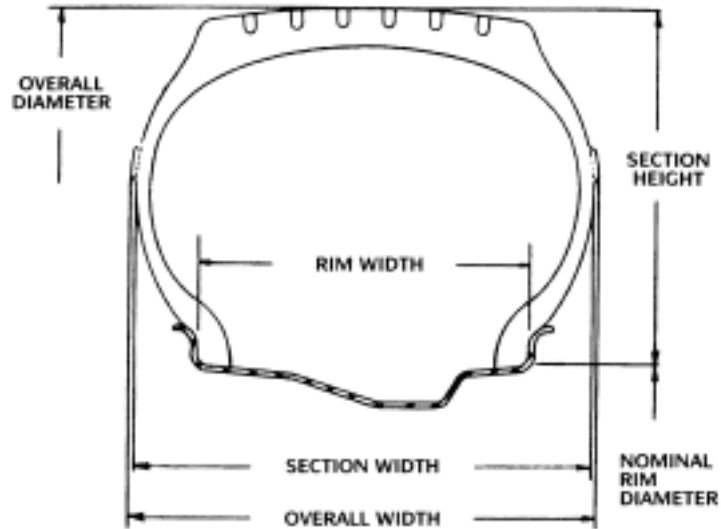


- A. Definitions**
- B. Suffix Letters Used in Tire Size Designations and Their Definitions**
- C. Conversion Factors**
- D. Load Range Designation—Ply Rating Equivalency Table**
- E. VAI®**
- F. Sidewall Rib Guard
Curb Scuff Indicators**
- G. Safety Warnings**
 - Tire Demounting and Mounting Safety Precautions**
 - Misapplication/Improper Inflation/
Overloading Safety Warnings**

A. Definitions

NEW TIRE DIMENSIONS



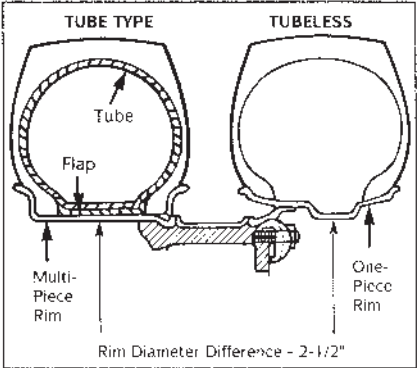
Aspect Ratio	Section Height Section Width
Rim Width	Linear distance between the flanges of the rim.
Static Loaded Radius	Distance from wheel axle centerline to supporting tread surface at a given load and pressure in a static condition.
Tire (Overall) Width	The width of a new tire, including 24-hour inflation growth, and including protective side ribs, bars and decorations.
Section Height	Half the difference between the overall diameter and the nominal rim diameter.
Overall Diameter	The diameter of an inflated tire at the outermost surface of the tread, including 24-hour inflation growth.
Revolutions Per Mile	Measured number of revolutions for a tire traveling one mile. This can vary with speed, load, and inflation.
Tread Width	Distance across tread from shoulder to shoulder.
Width Loaded	Tire width (overall) under rated load conditions.
Minimum Dual Spacing	Minimum dual tire centerline to centerline measurement.
Section Width	Linear distance between outside of sidewalls of inflated tire (exclusive of markings, etc.)

GENERAL INFORMATION

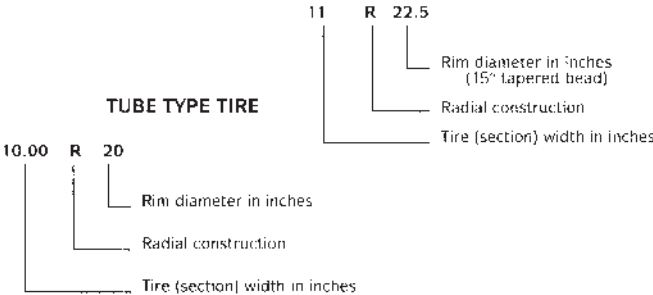
Tube-Type Tire Considerations:

- more easily repairable
- standardization with existing tube-type wheels in fleet taken into account when converting to low profiles.

TIRE CONSTRUCTION



TUBELESS TIRE



The original purpose for introduction of the low profile tires was to minimize irregular wear. Shown below are some other considerations of low profile tires.

