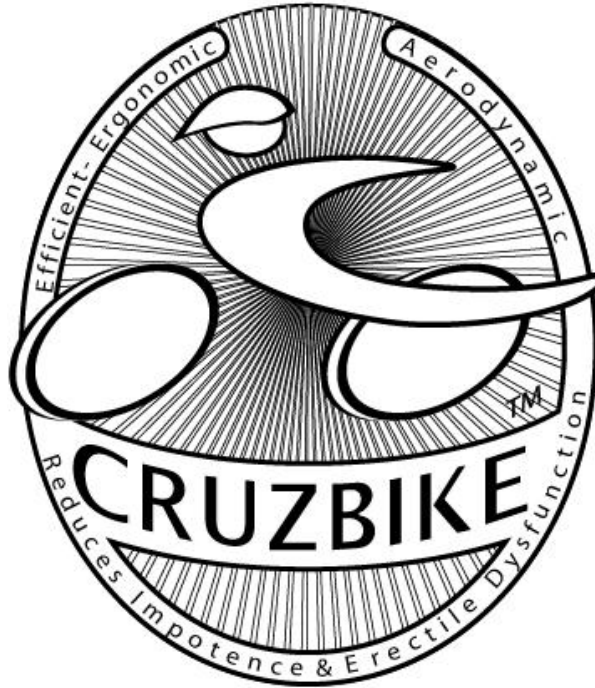


Cruzbike Owner's Instruction & Safety Manual



Congratulations!

You have made a smart choice in selecting a Cruzbike front-wheel drive recumbent. Your new recumbent has been engineered to provide years of top quality performance, comfort and enjoyment.

Critical Safety Information

⚠ Caution: The Cruzbike riding position, rider's weight distribution and the weight of the steering function are each quite different from **any other bicycle**, including average "up right" bicycles and other recumbent bicycles of any kind.

⚠ Warning: Be ready to explore the unique handling characteristics of the Cruzbike with appropriate due care and in a safe, car and hazard free riding environment such as a large empty parking lot.

⚠ Caution: The Cruzbike has a drive system that is **unlike any other bicycle on the market**. Like a child's tricycle, the pedaling and steering system are unified and create a unique set of handling characteristics. Starting up from a standstill, turning at low and high speeds, and cornering and braking in wet weather, even riding in a straight line are handled differently to all other bicycles.

⚠ Warning: Do not ride this bicycle among automobile traffic or other cyclists before you are thoroughly familiar with its handling characteristics. Failure to do so could result in accident and serious injury or death.

This manual is intended as a general safety and operation guide for Cruzbike models: Sofrider, Quest, Silvio, Vendetta and customer-built bikes using the Cruzbike kit. Some sections won't directly apply to all models. There are separate Assembly Manuals for the various Cruzbike models.

Read and make sure that you understand each point in the safety related sections (Sections 4, 5 and 6) and refer to the cited sections on any issue that you don't completely understand.

1. General Warning:

Like any sport, bicycling involves risk of injury and damage. By choosing to ride a bicycle, you assume the responsibility for that risk, so you need to know — and to practice — the rules of safe and responsible riding and of proper use and maintenance. Proper use and maintenance of your bicycle reduces risk of injury.

This Manual contains many “Warnings” and “Cautions” concerning the consequences of failure to maintain or inspect your bicycle and of failure to follow safe cycling practices.

- The combination of the ▲ safety alert symbol and the word **WARNING** indicates a potentially hazardous situation that if not avoided could result in serious injury or death.
- The combination of the ▲ safety alert symbol and the word **CAUTION** indicates a potentially hazardous situation that if not avoided may result in minor or moderate injury, or is an alert against unsafe practices.
- The word CAUTION used without the safety alert symbol indicates a situation that, if not avoided, could result in serious damage to the bicycle or the voiding of your warranty.

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 always repeat the Warning of possible injury or death.

