



Goodyear Truck Tire Databook Emerging Markets 2020-2021

*Welcome to the next
Generation of tires.*

GOODYEAR

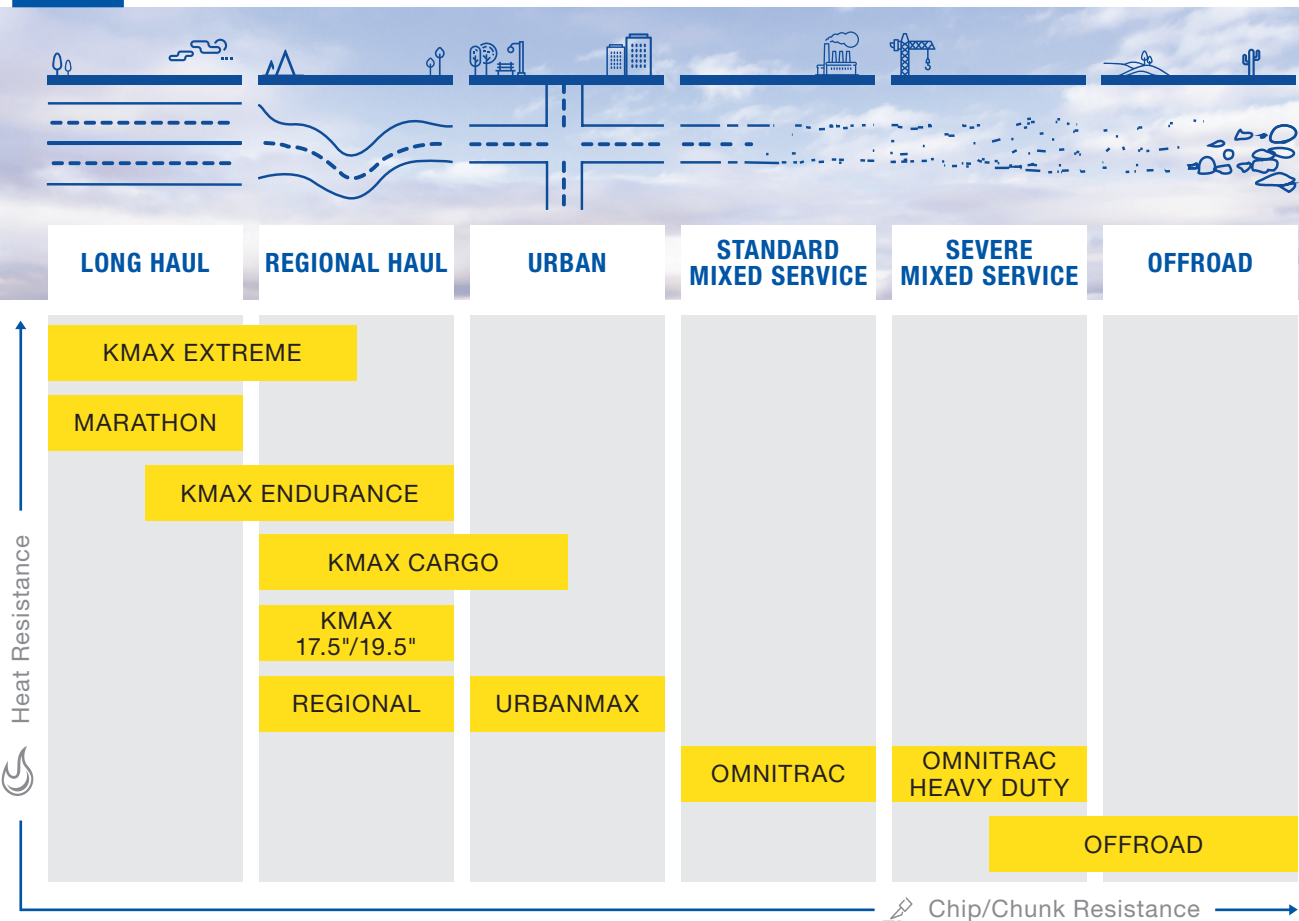


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Application Map



PREVIOUS GENERATION TIRES: (Ex. MARATHON LHS II+)

Family	Application	Axle Position	Generation
Marathon	LH: Long Haul	S: Steer	-
Regional	RH: Regional Haul	D: Drive	II
Omnitrac	MS: Mixed Service	T: Trailer	II+
Urbanmax	MC: Municipal	A(blank): All Position	
	OR: OffRoad		
	COACH: Coach Buses		

NEW GENERATION TIRES: (Ex. KMAX S EXTREME)

Family	Axle Position	Customization/Benefit	Generation
KMAX	OnRoad Tires	S: Steer (Standard Construction)	-
Omnitrac	Mixed Service Tires	D: Drive HIGH LOAD (HL): Higher load index than standard	GEN-2
Offroad	OffRoad Tires	T: Trailer HEAVY DUTY: Reinforced construction for severe conditions	
Urbanmax	Municipal Tires	A(blank): All Position EXTREME: For long distances with extreme hot climates	
		ENDURANCE: For high mileage OnRoad	
		CARGO: For high mileage OnRoad with tough service conditions	



Application Map



TIRES FOR LONG HAUL

	KMAX EXTREME			MARATHON		
SIZES AVAILABLE	KMAX S (Steer)	KMAX D (Drive)	KMAX T (Trailer)	LHS II/II+ (Steer)	LHD II (Drive)	LHT/LHT II (Trailer)
11R22.5						
275/70R22.5						
315/80R22.5						
355/50R22.5						
375/50R22.5						
385/65R22.5						
435/50R19.5						
435/50R22.5						
455/40R22.5						



TIRES FOR REGIONAL HAUL

	KMAX CARGO			KMAX ENDURANCE			REGIONAL			KMAX		
SIZES AVAILABLE	KMAX S (Steer)	KMAX D (Drive)	KMAX T (Trailer)	KMAX S (Steer)	KMAX D (Drive)	KMAX T (Trailer)	RHS/RHS II (Steer)	RHD RHD II (Drive)	RHT II (Trailer)	KMAX S/ KMAX S G2 (Steer)	KMAX D/ KMAX D G2 (Drive)	KMAX T/ KMAX T G2 (Trailer)
8.5R17.5												
9.5R17.5												
10R17.5							G291	G124	G114			
Other 17.5"/19.5"												
10.00R20							S200+					
11.00R20							S200+					
10R22.5							G391					
11R22.5												
12R22.5												
275/70R22.5												
295/60R22.5												
295/80R22.5												
305/70R22.5												
315/60R22.5												
315/70R22.5												
315/80R22.5												
385/55R22.5												
385/65R22.5												
425/65R22.5												
445/65R22.5												



Application Map



TIRES FOR MIXED SERVICE

SIZES AVAILABLE	OMNITRAC			OMNITRAC HEAVY DUTY		OMNITRAC MS		
	OMNITRAC S (Steer)	OMNITRAC D (Drive)	OMNITRAC T (Trailer)	OMNITRAC S (Steer)	OMNITRAC D (Drive)	MSS/MSS II /MSS II PLUS (Steer)	MSD II/ MSD II PLUS (Drive)	MST II (Trailer)
12.00R20								
11R22.5								
12R22.5								
13R22.5								
265/70R19.5								
275/70R22.5								
295/80R22.5								
315/70R22.5								
315/80R22.5								
375/90R22.5								
385/55R22.5								
385/65R22.5								
445/65R22.5								
445/75R22.5								
495/45R22.5								
12.00R24								
325/95R24								



TIRES FOR OFFROAD TRUCKS

SIZES AVAILABLE	OFFROAD		
	OFFROAD ORD (Drive)	OFFROAD (All Position)	OFFROAD HEAVY DUTY (All Position)
14.00R20		Design.3	Design.3
365/85R20	Design.2		
13R22.5	Design.1		
375/90R22.5		Design.2	
325/95R24	Design.1		



Application Map



TIRES FOR BUSES & COACHES

	MARATHON (INTERCITY COACH)		URBANMAX (CITY BUS)		
SIZES AVAILABLE	S100 HFE/ LHS LR8 (All Position)	Coach (All Position)	MCA (All Position)	MCD (Drive)	MCS (All Position)
11R22.5					
265/70R19.5					
275/70R22.5					
295/80R22.5					
305/70R22.5					
315/60R22.5					
315/80R22.5					
455/45R22.5					



LONG HAUL TIRE RANGE



LONG HAUL

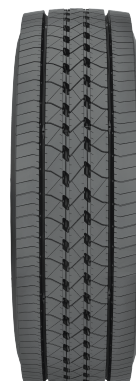


KMAX S EXTREME

STEER



- 5-rib sophisticated tread design specifically engineered for regular wear & low heat generation.
- Features IntelliMax Rib Technology with closed shoulders for excellent tracking/steering on front axle, mileage & robustness in trailer usage.
- “Flexomatic” sipes for short braking distances & high mileage.
- Cool running tread compound for high mileage in extreme hot climates & reduced heat generation.
- Durable construction for performance, retreadability, durability and mileage in hot conditions.



Size	Load Index / Speed Symbol	Comments
315/80R22.5	156/150L (154/150M)	

KMAX D EXTREME

DRIVE



- 5-rib deep tread design with Flexomatic sipes & raindrop channels for regular wear in all torque and temperature conditions, high mileage, reduced heat generation & low rolling resistance.
- Closed shoulder for regular wear & optimal traction.
- V-shape directional design & variable pitch length for regular wear, high traction & low noise emissions during the whole tire life.
- Cool running tread compound for high mileage in extreme hot climates & reduced heat generation.
- Durable construction for performance, retreadability, durability and mileage in hot conditions.



Size	Load Index / Speed Symbol	Comments
315/80R22.5	156/150L (154/150M)	

KMAX T EXTREME

TRAILER



- A reinforced carcass for High load capability (10 tons axels), high robustness and durability & better retreadability
- Strong shoulder ribs for high mileage robustness & durability
- Zig-Zag Grooves for high traction & durability due to less stone holding
- Cool running tread compound for high mileage in extreme hot climates & reduced heat generation.
- Durable construction for performance, retreadability, durability and mileage in hot conditions.



Size	Load Index / Speed Symbol	Comments
385/65R22.5	164K (158L)	High Load Version



MARATHON LHS II/II+

STEER



- A dedicated tread compound using the Silefex technology designed to lower the fuel consumption and emissions (Low rolling resistance -7% vs LHS II).
- Wide tread, rib layout for excellent mileage, even wear and good handling/stability.
- “Flexomatic Blades” and “Edge Blading” on grooves for excellent braking on wet, even wear and high mileage.
- Latest technology carcass geometry and materials for reduced weight, enhanced damage resistance, durability and retreadability.

Size	Load Index / Speed Symbol	Comments
315/80R22.5	156/150L (154/150M)	
385/65R22.5	160K (158L)	
315/80R22.5	158/150L	High Load Version
355/50R22.5	156K	High Load Version
375/50R22.5	156K	



LONG HAUL

REGIONAL HAUL

BUSES & COACHES

MIXED SERVICE

OFFROAD

MARATHON LHD II

DRIVE



- A wide tread with large shoulder ribs for excellent mileage, traction and braking as well as even wear pattern.
- “3D-BIS” waffle blade technology for traction and braking performance and improved handling and stability.
- Latest technology carcass geometry and materials for reduced weight, enhanced damage resistance, durability and retreadability.

Size	Load Index / Speed Symbol	Comments
315/80R22.5	156/150L (154/150M)	
495/45R22.5	169K	Available in LHD Pattern



MARATHON LHT II

TRAILER



- Multi-radius tread shape for even wear pattern.
- Wide and strong shoulder rib for improved damage resistance and wear.
- Low energy dissipation, compact tread design concept for very low rolling resistance, reduced fuel consumption & robustness against cracks and damages.
- Variable angle shoulder groove geometry for robustness & minimized stone holding.
- Optimized blading density/distribution for good braking, optimum rolling resistance & very low noise emissions.
- Latest tread compound technology with high silica content for optimum balance between RR, wet braking and mileage.

Size	Load Index / Speed Symbol	Comments
11R22.5	148/145J	Available in LHT Pattern
275/70R22.5	152/148 J (148/145 L)	
435/50R19.5	160J	
435/50R22.5	164J	Available in LHT Pattern
455/40R22.5	160J	Available in LHT+ Pattern



REGIONAL HAUL TIRE RANGE





REGIONAL HAUL

GOODYEAR

KMAX S CARGO

STEER



- Reinforced bead area for resistance to operations in heavy cargo conditions.
- 4-rib Design that may be used on any axle with Innovative Details, massive ribs resist against chipping, chunking & tearing which preserves casing integrity for retreading.
- Stone Ejectors to prevent stone damage & maximize carcass durability and therefore its value via retreading.
- IntelliMax Rib Technology with closed shoulders for excellent tracking/steering on front axle, mileage & robustness in trailer usage.
- Dual depth sipes for grip and handling throughout the tire life.
- New tread compound to optimize cut resistance for maximized mileage, chipping & chunking resistance.
- Durable construction for performance, retreadability, durability and mileage.



Size	Load Index / Speed Symbol	Comments
295/80R22.5	152/148M	
315/80R22.5	156/150L (154/150M)	

KMAX D CARGO

DRIVE



- Reinforced bead area for resistance to operations in heavy cargo conditions.
- V-shape directional design & variable pitch length for regular wear, high traction & low noise emissions during the whole tire life.
- Humps in the central ribs for high mileage & robustness.
- Humps in the shoulders for high traction over tire life.
- Wide tread design for high mileage.
- New tread compound to optimize cut resistance for maximized mileage, chipping & chunking resistance.
- Durable construction for performance, retreadability, durability and mileage.



Size	Load Index / Speed Symbol	Comments
295/80R22.5	152/148M	
315/80R22.5	156/150L (154/150M)	

KMAX T CARGO

TRAILER



- Reinforced bead area for resistance to operations in heavy cargo conditions.
- A reinforced carcass for High load capability (10 tons axels), high robustness and durability & better retreadability
- Strong shoulder ribs for high mileage robustness & durability
- Zig-Zag Grooves for high traction & durability due to less stone holding
- New tread compound to optimize cut resistance for maximized mileage, chipping & chunking resistance.
- Durable construction for performance, retreadability, durability and mileage.



Size	Load Index / Speed Symbol	Comments
385/65R22.5	164K (158L)	High Load Version



KMAX S ENDURANCE

STEER



- Innovative rib design that may be used on any axle with Innovative Details, massive ribs resist against chipping, chunking & tearing which preserves casing integrity for retreading.
- Stone Ejectors to prevent stone damage & maximize carcass durability and therefore its value via retreading.
- IntelliMax Rib Technology with closed shoulders for excellent tracking/steering on front axle, mileage & robustness in trailer usage.
- Dual depth sipes for grip and handling throughout the tire life.
- New tread compound to optimize cut resistance for maximized mileage, chipping & chunking resistance.
- Durable construction for performance, retreadability, durability and mileage.



Size	Load Index / Speed Symbol	Comments
315/80R22.5	156/150L (154/150M)	KMAX S ENDURANCE+ coming soon
385/65R22.5	160K (158L)	

KMAX D ENDURANCE

DRIVE



- V-shape directional design & variable pitch length for regular wear, high traction & low noise emissions during the whole tire life.
- Humps in the central ribs for high mileage & robustness.
- Humps in the shoulders for high traction over tire life.
- Wide tread design for high mileage.
- New tread compound to optimize cut resistance for maximized mileage, chipping & chunking resistance.
- Durable construction for performance, retreadability, durability and mileage.



Size	Load Index / Speed Symbol	Comments
315/80R22.5	156/150L (154/150M)	

KMAX T ENDURANCE

TRAILER



- A reinforced carcass for High load capability (10 tons axels), high robustness and durability & better retreadability
- Strong shoulder ribs for high mileage robustness & durability
- Zig-Zag Grooves for high traction & durability due to less stone holding
- New tread compound to optimize cut resistance for maximized mileage, chipping & chunking resistance.
- Durable construction for performance, retreadability, durability and mileage.



Size	Load Index / Speed Symbol	Comments
385/65R22.5	164K (158L)	High Load Version

LONG HAUL

REGIONAL HAUL

BUSES & COACHES

MIXED SERVICE

OFFROAD

REGIONAL RHS II - 22.5"

STEER



- Wide tread, 5-rib pattern, groove edge blading, for excellent mileage, even wear and superb handling and stability.
- Dedicated for high mileage and a wide application range. The innovative high silica content tread compound results in excellent mileage performance, excellent wet braking, even wear and reduced rolling resistance.
- High density, flexomatic blading, for outstanding braking on wet surfaces combined with high mileage.



Size	Load Index / Speed Symbol	Comments	Size	Load Index / Speed Symbol	Comments
10.00R20	146/143K	Available in S200+ Pattern	295/80R22.5	152/148M	
11.00R20	150/147K	Available in S200+ Pattern	305/70R22.5	153/150L	Available in KMAX S Pattern
10R22.5	144/142M	Available in G391 Pattern	315/60R22.5	152/148L	Available in KMAX S G2 Pattern
11R22.5	148/145L		315/70R22.5	154/150L	
12R22.5	152/148L	Also Available in RHS & with Hot Climate Technology	315/80R22.5	156/150L (154/150M)	Also Available with High Load
275/70R22.5	148/145M	Available in KMAX S Pattern	385/65R22.5	164K (158L)	High Load Version
295/60R22.5	150/147K	Available in KMAX S G2 Pattern			

REGIONAL RHD II - 22.5"

DRIVE



- Features KMAX Technology developed to increase mileage performances without compromising other tire characteristics.
- Wide tread, 5-rib directional pattern, for excellent mileage, even wear, superb handling and stability.
- Special, directional groove tapers, highly bladed pattern, for improved wet braking and mileage performances, excellent traction and grip.
- New technology, high silica tread compound, for high mileage combined with good tear and damage resistance.
- Dedicated carcass geometry, latest technology carcass materials resulting in enhanced robustness, durability and retreadability.



