

cannondale

KIDS BIKES

BICYCLE OWNER'S MANUAL

(For bikes with 12, 16, 20, or 24 inch wheel size.)

 **WARNING**

THIS MANUAL CONTAINS IMPORTANT SAFETY, PERFORMANCE AND MAINTENANCE INFORMATION. Read the manual before taking your first ride on your new bicycle, and keep the manual handy for future reference.

HELMETS SAVE LIVES !!!

**ALWAYS WEAR A PROPERLY
FITTED HELMET WHEN
YOU RIDE YOUR BICYCLE.
DO NOT RIDE AT NIGHT.
AVOID RIDING IN WET
CONDITIONS.**



CORRECT FITTING

Make sure your helmet covers your forehead



INCORRECT FITTING

Forehead is exposed and vulnerable to serious injury

Congratulations on your new purchase!

Our Service Department is dedicated to your satisfaction with Cycling Sports Group and its products. For questions regarding performance, assembly, operation, parts or returns, contact the experts at Cycling Sports Group directly by calling toll free

1-800-THE-BIKE

dealerservice-gsm@cyclingsportsgroup.com

**Please Retain your Sales Receipt
as Proof of Purchase.**

Notes: _____

All of the original equipment affixed to the bicycle at the time of the original sale were selected as being compatible with your frame and with all other OEM components on the bicycle. Certain after-market products and/or components may not be compatible for use with this bicycle or frame. Consult with your authorized dealer or Customer Service at (800) THE-BIKE before you attach any non-factory specified product to your bicycle.

Use of any component that is not factory specified could result in damage to the bicycle which would not be covered by the warranty and could further cause you to lose control of the bicycle and fall, all of which could cause serious injury to the rider.

This bike may only be assembled by an authorized dealer. It may only be sold new by an authorized dealer. If you purchased the bike from any source other than an authorized dealer, the bike may have been obtained under suspect circumstances and may be dangerous for you or your child.

 **WARNING**

Assembly of your bicycle by any party other than an authorized dealer voids your warranty. It is strongly recommended to have all post-sale assembly and service work on your bicycle performed by a properly trained and equipped dealer.

When inspecting your bicycle, be certain to tighten all nuts and bolts properly. Undertightening can result in loosening, parts loss, and component damage. Over-tightened nuts and bolts can break. Certain bicycle parts have metric hardware--always use the correct tools.

Owner's Manual

for Juvenile Bicycles

This manual contains important safety, performance and maintenance information. Read the manual and all warnings before taking your first ride on your new bicycle, and keep the manual handy for future reference.

Unsafe or improper use of the Bicycle by failing to read and comply with all safety, performance and maintenance requirements and warnings could result in serious injury or death. It is also impossible to predict every situation and condition which will occur while riding. Cycling Sports Group has made no representation about the safe use of the Bicycle under all conditions. There are risks associated with the use of any Bicycle which cannot be predicted or avoided and safe, cautious riding is recommended.

INTRODUCTION

CONGRATULATIONS on the purchase of your new bicycle. This manual is designed to give you information you need for the safe operation and maintenance of your new bicycle. Please read it thoroughly before riding your bicycle.

Your bicycle's serial number is stamped on the underside of the bottom bracket shell. Please record the serial number in this manual in the event your bicycle is lost or stolen. You may also want to register your serial number with your local police department. Please retain your sales receipt as proof of purchase and keep with the information below.

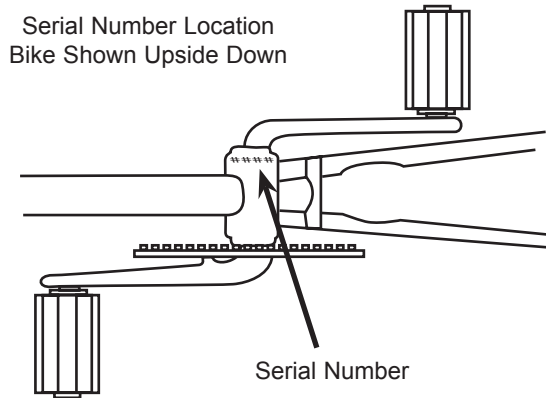
MODEL NAME _____

SERIAL NUMBER _____

COLOR _____

DATE OF PURCHASE _____

PLACE OF PURCHASE _____



ABOUT THIS MANUAL

This manual was written to help you get the most performance, comfort, enjoyment and safety when riding your new bicycle. It is important for you to understand your new bicycle. By reading this manual *before* you go out on your first ride, you'll know how to get better performance, comfort, and enjoyment from your new bicycle. It is also important that your first ride on your new bicycle is taken in a controlled environment, away from cars, obstacles and other cyclists.

GENERAL WARNING

Bicycling can be a hazardous activity even under the best of circumstances. Proper maintenance of your bicycle is your responsibility as it helps reduce the risk of injury. This manual contains many "*Warnings*" and "*Cautions*" concerning the consequences of failure to maintain or inspect your bicycle. Many of the warnings and cautions say "you may lose control and fall". Because any fall can result in serious injury or even death, we do not repeat the warning of possible injury or death whenever the risk of falling is mentioned.






WARNING

*** SPECIAL NOTE FOR PARENTS ***

It is a tragic fact that many bicycle accidents involve children. As a parent or guardian, you bear the responsibility for the activities and safety of your minor child. Among these responsibilities are to make sure that the bicycle which your child is riding is properly fitted to the child; that it is in good repair and safe operating condition; that you and your child have learned, understand and obey not only the applicable local motor vehicle, bicycle and traffic laws, but also the common sense rules of safe and responsible bicycling. As a parent, you should read this manual before letting your child ride the bicycle. Please make sure that your child always wears an approved bicycle helmet when riding.

WARNING

This bicycle is intended for use as a pedal power bicycle only. It is NOT designed, intended, or suitable for use with the installation of an internal combustion engine or other powered devices. **DO NOT MODIFY THE BICYCLE.**

	PART 1
	PART 2
	PART 3
	PART 4
	PART 5

Parts Identification	09
Before You Ride.....	10-20
Servicing	21-25
Detailed Assembly & Maintenance.....	26-60
How Things Work.....	61-73
Limited Warranty	74

In this manual, particularly important information is presented in the following ways:

 **WARNING**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

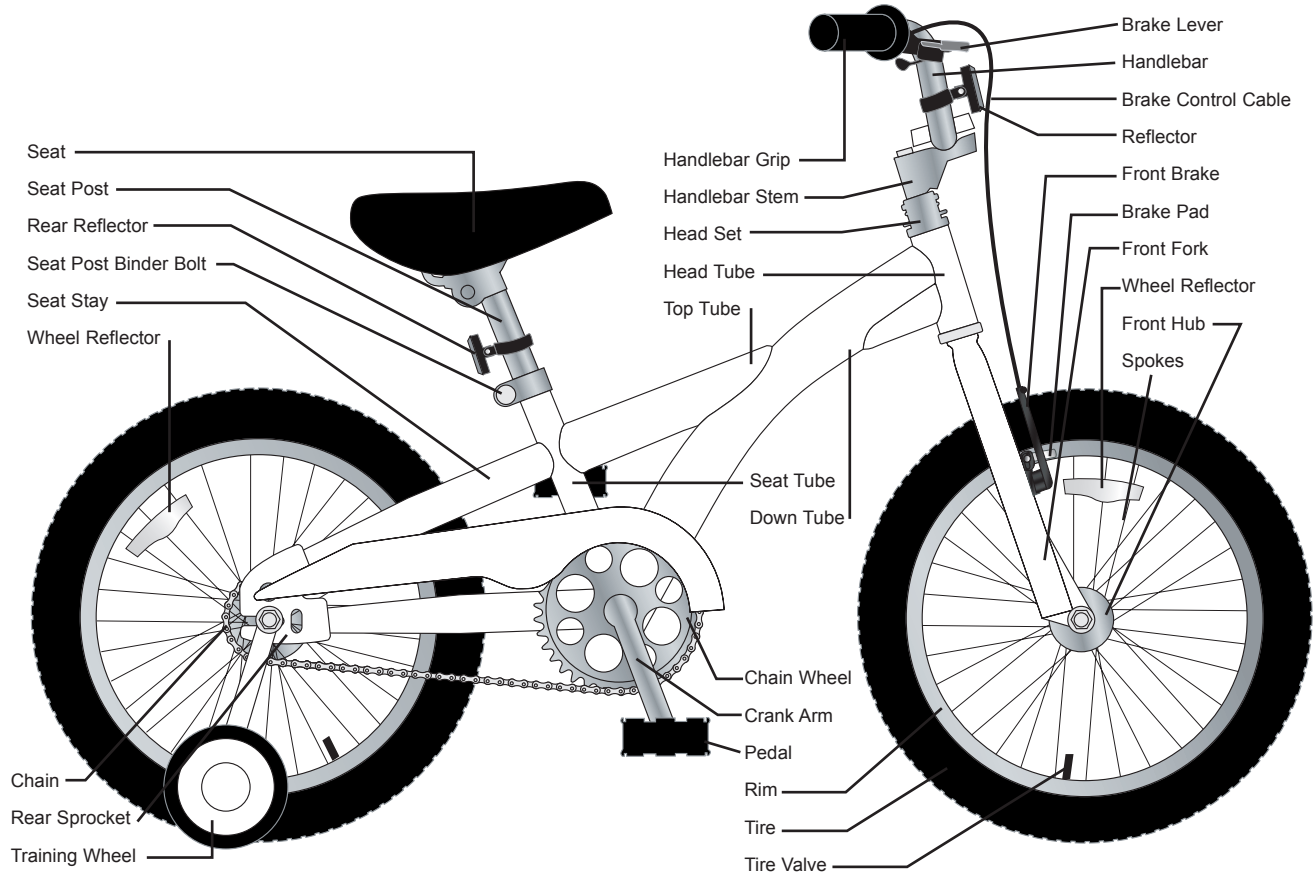
 **CAUTION**

Indicates special precautions that must be taken to avoid damage.

Juvenile Type Bicycle



PART 1 - PARTS IDENTIFICATION

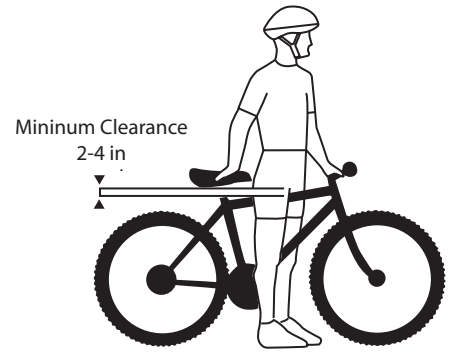




CORRECT FRAME SIZE

Juvenile type bikes do not have a range of frame sizes. These bikes are categorized according to their wheel size. The most common wheel sizes for juvenile bikes are 12", 14", 16", 18", 20" and 24".

The ideal clearance will vary between types of bicycles and rider preference. Appropriate clearance is an important safety consideration in situations such as sudden stops, or when dealing with rough, unpredictable terrain. To be certain of the correct frame size for your child, please consult your authorized dealer for professional assistance.

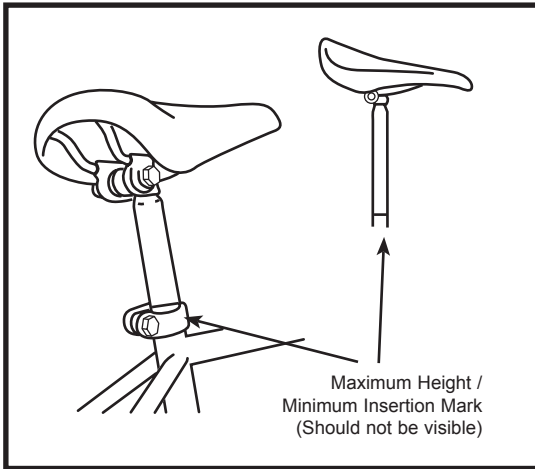


Braking Technique

- It is important to take the time to familiarize your self with the braking system of your bicycle.
- Modern braking systems are quite powerful and do not normally require a great deal of force to operate.
- The front brake is responsible for the majority of your stopping power. However, improper use can result in accident or injury.
- It is recommended that you practice using the brakes in a controlled environment such as a driveway or empty parking lot to gain a feel for how they function and how much force is required to safely stop the bike.
- Always avoid using sudden or excessive force when operating the brake levers. A gradual and smooth pull of the lever is all that is needed to safely reduce your sped and come to a stop.

Pedaling Technique

- Position the ball of your foot on the center of the pedal.
- When pedaling, ensure your knees are parallel to the bicycle frame.
- To absorb shock, keep your elbows slightly bent.
- Learn to operate the gears properly.



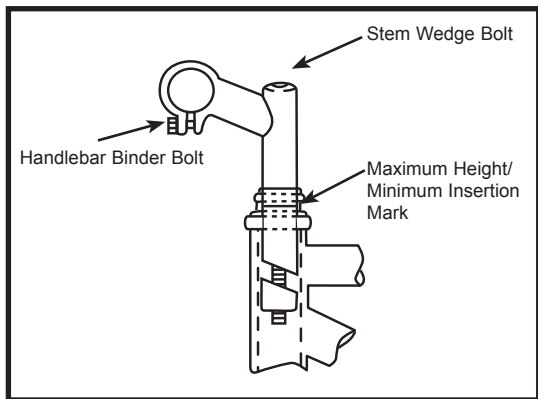
RIDING POSITION

Saddle Height

In order to obtain the most comfortable riding position and offer the best possible pedaling efficiency, the saddle height should be set correctly in relation to the rider's leg length. The correct saddle height should not allow leg strain from over-extension, and the hips should not rock from side to side when pedaling. For younger riders or those new to riding, you may want to position the saddle so that the rider can easily touch the ground with their feet while sitting on the saddle. This will allow the rider to feel more comfortable on the bike and allow them to gain confidence as they increase their balance and stability. As the rider gains stability, you will want to position the saddle so that they are able to achieve a smoother and more efficient pedal stroke. The optimal saddle height will allow the knee to be slightly bent while the pedal is at its lowest point in the pedal stroke.

WARNING

Under no circumstances should the seat post project from the frame beyond its "Minimum Insertion" or "Maximum Extension" mark. If your seat post projects from the frame beyond these markings, the seat post or frame may break, which could cause you to lose control and fall. Prior to your first ride, be sure to tighten the saddle adjusting mechanism properly. A loose saddle clamp or seat post binder can cause damage to the bicycle or can cause you to lose control and fall. Periodically check to make sure that the saddle adjusting mechanism is properly tightened.



Handlebar Height

Note: Only bicycles equipped with quill type stems, as shown in the accompanying diagram, are able to allow for handlebar height adjustment. You should never raise the stem past the maximum height/minimum insertion mark imprinted on the stem.

WARNING

If your bicycle does not fit properly, you may lose control and fall. If your new bike doesn't fit ask your Authorized Dealer to adjust it for proper fit.

WARNING

Clamp on stems for threadless steering systems cannot be adjusted height wise. It is possible to make certain parts changes that will allow you to alter the handlebar position. Please consult your authorized bicycle dealer for available options. See diagram on page 32.

The stem's "Minimum Insertion" mark must not be visible above the top of the headset. If the stem is extended beyond this mark, the stem may break or damage the fork's steerer tube, which could cause you to lose control and fall.

Failure to properly tighten the stem binder bolt, the handlebar binder bolt, or the bar end extension clamping bolts may compromise steering action, which could cause you to lose control and fall. Place the front wheel of the bicycle between your legs and attempt to twist the handlebar/stem assembly using a reasonable amount of force. If you can twist the stem in relation to the front wheel, turn the handlebars in relation to the stem, or turn the bar end extensions in relation to the handlebar, you must tighten the appropriate bolts accordingly.

PRE-RIDE SAFETY CHECKLIST



Always perform the PRE-RIDE SAFETY CHECKLIST below before every ride. If you find damage, do not ride the bike; seek the assistance of a bike dealer to correct any problem. **FAILURE TO PERFORM PRE-RIDE CHECKS CAN LEAD TO AN ACCIDENT WITH RISK OF SERIOUS INJURY, PARALYSIS, OR DEATH.**

- 1. CHECK THE HELMET** - Make sure rider wears a helmet and appropriate shoes and clothing. Clothing must not interfere with the ability to control the bicycle. Make sure the bicycle helmet is intended for bicycling, is in good condition, and fits the rider correctly. Read manufacturer's helmet instructions for inspection and fit information. **See pages: 1, 13, 15.**
- 2. INSPECT FRAME AND FORK** - Clean frame and check for cracks, especially around welds. Check that the frame and fork are not bent or broken. If either are bent or broken, they should be replaced.
- 3. CHECK REFLECTORS, LIGHTING, AND ACCESSORIES**, Ensure that all reflectors are present, properly fitted, and not obscured. Ensure all other fittings on the bike are properly and securely fastened, and functioning. Make sure there are not loose or broken parts.
- 4. CHECK THE WHEELS AND TIRES** - Ensure tires are inflated to within the recommended limit as displayed on the tire sidewall. Ensure tires have tread and have no bulges or excessive wear. Ensure rims run true and have no obvious wobbles or kinks. Ensure all wheel spokes are tight and not broken. Check to ensure that wheels are properly seated in the forks. Check that axle nuts are tight. If your bicycle is fitted with quick release axles, make sure locking levers are correctly tensioned and in the closed position. **See pages: 13, 26-34, 61-65, 71-72.**

continued on the next page.....

PRE-RIDE SAFETY CHECKLIST

continued from previous page.....

5. **CHECK THE BRAKES** - Ensure front and rear brakes work properly. Ensure brake shoe pads are not over worn and are correctly positioned in relation to the rims. Ensure brake control cables are lubricated, correctly adjusted and display no obvious wear. Ensure brake control levers are lubricated and tightly secured to the handlebar. **See pages: 10,14, 43-48, 66-67.**

6. **CHECK THE STEERING** - Ensure handlebar and stem are correctly adjusted and tightened, and allow proper steering. Ensure that the handlebars are set correctly in relation to the forks and the direction of travel. Check that the headset locking mechanism is properly adjusted and tightened. If the bicycle is fitted with handlebar end extensions, ensure they are properly positioned and tightened. **See pages: 14, 35-36, .**

7. **CHECK THE MOVING PARTS** - (CHAIN, CRANKS, DERAILLUER, PEDALS, SHIFTERS, AND GEARS) - - Ensure chain is oiled, clean and runs smoothly. More frequent service is required in wet or dusty conditions. Ensure pedals are securely tightened to the cranks. Ensure cranks are securely tightened to the axle and are not bent. Check that front and rear mechanisms are adjusted and function properly. Ensure control levers are securely attached. Ensure derailleurs, shift levers and control cables are properly lubricated. Ensure all bearings are lubricated, run freely and display no excess movement, grinding or rattling. Check headset, wheel bearings, pedal bearings and bottom bracket bearings. **See "Servicing" pages 21-25, and Maintenance pages 26-60.**



Helmets

A WORD TO PARENTS REGARDING CHILDREN AND HELMETS:

Many states have passed helmet laws regarding children. Make sure you know your states helmet laws. It is your job to enforce these rules with Your children. Even if your state does not have a children's helmet law, it is strongly advised that everyone wear a helmet when cycling. When riding with a child carrier seat or trailer, children must wear a helmet.

