



**BICYCLE OWNER'S  
HANDBOOK**

**MANUEL DU PROPRIÉTAIRE  
DE BICYCLETTE**

**CAUTION**

This Owner's manual is to be read prior to operating your Specialized bicycle.

**ATTENTION**

Lisez ce manuel attentivement avant d'utiliser votre bicyclette Specialized.



**SPECIALIZED.**

15130 CONCORD CIRCLE  
MORGAN HILL  
CALIFORNIA 95037



PRINTED ON RECYCLED MATERIALS

**OWNER RECORD**

Keep your receipt with this record and present both items to your authorized Specialized Bicycle Retailer when service is requested. Your warranty is valid only when this record and your receipt are presented to the dealer.

Owner's Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Purchase date \_\_\_\_\_

Model \_\_\_\_\_

Color \_\_\_\_\_

Serial Number \_\_\_\_\_

Dealer Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Notes \_\_\_\_\_

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**LIMITED WARRANTY**

Specialized Bicycle Components ("Specialized") makes the following Limited Warranty:

**ONE YEAR LIMITED WARRANTY ON COMPLETE BICYCLE**

Specialized warrants to the original owner that this new Specialized bicycle shall be free of defective materials and workmanship for a period of one year from the date of the original purchase from an authorized Specialized dealer provided the bicycle is purchased in the United States or Canada and operated under normal conditions and use. During this one-year warranty period, Specialized shall repair or replace, at its sole option, all parts that are found by Specialized to be defective and subject to this limited warranty. The original owner shall pay all labor charges connected with the repair or replacement of all parts.

**LIFETIME LIMITED WARRANTY ON BICYCLE FRAME**

Specialized further warrants to the original owner that the frame of this new Specialized bicycle from an authorized Specialized dealer shall be free of defective materials or workmanship during the lifetime of the original owner. During this lifetime warranty period, Specialized shall repair or replace, at its sole option, the bicycle frame if Specialized determines the frame is defective and subject to this limited warranty. The original owner shall pay all labor charges connected with the repair or replacement of the bicycle frame.

**GENERAL PROVISIONS**

This Limited Warranty is made only to the original owner of this new Specialized bicycle from an authorized Specialized dealer, and it shall remain in force only as long as the original owner retains ownership of the Specialized bicycle. This Limited Warranty is not transferable.

In order to obtain service under this Limited Warranty, the original owner must deliver the Specialized bicycle to an authorized Specialized dealer, together with the Specialized warranty card and the bill-of-sale or other dated proof-of-purchase document identifying the Specialized bicycle by frame number.

This Limited Warranty does not apply to normal wear or tear, nor to defects, malfunctions or failures that result from the abuse, neglect, improper maintenance, alteration, modification, accident, or misuse (including, without limitation, bicycle racing, bicycle motocross, stunt bicycling or similar activities) of the Specialized bicycle.

THIS LIMITED WARRANTY IS THE ONLY EXPRESS OR LIMITED WARRANTY APPLICABLE TO SPECIALIZED BICYCLES. ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED IN SCOPE AND DURATION IN ACCORDANCE WITH THIS LIMITED WARRANTY. SPECIALIZED SHALL NOT BE RESPONSIBLE FOR ANY DIRECT, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES SUFFERED BY ANY PARTY. THE FOREGOING STATEMENTS OF WARRANTY ARE EXCLUSIVE AND IN LIEU OF ALL OTHER REMEDIES.

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS; YOU MAY ALSO HAVE OTHER LEGAL RIGHTS WHICH VARY FROM STATE TO STATE OR PROVINCE TO PROVINCE. SOME STATES OR PROVINCES DO NOT ALLOW LIMITATIONS OR EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES; SO, THE ABOVE LIMITATIONS AND EXCLUSIONS SET FORTH IN THIS LIMITED WARRANTY MAY NOT APPLY TO YOU.

THE LIMITED WARRANTY SET FORTH HEREIN MAY NOT BE EXTENDED, ENLARGED OR OTHERWISE MODIFIED BY ANY SPECIALIZED DEALER, AGENT OR EMPLOYEE, AND SPECIALIZED DOES NOT ASSUME ANY LIABILITY OR MAKE ANY WARRANTY EXCEPT AS STATED IN THIS LIMITED WARRANTY.

**WARRANTY ONLY APPLIES IN THE U.S.A. AND CANADA  
SEE YOUR DEALER FOR THE SPECIFIC WARRANTY IN YOUR COUNTRY  
WARRANTY VALID ONLY IF BICYCLE IS ASSEMBLED BY AN AUTHORIZED SPECIALIZED DEALER**



### Cleaning your bike:

Throughout this book, we've emphasized the role your authorized Specialized dealer plays in keeping your bike in good condition. You have an important role too. Even if you never pick up a wrench, you can reduce maintenance costs and have your bike last longer by inspecting and cleaning your bike regularly.

For starters, don't wipe dirt off with a rag. That only scratches your paint.

Use hot water, a mild detergent, a handful of nylon bristle brushes, a high-viscosity degreaser such as Gunk, a small screwdriver, rinse water, and an old towel. Remove the wheels for easy access to critical areas.

Rinse the major muck off. If your water comes from a hose, that's fine — as long as you don't point the pressurized water straight at your bearing seals (in the hubs, pedals and cranks).

Brush degreaser onto the derailleurs, chain, freewheel cogs, and chainrings. (Thick, high-viscosity degreaser won't run inside the bearings or chain rollers.) Wash it off with water. Use the screwdriver to remove mud between freewheel cogs.

Scrub the frame, hubs, rims and tires with the brush and soapy water.

Wipe off water with a towel and reassemble the bike. Put it in a warm place to dry thoroughly. After it's dry, check: if you put too much degreaser on your chain, add a tiny amount of oil to each link.

Mountain bike riders will find their rims get abraded by dirt in the brake pads. Clean your brake pads as necessary, and restore the rim surface to good condition by wiping the surface with steel wool. Note that extensive abrasion can weaken the rim, and require rim replacement.

