

FACTORS INFLUENCING TYRE LIFE

Factors influencing Tyre Life

- The critical parameters which influence tyre life :
 - **Inflation Pressure**
 - **Dual spacing , matching & tyre rotation**
 - Mechanical Conditions
 - Proper Loading
 - Operating conditions
 - Driving habits

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Factors influencing Tyre Life

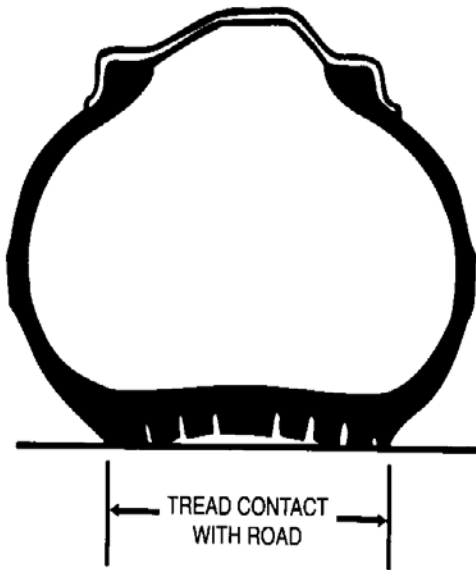
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TYRE INFLATION PRESSURE

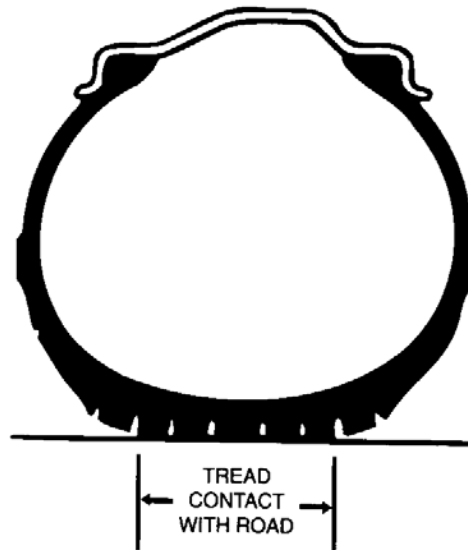
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Importance of correct tyre inflation pressure