It is strongly advised that a properly fitting, ANSI or SNELL approved, bicycle safety helmet be worn at all times when riding your bicycle. In addition, if you are carrying a passenger in a child safety seat, they must also be wearing a helmet.

The correct helmet should:

- be comfortable
- have good ventilation
- be undamaged
- be lightweight
- fit correctly

WARNING

ALWAYS WEAR A PROPERLY FITTED HELMET WHICH COVERS THE FOREHEAD WHEN RIDING A BICYCLE. MANY STATES REQUIRE SPECIFIC SAFETY DEVICES. IT IS YOUR RESPONSIBILITY TO FAMILIARIZE YOURSELF WITH THE LAWS OF THE STATE WHERE YOU RIDE AND TO COMPLY WITH ALL APPLICABLE LAWS, INCLUDING PROPERLY EQUIPPING YOURSELF AND YOUR BIKE AS THE LAW REQUIRES. Reflectors are important safety devices which are designed as an integral part of your bicycle. Federal regulations require every bicycle to be equipped with front, rear, wheel, and pedal reflectors. These reflectors are designed to pick up and reflect street lights and car lights in a way that helps you to be seen and recognized as a moving bicyclist. Check reflectors and their mounting brackets regularly to make sure they are clean, straight, unbroken and securely mounted. Have your dealer replace damaged reflectors and straighten or tighten any that are bent or loose.

Wet Weather

IT IS RECOMMENDED TO NOT RIDE IN WET WEATHER

- In wet weather you need to take extra care.
- Brake earlier, you will take a longer distance to stop.
- Decrease your riding speed, avoid sudden braking and take corners with additional caution.
- Be more visible on the road.
- Wear reflective clothing and use safety lights.
- Pot holes and slippery surfaces such as line markings and train tracks all become more hazardous when wet.

RIDING SAFELY

General Rules

Always wear a helmet.

When riding obey the same road laws as all other road vehicles, including giving way to pedestrians, and stopping at red lights and stop signs.

For further information, contact the Road Traffic Authority in your State.

Ride predictably and in a straight line. Never ride against traffic.

Use correct hand signals to indicate turning or stopping.

Ride defensively. To other road users, you may be hard to see.

Concentrate on the path ahead. Avoid pot holes, gravel, wet road markings, oil, curbs, speed bumps, drain grates and other obstacles.

Cross train tracks at a 90 degree angle or walk your bicycle across.

Expect the unexpected such as opening car doors or cars backing out of concealed driveways.

Be extra careful at intersections and when preparing to pass other vehicles.

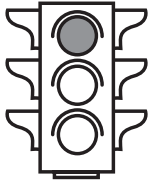
Familiarize yourself with all the bicycle's features. Practice gear shifts, braking, and the use of toe clips and straps, if fitted.

If you are wearing loose pants, use leg clips or elastic bands to prevent them from being caught in the chain. Wear proper riding attire and avoid open toe shoes.

Don't carry packages or passengers that will interfere with your visibility or control of the bicycle. Don't use items that may restrict your hearing.

Do not lock up the brakes. When braking, always apply the rear brake first, then the front. The front brake is more powerful and if it is not correctly applied, you may lose control and fall.

Maintain a comfortable stopping distance from all other riders, vehicles and objects. Safe braking distances and forces are subject to the prevailing weather conditions.



NIGHT RIDING

Riding a bicycle at night is much more dangerous than riding during the day. A bicyclist is very difficult for motorists and pedestrians to see. **Therefore, children should never ride at dawn, at dusk or at night.** Adults who chose to accept the greatly increased risk of riding at dawn, at dusk or at night need to take extra care both riding and choosing specialized equipment which helps reduce that risk. Consult your dealer about night riding safety equipment.

WARNING

REFLECTORS ARE NOT A SUBSTITUTE FOR REQUIRED LIGHTS. RIDING AT DAWN, AT DUSK, AT NIGHT OR AT OTHER TIMES OF POOR VISIBILITY WITHOUT AN ADEQUATE BICYCLE LIGHTING SYSTEM AND WITHOUT REFLECTORS IS DANGEROUS AND MAY RESULT IN SERIOUS INJURY OR DEATH.

Bicycle reflectors are designed to pick up and reflect street lights and car lights in a way that may help you to be seen and recognized as a moving bicyclist.

CAUTION

Check reflectors and their mounting brackets regularly to make sure that they are clean, straight, unbroken and securely mounted. Have your dealer replace damaged reflectors and straighten or tighten any that are bent or loose.

The mounting brackets of front and rear reflectors are often designed as brake straddle cable safety catches which prevent the straddle cable from catching on the tire tread if the cable jumps out of its yoke or breaks.

WARNING

DO NOT REMOVE THE FRONT OR REAR REFLECTORS OR REFLECTOR BRACKETS FROM YOUR BICYCLE.

They are an integral part of the bicycle's safety system.

REMOVING THE REFLECTORS MAY REDUCE YOUR VISIBILITY TO OTHERS USING THE ROADWAY. BEING STRUCK BY OTHER VEHICLES MAY RESULT IN SERIOUS INJURY OR DEATH.

The reflector brackets may protect you from the brake straddle cable catching on the tire in the event of brake cable failure. If a brake straddle cable catches on the tire, it can cause the wheel to stop suddenly, causing you to lose control and fall.

If you choose to ride under conditions of poor visibility, check and be sure you comply with all local laws about night riding, and take the following strongly recommended additional precautions:

- Purchase and install battery or generator powered head and tail lights which meet all regulatory requirements and provide adequate visibility.
- Wear light colored, reflective clothing and accessories, such as a reflective vest, reflective arm and leg bands, reflective stripes on your helmet, flashing lights attached to your body and/or your bicycle ... any reflective device or light source that moves will help you get the attention of approaching motorists, pedestrians and other traffic.
- Make sure your clothing or anything you may be carrying on the bicycle does not obstruct a reflector or light.
- Make sure that your bicycle is equipped with correctly positioned and securely mounted reflectors.



Hill Technique

- Gear down before a climb and continue gearing down as required to maintain pedaling speed.
- If you reach the lowest gear and are struggling, stand up on your pedals. You will then obtain more power from each pedal revolution.
- On the descent, use the high gears to avoid rapid pedaling.
- Do not exceed a comfortable speed; maintain control and take additional care.

Cornering Technique

Brake slightly before cornering and prepare to lean your body into the corner. Maintain the inside pedal at the 12 o'clock position and slightly point the inside knee in the direction you are turning. Keep the other leg straight, don't pedal through fast or tight corners.

Rules for Children

To avoid accidents, teach children good riding skills with an emphasis on safety from an early age. Make sure your child is properly fitted to their bicycle. Your dealer will be able to offer detailed advice and assistance in determining the proper fit for your child.

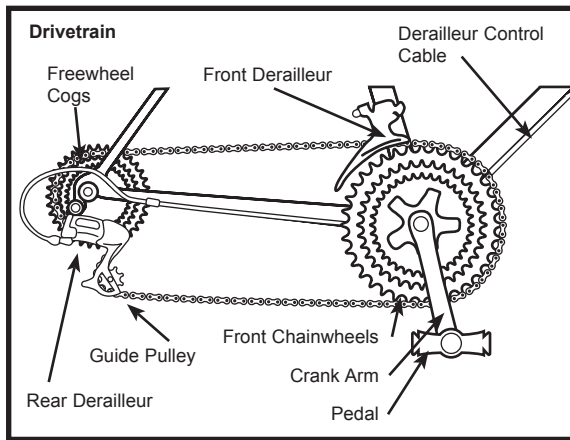
1. Always wear a properly fitted helmet.
2. Do not ride on busy streets.
3. Do not ride at night.
4. Obey all the traffic laws, especially stop signs and red lights.
5. Be aware of other road vehicles behind and nearby.
6. Before entering a street: Stop, look left, right, and left again for traffic. If there's no traffic, proceed into the roadway.
7. If riding downhill, be extra careful. Slow down using the brakes and maintain control of the steering.
8. Never take your hands off the handlebars, or your feet off the pedals when riding downhill.
9. Your bicycle is intended for use by only one rider. Do not ride double.



The Consumer Protection Safety Commission advises that the riding of small wheel diameter bicycles at excessive speeds can lead to instability and is not recommended.

Children should be made aware of all possible riding hazards and correct riding behavior before they take to the streets.

- Do not leave it up to trial and error.



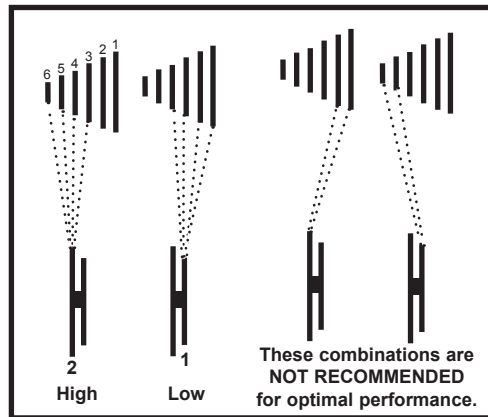
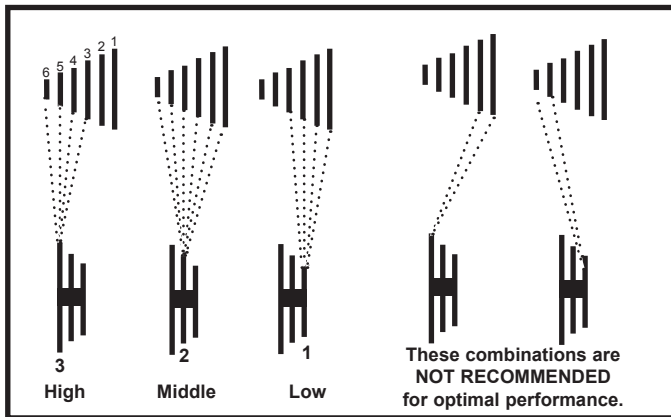
GEARS - HOW TO OPERATE

Derailleur Gears

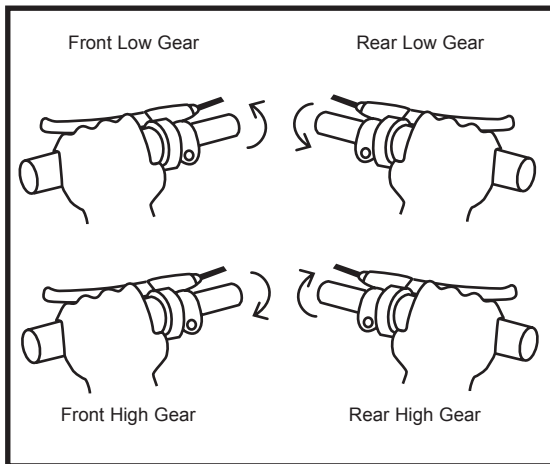
Most multi-speed bicycles today are equipped with what are known as derailleur gears. They operate using a system of levers and mechanisms to move the drive chain between different sized driving gears or cogs. The purpose of gears is to let you maintain a constant, steady pedaling pace under varying conditions. This means your riding will be less tiring without unnecessary straining up hills or fast pedaling down hill. Bicycles come with a variety of gear configurations from 5 to 30 speeds. A 5-8 speed bicycle will have a single front chainwheel, a rear derailleur, and 5 to 8 cogs on the rear hub. Bicycles with more gears will also have a front derailleur, a front chainwheel with 2-3 cogs, and up to 10 cogs on the rear hub.

Operating Principles

No matter how many gears, the operating principles are the same. The front derailleur is operated by the left shift lever and the rear derailleur by the right. To operate you must be pedaling forward. You can not shift derailleur gears when you are stopped or when pedaling backwards. Before shifting ease up on your pedaling pressure. For a smooth gear change when approaching a hill, shift to a lower gear **BEFORE** your pedaling speed slows down too much. When coming to a stop, shift to a lower gear first so it will be easier when you start riding again. If, after selecting a new gear position, you hear a slight rubbing noise from the front or rear gears, gently adjust the appropriate shifter using the barrel adjusters until the noise goes away. For optimal performance and extended chain life, it is recommended that you avoid using the extreme combinations of gear positions (diagram p. 20) for extended periods.



Recommended Chainwheel/Rear Sprocket Gear Combinations



Twist Grip Shifters

Most multi speed cruisers will be equipped with a shifting mechanism commonly referred to as a twist shifter. These shifters are designed to be integrated with the hand grip and do not make use of separate shift levers. The ratcheting mechanism is built into part the grip that you grasp with your thumb and index finger. For most models, to select a lower gear (larger rear cog), twist the shifter toward you. To select a higher gear (smaller rear cog), twist the shifter away from you. You can shift one gear at a time by moving the shifter for one click, or you can shift through multiple gears at one time by twisting the shifter through several clicks.

Note: some models will utilize a twist shifter that may work opposite of these directions. If you have any questions or concerns regarding your particular shifting system, please contact or visit your authorized dealer.

BICYCLE CARE

Basic Maintenance

The following procedures will help you maintain your bicycle for years of enjoyable riding.

For regular, periodic cleaning of your frame, wipe with a damp cloth soaked in a mild detergent mixture. Dry with a cloth and polish with car or furniture wax. Your dealer will also have a number of cleaning products available that are specifically intended for use on your bicycle. If your bike is extremely dirty or is caked with mud, you may want to carefully hose the bike off before washing. It is very important however to not use any kind of pressure sprayer on your bicycle and to keep the water directed away from all bearing assemblies. Failure to do so can result in the bearing assembly becoming contaminated causing premature wear and diminished performance.

Always store your bicycle under shelter. Avoid leaving it in the rain or exposed to corrosive materials. Riding on the beach or in coastal areas exposes your bicycle to salt which is very corrosive. If you ride your bike in these areas, wash your bicycle frequently and wipe or spray all unpainted parts with an anti-rust treatment, making sure to avoid contact with any braking surfaces.

If the hub and bottom bracket bearings of your bicycle have been submerged in water, you should have them serviced by your local dealer. This will prevent accelerated bearing deterioration and maintain overall performance.

If paint has become scratched or chipped to the metal, use touch up paint to prevent rust and corrosion. A good choice would be enamel based model or hobby paint. These paints are widely available and are produced in a wide array of colors. Clear nail polish can also be used as a preventative measure.

Regular cleaning and lubrication will extend the useful life of your bicycle and maintain a high level of performance. While many of these processes can be easily done on your own, we do recommend bringing the bike in to your local authorized dealer for regular service and general inspection.





Correct routine maintenance of your new bike will ensure:

Smooth running - Longer lasting components - Safer riding - Lower running costs

Every time you ride your bicycle, its condition changes. The more you ride, the more frequently maintenance will be required. We recommend you spend a little time on regular maintenance tasks. The following schedules are a useful guide and by referring to Part 4 of this manual, you should be able to accomplish most tasks. As always, please see your dealer for further assistance or if you have any questions.

Schedule 1 - Lubrication

Frequency	Component	Lubricant
Weekly	chain	chain lube or light oil
	suspension fork	see fork owners manual
Monthly	derailleur pulley wheels	chain lube
	derailleur pivots	chain lube
	brake levers	chain lube
	clipless pedal systems	chain lube
Every Six Months	brake cables	chain lube
	shift cables	chain lube
	freewheel	chain lube
Yearly	seatpost (in frame)	synthetic grease
	pedal threads & bearings	synthetic grease
	bottom bracket threads	synthetic grease
	bottom bracket bearings (non-cartridge)	synthetic grease
	wheel bearings (non-cartridge)	synthetic grease
	headset bearings (non-cartridge)	synthetic grease
	quick release levers	chain lube

Note: The frequency of maintenance should increase with use in wet or dusty conditions. Do not over lubricate - remove excess lubricant to prevent dirt build up. Never use a degreaser to lubricate your chain (WD-40™).

Schedule 2 - Service Checklist

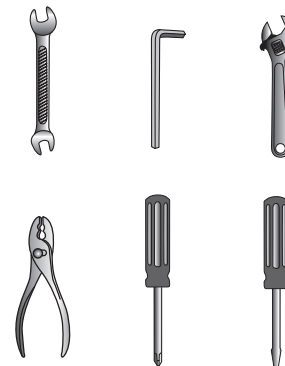


		Page Reference
Before every ride	Check tire pressure	28
	Check brake operation	40-45
	Check wheels for loose spokes and any wobble	27
	Check quick release / wheel bolts	26-27
	Inspect tires for wear and damage	28
	Check frame and fork for cracks	14
Weekly	Lubrication as per schedule 1	22
	Quick wipe down with a damp cloth	21
	Check pivot bolts on full suspension frames	37-38
	Check suspension bolts for tightness	37-38
Monthly	Lubrication as per schedule 1	22
	Check handlebar and stem adjustment	32-34
	Check seat and seatpost adjustment	39-40
	Inspect chain and cassette for wear	14
	Inspect shift cables for wear	36
	Check derailleur adjustment	52-53
	Check brake adjustment	40-45
	Check brake pads for wear	40-45
	Check that all nuts and bolts are tight	
Every Six Months	Lubrication as per schedule 1	22
	Check all points as per monthly service	23
	Inspect brake pads for wear and replace as needed	40-45
Yearly	Inspect chainrings for wear	48-50
	Lubrication as per schedule 1	22
	Schedule service at Authorized Dealer	



Recommended Tools for Basic Maintenance

1. Allen wrenches in 2, 4, 5, 6 and 8mm sizes
2. Open-end wrenches in 9, 10 and 15mm sizes
3. T-25 Torx wrench
4. No. 1 Phillips head screwdriver
5. Tire pump with gauge
6. Tube repair kit
7. Tire levers



Travel Tools for the Ride:

1. Spare Tube
2. Patch kit
3. Pump
4. Tire levers
5. Multi-tool
6. Change (phone call) or cell phone

SERVICE & TECHNICAL SUPPORT

CALL TOLL FREE 1-800-THE-BIKE

WARNING

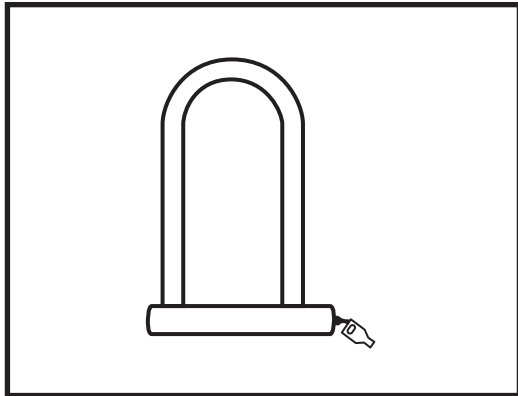
To avoid injury, this product must be properly assembled before use. If your bicycle was obtained assembled, we strongly recommend that you review the complete assembly instructions and perform checks specified in the manual before riding.

