Lemond

The OWNER'S MANUAL

Even if you have ridden a bike for years, it is important for EVERY person to read Chapter 1 before you ride your new bicycle.





IMPORTANT: KEEP FOR FUTURE REFERENCE

About this Owner's Manual

This manual explains how to ride your new bike safely, and how to maintain your bicycle to keep it operating safely. Every person, prior to riding this bicycle, should read at least Chapter 1 of this manual. Parents should explain Chapter 1 to a child, or anyone else, who might not otherwise understand this information.

Even if you have ridden a bicycle for years, it is important for EVERY person to read Chapter 1 before riding this bicycle!

This manual includes a CD (compact disc) with more comprehensive information. This CD can be viewed by inserting it into your home computer. If you do not have a computer, take the CD to your school, work, or public library and view it there. In addition to reading the extensive information on the CD, you should register your bike on-line; the CD has links to the registration site. If your CD does not work, go to the web address on the cover to access the information on the Web.

There are many models, with a variety of equipment, so this manual may contain some information that does not apply to your bike. Some illustrations may vary from the actual bicycles.

If you have any questions after reading the information in this manual, the CD, or web site, consult your dealer. If you have a question or problem that your dealer can't handle, contact us:

Attn Customer Service
801 W. Madison Street
Waterloo, Wisconsin 53594
920.478.4678

Your new bicycle

Assembly and the first adjustment of your bicycle take special tools and skills, so this should only be done by an authorized dealer.

Meaning of special symbols and lettering

⚠WARNING

In this manual, the **WARNING** sign indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION

In this manual, the **CAUTION** sign indicates a potentially hazardous situation or unsafe practice which, if not avoided, may result in minor or moderate injury.

Bold letters indicate important text, or points to note.

Italicized letters indicate a reference to another section within the manual.

Register your bicycle on-line

There are two easy ways to register your new bicycle:

- Click the link when viewing the CD supplied with this manual
- Go to the web address on the cover of this manual and follow the links

My bicycle model: _____

My serial number: _____ Lock key # _____

My dealer: _____

My dealer's phone: _____

BICYCLE TYPE AND USE CLASSIFICATION



Road "Drop" or triathlon handlebars, caliper brakes, and 700c or 650c wheels with 20-25c tires. Condition 1



Touring Similar to a road bike, except with direct-pull brakes and wider tires. Designed for self-contained touring. Condition 1



Cross Similar to a road bike, except wider tires and cantilever brakes. With a skilled rider in mind, designed for riding off-pavement. Condition 2



Hybrid "Flat" handlebars like a mountain bike, but 700c wheels like a road bike. Condition 2



City bike A hybrid equipped with accessories like fenders, rack. Condition 1



Folding Hybrid features, but with a hinged frame and stem. Condition 1



Tandem Built for two, with either "drop" road handlebars or "flat" handlebars as on a hybrid. Condition 1



Cruiser Wide, sweeping handlebars, wide saddle, and balloon tires. Condition 1



Juvenile Smaller bikes designed for kids but also fitting smaller adults. Includes BMX with coaster brake. Condition 1



Tricycle designed for small kids to be ridden only on sidewalks, and always under parental supervision.



Mountain Wide tires, "flat" handlebars, and direct pull or disc brakes. For riding on rougher surfaces. Front suspension, or light-weight full suspension Condition 3; **NOT** Condition 4



Freeride or "hucking" Wide tires, "riser" handlebars, double-crown, triple-clamp suspension forks, and disc brakes (only). For aggressive riding on rougher surfaces. Compared to a standard mountain bike, a freeride bike has a heavy-duty and reinforced frame. Condition 4



BMX BMX-style bikes with riser handlebar and 20-inch wheels.. Condition 3

Jumping BMX-style bikes with heavy-duty, reinforced frame and fork, and 48-spoke wheels. Models TR30 and Vert 2 only. Condition 4

Conditions for Use

Riding a bicycle in a manner other than its intended use can cause the bicycle, or part of the bicycle, to fail. Read the safety information in Chapter 1 for further details.

Condition 1- riding on a paved surface where the tires do not lose ground contact

Condition 2- includes Condition 1 plus smooth gravel roads and smooth improved trails with moderate grades where the tires do not lose ground contact

Condition 3- includes Conditions 1 and 2 plus rough trails, rough unpaved roads, and rough technical areas with unimproved trails, where momentary loss of tire contact with the ground may occur. **NOT** jumping.

Condition 4- Any riding in excess of Condition 3

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BEFORE A FIRST RIDE

Make sure the bicycle fits you properly.

Your dealer should fit you with the proper size of bicycle. There should be at least one inch (25mm) clearance between the top tube and the rider when standing over the bicycle (Figure 1). For mountain bikes, two to three inches (50-75mm) clearance is recommended.



Figure 1 Minimum stand-over height:
1" (25mm) for most bicycles
2-3" (50-75mm) for mountain bicycles

Some models have maximum weight limits:

Tricycle 80lbs. (36kg.)

The seat and handlebars may be adjusted to offer the best comfort and performance. Before making these adjustments, refer to Chapter 2.

Know how the bicycle performs.

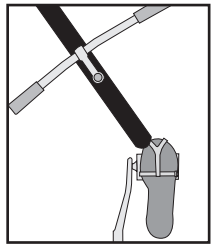
The features of your bicycle, if misused, may cause you to lose control of the bike. Before riding fast or in more difficult conditions, learn the function and performance of all the mechanisms of your bike by riding at slower speeds in a flat, empty parking lot.

If you want your bicycle to perform differently, or if you have special needs that require different parts for the safe operation of your bike, consult your dealer. As an example, the stopping power on bikes varies according to the intended use of the bike. If you would like your bike to have more, or less, stopping power, consult your dealer about brake adjustments or other brake options for your bicycle.

⚠ WARNING

Mis-use of the braking system, including over-use of the front brake, can cause you to lose control and fall. Avoid improper braking by understanding and practicing proper application of your brakes as explained in this manual.

When riding slowly, do not pedal if the handlebar is turned. It may be possible, at very slow speeds when the handlebar is turned, for your foot or toe-clips to contact the front wheel or fender (Figure 2). At normal riding speeds, the handlebar does not turn enough for this to occur.


Figure 2- Toe-clip overlap

⚠ WARNING

Contact between your foot or toe-clip and the front wheel or fender can cause you to lose control and fall. Avoid pedaling when turning at slow speed.

In very rare cases, some riders may experience a "shimmy" or "harmonic oscillation" or "frame vibration" at certain speeds. If you are experiencing a shimmy, slow down immediately. Take your bicycle directly to a dealer for inspection and repair.

⚠ WARNING

A shimmy, or steering wobble, can cause you to lose control and fall. If you experience a shimmy, slow down immediately. Take your bicycle to your dealer for inspection and repair.

CHECK THE BIKE BEFORE EVERY RIDE

Before every ride, inspect the bike with the following check list. If any part of the bicycle fails the inspection, repair the bicycle by following the information provided by us or take it to your dealer for service. Never ride a bike with a damaged part; have it replaced. This is not a comprehensive maintenance program.

⚠ CAUTION

A bicycle that does not work properly can cause you to lose control and fall. Inspect the entire bicycle thoroughly before every ride, and do not ride it until any problem has been corrected.

☑ Check the wheels.

Check that the wheels are straight. Spin each wheel and watch the rim as it passes through the brake pads or the frame. If the rim wobbles, up and down or from side to side, repair the wheel.

Check that the wheels are properly attached. Bicycle wheels are attached by several systems: threaded axle nuts, a quick-release where a lever-actuated wheel retention mechanism (Figure 3) allows the wheel to be installed and removed without tools, or a through-axle where the axle is threaded through the ends of the frame or fork. For information about adjustment and closure of the wheel attachment devices on your bicycle, see Chapter 3.


Figure 3- Wheel quick-release


Figure 4- Test for looseness

Test for proper wheel attachment. Pick up the bike, and sharply hit the top of the tire (Figure 4). The wheel must not come off, be loose, or move from side to side. Further tests are provided in Chapter 3.