Because it is impossible to anticipate every situation or condition that can occur while riding, this Manual makes 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 which are the sole responsibility of the rider. A special note for parents:

▲ WARNING: Cruzbike bicycles are intended for use by adults only. Failure to follow this Warning could result in serious injury or death.

This manual contains important safety, performance and service information. Read it before you take the first ride on your new bicycle, and keep it for reference.

If you have any questions or do not understand something, take responsibility for your safety and consult with your dealer or local bike shop or the bicycle’s manufacturer.

This manual is not intended as a comprehensive use, service, repair or maintenance manual. Please see your dealer or local bike shop for all service, repairs or maintenance. Your dealer or local bike shop may also be able to refer you to classes, clinics or books on bicycle use, service, repair or maintenance.

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3. Sizing Adjustments

Important Sizing Information for Proper Riding Position

Cruzbike bicycle sizing and fitting criteria are different from upright bicycles. It is very important to carry out the necessary adjustments to be sure your Cruzbike bicycle fits you properly. A bike that does not fit properly is unsafe, will be uncomfortable and will be difficult to control and potentially dangerous to the rider. Please refer to the Assembly manual for details of adjusting your bike to fit you.

⚠ WARNING: Fit and size are important; if your bicycle does not fit properly, you may lose control and fall. If your new bike doesn't fit, ask your dealer or local bike shop to size it properly before you ride, or you may have an accident resulting in serious injury or death.

Pedal position and handle bar position affect your comfort, safety and ability to control the bike.

TIGHTEN AND CLOSE QUICK-RELEASE MECHANISMS: Riding your bicycle with quick-release mechanisms open or improperly adjusted can cause you to lose control, resulting in serious injury or death.

Step over height

Step over height is the distance from the ground to the top of the seat pan cushion.

You need to be comfortable that you can swing your leg over the seatback, or lift your leg over the seat pan. Or you need to be comfortable that you can lay the bike over, step over it and lift it up between your straddling legs. If you cannot comfortably use at least one of these mounting and dismounting techniques, then a Cruzbike bicycle is not recommended for you.

Seat position

On models where it is adjustable, correct seat and backrest adjustment is an important factor in getting the most performance and comfort from your Cruzbike bicycle. If the seat position is not comfortable for you, see your dealer or local bike shop.

For the Sofrider and many kit-built bikes, the seat can be adjusted in three directions:

1. Fore and aft adjustment
2. Seat pan angle adjustment
3. Seat back adjustment.

The backrest recline is adjustable to several different position settings. Newer riders may prefer a more upright setting. Experienced and performance-oriented riders may prefer a more reclined seat back.

The backrest can be adjusted by loosening the seat-binding bolt behind the backrest as well as the seat post quick release. Slide the binding bolt down the seat back rails to further recline the angle.

⚠ WARNING: After any seat adjustment, be sure that the seat adjusting mechanism is properly tightened before riding. Loose parts on the seat post, seat back, seat pan or seat mount can cause damage to the components, or can cause you to lose control and fall. A correctly tightened seat will allow no seat movement in any direction. Periodically check to make sure that the seat adjusting mechanism is properly tightened.

Pedal Position Adjustment

Rotate the crank until the pedal is forward as far as possible. Sitting on the bike place the heel of your foot on the center of the forward pedal. Release the Quick Release lever and adjust the adjustable front tube (AFT) until your leg is absolutely straight. Tighten the Quick Release. This technique should provide a slight bend at the knee when the ball of your foot is centered on the pedal. Note where the AFT is positioned on the ruler that is marked on the smaller tube. Note that the procedure for adjusting the AFT is different on the Silvio and Vendetta. Refer to the respective Assembly manuals for instructions.

Handlebar height and angle

The handlebars should be high enough to clear the knees, the grips should be pointed down and the levers should point forward and be in a comfortably reached position and orientation. The angle of the brake and shift control levers and their position on the handlebars can be changed with the use of an Allen wrench. If you are not confident in making these adjustments, ask your dealer or local bike shop or local bicycle shop mechanic to make the adjustments for you.