We recommend that you consult a bicycle specialist if you have doubts or concerns as to your experience or ability to properly assemble, repair, or maintain your bicycle.



Storage

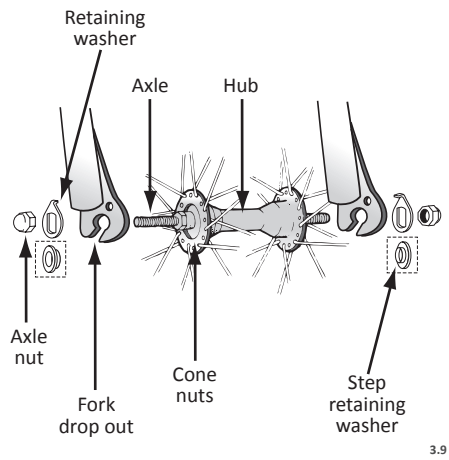
Keep your bicycle in a dry location away from the weather and the sun. Ultraviolet rays may cause paint to fade or rubber and plastic parts to crack. Before storing your bicycle for a long period of time, clean and lubricate all components and wax the frame. Deflate the tires to half pressure and hang the bicycle off the ground. Don't store near electric motors as ozone emissions may effect the rubber and paint. Don't cover with plastic as "sweating" will result which may cause rusting. Please notice that your bicycle warranty does not cover paint damage, rust, corrosion, dry rot or theft.



Security

It is advisable that the following steps be taken to prepare for and help prevent possible theft.

1. Maintain a record of the bicycle's serial number, generally located on the frame underneath the bottom bracket.
2. Register the bicycle with the local police.
3. Invest in a high quality bicycle lock that will resist hack saws and bolt cutters. Always lock your bicycle to an immovable object if it is left unattended.



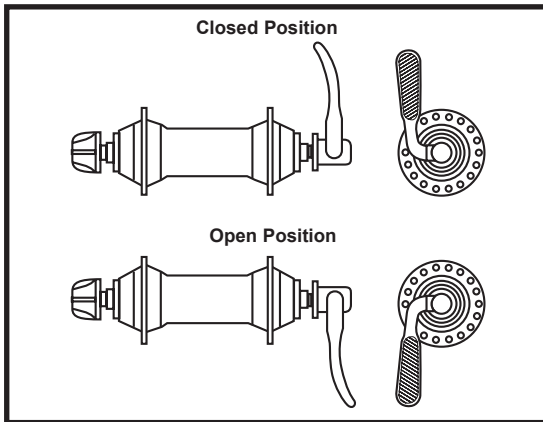
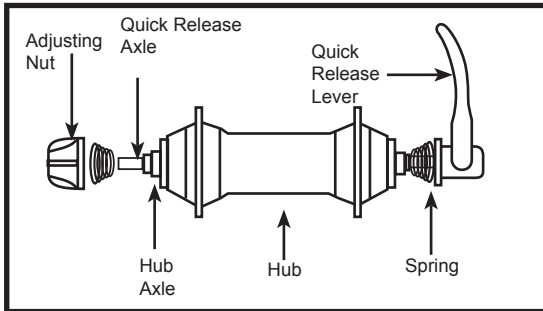
WHEELS AND TIRES

FRONT WHEEL

There are two types of front wheel hubs; Nuted and quick release.

Nuted Front Wheels

Loosen the axle nuts on the front wheel. If there is a washer inside of the axle nut, it belongs outside of the fork dropouts. If the washer has a hook or a step, be sure that it engages the fork before tightening the axle nuts. Slide the front wheel between the fork dropouts. If the wheel has a hook shaped washer, be sure that the hook is hooked into the hole above the wheel slot. If there is a step washer, be sure the step fits into the key hole at the top of the wheel slot. Tighten the two outer axle nuts evenly; Tighten one side part way, then tighten the other side and repeat until both sides are tightened securely. Be sure that the wheel is centered between the fork legs. If it is off center, loosen the axle nut on the side that has a smaller gap between tire and fork leg, and use your hand to push the wheel to a centered position; hold the wheel with one hand, and tighten the axle nut and check again. Repeat if needed to be sure the wheel is centered and securely tightened. (Fig. 3.9)



WHEELS AND TIRES, (continued from previous pages)

Wheels



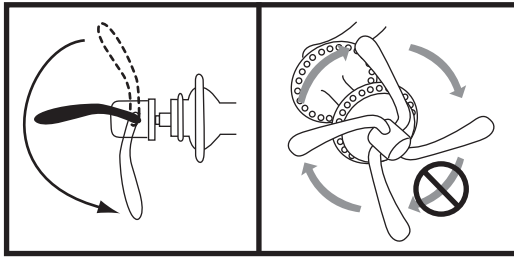
WARNING

ALSO READ NOW: page 61

Check the wheel hub before attaching it to the fork by rotating the threaded axle. It should be smooth with no lateral movement. Insert the front wheel into the fork dropouts. Tighten the wheel nuts using the appropriate 14mm or 15mm wrench. Spin the wheel checking for trueness. Some bicycles have wheel axles that incorporate a Quick Release (QR) mechanism. This allows easy wheel removal without the need for tools. The mechanism uses a long bolt with an adjusting nut on one end, and a lever operating a cam-action tensioner on the other. If the wheel is fitted with a Quick Release type axle, turn the adjusting nut so that the locking lever is moved to the closed position with a firm action. At the halfway closed position of the quick release lever, you should start to feel some resistance to this motion. Do not tighten the quick release by using the quick release lever like a wing nut. If the quick release lever is moved to the closed position with no resistance, clamping strength is insufficient. Move the quick release lever to the open position, tighten the quick release adjusting nut, and return the quick release lever to the closed position.

Correct Quick Release Axle Setting

1. To set, turn the lever to the open position so that the curved part faces away from the bicycle.
2. While holding the lever in one hand, tighten the adjusting nut until it stops.
3. Pivot the lever towards the closed position. When the lever is halfway closed, there must be firm resistance to turn it beyond that point. If resistance is not firm, open the lever and tighten the adjusting nut in a clockwise direction.
4. Continue to pivot the lever all the way to the closed position so that the curved part of the lever faces the bicycle.
5. The wheel is tightly secured when the serrated surfaces of the quick release clamping parts actually begin to cut into the bicycle frame/fork surfaces.
6. Note that the same procedure applies when operating a quick release seat post binder mechanism.



WARNING

If you can fully close the quick release "QR" without wrapping your fingers around the fork blade for leverage, and the lever does not leave a clear imprint in the palm of your hand, the tension is insufficient. Open the lever, turn the adjusting, and try again. Continue until the QR lever closes properly. Secondary retention devices are not a substitute for a correct quick release adjustment. Failure to properly adjust the quick release mechanism can cause the wheel to wobble or disengage, which could cause you to lose control and fall, resulting in serious injury or death.

Wheel Inspection

It is most important that wheels are kept in top condition. Properly maintaining your bicycle's wheels will help braking performance and stability when riding. Be aware of the following potential problems:

•**Quick Release:**

Check that the quick release is set to the closed position and is properly tensioned before each ride. Check that the wheel is properly mounted on the fork.

Caution: Maintain the closed position and the correct adjustment. Failure to do so may result in serious injury.

•**Wheels not straight:**

Lift each wheel off the ground and spin them to see if they are crooked or out of true. If wheels are not straight, they will need to be adjusted. This is quite difficult and is best left to a bicycle specialist.

•**Broken or loose spokes:**

Check that all spokes are tight and that none are missing or damaged.

Caution: Such damage can result in severe instability and possibly an accident if not corrected.

Again, spoke repairs are best handled by a specialist.

•**Loose hub bearings:**

Lift each wheel off the ground and try to move the wheel from side to side.

Caution: If there is movement between the axle and the hub, do not ride the bicycle. Adjustment is required.

•**Axle nuts:**

Check that these are tight before each ride.



Tire Inspection

Tires must be maintained properly to ensure road holding and stability. Check the following areas:

Inflation: Ensure tires are inflated to the pressure indicated on the tire sidewalls. It is better to use a tire gauge and a hand pump than a service station pump.

Caution: If inflating tires with a service station pump, take care that sudden over inflation does not cause tire to blow out.

Bead

Seating: When inflating or refitting tire, make sure that the bead is properly seated in the rim.

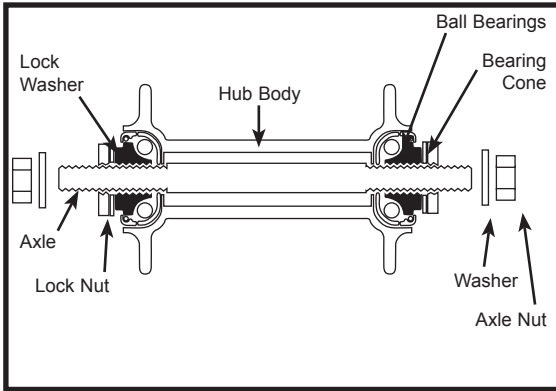
Tread: Check that the tread shows no signs of excessive wear or flat spots, and that there are no cuts or other damage.

Caution: Excessively worn or damaged tires should be replaced.

Valves: Make sure valve caps are fitted and that valves are free from dirt. A slow leak caused by the entry of the dirt can lead to a flat tire, and possibly a dangerous situation.

Recommended Tire pressures:

Please follow the tire manufacturer's guidelines which can be found molded into the sidewall of your tires.

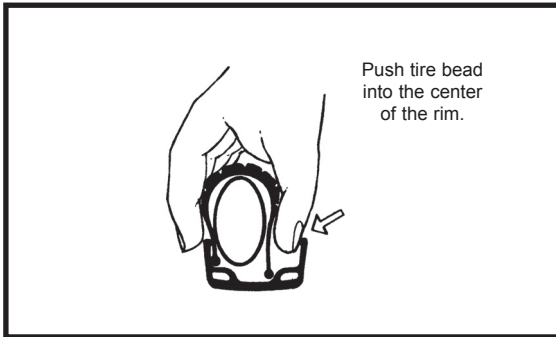


Hub Bearing Adjustment

When checked, the hub bearings of either wheel will require adjustment if there is any more than slight side play.

1. Check to make sure neither locknut is loose.
2. To adjust, remove wheel from bicycle and loosen the locknut on one side of the hub while holding the bearing cone on the same side with a flat open end wrench.
3. Rotate the adjusting cone as needed to eliminate free play.
4. Re-tighten the locknut while holding the adjusting cone in position.
5. Re-check that the wheel can turn freely without excessive side play.

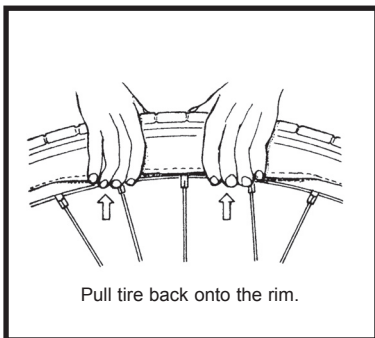
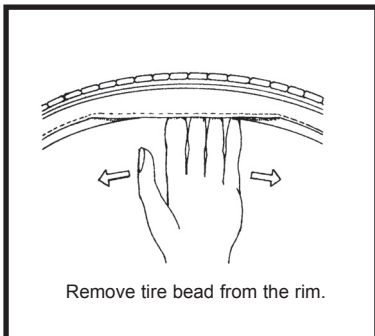
NOTE: If your bike is equipped with cartridge bearing hubs, please see your dealer for assistance.



How To Fix a Flat Tire

If you need to repair a tire, follow these steps:

1. Remove the wheel from the bicycle.
2. Deflate the tire completely via the valve.
Loosen the tire bead by pushing it inward all the way around.
3. Press one side of the tire bead up over the edge of the rim.
Note: Use tire levers, not a screwdriver, otherwise you may damage the rim.
4. Remove the tube, leaving the tire on the rim.
5. Locate the leaks and patch using a tube repair kit, carefully following the instructions, or replace the tube.
Note: Ensure that the replacement tube size matches the size stated on the tire sidewall and that the valve is the correct type for your bicycle.



6. Match the position of the leak in the tube with the tire to locate the possible cause and mark the location on the tire.
7. Remove the tire completely and inspect for a nail, glass, etc. and remove if located. Also inspect the inside of the rim to ensure there are no protruding spokes, rust or other potential causes. Replace the rim tape which covers the spoke ends, if damaged.
8. Remount one side of the tire onto the rim.
9. Using a hand pump, inflate the tube just enough to give it some shape.
10. Place the valve stem through the hole in the rim and work the tube into the tire. Note: Do not let it twist.
11. Using your hands only, remount the other side of the tire by pushing the edge toward the center of the rim. Start on either side of the valve and work around the rim.
12. Before the tire is completely mounted, push the valve up into the rim to make sure the tire can sit squarely in position.
13. Fit the rest of the tire, rolling the last, most difficult part on using your thumbs. Note: Avoid using tire levers as these can easily puncture the tube or damage the tire.
14. Check that the tube is not caught between the rim and the tire bead at any point.
15. Using a hand pump, inflate the tube until the tire begins to take shape, and check that the tire bead is evenly seated all the way around the rim. When properly seated, fully inflate the tire to the pressure marked on the sidewall. Use a tire air pressure gauge to check.
16. Replace the wheel into the frame checking that all gears, brakes and quick release levers are properly adjusted.

PEGS

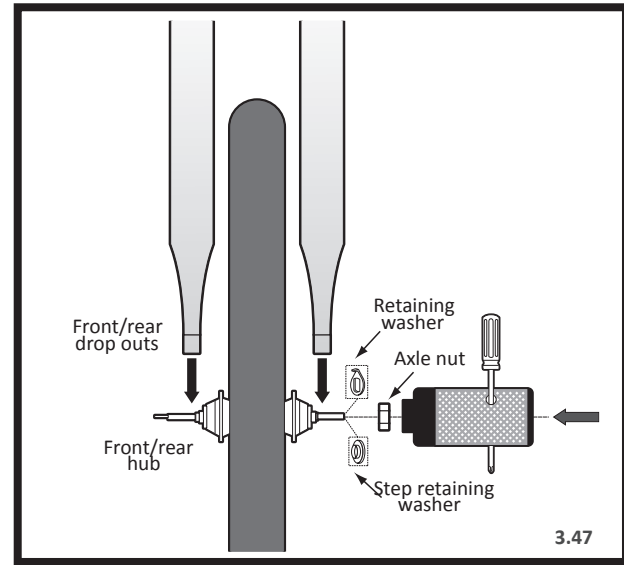
Some models may come equipped with 2 or 4 pegs.

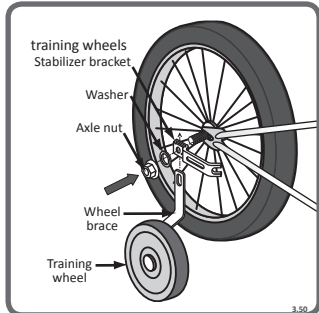
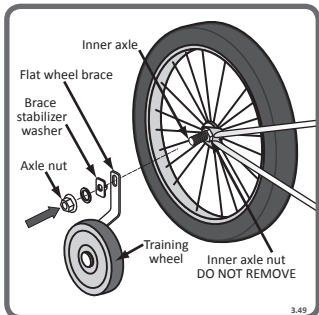
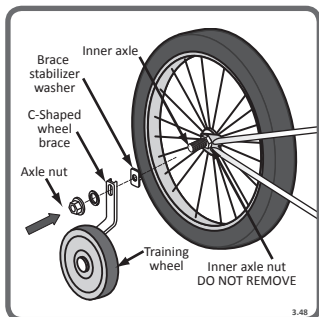
To install pegs, DO NOT loosen or remove axle nuts.

Check to make sure axle nuts are properly tightened before installing and tightenings the pegs. Thread the pegs on the axle over the axle nut, and insert a screwdriver or similar tool through the peg holes and tighten by turning the peg with the tool. (Figure 3.47)

WARNING

Periodically check to make sure both pegs are in good condition, not damaged, and make sure they are both securely tightened.





TRAINING WHEELS

Attaching training wheel brace to bicycle

There are three different braces used to attach the training wheels to the bicycle: the c-shape brace, the flat brace and the flat brace with stabilizer. Determine which brace was included with your bicycle and follow the given instructions for that particular brace.

C-Shape Brace

Remove the outer axle nut and washer from the rear wheel axle. Place the brace stabilizer washer onto the axle and align the washer so that the notch on the washer fits into the rear frame drop out. Next, place the C-shaped wheel brace onto the axle and replace the axle nut securely, making sure that the wheel brace stays in the proper vertical position. The elongated hole on the wheel brace allows the training wheel height to be adjusted for proper fit. (Fig. 3.48)

WARNING

It is very important to check the training wheel connection to the bicycle. Failure to properly tighten may cause the training wheel to dislodge. Please contact CYCLING SPORTS GROUP, INC. at **1-800-THE-BIKE** with any questions.

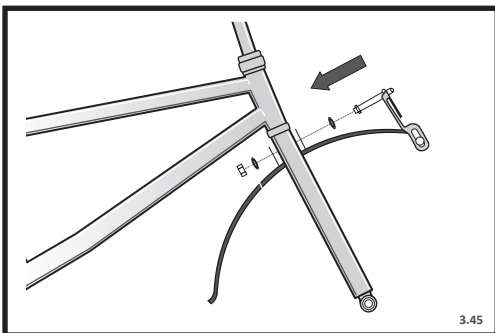
Flat Wheel Brace

Remove the outer axle nut and washer from the rear wheel axle. Place the flat wheel brace onto the axle. Next place the brace stabilizer washer onto the axle and align it so that the notch fits into the rear frame drop out. Replace the washer and axle nut. Tighten the axle nut securely, making sure that the wheel brace stays in the proper vertical position. The elongated hole on the wheel brace allows the training wheel height to be adjusted for proper fit. (Fig. 3.49)

Training Wheel Stabilizer Bracket

Remove the outer axle nut and washer from the rear wheel axle. Insert the wheel brace into the stabilizer bracket so that the forked end of the stabilizer bracket faces in. Slide assembly onto the rear axle so that the forked end hooks around the chain stay of the bicycle. Replace the axle nut and washer, secure tightly. The elongated hole on the brace allows for raising and lowering the training wheel to the proper height. (Fig. 3.50)

NOTICE: Not all bicycles will accept training wheels. If your bike did not come stock with training wheels, please call Cycling Sports Group to help determine if after-market can be attached.

