

# BIKE FIT TIPS

## **Seat Adjustment**

Start adjusting fit by placing the bicycle on a level surface and checking that the seat is level. A good way to check is to place a carpenter's level on top of the seat. While adjusting, ensure that the seat is centered on its rails over the seatpost, too.

### **Notes**

- a level seat supports your full body weight, offers optimum pedaling efficiency and makes it easier to move around on the seat when necessary. (It's logical to think that tilting the seat down will ease pressure on sensitive areas. But, when you do this, it causes you to slide forward when riding, which will create extra pressure on your arms, hands and knees, which can lead to injury.)
- If you experience discomfort, tip the seat slightly (no more than 3 degrees) up or down. Women typically tip it down; men tip it up. ½ bubble on a level

## **Seat Height Adjustment**

The easiest do-it-yourself seat-height adjustment is done on a trainer a partner to help. Put on your cycling shorts and shoes, mount your bike in the trainer. Some times it's best to have a person help observe with this step.

To find seat height, place your **heels** on the pedals and pedal **backwards**. You've found the optimum seat height when your legs are completely extended at the bottoms of the pedal strokes with your heels on the pedals. Have your helper watch for rocking hips, the sign that the seat is too high. Now, when you're actually pedaling, you'll have the perfect bend in your knees.

### **Notes**

- this is a starting position. If it feels too low or high, adjust the seat up or down. But, only slightly to fine-tune the adjustment.
- When you've found the perfect position, mark it with an indelible marker (or wrap electrical tape around the post to mark it) so you won't have to go through the fitting process again.
- Consider documenting the measurement. (measure from the top of the seat to the middle of the crank).

## **Saddle Fore/Aft Position**

Use your helper in this step too. Put on your biking shorts and shoes, get on and pedal backwards until you're sitting in the "sweet spot" on the seat. Turn crank to the 3 o'clock position. The forward crankarm and pedal must be level with the ground. The fore/aft seat adjustment is

correct when a plumb line (any piece of string with a weight on the end) hanging from the bony protrusion just below your kneecap, bisects the pedal axle.

### **Notes**

- As with the other adjustments, this is a safe starting position.

## **Shoe/Cleat Adjustment**

If you're riding in cycling shoes, it's important that the cleats on the soles are positioned correctly. There are two important adjustments, **fore/aft** and **angular**.

### **Fore/aft**

The cleat should be positioned so that the balls of your feet rest over the centers of the pedals (the axles) when you're pedaling. The balls of your feet form protrusions on the insides of the shoes and these should rest right over the axles. If not, adjust the cleats as needed.

### **Angular**

Ideally, your cleat position allows resting your feet in a natural position on the pedals. Otherwise, you could injure your knees. Usually, aligning the cleats with an imaginary line that bisects the soles provides a safe starting position. But, go for some very easy rides to check the position and ensure it's right for your knees. If you feel any stress or strain, change the angle slightly to eliminate discomfort.

### **Notes**

- When you've found an ideal cleat position, trace lines around the cleats so you can easily replace a worn cleat and reposition a loose one.
- Use quality tools and work with care so you don't strip the cleat bolts. Also, check your hardware to make sure it's still tight after about 5 hours of riding.
- If you're using toe clips and straps, make sure the clips hold your feet in the optimum position (balls of the feet over the centers of the pedals).

## **Handle Bar Height**

The first bar-height check is comfort. If you're sore during or after rides particularly in the lower back and/or neck, the bars may need adjustment. Inspect bar height by standing your bike on a level surface and viewing it from the side comparing the height of the seat to the height of the bars. For road riding, a difference of 1 to 3 inches is optimal, even slightly more, if you're a flexible racer. For off-road use and recreational riding, bar height should be equal to or up to 2 inches below the seat height. Keep in mind that these are guidelines that work for most people. Sometimes it takes a little experimentation to find the most comfortable position.

### **Notes**

- To measure the difference between your seat and bar height, rest a straightedge on the seat (if

the seat's not level, level the straightedge) so it extends over the bars and measure the difference with a ruler.

- It's important to realize that there's a limit to how much you can raise the handlebars. The amount of adjustment depends on the frame and component design. In some cases, it may be necessary to install longer cables, housing, and spacers to raise the handlebars, too.
- Achieve a comfortable back angle of approximately 45 degrees (depending on your degree of flexibility).
- When the bars are the right height, it should feel natural to look ahead (no neck craning).
- Another way to "raise" mountain-bike handlebars is to replace your flat bars with a riser model. These can be an inch or two higher than flat bars.
- It's usually not a good idea to raise the handlebars too much. Once they're higher than the seat, your body weight is shifted more over the rear of the bike, which can mean greater jolts from bumps in the road. This can lead to discomfort and pain. Difficulty handling may occur too.