Many bikes have brake levers that can be adjusted for reach. If you have small hands or find it difficult to squeeze the brake levers, your dealer or local bike shop or local bicycle shop can either adjust the reach or fit shorter reach brake levers.

⚠ WARNING: The shorter the brake lever reach, the more critical it is to have correctly adjusted brakes, so that full braking power can be applied within the available brake lever travel. Brake lever travel insufficient to apply full braking power can result in loss of control, which may result in serious injury or death.

⚠ WARNING: The handlebar should be tightly secured. An insufficiently tightened handlebar 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. 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, the bolts are insufficiently tightened.

Fit Checklist

1. Rider height: The Cruzbike Sofrider, Quest, Vendetta, and Silvio are designed to fit most riders with a height between 5'1" (155 cm) and 6'4" (193 cm). If your bike is not the right size for you, you may lose control and fall. If your new bike is not the right size, there may be other options such as using a Cruzbike kit to modify a bicycle with a smaller or larger frame. An in-depth discussion of the Cruzbike kit is outside the realm of this Owner's Manual, but there is more information about kit-built Cruzbikes on <http://cruzbike.com>.
2. Rider weight: The Cruzbike frame, like most adult bicycle frames, is designed for riders up to 250 pounds (114 kg). While there are many Cruzbike enthusiasts whose weight exceeds 250 lbs., we cannot endorse its use for riders above this weight and we recommend caution and frequent examination of the frame and other components for signs of structural fatigue.
3. Seat and backrest adjustment: Are the seat, backrest, and backrest-post securely fastened? A correctly tightened seat/backrest will allow no seat movement in any direction.
4. Handlebar position: Are the stem and handlebars at the right height and distance for you?
5. Brake levers: Can you comfortably operate the brakes? If not, you may be able to adjust their angle and reach.

NOTE: Correct fit is an essential element of bicycling safety, performance and comfort. Making the adjustments to your bicycle that result in correct fit for your body and riding conditions requires experience, skill and special tools. Always have your dealer or local bike shop make the adjustments on your bicycle; or, if you have the experience, skill and tools, have your dealer or local bike shop check your work before riding.

⚠ WARNING: If your bicycle does not fit properly, you may lose control and fall. If your new bike doesn't fit, ask your dealer or local bike shop to exchange it before you ride it.

4. Pre-riding Safety Checks

Safety first

1. Always wear an approved helmet when riding your bike, and follow the helmet manufacturer's instructions for fit, use and care.
2. Do you have all the other required and recommended safety equipment? See Section 6. It is your responsibility to familiarize yourself with the laws of the areas where you ride, and to comply with all applicable laws.
3. Do you know how to correctly operate your wheel quick releases? Check Section 7.A.1 to make sure. Riding with an improperly adjusted wheel quick release can cause the wheel to wobble or disengage from the bicycle, and cause serious injury or death.
4. Toe-clips and clip-less pedals are not recommended for use with Cruzbike bicycles until you have become an expert Cruzbike rider. Make sure you know how they work (see Section 7.E). These pedals require special techniques and skills. Follow the pedal manufacturer's instructions for use, adjustment and care.
5. If your Cruzbike bicycle is equipped with adjustable suspension, see your Assembly manual for proper adjustment. Suspension can change the way a bicycle performs.

Mechanical Safety Check

Routinely check the condition of your bicycle before every ride.

Nuts, bolts & straps: Make sure nothing is loose. Lift the front wheel off the ground by two or three inches then let it bounce on the ground.

Does anything sound, feel or look loose? Do a visual and tactile inspection of the whole bike. Any loose parts or accessories? If so, secure them. If you're not sure, ask someone with experience to check.

Tires & Wheels: Make sure tires are correctly inflated (see Section 7.G.1).

Check by putting one hand on the seat, one on the intersection of the handlebars and stem, then bouncing your weight on the bike while looking at tire deflection. Compare what you see with how it looks when you know the tires are correctly inflated; and adjust if necessary.

Tires in good shape? Spin each wheel slowly and look for cuts in the tread and sidewall. Replace damaged tires before riding the bike.