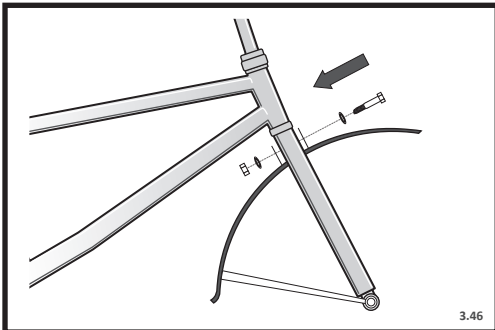


FRONT FENDER - if equipped

The front fender is mounted at the fork crown. There are two ways in which to mount your front fender. The first is the caliper brake mounting system (see Fig. 3.45), and the second is the 10mm nut and bolt system (see Fig. 3.46). Identify the mounting system used on your bicycle and follow the given instructions for that particular type of mounting system.

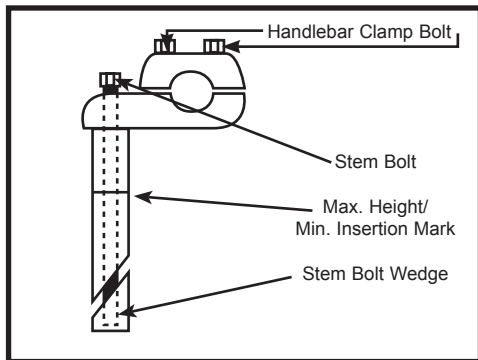
(Fig. 3.45) Caliper Brake Mounting System

First remove the front wheel from your bicycle. Remove the hex nut from the caliper brake bolt on the rear of the fork, and slide the brake assembly from the fork. Place the fender assembly onto the fork making sure the attachment holes and fender bracket holes line up. Reattach the caliper brake making sure that the brake arms are on each side of the fender. Tighten the bolt until secure.



(Fig. 3.46) 10mm Nut and Bolt Mounting System

First remove the front wheel from your bicycle. Place the fender assembly onto the fork making sure the attachment holes and fender bracket holes line up. Attach the fender with the 10mm hex bolt and nut. Tighten the bolt until secure.



HANDLEBARS AND STEM

Quill Stems

The handlebar stem fits into the steering column and is held firm by the action of a binder bolt and expander wedge which, when tightened, binds with the inside of the fork steerer tube.

When removing the stem, loosen the stem bolt two or three turns, then give it a tap to loosen the wedge inside.

Lubricate by first wiping off any old grease and grime, then applying a thin film of grease to the part, including the wedge, that will be inserted into the frame.

The height of the handlebar can be adjusted to suit your comfort preference.

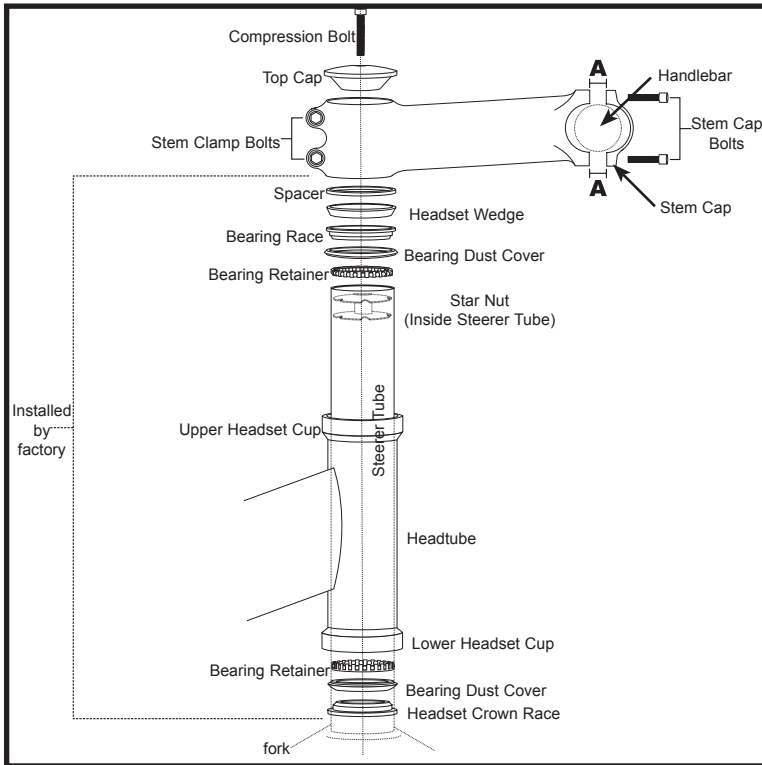
If the stem is removed from the steering column, you will notice a mark about 65mm up from the bottom with the words "max. height" or "minimum insertion".



WARNINGS

NEVER RIDE A BICYCLE IF THE STEM HAS BEEN RAISED SO THAT THE "MAX. HEIGHT"/MINIMUM INSERTION" LINE MARKING CAN BE SEEN.

OVER TIGHTENING THE STEM BOLT OR HEADSET ASSEMBLY MAY CAUSE DAMAGE TO THE BICYCLE AND/OR INJURY TO THE RIDER.



Direct-connect Stem

When re-fitting the stem, make sure the handlebars are correctly aligned and tightened using the appropriate hex wrench or allen key.

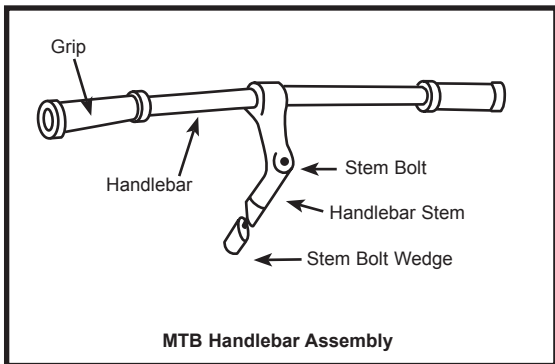
Do not overtighten.

Test the security of the handlebar within the stem, and the stem within the fork steerer tube, by clamping the front wheel between your knees and trying to move the handlebar up and down, and from side to side. The handlebar should not move when applying turning pressure.

Direct-connect Stems

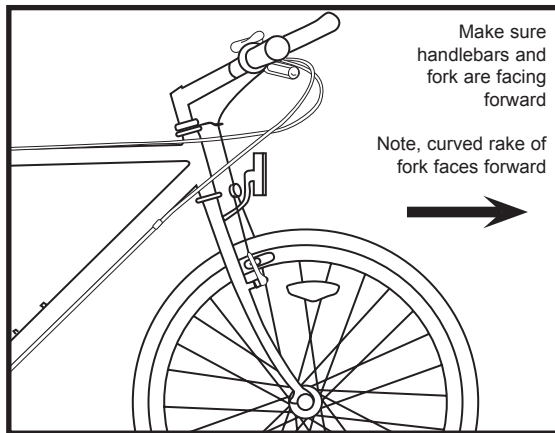
Direct-connect or threadless type stems can not be raised from their original height. They can however be lowered by switching the spacers from beneath the stem to above the stem. If you find that you need to have the handlebar raised, there are a number of options that are available to you. Your dealer will be able to demonstrate the various options available and help you choose the best one for your needs. If you have any questions on adjustment of your direct-connect stem, please see your local dealer for service assistance.





Handlebars

The exact position of the handlebars is a matter of personal preference. For bicycles with flat handlebars, the bar should be positioned relatively horizontal. For bikes with a riser style handlebar, the bar should be placed in an approximately upright position but can be angled back or forward slightly for comfort and personal preference. As always, your authorized dealer can further assist you in proper handlebar positioning.



WARNING

Never ride unless the handlebar clamping mechanism has been securely tightened.

HEADSET

Inspection

The headset bearing adjustment should be checked every month. This is important as it is the headset which locks the fork into the frame, and if loose, can cause damage or result in an accident. While standing over the frame top tube with both feet on the ground, apply the front brake firmly and rock the bicycle back and forth; if you detect any looseness in the headset, it will need adjustment. Check that the headset is not over tight by slowly rotating the fork to the right and left. If the fork tends to stick or bind at any point, the bearings are too tight.

Adjustment

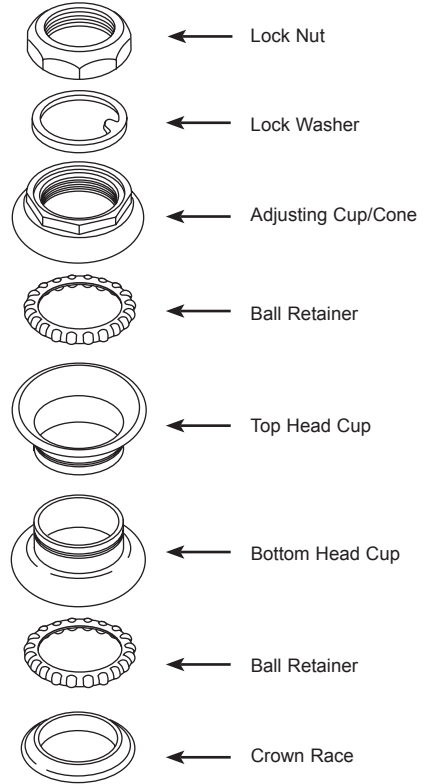
Headset bearing adjustment requires special tools and training. Improper adjustment can result in damage to the bicycle as well as threaten the rider's safety. For these reasons, we recommend that an authorized dealer perform all necessary headset adjustments.

WARNINGS

Always make sure that the headset is properly adjusted and that the headset locknut is fully tightened before riding.

Over tightening the stem bolt or headset assembly may cause damage to the bicycle and/or injury to the rider.

Standard Headset



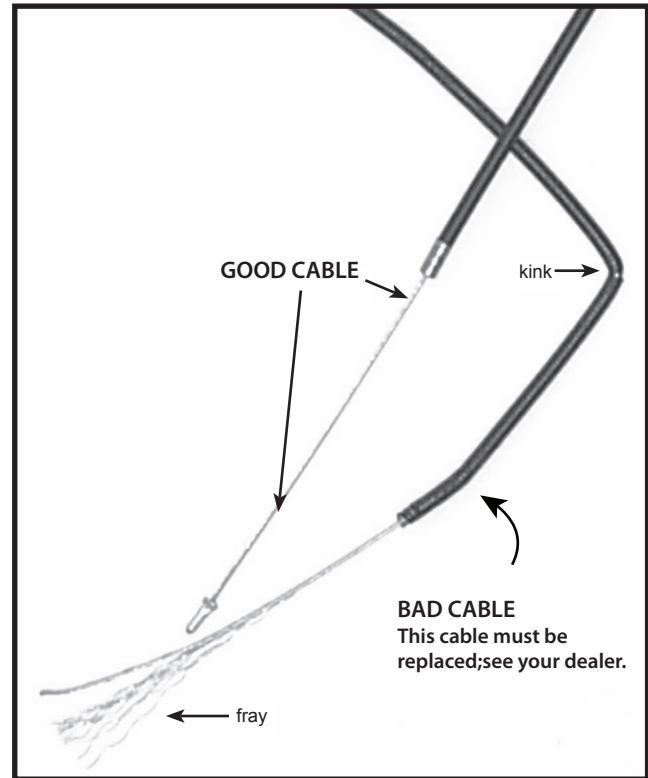


Cables and Cable Housing

Cables and housing are one of the most overlooked parts on the bicycle. The first indication that your cables and housing need to be replaced is an increased amount of pressure needed to operate the brakes or shifters. Before every ride, check that there are no kinks or frays in the cables and housing. Also check that the housing is seated properly into each cable stop of the bicycle. It is recommended that the cables and housing are replaced at least every riding season to prolong the life of your bike. See your authorized dealer for cable and housing replacement.

WARNING

Do not ride a bicycle that is not operating properly.



SUSPENSION SYSTEMS

Suspension Forks



WARNING

ALSO READ NOW: page 73

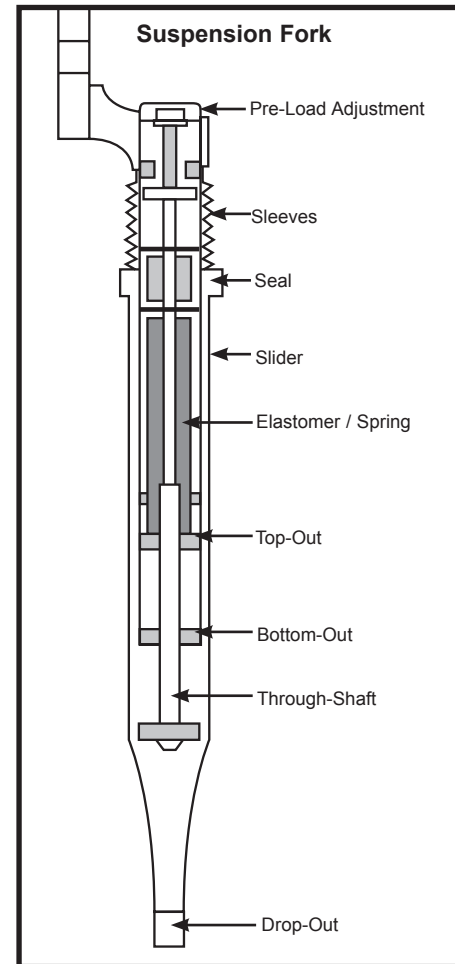
Many bicycles now come equipped with a suspension fork, which is designed to smooth out some of the bumps and vibrations encountered in off road riding. Suspension forks require regular maintenance to perform properly. There are too many different suspension systems to properly address this in the manual. If your bicycle has a suspension fork, please refer to the Suspension Fork Owner's Manual that you received with your bicycle. If you did not receive an owner's manual, please contact your dealer to obtain one.

Inspection

Be sure that the suspension fork is operating properly and all contacts are properly adjusted before attempting to ride your bicycle. Please refer to the Suspension Fork Owner's manual for further inspection procedures.

Adjustment

Some suspension forks provide various adjustments to fine tune the ride quality and performance of the fork. The two most common adjustments would be for the Preload, which controls the firmness of the spring and the Damping, which controls the speed of the spring. Your dealer can point out the features that your particular suspension fork comes equipped with. Please refer to the Suspension Fork Owner's Manual for further details and proper adjustment.





 **WARNING**

Failure to check and properly adjust the suspension system may result in suspension malfunction, which may cause you to lose control and fall.

 **CAUTION**

Changing suspension adjustment can change the handling and braking characteristics of your bicycle. Never change suspension adjustment unless you are thoroughly familiar with the suspension system manufacturer's instructions and recommendations, and always check for changes in the handling and braking characteristics of the bicycle after a suspension adjustment by taking a careful test ride in a hazard-free area.

 **CAUTION**

Not all bicycles can be safely retrofitted with some types of suspension systems. Before retrofitting a bicycle with any suspension, check with the bicycle's manufacturer to make sure that what you want to do is compatible with the bicycle's design.

 **WARNING**

If your bike has suspension, the increased speed you may develop also increases your risk. When braking, the front of a suspended bike dips. You could lose control and fall if your skill is not up to handling this system. Get to know how to handle your suspension system safely before trying any downhill or very fast mountain biking.

Suspension can increase the handling capabilities and comfort of your bicycle.

This enhanced capability may allow you to ride faster than you are capable of safely proceeding given your personal riding skills and experience. You must not confuse the enhanced capabilities of the bicycle with your own personal riding skills. Never ride at a speed or on terrain which is not suitable for your personal riding skill and experience.

ALWAYS PROCEED CAUTIOUSLY IN AREAS IN WHICH YOU ARE NOT FAMILIAR WITH THE TERRAIN. IF YOU EXCEED YOUR LIMITATIONS SERIOUS INJURY OR DEATH COULD OCCUR.



SADDLE AND SEAT POST

Inspection

The seat fixing bolt and the seat post binder bolt should be checked for tightness and adjustment every month. On removing the seat post from the frame, you will notice a mark about 65mm up from the bottom with the words “max. height” or “minimum insertion”.

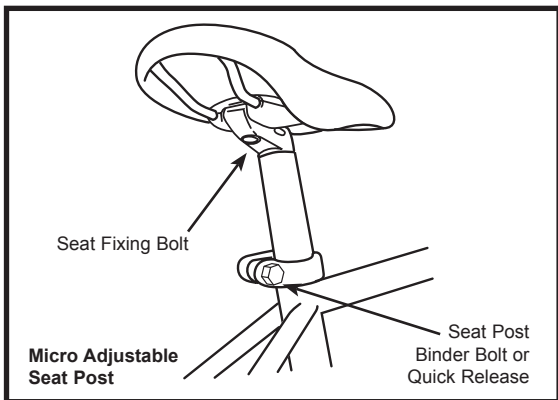
If equipped with a quick release: Tighten the adjusting nut by hand and move the quick release lever to the closed position. You should feel considerable resistance while moving the lever. If not, re-open and re-tighten the lever, then move it to the closed position so it is in line with the frame.

If equipped with a binder clamp: Insure the lip on the binder clamp is fitted completely against the top of the seat tube of the frame. With the seat post inserted, tighten the binder bolt securely. Position the top of the seat parallel with the ground. Push the front of the seat up and down to firmly mesh the serrations together. The serrations must mesh completely together to insure a stabilized riding position. Securely tighten the nut on the seat clamp. If there is a nut on both sides of the clamp, tighten each one by alternating from one to the other. Check for tightness by twisting the seat from side to side, and from front to back. If the seat moves at the seat clamp or quick release, re-position and re-tighten the appropriate clamping mechanism.



WARNING

The seat post must be inserted so that the minimum insertion mark cannot be seen. The quick release mechanism must be tightened securely to prevent a sudden shift of the seat when riding. Failure to do this may cause loss of bicycle control.





Adjustment

As mentioned in Part 2, the seat can be adjusted in height, angle and distance from the handlebars to suit the individual rider. Saddle angle is a matter of personal preference but the most comfortable position will usually be found when the top of the seat is almost parallel to the ground, or slightly raised at the front.

The saddle can also be adjusted by sliding it forward or back along the mounting rails to obtain the most comfortable reach to the handlebars. When fitting, position the seat post into the clamp under the seat and place it in the frame without tightening. Adjust it to the desired angle and position, and tighten the clamping mechanism.

There are two types of seat clamps commonly in use. The most common employs a steel clamp with hexagonal nuts on either side to tighten. The other type, known as a micro-adjustable clamp, uses a single vertically mounted Allen head fixing bolt to tighten. After fixing the seat to the desired position on the post, adjust the height to the required level and tighten the binder bolt.

Note that the type of binder bolt may be either a hexagonal bolt, an Allen head bolt or a quick release mechanism. The operation of a seat post quick release mechanism is the same as for quick release hubs. Refer to p. 26. Test the security by grasping the seat and trying to turn it sideways. If it moves, you will need to further tighten the binder bolt.