Size	Load Index / Speed Symbol	Comments	Size	Load Index / Speed Symbol	Comments
11R22.5	148/145L		295/80R22.5	152/148M	With Hot Climate Technology
12R22.5	152/148L	Also Available with Hot Climate Technology	305/70R22.5	153/150L	Available in KMAX D Pattern
275/70R22.5	148/145M	Available in KMAX D Pattern	315/60R22.5	152/148L	Available in KMAX D G2 Pattern
295/60R22.5	150/147K	Available in KMAX D Pattern	315/70R22.5	154/150L	
			315/80R22.5	156/150L (154/150M)	

REGIONAL RHT II - 22.5"

TRAILER



- Superb mileage performance thanks to its multi-radius cavity shape and its high wearable rubber volume and even wear.
- Innovative tread compound which offers resistance to groove cracking and tread chunking.
- Excellent robustness and high resistance in shoulder wear.
- Reduced stone catching and resistant to groove cracking.
- Low rolling resistance for fuel efficiency.
- High grip level due to Zig-Zag grooves design.



Size	Load Index / Speed Symbol	Comments
385/55R22.5	160K (158L)	
425/65R22.5	169K	Available in KMAX T G2 Pattern
445/65R22.5	169K	Available in KMAX T G2 Pattern



REGIONAL HAUL TIRES



KMAX S 17.5"/19.5"

STEER



- Computer modeled tread profile for optimized tire pressure distribution that offers regular wear, high mileage, robustness, good braking on wet and excellent handling.
- IntelliMax Rib Technology that offers stiffer tread, higher mileage and regular wear.
- Wide tread, provide an optimized footprint and high mileage.
- Robust, wide shoulders Improve robustness.
- "Stiffener" technology in center grooves provides good handling, & steering response.
- Specific blading frequency and geometry offers excellent braking and grip.

Size	Load Index / Speed Symbol	Comments
8.5R17.5	121/120M	Available in RHS Pattern
9.5R17.5	129/127M	Available in RHSII Pattern
10.5R17.5	134/132M	Available in G291 Pattern
205/75R17.5	124/122M	
215/75R17.5	128/126M	
225/75R17.5	129/127M	
235/75R17.5	132/130M	

Size	Load Index / Speed Symbol	Comments
245/70R17.5	136/134M	Available in 4Rib Pattern
245/70R19.5	136/134M	
265/70R17.5	139/136M	Available in 4Rib Pattern
265/70R19.5	140/138M	
285/70R19.5	146/144L	
305/70R19.5	148/145M	



LONG HAUL

REGIONAL HAUL

BUSES & COACHES

MIXED SERVICE

OFFROAD

KMAX D 17.5"/19.5"

DRIVE



- High mileage potential, high traction performance and low noise emission thanks to optimized tire pressure distribution, the right number of pitches, the non-skid optimized block geometry and a higher wearable rubber volume compared to its predecessors.
- IntelliMax Tread Technology: Dual compound layer, gives high mileage and low rolling resistance.
- Directional, V-shaped pattern for very low noise.
- 3D waffle sipes for excellent traction.

Size	Load Index / Speed Symbol	Comments
8.5R17.5	121/120M	Available in RHD Pattern
9.5R17.5	129/127M	Available in RHDII Pattern
10.5R17.5	134/132M	Available in G124 Pattern
205/75R17.5	124/122M	
215/75R17.5	126/124M	
225/75R17.5	129/127M	

Size	Load Index / Speed Symbol	Comments
235/75R17.5	132/130M	
245/70R17.5	136/134M	
245/70R19.5	136/134M	
265/70R17.5	139/136M	
265/70R19.5	140/138M	
285/70R19.5	146/144L	
305/70R19.5	148/145M	



KMAX T 17.5"/19.5"

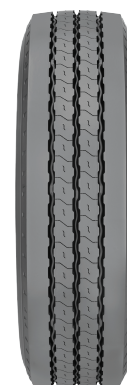
TRAILER



- Ideal choice for low platform application. Thanks to its tread design and robust construction.
- These tires offer all season mobility combined with optimal mileage and robustness even in demanding low platform usage.
- The 4-rib tread design provides robustness and even pressure distribution.
- Radial and longitudinal sipes for Increased grip.
- Special tread compound for High mileage potential.

Size	Load Index / Speed Symbol	Comments
9.5R17.5	143/141J	Available in RHTII Pattern
10.5R17.5	134/132L	Available in G114 Pattern
215/75R17.5	135/133J	
245/70R17.5	143/141J	
235/75R17.5	143/141J	
205/65R17.5	129/127K	
285/70R19.5	150/148J	

Size	Load Index / Speed Symbol	Comments
245/70R19.5	141/140J	
265/55R19.5	141/140J	
265/70R19.5	143/141J	
435/50R19.5	160J	Available in KMAX T G2 Pattern



BUSES & COACHES TIRE RANGE







MARATHON LHS LR8

ALL



- Specially designed for usage in hot countries, the LHS LR8 pattern provides high mileage combined with high steering precision and driver comfort.
- The dedicated carcass construction and tread compound suit the demanding requirements of the severe service requirements in hot country areas.
- Even load distribution for reduced tire wear.
- Low rolling resistance for added fuel savings.
- Low rolling noise.

Size	Load Index / Speed Symbol	Comments
295/80R22.5	152/148M	with Hot Climate Technology



S100 HFE

ALL



- S100 HFE is specially developed for coaches operating in hot climate conditions, ensuring exceptional safety and high mileage.
- Fuel Max technology integrates optimized carcass structure and new rubber formula to reduce energy loss between molecules resulting in reduced rolling resistance and fuel consumption.
- High polymer addition strengthens molecular connection which delays wearing process of the rubber. The rubber compound developed to adapt to the long distances maintaining a cool running tire, even wear and extra mileage.
- The optimized tread profile improves the ground contact footprint with an enhanced tread surface area distributing a uniform pressure across, which effectively prevents uneven wear and increases the handling.
- The new groove design improves handling performance and extends the service life with better heat dissipation to ensure cooler running.

Size	Load Index / Speed Symbol	Comments
295/80R22.5	152/148M	with Hot Climate Technology



MARATHON COACH

ALL



- Asymmetric pattern dedicated for all position fitment on long haul and intercity coach applications.
- Providing excellent mileage, resistance to shoulder wear.
- Low (exterior) noise emission and quiet running for passenger satisfaction.
- Excellent level of ride and handling that provides comfort for driver and passengers.
- Reduced cost per km through high mileage potential, retreadability & even wear.
- Reduced rolling resistance Fuel savings.
- Excellent wet grip (braking) for confidence in wet conditions.

Size	Load Index / Speed Symbol	Comments
295/80R22.5	154/149M	High Load Version
315/80R22.5	156/150L (154/150M)	





URBANMAX MCA

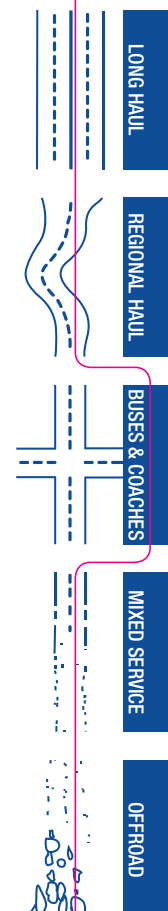
ALL



- Wide tread, 5 robust ribs, for superb mileage and even wear.
- Featuring UrbanMax Technology, a combination of latest technology tread pattern and state of the art materials.
- Specifically developed to provide excellent mileage in “stop & go” applications.
- Provides good braking and traction.
- MCA tires are usable as steer or as all position tires on municipal vehicles.
- Centerline blocks with edge and flexomatic blading for good braking on wet and all season capability.
- Reinforced sidewalls, with wear indicators, to resist to curb scuffing and enhanced durability and damage resistance.
- Regroovable and retreadable.



Size	Load Index / Speed Symbol	Comments
11R22.5	148/145J	
265/70R19.5	140/138L	
275/70R22.5	148/145J	
275/70R22.5	150/145J	High Load Version
295/80R22.5	152/148J	
305/70R22.5	152/148J	Available in MCS Pattern
315/60R22.5	152/148J	



URBANMAX MCD TRACTION

DRIVE



- Has 6 row block type pattern for excellent traction performance
- Featuring UrbanMax Technology, a combination of latest technology tread pattern and state of the art materials.
- It provides superb mileage, & good braking.
- The wide tread with deep profile depth ensures excellent mileage performance, & even wear.
- Reinforced sidewalls, with wear indicators, to resist to curb scuffing and enhanced durability and damage resistance
- Regroovable and retreadable.



Size	Load Index / Speed Symbol	Comments
275/70R22.5	148/145 J (152/148 E)	
455/45R22.5	166J	



MIXED SERVICE TIRE RANGE



MIXED SERVICE

GOODYEAR

OMNITRAC s

STEER



- Robust 5 rib design (24" = 4 rib) that improves durability and ground pressure distribution for high mileage and even wear performance
- Siped tread blocks and zig-zag grooves, where the sipes double the number of biting edges; and zig-zag grooves provide extra grip for improved traction
- 'Quick release' groove shapes with stone penetration protectors reduces stone holding; protect against stone drilling and groove cracking which gives excellent self cleaning capabilities, improved casing durability, and high mileage potential
- Cool running cap & tear resistant base compound for high mileage and casing durability
- DuraShield technology Top belt for ultimate casing protection against corrosion that gives a new level of casing durability and retreadability performance

Size	Load Index / Speed Symbol	Comments
13R22.5	156/150K	
295/80R22.5	152/148K	
315/70R22.5	156/150K	High Load Version
315/80R22.5	156/150K	
325/95R24	162/160K	
385/65R22.5	160K	TL/TT



OMNITRAC D

DRIVE



- Directional 3-rib tread design with siped blocks to double the number of biting edges for high traction and even wear on all surfaces including retarder operation
- High centerline net contact area with tie bars with massive center rib for high damage resistance, even wear in abrasive road conditions, high mileage potential and casing durability
- Wide open shoulder grooves with stone penetration protectors for excellent mud drainage and stone rejection, and high traction throughout complete tire life
- Cool running cap & tear resistant base compound for high mileage and casing durability
- DuraShield technology Top belt for ultimate casing protection against corrosion that gives a new level of casing durability and retreadability performance

Size	Load Index / Speed Symbol	Comments
13R22.5	156/150K	
295/80R22.5	152/148K	
315/70R22.5	154/150K	
315/80R22.5	156/150K	



OMNITRAC T

TRAILER



- A wide tread and multi-radii cavity for even wear and a mileage increase.
- A Zig-Zag centreline groove and off-set block edge design offer an improved on/off road traction
- Massive centerline ribs increase the damage resistance.
- Mixed service casing gives robustness against road hazards.
- Increased durability and retreadability.

Size	Load Index / Speed Symbol	Comments
385/65R22.5	164K (158L)	High Load Version



MIXED SERVICE TIRES



OMNITRAC S HEAVY DUTY

STEER



- Durashield technology where top belt prevents objects from penetrating the belt package and protects the casing from corrosion which gives a new level of casing durability and retreadability performance
- 4-Rib robust tread design with massive shoulder ribs to resist the most demanding mixed service applications to give a high mileage and even wear performance without chunking
- 'Quick release' groove shapes with stone penetration protectors to ensure that trapped stones are quickly released by the tread movements and centerline stone ejectors prevent them to reach the groove bottom which gives an excellent protection against stone damage leading to less punctures and more carcass durability, excellent self cleaning in all terrains for good traction
- A new tread rubber particularly designed to resist to chipping and chunking in all tire life phases provides high mileage. While the Increased under-tread rubber provides extra casing protection.



Size	Load Index / Speed Symbol	Comments	Size	Load Index / Speed Symbol	Comments
12R22.5	152/148K		315/80R22.5	156/150K	
13R22.5	156/150K		325/95R24	162/160K	Coming Soon

OMNITRAC D HEAVY DUTY

DRIVE



- Durashield technology where top belt prevents objects from penetrating the belt package and protects the casing from corrosion which gives a new level of casing durability and retreadability performance
- Directional tread design ensures traction and self cleaning until end of tread life with traction on all surfaces
- Continuous tractive centerline design that provides traction and protects the tread against damages in its most vulnerable zone as well as even wear in chipping and chunking conditions, high mileage potential and casing protection
- Wide open shoulder grooves and dynamic block design where the V-shaped directional design of the blocks provides edges for traction and ejects stones and mud quickly to give high traction throughout complete tyre life and with all carriageway conditions; chip/chunk resistance under torque and stone damage prevention
- A new tread rubber particularly designed to resist to chipping and chunking in all tire life phases provides high mileage. While the Increased under-tread rubber provides extra casing protection.



Size	Load Index / Speed Symbol	Comments	Size	Load Index / Speed Symbol	Comments
12R22.5	152/148K		315/80R22.5	156/150K	
13R22.5	156/150K		325/95R24	162/160K	Coming Soon

LONG HAUL

REGIONAL HAUL

BUSES & COACHES

MIXED SERVICE

OFFROAD



MIXED SERVICE TIRES



OMNITRAC MSS II/MSS II PLUS

STEER



- Features a wide tread, 4-rib and 5-rib pattern for excellent mileage durability, retreadability and even wear.
- Its robust tread pattern provides high mileage in on road use and good damage resistance.
- The specific groove layouts ensure good self cleaning and reduced stone holding.
- Wide shoulder ribs for resistance against shoulder wear & robustness in cornering maneuvers.
- 'Slalom' centerline groove for good braking.
- Variable pitch length for low noise emissions.
- Stone penetration protectors with double groove angle for stone drilling resistance.

Size	Load Index / Speed Symbol	Comments
12.00R20	154/150 K	
12.00R24	160/156 K	Available in MSS II Plus Pattern
265/70R19.5	143/141 J	
275/70R22.5	148/145 K	



OMNITRAC MSD II/ MSD II PLUS

DRIVE



- Specifically developed robust tread pattern that provides excellent traction in on and off road conditions, high mileage in on road use and good damage resistance.
- The specific groove layouts ensure good self cleaning and reduced stone holding.
- The dual layer wide tread with a centerline rib provides excellent mileage on off-road usage, better resistance to chip and chunk, & better resistance to carcass damage.
- Radial grooves on the side of the tread and shoulder blocks ensure good traction.
- Mixed service casing gives robustness against road hazards.

Size	Load Index / Speed Symbol	Comments	Size	Load Index / Speed Symbol	Comments
12.00R20	154/150 K		385/55R22.5	160K	
12.00R24	160/156 K	Available in MSD II Plus Pattern	495/45R22.5	169K	
325/95R24	162/160 K	Available in MSD II Plus Pattern			



OMNITRAC MST II

TRAILER



- A wide tread and multi-radii cavity for even wear and a mileage increase.
- A Zig-Zag centerline groove and off-set block edge design offer an improved on/ off road traction.
- Massive centerline ribs increase the damage resistance.
- Mixed service casing gives robustness against road hazards.
- Increased durability and retreadability.

Size	Load Index / Speed Symbol	Comments
385/65R22.5	160K (158L)	Available with Hot Climate Technology
445/65R22.5	169K	



MIXED SERVICE TIRES



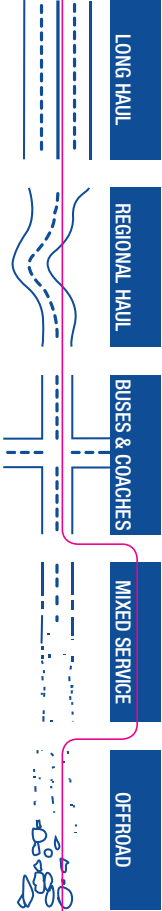
OMNITRAC mss

STEER



- Features a wide tread, 5-rib pattern for excellent mileage durability, retreadability and even wear for mixed service steer operation.
- Its robust tread pattern provides high mileage in on road use and good damage resistance.
- The specific groove layouts ensure good self cleaning and reduced stone holding.
- Wide shoulder ribs for resistance against shoulder wear & robustness in cornering maneuvers.
- ‘Slalom’ centerline groove for good braking.
- Variable pitch length for low noise emissions.
- Stone penetration protectors with double groove angle for stone drilling resistance.

Size	Load Index / Speed Symbol	Comments
445/75R22.5	170J	
315/80R22.5	156/150 K	
375/90R22.5	164G	
11R22.5	148/145K	



OFFROAD TIRE RANGE



OFFROAD

GOODYEAR

OFFROAD TIRES

OFFROAD ORD (DESIGN 1)

DRIVE



- The Goodyear Offroad ORD is a specific tire for off-road applications.
- Deep tread depth for Secure off-road traction and good mileage potential.
- Optimized off-road tread compound for excellent resistance to tearing and cutting.
- Overlapping blocks for balanced tire wear around the circumference.
- Massive block geometry for Improved resistance to cuts.
- Deep, wide shoulder grooves for self-cleaning, minimizing stone holding & increasing traction.

Size	Load Index / Speed Symbol	Comments
13R22.5	156/150G	
325/95R24	162/160G	



OFFROAD (DESIGN 2)

ALL POSITION



- The offroad service, all position usage or drive axle tire is a specific tire for military & other service vehicles.
- It provides excellent damage resistance and enhanced traction properties even on oft or sandy surfaces.
- Secure off-road traction and high mileage.
- Exceptional resistance to tearing and cutting.
- Excellent resistance to stone holding and self-cleaning ability.
- Low inflation capability.