Wheels true? Spin each wheel and check for brake clearance and side-to-side wobble. If a wheel wobbles side to side even slightly, or rubs against or hits the brake pads, take the bike to a qualified bike shop to have the wheel trued.

⚠ CAUTION: **Wheels must be true for the brakes to work effectively. Wheel truing is a skill that requires special tools and experience.** Wheel rims clean and undamaged? Make sure the rims are clean and undamaged along the braking surface, and check for excess rim wear.

Brakes: Check the brakes for proper operation (see Sections 7.C).

Squeeze the brake levers. Are the brake quick-releases closed? All control cables seated and securely engaged? Do the brake pads contact the wheel rim squarely and make full contact with the rim? Do the brake pads touch the wheel rim within an inch of brake lever movement? Can you apply full braking force at the levers without having them touch the handlebar? If not, your brakes need adjustment. Do not ride the bike until a professional bicycle mechanic properly adjusts the brakes.

Quick Releases: Make sure the front wheel, rear wheel and seat post quick releases are properly adjusted and in the locked position. See Section 7.A and 7.B.

Handlebar and seat alignment: Make sure the seat and handlebar stem are parallel to the bike's centerline and clamped tight enough so that you can't twist them out of alignment. See Section 3.

Handlebar ends: Make sure the handlebar grips are secure and in good condition. If not, have your dealer or local bike shop replace them. Make sure the handlebar ends are plugged. If not, plug them before you ride.

⚠ WARNING: **Loose or damaged handlebar grips can cause you to lose control and fall. Unplugged handlebars can cut you and cause serious injury in an otherwise minor accident.**

5. Your First Cruzbike Ride

Picking the spot: When you buckle on your helmet and go for your first familiarization ride on your new bicycle, be sure to pick a controlled environment, away from cars, other cyclists, obstacles or other hazards. A wide area, such as a parking lot or cul-de-sac is ideal because new riders often need extra space as they get used to the pedal-steer effect. Unlike other bikes, pedaling on a Cruzbike bicycle can “steer” the bike to the right or left. Therefore new riders need extra space to learn how to follow a straight path.

Mounting the bike

There are three recommended ways to get on (mount) a Cruzbike. Choose one that fits your style and degree of flexibility.

If you have been riding a regular upright bicycle, you may be used to a **leg swing** technique, and some tall and/or flexible Cruzbike riders still prefer this technique. It requires swinging one leg over the top of the backrest, which is approximately 41 inches (104 cm) above the ground on a Sofrider.

The most popular way to mount a Cruzbike is to **step over** the seat while holding the handlebar with one hand and the top of the backrest with the other hand. This requires your foot to clear the seat cushion, which sits approximately 26 inches (66 cm) above the ground. If you have difficulty stepping over the seat, it may help to tilt the bike toward you slightly before stepping over.

If you prefer or need an even lower vertical clearance, use the **lay down** technique. Simply, lay the bike gently on its left side on the ground. The top edge of the seat will be only 14.5 inches (37 cm) above the ground. Step over the seat so that you are straddling the bike. Reach down and gently bring the bike to a fully upright position as you sidle to the right. Dismounting is simply the reverse of mounting.

Adjusting the Adjustable Front Tube (AFT): Once you are comfortably sitting on the bike, you will need to adjust the distance of the pedals for your leg length. Loosen the quick release clamp on the AFT and firmly grip the outer AFT. Keeping at least one foot on the ground, push or pull the tube until the pedals are at a distance where you can reach them with only a slight bend in your knees when they are farthest from you. Now tighten the quick release clamp securely once the AFT length is right for you.

⚠ WARNING: Failure to tightly secure the clamp on the Adjustable Front Tube (AFT) could result in a serious injury by allowing the tube to separate while pedaling.

Getting used to the feel

Now that the AFT is adjusted properly, test the brakes. Squeezing the brake levers will engage the brakes and make the bike feel more secure while you are standing still.