Note: Remember that the minimum insertion mark must remain inside the frame assembly.

BRAKES

The correct adjustment and operation of your bicycle's brakes is extremely important for safe operation. Brakes should be checked for effective operation before every ride. Frequent checking of adjustment is necessary as the control cables will stretch and the brake pads will become worn with use.



WARNING

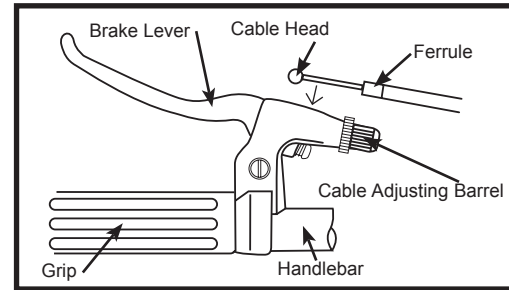
Never ride a bicycle unless the brakes are functioning properly.

ALSO READ NOW: page 66.

There are numerous types of brake systems in common use on today's modern bicycles: side pull calipers, linear pull and coaster brakes. Sidepull and Linear pull brakes utilize a handlebar mounted lever which controls a cable to operate the brake. Side pull brakes are mounted to the frame or fork via a single pivot bolt. Linear pull brakes use two separate arms, each mounted with a separate pivot bolt to either side of the frame and fork. Coaster brakes utilize a system that is internally housed in the rear hub and is activated by pedaling backwards.

Brakes Inspection

Brake levers should be checked for tightness at least every three months. They should be set in a comfortable position within easy reach of the rider's hands, and must not be able to move on the handlebar. Some brake levers make use of a reach adjustment screw, which can be altered to the distance between the handlebar grip and the lever, as required. The brake pads should be checked for correct positioning and tightness before every ride, and the various bolts and nuts at least every three months. Squeeze each brake lever to make sure they operate freely and that the brake pads press hard enough on the rims to stop the bike. There should be about 1mm - 2mm clearance between each pad and the rim when the brakes are not applied. The brake pads must be properly centered for maximum contact with the rim. Replace the brake pads if they are over worn so that the grooves or pattern cannot be seen. The brake cable wires should be checked for kinks, rust, broken strands or frayed ends. The outer casing should also be checked for kinks, stretched coils and other damage. If the cables are damaged, they should be replaced. Some brakes have a quick release mechanism to allow easier wheel removal. Whenever you adjust the brakes, make sure the quick release mechanism is in the closed position.



**Brakes are complicated;
see your bike dealer for service/repair.**



WARNINGS

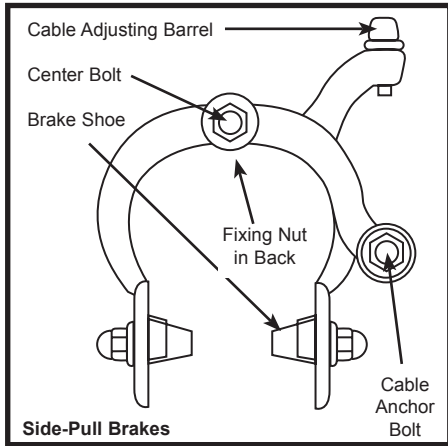
Do not ride the bicycle until the brakes are functioning properly. To test, apply the brakes while trying to push the bike forward to make sure they will stop the bicycle. Never ride a bicycle that is not functioning properly.

Sudden or excessive application of the front brake may pitch the rider over the handlebars, causing serious injury or death.

After re-installing a wheel, in addition to a brake check, make sure that the wheel quick release is firmly locked in the closed position. See Wheels in this manual for the correct way to secure the wheel.

Applying Lubrication

The brake lever and brake caliper pivot points should be lubricated with 2-3 drops of chain lube at least every three months to ensure smooth operation and to reduce wear. Cables should be greased along their entire length, after removing them from their casings, at least every six months. Always grease new cables before fitting.



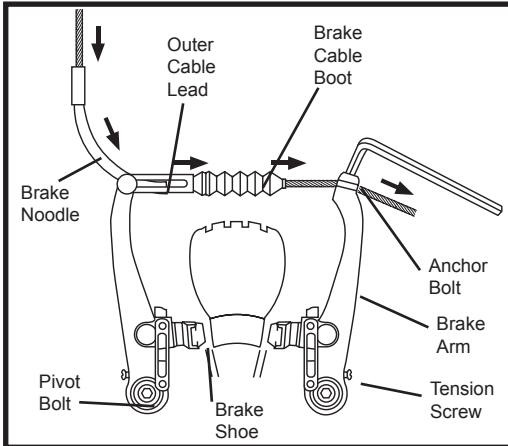
Adjustment - Sidepull Calipers

Minor brake adjustment can be made via the cable adjusting barrel, usually located at the upper cable arm. To adjust, squeeze the brake pads against the rim, loosen the lock nut and turn the adjuster. Brake pad clearance should be a maximum 2mm from the rim. When correct, re-tighten the lock nut. If the pads cannot be set close enough to the rim in this manner, you may have to adjust the cable length. Screw the barrel adjuster 3/4 of the way in, squeeze the pads against the rim, undo the cable anchor bolt and pull the cable through with pliers. Re-tighten the cable anchor bolt and apply full force to the brake lever to test, then fine tune using the barrel adjuster. If one pad is closer to the rim than the other, loosen the fixing nut at the back of the brake, apply the brake to hold it centered, and re-tighten the fixing nut.



WARNING

Ensure the brake fixing nut is secured tightly. Failure to do this may cause the brake assembly to dislodge from the fork.

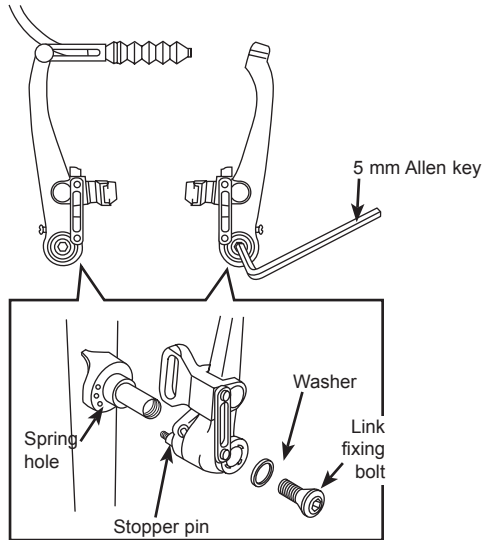


Linear Pull Brakes

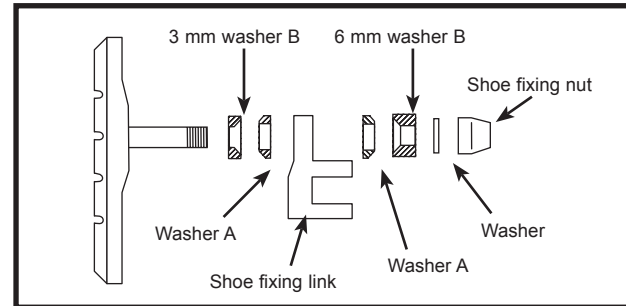
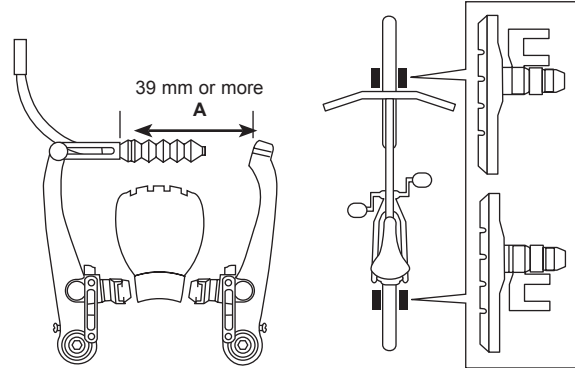
If not already assembled, take the brake noodle from the parts box and slide the cable through the larger opening. The cable housing will then seat into the end of the noodle. Slide the cable through the cable lead on the end of the left brake arm, this will cause the noodle to fit into the lead. Slip the brake cable boot over the cable and position it between both brake arms. Next, loosen the 5mm anchor bolt at the end of the right brake arm and slide the cable under the retaining washer. Pull the slack out of the cable making sure a distance of 39mm or more remains between the end of the lead and the start of the anchor bolt. Once the cable is secured to the brake arms, engage the brake lever several times, checking the position of the brake shoes at the rim. The brake shoes should be 1mm away from the rim when in a relaxed position. When the brake lever is engaged, the brake shoe should hit the rim flush (never the tire) with the front brake pad touching the rim slightly before the rear. This is called “toeing-in” your brake shoe. If this position is not achieved, adjustments to the brake shoe are required. Loosen the brake shoe hardware and reposition the brake shoe. It may take several shoe and cable adjustments before the required position is accomplished.

Linear Pull Brake

1. If fitted with linear pull brakes, insert the brake body into the center spring hole in the frame mounting boss, and then secure the brake body to the frame with the link fixing bolt.

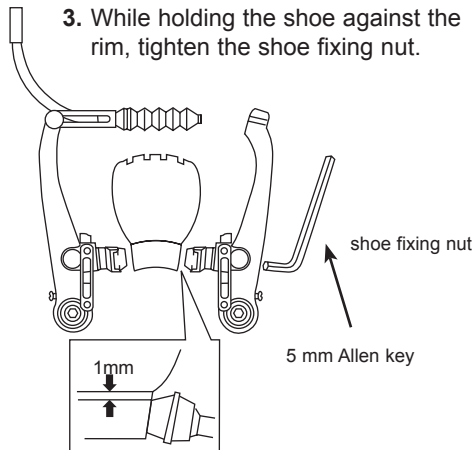


2. While holding the shoe against the rim, adjust the amount of shoe protrusion by interchanging the position of the B washers (i.e. 6 mm and 3 mm) so that dimension A is kept at 39 mm or more.

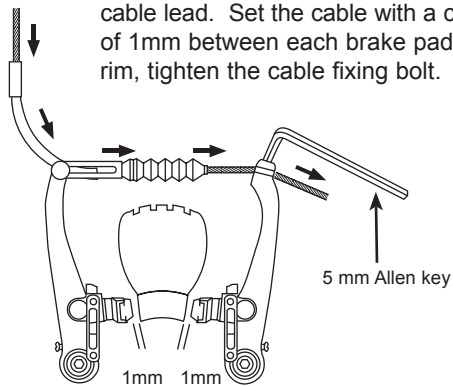




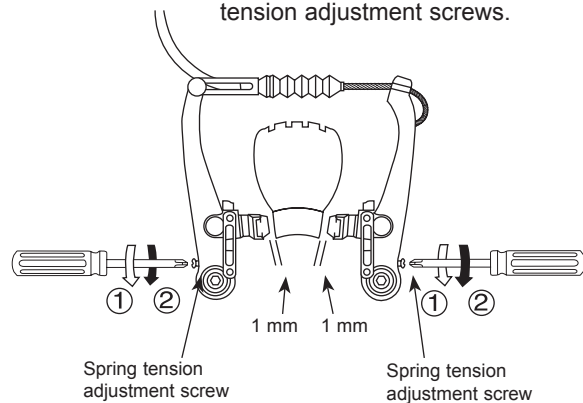
- 3.** While holding the shoe against the rim, tighten the shoe fixing nut.



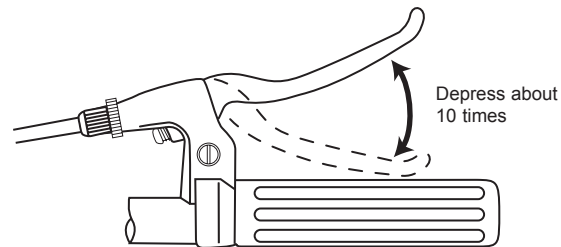
- 4.** Pass the inner cable through the inner cable lead. Set the cable with a clearance of 1mm between each brake pad and the rim, tighten the cable fixing bolt.



- 5.** Adjust the balance with the spring tension adjustment screws.



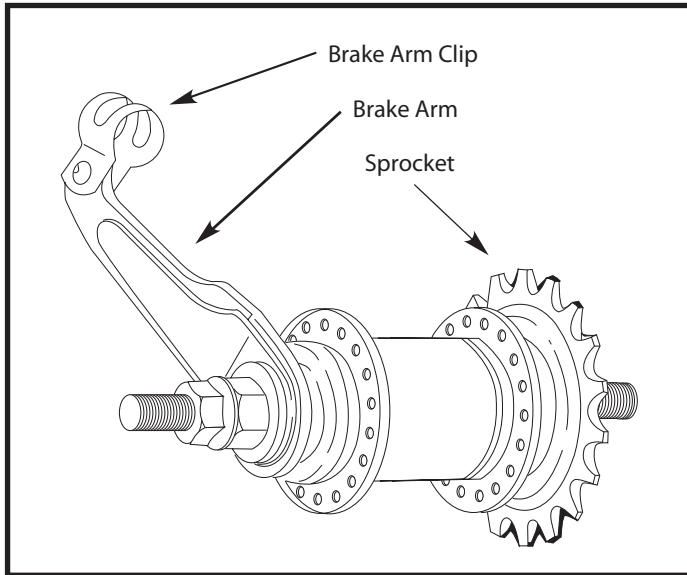
- 6.** Depress the brake lever about 10 times as far as the grip to check that everything is operating correctly and that the shoe clearance is correct before using the brakes.





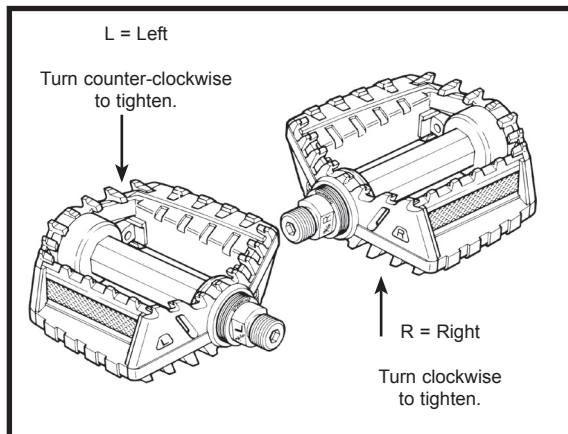
Coaster Hub

Many juvenile style bikes will be equipped with the classic coaster brake system. The heart of the coaster brake system is internally housed within the rear wheel hub. This type of system offers the advantages of increased reliability, low maintenance, and easy operation. The brake is operated by simply applying backward pedaling pressure. There are different coaster hub models available, and all of their internal mechanisms are very complex. While they do require very little maintenance, any service or adjustment of internal parts should be left to your authorized dealer.



WARNING

Make sure the brake arm is correctly attached to the chainstay with the brake arm clip. The brake will not operate otherwise.



DRIVETRAIN

The drivetrain of a bicycle refers to all parts that transmit power to the rear wheel including the pedals, crankset, chain and freewheel/cassette.

PEDALS

Pedals are available in a variety of shapes, sizes and materials, and each are designed with a particular purpose in mind. Some pedals can be fitted with toe clips and straps. These help to keep the feet correctly positioned and allow the rider to exert pulling force, as well as downward pressure, on the pedals. Use of toe clips with straps requires practice to acquire the necessary skill to operate them safely.

Inspection

Pedals should be inspected every month, taking note of the following areas:

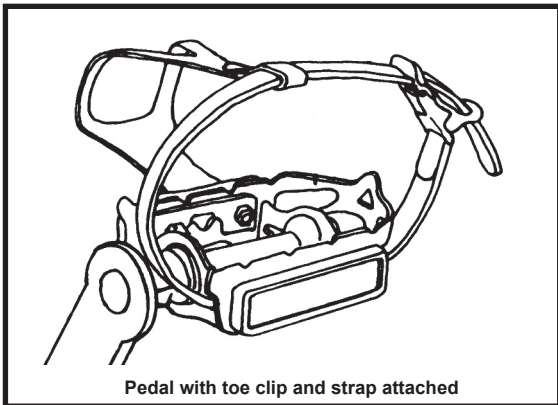
- Check correct tightness into the crank arms. If pedals are allowed to become loose, they will not only be dangerous but will also cause irreparable damage to the cranks.
- Check that pedal bearings are properly adjusted. Move the pedals up and down, and right to left, and also rotate them by hand. If you detect any looseness or roughness in the pedal bearings then adjustment, lubrication or replacement is required.
- Ensure that the front and rear pedal reflectors are clean and securely fitted.
- Also ensure that the toe clips, if fitted, are securely tightened to the pedals.
- Check for damage to pedal platform



WARNING

Never ride with loose or damaged pedals.

ALSO READ NOW: page 70.



Pedal with toe clip and strap attached

Lubrication and Adjustment

Many pedals cannot be disassembled to allow access to the internal bearings and axle. However, it is usually possible to inject a little oil onto the inside bearings, and this should be done every six months. If the pedal is the type that can be fully disassembled, then the bearings should be removed, cleaned and greased every six to twelve months. Because of the wide variety of pedal types and their internal complexity, disassembly procedures are beyond the scope of this manual and further assistance should be sought from your authorized dealer.

WARNING

NEVER RIDE IN TRAFFIC WITH FULLY TIGHTENED TOE STRAPS.

ALSO READ NOW: The information about toe strap and clip-in, clip-less pedals pages 70 -71.

Attachment

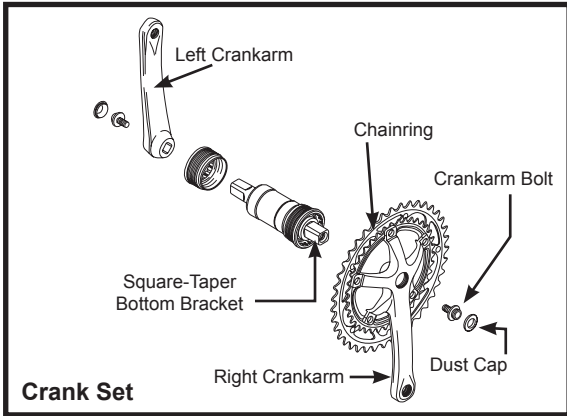
Note: The right and left pedals of a bicycle each have a different thread and are not interchangeable. Never force a pedal into the incorrect crank arm.

The right pedal, which attaches to the chainwheel side, is marked 'R' on the end of the axle, and screws in with a clockwise thread. The left pedal, which attaches to the other crank arm, is marked 'L' on the axle, and screws in with a counter-clockwise thread.