Aspect Ratio (Low Profile) Considerations:

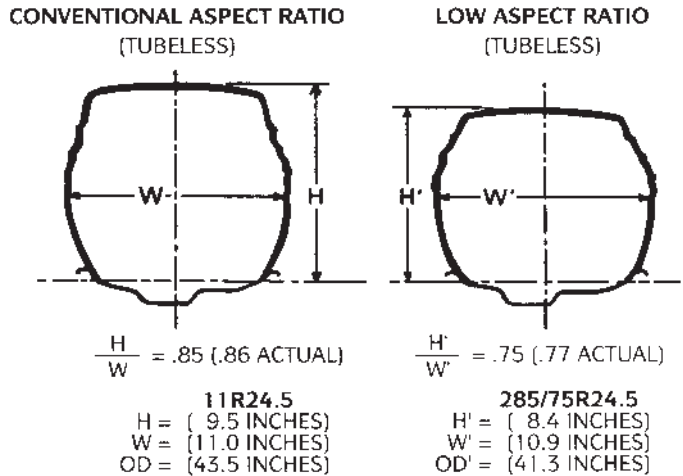
- improved treadwear (less irregular wear) on steer and trail axles
- lighter weight and less Federal Excise Tax
- potential fuel economy improvement
- better cube potential due to smaller tire diameter on new equipment
- improved stability from higher lateral spring rate
- more susceptible to sidewall damage

As mentioned earlier, there are drive train/ gearing considerations which must be made at the original equipment or replacement level when utilizing low profile tires. These involve the engine RPM, transmission, drive axle gear ratio and tire RPM. The objective is to obtain the most fuel efficient engine RPM/ground speed relationship consistent with service condition requirements.

The effect on road speed at the same engine RPM, using a 55 mph base, depends upon which conventional sizes and which low profile diameters are involved.

GENERAL INFORMATION

LOW ASPECT RATIO TIRES 24.5 INCH HIGHWAY SIZE (USING TYPICAL DESIGN DIMENSIONS)



MATCH TIRE FOR SPEED AND AXLE WEIGHTS

In a tire selection process, it is mandatory that consideration be given to selecting a tire size and load range which at least equals the maximum load requirements by axle position (steer, drive or trail). All highway truck tires have load limits established for tires used in normal highway service. Therefore, when selecting a tire for service, both the carrying capacity and speed implications must be considered.

TIRE LOAD LIMITS AT VARIOUS COLD INFLATION PRESSURES THE PRESSURE IS MINIMUM FOR LOAD										
MAXIMUM SPEED OF 65 MPH										
SIZE			70 (480)	75 (520)	80 (550)	85 (590)	90 (620)	95 (660)	100 (690)	105 (720)
										Example for LRG
11R22.5	Dual	kg	1990	2080	2160	2250	2360	2460	2560	2650(G)
		lbs	4380	4580	4760	4950	5205	5415	5625	5840(G)
11R24.5	Single	kg	2050	2160	2260	2370	2500	2600	2700	2800(G)
		lbs	4530	4770	4990	5220	5510	5730	5950	6175(G)
11R24.5	Dual	kg	2110	2210	2300	2390	2500	2580	2660	2725(G)
		lbs	4660	4870	5070	5260	5510	5675	5840	6005(G)
11R24.5	Single	kg	2190	2300	2410	2520	2650	2770	2890	3000(G)
		lbs	4820	5070	5310	5550	5840	6095	6350	6610(G)

For example, when selecting tires for a tractor-trailer combination with a gross combination weight (GCW) of 80,000 lbs. and an axle weight distribution of 12,000 lbs. on the steer, 34,000 lbs. on the tandem drive and 34,000 lbs. on the tandem trailer axles, the most common conventional tire sizes used are 11R22.5 Load Range G and 11R24.5 Load Range G. The load and inflation schedule according to the Tire and Rim Association tables for these sizes is shown above.

B. Suffix Letters Used In Tire Size Designations And Their Definitions

Suffix letters are included, when necessary, as part of Tire Size Designations to differentiate between tires for service conditions which may require different loads and inflations and/or tires which must be used on different types of rims.

TRUCK-BUS

LT Light Truck tires for service on Trucks, Busses, Trailers and Multipurpose Passenger Vehicles used in normal highway service for a 5° tapered bead seat rim with a specified rim diameter of nominal minus .032" diameter or with 15° tapered bead seat rim. This suffix is intended to differentiate among tires for Passenger Car, Truck-Bus and other vehicles or other services which use a similar designation. Example: 7.0015, 7.00-15LT, 7.0015TR.