Size	Load Index / Speed Symbol	Comments
365/85R20	164J	Available in ORD Pattern
375/90R22.5	164G	



OFFROAD TIRES

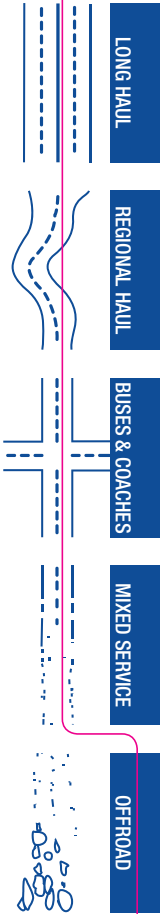
OFFROAD (DESIGN 3)

ALL POSITION



- Originally developed for special military, airport fire brigade and road maintenance applications.
- Gives excellent off-road traction, stone holding resistance and balanced wear around the circumference.
- Optimum durability and retreadability.
- Exceptional off-road traction and cutting resistance.
- Resistance to tearing and cutting for more kilometers.
- Self-cleaning to avoid stone holding and increase traction.

Size	Load Index / Speed Symbol	Comments
14.00R20	164K	
14.00R20	164J	Heavy Duty



TECHNICAL DATA



TECHNICAL DATA



Goodyear Technical Data

				Tire Dimensions					Rim Data			
Size	Goodyear Design	Load/Speed Index	Additional Markings/ Comments	Overall Diameter mm (+/-1.5%)	Overall Section Width mm (+/-1.5%)	Static Loaded Radius (mm)	Rolling Circumf. (mm)	Tread Depth (mm)	Recomm. Rim Width	Permitted Rims	Minimal Dual Spacing (mm)	
17.5" - 65 Series Sizes												
205/65R17.5	KMAX T	129/127K	FRT	716	213	334	2199	11.2	6.00	6.00-6.75	231	
17.5" - 70 Series Sizes												
245/70R17.5	KMAX S	136/134M		794	246	368	2430	13.1	7.50	6.75-7.50	279	
	KMAX D	136/134M		795	245	369	2422	13.5	7.50	6.75-7.50	279	
	KMAX T	143/141J	FRT	793	256	365	2428	11	7.50	6.75-7.50	279	
265/70R17.5	KMAX S	139/136M		816	256	378	2488	13.1	7.50	6.75-7.50	295	
	KMAX D	139/136M		818	256	349	2481	13.6	7.50	6.75-7.50	295	
17.5" - 75 Series Sizes												
205/75R17.5	KMAX S	124/122M		758	210	355	2310	13	6.00	5.25-6.75	231	
	KMAX D	124/122M		760	209	356	2305	13.8	6.00	5.25-6.75	231	
215/75R17.5	KMAX S	128/126M	High Load	774	217	361	2352	13.5	6.00	6.00-6.75	239	
	KMAX D	126/124M		776	214	362	2344	13.9	6.00	6.00-6.75	239	
	KMAX T	135/133J	FRT	769	215	355	2350	11	6.00	6.00-6.75	239	
225/75R17.5	KMAX S	129/127M		787	232	367	2393	14	6.75	6.00-6.75	254	
	KMAX D	129/127M		790	232	368	2390	14.9	6.75	6.00-6.75	254	
235/75R17.5	KMAX S	132/130M		806	236	376	2448	14.4	6.75	6.75-7.50	278	
	KMAX D	132/130M		807	236	377	2449	15	6.75	6.75-7.50	278	
	KMAX T	143/141J	FRT	801	237	368	2450	11	6.75	6.75-7.50	278	
17.5" - Standard Series Sizes												
8.5R17.5	RHS	121/120M		808	207	376	2466	13	5.25	5.25-6.75	233	
	RHD	121/120M		805	207	374	2457	14.6	5.25	5.25-6.75	233	
9.5R17.5	RHS II	129/127M		847	241	392	2585	13.2	6.00	6.00-6.75	261	
	RHD II	129/127M		855	237	400	2610	14.5	6.00	6.00-6.75	261	
	RHT II	143/141J	FRT	846	246	390	2582	11.2	6.75	6.00-6.75	270	
10R17.5	G291	134/132M		858	246	398	2615	13.5	6.75	6.75-7.50	277	
	G124	134/132M		862	239	405	2630	15	6.75	6.75-7.50	277	
	G114	134/132L		In preparation: use ETRTO standard values				11.4	6.75	6.75-7.50	277	
19.5" - 50 Series Sizes												
435/50R19.5	LHT II	160J	FRT	920	429	421	2788	11	14.00	14.00-15.00		
	KMAX T G2	160J	FRT	In preparation: use ETRTO standard values				13.3	14.00	14.00-15.00		
19.5" - 55 Series Sizes												
265/55R19.5	KMAX T	141/140J	FRT	792	271	366	2436	10	8.25	8.25	297	

- Measured tire dimension using the Goodyear recommended rim.
- FRT = "Free Rolling Tire": this tire may only be fitted on a trailer or tag axle and not on a drive or steer axle.



			Max Load		Load Capacity per axle (in kg) at inflation pressure in bar (psi)														
	Size (contd.)	Nominal Pressure bar (psi)	Single Axle Load (kg)	Dual Axle Load (kg)	Load Index	Single/Dual	5.0 (73)	5.5 (80)	6.0 (87)	6.5 (94)	7.0 (102)	7.25 (105)	7.5 (109)	7.75 (112)	8.0 (115)	8.25 (120)	8.5 (123)	8.75 (127)	9.0 (130)
	205/65R17.5	9.00 (130)	3700	7000	129	S	2310	2500	2680	2850	3030	3110	3200	3280	3370	3450	3530	3620	3700
					127	D	4370	4720	5060	5400	5730	5890	6050	6210	6370	6530	6690	6840	7000
	245/70R17.5	8.50 (123)	4480	8480	143	S	3480	3760	4030	4300	4560	4690	4820	4950	5070	5200	5330	5450	
		8.50 (123)	4480	8480	141	D	6580	7100	7620	8120	8620	8860	9100	9350	9590	9830	10060	10300	
		8.75 (127)	5450	10300	136	S	2930	3160	3390	3610	3840	3940	4050	4160	4270	4370	4480		
					134	D	5550	5990	6420	6840	7260	7470	7670	7880	8080	8280	8480		
	265/70R17.5	8.00 (115)	4860	8960	139	S	3340	3600	3860	4120	4370	4490	4620	4740	4860				
		8.00 (115)	4860	8960	136	D	6150	6640	7120	7590	8050	8280	8510	8740	8960				
	205/75R17.5	7.50 (108)	3200	6000	124	S	2310	2500	2680	2850	3030	3110	3200						
		7.50 (108)	3200	6000	122	D	4340	4680	5020	5350	5680	5840	6000						
	215/75R17.5	7.50 (108)	3600	6800	135	S	2850	3080	3300	3520	3730	3840	3940	4050	4150	4260	4360		
		7.25 (105)	3400	6400	133	D	5390	5820	6240	6650	7050	7260	7450	7650	7850	8050	8240		
		8.50 (123)	4360	8240	128	S	2600	2810	3010	3210	3410	3500	3600						
					126	S	2530	2730	2920	3120	3310	3400							
					126	D	4340	4680	5020	5350	5680	5840	6800						
					124	D	4750	5130	5500	5860	6220	6400							
	225/75R17.5	7.25 (105)	3700	7000	129	S	2750	2970	3180	3390	3600	3700							
		7.25 (105)	3700	7000	127	D	5200	5610	6020	6410	6810	7000							
	235/75R17.5	7.75 (112)	4000	7600	143	S	3480	3760	4030	4300	4560	4690	4820	4950	5070	5200	5330	5450	
		7.75 (112)	4000	7600	141	D	6580	7100	7620	8120	8620	8860	9100	9350	9590	9830	10060	10300	
		8.75 (127)	5450	10300	132	S	2820	3040	3260	3470	3690	3790	3900	4000					
					130	D	5350	5780	6190	6600	7010	7210	7400	7600					
	8.5R17.5	6.25 (90)	2900	5600	121	S	2430	2620	2810										
		6.25 (90)	2900	5600	120	D	4680	5060	5420										
	9.5R17.5	7.50 (108)	3700	7000	143	S	3480	3760	4030	4300	4560	4690	4820	4950	5070	5200	5330	5450	
		7.50 (108)	3700	7000	141	D	6580	7100	7620	8120	8620	8860	9100	9350	9590	9830	10060	10300	
		8.75 (127)	5450	10300	129	S	2680	2890	3100	3300	3500	3600	3700						
					127	D	5060	5460	5860	6240	6620	6810	7000						
	10R17.5	8.00 (115)	4240	8000	134	S	2920	3150	3370	3600	3820	3920	4030	4140	4240				
		8.00 (115)	4240	8000	132	D	5500	5930	6360	6780	7190	7400	7600	7800	8000				
		8.00 (115)	4240	8000															
	435/50R19.5	9.00 (130)	9000		160	S	5620	6070	6510	6940	7360	7570	7780	7990	8190	8390	8600	8800	9000
		9.00 (130)	9000																
	265/55R19.5	9.00 (130)	5150	10000	141	S	3220	3470	3720	3970	4210	4330	4450	4570	4690	4800	4920	5040	5150
					140	D	6250	6740	7230	7710	8180	8410	8640	8870	9100	9330	9550	9780	10000



Goodyear Technical Data

				Tire Dimensions					Rim Data			
Size	Goodyear Design	Load/Speed Index	Additional Markings/ Comments	Overall Diameter mm (+/-1.5%)	Overall Section Width mm (+/-1.5%)	Static Loaded Radius (mm)	Rolling Circumf. (mm)	Tread Depth (mm)	Recomm. Rim Width	Permitted Rims	Minimal Dual Spacing (mm)	
19.5" - 70 Series Sizes												
245/70R19.5	KMAX S	136/134M		836	242	389	2555	13.1	6.75	6.75-7.50	279	
	KMAX D	136/134M		837	241	390	2555	13.5	6.75	6.75-7.50	279	
	KMAX T	141/140J	FRT	848	252	389	2589	11.5	7.50	6.75-7.50	279	
265/70R19.5	MCA	140/138L		873	271	406	2665	15.5	7.50	6.75-8.25	295	
	MSS II	143/141J		872	269	405	2662	15	6.75	7.50-8.25	295	
	KMAX S	140/138M		866	263	402	2650	14.1	6.75	6.75-8.25	295	
	KMAX D	140/138M		868	263	402	2464	14.6	6.75	6.75-8.25	295	
	KMAX T	143/141J	FRT	866	266	400	2643	11.6	7.50	7.50-8.25	295	
285/70R19.5	KMAX S	146/144L		888	277	399	2720	12.3	8.25	7.50-9.00	318	
	KMAX D	146/144L		895	279	417	2729	15.8	8.25	7.50-9.00	318	
	KMAX T	150/148J	FRT	892	289	410	2723	11.4	8.25	8.25-9.00	318	
305/70R19.5	KMAX S	148/145M		921	297	425	2812	13.3	8.25	8.25-9.00	343	
	KMAX D	148/145M		926	295	433	2823	15.7	8.25	8.25-9.00	343	
20" - 85 Series Sizes												
365/85R20	ORD	164J		1142	358	511	3465	21	10.00	10.00		
20" - Standard Series Sizes												
10.00R20	S200+	146/143K		1053	279	491	3214	14.7	7.50	7.50-8.00	328	
11.00R20	S200+	150/147K		1087	291	509	3318	14.7	8.00	8.00-8.50	346	
12.00R20	MSS II	154/150K		1126	313	526	3437	17.1	8.50	7.50-9.00	360	
	MSD II	154/150K		1133	313	530	3458	21	8.50	7.50-9.00	360	
14.00R20	ORD	164/160J		1258	377	573	3840	23.3	10.00	9.00-10.00	426	
	OFFROAD	164/161K		In preparation: use ETRTO standard values				23.3	10.00	9.00-10.00	426	
	OFFROAD	164/161J	HEAVY DUTY	In preparation: use ETRTO standard values				23.3	10.00	9.00-10.00	426	
22.5" - 45 Series Sizes												
495/45R22.5	MSD II	169K		1020	502	466	3091	16	17.00	16.00-17.00		
	LHD	169K		1018	505	471	3085	16	17.00	16.00-17.00		
22.5" - 50 Series Sizes												
355/50R22.5	LHS II+	156K	High Load	933	354	432	2866	13.3	11.75	11.75		
375/50R22.5	LHS II	156K		951	366	440	2882	13.2	11.75	11.75-12.15		
435/50R22.5	LHT	164J		1003	434	464	3110	12.1	14.00	14.00-15.00		
22.5" - 55 Series Sizes												
385/55R22.5	MSD II	160K		996	386	457	3018	14.3	11.75	11.75-12.25		
	RHT II	160K	FRT	995	387	457	3015	14.4	11.75	11.75-12.25		
22.5" - 60 Series Sizes												
295/60R22.5	KMAX S G2	150/147K		927	285	432	2841	12.3	9.00	9.00-9.75	329	
	KMAX D	150/147K		937	288	435	2858	17.9	9.00	9.00-9.75	329	
315/60R22.5	MCA	152/148J		963	316	446	2918	16.3	9.00	9.00-9.75	344	
	LHS II+	152/148L		956	308	442	2897	12.5	9.00	9.00-9.75	344	
	KMAX S G2	154/148L	High Load	954	310	442	2936	12.5	9.00	9.00-9.75	344	
	KMAX D G2	152/148L		965	307	450	2949	17.6	9.00	9.00-9.75	344	

- Measured tire dimension using the Goodyear recommended rim.
- FRT = "Free Rolling Tire": this tire may only be fitted on a trailer or tag axle and not on a drive or steer axle.



Max Load					Load Capacity per axle (in kg) at inflation pressure in bar (psi)														
	Size (contd.)	Nominal Pressure bar (psi)	Single Axle Load (kg)	Dual Axle Load (kg)	Load Index	Single/ Dual	5.0 (73)	5.5 (80)	6.0 (87)	6.5 (94)	7.0 (102)	7.25 (105)	7.5 (109)	7.75 (112)	8.0 (115)	8.25 (120)	8.5 (123)	8.75 (127)	9.0 (130)
	245/70R19.5	8.25 (120)	4480	8480	141	S	3370	3640	3900	4160	4410	4530	4660	4780	4910	5030	5150		
		8.25 (120)	4480	8480	140	D	6540	7060	7570	8070	8560	8810	9050	9290	9530	9760	10000		
		8.50 (123)	5150	10000	136	S	3000	3240	3470	3700	3930	4040	4150	4260	4370	4480			
					134	D	5680	6130	6570	7010	7440	7650	7860	8070	8270	8480			
	265/70R19.5	7.75 (112)	5000	9440	143	S	3560	3850	4120	4400	4670	4800	4930	5060	5190	5320	5450		
		8.50 (123)	5450	10300	141	D	6740	7270	7800	8310	8820	9070	9320	9570	9810	10060	10300		
		7.75 (112)	5000	9440	140	S	3520	3800	4070	4340	4610	4740	4870	5000					
		7.75 (112)	5000	9440	138	D	6650	7170	7690	8200	8700	8950	9200	9440					
		8.50 (123)	5450	10300															
	285/70R19.5	9.00 (130)	6000	11200	150	S	4190	4520	4840	5160	5480	5640	5790	5940	6100	6250	6400	6550	6700
		9.00 (130)	6000	11200	148	D	7870	8500	9110	9710	10310	10600	10890	11180	11470	11750	12040	12320	12600
		9.00 (130)	6700	12600	146	S	3750	4050	4340	4620	4910	5050	5190	5320	5460	5600	5730	5870	6000
					144	D	7000	7550	8100	8630	9160	9420	9680	9940	10190	10450	10700	10950	11200
	305/70R19.5	8.50 (123)	6300	11600	148	S	4120	4450	4770	5080	5390	5550	5700	5850	6000	6150	6300		
		8.50 (123)	6300	11600	145	D	7590	8190	8780	9360	9930	10210	10490	10770	11050	11330	11600		
	365/85R20	8.00 (115)	10000		164	S	6870	7410	7940	8470	8990	9240	9500	9750	10000				
	10.00R20	8.25 (120)	6000	10900	146	S	-	-	4630	4930	5240	5380	5530	5680	5830	6000			
					143	D	-	-	8410	8960	9510	9780	10050	10320	10580	10900			
	11.00R20	8.25 (120)	6700	12300	150	S	-	-	5170	5510	5850	6010	6180	6340	6510	6700			
					147	D	-	-	9490	10120	10730	11040	11340	11640	11940	12300			
	12.00R20	8.50 (123)	7500	13400	154	S	4910	5290	5680	6050	6420	6600	6790	6970	7140	7320	7500		
		8.50 (123)	7500	13400	150	D	8760	9460	10140	10810	11470	11800	12120	12450	12770	13080	13400		
	14.00R20	7.50 (108)	10000	18000	164	S	7230	7800	8370	8920	9460	9730	10000						
		7.50 (108)	10000	18500	160	D	13010	14040	15060	16050	17030	17520	18000						
		7.50 (108)	10000	18500															
	495/45R22.5	9.00 (130)	11600		169	S	7250	7820	8390	8940	9490	9760	10030	10290	10560	10820	11080	11340	11600
		9.00 (130)	11600																
	355/50R22.5	9.00 (130)	8000		156	S	5000	5390	5780	6170	6540	6730	6910	7100	7280	7460	7640	7820	8000
	375/50R22.5	9.00 (130)	8000		164	S	6250	6740	7230	7710	8180	8410	8640	8870	9100	9330	9550	9780	10000
	435/50R22.5	9.00 (130)	10000																
	385/55R22.5	9.00 (130)	9000		160	S	5620	6070	6510	6940	7360	7570	7780	7990	8190	8390	8600	8800	9000
		9.00 (130)	9000																
	295/60R22.5	9.00 (130)	6700	12300	150	S	4190	4520	4840	5160	5480	5640	5790	5940	6100	6250	6400	6550	6700
		9.00 (130)	6700	12300	147	D	7690	8290	8890	9480	10060	10350	10630	10910	11190	11470	11750	12030	12300
	315/60R22.5	9.00 (130)	7100	12600	154	S	4690	5060	5420	5780	6130	6310	6480	6650	6830	7000	7160	7330	7500
		9.00 (130)	7100	12600	152	S	4440	4790	5130	5470	5810	5970	6140	6300	6460	6620	6780	6940	7100
		9.00 (130)	7500	12600	148	D	7870	8500	9110	9710	10310	10600	10890	11180	11470	11750	12040	12320	12600
		9.00 (130)	7100	12600															