You can keep an old bike looking fabulously new with two additional tricks: (1) Use auto wax on the painted frame. (2) Use an aluminum polish such as Simichrome (available at auto parts stores) to keep your aluminum components shiny.

### Lubrication

Lubricate your chain after every 300 miles or every ride in dirt, or rain. Your brake and derailleur cables and the bearings in your hubs, pedals, crank spindle, freewheel and headset should be disassembled, cleaned and greased annually in normal use. (In severe wet, muddy mountain bike conditions, you may need to have these bearings serviced after a single ride.) Ask your authorized Specialized dealer to perform these services for you. If you change the adjustment of your seat post or handlebar stem, clean and re-grease the column and, in the case of the handlebar stem, the expanding wedge and expander mechanism threads.

brake lever pivots

headset

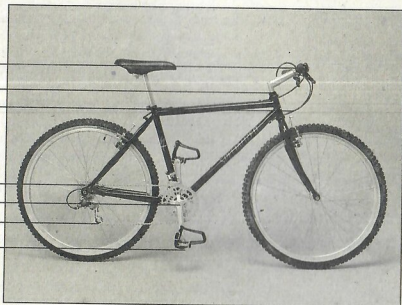
cables

freewheel

bottom bracket

derailleur

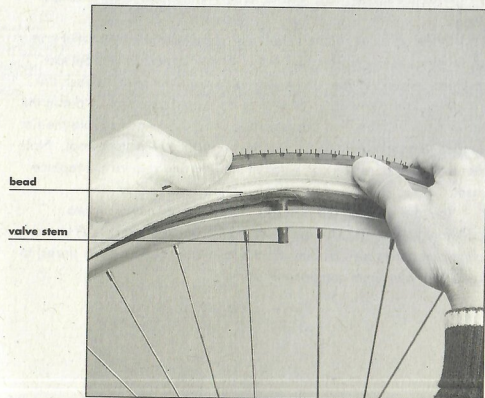
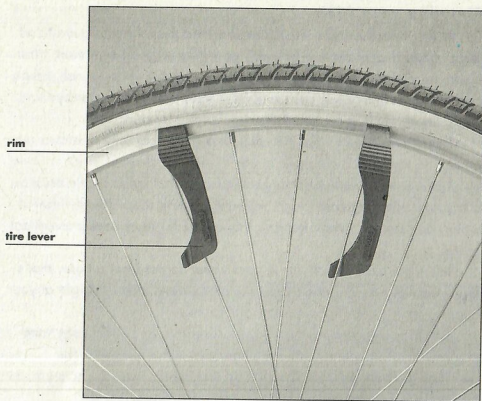
pedals





**Tire removal and installation**

- 1 Remove the wheel from the bicycle, using the instructions elsewhere in this book.
- 2 Take a tire lever and insert it between the tire and the rim, with its curved end pointing towards the tire.
- 3 Push down on the other end of the tire lever to lift the tire bead out over the rim.
- 4 Hook the tire lever under a spoke, so it holds the tire bead out.
- 5 Take a second tire lever, position it about six inches away from the first tire lever, and repeat steps two through four.
- 6 Take a third tire lever, position it about six inches farther away, and repeat steps two through four.
- 7 Remove the middle tire lever, position it about six inches outside of either of the two remaining levers, and repeat steps two through four. Repeat the process until the tire bead pops all the way off the rim. Separate the tire and tube from the rim.
- 8 Either get a new inner tube or patch the old one (using the instructions on your Specialized patch kit).
- 9 Remove any debris or sharp objects from the tire casing. Inspect the casing for possible damage and replace the tire if the casing is torn.
- 10 Dust the inside of the tire casing and the tire bead with talcum powder.
- 11 Inflate the inner tube just enough so that it holds its shape. Put the inner tube inside the tire.
- 12 Put the inner tube's valve stem in the corresponding hole in the rim, and place one of the tire's two sidewall beads inside the U-shaped cavity of the rim.
- 13 Starting at the valve stem, place the second bead inside the rim, using only your hands. It will get more difficult as you get more of the tire bead inside the rim.
- 14 If necessary, and only if necessary, use the tire levers to put the tire bead inside the rim (by reversing the process described in Steps 2 and 3). Be careful not to pinch the inner tube between the tire lever and the tire bead.
- 15 Inflate the tire to 25 pounds. Inspect both sidewalls to make sure the bead is correctly seated throughout its circumference. If the bead is bulging outward in any place, deflate the tire and reposition it so the bead doesn't bulge out.
- 16 Inflate the tire to its full recommended pressure. Inspect the bead seats again. Install the wheel on the bicycle.



**MAINTENANCE AND CARE**

Maintenance and care procedures outlined in this handbook can be done with the following tools. Your bike model may require other tools. Check with your authorized Specialized dealer to confirm you are properly maintaining your bike with the appropriate tools.

- Large adjustable wrench
- Small adjustable wrench
- Pliers
- Flat blade screwdriver
- Phillips-head screwdriver
- Hex wrenches (3, 4, 5, 6 mm)
- Open end wrenches (8, 9, 10, 12, 14, 15, 33 mm)

**Monthly Inspection**

(OR MORE OFTEN IF YOU DO RUGGED RIDING)

- 1 Check headset for proper adjustment. The headset is your bike's steering bearing assembly. To check it, grab the front brake and attempt to rock the bike back and forth. The bike should feel solid and make no noises. If you hear clicking noises or feel movement, get the headset adjusted by your authorized Specialized dealer before you ride the bike again.
- 2 Check accessories for tightness: racks, water bottle cages, lights, etc.
- 3 Check the bearings in your pedals, cranks, and hubs for proper adjustment. Grab the pedal and try to rock it. Grab the crank and try to move it sideways. Grab the rim and try to move it sideways. If any of these bearings is loose, a rocking motion will be possible. When the bearings are properly adjusted, they do not allow any extra motion. Take any loose bearings to your authorized Specialized dealer for adjustment. (This test will also uncover a loose crank arm fixing bolt, which your authorized Specialized dealer should tighten immediately.)
- 4 Inspect brake and derailleur cables for fraying. New cables are cheap; frayed cables can fail abruptly and cause a serious accident. Replace at the first sign of fraying.
- 5 Inspect brake pads for wear. When they're worn 1/8 inch beyond their new condition, replace them.