⚠ WARNING

A wheel attachment device that is not properly adjusted and closed may allow the wheel to be loose or come off unexpectedly, causing you to lose control and fall. Make sure the wheels are properly attached before riding the bike.

☑ Check the tire inflation.

Inflate the tires to the air pressure recommended on the tire sidewalls.

☑ Check the brakes

Follow the inspection instructions for the type of brake on your bike:

⚠WARNING

Never ride a bike if you are not certain the brakes are working properly, or you if suspect a problem with the brake cables or hydraulic hose. Malfunctioning brakes can cause you to lose control and fall. Inspect the brakes thoroughly before every ride. If your brakes are not working properly, re-adjust them or take the bike to your dealer for service.

Hand-rim brakes- a brake lever, connected to the brake by a cable, causes the brake pads to squeeze the rim. When the brakes are not applied, the brake pads should be 1 to 2mm from the rim. Squeeze each brake lever toward the handlebar to make sure the brake moves freely and stops the bike. If the brake lever can be pulled to the handlebar, the brake is too loose. If the brake pads are too close to the rim, the brake is too tight. Brake pads should be aligned with the rim surface (Figure 5).

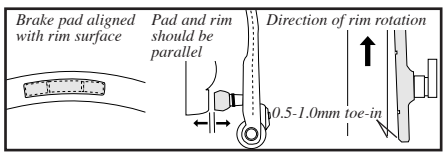


Figure 5- Brake pad alignment

Disc brakes- a hand lever connected to the brake squeezes a disc mounted on the wheel hub.

Squeeze each brake lever toward the handlebar to make sure the brake moves freely and stops the bike. If the brake lever can be pulled to the handlebar, the brake is too loose. The brake pads should be 0.25 to 0.75mm away from the disc when the brakes are not applied. If the pads are too close, the brake is too tight, or mis-aligned.

Internal drum or roller brakes- a hand lever operates a brake inside the hub. If it takes more than about 5/8 inch (15mm) of brake lever movement to stop the bike, the brake is too loose. If it takes less than 7mm of lever movement to stop the bike, the brakes are too tight.

⚠CAUTION

Disc brakes and discs get very hot during use and could burn skin. Also, the disc edges may be sharp and could cut skin. Avoid touching the disc or disc brake when hot, or when rotating.

⚠CAUTION

Internal hub brakes get very hot during use and could burn skin. Avoid touching the hub or cooling fins when hot.

Coaster brakes- the brake is engaged by pedaling backwards. When pedaling backwards, the brake should engage with less than 60 degrees rotation (1/6 revolution).

The chain actuates the brake, so make sure the chain cannot come off. There should be between 1/4 and 1/2 inches (6-12mm) total vertical movement of the chain (Figure 6).



Figure 6- Checking chain tension

☑ Check the handlebar and stem.

Make sure the stem is in alignment with the front wheel. Test the stem connection to the fork by attempting to turn the handlebars from side to side with the front wheel locked between your knees (Figure 7). Test the security of the handlebars by attempting to rotate them in the stem. Make sure that no cables are stretched or pinched by rotating the handlebars.

Check that



Figure 7- Function testing the handlebar and stem

the handlebar plugs are properly inserted into both ends of the handlebars, and bar-ends.

Carefully inspect your handlebar and stem for signs of fatigue: scratches, cracks, dents, deformation, or discoloration.

☑ Check the seat and seatpost.

Make sure the seat is secure by attempting to turn the seat and seatpost in the frame, and attempt to move the front of the seat up and down. It should not move or be loose.

☑ Check the suspension adjustments.

Make sure your suspension components are adjusted to your riding style, and that no suspension component can "bottom-out", or be so compressed that there is no further suspension travel or movement remaining.

☑ Check the lights and reflectors.

Make sure the lights are functioning correctly and that any batteries are charged. If the lights use a dynamo, make sure it is mounted correctly and all attachment hardware is tight. Make sure reflectors are clean and in position.

RULES FOR SAFE RIDING

Know and observe local bicycle riding laws.

Most state and local areas have specific laws for cyclists, and you should follow them. Local cycling clubs or your state's Department of Transportation (or equivalent) should be able to supply this information to you. The requirements for items like lights and reflectors change between areas, so check ahead.

These are a few of the more important rules of riding:

- Use proper hand signals.
- Ride single file when riding with other cyclists.
- Ride on the correct side of the road; never go against traffic.
- Ride defensively; expect the unexpected. A cyclist is hard to see, and many drivers simply are not trained to recognize the rights and special considerations of a bicycle rider.

Watch for cars, pedestrians, and other obstacles.

Watch for, and avoid, potholes, drain grates, soft or low shoulders, and other deviations which could impact your wheels or cause them to slip. When crossing railroad tracks or drain grates, do so carefully at a 90° angle (Figure 8). If you are not sure of riding surface conditions, walk your bike.

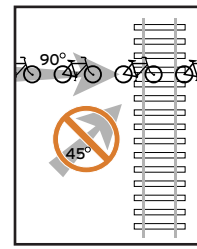


Figure 8- Angle for crossing tracks

If a car suddenly enters your lane, or someone unexpectedly opens the door of a parked car, you could be involved in a serious accident. Mount a horn or bell on your bicycle, and use it to alert others of your presence.

Wear a helmet and proper cycling clothes.

Wear a helmet that meets CPSC or CE safety testing standards (Figure 9); it may help prevent injury.


Figure 9- Wear a bicycle helmet

Helmets should be removed when not riding the bicycle because if the helmet is caught, stuck on, or stuck between objects, the wearer could choke.

Wear protective clothing including helmet, eye protection, and gloves. Avoid loose-fitting pants that could get caught in the chain.

Also wear light, bright, and reflective clothing, especially at night, to make yourself more visible.

RIDING INSTRUCTIONS

Use your brakes carefully.

Always keep a safe stopping distance between you and other vehicles or objects. Adjust stopping distances and braking forces to suit riding conditions.

If your bike has two hand brakes, apply both brakes at the same time. Over-use, or mis-use, of a front-wheel brake, such as using only the front-wheel brake in an emergency, could cause the rear wheel to lift from the ground which could cause you to lose control (Figure 10).

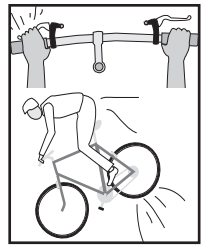


Figure 10- Overuse of the front-wheel brake

Bicycles are normally manufactured with the left brake lever controlling the front-wheel brake. To change so that the right lever controls the front-wheel brake, see Chapter 3.

Many models of modern brakes are very powerful; they are designed to stop a bike in wet or muddy conditions. If you feel your brakes are too powerful for your riding needs, take your bike to your dealer for adjustment, or replacement of the braking system.

⚠WARNING

Applying sudden or excessive stopping force with the front-wheel brake may cause the rear wheel to lift off the ground, or the front wheel to slip out from under you, which can cause you to lose control and fall. Apply both brakes at the same time, and shift your weight backwards on the bike while braking.

Use good shifting techniques.

Shifting gears allows you to choose the gear combination most comfortable for riding conditions, one that allows you to maintain a constant rate of pedaling. Shifting systems are of two types: derailleur (external) and internal.

Shifting a bike with a derailleur- the left-hand shifter controls the front derailleur and the right-hand shifter controls the rear derailleur. Use only one shifter at a time. Shift gears only when the pedals and chain are moving forward. When you shift, reduce the force on the pedals to provide quicker and smoother shifting, to help avoid excessive chain and gear wear, and to help avoid bent chains, derailleurs, and chainrings. Avoid shifting when going over bumps; the chain may not shift properly, or may fall off.

With modern indexed shifting systems, a movement of the shifter from one position to the next (or movement of the shifter to the "shift" position) should promptly move the chain from one gear to the next. However, bikes equipped STI road shifters and triple chainrings may shift better, particularly when shifting from the smallest chainring to the middle, if you "hold" the lever for a moment before letting go of the shifter.