TR Tires for service on Trucks, Busses and other vehicles with rims having specified rim diameter of nominal plus .156" or plus .250". This suffix is intended to differentiate among tires for Passenger Car, Light Truck, and other vehicles or other services which use similar designations. Example: 7.00-15, 7.00-15LT, 7.00-15NHS and 7.00-15TR.

ML Mining and Logging tires used in intermittent highway service.

MH Tires for Mobile Homes.

HC Identifies a heavy duty tire designated for use on "HC" 15° tapered rims used on Trucks, Busses, and other vehicles. This suffix is intended to differentiate among tires for Light Trucks and other vehicles or other services which use a similar designation. Example: 8R17.5LT, 8R17.5HC.

ST Special tires for Trailers in Highway Service.

OFF-THE-ROAD

NHS Not for highway service.

TG Tractor-Grader tires—Not for highway service .

K Compactor tire for use on 5° drop center or semidrop center rims having bead seats with nominal minus .032 diameter.

INDUSTRIAL

NHS Not for highway service.

SS Differentiates tires for off-highway vehicles such as mini and skid-steer loaders from other tires which use similar size designations such as 7.00-15TR and 7.00-15NHS, but may use different rim bead seat configurations.

GENERAL INFORMATION

CYCLE

NHS Not for highway service.

T (For Motorcycle Tires)—Indicates tires to be used on CM rims.

M/C Identifies a 15 diameter designation motorcycle tire for use only on a rim with a 5° bead seat and specified diameter equal to 15.080.

C. Conversion Factors

Kilograms x 2.205 = Lbs.