- 6 Inspect chain for cleanliness and adequate lubrication. Chains are inexpensive, and lubricant even more so, but if chains are not properly maintained, they can ruin your expensive cogs, chainwheels and derailleurs. Your chain actually gets longer as it wears out. When new, each link is exactly 1/2 inch long. As the chain grows old, the links get longer due to internal wear, and the chain should be replaced. Hold a ruler next to your chain and measure it. If 24 links measure any longer than 12 1/16 inches, replace the chain.
- 7 Using a 5 mm Allen wrench, test the chainwheel fixing bolts for tightness. They all should be hand tight.
- 8 Spin each wheel and check for trueness. Each wheel should be true within one millimeter. Pluck every spoke; no spoke should be loose. If either wheel does not meet these requirements, take the bike to your authorized Specialized dealer.

**Regular Maintenance**

It's hard to tell you how often your bike will need regular maintenance, because that depends on riding conditions, weather, the way you ride, and many individual factors. We recommend you take your bike to your authorized Specialized dealer for an inspection whenever any of your inspections raises a question, or every six months, whichever comes first. Among the questions you should be alert to: any of the conditions mentioned above under "Monthly Inspection," wear on the chainwheels, any new noises, any change in shifting or braking performance, any feeling of looseness in the steering, chain skipping under hard pedalling, or any other anomaly.

A bike that is being actively used, but not unduly abused, will require the following maintenance from an authorized Specialized dealer.

**EVERY SIX MONTHS:** Adjust derailleurs & brakes. Inspect all bearings, especially the headset, for proper adjustment.

**YEARLY:** Overhaul headset, crank spindle, hub and pedal bearings. Grease all cables. Replace brake pads. Replace chain. Replace tires. Re-tighten handlebars, handlebar stem, brake levers. Lubricate freewheel.

Every second or third year: Replace chainwheels and derailleur. Replace brake cable casing.



## TO REPLACE:

- 1 With the quick release and its adjustment opened, slip the wheel back into the front dropouts. Make sure it goes all the way in.
- 2 Re-adjust the quick release adjustment as described above in "The Quick Release — How it works."
- 3 Tighten the cam-lock lever and the brake quick release.

**How to Quick Release your rear wheel**

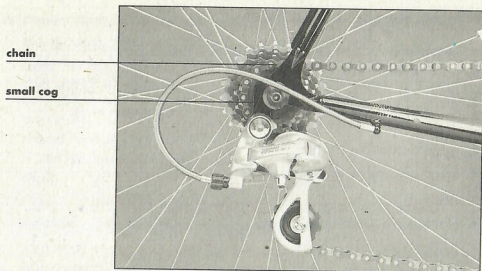
## TO REMOVE:

- 1 Shift the bike onto the smallest rear cog and small front chainwheel.
- 2 Stand behind the bike. Hold it upright by holding the rear wheel between your knees.
- 3 Open the wheel and brake quick release mechanisms.
- 4 With your right hand, grasp the derailleur body. Pull back on it, so that its mechanism is pulled away from the wheel.
- 5 With your left hand, grasp the tire. Push forward and down on the wheel. The wheel will slide forward and down out of its dropout slots. At the same time, the freewheel cogs will clear the chain, and you can take the wheel away.

## TO REPLACE:

- 1 Standing behind the bike, put the wheel into position in front of the dropouts.
- 2 Pick up the chain and engage its top run on the smallest rear cog.
- 3 Put one hand on each side of the axle. Guide the axle into its dropouts. Make sure the wheel rim is centered in the frame.
- 4 Re-tighten the wheel and brake quick release units.

*Note: If your bike's hubs have axle nuts instead of quick-release units, we recommend that you use a torque wrench and tighten them to 20 foot-pounds.*

**Pre-ride Inspection**

## BEFORE EVERY RIDE:

- 1 Check tire pressure. Inflate to recommended pressure with a regulated hand pump. Do not use a gas station air hose. Remember: low tire pressure may cause expensive rim damage and flat tires!
- 2 Check your brakes. Squeeze each brake lever. Most of the brake levers' range of motion should be squeezing the brake pads against the wheel rim, not just bringing the brake pads to the rim.
- 3 Inspect tires for cuts, bald spots, or other hazards. Replace as necessary.
- 4 Check saddle, handlebars, handlebar stem, brake levers and toe clips. Make sure they're all attached tightly.
- 5 Check all quick-release mechanisms for proper adjustment and secure attachment!



lever free of any interference with other parts of the bicycle.

On your front wheel, your bike has retention tabs. These are designed to keep the wheel from falling out, in the event that the quick release is used improperly or tampered with. Do not tamper with these tabs; this could defeat their safety purpose. If the front wheel ever comes loose so it is held in place only by those tabs, stop your bike immediately and get the quick release mechanism properly adjusted and installed before riding again. These tabs should be inspected periodically for wear. If they are ever damaged or excessively worn, take your bike to your authorized Specialized dealer for proper servicing.

### How to Quick Release your brakes

Specialized bicycles also come equipped with quick release mechanisms on the brakes. The purpose of this mechanism is to spread the brake shoes apart to allow easy wheel removal. The mechanism for road bikes (with sidepull brakes) is different from the mechanism for mountain bikes (with cantilever brakes).

On road bikes, the mechanism is a small lever on the brake calipers. Flip it up to open the quick release; flip it down to close. Do not ride the bike with the quick release in the open position.