Because Cruzbike bicycles have front-wheel drive, the front-end weighs more than you are probably used to. While sitting on the seat, release the brakes and “paddle” (sometimes called Fred Flintstone-ing) the bike around in circles or figure-8’s, and practice turning the front wheel side-to-side. Note how the steering feels heavier than you are used to. Now push the bike a little faster and then sit on the seat and “coast” with your feet barely above the ground. Do this a few times, trying to coast a little faster each time. Having a GENTLE downhill slope makes this step fun and easy. Practice these skills at least 5-10 minutes before the next step... pedaling for the first time.

Pedaling for the first time

Once you can coast comfortably, you are ready to pedal. This is best done on either flat or slightly downhill terrain. While straddling the bike, get the bike rolling, sit on the seat, and gently bring your feet up to the pedals and begin pedaling. Accurate placement of the feet squarely on the pedals seems to help with the balance. As you pedal, do not be surprised if you veer off to the left or right. You have a lifetime of riding rear-wheel drive bicycles. It will take a little time for your brain to adapt. If you feel you are about to fall, simply apply your brakes and put your feet down (you will probably do this instinctively). If you are like most people, it will only be a matter of minutes before you can ride in a reasonably straight line without putting your feet down. Once you are doing this, you are on the way to gaining the experience you need to ride safely and competently. Don’t grip the handlebar too tightly. During these low-speed learning sessions, think about a light grip on the handlebars and a slow and even pedaling motion. To remind yourself not to grip too tightly, it helps to keep your palms

open on the handlebars while you pedal. Also, have the bike in a medium gear so that the force required to pedal the bike is not too easy and not too hard.

Knee clearance

In the event that the handlebars do not clear your knees when pedaling, it may be necessary to adjust the handlebar position and/or seat position. But first, make sure you don't have your knees splayed out widely as you pedal. Your knees should come up straight above a line between your seat and pedals, not out to the side. If that is not the problem, simply extending the AFT a little bit more usually will give more knee clearance. If you have a Sofrider or Quest, try:

- a) moving the seat forward (either move the seat pan more forward on the seat mount, or move the seat mount more forward on the frame), or
- b) moving or rotating the handle bar up using the adjustable stem.

If you have a Silvio or Vendetta, the handlebar can be moved (somewhat) up and down as well as fore and aft.

Parking the bike with a kickstand

Cruzbike bicycle models that come with a kickstand (Quest & Sofrider) can easily be parked on flat areas by first turning the front wheel all the way to the right (about 120°), and then leaning the bike onto the stand. The kickstand is intended for use on level surfaces only.

More practice

Ride to become familiar with the controls, features and performance of your new Cruzbike bicycle. Familiarize yourself with the braking action of the bike (see Section 7.C). Test the brakes at slow speed, by straightening your arms and moving your head back. Then gently applying the brakes, rear brake first. Sudden or excessive application of the front brake could pitch you over the handlebars, though this is less likely to happen on Cruzbike bicycles compared with regular upright bicycles because your center-of-gravity is lower. Nevertheless, please be careful and become familiar with the operation of your brakes.

▲ CAUTION: *Applying brakes too hard can lock up a wheel, which could cause you to lose control and fall. Skidding is an example of what can happen when a wheel locks up. Serious injury can result.*

Toe clips or clipless pedals are not recommended until you are fully comfortable and adept on the Cruzbike, which usually takes several weeks or months (depending on how much you practice). They can add significantly to the performance of your Cruzbike by allowing you to use the powerful hamstring muscles for propulsion. If you use them, practice getting in and out of the pedals.

▲ CAUTION: *Use of toe clips or “clipless” pedals can lead to a serious accident by delaying getting your feet off the pedals and onto the ground. Do not use them until you consider yourself an “advanced” Cruzbike rider.*

If your bike has suspension, familiarize yourself with how the suspension responds to brake application and rider weight shifts. See Section 7.

Practice shifting the gears see Section 7. Remember to never move the shifter while pedaling backward, nor pedal backwards immediately after having moved the shifter. This could jam the chain and cause serious damage to the bicycle.