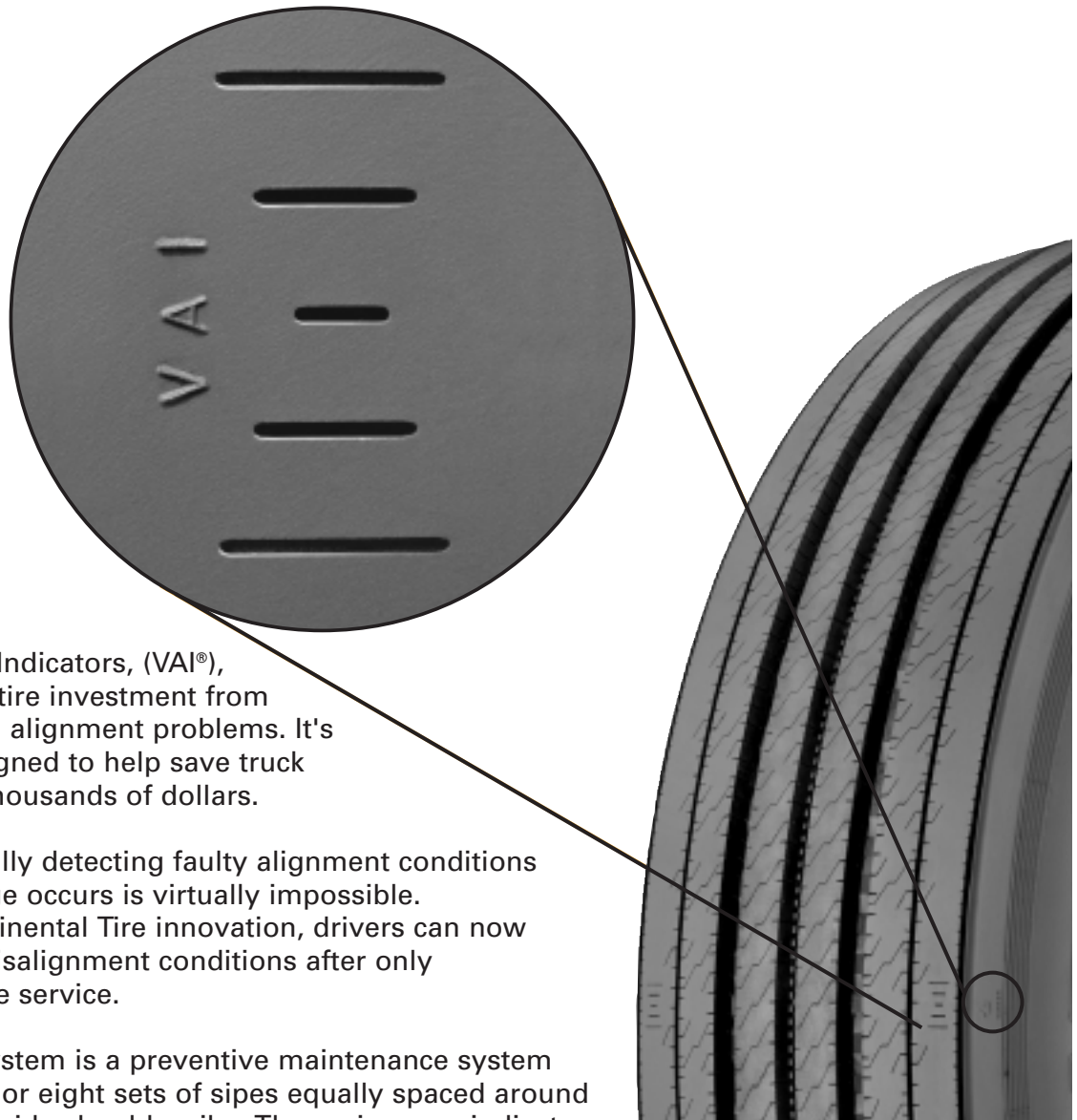
mm x .03937 = Inches

kPa x .145 = psi

D. Load Range Designation-Ply Rating Equivalency Table

LOAD RANGE	PLY RATING
A	2
B	4
C	6
D	8
E	10
F	12
G	14
H	16
J	18
L	20
M	22
N	24

E. VAI® Siping System (An Early Warning System That Helps Protect Your Tire Investment)



Visual Alignment Indicators, (VAI®), help protect your tire investment from possible front-end alignment problems. It's an insurance designed to help save truck operators many thousands of dollars.

Here's Why: Visually detecting faulty alignment conditions before any damage occurs is virtually impossible. But with this Continental Tire innovation, drivers can now detect possible misalignment conditions after only relatively short tire service.

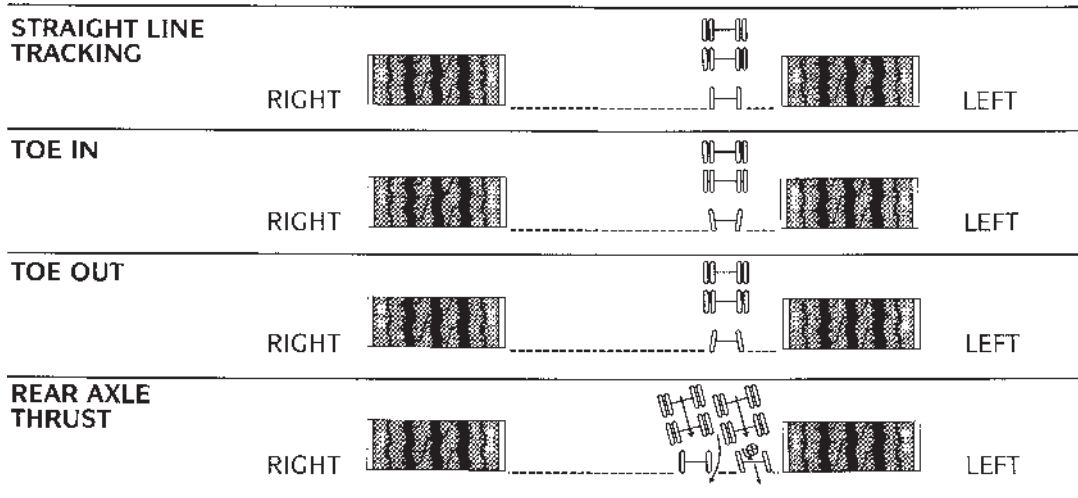
The VAI® siping system is a preventive maintenance system consisting of four or eight sets of sipes equally spaced around the inside and outside shoulder ribs. These sipes are indicators, graduated in depth, which allow for easy detection of wear differences between the shoulder ribs. Any discrepancy in wear signals the occurrences of side forces—forces which may prevent straight tracking of the tire...a sure sign of possible misalignment. And this early warning prevention system can mean significant savings in tire bills, as well as substantial benefits such as increased original tread life and protection of the casing for retreading— exactly what a cost-conscious fleet owner looks for in a tire.