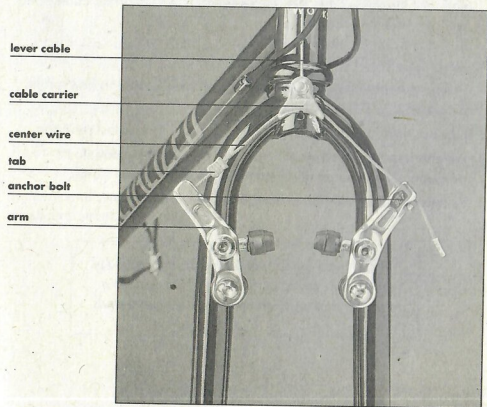
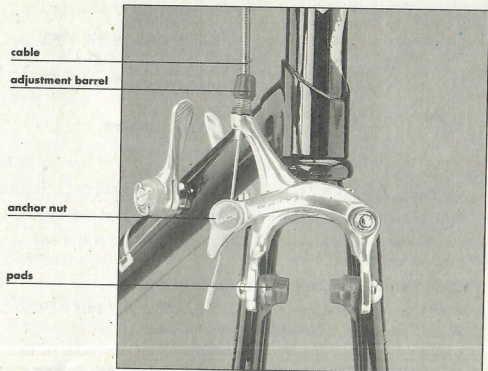
On mountain bikes, the mechanism is as follows: you grasp a small nub on the brake's transverse cable and disengage the cable from the caliper. You must use your other hand to hold the brake shoes against the rim while you are opening the quick release. After you disengage the cable and let go of the shoes, the brake shoes will then spread wide. The brake is completely inoperative.

To reattach the brake, hold the shoes together and use the nub to put the cable back into its slot in the caliper. Make sure the cable is securely engaged in its special slot. Do not ride the bike unless both brakes are attached.

### How to Quick Release your front wheel

TO REMOVE:

- 1 Open the brake and wheel quick release units.
- 2 Unscrew the quick release's adjusting nut (on the side away from the cam-lock lever) enough to slip the quick release past the positive retention flanges on your front fork dropouts.
- 3 Lift up on the bike handlebars while holding down on the wheel. The wheel will fall out.



### The Quick Release — how it works

Specialized bicycles come equipped with quick-release mechanisms for the wheels and brakes. These mechanisms enable you to remove a wheel in seconds, for easy transport, storage and repair.

But first, take five minutes to learn how to use the mechanism properly. If the quick-release is misused, the front wheel may come off while you are riding. This can cause loss of control, a spill, and possible personal injury. If you don't fully understand the quick release, ask your authorized Specialized dealer to demonstrate it to you.

First we're going to explain the hub quick release mechanism itself. Then we'll go through all the steps to get the wheel on and off the bike.

The quick release is not a nut-and-bolt mechanism, and the lever is not there to perform like a wrench handle. The quick release uses a cam mechanism, which is hidden inside the jelly bean-size metal housing, to clamp the hub to the frame. You don't spin its lever, as you would a wrench handle. You rotate the lever 180 degrees, from the open position to the closed position.

Practice this, without actually removing the wheel: grasp your quick release lever and move it to the open position. Then move it to the closed position.

You'll notice that when you close the lever, the lever action "stiffens," and becomes more difficult to move. This confirms that the mechanism is tightening, and the wheel is being secured into position.

But if the quick release doesn't stiffen, or only stiffens a little bit, you need to adjust it to make it tight enough to hold the wheel securely. On the other hand, if it stiffens too early, the mechanism will be difficult to close by hand, and you could damage it.

The mechanism should begin to stiffen when you're about halfway through the lever's range of motion (from the "open" to the "closed" position). To adjust it, move the lever to the open position. Rotate the acorn-shaped nut on the opposite side of the hub one-quarter turn, while holding the lever still.

Try the cam-lock mechanism again, by moving the lever to the closed position. If necessary, open the lever and re-adjust the nut on the opposite side of the hub.

When the cam mechanism is open, you can rotate it. The adjusting nut rotates along with the cam, so the adjustment isn't changed. This serves a purpose: You want the lever aligned so that when it's closed, it is in the position shown in the photographs. This position keeps the



adjusting nut

dropouts

open QR lever

closed QR lever

adjusting nut

derailleur

open QR lever

adjusting nut

closed QR lever



## GETTING STARTED

## Shifting:

Your Specialized bike's gearing is designed for its needs and yours. Our road racing bikes are geared for fast, vigorous riding. Our mountain bikes, cross bikes and Sequoia touring bike have gearing which will easily take you up steep hills, and then keep up with you as you pedal down the other side.

On both kinds of bikes, the gearing is controlled by the derailleurs.

The front derailleur (left shift lever) is used to pick the general range of gearing: large chainwheel for downhills and fast riding; medium chainwheel for slower riding and climbing; small chainwheel (which the road racing bikes don't have) for easy riding up extremely steep hills.

The rear derailleur (right shift lever) is used to fine-tune the gear you want, once you've picked the general range.

Shifting the derailleurs is quite easy, but observe this precaution: only shift while pedalling, but don't pedal hard while shifting. Your derailleurs only work on a moving chain, but if the chain is under pressure from hard pedalling, it's possible to cause a problem. As you become familiar with your bike, you'll learn to let up on the pedals for a fraction of a second, shift, and resume hard pedalling.

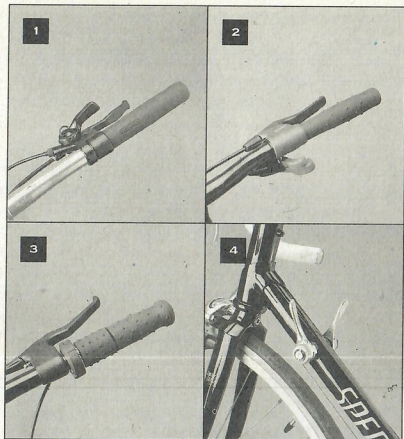
YOUR BIKE MAY HAVE ANY OF FOUR KINDS OF SHIFT LEVERS:

- 1, 2 Shimano Rapid fire plus and SunTour Express under-bar "push button style" shift levers. These lever assemblies have one lever you push for a lower gear, and a second lever you push to get a higher gear.
- 3 Grip Shift's twist-grip style mechanism. You twist it in one direction for a higher gear, and in another direction for a lower gear.
- 4 Conventional shift levers. You pull or push on the lever to make the gear change.