Check out the handling and response of the bike; and check the comfort.

If you have any questions, or if you feel anything about the bike is not as it should be, consult your dealer or local bike shop before riding.

6. Riding Safety

The Basics

⚠ WARNING: 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.

Observe all local bicycle laws and regulations. Observe regulations about licensing of bicycles, riding on sidewalks, laws regulating bike path and trail use, helmet laws, child carrier laws, special bicycle traffic laws, and so on. It's your responsibility to know and obey the laws.

1. Always wear a cycling helmet that meets the latest certification standards and is appropriate for the type of riding you do. Always follow the helmet manufacturer's instructions for fit, use and care of your helmet. Most serious bicycle injuries involve head injuries that might have been avoided if the rider had worn an appropriate helmet.

⚠ WARNING: Failure to wear a helmet when riding may result in serious injury or death.

2. Always do the Mechanical Safety Check (Section 4) before you get on a bike.

3. Be thoroughly familiar with the controls of your bicycle: brakes (Section 7.C.); pedals (Section 7.E.); shifting (Section 7.D.)

4. Be careful to keep body parts and other objects away from the sharp teeth of chain rings, the moving chain, the turning pedals and cranks, and the spinning wheels of your bicycle.

5. Always wear:

- Shoes that will stay on your feet and will grip the pedals. Never ride barefoot or in sandals.
- Bright, visible clothing that is not so loose that it can be tangled in the bicycle or snagged by objects at the side of the road or trail.
- Protective eyewear, to protect against airborne dirt, dust and bugs — tinted when the sun is bright, clear when it's not.

6. Don't jump with your Cruzbike bicycle. Jumping can put huge and unpredictable stress on the bicycle and its components. Riders who insist on jumping their bikes risk serious damage, to their bicycles as well as to themselves.

7. Ride at a speed appropriate for conditions. Increased speed means higher risk.



Safety on the Road

1. You are sharing the road or the path with others — motorists, pedestrians and other cyclists. Respect their rights.

2. Ride defensively. Always assume that others do not see you.

3. Look ahead, and be ready to avoid:

- Vehicles slowing or turning, entering the road or your lane ahead of you, or coming up behind you.
- Parked car doors opening.
- Pedestrians stepping out.
- Children or pets playing near the road.
- Pot holes, sewer grating, railroad tracks, expansion joints, road or sidewalk construction, debris and other obstructions that could cause you to swerve into traffic, catch your wheel or cause you to have an accident.
- The many other hazards and distractions which can occur on a bicycle ride.

4. Ride in designated bike lanes, on designated bike paths or as close to the edge of the road as possible, in the direction of traffic flow or as directed by local governing laws.

5. Stop at stop signs and traffic lights; slow down and look both ways at street intersections. Remember that a bicycle always loses in a collision with a motor vehicle; so be prepared to yield even if you have the right of way.
 6. Use approved hand signals for turning and stopping.
 7. Never ride with headphones. They mask traffic sounds and emergency vehicle sirens, distract you from concentrating on what's going on around you, and their wires can tangle in the moving parts of the bicycle, causing you to lose control.
 8. Never carry a passenger, unless it is a small child wearing an approved helmet and secured in a correctly mounted child carrier or a child-carrying trailer.
- ⚠ CAUTION: Note, most mountain bike style racks that connect solely to the seat post are not rated to take the weight of a child.**
9. Never carry anything which obstructs your vision or your complete control of the bicycle, or which could become entangled in the moving parts of the bicycle.
 10. Never hitch a ride by holding on to another vehicle.
 11. Don't do stunts, wheelies or jumps.
 12. Don't weave through traffic or make any moves that may surprise people with whom you are sharing the road.
 13. Observe and yield the right of way.
 14. Never ride your bicycle while under the influence of alcohol or drugs.
 15. If possible, avoid riding in bad weather, when visibility is obscured, at dawn, dusk or in the dark, or when extremely tired. Each of these conditions increases the risk of accident.