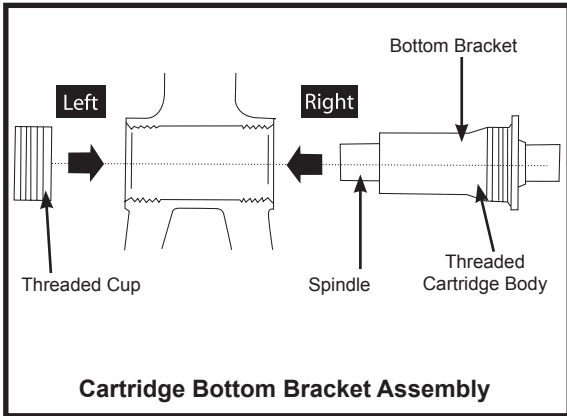
Insert the correct pedal into the crank arm and begin to turn the thread with your fingers only. When the axle is screwed all the way in, securely tighten using a 15mm wrench.

If removing a pedal, remember that the right pedal axle must be turned counter clockwise, i.e. the reverse of when fitting. If replacing the original pedals with a new set, make sure the size and the axle thread is compatible with the cranks on your bicycle. Bicycles use one of two types of cranks and these use different axle threads. Your bike may be equipped with cranks that are a one piece design with no separate axle. These operate with pedals that have a 1/2"(12.7mm) thread. Bikes equipped with three piece crank sets with a separate axle, left crank and right crank, use a slightly larger 9/16"(14mm) thread.

Note: Never try and force a pedal with the wrong thread size into a bicycle crank.



Crank Set



Cartridge Bottom Bracket Assembly

CRANK SET

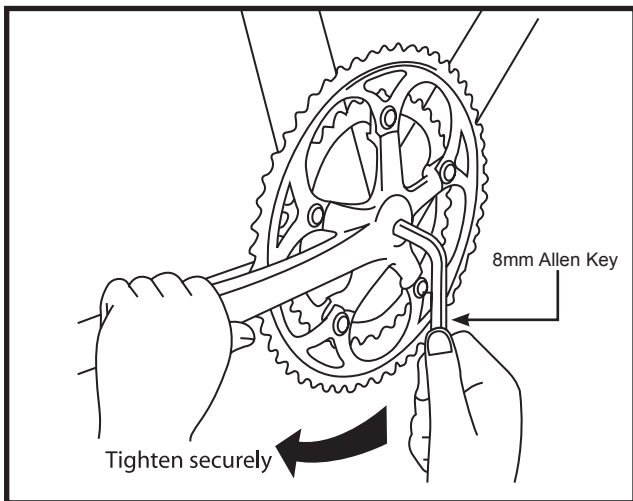
In general, the crank set refers to the crank arms and the bottom bracket assembly. Modern crank sets have been highly refined over the years, resulting in great increases in shifting performance and improved weight savings. Depending on the particular model of bike that you have, you may find that your cranks are constructed of either aluminum alloy or carbon fiber. You may also find that your crank is equipped with either two or three chainrings, depending on the bike model. A double chainring crank will typically be found on the more racing specific models, while the triple chainring cranks will be predominant on models with a range of intended uses.

There are also two main types of crank arm and bottom bracket spindle interface systems. Your bike may be fitted with either a splined interface, or a square tapered interface. The splined interface system is a more recent introduction and provides for a more secure fitting between the crank arm and spindle while increasing the overall stiffness and efficiency of the crank set. The square tapered interface has been the standard system for many years and is a simple and reliable set-up.



WARNING

Never ride your bike if the cranks are damaged or loose.



Inspection

The crank set should be checked for proper adjustment every month. The crank arm bolts must be kept tight and the bottom bracket must be properly adjusted. You should also ensure that the chainring bolts are properly tightened as well. It is also important to ensure that all threaded parts are thoroughly greased.

Please note that many aspects of the crankset adjustments require special tools and training in order to perform them properly. It is recommended that you bring your bike in to your authorized dealer for regular service.



One-Piece Crank Sets

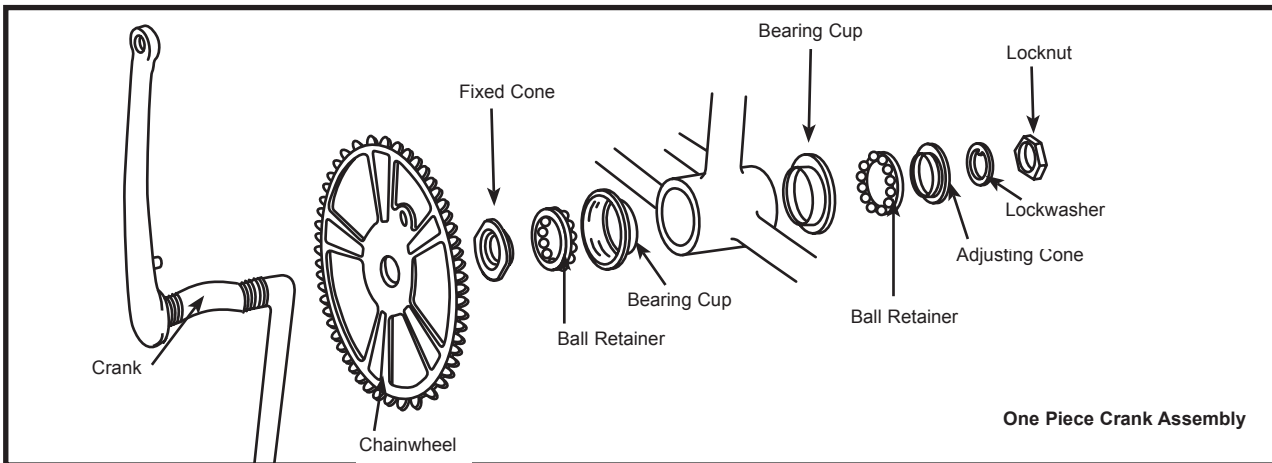
The crank set refers to the crank arms, chainring, and bottom bracket bearing assembly. In general, most all juvenile type bikes utilize what is referred to as one-piece cranks, where the crank arms and spindle are combined into one continuous piece. One-piece cranks require no real maintenance themselves and are very easy to work with.

Bottom Bracket

All one-piece cranks utilize a standard adjustable bearing bottom bracket assembly. This type of system consists of two bearing cups that pressed into the frame, a series of loose ball bearings, an adjustable cup that threads directly onto the spindle, and a locknut which also threads onto the spindle to lock the adjustment into place.

To adjust for any play that may exist in a standard one-piece crank set, loosen the locknut on the left or non-drive side of the crank and tighten the adjusting cone by turning it counter-clockwise. When correctly adjusted, hold the adjusting cone in place while tightening the locknut counter-clockwise. Be sure to check that the crank is able to spin freely and that there is no binding or stiffness in the bearings.

NOTE: Proper adjustment of the crankset and bottom bracket assembly requires specialized tools and mechanical knowledge. If you need assistance, please take the bike in to an Authorized Dealer for service.



SHIFTING SYSTEMS

The shifting system includes any front or rear derailleurs, the shifters, and the shifter cable and housing system, all of which must function correctly for smooth gear shifting operation. There are several different types of shifting systems available, but they all operate using similar principles. Your new bicycle may be fitted with either a more traditional external shifting system that utilizes a derailleur mechanism, or it may be fitted with an internal shifting system that is housed within the rear wheel hub. Regardless of type, your multi speed bike will utilize an indexing shifter that allows you to precisely select the specific gear that you choose. Each click of the handlebar mounted shifter represents one gear change.

Inspection

The operation of the shifting system should be checked at least every month or more. The rear derailleur should shift the chain cleanly from one cog to the next without hesitation. Each click of the shifter should equate to one gear change to a new cog. The rear derailleur should never allow the chain to fall off to the outside of the smallest or the largest rear cogs. On internally housed gear systems, there is no visible gear change to witness. However, you should be able to detect whether or not a proper shift has been made by feeling a change in how much easier or difficult it is to pedal the bicycle.

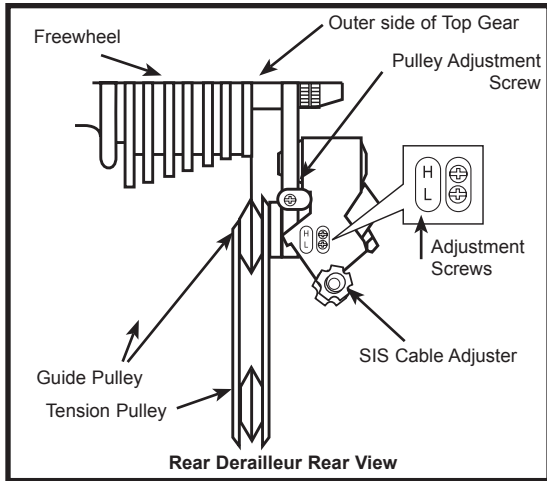
The shift cables are also a critical component that must be well maintained for accurate shifting performance. It is important regularly inspect both the cables and housing for any signs of rust, fraying, kinks, or broken strands. If any problems are detected, you should bring the bike in to you authorized dealer for service before riding the bicycle.



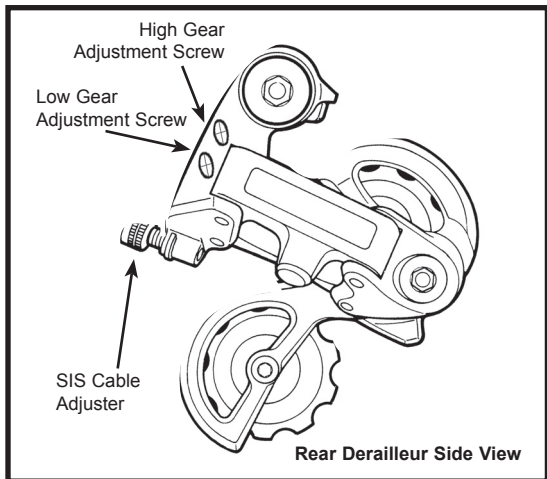
WARNING

ALSO READ NOW: starting page 67





Rear Derailleur Rear View



Rear Derailleur Side View

Lubrication

All the pivoting points of the front and rear derailleurs should be lubricated with chain lube at least every month. Be sure to wipe off any excess oil to prevent attraction of dirt into the mechanisms. The shifting cables should be cleaned and re-coated with a thin layer of grease every six months, or whenever new cables are being installed.

Adjustment - Rear Derailleur

The Low limit screw determines how far the rear derailleur will travel toward the wheel of the bicycle, while the High limit screw determines how far the cage will travel toward the frame.

1. Shift the rear shifter to the largest number indicated, disconnect the rear derailleur cable from the cable anchor bolt and place the chain on the smallest sprocket.
2. Adjust the High limit screw so the chain and the smallest sprocket are lined up vertically. Remove any slack in the cable by pulling it taut, then re-connect the cable and tighten the cable anchor bolt securely.
3. Shift up through the gears making sure that each gear is achieved quietly and without hesitation.

If noise occurs, use the barrel adjuster to fine-tune the cable tension.

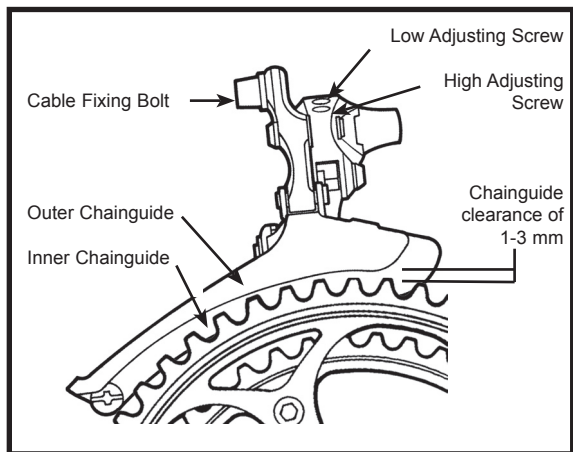
Turning the barrel adjuster **clockwise** will decrease cable tension and allow the derailleur cage to move farther away from the bicycle in small increments. Turning **counter-clockwise** will increase cable tension and bring the cage closer to the bicycle. This will micro-adjust the positioning of the derailleur cage in relation to the freewheel. Simply put; turn the barrel adjuster the direction you want the chain to go.

4. Shift the chain onto the largest sprocket; adjust the low limit screw so the chain and the largest cog are lined up vertically. If you are unable to get the chain to the largest cog, turning the Low limit screw counter-clockwise will enable the chain to move towards the wheel.
5. Shift through the gears ensuring each gear is achieved quietly and without hesitation.

NOTE: It may take several adjustments to achieve the desired positioning. Please refer to the troubleshooting section for more assistance.



Adjustment - Front Derailleur



1. Shift the **rear** shifter to the smallest number indicated, then shift the **front** shifter to the smallest number indicated. Disconnect the front derailleur cable from the cable anchor bolt and place the chain on the smallest chainwheel.
2. Make sure the front derailleur cage is parallel with the outer chainwheel on the crankset. There must be a 1-3mm gap between the bottom of the derailleur cage and the top of the outer chainwheel teeth to ensure the derailleur will clear the chainwheel when shifting.
3. Adjust the Low limit screw so the chain is centered in the middle of derailleur cage. Pull all slack out of the cable by pulling it taut, then reconnect the cable and tighten the cable anchor bolt securely.
4. Shift the front shifter into the largest gear and pedal the bike so the chain jumps to the largest chainwheel. If the chain does not shift onto the largest chainwheel, you will need to turn the High limit screw counter-clockwise until the chain moves to the largest chainwheel. If the chain falls into the pedals, the High limit screw has been turned too far. You will need to readjust the High screw clockwise in 1/4 turn increments until the chain no longer falls off.
5. Shift through each gear ensuring all are achieved quietly and without hesitation.
6. The barrel adjuster for the front derailleur is located on the shift mechanism. Turning clockwise will decrease cable tension and allow the front derailleur cage to move away from the bike, while turning counter-clockwise will increase tension and bring the cage closer to the bike. If you are experiencing problems shifting between gears, use the barrel adjuster to fine-tune the cable tension.

NOTE: Modern shifting and drivetrain systems are very precise in their operation. If you are experiencing shifting problems with your bicycle, it is highly recommended that you bring your bike in to your authorized dealer for expert service.



MISCELLANEOUS

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Problem	Possible Cause	Remedy
Gear shifts not working properly	<ul style="list-style-type: none">- Derailleur cables sticking/stretched/damaged- Front or rear derailleur not adjusted properly- Indexed shifting not adjusted properly	<ul style="list-style-type: none">- Lubricate/tighten/replace cables- Adjust derailleurs- Adjust indexing
Slipping chain	<ul style="list-style-type: none">- Excessively worn/chipped chainring or freewheel sprocket teeth- Chain worn/stretched- Stiff link in chain- Non compatible chain/chainring/freewheel	<ul style="list-style-type: none">- Replace chainring, sprockets and chain- Replace chain- Lubricate or replace link- Seek advice at a bicycle shop
Chain jumping off freewheel sprocket or chainring	<ul style="list-style-type: none">- Chainring out of true- Chainring loose- Chainring teeth bent or broken- Rear or front derailleur side-to-side travel out of adjustment	<ul style="list-style-type: none">- Re-true if possible, or replace- Tighten mounting bolts- Repair or replace chainring/set- Adjust derailleur travel
Constant clicking noises when pedaling	<ul style="list-style-type: none">- Stiff chain link- Loose pedal axle/bearings- Loose bottom bracket axle/bearings- Bent bottom bracket or pedal axle - Loose crankset	<ul style="list-style-type: none">- Lubricate chain / Adjust chain link- Adjust bearings/axle nut- Adjust bottom bracket- Replace bottom bracket axle or pedals- Tighten crank bolts
Grinding noise when pedaling	<ul style="list-style-type: none">- Pedal bearings too tight- Bottom bracket bearings too tight- Chain fouling derailleurs- Derailleur jockey wheels dirty/binding	<ul style="list-style-type: none">- Adjust bearings- Adjust bearings- Adjust chain line- Clean and lubricate jockey wheels



Problem

Possible Cause

Remedy

Freewheel does not rotate

- Freewheel internal pawl pins are jammed

- Lubricate. If problem persists, replace freewheel

Brakes not working effectively

- Brake pads worn down
- Brake pads/rim greasy, wet or dirty
- Brake cables are binding/stretched/damaged
- Brake levers are binding
- Brakes out of adjustment

- Replace brake pads
- Clean pads and rim
- Clean/adjust/replace cables
- Adjust brake levers
- Center brakes

When applying the brakes they squeal/squeak

- Brake pads worn down
- Brake pad toe-in incorrect
- Brake pads/rim dirty or wet
- Brake arms loose

- Replace pads
- Correct pad toe-in
- Clean pads and rim
- Tighten mounting bolts

Knocking or shuddering when applying brakes

- Bulge in the rim or rim out of true
- Brake mounting bolts loose
- Brakes out of adjustment
- Fork loose in head tube

- True wheel or take to a bike shop for repair
- Tighten bolts
- Center brakes and/or adjust brake block toe-in
- Tighten headset

Wobbling wheel

- Axle broken
- Wheel out of true
- Hub comes loose
- Headset binding
- Hub bearings collapsed
- QR mechanism loose

- Replace axle
- True wheel
- Adjust hub bearings
- Adjust headset
- Replace bearings
- Adjust QR mechanism



Problem	Possible Cause	Remedy
Steering not accurate	<ul style="list-style-type: none">- Wheels not aligned in frame- Headset loose or binding- Front forks or frame bent	<ul style="list-style-type: none">- Align wheels correctly- Adjust/tighten headset- Take bike to a bike shop for possible frame realignment
Frequent punctures	<ul style="list-style-type: none">- Inner tube old or faulty- Tire tread/casing worn- Tire unsuited to rim- Tire not checked after previous puncture- Tire pressure too low- Spoke protruding into rim	<ul style="list-style-type: none">- Replace Inner tube- Replace tire- Replace with correct tire- Remove sharp object embedded in tire- Correct tire pressure- File down spoke



It's important to your performance, enjoyment and safety to understand how things work on your bicycle. Even if you're an experienced bicyclist, don't assume that the way things work on your new bike is the same as how they work on older bikes. Be sure to read and to understand this section of the Manual. If you have even the slightest doubt as to whether you understand something, talk to a qualified specialist.

A. Wheel Quick Release

WARNING

Riding with an improperly adjusted wheel quick release can allow the wheel to wobble or disengage from the bicycle, causing damage to the bicycle, and serious injury or death to the rider.

Therefore, it is essential that you:

1. Make sure you know how to install and remove your wheels safely.
2. Understand and apply the correct technique for clamping your wheel in place with a quick release.
3. Each time, before you ride the bike, check that the wheel is securely clamped.

Invented in the 1930s to allow quick, easy wheel removal without the need for tools, the bicycle wheel quick release has become standard equipment on most recreational, sports and competition bicycles. While it looks like a long bolt with a lever on one end and a nut on the other, the wheel quick release uses a cam action to clamp the bike's wheel in place. Because of its adjustable nature, it is critical that you understand how it works and how to use it properly.

The full force of the cam action is needed to clamp the wheel securely. Holding the nut with one hand and turning the lever like a wing nut with the other hand until everything is as tight as you can get it will not clamp the wheel safely in the dropouts.