Goodyear Technical Data

				Tire Dimensions					Rim Data			
Size	Goodyear Design	Load/Speed Index	Additional Markings/ Comments	Overall Diameter mm (+/-1.5%)	Overall Section Width mm (+/-1.5%)	Static Loaded Radius (mm)	Rolling Circumf. (mm)	Tread Depth (mm)	Recomm. Rim Width	Permitted Rims	Minimal Dual Spacing (mm)	
22.5" - 65 Series Sizes												
385/65R22.5	LHS II+	160K		1077	377	499	3263	15.2	11.75	11.75-12.25		
	RHS II	164K	High Load	1077	377	499	3263	15.2	11.75	11.75-12.25		
	KMAX S END	160K		1076	379	499	3304	15.4	11.75	11.75-12.25		
	OMNITRAC S	160K		1077	376	500	3307	15.4	11.75	11.75-12.25		
	KMAX T EXT	164K	High Load, FRT	1083	386	498	3281	17.6	11.75	11.75-12.25		
	KMAX T END	164K	High Load, FRT	1083	386	498	3281	17.6	11.75	11.75-12.25		
	KMAX T CAR	164K	High Load, FRT	1082	387	499	3324	17.6	11.75	11.75-12.25		
	OMNITRAC T	164K	High Load, FRT	1082	389	500	3328	17.6	11.75	11.75-12.25		
425/65R22.5	MST II	160K	FRT	1085	387	504	3288	17.5	11.75	11.75-12.25		
	KMAX T	165K	FRT	1128	419	517	3418	16.2	13.00	12.25-14.00		
445/65R22.5	KMAX T G2	169K	FRT	In preparation: use ETRTO standard values				-	13.00	12.25-14.00		
	KMAX T G2	169K	FRT	In preparation: use ETRTO standard values				-	14.00	13.00-15.00		
	MST II	169K	FRT	1159	434	530	3512	15.8	14.00	13.00-15.00		
22.5" - 70 Series Sizes												
275/70R22.5	MCA	148/145J		976	271	457	2979	19.5	7.50	7.50-8.25	303	
	MCA	150/145J	High Load	972	273	457	2976	19.5	7.50	7.50-8.25	303	
	MSS II	148/145K		973	275	455	2970	17.6	7.50	7.50-8.25	303	
	KMAX S	148/145M		967	276	452	2965	13.8	7.50	7.50-8.25	303	
	KMAX D	148/145M		974	276	456	2970	18.1	7.50	7.50-8.25	303	
	MCD Traction	148/145J		976	276	459	2985	20.4	7.50	7.50-8.25	303	
	LHT II	152/148J	FRT	963	273	451	2940	13.8	7.50	7.50-8.25	303	
305/70R22.5	KMAX S	153/150L		996	297	465	3062	14.1	8.25	8.25-9.00	334	
	MCS*	152/148J		1008	301	462	3077	19.4	8.25	8.25-9.00	334	
	KMAX D	153/150L		1002	297	467	3058	17.7	8.25	8.25-9.00	334	
315/70R22.5	RHS II	154/150L		1015	314	470	3103	15.7	9.00	9.00-9.75	351	
	RHD II+	154/150L		1019	315	471	3110	18.1	9.00	9.00-9.75	351	
	OMNITRAC S	156/150L	High Load	In preparation: use ETRTO standard values				16.7	9.00	9.00-9.75	351	
	OMNITRAC D	154/150L		In preparation: use ETRTO standard values				20	9.00	9.00-9.75	351	
22.5" - 75 Series Sizes												
445/75R22.5	MSS	170J		1236	451	566	3773	13.9	14.00	13.00-14.00		
22.5" - 80 Series Sizes												
295/80R22.5	Coach	154/149M	High Load	1050	299	486	3205	13.4	9.00	8.25-9.00	335	
	MCA	152/148J		1061	198	494	3239	19.5	8.25	8.25-9.00	326	
	LHS LR8	152/148M		1047	295	484	3196	13	8.25	8.25-9.00	326	
	S100 HFE	152/148M		1047	306	489	3196	13.6	8.25	8.25-9.00	335	
	RHS II	152/148M		1054	298	489	3217	15.7	8.25	8.25-9.00	326	
	KMAX S CAR	154/149M		1047	305	491	3221	14.1	9.00	8.25-9.00	335	
	OMNITRAC S	152/148K		1053	309	491	3231	16.1	8.25	8.25-9.00	326	
	RHD II	152/148M		1062	296	495	3242	20.4	8.25	8.25-9.00	326	
	KMAX D CAR	152/148M		1060	305	491	3222	19.5	8.25	8.25-9.00	326	
OMNITRAC D	152/148K		1058	308	494	3232	19	8.25	8.25-9.00	326		

- Measured tire dimension using the Goodyear recommended rim.
- FRT = "Free Rolling Tire": this tire may only be fitted on a trailer or tag axle and not on a drive or steer axle.



Max Load					Load Capacity per axle (in kg) at inflation pressure in bar (psi)														
	Size (contd.)	Nominal Pressure bar (psi)	Single Axle Load (kg)	Dual Axle Load (kg)	Load Index	Single/ Dual	5.0 (73)	5.5 (80)	6.0 (87)	6.5 (94)	7.0 (102)	7.25 (105)	7.5 (109)	7.75 (112)	8.0 (115)	8.25 (120)	8.5 (123)	8.75 (127)	9.0 (130)
	385/65R22.5	9.00 (130)	9000		164	S	6250	6740	7230	7710	8180	8410	8640	8870	9100	9330	9550	9780	10000
		9.00 (130)	10000		160	S	5620	6070	6510	6940	7360	7570	7780	7990	8190	8390	8600	8800	9000
		9.00 (130)	9000																
		9.00 (130)	9000																
		9.00 (130)	10000																
		9.00 (130)	10000																
		9.00 (130)	10000																
		9.00 (130)	10000																
	425/65R22.5	8.25 (120)	10300		165	S	6900	7450	7980	8510	9030	9290	9540	9800	10050	10300			
		8.25 (120)	10300		169	S	7250	7820	8390	8940	9490	9760	10030	10290	10560	10820	11080	11340	11600
	445/65R22.5	9.00 (130)	11600		169	S	7250	7820	8390	8940	9490	9760	10030	10290	10560	10820	11080	11340	11600
		9.00 (130)	11600																
	275/70R22.5	9.00 (130)	6300	11600	152	S	4440	4790	5130	5470	5810	5970	6140	6300	6460	6620	6780	6940	7100
		9.00 (130)	6700	11600	150	S	4190	4520	4840	5160	5480	5640	5790	5940	6100	6250	6400	6550	6700
		9.00 (130)	6300	11600	148	S	3940	4250	4550	4860	5150	5300	5440	5590	5730	5880	6020	6160	6300
		9.00 (130)	6300	11600	148	D	7870	8500	9110	9710	10310	10600	10890	11180	11470	11750	12040	12320	12600
		9.00 (130)	6300	11600	145	D	7250	7820	8390	8940	9490	9760	10030	10290	10560	10820	11080	11340	11600
		9.00 (130)	6300	11600															
		9.00 (130)	7100	12600															
	305/70R22.5	9.00 (130)	7300	13400	153	S	4560	4920	5280	5630	5970	6140	6310	6480	6640	6810	6970	7140	7300
		9.00 (130)	6300	11600	152	S	4440	4790	5130	5470	5810	5970	6140	6300	6460	6620	6780	6940	7100
		9.00 (130)	7300	13400	150	D	8370	9040	9690	10330	10960	11270	11580	11890	12200	12500	12800	13100	13400
					148	D	7870	8500	9110	9710	10310	10600	10890	11180	11470	11750	12040	12320	12600
	315/70R22.5	9.00 (130)	7500	13400	156	S	5000	5390	5780	6170	6540	6730	6910	7100	7280	7460	7640	7820	8000
		9.00 (130)	7500	13400	154	S	4690	5060	5420	5780	6130	6310	6480	6650	6830	7000	7160	7330	7500
		9.00 (130)	8000	13400	150	D	8370	9040	9690	10330	10960	11270	11580	11890	12200	12500	12800	13100	13400
		9.00 (130)	7500	13400															
	445/75R22.5	8.00 (115)	12000		170	S	8240	8890	9530	10160	10780	11090	11400	11700	12000				
	295/80R22.5	8.50 (123)	7500	13000	154	S	4910	5290	5680	6050	6420	6600	6790	6970	7140	7320	7500		
		8.50 (123)	7100	12600	152	S	4640	5010	5370	5730	6080	6250	6420	6590	6760	6930	7100		
		8.50 (123)	7100	12600	149	D	8500	9180	9840	10490	11130	11450	11760	12070	12380	12690	13000		
		8.50 (123)	7100	12600	148	D	8240	8890	9540	10170	10790	11090	11400	11700	12000	12300	12600		
		8.50 (123)	7100	12600															
		8.50 (123)	7500	13000															
		8.50 (123)	7100	12600															
		8.50 (123)	7100	12600															
		8.50 (123)	7100	12600															
		8.50 (123)	7100	12600															



Goodyear Technical Data

Size	Goodyear Design	Load/Speed Index	Additional Markings/ Comments	Tire Dimensions					Rim Data			
				Overall Diameter mm (+/-1.5%)	Overall Section Width mm (+/-1.5%)	Static Loaded Radius (mm)	Rolling Circumf. (mm)	Tread Depth (mm)	Recomm. Rim Width	Permitted Rims	Minimal Dual Spacing (mm)	
315/80R22.5	Coach	156/150L		1081	315	500	3300	13.9	9.00	9.00-9.75	351	
	KMAX S EXT	156/150L		1079	314	500	3298	13.9	9.00	9.00-9.75	351	
	LHS II / LHS II+	156/150L		1080	316	499	3297	13.9	9.00	9.00-9.75	351	
	LHS II+	158/150L	High Load	1080	316	499	3297	13.9	9.00	9.00-9.75	351	
	KMAX S END	156/150L		1083	309	507	3310	15.4	9.00	9.00-9.75	351	
	KMAX S CAR	156/150L		1082	310	507	3310	15.4	9.00	9.00-9.75	351	
	RHS II	156/150L		1080	317	501	3297	15.2	9.00	9.00-9.75	351	
	RHS II	158/150L	High Load	1080	317	501	3297	15.7	9.00	9.00-9.75	351	
	MSS	156/150K		In preparation: use ETRTO standard values				18.1	9.00	9.00-9.75	351	
	OMNITRAC S	156/150K		1086	314	503	3322	17.4	9.00	9.00-9.75	351	
	OMNITRAC S	156/150K	HEAVY DUTY	1089	310	502	3325	18	9.00	9.00-9.75	351	
	KMAX D EXT	156/150L		1083	314	503	3297	16.2	9.00	9.00-9.75	351	
	LHD II	156/150L		1087	316	503	3318	17.5	9.00	9.00-9.75	351	
	KMAX D CAR	156/150L		1090	304	497	3304	19.5	9.00	9.00-9.75	351	
	KMAX D END	156/150L		1098	311	506	3312	20.9	9.00	9.00-9.75	351	
	RHD II	156/150L		1091	307	505	3330	21.1	9.00	9.00-9.75	351	
	OMNITRAC D	156/150K		1092	314	508	3325	20.9	9.00	9.00-9.75	351	
	OMNITRAC D	156/150K	HEAVY DUTY	1087	313	504	3319	18.1	9.00	9.00-9.75	351	
22.5" - 90 Series Sizes												
375/90R22.5	MSS	164G		1244	376	571	3797	16.8	11.75	10.50-11.75		
	OFFROAD	164G		1262	392	580	3852	23.7	11.75	10.50-11.75		
22.5" - Standard Series Sizes												
10R22.5	G391	144/142M		1020	246	476	3110	14.4	6.75	6.75-7.50	277	
11R22.5	MCA	148/145J		1065	284	499	3251	20	7.50	7.50-8.25	305	
	RHS II	148/145L		1058	274	492	3230	15.3	7.50	7.50-8.25	305	
	MSS	148/145K		1059	274	492	3233	16	7.50	7.50-8.25	305	
	RHD II	148/145L		1064	275	497	3248	20.5	7.50	7.50-8.25	305	
	LHT	148/145J	FRT	1054	275	492	3217	13.4	7.50	7.50-8.25	305	
12R22.5	RHS	152/148L		1085	287	507	3321	16	8.25	8.25-9.00	329	
	RHS II	152/148L		1083	296	502	3306	15.2	8.25	8.25-9.00	329	
	OMNITRAC S	152/148K	HEAVY DUTY	1086	289	505	3324	16.1	8.25	8.25-9.00	329	
	RHD II	152/148L		1091	299	509	3330	20.5	8.25	8.25-9.00	329	
	OMNITRAC D	152/148K	HEAVY DUTY	1086	288	506	3318	16.1	8.25	8.25-9.00	329	
13R22.5	OMNITRAC S	156/150K	HEAVY DUTY	1124	309	522	3445	17.1	9.00	9.00-9.75	351	
	OMNITRAC S	156/150K		1126	315	527	3447	17.4	9.00	9.00-9.75	351	
	OMNITRAC D	156/150K	HEAVY DUTY	1125	309	523	3435	17.1	9.00	9.00-9.75	351	
	OMNITRAC D	156/150K		1132	315	530	3447	20.9	9.00	9.00-9.75	351	
	ORD	156/150G		1140	319	533	3480	23.2	9.00	9.00-9.75	351	
24" - 95 Series Sizes												
325/95R24	OMNITRAC S	162/160K		1222	318	566	3736	16.7	9.00	8.50-10.00	374	
	OMNITRAC S	162/160K	HEAVY DUTY	In preparation: use ETRTO standard values				-	9.00	8.50-10.00	374	
	OMNITRAC D	162/160K	HEAVY DUTY	In preparation: use ETRTO standard values				-	9.00	8.50-10.00	374	
	MSD II Plus	162/160K		1229	312	570	3752	20.9	9.00	8.50-10.00	374	
	ORD	162/160G		1233	319	571	3764	22.3	9.00	8.50-10.00	374	
24" - Standard Series Sizes												
12.00R24	MSD II Plus	160/156K		1219	315	566	3694	15.2	8.50	8.50-9.00	360	
	MSD II Plus	160/156K		1232	315	572	3733	20.9	8.50	8.50-9.00	360	

- Measured tire dimension using the Goodyear recommended rim.
- FRT = "Free Rolling Tire": this tire may only be fitted on a trailer or tag axle and not on a drive or steer axle.



			Max Load		Load Capacity per axle (in kg) at inflation pressure in bar (psi)														
	Size (contd.)	Nominal Pressure bar (psi)	Single Axle Load (kg)	Dual Axle Load (kg)	Load Index	Single/Dual	5.0 (73)	5.5 (80)	6.0 (87)	6.5 (94)	7.0 (102)	7.25 (105)	7.5 (109)	7.75 (112)	8.0 (115)	8.25 (120)	8.5 (123)	8.75 (127)	9.0 (130)
	315/80R22.5	8.50 (123)	8000	13400	158	S	5310	5730	6150	6550	6950	7150	7350	7540	7740	7930	8120	8310	8500
		8.50 (123)	8000	13400	156	S	5230	5650	6050	6450	6850	7040	7240	7430	7620	7810	8000		
		8.50 (123)	8000	13400	150	D	8760	9460	10140	10810	11470	11800	12120	12450	12770	13080	13400		
		9.00 (130)	8500	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		9.00 (130)	8500	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
		8.50 (123)	8000	13400															
	375/90R22.5	7.50 (108)	10000		164	S	7230	7800	8370	8920	9460	9730	10000						
		7.50 (108)	10000																
	10R22.5	8.50 (123)	5600	10600	144	S	3670	3960	4240	4520	4800	4940	5070	5120	5340	5470	5600		
					142	D	6940	7490	8030	8560	9080	9340	9600	9850	10100	10350	10600		
	11R22.5	8.50 (123)	6300	11600	148	S	4120	4450	4770	5080	5390	5550	5700	5850	6000	6150	6300		
		8.50 (123)	6300	11600	145	D	7590	8190	8780	9360	9930	10210	10490	10770	11050	11330	11600		
		8.50 (123)	6300	11600															
		8.50 (123)	6300	11600															
		8.50 (123)	6300	11600															
	12R22.5	8.50 (123)	7100	12600	152	S	4640	5010	5370	5730	6080	6250	6420	6590	6760	6930	7100		
		8.50 (123)	7100	12600	148	D	8240	8890	9540	10170	10790	11090	11400	11700	12000	12300	12600		
		8.50 (123)	7100	12600															
		8.50 (123)	7100	12600															
		8.50 (123)	7100	12600															
	13R22.5	8.75 (127)	8000	13400	156	S	5110	5520	5920	6310	6690	6880	7070	7260	7450	7630	7820	8000	
		8.75 (127)	8000	13400	150	D	8560	9240	9910	10560	11210	11530	11850	12160	12470	12780	13090	13400	
		8.75 (127)	8000	13400															
		8.75 (127)	8000	13400															
		8.75 (127)	8000	13400															
	325/95R24	8.50 (123)	9500	18000	162	S	6210	6710	7190	7670	8130	8360	8590	8820	9050	9280	9500		
		8.50 (123)	9500	18000	160	D	11770	12710	13620	14520	15410	15850	16280	16720	17150	17580	18000		
		8.50 (123)	9500	18000															
		8.50 (123)	9500	18000															
		8.50 (123)	9500	18000															
	12.00R24	8.50 (123)	9000	16000	160	S	5890	6350	6810	7260	7710	7920	8140	8360	8570	8790	9000		
		8.50 (123)	9000	16000	156	D	10470	11290	12110	12910	13700	14090	14480	14860	15240	15620	16000		



REGROOVING GUIDELINES



REGROOVE GUIDE

GOODYEAR

Regrooving Guidelines

Depending on conditions of use and maintenance, Goodyear's high-quality tire casings can give each tire multiple lives (new, regrooved, retread, regrooved retread) lowering operating costs.