Your bike may come with additional instructions for its kinds of shift lever assembly. Refer to those instructions for additional information.

Regardless of what kind of shift lever you have, you simply move the lever or grip, while pedalling, to shift. You'll both hear and feel a click stop; it announces that you've selected the next gear.

**Shimano Rapid Fire Plus and SunTour Express under-bar "push button style" shift levers.**



**Grip Shift's twist-grip style mechanism. Conventional shift levers.**

With the under-bar "push button style" levers from Shimano and SunTour, you push the top lever for a lower gear (easier pedalling, slower speed) and push the bottom lever for a higher gear (harder pedalling, higher speed).

Grip Shift's twist grip style mechanism simply turns one way for lower gears and the other way for higher gears.

The front derailleur is very slightly different. With under-bar levers, you push the top lever for a higher gear and the bottom lever for a lower gear.

The click-stop mechanism in your derailleurs is called index shifting. Index shifting works properly if your components are kept clean and lubricated, and derailleurs kept in adjustment. We recommend that your authorized Specialized dealer adjust your derailleur for you.



- 3 CONTROL YOUR BICYCLE. Inattention, even for a second, can cause disaster. Excessive speed maims and threatens people: there is no excuse for it!
- 4 ALWAYS YIELD TRAIL. Make known your approach well in advance. A friendly greeting (or bell) is considered considerate and works well. Startling someone may cause loss of trail access. Show your respect when passing others by slowing to a walk or even stopping. Anticipate that other trail users may be around corners or in blind spots.
- 5 NEVER SPOOK ANIMALS. All animals are startled by unannounced approach, a sudden movement or loud noise. This can be dangerous for you, others, and the animals. Give animals extra room and time to adjust to you. In passing, use special care and follow the directions of horseback riders. (Ask if uncertain.) Running cattle and disturbing wild animals are serious offenses. Leave gates as you found them, or as marked.
- 6 PLAN AHEAD. Know your equipment, your ability and the area in which you are riding — and prepare accordingly. Be self-sufficient at all times, keep your machine in good repair and carry necessary supplies for changes in weather or other conditions. A well-executed trip is a satisfaction to you and not a burden or offense to others. Keep trails open by setting an example of responsible cycling for all mountain bicyclists.

### Braking Technique

Your brakes, when properly used, allow you control and modulation of your bike's speed, even on steep slopes at high speeds. But such control helps you only if you take proper advantage of it.

#### WARNING!

Improper use of your brakes may result in serious personal injury or death.

Here are some things you should know about proper use of your brakes:

Your front wheel has much more stopping power than the rear wheel. So you need to use the front brake, along with your back brake, to get a maximum-performance stop.

But the front brake, if you simply grab it, can lock the front wheel and cause an accident. So even in an emergency situation, you must use good technique to get a proper maximum-performance stop. Never grab the brakes; always squeeze them, taking note of how hard you are squeezing and also taking note of how abruptly the bike is slowing down.

As you apply the brakes, weight transfers from the rear wheel to the front wheel. If you were to brake too hard, all the weight would be transferred to the front wheel; the now-weightless rear wheel may lift off the ground, and cause pitchover. So the key is to use your brakes, but leave some weight on the rear wheel.

Many riders prefer to stand on the pedals and slide their bodies behind the saddle. This position moves your weight rearward, and thus allows greater braking force without threat of pitchover. But you should only attempt this if you're comfortable handling the bike while out of the saddle.

A true maximum-performance stop is a maneuver for a highly-skilled rider, but less-skilled riders can achieve short stops with an easier technique which reduces the risk of pitchover.

**Beginner's technique:** Squeeze the rear brake first. Do not allow the rear wheel to lock up. Then squeeze the front brake no harder than the rear brake. This technique should provide you with adequate emergency stopping power, and it requires a minimum of finesse from the rider.

**Intermediate technique:** Squeeze both brakes together, squeezing the front brake slightly harder than the rear brake. If there is any sign of skidding, let up on both brakes an equal amount. This technique is more difficult than the beginner technique, because you don't start out gingerly with rear wheel braking; you need enough finesse to know how hard to squeeze the brakes. Generally, this technique allows for shorter stopping distances.

As you become a more proficient bike rider, you can learn more advanced braking techniques through personal instruction from an Effective Cycling Instructor.

There's one time you shouldn't use your front brake: in the midst of a turn. Braking in a turn can reduce your steering control. It's best to finish your braking before the turn, and pedal through the turn.

## Rules of the Road

HERE ARE SOME IMPORTANT CAUTIONS:

- Ride with traffic at all times (on the right side of the road in the U.S.), except where required otherwise by local traffic laws. Riding against traffic is the leading cause of bicycle accidents! Don't wander across the centerline.
- Rough pavement, gravel, or a bumpy trail can unnerve you. Such conditions can cause you to get bounced around. To stay in control: hang onto the handlebars and keep your feet on the pedals, allow your arms and legs to flex to absorb the bumps, and put your weight on your hands and feet, rather than on the saddle. Also, riders should not sprint or "lunge" at the pedals, particularly while shifting gears. If the chain were to derail while you sprint, you could lose your balance.
- When in doubt, yield the right of way.
- Be predictable. Use straight-arm hand signals before turning, and use your bike's "body English" to announce your intentions. Look behind (using a mirror if you wish) before signaling or starting a left turn.
- When crossing train tracks, pavement lips, or other surface irregularities, do so at a right angle. Crossing these things at a shallow angle can knock your front wheel out from underneath you, causing you to fall.
- Scan for sewer grates, manhole covers, and other "metal paving." If you can safely steer around them, do so. If you must ride over them, do so slowly, sitting upright, and do not steer the bike while on top of metal. Cross sewer grates only at a right angle to the metal slats in the grate. Some grates can capture your front wheel. Never ride over a grate with slats that could catch your wheel.
- Scan for cross traffic, pedestrians, intersections and driveways. Always be ready to slow or stop as necessary to evade these hazards.
- Use a headlight and taillight for nighttime riding. The reflectors which came on your bike are not adequate by themselves for night riding. (Specialized is required by federal law to include the reflectors with the bike, but certain state laws require the rider to use headlights and taillights.) Additional reflectors and reflective accessories can help. But an active headlight and taillight are the proper equipment to have. Riding at night is more demanding than riding in daylight. Do not attempt to ride at night unless you are a skilled daytime rider. Ride slowly at night.