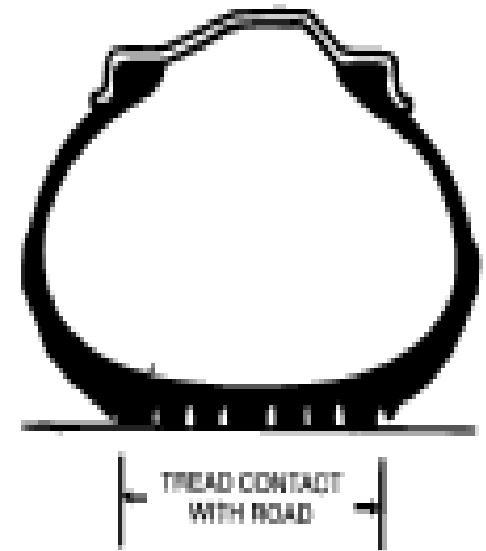
Under Inflation



Over Inflation



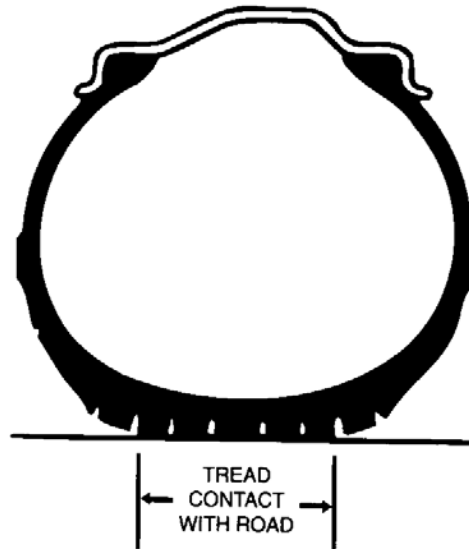
Proper Inflation



Importance of correct tyre inflation pressure

OVER INFLATION

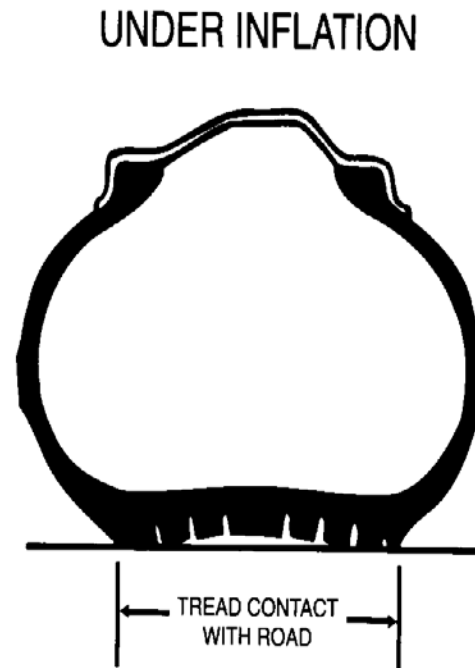
Over Inflation :



- Load carrying capacity of a tyre can not be increased above the maximum rated load capacity , merely increasing its inflation pressure
- Over inflated tyres do not flex as designed, do not absorb shocks, or impacts, more prone for cuts, concussion, snags , and rapid center wear.

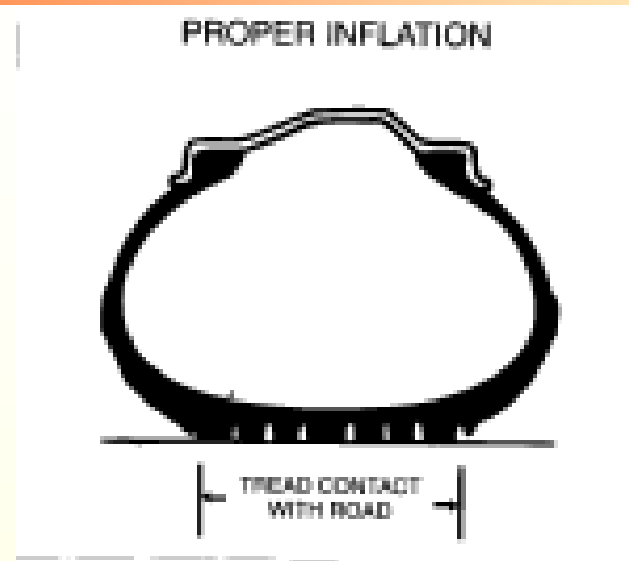
Importance of correct tyre inflation pressure

Under Inflation :



- Under inflation results in excessive flexing of tyres , excessive heat generation, rapid shoulder wear and premature casing failure .

Importance of correct tyre inflation pressure



- Tyres are designed to carry loads up to the maximum specified at the inflation pressure for a desired deflection , road contact, tread wear.
- Any neglect of inflation pressure will result in one or more of serious tyre failures or loss of life potential.

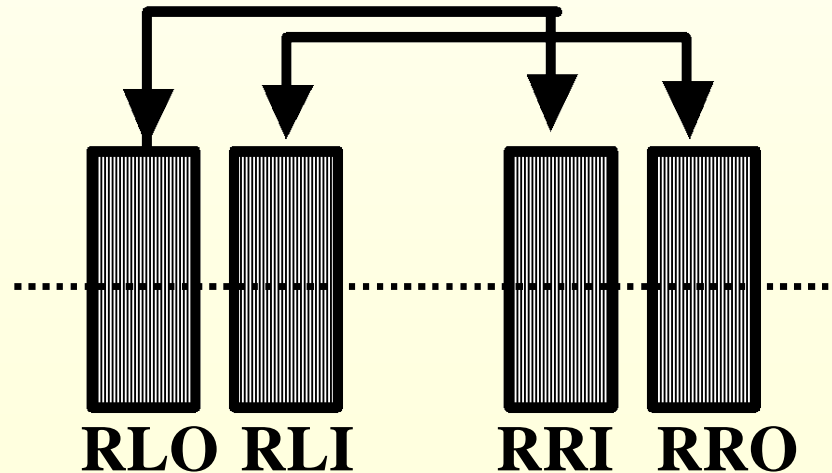
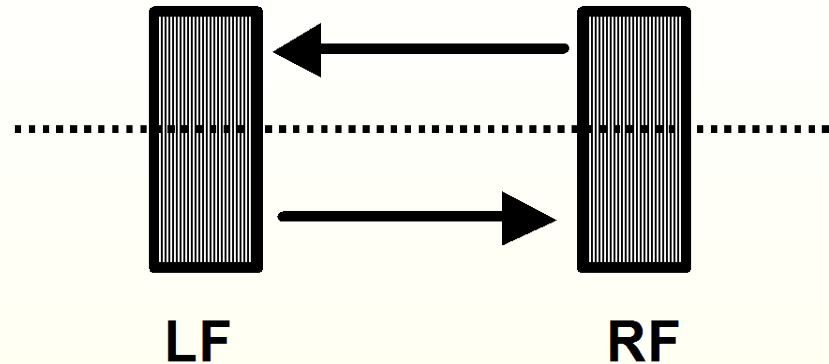
Rotation of Tyres

