

Tire Fundamentals



Tire Function

- ❖ provide traction (friction) with the road surface
- ❖ provide a cushion between the road and the metal wheel



Tire Size

➤ Letter designates tire type:

- “P” Passenger tire
- “LT” Light truck tire
- “C” Commercial tire
- “T” Temporary/spare tire



Tire Width

- tread width in millimetres
- this tire's width would be 245 mm



Aspect Ratio

- tire height expressed as a percentage of the tread width
- aspect ratio in the example below is 75
- sidewall height is 75% of the tire width
- aspect ratio of this tire is $245\text{mm} \times 75\% = 184\text{mm}$ tall sidewall



Rim Diameter

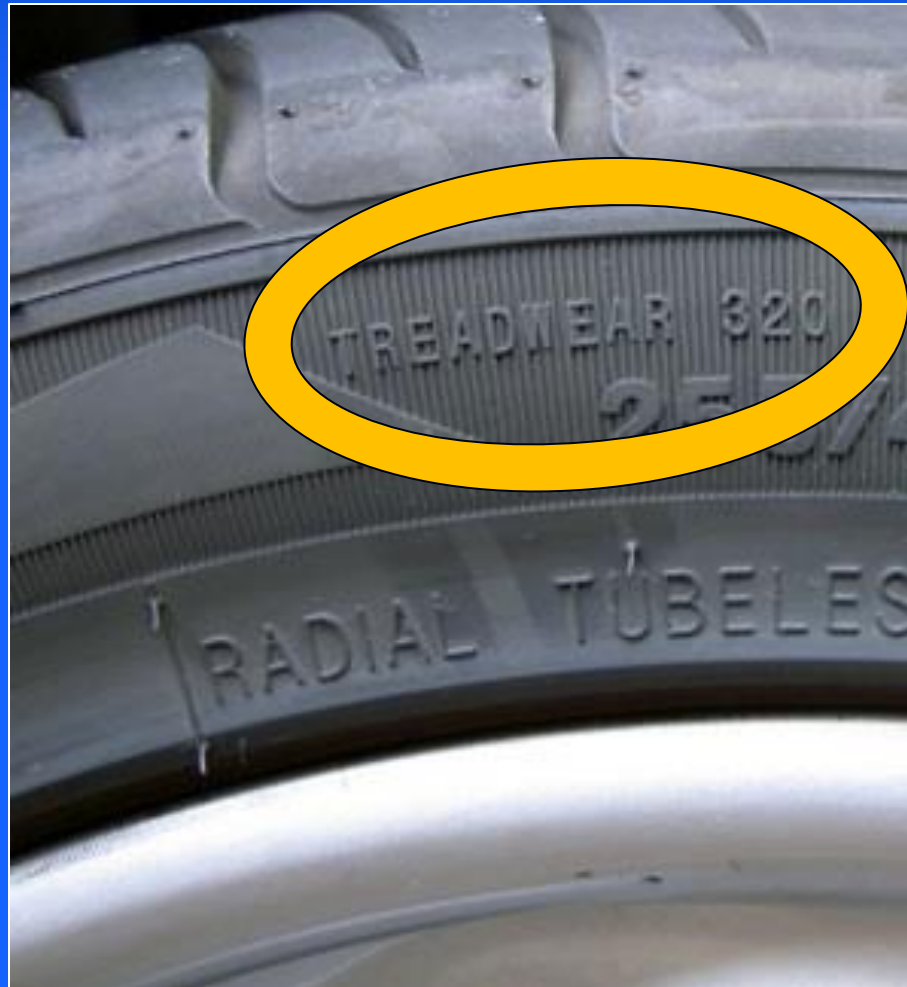
➤ rim diameter is given in inches

- 13 = 13"
- 14 = 14"
- 15 = 15" etc.



Treadwear Rating

- treadwear is given as a number
- the higher the number, the longer the tire will last
- 100 = baseline
- more than 100 = better
- less than 100 = poorer

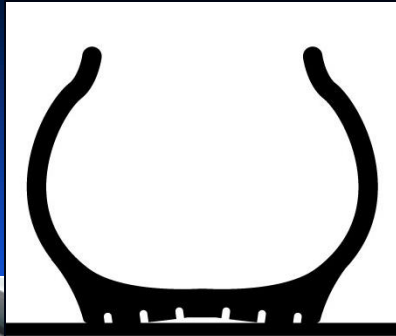


Date of Production

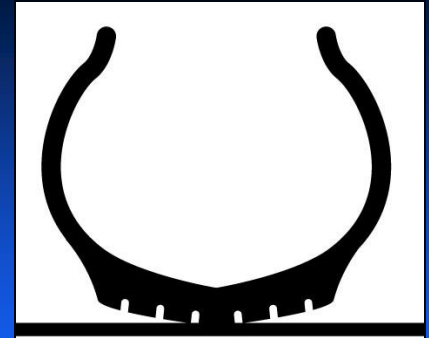
- Tires typically last around 5 years with normal usage. Find the circled 4 digit number on the side of a tire (if you cannot find it check the inside tire wall!).
- There are many factors that go into this number. The type of tire also plays a large role: tire type, performance tires, brands, treadwear ratings, etc.
- It is important to know the date of production when buying USED or NEW tires.
- You don't want to buy 20 year old tires!