- Ride slower over wet surfaces, whether paved or unpaved. Water reduces both traction and your brakes' stopping power. You cannot readily determine how much traction or stopping power you have under such conditions. Thus, a good rule of thumb is to slow down to jogging speed under these conditions.
- Don't use a radio.
- Don't perform stunts such as jumps, acrobatics or sideways skidding. Damage caused by such acts will void your warranty. These acts stress the bike much more than simple riding over the surfaces for which your bike was designed.
- If you want to bring a child with you, use a bicycle trailer (preferred) or a good-quality bicycle child seat. The child must wear a helmet.
- When riding in the city, look out for opening car doors. Ride a few feet away from parked cars, so you'll be out of range of the doors if they fling open.
- The fun of riding can be exciting, especially when you're with other riders. Don't get so carried away that you forget common safety precautions and traffic laws. Don't forget to stay to the right or scan for other traffic.

## Rules of the Trail

If you're going off-road, observe the rules of the trail. Be a courteous mountain bike rider, so that others will be allowed to use the same trails in years to come. These are the rules of the INTERNATIONAL MOUNTAIN BICYCLE ASSOCIATION:

- 1 RIDE ON OPEN TRAILS ONLY. Respect trail and road closures (ask if not sure), avoid possible trespass on private land, obtain permits and authorization as may be required. Federal and state wilderness areas are closed to cycling. Additional trails may be closed because of sensitive environmental concerns with other users. Your riding will determine what is closed to all cyclists!
- 2 LEAVE NO TRACE. Be sensitive to the dirt beneath you. Even on open trails, you should not ride under conditions where you would leave evidence of your passing, such as on certain soils shortly after rain. Observe the different types of soil and trail construction; practice low-impact cycling. This also means staying on the trail and not creating any new trails. Be sure to pack out at least as much as you pack in.



**RIDING SAFELY**

We can't be with you every time you ride, and we can't anticipate every situation you can encounter on the road. You should use your own judgment when riding.

Throughout the U.S. and in many other countries, the bicycle has similar rights and responsibilities as other vehicles. Generally, you have the right to use the road; and you must obey all traffic laws, including all lights, signals and signs. It is your responsibility to know the traffic laws where you are riding.

**Always wear a bicycle helmet!** Even the best rider can fall, and even the slowest fall can cause trouble if you hit your head. All bike helmets sold by Specialized meet the standards of a sample of a helmet model that passed the American National Standards Institute (ANSI Z90.4 standard for bicycle helmets) and/or the Snell Foundation (B-90 standard) in independent lab tests. (The Specialized Aero Force tested by ANSI only.) Helmets that meet such standards have identifying stickers inside. Look for such stickers before you buy a bike helmet.

**Toe Clip Safety**

Toe clips and straps, shoe cleats and pedal binding systems can be a distraction to novice or casual riders. It is your responsibility to determine whether your own ability allows you to use these devices without increasing your risk of injury.

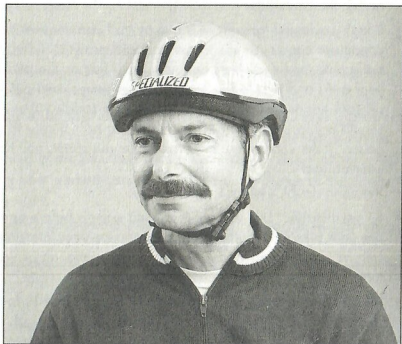
If you are not an experienced bicyclist, do not use any of these devices. Wait until you are very familiar, and very comfortable, with the rest of the bicycle's controls, and with the way the bicycle feels. After you have several months' regular riding experience, you may wish to try using toe clips without cleats. After several more months, you may wish to try cleats or a pedal binding system.

Toe clips and straps help hold your foot on the pedal. To get off a bike with toe clips, you must pull your foot straight back, out of the "socket" formed by the toe clip. This is not difficult for an experienced rider, who is completely comfortable with the bicycle, but a casual rider may find this too much to handle.

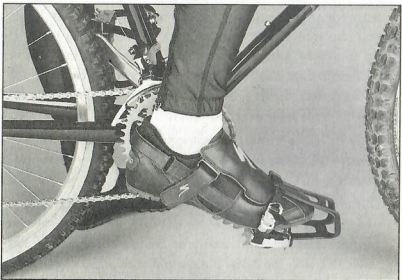
Cleats are used with toe clips, and they lock the shoe onto the pedal. To remove your foot, you must twist the foot to disengage the

cleat, then pull straight back. Pedal binding systems require you to rotate the foot sideways. Cleats and binding systems are for advanced riders only. You should have several months' regular riding experience with toe clips before graduating to them.

**Always wear head protection, such as Specialized's helmet which has been designed to meet the Snell and ANSI standards for protective headgear.**



**Remove your foot from toe clips by pointing heel up and pulling foot out.**





tion). The saddle is adjusted by loosening its seat post clamp. Retighten this clamp vigorously, so that the saddle doesn't come loose. We recommend using a torque wrench to tighten this clamp; use 10 foot-pounds of tightening torque on seat post clamps which use Allen wrench fittings, and use 15 foot-pounds on clamps which use hex bolt fittings.