### **Handlebar Reach**

If the bars are too close or too far away, you may experience neck, shoulder, back and hand pain. And, it can cause you to scoot backward or forward on your seat all the time. On most bikes, to change length, you must replace the stem. And stems come in a variety of types and diameters. To check reach at home, put on your cycling clothes, mount your bike on a trainer and make sure the bike is level. Get on and pedal until you're comfortable with your upper body relaxed. Look ahead as if you were looking down the road. For dropped handlebars, rest your hands on the tops of the brake levers. For flat bars with bar ends, use the regular grip position. Now, have a helper look at you from the side to gauge where a plumb line dropped from the tip of your nose would fall. Optimally, there should be about an inch between the plumb line and the center of the handlebar (or front wheel hub should disappear).

#### **Notes**

- if you feel the need to scoot forward on the seat while riding, your stem is probably too long (and vice versa).
- Indicators of proper reach include: being able to always comfortably bend the elbows while riding, no hump in the back, a natural neck angle and equal pressure on the hands and seat.

Excerpts: Bike Barn, Houston, Texas & USAT MANUAL

## Changing a Flat Tire

### **1. Inspect the outside of the tire for puncture sites**

#### **2. Remove the wheel**

##### **Front Wheel:**

Open brake caliper lever.

Flip open quick release lever.

*Note: Forks have safety tabs ("Lawyer Lips") which require some unscrewing of the quick release knob to release the wheel.*

##### **Rear wheel:**

Shift chain onto the smallest cog

Open brake caliper lever.

Flip open quick release lever.

Work from the rear of the bike: push the wheel either down or forward, depending on the frame dropout style. In a forward and down direction, free the cogs from their engagement with the chain and derailleur pulleys.

#### **3. Remove the tire from the rim and tube.**

Use tire lever(s) if tire bead is tight.

Remember it does take some effort

##### **Most Important! Alignment!!**

Keep the tire and the tube in alignment in order to help match the hole in the tube to the source of the flat on the tire.

Standard protocol: **Align valve with tire brand mark**

Tire brand mark is always on the GEAR side of the bike

Note that your tire may have an arrow indicating roll direction.

Always start working in the area OPPOSITE from the valve stem – 180 degrees away.

#### **4. Possible causes of flat tires:**

Glass shards, metal "staples", nails, screws, thorns

Pinch flat due to low tire pressure and hitting rocks or sharp curb

Rough edge of the rim tape or valve hole

Rim tape shifter to expose spoke nipple

Crack at the valve/tube interface

Old worn tire - tube can push out and a blowout happens

#### **5. Replace the tube**

##### **New tube:**

A thin coat of baby powder on the tube helps to keep it from sticking to the tire.

Partially inflate the tube to give it some shape before inserting into the tire. Align the valve stem with the brand name of the tire. Your tire may have a direction to it – align it so the arrow points in the direction of the forward motion of the bike. With the tire brand visible on the cog side of the wheel, direction will be correct.

Put one side of the aligned tire into the rim.

Align the valve stem with the hole in the rim, and carefully tuck the tube into the tire. Insure that the valve stem is straight. Replace the other side of the tire into the rim. Hold the wheel horizontally against your stomach and work the

tire on from your stomach outwardly to the point furthest away from you. Some tires are hard to replace on the rim – use tire levers for that last few inches, **CAREFULLY**. Look to be sure the bead is completely within the rim. Pump up the tube a bit more and recheck the stem and that the bead is completely within the rim. Pump it up as best as you can with your mini pump or CO2.

#### **6. Replace the wheel**

Wheel alignment in the frame is important. Quick release lever is on the non-gear side of the bike. If you forget, just note where it is on the other wheel.

On rear wheel, work from the rear of the bike, behind the seat or from the non-gear side. Bring the cogs into the center of the chain “circle” and hook the chain over the smallest cog. Bring the tire up between the brake pads. Continue to bring the wheel back or up into the dropouts until it is seated. Keep it straight. If you have horizontal dropouts, position the wheel from the rear of the bike, pressing it back into the dropouts with your right hand while you tighten the lever with your left hand.

Tighten the Quick Release: Align lever 180 degrees away from final locked position. Hold lever still, tighten partway with knob. Tighten and retighten until you see the impression of the lever on the palm of you hand.

Spin wheel to be sure it is centered – no rubbing on the frame or brake pads.

Close the brake release. This will be the best test of wheel alignment – the rim sides should be at equal distances from the brake pads.

Test brakes to be sure wheel is centered. If not, try again until it is centered.

**REMEMBER!!** Check your tire tread and wear regularly.

You may need to replace your tires after approximately 2000 – 3000 miles of wear. Note that your rear tire will lose its tread faster than your front tire. I will often flip flop my front and rear tire to get more wear and life out of the tires.

**Schraeder Valve** – wider valve – car or some mountain bike tubes

**Presta Valve** - narrower valve – most road bike tubes

#### **Ben Weaver, USAT CERTIFIED LEVEL 1 TRIATHLON COACH**

(812)350-6775 or [wbenbeaver@yahoo.com](mailto:wbenbeaver@yahoo.com)

B.A., PURDUE UNIVERSITY '91, MOVEMENT & SPORTS SCIENCE

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