Regrooving basics

- A regrooved tire is a tire, 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 molded groove depth.
- The regrooving of truck tires should be entrusted solely to fully trained operators.
- Only proven regrooving tools with electrically heated blades should be used.
- A minimum of remaining undertread rubber is essential to avoid damage at the top breaker belt, groove cracking and/or stone damage.
- If regrooved according to the recommendations outlined in this manual, Goodyear tires can, in principle, be mounted on all wheel positions. However, since it has become standard practice for users to normally fit new tires on front axles, the regrooved tires will usually be mounted on the rear axles or trailer positions.
- Tires which are heavily damaged in the tread area (e.g. rib tearing, multiple cutting and chipping) should not be regrooved but retreaded.
- All tires that are marked 'Regroovable' in the sidewall areas have extra undertread thickness for regrooving purposes.

Regrooving recommendations

- Under NO circumstances should the tire be completely worn before regrooving. It is strongly recommended to regroove when 3 to 6mm of the original design is still left.
- Determine the blade setting depth for each individual tire 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' + 3mm maximum regrooving depth. This will maintain a 3mm gauge under the regrooved tread.
- While regrooving, hold the cutter so that the underside of the cutting head is flush against the tread surface.
- The maximum regrooving depth for all Goodyear tires is 3mm.
- If the wear is irregular, probing of the remaining undertread gauge is necessary to ensure that 3mm of undertread will remain after regrooving.



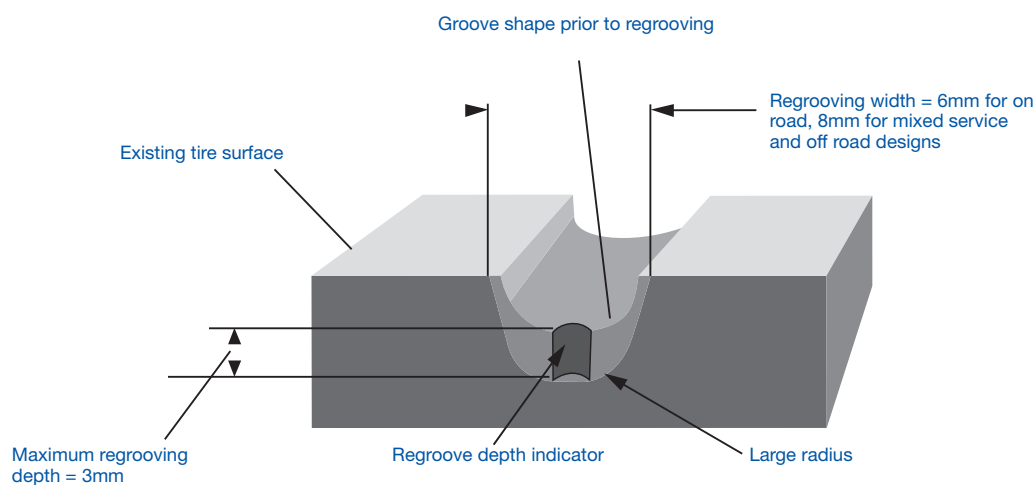
Regrooving Goodyear remould tires

Provided that the retreading process is on a Goodyear casing carried out by a Goodyear Authorized Retreader, the remold tire may be regrooved to the same pattern as the new tire, with a maximum regrooving depth of 3mm.

Regrooving parameters

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

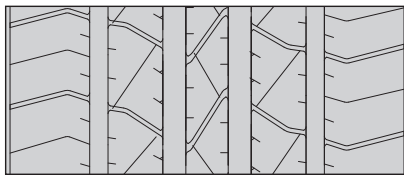
Regrooving depth indicators are moulded into the tire design. They allow regrooving tools to be set to the optimum depth.



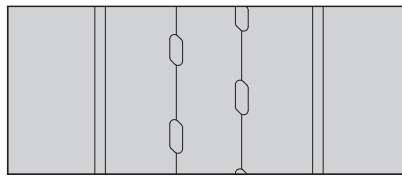
Long Haul

KMAX S EXTREME 22.5

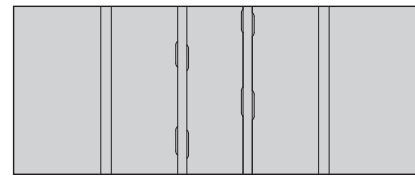
New tire tread



80% worn



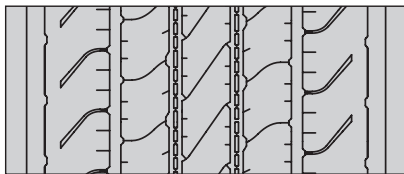
Regrooved tire



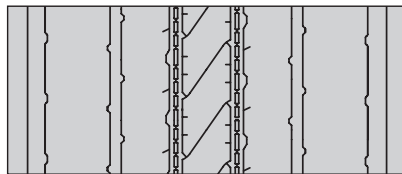
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

MARATHON LHS II / LHS II+ 22.5

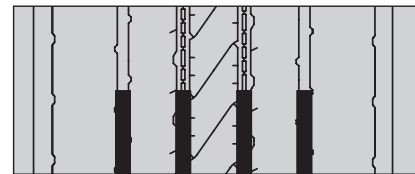
New tire tread



80% worn



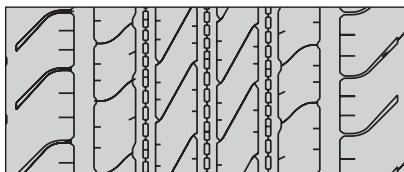
Regrooved tire



Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

MARATHON LHS II 65, 55 AND 50 SERIES

New tire tread



80% worn



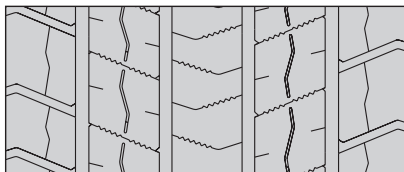
Regrooved tire



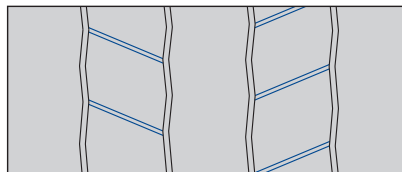
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

KMAX D EXTREME 22.5

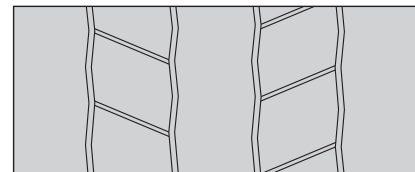
New tire tread



80% worn



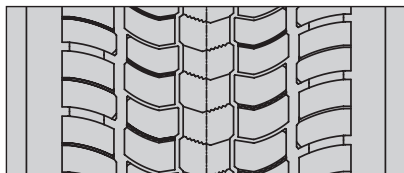
Regrooved tire



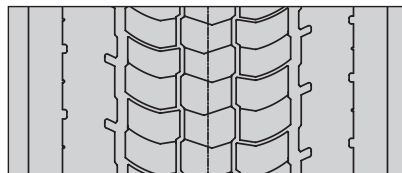
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

MARATHON LHD II / LHD II + 22.5

New tire tread



80% worn



Regrooved tire



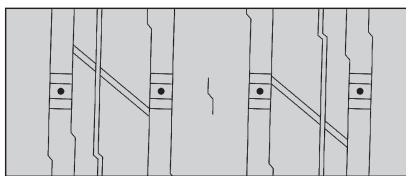
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.



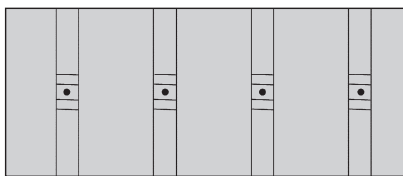
Long Haul

KMAX T EXTREME

New tire tread



80% worn



Regrooved tire

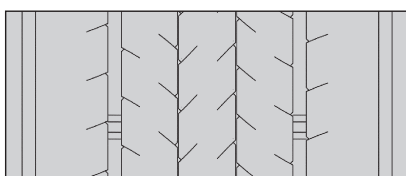


Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

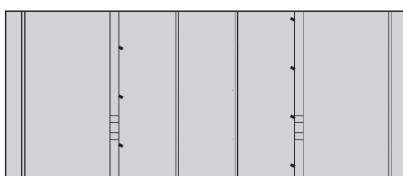
O = Regrooving depth indicators

MARATHON LHT II 22.5

New tire tread



80% worn



Regrooved tire



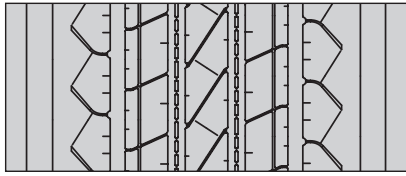
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.



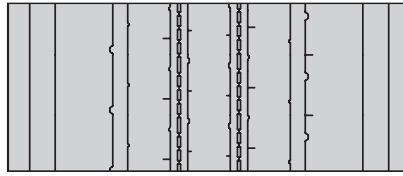
Regional Haul

REGIONAL RHS II 22.5

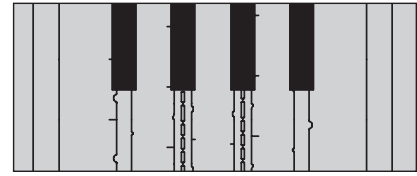
New tire tread



80% worn



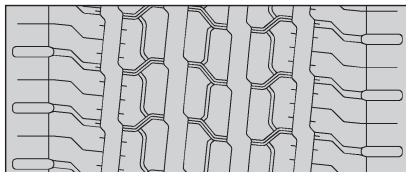
Regrooved tire



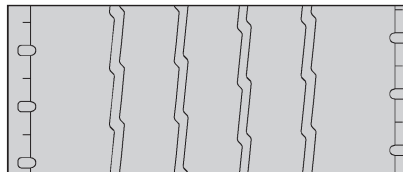
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

REGIONAL RHS II 17.5 AND 19.5

New tire tread



80% worn



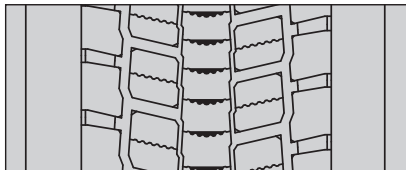
Regrooved tire



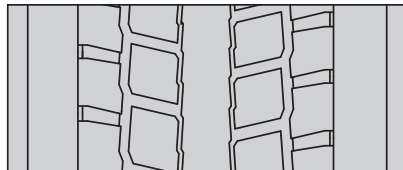
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

REGIONAL RHD II / RHD II + 22.5

New tire tread



80% worn



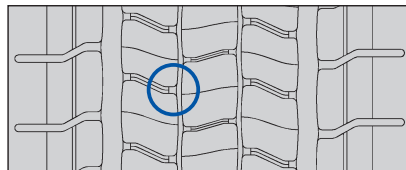
Regrooved tire



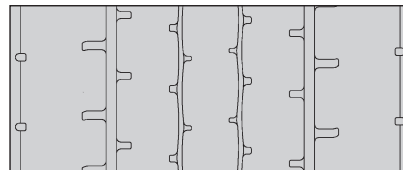
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

REGIONAL RHD II 17.5 AND 19.5

New tire tread



80% worn



Regrooved tire

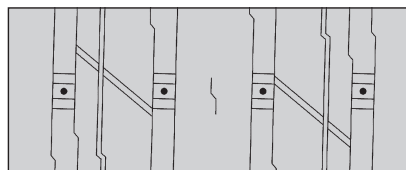


Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

O = Regrooving depth indicators

REGIONAL RHT II / KMAX T ENDURANCE / CARGO

New tire tread



80% worn



Regrooved tire



Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

O = Regrooving depth indicators



Regional Haul

REGIONAL RHT II LOW PLATFORM

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 2.5mm, regrooving width 8-10mm. Retreadable by Goodyear TreadMax.

KMAX S

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

KMAX D KMAX T LOW PLATFORM

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

KMAX S ENDURANCE / CARGO

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

KMAX D ENDURANCE / CARGO

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

KMAX T low platform

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 2.5 mm, regrooving width 6 mm.



Mixed Services

OMNITRAC S 22.5

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

O = Regrooving depth indicators

OMNITRAC S 24

New

Worn 80%

Regrooved

Depth = 3.0 mm, Width = 7.0 ÷ 10.0 mm

OMNITRAC D

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

O = Regrooving depth indicators

OMNITRAC S HEAVY DUTY

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 3mm, regrooving width 9-10mm.

O = Regrooving depth indicators

OMNITRAC D HEAVY DUTY

New tire tread

80% worn

Regrooved tire

Maximum regrooving depth 3mm, regrooving width 9mm.



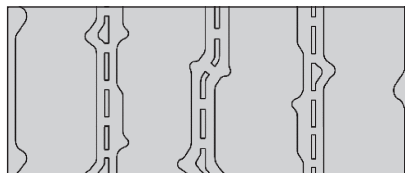
Mixed Services

OMNITRAC MSS II 4-RIBS

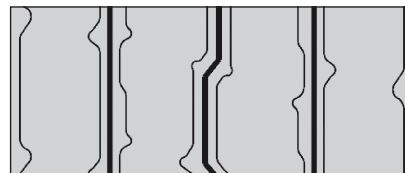
New tire tread



80% worn



Regrooved tire

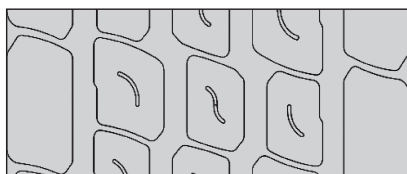


Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

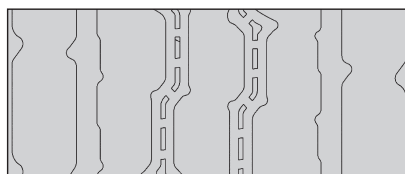
O = Regrooving depth indicators

OMNITRAC MSS II 5-RIBS

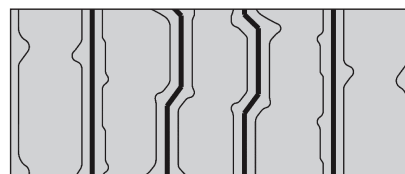
New tire tread



80% worn



Regrooved tire

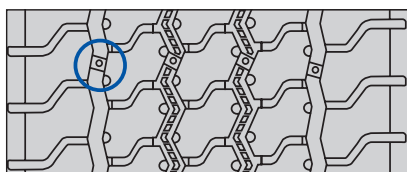


Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

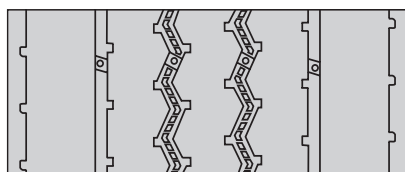
O = Regrooving depth indicators

OMNITRAC MSS 75 AND 90 SERIES

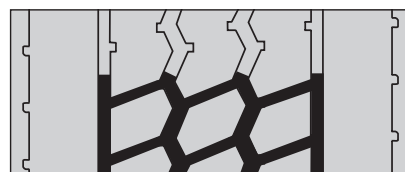
New tire tread



80% worn



Regrooved tire



Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

O = Regrooving depth indicators

OMNITRAC MSD II

New tire tread



80% worn



Regrooved tire



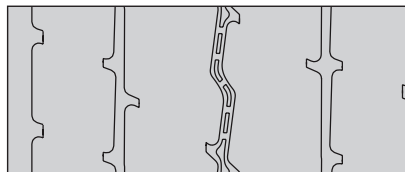
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

OMNITRAC MST II / OMNITRAC T

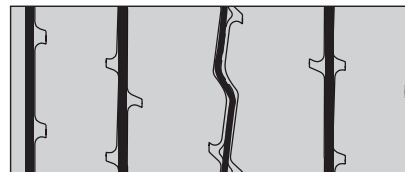
New tire tread



80% worn



Regrooved tire



Maximum regrooving depth 3mm, regrooving width 8mm. Retreadable by Goodyear TreadMax.

O = Regrooving depth indicators



Offroad

OFFROAD ORD - DESIGN 1

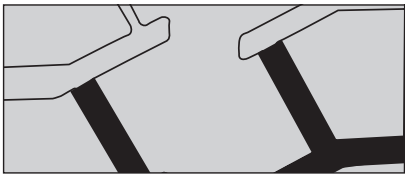
New tire tread



80% worn



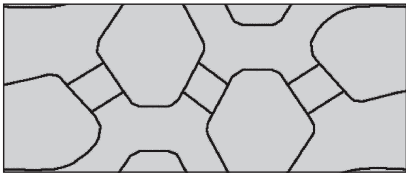
Regrooved tire



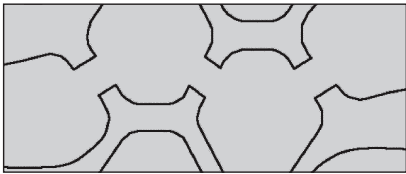
Maximum regrooving depth 3mm, regrooving width 8-10mm. Retreadable by Goodyear TreadMax.