Shifting a bike with internal gearing is best performed when coasting, stopped, or back pedaling. If you must shift while pedaling, reduce your pressure on the pedals. Excessive chain tension makes shifting difficult.

Change your riding to be safe in bad weather conditions.

No brakes, whatever their design, work as effectively in wet weather as they do in dry. Even properly aligned, lubricated, and maintained brakes require greater lever pressure and longer stopping distances in wet weather. Anticipate the extra distance it will take to stop.

Wet weather causes reduced traction. Use slower cornering when traction is reduced, like when riding over wet leaves, painted crosswalks, or manhole covers.

When wet weather cools to below freezing, traction is reduced even further. In addition, brakes may not work as well. Adjust your riding speed accordingly, or use other forms of transportation.

Strong winds can make a bicycle steer or turn unexpectedly. In windy conditions, slow down or use other forms of transportation.

When riding in wet weather, a

dynamo (generator light) may not work properly. Avoid riding in wet weather when visibility is reduced.

Be careful when riding in low light conditions.

Your bicycle is equipped with a full set of reflectors; keep them clean and in position. As useful as these reflectors are, they do not help you see, nor do they help you be seen unless light is directed on them. Use a working headlight and tail light when you ride in poorly lighted or low visibility conditions. The important thing is to see and be seen. If you do any amount of riding at dusk, at night, or in any poorly lighted conditions, consult your dealer to find appropriate products to aid your vision and make you more visible.

⚠ WARNING

A bicycle rider without proper lighting and reflectors may not have good vision, and may not be visible to others, which can cause a collision resulting in severe injury or death. Use front and rear bicycle lights and reflectors when riding in poor visibility conditions. Failure to do so will increase your chances of being involved in an accident in low light conditions.

Do not use unsafe riding practices.

Many cycling accidents could be avoided by using common sense. Here are a few examples:

- Do not ride 'no hands'.
- Do not ride with loose objects attached to the handlebars, or any other part of the bicycle.
- Do not ride while intoxicated, or while using medications which might make you drowsy.
- Do not 'ride double'.
- Use special care when off-road riding. Ride only on the trails. Avoid rocks, branches, or depressions. When approaching a descent, reduce speed, keep your weight back and low, and use the rear brake more than the front.
- Do not ride in an abusive manner; ride within the Use Classification for your type of bicycle (see page i). Bicycles are not indestructible. As with anything mechanical, every part of a bicycle has a limited useful life due to wear, stress, and fatigue. Fatigue refers to a low-stress force that, when repeated over a large number of cycles, can cause a material to fail or break. The length of the life of a part varies according to its design, materials, use, and maintenance. Although lighter frames or parts may, in some cases, have a longer life than heavier ones, it should be expected that light weight, high performance bicycles and parts require better care and more frequent inspections.

Regularly inspect your entire bicycle for signs of fatigue stress:

- Dents
- Cracks
- Scratches
- Deformation
- Discoloration

Carefully inspect your frame and components for signs of fatigue before and after each ride. Go to the web address on the cover to find special instructions on how to inspect carbon fiber parts.

Even if you perform regular inspections, if you exceed the limit of strength of your bicycle or a given part, it will fail.

⚠ WARNING

The following riding practices increase your risk of injury:

- **Jumping your bicycle**
- **Performing bicycle stunts**
- **Severe off-road riding**
- **Downhill riding**
- **Any abnormal bike riding**

Each of these practices increases the stress on every part of your bicycle. Frames or parts under high stress may fatigue prematurely, causing them to fail and increasing the risk of injury to the rider. To decrease your risk of injury, avoid these riding practices.

Protect your bike when parking or storing it.

Protect your bike from theft. Purchase and use a lock that is effective against bolt cutters and saws. Never leave your bike unlocked while unattended.

Register your bicycle with your local police department. Complete our on-line warranty registration; we will keep the serial number of your bike on file. Also, keep a record of the serial number in a safe place.

Park your bike safely in a place where it will be out of the way, and make sure it cannot fall over. Do not lay the bike on its derailleurs, as you may bend the rear derailleur or get dirt on the drivetrain. Don't let the bike fall down, as this may cut the handlebar grips, or tear the seat. Incorrect use of bike racks may bend your wheels.

Store your bike carefully where it will be protected from rain, snow, sun, etc. when not riding. Rain or snow may cause the metal on your bicycle to corrode. Ultraviolet radiation from the sun may fade the paint, or crack any rubber or plastic on the bicycle.

Before storing your bike for an extended period of time, clean and lubricate it, and polish the frame with Wrench Force® frame polish or a similar frame protectant. Hang the bicycle off the ground with the tires at approximately half pressure. Do not store the bike near electric motors, as ozone from motors destroys rubber and paint. Before riding the bicycle again, be certain it is in good working order.

Carry repair items.

Carry a pump, spare inner tube, patch kit, and appropriate tools to keep your bicycle running in the case of a flat tire of other common mechanical problem. If you ride at night, carry spare bulbs or batteries for your lights.

Only install and use approved accessories.

Not all accessories are compatible or safe, so only add accessories that are approved by the manufacturer. As an example, a child carrier places weight high on the bike, affecting the stability of the vehicle. Although any of our bikes can be fitted with a child carrier, the rider must use extra caution to compensate for the decreased stability.

If you are unsure whether a part is approved, consult your dealer.

⚠ WARNING

Never modify your frameset or parts in any way, including sanding, drilling, filing, removing redundant retention devices, installing incompatible forks, or by any other method. Improper components or improper assembly can place unknown stress on your bike or components. An improperly modified frame, fork, or component can cause you to lose control and fall. Before adding or changing any part of your bike, consult your dealer.

Keep the bike clean

If your frame or a component is dirty, clean it with a soft, damp cloth and Wrench Force® bike cleaner or a similar product. Do not use solvents or harsh chemicals. Use of industrial solvents for cleaning may damage the paint.

Use care when holding the bike during transportation or repair

Never clamp the bike frame by its finished or painted surfaces, because this may damage the paint or even dent, crush, or break the lightweight tubing used in high-performance bicycle frames. When holding the bicycle for repairs, clamp the seatpost. When holding the bicycle for transportation on a motor vehicle, clamp the bicycle by the wheels and fork tips.

⚠ CAUTION

Clamping devices used by work stands and car carriers can damage the finish on a bike or even crush the tubing. When putting a bike in a repair stand, clamp the seatpost. When carrying a bike in a car carrier, clamp the wheels and the fork tips.

CHAPTER 2: MAINTENANCE

Maintenance schedule

This maintenance schedule is based on normal usage. If you ride your bike more than average, or in rain, snow, or off-road conditions, service your bicycle more often than the schedule suggests. If any part appears to be malfunctioning, inspect and service it immediately, or consult your dealer. If a part is damaged, replace it before riding the bicycle again.

After initial break-in, new bikes should be checked for stretched cables and other normal conditions. About two months after purchasing your new bike, have your dealer thoroughly inspect the bicycle.

All bikes should be thoroughly serviced once a year, even if they have not been ridden much. Have the bike completely serviced every year.