THE FOLLOWING TIRES ARE EQUIPPED WITH THE VAI® SIPING SYSTEM

- | | | |
|--------------|---------|---------------------|
| HSL | HMS 45+ | S370 |
| HSL Eco Plus | HSU | ST250 |
| HSR | HTL | GENERAL RIB ST |
| HSC | S580 | ST250 ^{LP} |
| | S380A | |

PREVENTIVE MAINTENANCE BUILT RIGHT INTO THE TIRE WITH VAI® (VISUAL ALIGNMENT INDICATORS)

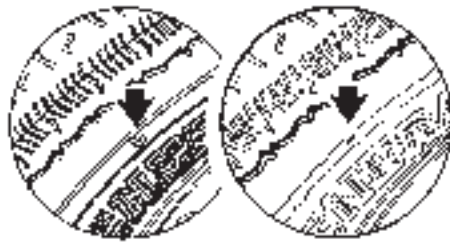
Examples of Early Detection of Alignment Problems by VAI®



NOTE: Differences in shoulder rib wear appearance may not be consistent with a single contributing cause (as shown above), but may also reflect the cumulative effects of several out-of-spec alignment settings.

The object of VAI® is to indicate alignment problems. It cannot and should not take the place of a thorough professional alignment inspection.

F. Sidewall Rib Guard Curb Scuff Indicators



Continental Tire has introduced an innovative new system of preventative maintenance aimed at protecting the sidewall. The Sidewall Rib Guard with curb scuff indicators allows the customer to monitor the abrasive affects of repeated curb/sidewall scuffing and takes the guesswork out of determining the remaining thickness of a sidewall after frequent scuffing occurs.

This protection system consists of a PLUS SIGN (+) molded into an extra layer of rubber on the tire's sidewall. After curb scuffing occurs, the PLUS SIGN (+) will eventually change to a MINUS SIGN (-), alerting the driver that the tire should be rotated to expose the new sidewall. When the second sidewall changes to a MINUS SIGN (-), the tire can be moved to an inside position in a dual application or to other service where scuffing is not prevalent.

This "Sidewall Protection System" will help prolong tire life and add to casing integrity and future retreadability.

The Sidewall Rib Guard with curb scuff indicators is available on the Ameri★SD400—General's urban delivery, all position tire.

G. Safety Warnings

TIRE DEMOUNTING AND MOUNTING SAFETY PRECAUTIONS

SAFETY WARNING

SERIOUS INJURY OR DEATH MAY RESULT FROM:





EXPLOSION OF TIRE RIM ASSEMBLY DUE TO IMPROPER MOUNTING - USE SAFETY CAGE & CLIP-ON EXTENSION AIR HOSE. ONLY SPECIALLY TRAINED PERSONS SHOULD MOUNT TIRES.

WARNING

Tire and wheel servicing can be dangerous, and should be done by trained personnel using proper tools and procedures. Follow the procedures and safety precautions in the RMA's "Demounting and Mounting Procedures for Trucks / Bus Tires" and "Inspection procedures for identification of potential zipper ruptures in steel cord radial medium and light truck tires" charts and service bulletins.

Failure to comply with these procedures may result in faulty positioning of the tire and/or rim parts, and cause the assembly to burst with explosive force, sufficient to cause serious physical injury or death. Never mount or use damaged tires or rims.

MISAPPLICATION/IMPROPER INFLATION/OVERLOADING SAFETY WARNINGS

WARNING

There is a danger of serious injury or death if a tire of one bead diameter is installed on a rim or wheel of a different rim diameter.

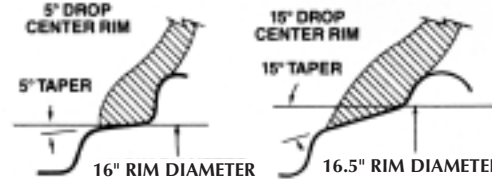
Re-assembly and inflation of mismatched parts can result in serious injury or death. Just because parts come in together does not mean they belong together. Check for proper matching of all rim parts before putting any parts together.

Always replace a tire with another tire of exactly the same bead diameter designation and suffix letters.


