Wheels, Tires & Tubes



Tire Removal

• tire levers should be used to pull the tire's bead off the rim







Tire Inspection

- in addition to looking for sufficient tread depth, inspect...
 - sidewalls for cracking flex the tire by hand
 - > cuts, gouges or tears on the sidewall are common...









- read the tire's sidewall to determine proper size...
 - the ETRTO size is the most accurate way to size a tire
 - the 40–635 pictured below is an ETRTO standard
 - ≻40mm rim width & 635mm inner diameter
 - inch sizes are approximate
 - ♦ eg. 26 X 1.95: ≈26" outside diameter and 1.95" width
 - ✤ 26" X 1.75" is different than 26" X 1 ¾"
 - French sizing looks like this: 700X32C
 - It this means ≈700mm in diameter and 32mm in width
 - \geq rims are often stamped with rim's diameter







Tire Valves

 Presta valves need to have the valve nut loosened to add or remove air from the tube...



 the chuck on the tire pump has 2 different sizes to accommodate both valve types

Repairing air leaks...

- inflate the tube to twice it's normal size
- submerge tubes in water or spray it with soapy solution
- use a patch kit to repair holes







Tube Repair

TO REMOVE OLD TUBE

1. Deflate the tire completely.

2. Working your way all around the wheel, squeeze the tire beads into the bottom (center) of the rim well, which makes the tire as loose as possible.

3. Starting opposite the valve with bicycle tire levers (only), lift one tire bead up and out of the rim.

4. Continue around the wheel, lifting the bead out until one bead is completely free.

5. Reach up into the tire and remove the inner tube,

6. Remove the second tire bead from the rim and remove the tire completely from the wheel.



TO INSTALL NEW TUBE

Check the rim and tire for debris or damage, and make sure the rim strip covers all spoke holes; repair or replace as necessary. Do not use high-pressure compressor to inflate tire.

1. Inflate the tube until it begins to take shape.

2. Place the tube in the tire.

3. Insert the valve stem through the valve hole in the rim.

4. Starting at the valve stem, install the first bead onto the rim.

5. Push the first bead and tube over so the tube is inside the rim.

6. Again starting at the valve stem, carefully push the second bead into the rim well using your hands (only).

For a Presta valve, push the base of the valve stem up into the tire so that it is inside the tire and not caught between the tire beads and the rim. Then, pull the valve stem down against the tire beads and install the threaded valve nut, finger tight.

7. Inflate the tire to about half pressure while checking that the tire bead is properly seated in the rim.

8. Inflate the tire to the pressure indicated on the side of the tire.



Rim Tape or Rim Strips

• without these, tubes would get punctured by the spoke nipples











Inspect Rim Tape/Strips

• if a replacement is needed,

measure rim cavity width (in mm)

measure rim diameter





Wheel Truing



Wheel Truing Objective

• use spoke tension to correct runout



Truing a Wheel

- wheels need to be trued if there is either...
 - Iateral runout (side to side movement)
 - radial runout (up & down movement)
- what would be the result of a rim that is not true?





Using a Wheel Truing Stand

- hubs must be correctly adjusted before using the truing stand!
- remove tire, tube & rim strip



Place Wheel in Truing Stand & Adjust

- place the axle in the truing stand
- use the thumb screw to tighten the axle to the stand



Adjust Caliper Position

- use thumb screw to set the height of the gauge
- use thumb screw so gauge is close to the rim



Preparing the spoke & nipple for adjustment...

• apply a single drop of oil between the spoke nipple & rim & spoke-to-nipple





Correcting Lateral Runout

(fig. a)

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- lateral runout should not exceed 1.0mm (0.040")
- the spoke, or pair of spokes opposite the rub will need to be tightened ¼ ½ turn
 - use the correct size spoke wrench (fig. a)
 - there are 4 different sizes
- think of the spoke as a bolt and the nipple as the nut



Correcting Radial Runout

- radial runout should not exceed 1.0mm (0.040")
- if the wheel has a "bump" or high spot, tighten (1/4 turn increments) two or four spokes centered under the bump