Every ride

Check the wheels 1
Check the tire inflation..... 1
Check the brakes 2
Check the handlebar and stem 2-3
Check the seat and seatpost 3
Check the suspension adjustments 3
Check the lights and reflectors. 3

Weekly

Wipe off your bicycle with a damp cloth 6
Check for loose spokes 16
Lubricate suspension forks 20
Check suspension fork bolts..... 18
Check rear suspension bolts..... 18

Monthly

Check the attachment of the handlebar and stem 2-3, 8-9
Check the attachment of the seat and seatpost..... 3, 9-11
Check the chain 11
Check the chainguard (accessories)..... 18
Inspect cables for wear 11
Check the operation of shifters . 11, 12-13
Inspect derailleurs 11-13
Lubricate derailleurs 20
Check the internal shift system 13
Check headset bearing adjustment 11
Check brake pads..... 14
Check brake bolts 14-16
Inspect a rotor for proper function 16
Check chain tension 2, 11
Inspect Trekking accessory bolts.... 18-19
Check wheel bearing adjustment 16
Check rims for wear 16

Every 3 Months

Clean and polish finish 16
Check the crankset and bottom bracket11
Lubricate brake levers 20

Every year

Lubricate handlebar stem..... 19
Lubricate seatpost..... 19
Re-grease pedal threads and bearings . 19
Re-grease bottom bracket bearings..... 19
Re-grease wheel bearings..... 19-20
Re-grease headset bearings..... 19
Lubricate wheel quick-releases 19-20
Re-grease suspension forks..... 20

Recommended tools for proper bicycle maintenance:

- Torque wrench with lb•in or Nm gradations
- 2, 4, 5, 6, 8mm allen wrenches
- 9, 10, 15mm open-end wrenches
- 15mm box end wrench
- Socket wrench, 14, 15, and 19mm socket
- T25 Torx wrench
- No. 1 phillips head screwdriver
- Bicycle tube patch kit
- Bicycle tire pump with gauge
- Tire levers
- Wrench Force® synthetic chain lube or similar lubricant
- Wrench Force® synthetic grease or similar bicycle grease
- Wrench Force® frame polish or similar frame protectant
- Special high pressure air pump for rear shock or suspension fork

Note: Not all bikes require all these tools

CHAPTER 3: ADJUSTMENT

This chapter lists instructions for adjustment of the parts of a bicycle. After any repair, inspect the bike as explained in Chapter 1.

⚠ WARNING

A bicycle that malfunctions can cause you to lose control and fall. Inspect the entire bicycle thoroughly before every ride, and do not ride it until any problem has been corrected.

A Word About Torque Specifications

Torque is a measurement of the tightness of a threaded fastener such as a screw or bolt, determined by using a torque wrench. The torque specifications should be used to make sure you do not over-tighten the fasteners. Applying more than the recommended torque to a fastener does not provide extra holding power, and may actually lead to damage or failure of a part.

Always perform the simple function tests listed in this chapter to make sure a part is properly tightened, whether or not the part was tightened with a torque wrench.

Handlebars

To adjust the angle of the handlebars

1. Loosen the handlebar clamp bolt(s) on the stem (Figures 11-12) just enough that the handlebars can be rotated in the stem.
2. Position the handlebars to the desired angle, making sure they are centered in the stem.
3. Tighten the handlebar clamp bolt(s) on welded stems to 100-120 lb•in (11.3-13.6 Nm).

⚠ WARNING

An improperly adjusted or tightened handlebar, stem, or bar-ends can cause you to lose control and fall. Make sure the stem, handlebar, and bar-ends are positioned and tightened properly before riding the bike.

- On forged stems to 150-180 lb•in (17-20.3 Nm)
- On 4-bolt BMX stems to 80-100 lb•in (9-11.3 Nm).

Stem

To align a direct-connect stem with the front wheel



Figure 11- Direct-connect stem

1. Loosen the steerer clamp bolts two to three turns.
2. Align the stem with the front wheel.
3. Tighten the steerer clamp bolts on mountain and road bikes to 100-120 lb•in (11.3-13.6 Nm).
   - On BMX bikes, tighten to 145 lb•in (16.4 Nm) .

To align a quill-type stem with the front wheel, or to change the handlebar height

Adjusting the handlebar height on a direct-connect stem (Figure 11) affects the headset bearing adjustment. This procedure requires special tools and training so this should only be done by your dealer.

To adjust the height of the adjustable-rise stem in Figure 12, first change the stem angle, which gives access to the stem expander bolt.

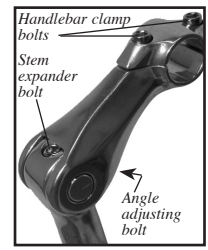


Figure 12- Adjustable-rise quill stem

1. Loosen the stem expander bolt two to three turns.

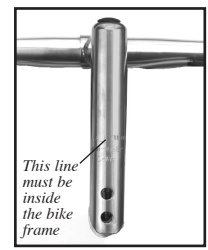


Figure 13- Minimum insertion mark on quill stem

2. Tap the top of the stem expander bolt with a wood or plastic-faced mallet to loosen the stem wedge.
3. Adjust the handlebars to the desired height, but with the minimum insertion line inside the frame (Figure 13). A minimum of $2^{3/4}$ inches (70mm) of the stem quill must always remain in the frame.
4. Tighten to 175-260 lb•in (19.8-29.4 Nm).

⚠WARNING

Never ride your bicycle with a quill stem raised above the minimum insertion mark. A quill stem that is positioned too high can damage the bike and can cause you to lose control and fall. Make sure the minimum insertion mark (Figure 13) is inside the frame.

To change the angle of an adjustable-rise stem

1. Loosen the (Figure 12) until the stem can be rotated.
2. Position the stem to the desired angle.
3. Tighten the angle adjusting bolt to 150-170 lb•in (17-20.3 Nm).

To change the angle of a Bontrager adjustable-rise stem

1. Pull out the locking button (Figure 14).
2. Pull the quick-release lever (Figure 14) down.
3. Position the stem to the desired angle.
4. Pull out the locking button again, and close the quick-release lever.

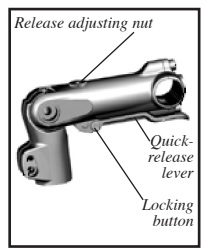


Figure 14- Bontrager adjustable-rise stem

Make sure the lever is completely closed and the locking button has returned to its locked position.

To adjust the clamping force of the quick-release lever of the Bontrager adjustable-rise stem

1. Open the quick-release lever.
2. Turn the release adjusting nut (Figure 14).

The nut uses standard threading: clockwise to tighten, counter-clockwise to loosen.

3. Check that at about halfway through the lever throw there is some resistance.

If the clamp force is too high or too low, readjust the nut.

4. Follow the procedures in Inspection to make sure the handlebars are clamped with adequate force.

Bar-ends

Bar-ends (Figure 15) are designed for climbing only. Ensure the bar-ends face forward and away from you.

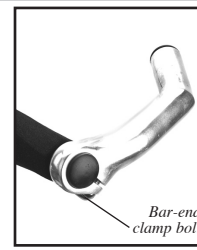


Figure 15- Bar-ends

To adjust the angle of the bar-ends

1. Loosen the bar-end clamp bolt(s) until they can be rotated on the handlebar.
2. Position the bar-ends to the desired angle, but an angle not less than 15° from parallel to the ground
3. Tighten the bar-end clamp bolt to 85-125 lb•in (9.6-14.1 Nm)

Saddle

The correct adjustment of the seat angle is largely a matter of personal preference; first try riding with the top of the seat parallel to the ground. For bikes with rear suspension, try tilting the seat nose down slightly so that compression of the rear shock under your body weight (sag) results in a flat seat.

The seat may also be moved forward or backward along the seatpost to increase comfort as well as adjust the distance to the handlebars.

With proper adjustment, the right

bike seat will be reasonably comfortable even for long rides.

⚠ WARNING

Extended riding with a poorly adjusted saddle, or one that does not properly support your pelvic area, can cause short-term or long-term injury to your nerves and blood vessels. If your saddle causes pain or numbness, re-adjust the saddle position. If after adjustment your saddle still causes pain or numbness, consult your dealer about further positioning or replacing the saddle with one that fits you better.

To adjust the angle of the seat

1. Loosen the seat fixing bolt (Figure 16) just far enough so the seat can be tilted fore and aft.

   Some seatposts use two bolts, where angle adjustment is done by loosening one bolt and tightening the other bolt.

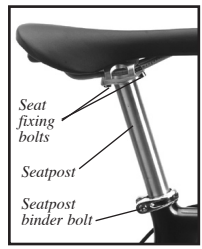


Figure 16- Seatpost parts

2. Place a straight edge, such as a bubble level or ruler, across the top of the seat to better see the angle.
3. Adjust the seat and re-tighten the seat fixing bolt. With double bolts using a 5mm allen wrench tighten to 80-125 lb•in (9.6-14.1 Nm).