**Handlebars:** Your handlebar stem can adjust up or down.

Ask your authorized Specialized dealer for help in properly adjusting the stem. If you elect not to, observe the minimum insertion mark on the stem, so that enough of the stem remains inserted in the fork. Make sure the stem binder bolt is tightened sufficiently (vigorously hand-tightened with a 6 mm Allen wrench, or 18 foot-pounds of torque with a torque wrench). You can test for tightness by standing in front of the bike, holding the front wheel between your knees, and trying to rotate the handlebars. It should take a strong push from you to rotate the handlebar stem while holding the wheel (and fork) still.

The handlebar reach can be changed by replacing the stem with a longer or shorter stem. On rare occasions, this replacement will help fit the bike to an individual rider. Ask your authorized Specialized dealer for advice if you think you need this change.

**Brake levers:** On many of our mountain bikes and cross bikes, the brake levers can be adjusted for larger or smaller hands. A set screw on the brake lever housing provides this adjustment. You should consult your authorized Specialized dealer before you adjust the brake levers.

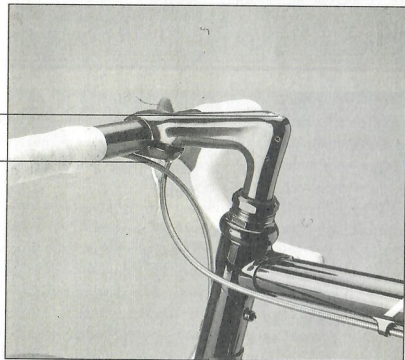
clamp nut

post



wedge bolt

clamp bolt



## PROPER BIKE FIT

Authorized Specialized dealers personally make sure the bikes they sell are sized correctly to fit the end user. If you weren't fitted for any reason by an authorized Specialized dealer (the bike was a gift, for example), please return to your retailer to make sure the fit is correct.

A bike that doesn't fit isn't as comfortable, as easy to control, or as maneuverable. If it's too large, it can be unsafe. Of course, you should be able to straddle the top tube with your feet flat on the ground, but there's more to proper fit than that. Your authorized Specialized dealer can "eyeball" your position on the bike and make sure your back, arms, and legs will all be properly positioned — so, if necessary, go back for a quick check.

That said, your authorized Specialized dealer will be the first to tell you that fitting a person to a bicycle is an art, not a science. The authorized Specialized dealer will set the bike up according to conventional wisdom. The final small adjustments (generally in fractions of an inch) will be up to you, as you develop a feel for cycling.

### Here are the basic bike fit measurements:

**Foot placement:** It all begins with the feet. The ball of your foot should be centered over the pedal. Don't pedal with your arch or your heels! If you use toe clips or a pedal binding system, the toe clip size or cleat adjustment should be adjusted to put the ball directly over the pedal spindle.

**Advanced riders note:** if you use a cleat or binding system, have your authorized Specialized dealer set up the rotational adjustment for you. These systems must have this adjustment set up correctly, to minimize potential knee pain. (Riders who don't use cleats don't have to worry about this; because your foot isn't locked into place, it will naturally assume the most comfortable position.)

**Saddle height:** Your saddle should be high enough so there is a slight bend in your leg at the bottom of the pedal stroke. Measure this distance (from crank spindle center to the top of the saddle) and write it down. You can also mark your seat post with a pencil. Also, your saddle should be flat — parallel to the ground.

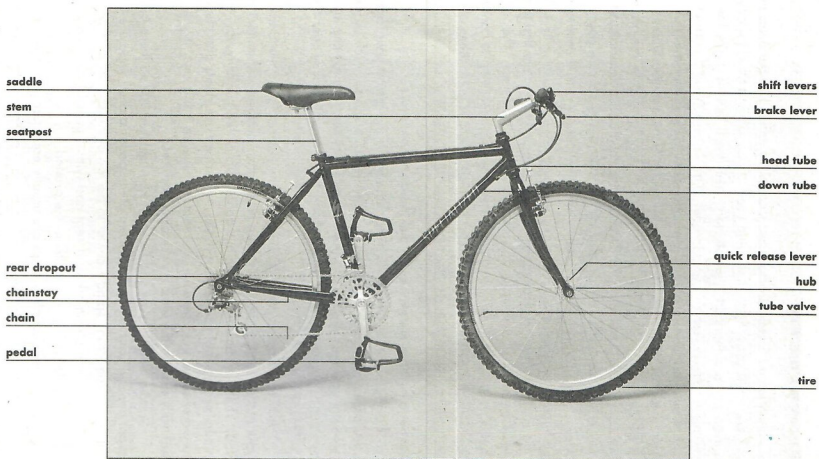
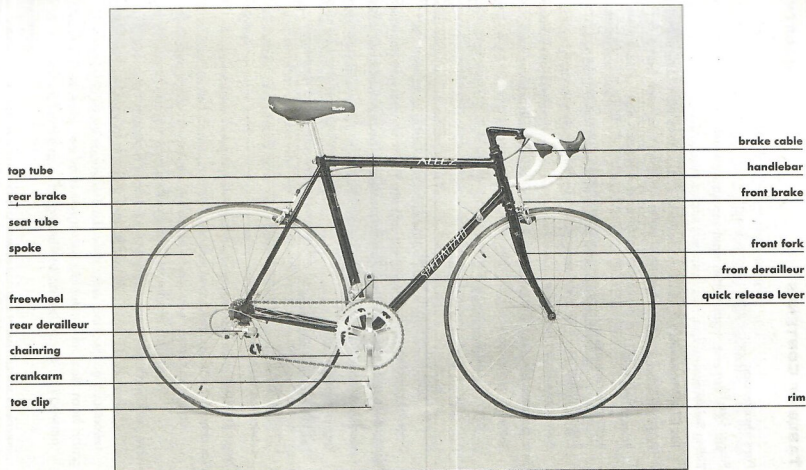
Specialized mountain bikes are usually equipped with a quick release lever on the seat post. This is so you can lower your saddle for a lower center of gravity and better bike handling when you're descending rough terrain. Generally, you won't pedal much with your



saddle lowered. When you reach the bottom of the hill, you raise your saddle back to its normal height for normal pedalling.