Uneven Wear Problems



•under inflated: excessive wear on outer edges of tread



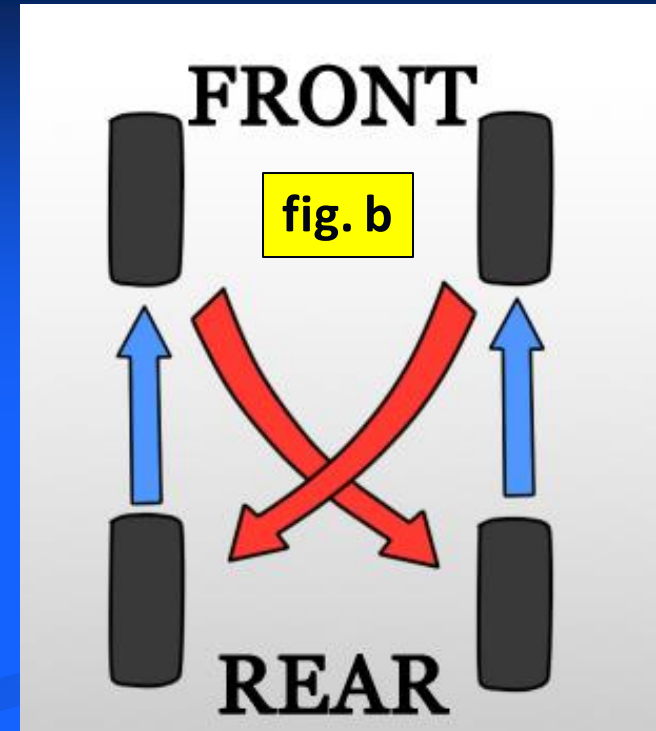
•over inflated: excessive wear in middle of tread



Wear bars flush with tread? Tire needs replacing!

Tire Rotation

- ensures maximum tire life - evens out tire wear
- tires should be rotated every 10,000 km
- full size spare tire?
 - include it in the rotation
- directional tires? (fig. a)
 - must remain on the same side of the vehicle
- check with owner's manual or Mitchell for specific rotation pattern
 - fig. b is just one example of many





Tire machine styles...

Rim Clamp Tire Machine



Center Post Tire Machine



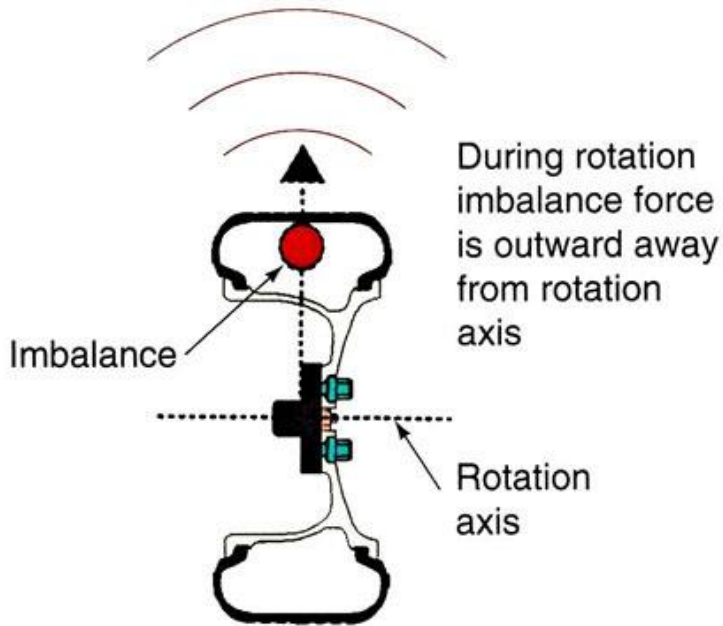
0:50

refer to 4075 D2L lecture content for:

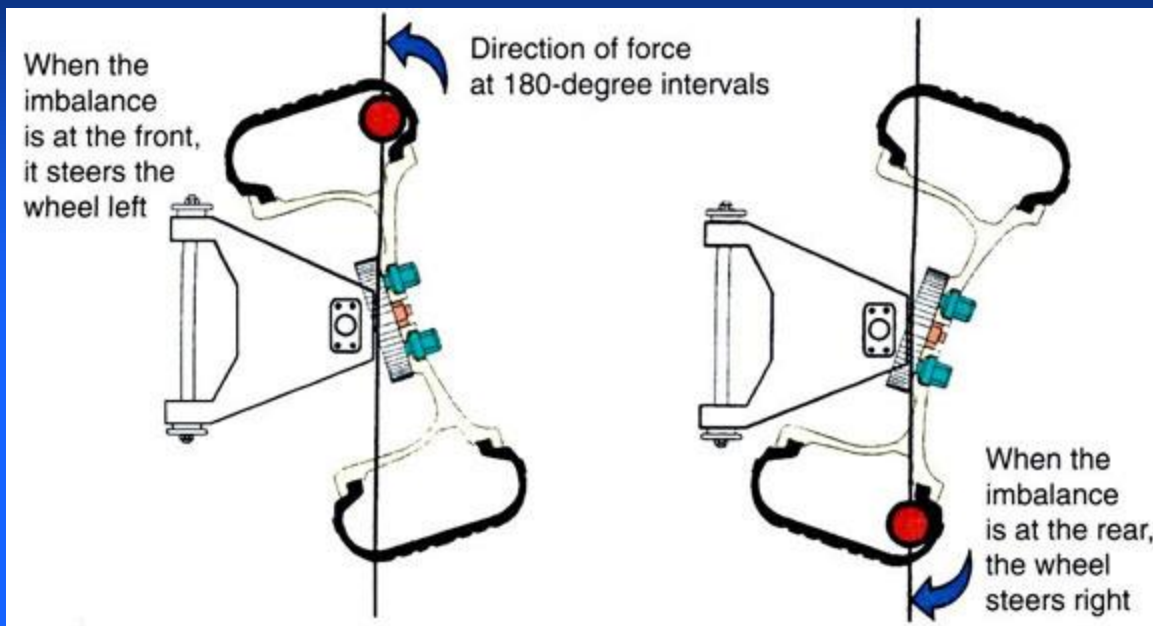
- user's manual & instructions
- how-to videos

Wheel Balancing

Imbalance causes vibration in the vehicle or steering wheel



wheel tramp



wheel shimmy

Wheel Balancing



**Wheel balancers correct this imbalance in the wheel/tire assembly.
Refer to 4075 D2L lecture content for:**

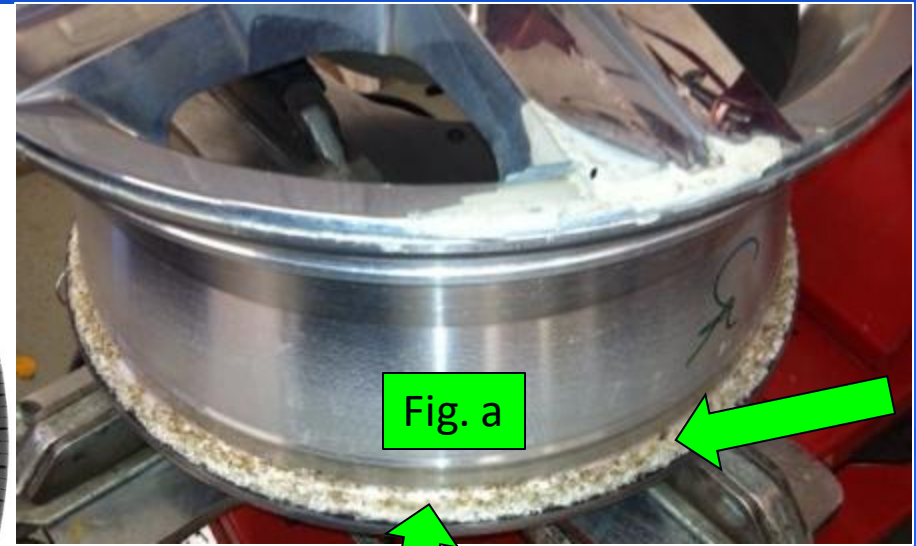
- **user's manual & instructions**
- **how-to videos**

Tire Repairs



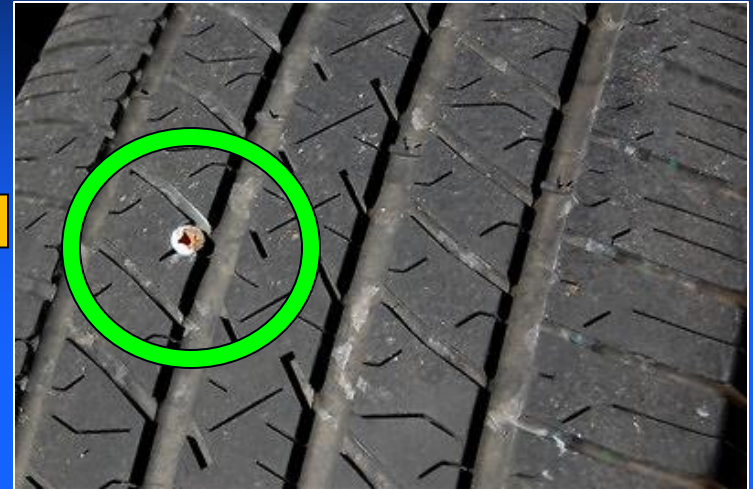
Checking for Leaks

- Inflate to 35psi & spray a soapy solution on these areas and look for bubbles:
 - the tire-to-bead sealing area (rust & corrosion can be cleaned (fig. a))
 - tire valve - both the valve core and where it meets the rim
 - tread (cuts, holes, etc)



Leaks in Tread

- leaks/injuries on the sidewall cannot be repaired – replace the tire
- injury must be inside the red lines



Safety Seal brand tire plugs

- holes <1/4" can be plugged
- if the tire was run flat, it must be demounted & inspected on the inside for damage



Tire Patch/Plug Combo

- holes $>1/4"$ or 6mm requires a path/plug combo