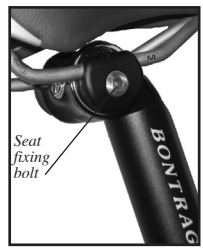


Figure 17- Bontrager seatpost

- With a bolt using a 13 or 14mm open-end wrench, tighten to 180-220 lb•in (20.3-24.9 Nm).
- With a single bolt using a 6mm allen wrench, tighten to 150-250 lb•in (17-28.3 Nm).
- With double bolts using a 4mm allen wrench, tighten to 45-60 lb•in (5-6.8 Nm).

To adjust the seat height of a bicycle

Never engage the seatpost binder with the seatpost out of the frame.


Figure 18- Leg extension with proper seat height

1. Sit on the seat in riding position without shoes, while someone holds the bicycle up.
2. Position the crank arms so they are parallel to the seat tube.
3. Loosen the seatpost binder bolt, or quick-release.
4. Extend the seatpost until, with your heel resting on the bottom pedal (Figure 18), your extended leg is straight.

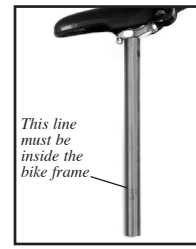


Figure 19- Minimum insertion mark on seatpost

When wearing your shoes there should be a slight bend in your knee in a proper riding position; with the ball of your foot on the pedal.

5. Make sure the minimum insertion mark on the seatpost (Figure 19) is not visible above the bike frame. A minimum of 2 1/2 inches (64mm) of seatpost must remain in the frame.
6. Close the seatpost quick-release, or tighten the bolt to 85-125 lb•in (9.6-14.1 Nm)

⚠ WARNING

A seatpost that is positioned too high can damage the bike and can cause you to lose control and fall. Make sure the minimum insertion mark (Figure 19) is inside the frame.

To adjust the seat position of a tricycle

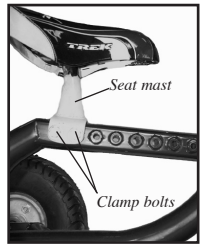


Figure 20- Tricycle seat mast

1. Loosen and remove the clamp bolts (Figure 20).
2. Move the seat mast to the desired position.
3. Install and tighten the seat mast clamp bolts to 85-125 lb•in (9.6-14.1 Nm).

Headset

To check if the headset is loose or tight

1. Apply the front brake firmly while you rock the bicycle forward and backward.
2. With the front wheel off the ground, slowly rotate the fork and handlebars to the right and left.

If the headset bearings rock in the frame, or do not turn smoothly, do not ride the bicycle; take the bike to your dealer for service.

Adjustment of headset bearings requires special tools and training. These services should only be performed by your dealer.

Pedals

To adjust the release force on clipless pedals, refer to the information on the CD supplied with your bicycle, or consult your dealer.

Tighten pedals into the crankarms to 350-380 lb•in (40.2-42.9 Nm).

Adjustment of pedal bearings requires special tools and training. These services should only be performed by your dealer.

Crank arms

Some bicycles offer adjustable crankarm length. To change the crank length, remove the pedals and install them into the second set of holes. Tighten by following the instructions for Pedals.

Bottom bracket

Adjustment of bottom bracket bearings requires special tools and training. These services should only be performed by your dealer.

Chain

To adjust the chain tension on a single speed bike

1. Gradually loosen the rear wheel axle nuts on alternate sides of the wheel.
2. Slide the wheel to re-tension the chain, and center the wheel in the frame.

   Some models have a chain tensioning device which helps position the wheel.
3. Complete the wheel installation.

Cables

Check the cables for kinks, rust, broken strands, or frayed ends. Also check the housing for loose wire strands, bent ends, cuts, and wear. If you suspect a problem with a cable, do not ride the bicycle; follow the instructions to replace a cable, or have your dealer service the bicycle.

Shifters

The position of the shifters can be adjusted on the handlebars. Follow the instructions for adjusting the lever position on page 14.

Front derailleur

To adjust the low gear position

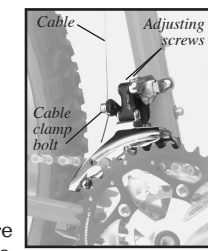


Figure 21- Front derailleur

1. Shift the chain onto the smallest front chainring and the largest cassette cog.
2. Loosen the front derailleur cable clamp bolt (Figure 21) until the cable is free.
3. Turn the low gear adjusting screw (marked “L”) until the inner chain guide of the derailleur is approximately 0.5mm from the chain.

4. Pull on the cable end, and downshift the left shift lever several times so it is in the small-chainring position.
5. Turn the shift cable adjusting barrel to its most clockwise position.
6. Insert the cable in the groove found next to the derailleur cable clamp bolt, pull the cable taut, and clamp the cable:

• Front derailleur cable clamp bolt to 44-60 lb•in (5.0-6.8 Nm).

To adjust the high gear position

1. Shift the rear derailleur to the smallest rear cog.
2. Turn the high-gear adjusting screw (marked "H") counter-clockwise until it cannot interfere with the motion of the derailleur.
3. Hand-turn the cranks, and use the shifter to carefully shift the chain onto the outside chainring.
4. Position the outer chain guide of the front derailleur approximately 0.5mm from the chain.
5. Re-tighten the high gear adjusting screw until it meets resistance. If you have turned the screw too far, the front derailleur will move toward the small chainring.

Go through the various gear combinations. Make sure the chain does not fall off when you shift, and the derailleur cage does not rub on any part of the crankset.

To adjust the middle gear position, with three chainrings

1. Shift the chain onto the largest front chainring and the smallest rear cog.
2. Rotate the cable tension barrel-adjuster (on the downtube, or on the lever) counter-clockwise increasing cable tension to align the inner derailleur cage until it just touches the chain.

Go through the various gear combinations to ensure the chain smoothly lines up with all the chainrings.

Note: some front shifters have a 'tab' feature: slightly downshift the lever, and the derailleur moves in slightly, no longer touching the chain.

Rear derailleur

To adjust the high gear position

1. Shift the chain onto the smallest rear cog and the largest front chainring.
2. Loosen the cable clamp bolt Figure 22) until the cable is free.
3. Stand behind the bicycle to see that the smallest rear cog, the chain, and the two derailleur pulleys are in line.

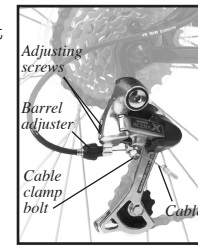


Figure 22- Rear derailleur

4. If they are not aligned, turn the high gear adjusting screw (usually marked "H",) until this line is established.
5. While pulling on the cable, up-shift until the shifter is in the small cog position.
6. Turn the adjusting barrel on the shifter, or down tube, all the way clockwise. Turn the adjusting barrel on the rear derailleur all the way clockwise, and then one turn counter-clockwise.
7. Insert the cable into the clamp bolt groove on the rear derailleur, pull the shift cable taut, and tighten the cable clamp bolt to 44-60 lb•in (5.0-6.8 Nm).

To adjust the low gear position

1. Turn the low gear adjusting screw on the rear derailleur (usually marked "L") far enough counter-clockwise so that it will not restrict the movement of the derailleur.
2. Carefully shift the chain onto the smallest front chainring and the largest rear cog. Do not over-shift the rear derailleur, or the chain may wedge between the large cog and the spokes.
3. Position the rear derailleur pulleys in line with the largest cog.

4. Turn the low gear adjusting screw clockwise until it meets resistance. If you have turned it too far, the derailleur will move toward the outside of the bicycle.
5. Go through the various gear combinations. Make sure the chain does not fall off when you shift.

To align the indexing system

1. Shift the chain onto the largest front chainring and the smallest rear cog.
2. Shift one click with the rear shifter.
3. Check if the chain moves smoothly to the next gear.
4. If the chain makes excessive noise or does not shift, turn the barrel-adjuster counter-clockwise in small increments and check again for a smooth shift.