For example: A 16" tire goes on a 16" rim. **Never** mount a 16" tire on a 16.1" or 16.5" rim. A 16.1" tire goes on a 16.1" rim. **Never** mount a 16.1" tire on a 16" or 16.5" rim. A 16.5" tire goes on 16.5" rim. **Never** mount a 16.5" tire on a 16" or 16.1 " rim.

While it is possible to pass a 16" diameter tire over the lip or flange of a 16.1" or 16.5" size diameter rim, it cannot be inflated enough to position itself against the rim flange. If an attempt is made to seat the tire bead by inflating, the tire bead will break with explosive force and could cause serious injury or death.

Rims of different diameters and tapers cannot be interchanged. The following diagram illustrates the difference between rims of two different tapers and diameters.



The following diagram shows how beads of a 16" tire will not seat on a 16.5" rim. The beads cannot be forced out against the rim flanges by using more air pressure because this will break the beads and the tire will explode with force sufficient to cause serious injury or death.



Never assemble a tire and rim unless you have positively identified and correctly matched the parts.

GENERAL INFORMATION

WARNING

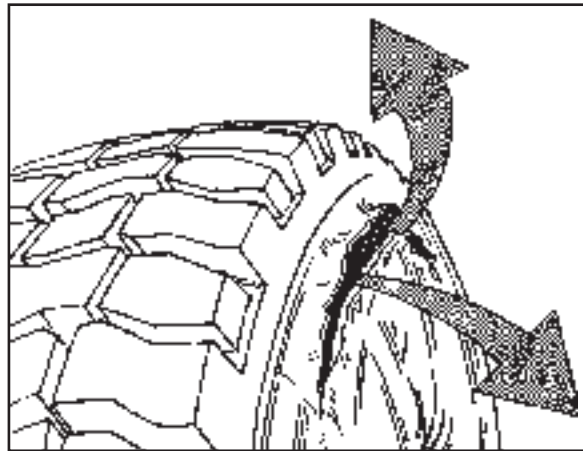
NEVER inflate beyond 40 pounds pressure to seat beads.

NEVER stand, lean or reach over the assembly during inflation.

Inspect both sides of the tire to be sure that the beads are evenly seated. If tire is mounted on a machine that does not have a positive lock-down device to hold the wheel, inflation should be done on a safety cage. If both beads are not properly seated when pressure reaches 40 pounds, completely deflate the assembly, reposition the tire and/or tube on the rim, relubricate and reinflate. Inflating beyond 40 pounds air pressure when trying to seat the beads is a **DANGEROUS PRACTICE** that may break a tire bead (or even the rim) with explosive force, possibly resulting in serious injury or death. After the beads are fully seated, pressure may be increased above 40 psi to operating pressures, not to exceed the maximum labeled on the tire sidewall.

WARNING

- Permanent tire damage due to underinflation and/or overloading cannot always be detected. Any tire known or suspected to have been run at 80% or less of normal operating inflation pressure and/or overloaded, could possibly have permanent structural damage (steel cord fatigue). Ply cords weakened by underinflation and/or overloading may break one after another, until a rupture occurs in the upper sidewall with accompanying instantaneous air loss and explosive force. This can result in serious injury or death.



Any tire suspected of having been operated underinflated and/or overloaded must be approached with caution. Completely deflate the tire by removing the valve core before removing the tire/rim/wheel assembly from the vehicle. After removing from the vehicle, clearly identify the tire, so it will not be reinflated **until carefully inspected by a trained technician**, to determine the cause of underinflation, as well as any tire damage resulting from underinflation and/or overloading.

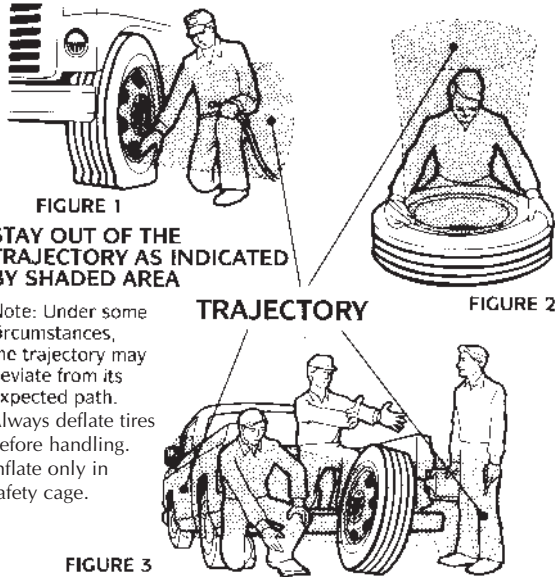
WARNING

The use of any flammable material during tire servicing is absolutely prohibited. Use of starting fluid ether, gasoline or any other flammable material to lubricates seal or seat the beads of a tubeless tire can cause the tire to explode or can cause the explosive separation of the tire/rim assembly resulting in serious injury or death.