1. Adjusting the quick release mechanism

The wheel hub is clamped in place by the force of the quick release cam pushing against one dropout and pulling the tension adjusting nut, by way of the skewer, against the other dropout. The amount of clamping force is controlled by the tension adjusting nut. Turning the tension adjusting nut clockwise while keeping the cam lever from rotating increases clamping force; turning it counterclockwise while keeping the cam lever from rotating reduces clamping force. Less than half a turn of the tension adjusting nut can make the difference between safe clamping force and unsafe clamping force.

NOTE: Once the quick release is installed in the hub axle by the manufacturer or the dealer, it never needs to be removed unless the hub itself requires servicing. If the hub requires servicing, consult a qualified specialist.



2. Front Wheel Secondary Retention Devices

Many bicycles have front forks which utilizes a secondary wheel retention device to keep the wheel from disengaging if the quick release is incorrectly adjusted. Secondary retention devices are not a substitute for correct quick release adjustment. Secondary retention devices fall into two basic categories:

- a) The clip-on type is an accessory part which the manufacturer adds to the front wheel hub or front fork.
 - b) The integral type is molded, cast or machined into the outer faces of the front fork dropouts.
- Ask your dealer to explain the particular secondary retention device on your bike.



WARNING

DO NOT REMOVE OR MODIFY THE SECONDARY WHEEL RETENTION DEVICE(S). Removing or disabling the secondary retention device is extremely dangerous and may lead to serious injury or death.

3. Removing or Installing Quick Release Wheels

a) Removing a Quick Release Front Wheel

- (1) Open up the brake shoes.
- (2) Rotate the wheel's quick-release lever from the locked or **CLOSED** position to the **OPEN** position.
- (3) If your front fork does not have a secondary retention device go to step 5.
- (4) If your front fork has a clip-on type secondary retention device, disengage it and go to step (5). If your front fork has an integral secondary retention device, loosen the tension adjusting enough to allow removing the wheel; then go to step (5).
- (5) Raise the front wheel a few inches off the ground and tap the top of the wheel with the palm of your hand to knock the wheel out of the front fork.

b) Installing a Quick Release Front Wheel

- (1) Rotate the quick-release lever so that it curves away from the wheel. This is the **OPEN** position.
- (2) With the steering fork facing forward, insert the wheel between the fork blades so that the axle seats firmly at the top of the slots which are at the tips of the fork blades — the fork drop-outs. The quick-release lever should be on the left side of the bicycle. If your bike has a clip-on type secondary retention device, engage it.
- (3) Holding the quick-release lever in the **OPEN** position with your right hand, tighten the tension adjusting nut with your left hand until it is finger tight against the fork dropout.
- (4) While pushing the wheel firmly to the top of the slots in the fork dropouts, and at the same time centering the wheel rim in the fork, rotate the quick-release lever upwards and push it into the **CLOSED** position (see pages 29-30). The lever should be parallel to the fork blade and curved toward the wheel.



CAUTION: If you can fully close the quick release without wrapping your fingers around the fork blade for leverage, and the lever does not leave a clear imprint in the palm of your hand, the tension is insufficient. Open the lever; turn the tension adjusting nut clockwise a quarter turn; then try again.

(5) If the lever cannot be pushed all the way to a position parallel to the fork blade, return the lever to the **OPEN** position. Then turn the tension adjusting nut counterclockwise one-quarter turn and try tightening the lever again.

(6) Close the brake shoes; then spin the wheel to make sure that it is centered in the frame and clears the brake shoes.

WARNING: Secondary retention devices are not a substitute for correct quick release adjustment. Failure to properly adjust the quick release mechanism can cause the wheel to wobble or disengage, which could cause you to lose control and fall, resulting in serious injury or death.

c. Removing a Quick Release Rear Wheel

(1) Shift the rear derailleur to high gear (the smallest, outermost rear sprocket).

(2) Open up the brake shoes.

(3) Pull the derailleur body back with your right hand.

(4) Rotate the quick-release lever to the **OPEN** position.

(5) Lift the rear wheel off the ground a few inches and, with the derailleur still pulled back, push the wheel forward and down until it comes out of the rear dropouts.

d. Installing a Quick Release Rear Wheel

(1) Shift the rear derailleur to its outermost position

(2) Pull the derailleur body back with your right hand.

(3) Rotate the quick-release lever to the **OPEN** position. The lever should be on the side of the wheel opposite the derailleur and freewheel sprockets.

(4) Put the chain on top of the smallest free wheel sprocket. Then, insert the wheel into the frame dropouts and pull it all the way in to the dropouts.

(5) Tighten the adjusting nut until it is finger tight against the frame dropout; then rotate the lever toward the front of the bike until it is parallel to the frame's chainstay or seatstay and is curved toward the wheel.

CAUTION: If you can fully close the quick release without wrapping your fingers around the fork blade for leverage, and the lever does not leave a clear imprint in the palm of your hand, the tension is insufficient. Open the lever; turn the tension adjusting nut clockwise a quarter turn; then try again.

(6) If the lever cannot be pushed all the way to a position parallel to the chainstay or seatstay tube, return the lever to the **OPEN** position. Then turn the adjusting nut counterclockwise one-quarter turn and try tightening again.



(7) Push the rear derailleur back into position.

(8) Close the brake shoes; then spin the wheel to make sure that it is centered in the frame and clears the brake shoes.

4. Removing and Installing Bolt-On Wheels

a. Removing a Bolt-On Front Wheel

(1) Open up the brake shoes.

(2) With a 15mm box wrench or a six inch adjustable wrench, loosen the two axle nuts.

(3) If your front fork has a clip-on type secondary retention device, disengage it and go to step (4). If your front fork has an integral secondary retention device, loosen the axle nuts about six full turns; then go to step (4).

(4) Raise the front wheel a few inches off the ground and tap the top of the wheel with the palm of your hand to knock the wheel out of the fork ends.

b. Installing a Bolt-On Front Wheel

(1) With the steering fork facing forward, insert the wheel between the fork blades so that the axle seats firmly at the top of the slots which are at the tips of the fork blades. The axle nut washers should be on the outside, between the fork blade and the axle nut. If your bike has a clip-on type secondary retention device, engage it.

(2) While pushing the wheel firmly to the top of the slots in the fork dropouts, and at the same time centering the wheel rim in the fork, use a six-inch adjustable wrench or a 15mm box wrench to tighten the axle nuts as tight as you can.

(3) Close the brake shoes; then spin the wheel to make sure that it is centered in the frame and clears the brake shoes.

c. Removing a Bolt-On Rear Wheel

(1) Open the rear brake shoes.

(2) Shift the rear derailleur to high gear (the smallest rear sprocket) and pull the derailleur body back with your right hand

(3) With a 15mm box wrench or a six-inch adjustable wrench, loosen the two axle nuts.

(4) Lift the rear wheel off the ground a few inches and, with the derailleur still pulled back, push the wheel forward and down until it comes out of the rear dropouts.



d. Installing a Bolt-On Rear Wheel

- (1) Shift the rear derailleur to its outermost position and pull the derailleur body back with your right hand.
- (2) Put the chain on to the smallest sprocket. Then, insert the wheel into the frame dropouts and pull it all the way in to the dropouts. The axle nut washers should be on the outside, between the frame and the axle nut.
- (3) Tighten the axle nuts as tightly as you can, using a six-inch adjustable wrench or a 15mm box wrench.
- (4) Push the rear derailleur back into position.
- (5) Close the brake; then spin the wheel to make sure that it is centered in the frame and clears the brake shoes.

B. Seatpost Quick Release

Many mountain bikes are equipped with quick-release seat post skewers. The seatpost quick-release skewer works exactly like the wheel quick-release. While a quick release looks like a long bolt with a lever on one end and a nut on the other, the quick release uses a cam action to firmly clamp the seat post.

WARNING

Riding with an improperly tightened seat post can allow the saddle to turn or move and cause you to lose control and fall. Therefore:

1. Make sure you know how to correctly clamp your seat post.
2. Understand and apply the correct technique for clamping your seat post quick release.
3. Before you ride the bike, first check that the seatpost is securely clamped.

Adjusting the quick release mechanism

The action of the quick release cam squeezes the seat collar around the seat post to hold the seat post securely in place. The amount of clamping force is controlled by the tension adjusting nut. Turning the tension adjusting nut clockwise while keeping the cam lever from rotating increases clamping force; turning it counterclockwise while keeping the cam lever from rotating reduces clamping force. Less than half a turn of the tension adjusting nut can make the difference between safe clamping force and unsafe clamping force.

The full force of the cam action is needed to clamp the seatpost securely. Holding the nut with one hand and turning the lever like a wing nut with the other hand until everything is as tight as you can get it will not clamp the seatpost safely.

If you can fully close the quick release and the lever does not leave a clear imprint in the palm of your hand, the tension is insufficient. Open the lever; turn the tension adjusting nut clockwise a quarter turn; then try again.



C. Brakes

NOTE: For most effective braking, use both brakes and apply them simultaneously.

WARNING

SUDDEN OR EXCESSIVE APPLICATION OF THE FRONT BRAKE MAY PITCH THE RIDER OVER THE HANDLEBARS, CAUSING SERIOUS INJURY OR DEATH.

1. How brakes work

It's important to your safety that you instinctively know which brake lever controls which brake on your bike. In the U.S., bikes are required to be set up with the right brake lever controlling the rear brake, and the left lever controlling the front brake.

The braking action of a bicycle is a function of the friction between the brake surfaces -- usually the brake shoes and the wheel rim. To make sure that you have maximum friction available, keep your wheel rims and brake shoes clean and free of lubricants, waxes or polishes.

Make sure that your hands can reach and squeeze the brake levers comfortably. If your hands are too small to operate the levers comfortably, consult your dealer before riding the bike. The lever reach may be adjustable; or you may need a different brake lever design.

Most brakes have some form of quick release mechanism to allow the brake shoes to clear the tire when a wheel is removed or reinstalled. When the brake quick release is in the open position, the brakes are inoperative. Make sure that you understand the way the brake quick release works on your bike and check each time to make sure both brakes work correctly before you get on the bike.

Brakes are designed to control your speed, not just to stop the bike. Maximum braking force for each wheel occurs at the point just before the wheel "locks up" (stops rotating) and starts to skid. Once the tire skids, you actually lose most of your stopping force and all directional control. You need to practice slowing and stopping smoothly without locking up a wheel. The technique is called progressive brake modulation. Instead of jerking the brake lever to the position where you think you'll generate appropriate braking force, squeeze the lever, progressively increasing the braking force. If you feel the wheel begin to lock up, release pressure just a little to keep the wheel rotating just short of lockup. It's important to develop a feel for the amount of brake lever pressure required for each wheel at different speeds and on different surfaces. To better understand this, experiment a little by walking your bike and applying different amounts of pressure to each brake lever, until the wheel locks.



WARNING

Some bicycle brakes, such as linear-pull and disc brakes, are extremely powerful. You should take extra care in becoming familiar with these brakes and exercise particular care when using them. Applying these brakes too hard or too suddenly can lock up a wheel, which could cause you to lose control and fall.

When you apply one or both brakes, the bike begins to slow, but your body wants to continue at the speed at which it was going. This causes a transfer of weight to the front wheel (or, under heavy braking, around the front wheel hub, which could send you flying over the handlebars). A wheel with more weight on it will accept greater brake pressure before lockup; a wheel with less weight will lock up with less brake pressure. So, as you apply brakes and your weight shifts forward, you need to shift your body toward the rear of the bike, to transfer weight back on to the rear wheel; and at the same time, you need to both decrease rear braking and increase front braking force. This is even more important on steep descents, because descents shift weight forward. The keys to effective speed control and safe stopping are controlling wheel lockup and weight transfer. Practice braking and weight transfer techniques where there is no traffic or other hazards and distractions.

Everything changes when you ride on loose surfaces or in wet weather. Tire adhesion is reduced, so the wheels have less cornering and braking traction and can lock up with less brake force. Moisture or dirt on the brake shoes reduces their ability to grip. The way to maintain control on loose or wet surfaces is to go more slowly to begin with.

2. Adjusting your brakes

If either brake lever on your bike fails the Mechanical Safety Check you can restore brake lever travel by turning the brake cable adjusting barrel counterclockwise, then lock the adjustment in by turning the barrel's lock nut clockwise as far as it will go. If the lever still fails the Mechanical Safety Check, or you have any question about whether your brakes are working properly have your dealer check the brakes.

D. Shifting

Your multi-speed bicycle will have a derailleur drivetrain, an internal gear hub drivetrain or, in some special cases, a combination of the two.

1. Why all those gears?

You will get the greatest fitness benefit, produce the greatest sustained power and have the greatest endurance if you learn to spin the pedals at high revolutions per minute (called cadence) against low resistance. You will get the least fitness benefit and have the least endurance by pushing hard on the pedals against heavy resistance.



The purpose of having multiple gears on a bicycle is to let you choose the gear that allows you to maintain your optimum cadence under the widest range of riding conditions. Depending on your fitness level and experience (the more fit, the higher the cadence), optimum cadence is between 60 and 90 pedal revolutions per minute.

2. Shifting a derailleur drivetrain

If your bicycle has a derailleur drivetrain, the gear-changing mechanism will consist of:


- a rear sprocket cluster, called a freewheel or freewheel cassette
- a rear derailleur
- usually a front derailleur
- one or two shifters
- one or two control cables
- one, two or three front sprockets called chainrings
- a drive chain

The number of possible gear combinations (“speeds”) is the product of multiplying the number of sprockets at the rear of the drivetrain by the number of sprockets at the front ($6 \times 2 = 12$, $6 \times 3 = 18$, $7 \times 3 = 21$ and so on).

a. Shifting Gears

There are many different types of shifter mechanisms, each preferred for specific types of application because of its ergonomic, performance and price characteristics. The designers of your bike have selected the shifter design which they believe will give the best results on your bike.

The vocabulary of shifting can be pretty confusing. A downshift is a shift to a “slower” gear, one which is easier to pedal. An upshift is a shift to a “faster”, harder to pedal gear. What’s confusing is that what’s happening at the front derailleur is the opposite of what’s happening at the rear derailleur (for details, read the instructions on Shifting the Rear Derailleur and Shifting the Front Derailleur below). For example, you can select a gear which will make pedaling easier on a hill (make a downshift) in one of two ways: shift the chain down the gear “steps” to a smaller gear at the front, or up the gear “steps” to a larger gear at the rear. So, at the rear gear cluster, what is called a downshift looks like an upshift. The way to keep things straight is to remember that shifting the chain in towards the centerline of the bike is for accelerating and climbing and is called a downshift. Moving the chain out or away from the centerline of the bike is for speed and is called an upshift.



Whether upshifting or downshifting, the bicycle derailleur system design requires that the drive chain be moving forward and be under at least some tension. A derailleur will shift only if you are pedaling forward.

1) Shifting the Rear Derailleur

The rear derailleur is controlled by the right shifter. The function of the rear derailleur is to move the drive chain from one gear to another on the rear gear cluster, thereby changing gear drive ratios. The smaller sprockets on the gear cluster produce higher gear ratios. Pedaling in the higher gears requires greater pedaling effort, but takes you a greater distance with each revolution of the pedal cranks. The larger sprockets produce lower gear ratios. Using them requires less pedaling effort, but takes you a shorter distance with each pedal crank revolution. Moving the chain from a smaller sprocket of the gear cluster to a larger sprocket results in a downshift. Moving the chain from a larger sprocket to a smaller sprocket results in an upshift. In order for the derailleur to disengage the chain from one sprocket and move it on to another, the chain must be moving forward (i.e. the rider must be pedaling forward).

2) Shifting the Front Derailleur:

The front derailleur, which is controlled by the left shifter, shifts the chain between the larger and smaller chainrings. Shifting the chain onto a smaller chainring makes pedaling easier (a downshift). Shifting to a larger chainring makes pedaling harder (an upshift).

b) Which gear should I be in?

The combination of largest rear, smallest front gears is for the steepest hills. The smallest rear, largest front combination is for the greatest speed. It is not necessary to shift gears in sequence. Instead, find the “starting gear” which is right for your level of ability -- a gear which is hard enough for quick acceleration but easy enough to let you start from a stop without wobbling — and experiment with upshifting and downshifting to get a feel for the different gear combinations. At first, practice shifting where there are no obstacles, hazards or other traffic, until you’ve built up your confidence. Once you’ve learned the basics, experience will teach you which gear is appropriate for which condition, and practice will help you shift smoothly and at precisely the optimum moment.

3. Shifting an internal gear hub drivetrain

If your bicycle has an internal gear hub drivetrain, the gear changing mechanism will consist of:

- a 3, 5, 7 or possibly 12 speed internal gear hub
- one, or sometimes two, shifters



- one or two control cables
- one front sprockets called chainrings
- a drive chain

a) Shifting internal gear hub gears

Shifting with an internal gear hub drivetrain is simply a matter of moving the shifter to the indicated position for the desired gear. After you have moved the shifter to the gear position of your choice, ease the pressure on the pedals for an instant to allow the hub to complete the shift.

b) Which gear should I be in?

The numerically lowest gear (1) is for the steepest hills. The numerically largest gear (3, 5, 7 or 12, depending on the number of speeds of your hub) is for the greatest speed. Shifting from an easier, “slower” gear (like 1) to a harder, “faster” gear (like 2 or 3) is called an upshift. Shifting from a harder, “faster” gear to an easier, “slower” gear is called a downshift. It is not necessary to shift gears in sequence. Instead, find the “starting gear” for the conditions -- a gear which is hard enough for quick acceleration but easy enough to let you start from a stop without wobbling -- and experiment with upshifting and downshifting to get a feel for the different gears. At first, practice shifting where there are no obstacles, hazards or other traffic, until you’ve built up your confidence. Once you’ve learned the basics, experience will teach you which gear is appropriate for which condition, and practice will help you shift smoothly and at precisely the optimum moment.

E. Toeclips & Straps

Toeclips and straps are the traditional means which experienced cyclists use to keep their feet correctly positioned and engaged with the pedals. The toeclip positions the ball of the foot over the pedal spindle, which gives maximum pedaling power. The toe strap, when tightened, keeps the foot engaged throughout the rotation cycle of the pedal. While toeclips and straps give some benefit with any kind of shoe, they work most effectively with cycling shoes designed for use with toeclips. Your dealer can explain how toeclips and straps work.

WARNING

GETTING INTO AND OUT OF PEDALS WITH TOECLIPS AND STRAPS REQUIRES SKILL WHICH CAN ONLY BE ACQUIRED WITH PRACTICE.

Until it becomes a reflex action, the technique requires concentration which can distract your attention and cause you to lose control and fall. Practice the use of toeclips and straps where there are no obstacles, hazards or traffic. Keep the straps loose, and don’t tighten them until your technique and confidence in getting in and out of the pedals warrants it. Never ride in traffic with your toe straps tight.