If instead, the chain moves to the third smallest cog, turn the barrel adjuster clockwise until the derailleur pulleys align with the second smallest cog. Go through the gear combinations to ensure the chain smoothly lines up with all the rear cogs.

If the derailleur cannot be adjusted in this manner, the derailleur hanger may be out of alignment; take the bike to your dealer for service.

Nexus 4, 7, or 8 speed systems

To adjust the rear shifting

1. Rotate the shifter to the 4th gear position.
2. Align the indicator on the rear hub pulley (Figure 23) with the cog joint bracket.



Figure 23- Pulley and cog joint bracket

3. If the red lines do not line up, adjust the gear cable tension by rotating the barrel adjuster until this alignment is achieved.
4. Shift to 1st gear, then back to 4th, and re-check the adjustment.

3 speed systems

To adjust the rear shifting

1. Rotate the shifter to the 2nd gear position.
2. Align the indicator on the bell crank window with the line on the push rod (Figure 24).

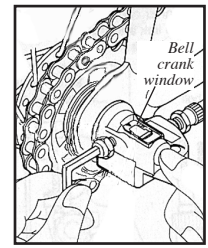


Figure 24- Three-speed bell crank

3. If the lines do not line up, adjust the gear cable tension by rotating the barrel adjuster until this alignment is achieved.
4. Shift to 1st gear, then back to 2nd, and re-check the adjustment.

SRAM DualDrive system

To adjust the rear hub shifting

1. Place the shifter in the Standard mode.
2. Align the indicator on the Clickbox window by rotating the barrel adjuster (Figure 25).

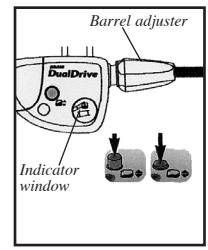


Figure 25- Clickbox (on rear hub)

4. Shift to Uphill mode, then back to Standard mode, and re-check the adjustment.

Brake levers

The brake system allows you to slow or stop your bike, a function critical to your safety.

The brake system is difficult to adjust properly without the proper tools and training. It is strongly recommended that adjustment of a brake be done by your dealer. If you need more specific information regarding your brake system, contact your dealer.

To adjust the position of a lever

1. Locate the lever clamp bolt (Figures 26-28).

2. Loosen the clamp bolt 2-3 turns.
3. Position the lever.
4. Tighten the clamp bolt on regular brake levers to 53-69 lb•in (6.0-7.8 Nm).

- On mid-bar levers (Figure 28) to 20-30 lb•in (2.3-3.3 Nm).
- On Hayes hydraulic levers to 25-35 lb•in (2.8-4 Nm)



Figure 26- Lever clamp bolt, road lever

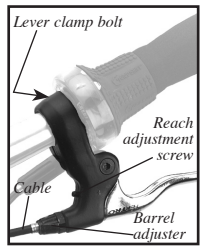


Figure 27- Lever clamp bolt, mountain lever

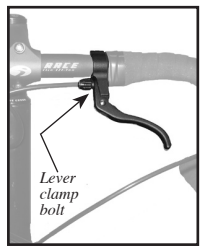


Figure 28- Mid-bar brake lever

To adjust the reach to the brake lever (cable type)

With some brake levers, you can change the reach, the distance from the handlebar to the lever.

1. Locate the reach adjustment screw and turn.

   To increase the reach, turn the screw in (clockwise). To reduce the reach, turn the screw out (counter-clockwise).
2. If needed after adjusting the reach, re-adjust the brake pad clearance.

To adjust the reach to the brake lever (hydraulic type)

1. Locate the reach adjustment screw between the lever and the handlebar, near the lever pivot.
2. To increase the reach, turn the screw in (clockwise). To reduce the reach, turn the screw out (counter-clockwise).

To change which lever controls the front brake (cable type)

See the Brakes section for brake adjustment procedures.

1. Open the brake.
2. For a road bike, disconnect the brake cable and completely remove it from the lever.
   - For a mountain bike, just remove the leaded end of the cable from the lever.
3. Install the cables into the opposite levers.
4. Close the brakes.
5. Inspect the brakes as explained in Chapter 1, and re-adjust as necessary.

To change which lever controls the front brake (hydraulic type)

1. For a Hayes brake, loosen and remove both clamp bolts.

   Changing the levers with Shimano hydraulic brakes requires special tools and training so should only be done by your dealer.
2. Remove the levers and re-position according to your preference.
3. Re-install the clamp bolts and tighten to 25-35 lb•in (2.8-4 Nm).

Brakes

Inspect brake pads for wear. If the grooves in the braking surface are less than 2mm deep, or 1mm deep for direct-pull brakes, replace the pads. Replace disc brake pads that are thinner than 1.0mm.

To adjust brake pad clearance to the rim

1. Turn the barrel adjuster. To increase the pad clearance, turn the barrel adjuster in (clockwise). To reduce the pad clearance, turn the barrel adjuster out (counter-clockwise).

   For most direct-pull (Figure 29), cantilever (Figure 31), or U-brake (Figure 32) systems the barrel adjuster is on the lever. For most road caliper systems (Figure 30) the barrel adjuster is on the brake itself.
2. If the brake pads cannot be adjusted properly, loosen the cable clamp bolt and re-attach the cable.

To center a V-type, cantilever, or road brake

1. Rotate the centering screw. Turn in small increments and check for centering.
2. If the brake has two centering screws, adjust the overall spring tension while centering the brake.

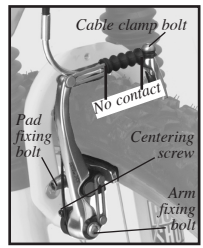


Figure 29- Direct pull

To center a U-brake

1. Hold the 13mm centering nut with a wrench.
2. Loosen the arm fixing bolt with a 5mm allen wrench.
3. Rotate the centering nut.
4. Re-tighten the bolt.

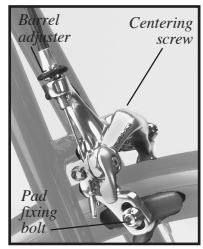


Figure 30- Caliper brake

To adjust the alignment of the brake pads on caliper-type brake

1. Loosen the brake pad fixing bolt.
2. Follow the procedures in ***Inspection*** to align and tighten the brake pads.
3. After adjusting the brakes, test them by applying force to the levers. Ensure the cable does not slip, the pads close toward the rim at right angles, and the pads do not contact the tire.

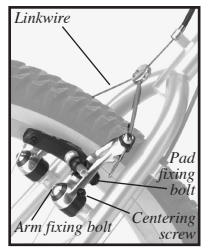


Figure 31- Cantilever

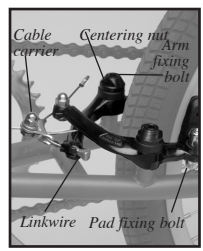


Figure 32- U brake

To align a hydraulic disc brake

1. Loosen the brake mounting bolts.
2. Apply the lever fully, and gradually tighten the bolts to:

   100-110 lb•in (11.3-12.4 Nm)

To align a cable-actuated disc brake

There are several parts to this procedure:

- **To adjust right brake pad clearance to the disc**

1. Turn the fixed pad adjuster (Figure 33). To increase the pad clearance, turn the barrel adjuster in (clockwise). To reduce the pad clearance, turn the barrel adjuster out (counter-clockwise).
2. If the pads cannot be adjusted properly in this manner, follow the instructions ***To adjust left brake pad clearance to the disc***, and re-set the right pad.



Figure 33- Disc brake

- **To adjust left brake pad clearance to the disc**

1. Turn the cable barrel adjuster. To increase the pad clearance, turn the barrel adjuster in (clockwise). To reduce the pad clearance, turn the barrel adjuster out (counter-clockwise).
2. If the pads cannot be adjusted properly in this manner, loosen the cable clamp bolt and re-attach the cable as explained in ***To install a brake cable,*** page 19, but without removing the cable.
3. After adjustment, turn the locking nut clockwise to help prevent rotation of the barrel adjuster.