OFFROAD ORD - DESIGN 2

New tire tread



80% worn



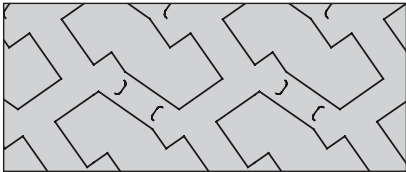
Regrooved tire



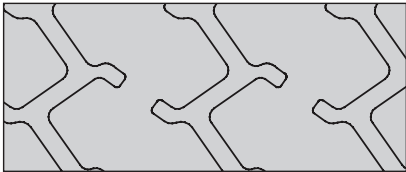
Maximum regrooving depth 3mm, regrooving width 8-10mm. Retreadable by Goodyear TreadMax.

OFFROAD ORD - DESIGN 3

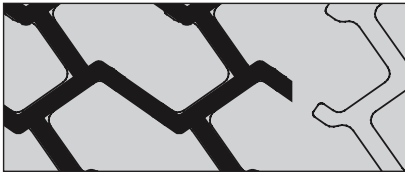
New tire tread



80% worn



Regrooved tire



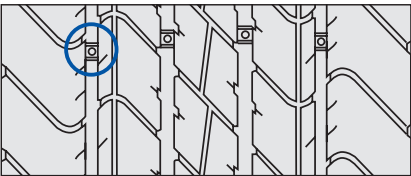
Maximum regrooving depth 3mm, regrooving width 8-10mm. Retreadable by Goodyear TreadMax.



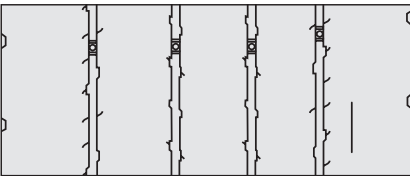
Buses & Coaches

MARATHON LHS LR8

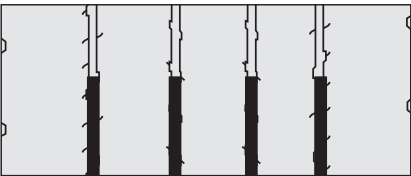
New tire tread



80% worn



Regrooved tire

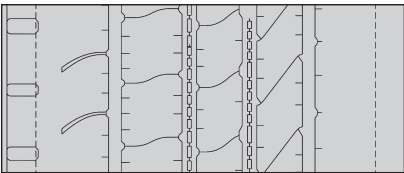


O = Regrooving depth indicators

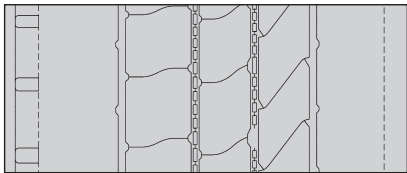
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

MARATHON COACH 22.5"

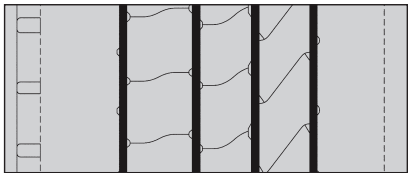
New tire tread



80% worn



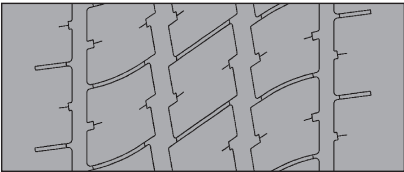
Regrooved tire



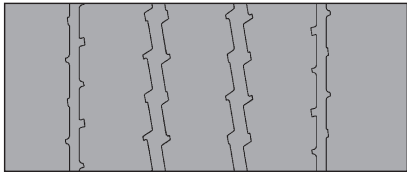
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

URBANMAX MCA

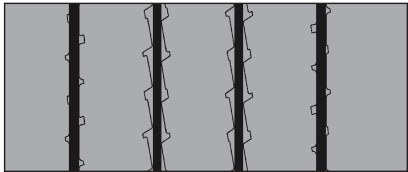
New tire tread



80% worn



Regrooved tire



Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

URBANMAX MCD TRACTION

New tire tread



80% worn



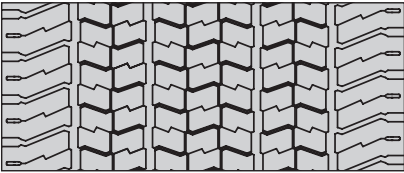
Regrooved tire



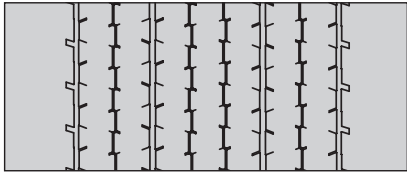
Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.

MCD SUPER SINGLE

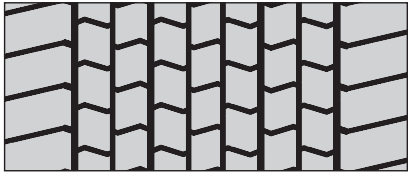
New tire tread



80% worn



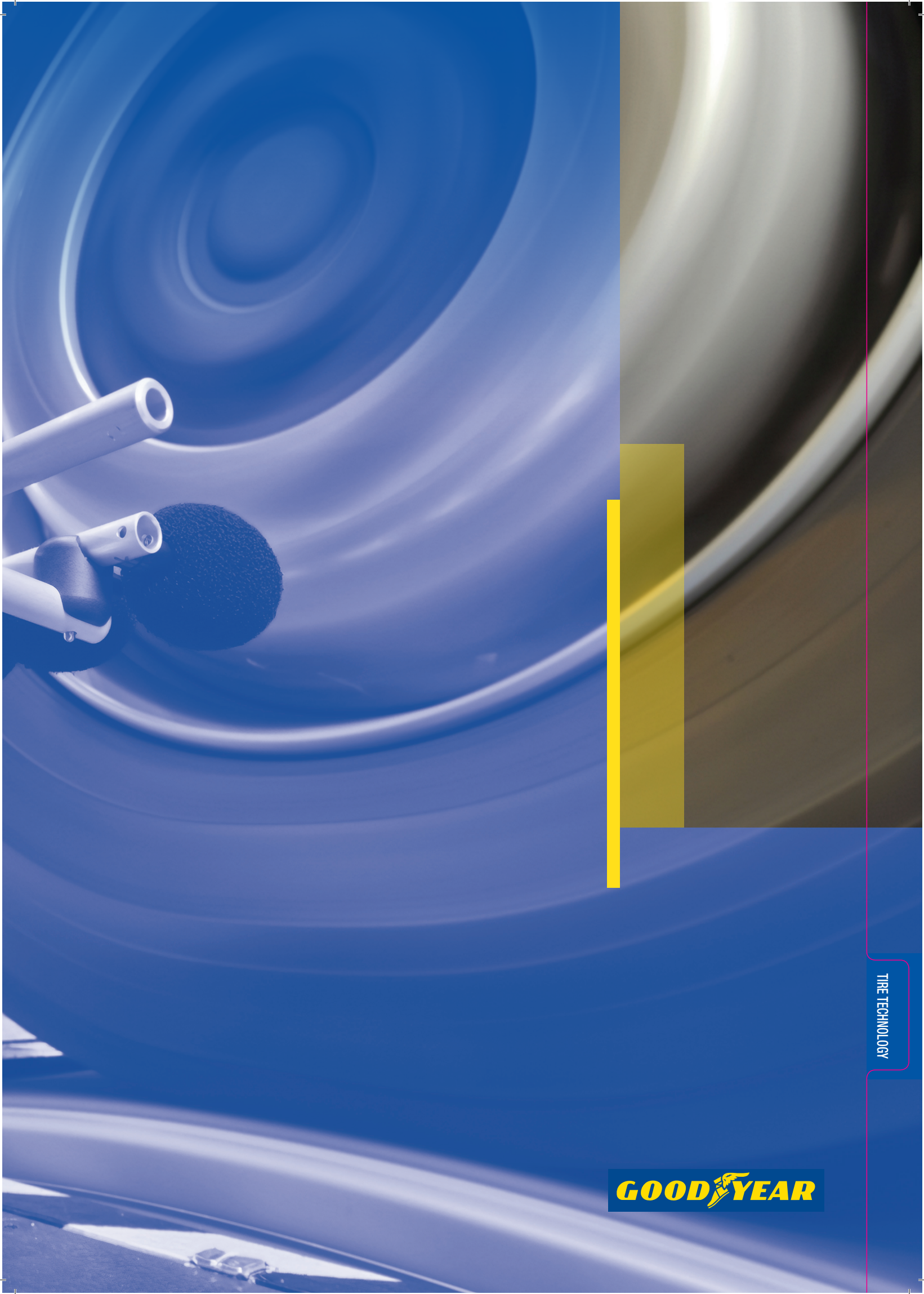
Regrooved tire



Maximum regrooving depth 3mm, regrooving width 6-8mm. Retreadable by Goodyear TreadMax.



TIRE TECHNOLOGY



TIRE TECHNOLOGY

GOODYEAR

Tire Construction and tire terminology

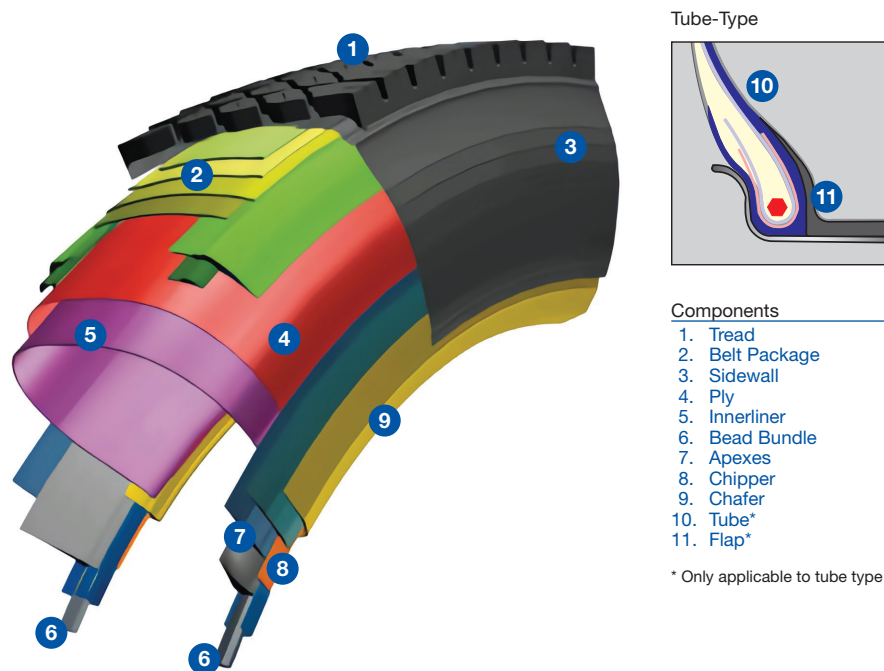
Truck tires are a high value investment whose performance potential can be dramatically influenced by a multitude of service parameters - which can be globally identified as operating and maintenance conditions. In other words, the true cost per kilometre is not only a function of the tire quality and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

It will also be advisable 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 therefore help minimize fleet operating expenses. For further clarifications and updated facts and figures, please consult with your Goodyear truck tire specialist.

Tire construction

The commercially available tire 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 tire are described below.



Components

1. Tread
2. Belt Package
3. Sidewall
4. Ply
5. Innerliner
6. Bead Bundle
7. Apexes
8. Chipper
9. Chafer
10. Tube*
11. Flap*

* Only applicable to tube type tires

NOTE: Whilst every care has been taken in the production of this publication, no responsibility can be accepted for any loss or damage arising out of undetected errors or mis-printing which may have occurred.



Tire terminology

Tread

Provides primarily traction and wear and protects the carcass underneath.

Belt

Multiple, low angle, steel cord layers provide strength to the tire, stabilise the tread and prevent penetrations into the 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 tire under operating pressure.

Innerliner

A layer of rubber in tubeless tires specially compounded to prevent loss of air.

Bead bundle

The steel bead bundle properly seats and seals the tire 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 tires.

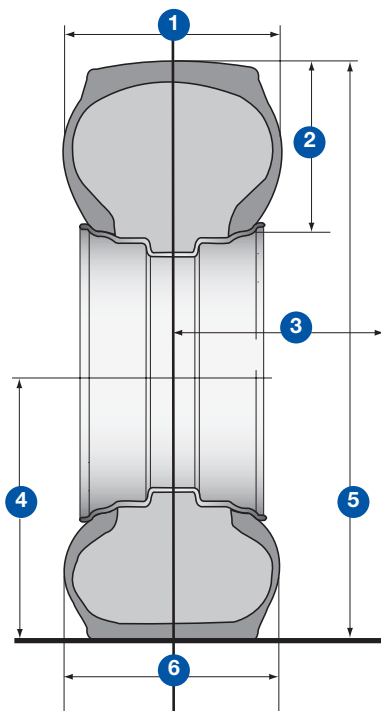
Flap*

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 tires.

Tire dimension definitions

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



1 Section Width (SD)

The width of the inflated tire section, excluding any lettering or decoration.

2 Section Height (SH)

The distance from the bead seat to the outer tread contour of the inflated tire at centerline.

3 Minimum Dual Spacing

The minimum recommended distance between centerlines of dual mounted tires to avoid kissing in the flex area.

4 Static Loaded Radius (SLR)

The standing height from the road surface to the axle center under nominal tire load/inflation conditions.

5 Outside Diameter (OD)

The diameter of an unloaded tire, mounted on its recommended rim and inflated to recommended pressure.

6 Loaded Section Width (LSW)

The width of the loaded cross-section.

Aspect Ratio

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



Truck Tire Label

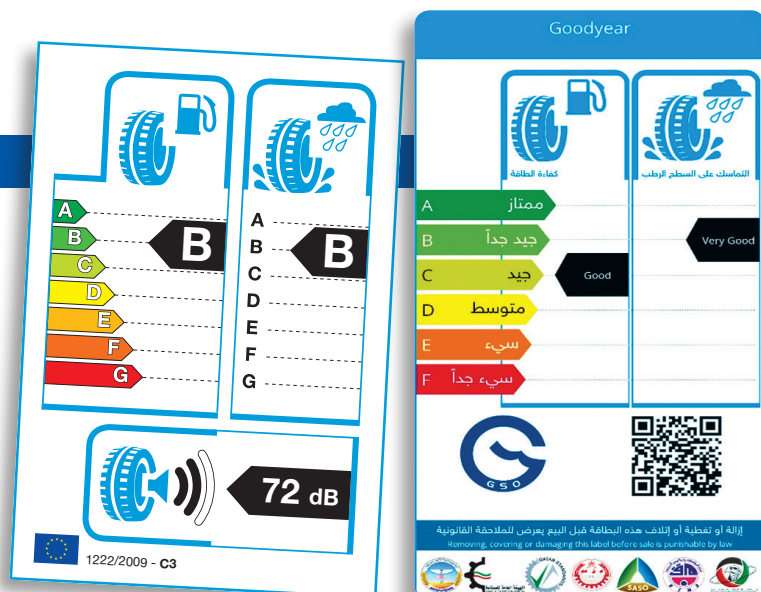
What is it?

Thanks to new legislation, commercial vehicle operators are to be helped in choosing their tires. Tire labeling will ensure that tires sold are accompanied by data relevant to the consumers.

Clear and informative, the label information resembles that on existing energy efficiency labels with A being the highest performing and G the lowest.

GSO Label: Including fuel efficiency and wet grip grades is produced for GCC Standardization Organization (GSO) with membership of the governments of The State of the United Arab Emirates, The Kingdom of Bahrain, The Kingdom of Saudi Arabia, The Sultanate of Oman, The State of Qatar, The State of Kuwait & the Republic of Yemen.

EU Label: Including fuel efficiency, wet grip and exterior noise. Which was introduced on 1st November 2012 for all European Union countries.



EU LABEL

GSO LABEL

Label values shown are for illustrative purposes only. Values for a certain tire line/size may vary.

What does it mean?



FUEL EFFICIENCY / ROLLING RESISTANCE
A = Most fuel efficient tire
F = Least fuel efficient tire
(Class G will not be used for truck tires)

A rolling tire deforms and dissipates energy, and is one of the resistive forces acting on a vehicle. The energy that is lost in this way is known as 'rolling resistance' and directly impacts on fuel consumption and the environment. With lower rolling resistance the tire deformation requires less energy, less fuel and, in turn, less CO₂ is emitted. A win-win situation.

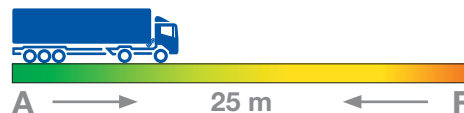
Effects may vary according to the vehicle and driving conditions. However, the difference between a complete set of new A-class and F-class tires could reduce a truck's fuel consumption by up to 15%.*



WET GRIP / BRAKING
A = Shortest braking distance
F = Longest braking distance
(Class G will not be used for truck tires)

Tires with excellent grip in the wet have shorter braking distances on slippery roads, essential for safety.

Effects may vary according to the vehicle, driving conditions and test method adopted. However, in the case of full braking, the difference between A-class and F-class tires could be up to 30% shorter braking distance. This means for a typical truck driving at 80 km/h up to 25 m shorter braking distance.**



NOISE EMISSION / EXTERIOR NOISE
Measured in decibels (dB)
Three classes

A tire's exterior noise grading is expressed in decibels (dB) and accompanied by one, two or three sound waves on the label.

One wave corresponds to the quietest tire, three to the noisiest. In fact, three waves is the current limit, while two meets future laws and one is a further 3dBs below. The quieter the tire the more environmental-friendly it is.

* Calculations based on tests made by the Goodyear Innovation Center Luxembourg 2012. For more details see verso.