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Tyre Rotation Plan

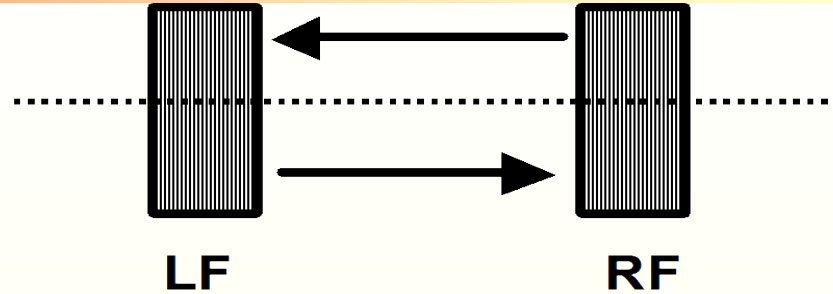
- **TRUCK/BUS/LCV**
 - Rotation of tyres in the vehicle is recommended for uniform pattern of tyres wear on all the wheel positions to achieve optimum tyre life , thus reducing cost per kilometer and save operations.
 - It is suggested to rotate tyres at around 8000 to 10,000 Kms or in case of any uneven , abnormal misalignment wear .

Recommended Tyre Rotation Plan

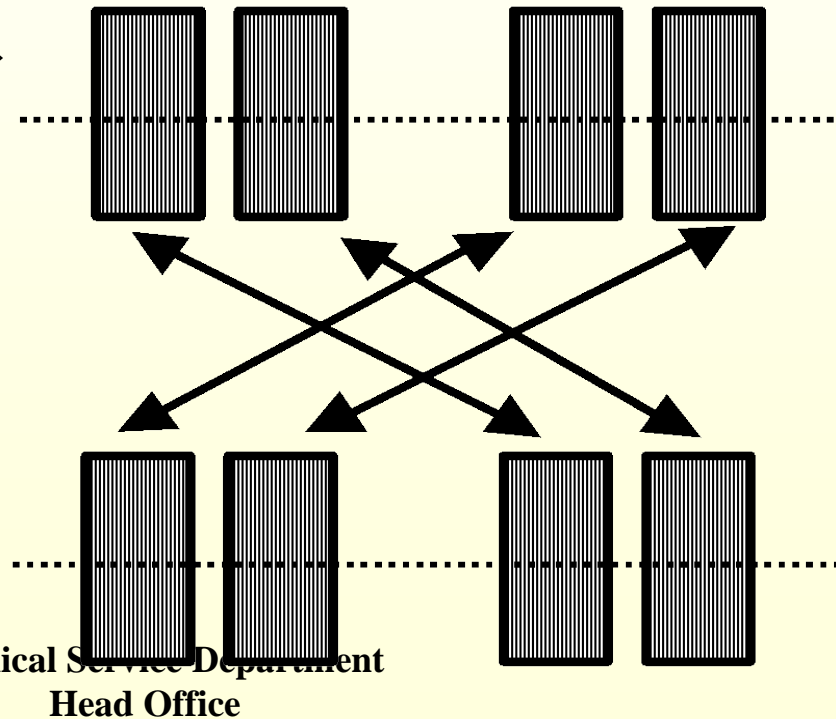


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Recommended Tyre Rotation Plan