- **To align the brake with the disc**

1. Loosen the brake mounting bolts.
2. Slide a business card, or similar thin object, between the right brake pad and the disc.
3. Apply the lever fully, and gradually tighten each mounting bolt as specified in ***Inspection.***

To remove disc brake pads

1. Remove the wheel.
2. With your fingers, or thin-tipped pliers, grasp the installation tang of the brake pad and pull out.

To adjust a rotor

A rotor (Figure 34) allows the rear brake cable to bypass the headset so the handlebars can be rotated a full 360 degrees.

1. Ensure that both lower barrel adjusters are flush with (do not show above) the lower cable stop, and the bearing unit is resting on the lower cable stop.

   The rear brake adjustment must be made with the bearing unit in this position. The bearing unit should be parallel to the upper and lower cable stops.

2. If it is tilted, there is slack in one of the cables. Pull each cable end, one at a time to see which cable has slack at the bearing unit.
3. Remove the slack through the barrel adjuster.
4. When even pull is achieved, tighten all barrel adjuster locknuts.

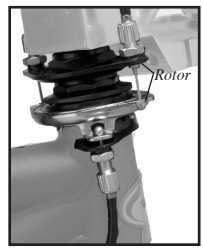


Figure 34- Rotor

To open the brake for wheel removal

- **For most road calipers**, lift the brake release lever to the open **UP** position. To close, simply turn the lever to the **Down** position.
- **For Campagnolo levers**, slightly depress the brake lever, and push the button until it is flush with the lever body. Release the lever and the brake will open.

  To close, reverse the instructions.
- **For cantilever brakes and U-brakes**, release the linkwire. With one hand, squeeze the brake pads firmly against the rim. With the other hand, pull the leaded end of the linkwire from the retaining fork on the brake arm. Release the brake pads, and the brake will open.

  To close the brake, reverse the instructions.
- **For direct-pull type brakes**, disconnect the pipe from the link arm. With one hand, squeeze the pads firmly against the rim. With the other hand, pull the pipe back from the link arm, and lift the pipe. Once disconnected, let go of the brake pads and the brake will open.

  To close the brake, reverse the instructions.
- **For internal or drum brakes,** to remove the rear wheel, first disconnect the shift and brake cables.

  -To disconnect the brake cable, press the cable carrier arm forward, and the cable clamp bolt rearward, so the bolt aligns with the larger diameter hole in the carrier. Pull the cable clamp bolt outward to disengage it from the carrier. Slide the brake cable stop forward to remove it from the brake arm. Undo brake strap bolt.

  -To disconnect the shift cable, put the shifter in 1st gear. Pull the cable housing out of the shift cable housing stop. Rotate the shift cable fixing bolt until the washer flats align with the slit in the cog joint bracket. Remove the cable.

Wheels

Inspect tires for wear and damage. Make sure rims are clean, and check for wear; if the small indentations on the braking surface disappear, replace the rim. Make sure there are no loose, damaged, or broken spokes. Check that hub bearings are properly adjusted. Make sure a rim strip is in place and all spoke holes are completely covered.

To adjust and install a quick-release wheel

1. Move the quick-release lever to the **OPEN** position (Figure 39) and set the wheel so it firmly touches the inside of the fork ends.

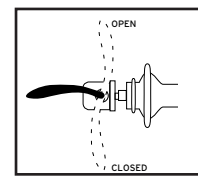


Figure 39- Lever positions

2. With the lever about halfway between the **OPEN** position and the **CLOSED** position, tighten the quick-release adjusting nut (Figure 40) until finger-tight.

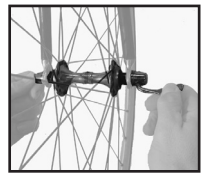


Figure 40- Tighten nut

3. Place the lever in the palm of your hand and throw the lever as shown in Figure 41 to the **CLOSED** position (Figures 43-44). At the half-closed position of the lever, there should be some resistance.

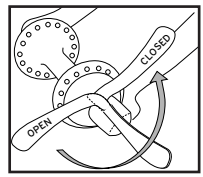


Figure 41- Proper lever throw

- Do not tighten the quick-release wheel retention mechanism by turning the lever like a wing nut (Figure 42); it will not result in sufficient force to hold the wheel in place.

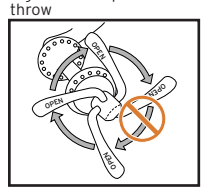


Figure 42- Do not turn lever



Figure 43- Front lever position

5. If the lever is moved to the **CLOSED** position with little or no resistance, clamping strength is insufficient. Return the lever to the **OPEN** position, tighten the quick-release adjusting nut further and close the lever, and again test for resistance. For further information on correct adjustment of the quick-release tension, read Figure 45.

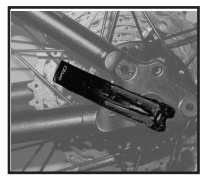


Figure 44- Rear lever position

6. Orient the quick-release levers so they do not interfere with any other bicycle part or accessory part (such as rack or fenders), and so obstacles in the path of the bicycle cannot snag the levers.

7. Test that you have properly adjusted and closed the quick-release. If the quick-release fails any test, either repeat these adjustment procedures, including these tests, or take your bicycle to your dealer for service.

If it requires more than 45 pounds (200 Newton) force to completely close the quick-release lever, open the lever and slightly loosen the quick-release adjusting nut.
If it requires less than 12 pounds (53.4 Newton) force to begin to open the lever from the fully closed position, open the lever and slightly tighten the quick-release adjusting nut.
Repeat the adjustment if necessary.

Figure 45- Actual measurements

8. Test for proper quick-release adjustment

- Pick up the bike, and sharply hit the top of the tire (Figure 46). The wheel must not come off, be loose, or move from side to side.



Figure 46- Test for looseness

- Make sure the quick-release lever cannot be rotated parallel to the wheel (Figure 47).
- When the quick-release is properly tightened, and clamped by the lever in the closed position, the clamping force is adequate to cause metal-into-metal engagement (embossing) of the dropout surfaces.
- See Figure 45.



Figure 47- Test for rotation

To install an axle-nut wheel

Some wheels are attached by tightening nuts threaded onto the axle. The front wheel may require a toothed washer to be placed between the nut and fork tip. Some bicycles also have pegs, tubular axle extension.

1. Tighten the axle nuts:

- Tighten a regular front wheel to 180-240 lb•in (20.3-27.1 Nm).
- Tighten a regular rear wheel to 240-300 lb•in (27.1-33.9 Nm).
- For a front wheel with pegs, tighten to 220-240 lb•in (24.9-27 Nm).

- For a rear wheel with pegs, tighten to 350 lb•in (40 Nm).

2. Test to ensure that you have properly tightened the axle-nuts.

- Pick up the bike, and sharply hit the top of the tire (Figure 46). The wheel must not come off, be loose, or move from side to side.

If the wheel attachment fails the test, repeat these procedures, including the tests, or take your bicycle to your dealer for service.

To install a thru-axle wheel

1. Open the quick-release or loosen the clamp bolts on both fork ends.
2. With the wheel in place, slide the axle into the fork tips.
3. Close the quick-releases, or tighten the clamp bolts to 45-55 lb•in (5.1-6.2 Nm).
4. Test to ensure that you have properly attached the thru-axle.

- Pick up the bike, and sharply hit the top of the tire (Figure 46). The wheel must not come off, be loose, or move from side to side.

If the wheel attachment fails the test, repeat these procedures, including the tests, or take the bicycle to your dealer for service.

Suspension components

Changing your suspension settings affects handling and braking characteristics. After making a change, carefully test the bike in a low traffic area until you are familiar with its performance.

For an all-round ride, set the forks for about 15% sag, and a rear shock at about 25% sag. Experiment with the adjustment in small increments to find your preference. If the suspension is fully compressed, its movement will stop abruptly and could cause you to lose control. See the CD or web site for more specific adjustment and maintenance information, or consult your dealer.