This practice may also result in undetected damage to the tire or rim that could result in failure of the tire in service.

SAFETY WARNING!

SAFETY WARNING!



The air pressure contained in a tire is dangerous. The sudden release of this pressure by a tire blow-out or side ring separation can cause serious injury or death. Stay out of the trajectory as indicated by shaded area. When installing the tire/rim assembly on the vehicle, it will be impossible to stay out of the trajectory; however, at all other times you and all others must stay out of the trajectory.

⚠ WARNING

Tire explosions can cause death or personal injury or property damage.

Excessive speed in a free-running, unloaded tire can cause it to “explode” from extreme centrifugal force.

⚠ WARNING

- When mounting dual disc wheels on a vehicle, be sure to carefully check and retighten or retorque inner cap nuts before mounting the outer wheel. In demounting the outer wheel, there is a possibility that the inner cap nuts may have been loosened accidentally.
- NEVER rework, weld, heat, or braze the tire/wheel/rim. Heating the rim of tire/wheel/rim assembly can cause a tire to explode, causing serious injury or death.
- NEVER hammer, strike or pry on any type of tire/rim assembly while the tire contains inflation pressure. Do not attempt to seat any part while the tire contains any inflation pressure. This could result in serious injury or death.

SERVICE DESCRIPTIONS

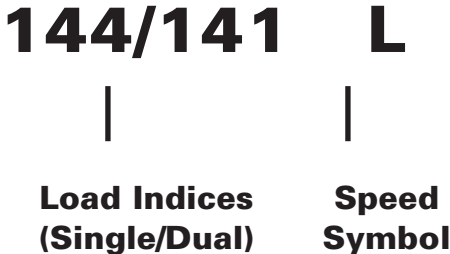
Continental Tire North America, Inc. has recently added a service description to all of our premium steer axle tires.

This service description, which consists of one or two load indices and a speed symbol, is located close to the tire size designation on the sidewall of the tire.

The load index relates to the maximum load carrying capacities allowed at the speed indicated by the speed symbol.

The speed symbol relates to the maximum speed allowed for the load carrying capacities associated with the load index.

The following is an example of a load index / speed symbol associated with a medium radial truck tire:



The attached chart shows the comparison of load index to load and speed symbol to maximum speed for radial truck tire products.

Consult your local Continental Tire representative for confirmation of the suitability of the tire/wheel assembly for the intended service.

TRUCK-BUS METRIC TIRES INTERNATIONAL LOAD INDEX NUMBERS

Load Index	Kg	Lbs.	Load Index	Kg	Lbs.
119	1360	3000	145	2900	6395
120	1400	3085	146	3000	6610
121	1450	3195	147	3075	6780
122	1500	3305	148	3150	6940
123	1550	3415	149	3250	7160
124	1600	3525	150	3350	7390
125	1650	3640	151	3450	7610
126	1700	3750	152	3550	7830
127	1750	3860	153	3650	8050
128	1800	3970	154	3750	8270
129	1850	4080	155	3875	8540
130	1900	4190	156	4000	8820
131	1950	4300	157	4125	9090
132	2000	4410	158	4250	9370
133	2060	4540	159	4375	9650
134	2120	4675	160	4500	9920
135	2180	4805	161	4625	10200
136	2240	4940	162	4750	10500
137	2300	5070	163	4875	10700
138	2360	5205	164	5000	11000
139	2430	5355	165	5150	11400
140	2500	5510	166	5300	11700
141	2575	5675	167	5450	12000
142	2650	5840	168	5600	12300
143	2725	6005	169	5800	12800
144	2800	6175	170	6000	13200

Speed Symbol	Speed (km/h)	Speed (mph)
F	80	50
G	90	56
J	100	62
K	110	68
L	120	75
M	130	81
N	140	87
P	150	93
Q	160	99
R	170	106
S	180	112
T	190	118