** The calculation is based on a typical truck with semi-trailer operating at 40 tonnes GTW.

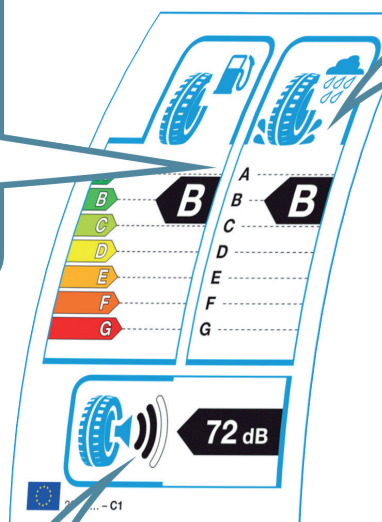


Benefits of the labeling at a glance

Possible annual saving generated by choosing A-class rolling resistance tires instead of F-class tires*

€70000

Difference of braking distance between an A and F-class for a typical truck driving at 80 km/h



The difference between external rolling noise from 1 to 3 black waves is roughly four times the noise level



Calculations based on tests made by the Goodyear Innovation Center Luxembourg 2012.

Not the full story. What's not covered?

While we're completely in favour of the introduction of tire labeling, it's essential to remember that it doesn't tell customers everything they need to know. So while it's a great starting point for customers to get information that is comparable, reliable and objective, it's by no means exhaustive. After all, tires are more than simply black and round; they're a complex piece of engineering. It's therefore important to look at the bigger picture.

- Tire labeling only covers fuel efficiency, wet grip and exterior noise.
- Key criteria such as mileage performance, traction and retreadability are not covered.
- Winter conditions are not taken into consideration.

*The calculation is based on the following assumption: Average fuel consumption of vehicle 32.31/100km → 3231/1000km → 14. 7% potential savings = 47.5l less fuel consumption per 1000 km → fuel price 1.50 EUR/liter = 71.25 EUR/1000km → 100,000 km mileage/year = 7,125 EUR savings/year.



Tire markings

Size markings

There are various forms of tire size marking and these differ in order to differentiate between tire types. The size markings should be treated the same as a part number on a vehicle, so the motorist should ensure that the tires 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 tires intended for commercial vehicles will be marked with a "Service Description" located near to the tire size marking. This consists of a code which indicates operating limits of load and speed and includes a "load index" for single and dual tire fitment and a "speed symbol" (e.g. 156/150 L).

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

Free Rolling Tire (FRT)

'FRT' stands for 'Free Rolling Tire' and is a legal marking according to the UNECE Regulation No. 54, which indicates that the tire is specifically designed and intended for the equipment of trailer axles and axles of motor vehicles other than front steering and all drive axles.

Therefore these trailer tires marked 'FRT' should be used exclusively on trailer axles and axles of motor vehicles other than front steering and all drive axles and should not be fitted in any other position.

Goodyear Dunlop will not warrant and cannot be held accountable for any potential liability claim involving FRT tires fitted outside these recommendations.

Size definitions

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

12

/

R

22.5

152/148

M

Section width
in inches

R-radial

Rim diameter
in inches

Load index
(single/dual mounted)

Speed
symbol

295

/

80

R

22.5

152/148

M

Section width
in mm

Aspect
ratio

R-radial

Rim diameter
in inches

Load index
(single/dual mounted)

Speed
symbol

365

/

80

R

20.0

160

J

Section width
in mm

Aspect
ratio

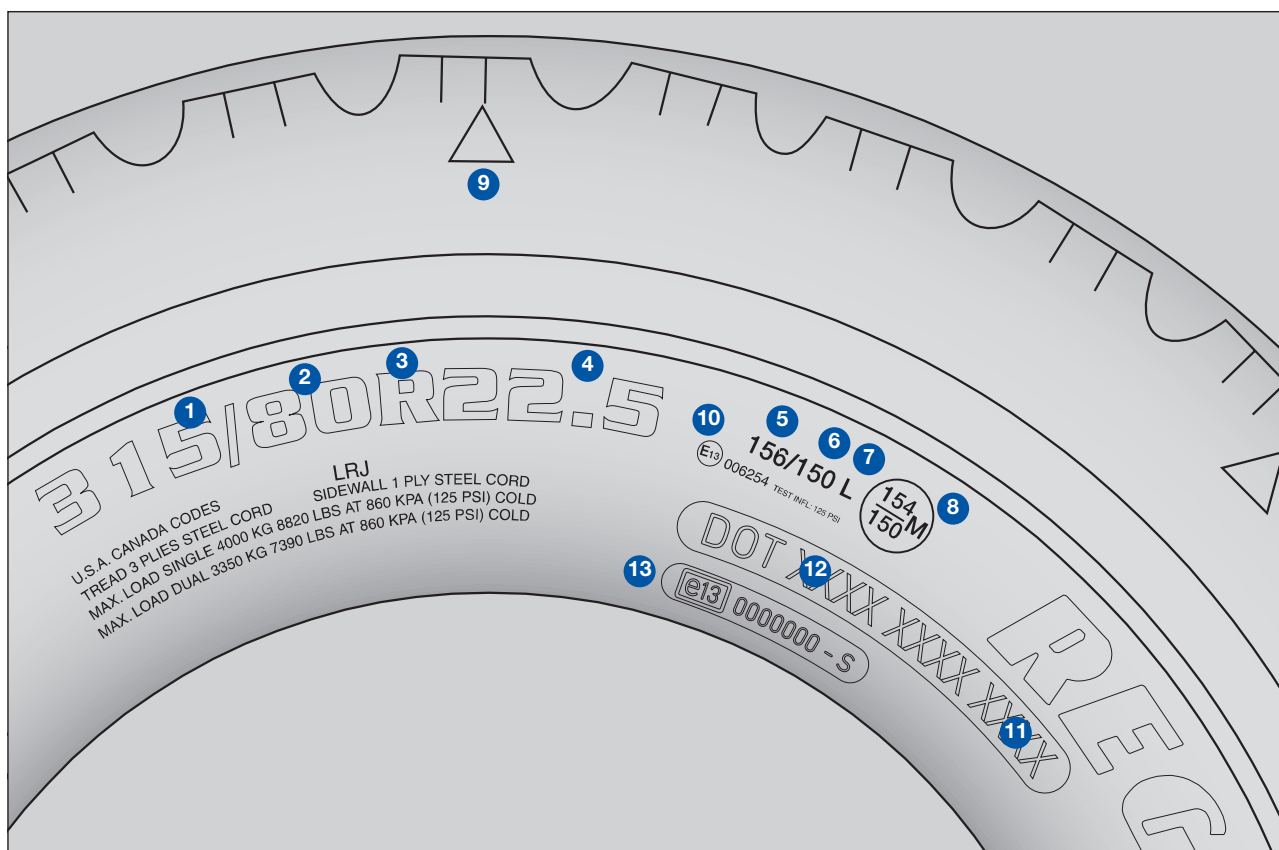
R-radial

Rim diameter
in inches

Load index
(single/dual mounted)

Speed
symbol





The position of the major tire markings are as shown;

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

USA and Canada

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

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



Load Index and Speed Symbol

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

Load indices and speed symbols are shown on both tire sidewalls. Example: 149/145 L. The first number denotes the tire load carrying capacity in SINGLE application, while the second number refers to DUAL fitment. The letter "L" defines the maximum speed limit. Unmarked Radial tires are allowed up to a speed of 110 km/h. (Bias ply tires are confined to 100 km/h).

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

Special purpose tires, 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
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
70	335	90	600	110	1060	130	1900	150	3350	170	6000

The LOAD INDEX denotes the maximum load a given tire 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 tire can carry the load indicated by the load index.



Interaction of Load and Speed

Load Capacity Variations (%) as a function of Speed

Below information is based on the “European Tire and Rim Technical Organization - Standards Manual” - Load Variation with Speed section.

Variations in Load Carrying Capacity with Speed (%)

Speed km/h	F 80 km/h	G 90 km/h	J 100 km/h	K 110 km/h	L 120 km/h	M 130 km/h	Inflation Pressure (%)* Compensation
Static	+150	+150	+150	+150	+150	+150	+40
5	+110	+110	+110	+110	+110	+110	+40
10	+80	+80	+80	+80	+80	+80	+30
15	+65	+65	+65	+65	+65	+65	+25
20	+50	+50	+50	+50	+50	+50	+21
25	+35	+35	+35	+35	+35	+35	+17
30	+25	+25	+25	+25	+25	+25	+13
35	+19	+19	+19	+19	+19	+19	+11
40	+15	+15	+15	+15	+15	+15	+10
45	+13	+13	+13	+13	+13	+13	+9
50	+12	+12	+12	+12	+12	+12	+8
55	+11	+11	+11	+11	+11	+11	+7
60	+10	+10	+10	+10	+10	+10	+6
65	+7.5	+8.5	+8.5	+8.5	+8.5	+8.5	+4
70	+5	+7	+7	+7	+7	+7	+2
75	+2.5	+5.5	+5.5	+5.5	+5.5	+5.5	+1
80	0	+4	+4	+4	+4	+4	0
85		2	+3	+3	+3	+3	0
90		0	+2	+2	+2	+2	0
95			+1	+1	+1	+1	0
100			0	0	0	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

NOTES: Increment to be applied in the absence of any specific agreement with the tire manufacturer. These increments do only apply to the “nominal” load/speed indices.

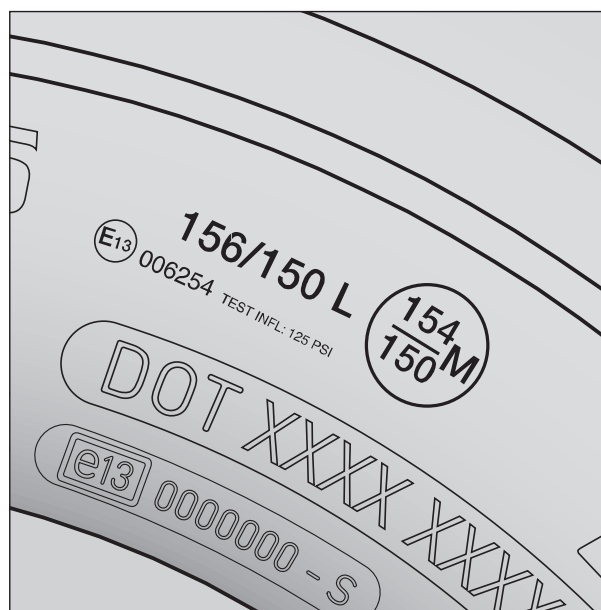


Interaction of Load and Speed (cont.)

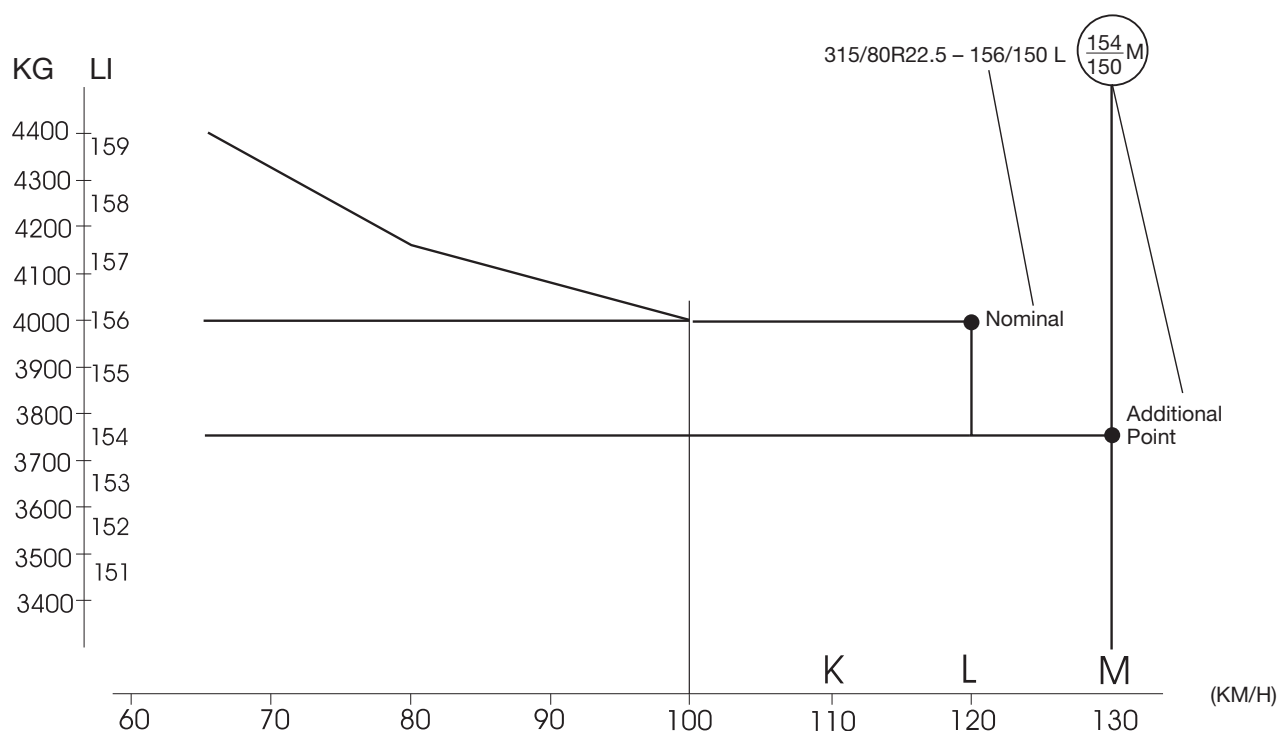
Additional load/speed markings

The tire manufacturer has the possibility to add to the “nominal” load/speed indices an additional load/speed index with different load index and different speed index. This additional load/speed index is circled.

For other load benefits due to maximum speed variations please consult the table and notes in the “Interaction of Load and Speed” section.



NOTES: ETRTO tables apply only to nominal LI/SI marking.



Interaction of Load and Speed (cont.)

Notes concerning “Variations in load capacity with speed (%)”

(Below notes refer to the ETRTO (European Tire and Rim Technical Organisation) Guidelines, in case more details are required, please refer to the actual valid ETRTO Standards Manual)

For the application being considered, “SPEED” means:

either the maximum speed capability of the motor vehicle

or any overriding national requirement/legislation for the type of motor vehicle

or, in case of “special applications”, the specific conditions of use.

The load carrying capacity of tires in dual fitments is twice the load carrying capacity in single up to 40 km/h. Bonus loads will not be permitted for speeds of 40 km/h and above if the wheel axles are rigidly fixed to the body of vehicle.

Bonus loads are not applicable for trailers and semi-trailers at speeds over 65 km/h.

General definitions

Buses (Category M3 vehicles in the EU Directive) are subdivided into three classes depending on the intended type of use. Category M3 vehicles, for the carriage of passengers, have more than eight seats in addition to the driver's seat and exceed 5 tonnes in overall weight.

Class I

Urban-bus or City bus - foreseen for urban use with frequent stops, these vehicles have spaces for standing passengers and allow movements of passengers.

Class II

Suburban bus or Interurban bus - foreseen for passenger transport within a given district, these vehicles have no specific spaces for standing passengers, but allow them to keep standing in the gangway for some distances during the trip.

Class III

Touring coach - These vehicles mainly foreseen for long distances, are conceived for transportation of sitting passengers only.

On the basis of the specific conditions of use of the buses designed for urban or suburban services and irrespective of their actual maximum speed capability, the following bonus loads apply:

Class I

+ 15% of the load indices marked on the tire, when the average speed does not exceed 40 km/h.

Class II

+ 10% of the load indices marked on the tire, when the operating speed is restricted to 60 km/h.

Class III

no bonus load Class

For the equipment of special public service vehicles in urban and suburban applications (for instance road sweepers, fire tenders, etc.), on the basis of specific conditions of use and irrespective of the actual maximum speed capabilities of the vehicle, a bonus load of 10% applies with respect to the load indices marked on the tire.

In any case, it is recommended to avoid the maximum permissible load capacity if the resulting inflation pressure is higher than 1000 kPa. In that case, the load capacity shall be reduced accordingly.

It is imperative to consult Rim/Wheel Manufacturers for the choice of rims and wheels suitable for the load carrying capacities and the inflation pressures required for applications at speeds of 40 km/h and below.



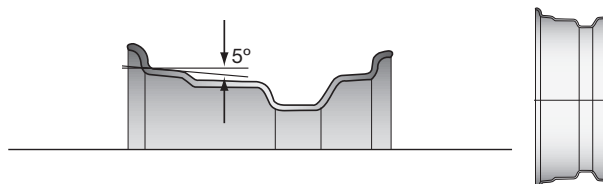
Rims and Wheels

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

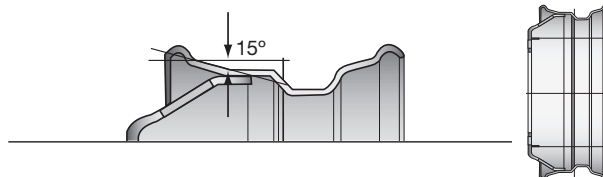
- one-piece tubeless drop center rims
- multi-piece tube-type flat base rims
- multi-piece tubeless flat base rims

One-piece tubeless drop center

5° Drop center Rim -(13", 14", 17" etc...) symmetric and asymmetric rims for standard and low section light truck (C) tires.

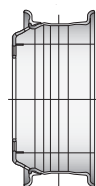


15° Drop center Rim -(17.5", 19.5", 22.5" etc...) rims for standard and wide section (Low Aspect Ratio, Super Single) tires.



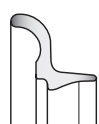
Two and four-piece tube-type flat base

(Mainly 20") rims for high aspect ratio tires. It will be important to avoid interchanging of parts from both systems.

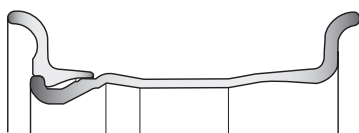


NOTE: Each system is usually identified accordingly (stamped 2P or 4P).