**TWIN TYRES
WITH SAME
DEGREE OF
WEAR**



Dual Matching

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Proper Matching of Duals

Results in extra tyre mileage and lower cost per Km

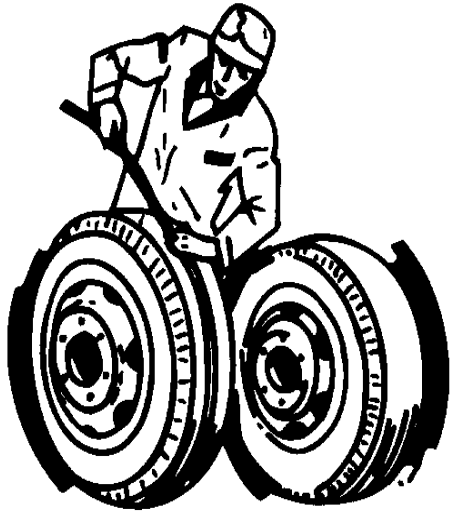
Improper Matching of Duals Causes

- Overloading one of the dual tyres. The larger diameter tyre is forced to carry greater share of the load.
- Rapid Tyre Wear
- Overheating
- Truck tyres in a dual assembly are matched to equalize the load between the two tyres . Mismatched tyres bring about an unequal distribution of load because they have different diameters or circumferences. Since both tyre must rotate at the same speed , the result is abnormal and unequal tread wear and excessive cord body strain on one tyre.

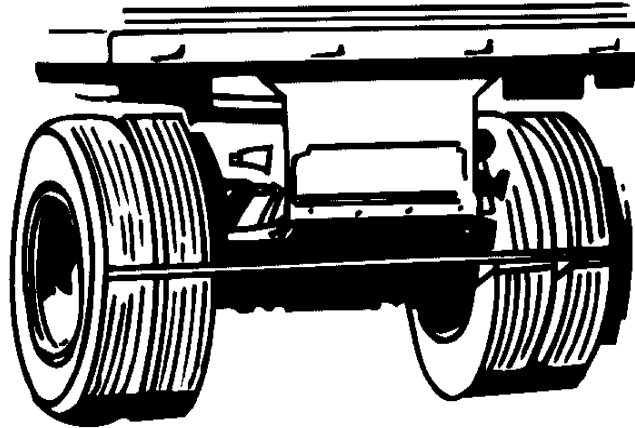
Improper Matching of Duals Causes

- Conditions that prevent an equitable distribution of the load on dual assemblies are :
 - A difference in the diameter (or circumference) of the two tyres.
 - The difference in the diameter in the air pressure in each line .
 - The crown or contour of the roads.
 - Axle sag
- It is not always possible to match tyres exactly. Therefore , some tolerance must be permitted.
- **The most desirable matching is obtained by not exceeding**
 - **19 mm difference in circumference or 6 mm in diameter for tyre sizes upto and including 8.25**
 - **38 mm difference in circumference or 12.7 in diameter for sizes 9.00 and larger.**

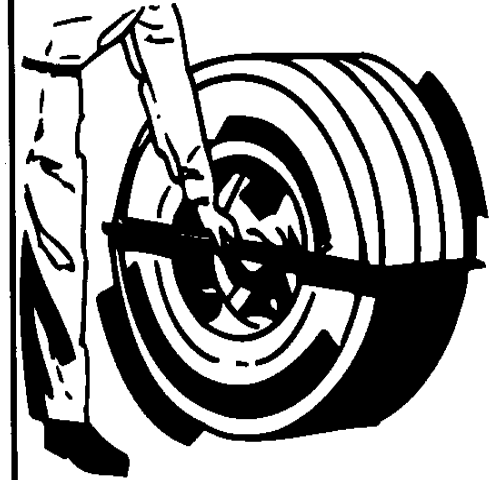
MEASURING DUAL ASSEMBLY



Measuring with Endless Tape

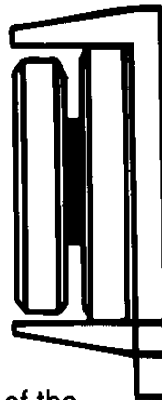
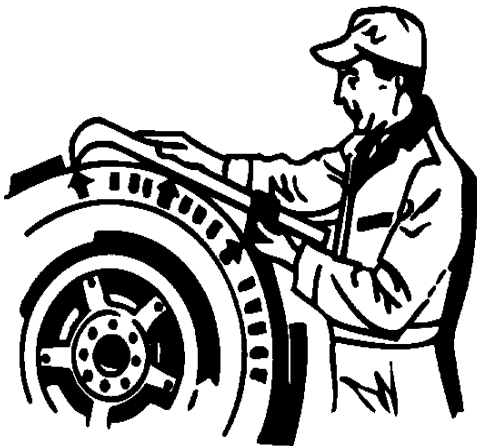


