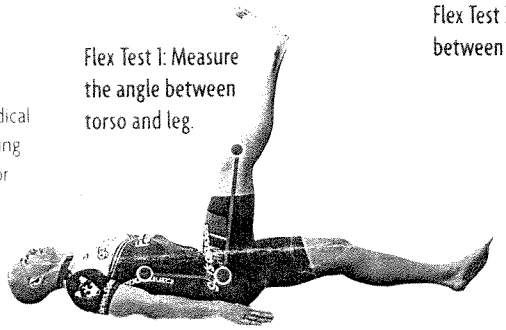
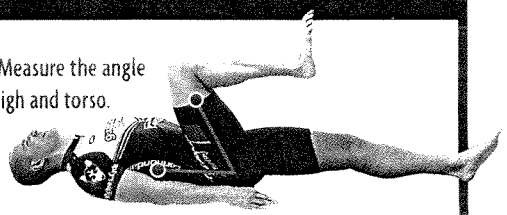
2. TAKE THESE FLEX TESTS

You'll need a helper to do the measuring. A medical tool called a goniometer is the simplest measuring device (about $10 from a medical supply store, or allneart.com), but you can also use a protractor and two yard sticks.

TEST 1: Lying on your back with your arms at your sides and head flat on the floor, have your helper lift your leg at the heel. Keep your knee locked. At your flexibility limit, your pelvis will start to lift off the floor or your hamstrings will let you know when to stop. Record the angle between torso and leg. Repeat for the other leg. The two measurements should be close but not necessarily identical.



Flex Test 1: Measure the angle between torso and leg.

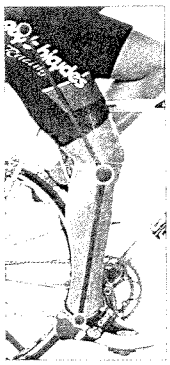


Flex Test 2: Measure the angle between thigh and torso.

FLEX TEST 2: Start as in Test 1 with arms and head relaxed and resting on the floor. Have your helper place one hand on top of your shin below the knee and the other hand under your heel. The helper should bring your knee toward your chest, gently pressing it until your hips just start to rock and lift off the floor. Measure the angle between thigh and torso. Repeat for the other leg. These should be similar, but not necessarily identical, measurements.

3. THEN APPLY YOUR NUMBERS TO THE BIKE

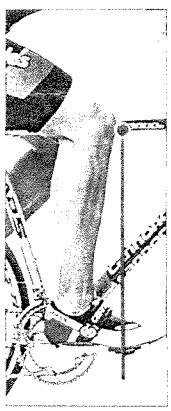
Put your bike in the trainer for these adjustments.



Your seat's at the right height when the angle between thigh and calf is 25-35 degrees and your hips don't rock.

SEAT HEIGHT (KNEE/CALF ANGLE):

Multiply your inseam by 0.883. That's your seat height—or at least a starting point. Adjust your saddle height—from the center of the bottom bracket axle to the top plane of the seat—to match this number. Pedal for a few minutes. How's it feel? Go up or down 5mm at a time to see what feels best. The angle between thigh and calf should be between 25 and 35 degrees (use your goniometer). If your hips rock, the seat's too high.



The bony point below your kneecap should align over the pedal axle.

SADDLE FORE/AFT POSITIONING:

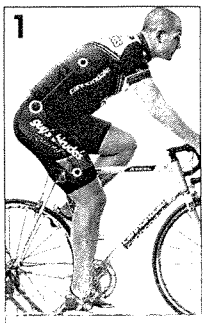
Pedal, then stop with the cranks in the 3 and 9 o'clock positions—try to freeze your feet in their "natural" positions (ankles at a natural, neutral angle). Drop a plumb line from the front of the bony bump just below your kneecap. The line should bisect the pedal axle, or fall within 5mm of the axle. If it's off, loosen the seat clamp and slide the saddle forward or back on the post. General rule: If you favor a high-rpm cadence go a little forward; go back if you're a low-rpm masher.