Two-piece tube-type flat base



Combination Side Ring



Four-piece tube-type flat base



Lock ring



Side ring



Bead seat band



Four-piece tube-type flat base



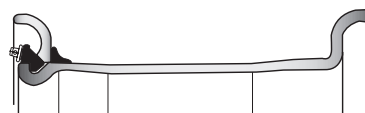
Lock ring



Side ring



Bead seat band

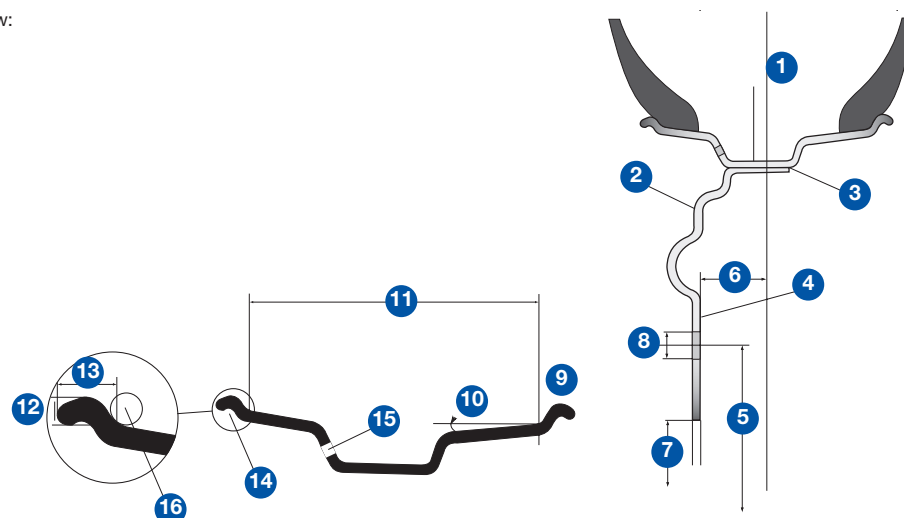


(20") rims for mainly 80-series tires. They require a new sealing gasket for each new tire.



Complete wheel details are shown below:

- 1 Drop center
- 2 Disc
- 3 Rim/disc junction
- 4 Hub contact face
- 5 Pitch (bolt) circle diameter
- 6 Offset
- 7 Center 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



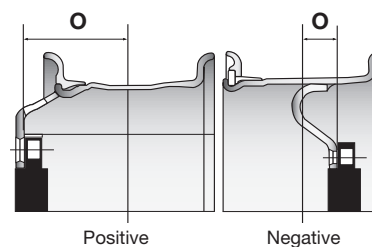
NOTE: Rim diameters can only be accurately measured by means of a special ball tape.

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.

Tire 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.

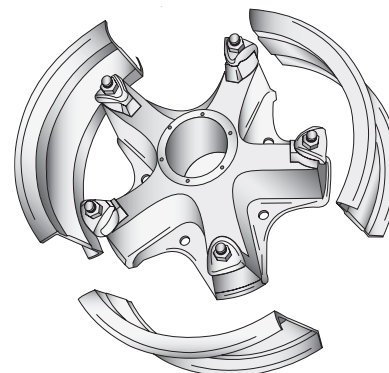
Wheel offsets can be positive, negative or zero. The offset is defined as the distance from the wheel center to the inside face of the disc (against the hub) and is called positive whenever this inside face is located outside of the centerline, negative when located inside, zero when matching the centerline 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 tires 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-centered over the centering cams (placed on spokeheads).



Tubes and Flaps

Only use “Radial” marked tubes and flaps in Radial Tires. Preferably fit a new tube and a new flap when mounting a new tire. Due to their inherent construction, Radial Tires impose far greater local stresses on Inner tubes than Bias Tires. “Radial” marked Tubes are specially compounded to withstand these stresses and their use in Radial Tires is mandatory. “Radial” marked Tubes may also be used in Bias Tires, but in this application, unmarked Bias Tubes are perfectly satisfactory.

The higher stresses in Radial Tires 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” tires 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 center rims including passenger, truck and farm, have a valve hole on the side of the well and require an off center valve on the tube. They do not require a Flap.

Drop center truck rims occasionally have the valve hole on center, 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 centerline of the rim to the edge. These rims require a flap, and a tube with an on center valve.

All Semi Drop center rims have a short valve slot, which may be on or off center dependant on the type of rim, and upon the rim manufacturer, and require flaps and tubes with respectively on or off center 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 – 20/24”

Tire size	Tube	Rim	Flap
12.00R20	12.00R20	8.0	20R8.5
		8.5	20R8.5
		9.0	20R9.5
14.00R20	14.00R20	10.0	20R9.0
12.00R24	12.00R24	8.0	24R8.5
		8.5	24R8.5
		9.0	24R9.0

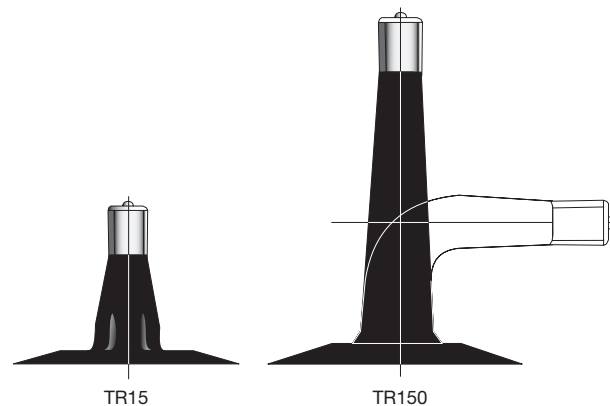


Valves

Three types of Inner Tube Valve exist in Commercial service:

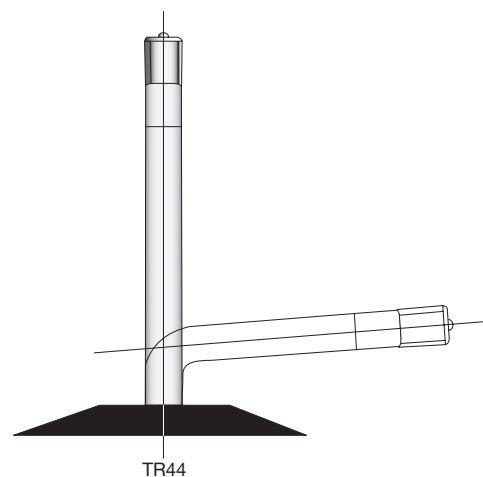
Rubber covered valves

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



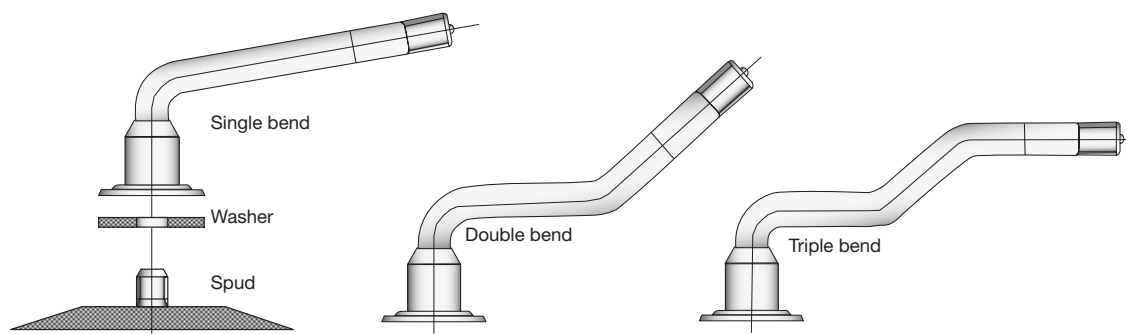
One-piece metal valves

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.

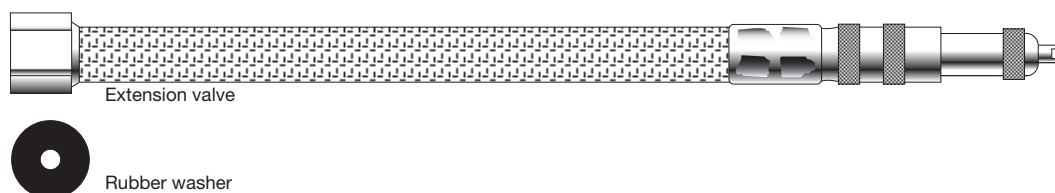


Fitting extension valves

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 valves 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 tire/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 TubeValveValve 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.



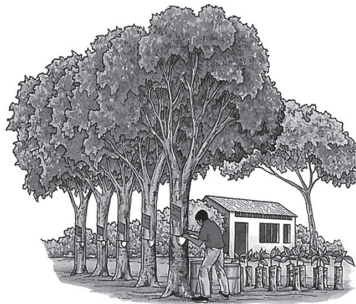
The tire manufacturing process

Raw Materials



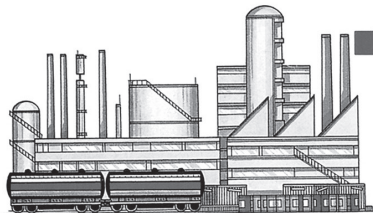
Textile Industries

Early tire fabric was made from cotton fibre. Today's tire carcasses are made of fibres such as nylon, rayon, polyester, fibreglass, etc.



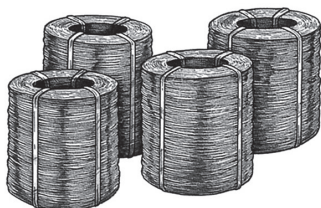
Rubber Plantation

Natural rubber is obtained mainly from the Hevea tree in the form of latex which is tapped by cutting through the outer bark of the tree. Liquid latex is collected in little cups and then coagulated to obtain solid rubber. Goodyear operates its own plantations in several parts of the world.



Chemical Industries

Synthetic rubber is derived from crude oil. Carbon black, used in rubber compounds to provide increased strength, is produced mainly by burning crude oil in special furnaces. Other chemical ingredients such as sulphur, plasticisers, accelerators, antioxidants, etc needed in the tire manufacturing process, are supplied by various chemical industries.

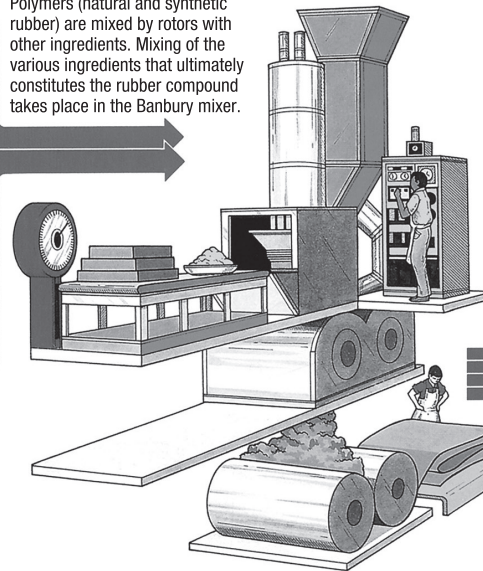


Steel Industries

High tensile steel wire is used to constitute the bead; the rigid base of a tire. Cable wire is also used in radial tires, both for belt and carcass material.

Banbury Mixer

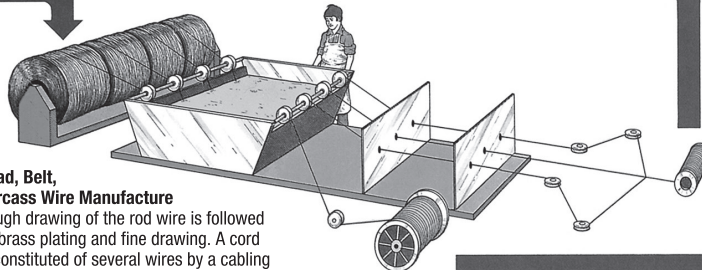
Polymers (natural and synthetic rubber) are mixed by rotors with other ingredients. Mixing of the various ingredients that ultimately constitutes the rubber compound takes place in the Banbury mixer.



Bead, Belt,

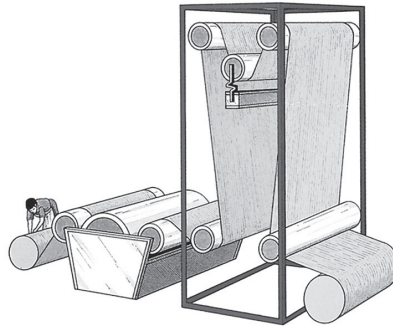
Carcass Wire Manufacture

Rough drawing of the rod wire is followed by brass plating and fine drawing. A cord is constituted of several wires by a cabling operation.



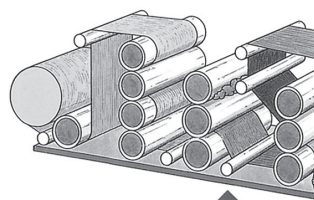
Fabric Manufacture

Textile fibres are twisted into cords which are woven into fabric with cords running only lengthwise and are held together by threads. The fabric is then impregnated with a special cement to improve adhesion with rubber and is then processed through the exclusive Goodyear 3T unit.



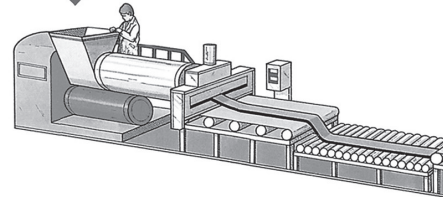
Fabric Bias Cutter and Sheet Calender

The calendered fabric treatment is cut to certain widths and angles to be used as breaker and reinforcement for the body of the tire. Rubber coatings are applied to the fabric to facilitate adhesion and retention in the finished tire.



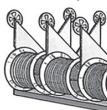
Extruders

Treads, sidewalls and other tire components are extruded to a specific contour and cut to length in the extruder.

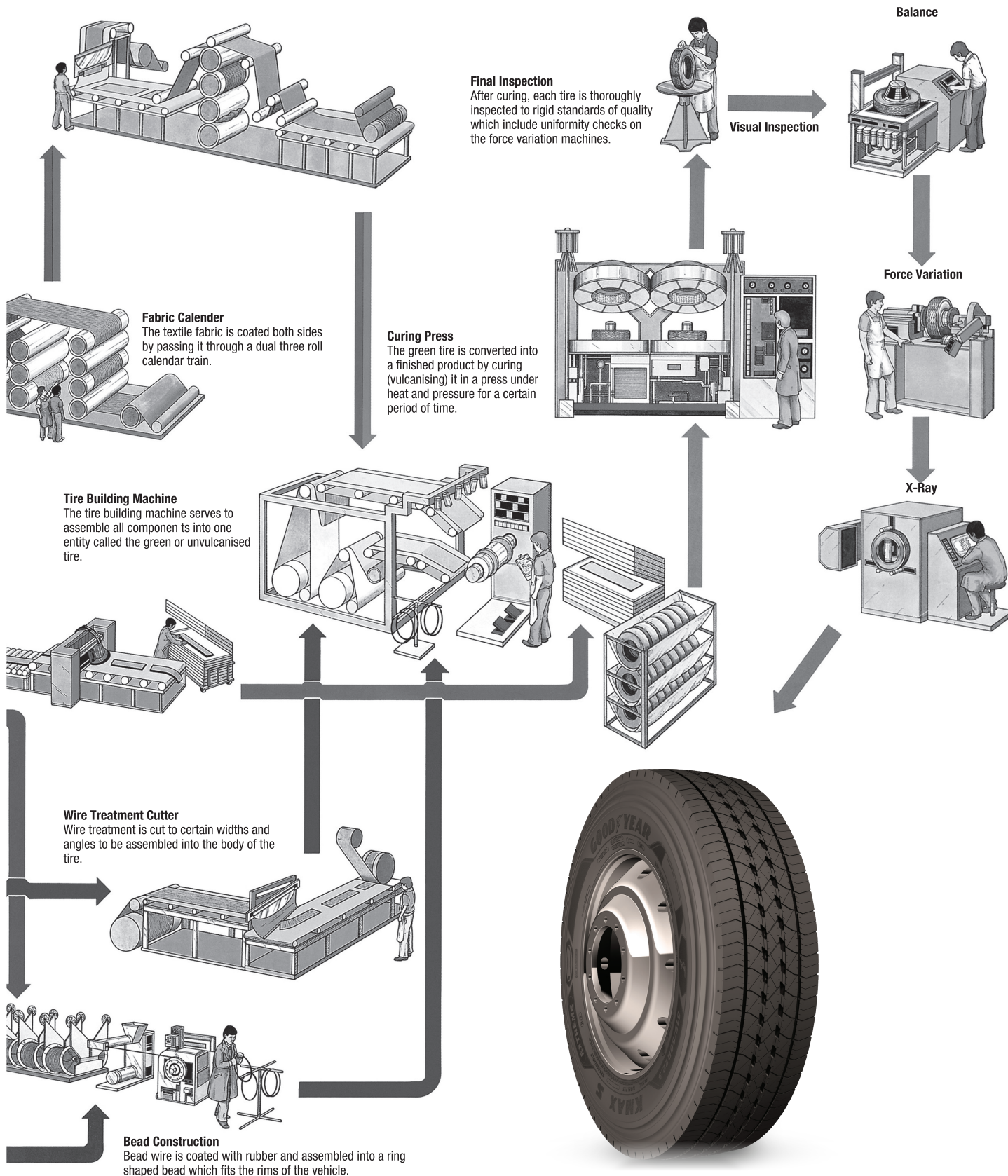


Wire Calender

Individual spools of cable wire are assembled from the creel room into a sheet which is rubber coated on both sides to produce a wire treatment.



GOODYEAR



Notes



Notes



Notes





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Contact your local Goodyear dealer for tire availability



Produced by Goodyear Middle East.
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