Your seat post quick release uses a cam-lock mechanism just like that on the wheel's quick release. Refer to the wheel quick release instructions for information on how to use the seat post quick release properly. Observe the minimum insertion mark on the seat post, so enough of the post is inserted in the frame.

Your saddle can adjust forwards and backwards about an inch. The optimal position is so that your knee is directly over the pedal when you're in the middle of the power stroke (the "3 o'clock" posi-





## INTRODUCTION

Welcome to Specialized high technology.

We're proud to sell you a bike that uses high technology to make your life more fun. You'll enjoy our high technology whether you ride for fitness, family recreation, or the personal accomplishment that comes with competition.

But your new bike isn't like other high technology. It didn't come in a sealed box. You bought a bike fitted to you by an authorized Specialized dealer.

Your continued enjoyment of the bike depends on an ongoing three-way conversation between you, your bike and your authorized Specialized dealer.

Your authorized Specialized dealer will assist you with advice... with recommendations of accessories which meet your riding needs... with maintenance to keep your bike performing properly... and with personal attention. Your authorized Specialized dealer can look for parts requiring maintenance before they become a big problem.

Maintenance is important to keep your Specialized bicycle operating properly. For this reason, we urge you to consult with your authorized Specialized dealer about maintenance. Your authorized Specialized dealer's mechanics have the tools and know-how to make your bike perform properly.

High-tech bikes require unique tools and maintenance procedures. This is another reason why we urge you to consult with your authorized Specialized dealer and have your Specialized bicycle maintained by him/her.

If you maintain and repair your bicycle on your own, your authorized Specialized dealer can sell you the necessary service manuals and unique tools. If you are uncertain about any aspect of proper maintenance, consult your authorized Specialized dealer.

If you don't maintain your bike in proper operating condition, your bike's performance and safety may diminish.

When you share roads or trails with other people, be courteous! Later in this manual, we have suggested guidelines for both road riding and mountain bike riding. The guidelines are all based on common courtesy.

And don't forget the added protection from wearing an appropriate lightweight, cool, comfortable, well-ventilated bicycle helmet.

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**WARNING - QUICK RELEASE**

PROPER OPERATION OF THE QUICK RELEASE IS ESSENTIAL TO SAFE RIDING. CHECK THE QUICK RELEASE BEFORE EVERY RIDE, AND MAKE SURE IT IS PROPERLY SECURE. IF IT IS NOT PROPERLY SECURE, THE FRONT WHEEL MAY WOBBLE OR DISENGAGE FROM BICYCLE, WHICH MAY RESULT IN SERIOUS BODILY INJURY. IF YOU DO NOT FULLY UNDERSTAND ITS OPERATION, SEE YOUR DEALER. (See page 22)

**AVERTISSEMENT -  
MÉCANISME DE BLOCAGE RAPIDE**

LE BON FONCTIONNEMENT DU MÉCANISME DE BLOCAGE RAPIDE EST INDISPENSABLE À UNE CONDUITE EN TOUTE SÉCURITÉ.

AVANT CHAQUE DÉPART, VÉRIFIEZ CE MÉCANISME ET ASSUREZ-VOUS QU'IL EST BIEN AJUSTÉ.

S'IL EST MAL AJUSTÉ, LA ROUE AVANT PEUT AVOIR DU JEU ET SE DÉTACHER DE LA BICYCLETTE : VOUS RISQUEZ D'ÊTRE SÉRIEUSEMENT BLESSÉ.

SI LE FONCTIONNEMENT DE CE MÉCANISME VOUS SEMBLE COMPLICQUÉ, CONTACTEZ VOTRE DISTRIBUTEUR POUR DES EXPLICATIONS SUPPLÉMENTAIRES.

**CAUTIONS**

- Read this manual before riding
- If you are buying this bicycle for your child, review this manual with the child before the first bike ride.
- Understand the operation of your bicycle before riding.
- Always inspect your bicycle before riding.
- Be certain the bike is fitted to the rider by an authorized Specialized dealer.
- Always wear a helmet while riding.
- Know and obey all traffic laws.
- Beware of road hazards.
- Be certain that wheel quick release mechanisms are properly operating.

**MISES EN GARDE**

- Lisez ce manuel attentivement avant d'utiliser votre bicyclette pour la première fois.
- Si c'est votre enfant qui utilise la bicyclette, lisez ce manuel avec lui avant son premier départ.
- Comprenez bien le fonctionnement de votre bicyclette avant de l'utiliser.
- Vérifiez l'état de votre bicyclette avant chaque départ.
- Consultez un distributeur agréé Specialized pour choisir le modèle de bicyclette qui vous convient.
- Portez toujours un casque.
- Apprenez la signalisation routière et respectez-en les règles.
- Soyez prudent.
- Vérifiez si les mécanismes de blocage rapide des roues fonctionnent correctement.

**Before every ride:**

- 1 Check tire pressure. Inflate to recommended pressure with a regulated hand pump. Do not use a gas station air hose. Remember: low tire pressure may cause expensive rim damage and flat tires!
- 2 Check your brakes. Squeeze each brake lever. The brake levers' range of motion should be squeezing the brake pads against the rim, not just bringing the brake pads to the rim.
- 3 Inspect tires. Replace them if cuts, bald spots, or other hazards are found.
- 4 Check saddle, handlebars, handlebar stem, brake levers and toe clips. Make sure they're all properly attached.
- 5 Check all quick-release mechanisms for proper adjustment and attachment.

*Note: This manual describes the basics of using your bike. But the manual is not a substitute for an advanced cycling book, which discusses advanced riding techniques, or for personal instruction from a certified Effective Cycling Instructor, certified by the League of American Wheelmen. For advanced information, look to those sources.*