Accessories

There are a wide variety of accessories installed on bicycles. Once a month, check any accessories to make sure they are properly attached. If any part seems loose or misaligned, either tighten the part or take the bike to your dealer for service.

To adjust training wheels

See other sections of this manual as needed.

1. Place the bike on a flat, smooth surface, with the tires properly inflated.
2. Loosen the rear axle nuts. Follow the procedures in the Wheels section.
3. Stand the bike up very straight, and set a gap of about 1/4 inch (6mm) between the training wheels and the ground on both sides of the bike. Make sure the gap is the same on both sides.
4. Adjust the chain tension and re-tighten the axle nuts.

To install a light bulb

1. Locate the lens set-screw on the back of either the taillight or head light.
2. Remove the screw.
3. Rotate the lens 1/4 turn clockwise and lift the lens assembly off the bulb mount.
4. Unscrew the bulb.

   Be careful not to crush the glass of the bulb. Do not dislodge the wire in the base of the bulb mount.
4. Screw a new bulb in until finger tight.
5. Place the lens on the bulb mount, rotate the lens 1/4 turn counter-clockwise.
6. Install the lens set-screw.

Check that the new bulb works. If it does not, check the wiring for correct placement, and verify that the new bulb is not damaged.

Folding bike

Some models of Trek bikes have a large hinge in the middle to fold the bike by following these steps:

To lower the saddle

1. Open the seatpost quick-release and lower the saddle.
2. Close the quick-release to hold the seatpost in position.

To fold the pedals

1. Push the end of the pedal directly inward, toward the crankset.
2. Fold the pedal over.
3. Repeat for the other pedal.

To fold the handlebar stem

1. Rotate the lever lock away from the lower quick-release.
3. Hold the handlebar with the cables out of the way to prevent pinching, and open the lower quick-release.
4. Fold the handlebar assembly to its down position.

To fold the main frame

1. Open the latch lock.
2. Pull outwards, away from the frame, on the end of the frame latch until the latch opens.
3. While avoiding pinching yourself or cables, fold the bike in half.

To unfold the frame, reverse the steps of the folding procedure.

⚠ WARNING

Riding a folding bike with movement at the lower stem quick-release or main frame hinge could cause you to lose control and fall. If the folding frame moves at the stem or frame hinge, take the bike to your dealer for service.

This section explains the parts that require lubrication, their frequency, and brief instructions. See your dealer for recommended lubrications. If you need more detailed information, see other sections of this manual as needed, or consult your dealer.

Re-greasing bearings requires special tools and training, so this should only be done by your dealer. Some bearings are permanently sealed and do not require yearly re-greasing

Stem

Once a year lubricate the stem.

Note: Lubricating a direct-connect stem requires adjustment of the headset bearings, so should only be done by your dealer.

1. Remove the stem from the frame.
2. Wipe any old grease off the stem, and clean it.
3. Apply a thin layer of grease to the section of the quill that will be inserted into the frame, including the stem wedge.
4. Install the stem.

Seatpost

Once a year, lubricate the seatpost (except for a bike with a carbon fiber seat tube, where no lubrication is recommended).

1. Loosen the seatpost binder bolt, or open the quick-release, and remove the seatpost from the frame.
2. Wipe any old grease off the seatpost, and clean if necessary.
3. Apply a thin layer of grease to the section of the seatpost that will be inside the frame.
4. Insert the seatpost into the frame.
5. Adjust the seat to the proper height, align it, and tighten the seatpost binder bolt.

Bottom bracket

Once a year re-grease the bottom bracket bearings,

Pedals

Once a year re-grease the pedal bearings.

Once a year re-grease the pedal axles

where they thread into the crank arms.

Note: There are right and left pedals, usually marked with a letter stamped on the end of the pedal axle, or on the wrench flats.

1. Remove the pedals; turn the right pedal spindle counter-clockwise, but turn the left clockwise.
2. Apply a this layer of grease over all the threads.
3. Install the pedals on the proper side; put the right pedal on the right crank arm and the left pedal on the left crank arm.
4. Tighten the pedals.

Derailleurs

Every month, lubricate all pivot points on both the front and rear derailleurs, including the derailleur pulleys on the rear derailleur, with chain lube.

Headset

Once a year re-grease the headset bearings.

Brakes and Brake Levers

Every 3 months lubricate your brake lever pivots and brake arm fixing pivots with a light oil.

Wheels

Once a year re-grease the wheel bearings.

Every year, lubricate wheel quick-release. Apply several drops of Wrench Force® synthetic lube or a similar light oil where the quick-release lever rotates in the quick-release body.

Suspension forks

Once a month, apply a light oil to the upper fork leg where the lower leg slides on it. Wipe clean.

Rear suspension

No lubrication is required for the shock or the pivot of your full suspension bike. Avoid all lubricants.

Control cables

Lubricate cables whenever they are installed.

To install a cable

Installing a cable in a cantilever brake requires special tools and training, so should only be done by your dealer.

1. Note the path of the old cable, and loosen the cable anchor bolt and remove the worn cable.
2. Grease the new cable and reinstall, feeding it along the same path as the old cable, including through the cable anchor bolt.
3. Make sure the leaded cable-end is seated properly in the lever, and the housing is properly seated in the lever.

   If needed when installing a cable in a brake, readjust the brake.
4. Turn the adjusting barrel clockwise so the threads on the adjusting barrel are not exposed.

   For a shift cable, put the shifter in the position with the least cable tension. For a brake, hold the brake closed while you do the next step.
5. Tighten the cable clamp bolt:

   52-69 lb•in. (6-8 Nm)
6. Cut the cable so that no more than 2 inches (51mm) extends beyond the anchor bolt.
7. Crimp a metal cap or place a bit of solder on the end of the cable to prevent fraying.
8. Follow the instructions for adjustment.

LIMITED WARRANTY

For more information

If you would like additional information about your bicycle, or bicycling in general, there are many resources in your community.

First, talk to your bicycle dealer. They have extensive experience with bicycles and riding in your community. With this background, they can help you with your individual questions and help you find areas to enjoy your new bicycle. In addition, most dealers stock a variety of book about cycling, including extensive repair manuals.

Second, check your public library. Most libraries have extensive offerings of books written by experts in the field about riding, racing, bicycle safety, bicycle maintenance, and more.

Third, go on-line. The best on-line resource for your bike can be found by viewing the CD that accompanies this manual. Place the CD in a computer, and you will find much more information. With internet access, you can link direct from the CD to our company web site. Links to some of the companies that make the parts of your bike are also provided. All of this information and help is just a click away.

Trek Bicycle Corporation (Trek) warrants each new frame, rigid fork, or original component part of the bicycle against defects in workmanship and materials:

For the lifetime of the original owner-

- The bicycle frame or rigid fork

For one year-

- Paint and decals
- All original parts, excluding suspension forks and rear shock absorbers
- Suspension forks and rear shock absorbers shall be covered by the stated warranty of the original manufacturer.

This warranty does not cover-

- Normal wear and tear
- Improper assembly
- Improper follow-up maintenance
- Installation of parts or accessories not originally intended for, or compatible with, the bicycle as sold
- Damage or failure due to accident, misuse, abuse, or neglect
- Labor charges for part replacement or changeover

This warranty is void in its entirety by any modification of the frame, fork, or components.

This warranty is expressly limited to the repair or replacement of a defective item and is the sole remedy of the warranty. This warranty extends from the date of purchase, applies only to the original owner, and is not transferable. Trek is not responsible for incidental or consequential damages. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

Claims under this warranty must be made through an authorized dealer. Proof of purchase is required. The subject item must be registered with Trek, either through on-line registration or by the receipt of a warranty registration card by Trek, before a warranty claim may be processed.

This warranty gives the consumer specific legal rights, and those rights may vary from place to place. This warranty does not affect the statutory rights of the consumer.

LeMond
RACING CYCLES

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Waterloo, Wisconsin 53594 USA

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