HANDLEBAR REACH AND HEIGHT:

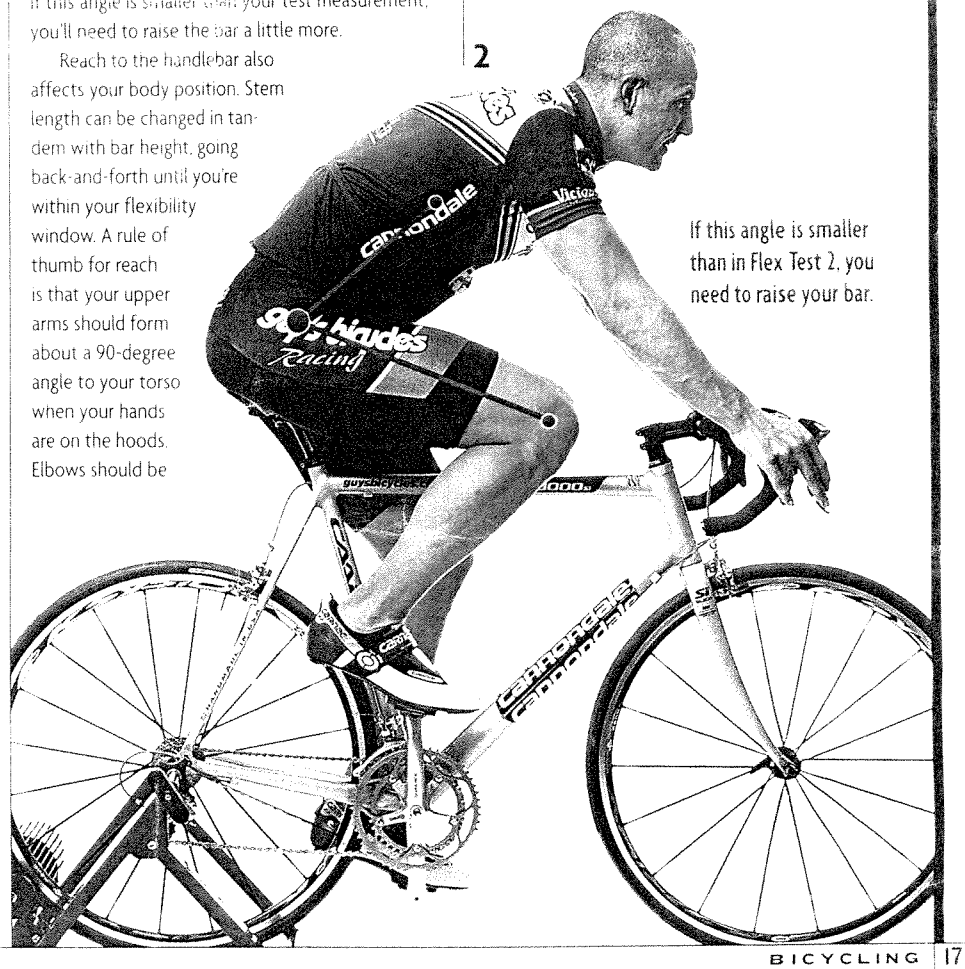
Get out your flexibility-test results. Put your hands in the drops, pedal for a minute, and stop with your right foot at the bottom of its downstroke. Have your helper measure the same angle as Flex Test 1. If this angle is smaller than your test measurement you'll need to raise the bar height a little until you're inside your flex window.

Pedal again and stop with one pedal at 12 o'clock. Have a helper measure the same angle as Flex Test 2. If this angle is smaller than your test measurement, you'll need to raise the bar a little more.

Reach to the handlebar also affects your body position. Stem length can be changed in tandem with bar height, going back-and-forth until you're within your flexibility window. A rule of thumb for reach is that your upper arms should form about a 90-degree angle to your torso when your hands are on the hoods. Elbows should be slightly bent—if not, then reach is too long or too low. If you're most comfortable resting your hands on the far tips of the brake hoods, reach is too short.



1 Bar height is right when the angle is the same or larger than in Flex Test 1.



2 If this angle is smaller than in Flex Test 2, you need to raise your bar.

How to Get Proper Fit

The lightest, techiest, snazziest bike in the world is scrap metal if it doesn't fit. Here's how to customize your bike to your body.

By Alan Coté

>>FINDING A COMFORTABLE, YET POWERFUL RIDING POSITION IS THE SINGLE MOST IMPORTANT THING ABOUT CYCLING.

If your bike can't accommodate your body, you'll suffer from endless (and needless) aches and pains, rob yourself of power and stamina, and look really goofy. (Even in your shiny new jersey!) Serotta Bicycles is probably more committed to the idea of bike fit than anyone. Its Size Cycle—an infinitely adjustable stationary bike used for determining fit—is a bike-shop staple, and the company's week-long classes teach bike fit to shop rats (regardless of whether they're Serotta dealers). We distilled Serotta's class to the key elements you can use yourself.