F. Clipless (“step-in”) pedals

Clipless pedals (sometimes called “step-in pedals”) are the means most racers use to keep their feet securely in the correct position for maximum pedaling efficiency. They work like ski bindings ... a plate on the sole of the shoe clicks into a spring-loaded fixture on the pedal. Clipless pedals require shoes specifically designed for the make and model pedal being used. Many clipless pedals are designed to allow the rider to adjust the amount of force needed to engage or dis-engage the foot.



WARNING

GETTING INTO AND OUT OF PEDALS WITH TOECLIPS AND STRAPS REQUIRES SKILL WHICH CAN ONLY BE ACQUIRED WITH PRACTICE.

Until it becomes a reflex action, the technique requires concentration which can distract your attention and cause you to lose control and fall. Practice the use of toeclips and straps where there are no obstacles, hazards or traffic. Keep the straps loose, and don't tighten them until your technique and confidence in getting in and out of the pedals warrants it. Never ride in traffic with your toe straps tight.

G. Tires and Tubes

1. Tires

Bicycle tires are available in many designs and specifications, ranging from general-purpose designs to tires designed to perform best under very specific weather or terrain conditions. Your bicycle has been equipped with tires which the bike's manufacturer felt were the best balance of performance and value for the use for which the bike was intended. If, once you've gained experience with your new bike, you feel that a different tire might better suit your riding needs, your dealer can help you select the most appropriate design.

The size, pressure rating, and on some high-performance tires the specific recommended use, are marked on the sidewall of the tire. The part of this information which is most important to you is Tire Pressure.



CAUTION

Pencil type automotive tire gauges can be inaccurate and should not be relied upon for consistent, accurate pressure readings. Instead, use a high quality dial gauge.

Some tires may need to be brought up to pressure every week or two. So, it is important to check your tire pressures before every ride.



WARNINGS

NEVER INFLATE A TIRE BEYOND THE MAXIMUM PRESSURE MARKED ON THE TIRE'S SIDEWALL OR THE WHEEL RIM. If the maximum pressure rating for the wheel rim is lower than the maximum pressure shown on the tire, always use the lower rating. Exceeding the recommended maximum pressure may blow the tire off the rim or damage the wheel rim, which could cause damage to the bike and injury to the rider and bystanders.

THERE IS A SAFETY RISK IN USING GAS STATION AIR HOSES OR OTHER AIR COMPRESSORS. They are not made for bicycle tires. They move a large volume of air very rapidly, and will raise the pressure in your tire very rapidly, which could cause the tube to explode.



Tire pressure is given either as maximum pressure or as a pressure range. How a tire performs under different terrain or weather conditions depends largely on tire pressure. Inflating the tire to near its maximum recommended pressure gives the lowest rolling resistance; but also produces the harshest ride. High pressures work best on smooth, dry pavement. Very low pressures, at the bottom of the recommended pressure range, give the best performance on smooth, slick terrain such as hard-packed clay, and on deep, loose surfaces such as deep, dry sand. Tire pressure that is too low for your weight and the riding conditions can cause a puncture of the tube by allowing the tire to deform sufficiently to pinch the inner tube between the rim and the riding surface.

2. Tire Valves

There are primarily two kinds of bicycle tube valves: The Schrader Valve and the Presta Valve. The bicycle pump you use must have the fitting appropriate to the valve stems on your bicycle.

The Schrader valve (fig. 18) is like the valve on a car tire. To inflate a Schrader valve tube, remove the valve cap and clamp the pump fitting onto the end of the valve stem. To let air out of a Schrader valve, depress the pin in the end of the valve stem with the end of a key or other appropriate object.

The Presta valve (fig. 18) has a narrower diameter and is only found on bicycle tires. To inflate a Presta valve tube using a Presta headed bicycle pump, remove the valve cap; unscrew (counterclockwise) the valve stem lock nut; and push down on the valve stem to free it up. Then push the pump head on to the valve head, and inflate.

To inflate a Presta valve with a Schrader pump fitting, you'll need a Presta adapter (available at your bike shop) which screws on to the valve stem once you've freed up the valve. The adapter fits into the Schrader pump fitting. Close the valve after inflation. To let air out of a Presta valve, open up the valve stem lock nut and depress the valve stem.

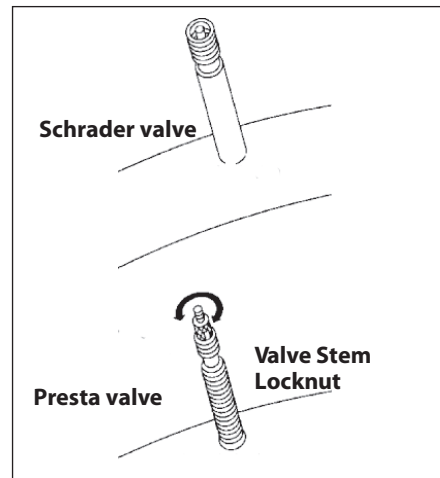


Figure 18.



WARNING

We highly recommend that you carry a spare inner tube when you ride your bike.

PATCHING A TUBE IS AN EMERGENCY REPAIR.

If you do not apply the patch correctly or apply several patches, the tube can fail, resulting in possible tube failure, which could cause you to lose control and fall. Replace a patched tube as soon as possible.



The Presta valve has a narrower diameter and is only found on bicycle tires. To inflate a Presta valve tube using a Presta headed bicycle pump, remove the valve cap; unscrew (counterclockwise) the valve stem lock nut; and push down on the valve stem to free it up. Then push the pump head on to the valve head, and inflate. To inflate a Presta valve with a gas station air hose, you'll need a Presta adapter (available at your bike shop) which screws on to the valve stem once you've freed up the valve. The adapter fits the end of the air hose fitting. Close the valve after inflation. To let air out of a Presta valve, open up the valve stem lock nut and depress the valve stem.

H. Bicycle Suspension

Some Mountain Bikes come equipped with suspension systems which are designed to smooth out some of the shocks encountered in off-road riding. There are many different types of suspension systems — too many to deal with individually in this Manual. If your bicycle has a suspension system of any kind, consult a qualified specialist to provide you with the appropriate adjustment and maintenance instructions.

WARNINGS

FAILURE TO MAINTAIN, CHECK AND PROPERLY ADJUST THE SUSPENSION SYSTEM MAY RESULT IN SUSPENSION MALFUNCTION, WHICH MAY CAUSE YOU TO LOSE CONTROL AND FALL.

CHANGING SUSPENSION ADJUSTMENT CAN CHANGE THE HANDLING AND BRAKING CHARACTERISTICS OF YOUR BICYCLE. Never change suspension adjustment unless you are thoroughly familiar with the suspension system manufacturer's instructions and recommendations, and always check for changes in the handling and braking characteristics of the bicycle after a suspension adjustment by taking a careful test ride in a hazard-free area.

NOT ALL BICYCLES CAN BE SAFELY RETROFITTED WITH SOME TYPES OF SUSPENSION SYSTEMS. Before retrofitting a bicycle with any suspension, check with the bicycle's manufacturer to make sure that what you want to do is compatible with the bicycle's design.

IF YOUR BIKE HAS SUSPENSION, THE INCREASED SPEED YOU MAY DEVELOP ALSO INCREASES YOUR RISK. When braking, the front of a suspended bike dips. You could lose control and fall if your skill is not up to handling this system. Get to know how to handle your suspension system safely before trying any downhill or very fast mountain biking.

Suspension can increase the handling capabilities and comfort of your bicycle. This enhanced capability may allow you to ride faster; but you must not confuse the enhanced capabilities of the bicycle with your own capabilities as a rider. Increasing your skill will take time and practice. Proceed carefully until you are sure you are competent to handle the full capabilities of your bike. Never ride at a speed or on terrain which is not suitable for your personal riding skill and experience. Always proceed cautiously in areas where you are not familiar with the terrain. If you exceed your limitations, serious injury or death could occur.

Cannondale stands behind all of its products.

Cannondale bicycles are warranted against manufacturing defects in materials or workmanship. Cannondale will repair or replace any products found to be defective within the normal scope of use with the same or most nearly comparable model or component then available. The terms of this limited warranty are described below.

LIMITED WARRANTY

LENGTH OF WARRANTY

Every bicycle has a useful product lifespan. This limited warranty is not meant to suggest or imply that the frame or components can never be broken or will last forever. This limited warranty covers manufacturing defects that occur within the normal lifespan and use of the product.

Cannondale bicycles must be registered on cannondale.com or in person by an Authorized Cannondale Retailer in order to activate the lifetime frame warranty described below.

Frames, excluding those listed below: Lifetime of the original owner.

Frames of Gravity, Freeride, Downhill, Dirt Jump and other ASTM Category Five Bicycles: Three years from original retail purchase.

Swing Arms, Chainstays, Seatstays, and Shock Links of Full Suspension Frames: Five years from original retail purchase.

Cannondale Lefty and Headshok Suspension Forks and Unbranded Forks: The fork structure is covered under the frame warranty. The internal components are covered as Cannondale Branded Components.

Paint and Decals: One year from original retail purchase.

Cannondale Branded Components: One year from original retail purchase.

Non-Cannondale Branded Components, including Non-Cannondale Branded Forks, Electronic Systems, Shocks, and Other Components, are covered by the stated warranty, if any, of their manufacturer, and are not covered under this limited warranty. Please check in your owner's manual pack for information regarding these warranties.

WARRANTY CONDITIONS

This limited warranty applies only to the original owner of the bicycle and is not transferable to subsequent owners.

For any warranty claim to be considered, the bicycle must be brought in to an Authorized Cannondale Retailer on the same continent on which the bicycle was purchased. The bicycle must be in an assembled, reasonably clean and sanitary condition and accompanied by the original, dated sales receipt for the bicycle (be sure to keep your receipt in a safe place!).

This limited warranty applies only to bicycles purchased in assembled and adjusted condition from Authorized Cannondale Retailers.

This limited warranty is void if the bicycle is subjected to abuse, neglect, improper repair, improper assembly, lack of proper maintenance according to the owner's manual, alteration, modification, installation of incompatible parts, corrosion, an accident or other abnormal, excessive, or improper use.

This limited warranty is void if the bicycle is used in a rental or bike sharing program.

This limited warranty is void if the bicycle is subjected to abuse, neglect, improper repair, improper assembly, lack of proper maintenance according to the owner's manual, alteration, modification, installation of incompatible parts, corrosion, an accident or other abnormal, excessive, or improper use.

This limited warranty is void if the bicycle is used in a rental or bike sharing program.

(continued on the next page.....)

(LIMITED WARRANTY continued.....)

Damage resulting from normal wear and tear, including the results of fatigue, is not covered. It is the owner's responsibility to regularly inspect and properly maintain his/her bicycle. Some items that typically exhibit damage from normal wear and tear include:

- Bearings
- Bearing races
- Rear shock mounting hardware and main seals
- Chainrings
- Cassettes
- Tires
- Tubes
- Saddles
- Chain
- Seals
- Brake pads
- Pawls
- Free hubs
- Wheel braking surface
- Spokes
- Handlebar and grips
- Cables and housing
- Bushings

Paint fading caused by the effects of ultraviolet light (UV) or outdoor exposure is not covered by this limited warranty.

All labor charges for warranty service, including the transfer of components and/or any installation of new components, are the responsibility of the bicycle owner.

Due to product evolution and obsolescence (such as products that have been discontinued or are no longer kept in stock), some frames or components may not be available for older models. In these cases, Cannondale may elect to provide a replacement that it determines to be the most nearly comparable model, but sourcing and paying for components is the responsibility of the bicycle owner.

All determinations under this limited warranty will be made in the sole discretion of Cannondale, including but not limited to the decision to repair or replace a defective product, and what replacement product is the most nearly comparable product then available.

THE REMEDIES STATED ABOVE ARE THE EXCLUSIVE REMEDIES UNDER THIS WARRANTY. ANY AND ALL OTHER REMEDIES AND DAMAGES THAT MAY OTHERWISE BE APPLICABLE ARE EXCLUDED, INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES, DAMAGES TO OTHER PROPERTY, OR ANY PUNITIVE DAMAGES.

THIS IS THE ONLY WARRANTY MADE BY CANNONDALE ON ITS FRAMES AND COMPONENTS, AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION HEREIN. ANY WARRANTIES THAT MAY OTHERWISE BE IMPLIED BY LAW INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXCLUDED.

PLEASE REFER TO THE DOCUMENTS INCLUDED WITH YOUR BICYCLE FOR POSSIBLE FURTHER RESTRICTIONS.

THIS LIMITED WARRANTY GIVES THE CONSUMER SPECIFIC LEGAL RIGHTS. THE CONSUMER MAY ALSO HAVE OTHER LEGAL RIGHTS WHICH VARY FROM STATE TO STATE OR COUNTRY TO COUNTRY. SOME STATES AND COUNTRIES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR WARRANTIES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. IF IT IS DETERMINED BY A COURT OF COMPETENT JURISDICTION THAT A CERTAIN PROVISION OF THIS LIMITED WARRANTY DOES NOT APPLY, SUCH DETERMINATION SHALL NOT AFFECT ANY OTHER PROVISION OF THIS LIMITED WARRANTY AND ALL OTHER PROVISIONS SHALL REMAIN IN EFFECT.

(05/18)

CANNONDALE USA

Cycling Sports Group, Inc.
1 Cannondale Way,
Wilton CT, 06897, USA
1-800-726-BIKE (2453)

WARNING

INSTRUCT CHILDREN TO NOT RIDE OVER STICKS OR DEBRIS.

WHY?

We are aware of rare but very serious accidents where a foreign object was kicked up, entered the spokes of the front wheel, was swept around and either broke the fork or stopped the wheel. The forensic evidence was clear, even if the object itself could not later be located. These objects can result in damage leading to an accident.

AVOID RIDING OVER STICKS, DEBRIS:

The riders were taken by surprise and crashed hard. As many riders know, the road side can be littered with a great variety of debris. Common items are sticks, branches, auto parts and trash.

BE AWARE OF THE PATH AHEAD, TO AVOID:

Scan ahead and if you see debris ride around it. Before moving from your predictable path of travel, look over your shoulder to be sure you can do so safely. If you are riding with a group and at the front, point out debris.

RIDING OVER OR INTO DEBRIS COULD LEAD TO AN ACCIDENT, WITH RISK OF SERIOUS INJURY, PARALYSIS OR DEATH.

WARNING

DO NOT RELY ONLY ON BLINKING AND LOW-INTENSITY BIKE LIGHTS FOR RIDING SAFETY.

Even when equipped with lighting and reflectors, riding a bike at night or in low light is very hazardous. We urge you to not allow children to ride at night.

WHAT LIGHTS ARE INTENDED FOR:

Blinking and low-intensity bike lights are intended only as daytime “be seen” running lights which can draw attention and increase the chance of other cyclists, pedestrians and motorists seeing a rider while riding. Blinking and low-intensity bike lights are not designed to illuminate the road or hazards in the road.

WHAT LIGHTS ARE NOT FOR:

Blinking and low-intensity bike light are not bright or intense, they are not a replacement for higher-intensity lights. Higher intensity “riding lights” lights are different as they are intended to illuminate hazards to the rider while riding.

CHILDREN SHOULD NOT RIDE AT NIGHT.

Read “NIGHT RIDING” on page 17, now!

A CHILD RIDER CAN BE SEVERELY INJURED, PARALYZED OR KILLED IN AN ACCIDENT IF YOU IGNORE THESE WARNINGS.

PRE-RIDE SAFETY CHECKLIST

CHECK THE HELMET. Make sure the rider wears a helmet and appropriate shoes and clothing. Clothing must not interfere with the ability to control the bicycle. Make sure the bicycle helmet is intended for bicycling, is in good condition, and fits the rider correctly. **See pages 1,13, and 15.**

INSPECT THE FRAME AND FORK. Clean the frame and check for cracks, especially around welds. Check the frame and fork are not bent or broken. If either are bent or broken, they should be replaced.

CHECK REFLECTORS, LIGHTING AND ACCESSORIES. Ensure that all reflectors are present, properly fitted, and not obscured. Ensure that all other fittings on the bike are properly and securely fastened, and functioning. Make sure there are not loose or broken parts.

CHECK THE WHEELS AND TIRES. Ensure the tires are inflated to within the recommended limit as displayed on the tire sidewall. Ensure tires have tread and have no bulges or excessive wear. Ensure rims run true and have no obvious wobbles or kinks. Ensure all wheel spokes are tight and not broken. Check to ensure that wheels are properly seated in the forks. Check that axle nuts are tight. If you bicycle is fitted with quick release axles, make sure locking lever are correctly tensioned and in the CLOSED position. **See pages: 13, 26-34, 61-65, 71-72.**

CHECK THE BRAKES. Ensure front and rear brakes work properly. Ensure brake shoe pads are not over worn and are correctly positioned in relation to the wheel rims. Ensure brake control cables are lubricated, correctly adjusted and display no obvious wear. Ensure brake control levers are lubricated and tightly secured to the handlebar. **See pages: 10, 14, 43-48, 66-67.**

CHECK THE STEERING. Ensure handlebar and stem are correctly adjusted and tightened, and allow proper steering. Ensure that the handlebars are set correctly in relation to the forks and the direction of travel. Check that the headset lock ring mechanism is properly adjusted and tightened. If the bicycle is fitted with handlebar extensions, ensure they are properly positioned and tightened. **See pages: 14, 35-36.**

CHECK THE MOVING PARTS. (Chains, Crank arms, Derailleurs, Pedals, Shifters, and Gears) Ensure the chain is oiled, clean and runs smoothly. More frequent service is required in wet or dusty conditions. Ensure pedals are securely tightened to the cranks. Ensure cranks are securely tightened to the axle and are not bent. Check that the front and rear mechanisms are adjusted and function properly. Ensure control levers are securely attached. Ensure derailleurs, shift levers and control cables are properly lubricated. Ensure all bearings are properly lubricated, run freely and display no excess movement or rattling. Check headset, wheel bearings, pedal bearings and bottom bracket bearings. **See "Servicing," pages: 21-25, and "Maintenance," pages 26-60.**

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WARNING

To avoid injury: this bicycle must be properly assembled by an adult prior to use. If you do not know how or have questions, take the bike to a bike dealer.

FAILURE TO FOLLOW THESE WARNINGS COULD LEAD TO ACCIDENT, WITH RISK OF SERIOUS INJURY, PARALYSIS, OR DEATH

Always perform the above "PRE-RIDE SAFETY CHECKLIST" before every ride. If you find damage, do not ride the bike, seek the assistance of a bike dealer to correct any problem.

Not suitable for children under 3 years. Choking hazard - small parts. Keep out of reach of children under 3 years.