Off Road Safety

1. The variable conditions and hazards of off-road riding require close attention and specific skills. Start slowly on easier terrain and build up your skills. If your bike has suspension, the increased speed you may develop also increases your risk of losing control and falling. Get to know how to handle your bike safely before trying increased speed or more difficult terrain.
2. Wear safety gear appropriate to the kind of riding you plan to do.
3. Don't ride alone in remote areas. Even when riding with others, make sure that someone knows where you're going and when you expect to be back.
4. Always take along some kind of identification, so that people know who you are in case of an accident; and take along a couple of dollars in cash for a candy bar, a cool drink or an emergency phone call.
5. Yield right of way to pedestrians and animals. Ride in a way that does not frighten or endanger them, and give them enough room so that their unexpected moves don't endanger you.
6. Be prepared. If something goes wrong while you're riding off-road, help may not be close.

Downhill Riding

⚠ WARNING: You can reach high speeds on a Cruzbike bicycle riding down a hill, which can result in serious injury or death if you crash or lose control.

Use your brakes to maintain a speed slow enough that you could make an emergency stop or turn to avoid a sudden obstacle, especially while you are a new rider.

Become fully proficient at the Cruzbike riding technique on flat terrain before attempting any steep downhill riding.

⚠ WARNING: When you re-initiate pedaling after you have been coasting down a hill, do so in a controlled, gradual fashion and in a higher (more resistance) gear.

Rapidly stomping on the pedals after coasting could make the front end of the bike turn and make you wobble, swerve, or crash.

Practice coasting, and then pedaling, while descending small hills at low speeds until you become comfortable with the technique. Once these techniques are learned and become second-nature,

Cruzbike bicycles can be ridden and pedaled down large hills safely. However, keep in mind that high speed increases the risk of serious injury on any bicycle.

⚠ CAUTION: Flat tires or other mechanical failures while descending hills pose increased risk of a serious crash on any bicycle. If you have a flat or other mechanical issue, cautiously bring the bicycle to a full stop, without swerving, and plant your feet on the ground. Move yourself and the bicycle to a safe place, away from traffic, before beginning repairs.

Wet Weather Riding

⚠ WARNING: Wet weather impairs traction, braking and visibility, both for the bicyclist and for other vehicles sharing the road. The risk of an accident is dramatically increased in wet conditions.

Under wet conditions, the stopping power of your brakes (as well as the brakes of other vehicles sharing the road) is dramatically reduced and your tires don't grip nearly as well. This makes it harder to control speed and easier to lose control. To make sure that you can slow down and stop safely in wet conditions, ride more slowly and apply your brakes earlier and more gradually than you would under normal, dry conditions. See also Section 7.C.

Night Riding

Riding a bicycle at night is many times more dangerous than riding during the day. A cyclist 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 that helps reduce that risk. Consult your dealer or local bike shop 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 streetlights and car lights in a way that may help you to be seen and recognized as a moving cyclist.

⚠ CAUTION: Check reflectors and their mounting brackets regularly to make sure that they are clean, straight, unbroken and securely mounted.

Have your dealer or local bike shop replace damaged reflectors and straighten or tighten any that are bent or loose.

⚠ 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.

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 taillights that 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.

While riding at dawn, at dusk or at night:

- Ride slowly.

- Avoid dark areas and areas of heavy or fast-moving traffic.
- Avoid road hazards.
- If possible, ride on familiar routes.

If riding in traffic:

- Be predictable. Ride so that drivers can see you and predict your movements.
- Be alert. Ride defensively and expect the unexpected.
- If you plan to ride in traffic often, ask your dealer or local bike shop about traffic safety classes or a good book on bicycle traffic safety.

Extreme, stunt or competition riding

Whether you call it *Aggro*, *Hucking*, *Freeride*, *North Shore*, *Downhill*, *Jumping*, *Stunt Riding*, *Racing* or something else: by engaging in this sort of extreme, aggressive riding you voluntarily assume an increased risk of injury or death.