Serotta's methodical approach to bike fit includes flexibility tests designed to find your body's natural position on the bike—much more accurate than old-school eyeball estimates of what "looks" right.

BEFORE YOU START

Measure your existing position. Record saddle height (bottom bracket to the saddle rails), saddle offset behind the bottom bracket, stem/handlebar height and stem length. Or, mark the position of saddle rails, seatpost and stem height using a permanent marker. This lets you get your old position back if you want.

WHEN TO RESIZE

Recheck your position after an accident or injury that could impact your flexibility. A re-check's also a good idea if you've been stretching or doing lots of yoga.

BIKE FIT 101—THE FAST WAY

SEAT HEIGHT: With the right pedal positioned just before the bottom of the downstroke, your leg should be nearly straight, but not locked and stretched. If your hips rock up and down as you pedal, your seat is too high. If your heel drops as you pedal when your foot is at the bottom of your downstroke, your seat is too low.

HANDLEBAR REACH AND HEIGHT: If you suffer from achy shoulders, back, neck or even butt while riding, fit adjustment here could help. A low bar looks racy, but it shouldn't be so low you can't comfortably ride in the drops. If, on a road bike, you're constantly crouching to get lower to the wind, your bar may be too high.

On a mountain bike, handlebar height and reach are related to terrain. Start from a neutral point where you don't feel too stretched, or bunched up. Then, depeding on your flexibility, adjust for riding conditions: Bar reach should be 2–3cm closer and higher if your local trails are low-speed, technical affairs with lots of log-thunking and steep drop-offs (West Virginia-type terrain). You can get 2–3cm more stretched-out if you'll be flying down fire roads (Southern California-type terrain).

COMPONENT TWEAKS:

HANDLEBAR ANGLE: Your wrists should be at a comfortable angle (close to the position they assume when relaxed and dangling) when your hands are in the drops or on the grips. If not, rotate the bar forward or back. On road bikes, the correct position is when the flat part on the bottom of the bar is level or pointed slightly down toward the rear end. You'll have to rotate a mountain bar in the stem to find a natural wrist angle—especially important with riser bars.

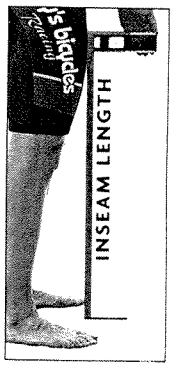
SEAT: It's simple: Forget about weight and looks, and go with what feels good. Women may prefer a wider seat because their sit bones are more widely spaced. Experiment with saddle tilt—a few degrees downward tilt will relieve pressure from the front of your anatomy—a slight upward slope relieves pressure from your sit bones. ◎

KURT WILSON

If you're as big a bike geek as us, or you never just throw some salt in a recipe (or trust the bartender to give you a full shot), you might want to minutely dial in your position.

This whole process should take about 45 minutes and requires a helper and a stationary trainer to get the measurements right. It's painstaking and boring, but the result is pure butter.

1. DO THESE PRELIMINARY MEASUREMENTS

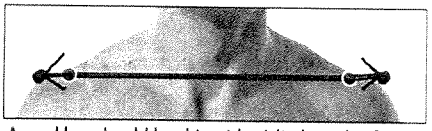


INSEAM:

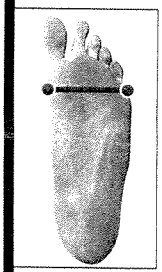
Stand on an uncarpeted floor in your bare feet. Straddle a stick and pull it up firmly against your crotch, with one hand grasping the stick behind your back and the other hand on the stick in front of you, keeping it level. Have a helper measure the distance from the top of the stick to the floor.

SHOULDER WIDTH:

Have a helper measure the distance between the bony bumps on the outside of the tops of your shoulders. For road bikes, pick a handlebar width (measure center-to-center) that's closest to this measurement. For mountain bars, go wider, for more stability and control—bar width is as much about steering stability as ergonomics for off-roading.



A road bar should be this wide. A little wider for mountain bikes.



Pedal spindle should be right here.

CLEATS:

FORE/AFT: Mount the cleats so the pedal spindles are under the balls (the metatarsal head) of your feet.

ROTATIONAL POSITION: If you use floating cleats, make sure you have "float" both inward and outward throughout the pedal stroke. If you use fixed cleats, try to find the "natural" position, so your heel is neither being forced inward or outward. Many shops have a tool (called the RAD, Rotational Adjustment Device) for doing this. Otherwise, it's trial and error by feel, until you no longer feel as though your heels are being forced inward or outward throughout the entire pedal stroke.