Use of String Edge

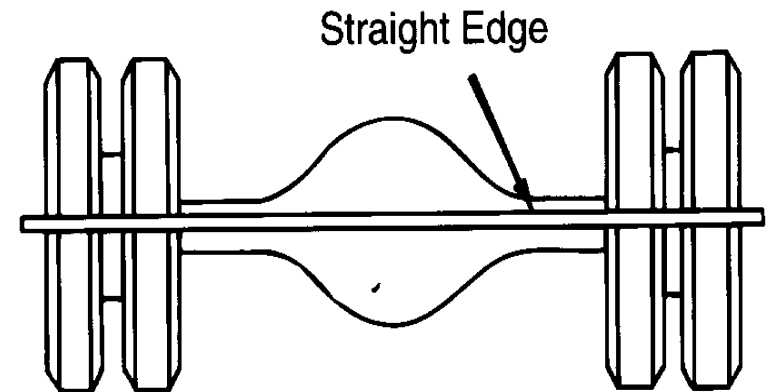


Use of Square

Use of Tyre Caliper



Use of the Matching Stick



Straight Edge

Use of Tyre Straight Edge

MIXING OF TYRES

- Do not fit tyres of different construction on the same axle.
- The best results are obtained by fitting complete sets of Bias or Radial tyres.
- Do not use Radial tyres on the steering wheels and Bias tyres at the rear wheel.
- If only four radials are to be used , fit them on the rear axle.
- Radials in the rear axles and Bias at the front axles are permitted.

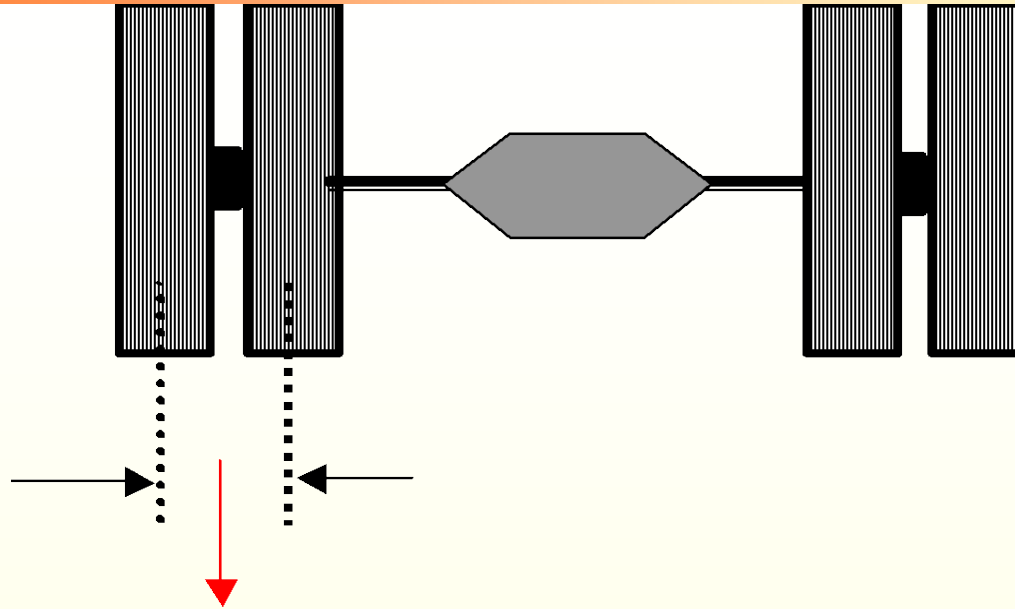
DUAL SPACING

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Spacing of Duals

- Often the service rendered by Dual tyre is sharply reduced because of the improper spacing between the duals. This condition is caused either
 - Over size tyre
 - Improper Rim or Wheels
- If the space between the duals is too small there will be insufficient cooling between the tyres- **Heat is the greatest enemy**
- If the space is too great there will be excessive dragging or scuffing of outside tyre, each time a turn is made.

Spacing of Duals



DUAL SPACING

Recommended Dual spacing for a 10.00-20 tyre on 7.5x 20 Rim is 322 mm and on 7.0 x 20 Rim the recommended dual spacing is 317 mm.

For every 0.50 difference in Nominal rim width code will increase or decrease section Width of the tyre by 5.0 mm , therefore Dual spacing has to be adjusted for any change in nominal width code.