Cruzbike bicycles are not designed for extreme or aggressive riding. They are intended for road and groomed trail touring, commuting, and recreational/fitness riding.

When riding fast down hill, you can reach speeds seen on motorcycles, and therefore face similar hazards and risks. Have your bicycle and equipment carefully inspected by a qualified mechanic and be sure it is in perfect condition before descending steep hills. Use Caution and consult with expert riders and race officials on conditions and equipment advisable before riding at a new site.

Wear appropriate safety gear, including an approved helmet, full finger gloves, and body armor. Ultimately, it is your responsibility to have proper safety equipment and to be familiar with road or course conditions.

⚠ WARNING: Although many catalogs, advertisements and articles about bicycling depict riders engaged in extreme riding, this activity is extremely dangerous, increases your risk of injury or death, and increases the severity of any injury. Remember that professionals with many years of training and experience are performing the action depicted.

Know your limits and always wear a helmet and other appropriate safety gear. Even with state-of-the-art protective safety gear, you could be seriously injured or killed when riding downhill at speed or in competition.

⚠ CAUTION: Cruzbike bicycles and bicycle parts have limitations with regard to strength and integrity, and extreme riding can exceed those limitations.

Know the limits of your skill and experience. Ultimately, avoiding injury is your responsibility.

Changing Components or Adding Accessories

There are many components and accessories available to enhance the comfort, performance and appearance of your Cruzbike bicycle. However, if you change components or add accessories, you do so at your own risk. The bicycle's manufacturer may not have tested that component or accessory for compatibility, reliability or safety on your bicycle. Before installing any component or accessory, including a different size tire, make sure that it is compatible with your bicycle by checking with your dealer, Cruzbike, Inc., or your local bike shop.

For example, rear mountain bike style touring racks that attach to the seat post may be used with some Cruzbike bicycles. Many standard mudguard designs will fit some Cruzbike bicycle models. Follow the manufacturers installation and usage directions in all cases.

⚠ WARNING: Failure to confirm compatibility, to properly install, or to properly operate and maintain any component or accessory can result in serious injury or death.

⚠ CAUTION: Changing the components on your bike may void the warranty. Refer to your warranty, and check with your dealer or local bike shop before changing the components on your bike.

Scheduling Success on a Cruzbike bicycle: The Skills Checklist

Just like learning to ski, speaking a new language, or playing a musical instrument, riding a Cruzbike requires new skills. While many Cruzbike riders teach themselves to ride, it may be helpful to have an organized list of skills that should be mastered. Below is a suggested schedule of learning specific skills. Master each skill below before moving on to the next.

You will learn faster if you **ONLY** ride your new Cruzbike bicycle. Switching back and forth between other types of bicycles may slow down your progress.

Begin this checklist only after: 1) you have read the entire Owner's Manual, 2) the bike has been adjusted for a comfortable fit, 3) you have had your first successful ride in a parking lot or quiet street, and 4) after you are comfortable operating the brakes and gear shifters. Practice only in safe areas away from traffic and wear proper safety equipment. Some of these drills may not be appropriate for all riders. Know your limitations and progress your skills at your own rate. This is not a complete list of skills that you may need. Check the skills off as you master them.

Regarding Speed in the table below:

"Slow" = 0 to 9 mph, "Medium" = 10 to 19 mph, and "Fast" = 20 or more mph.

Skill #	Drill	Gain ability to:	Terrain	Speed	Time per day	Master in:	Comment	Check when done
1	Figure-8s: wide	confidently make right and left turns	Flat	slow	5 to 15 minutes	1 to 7 days	set two cones 20 to 40 ft (6 to 12 meter) apart and do figure 8s.	
2	straight-line riding: slow	ride in a straight line (as well as any bicycle can)	flat	slow	5 to 15 minutes	1 to 7 days	Try to ride with your upper body relaxed, open palms	
3	sitting start	take-off quickly and confidently	flat	slow	2 to 5 minutes	1 to 7 days	while seated, one foot on the ground, one on the pedal, takeoff	
4	rolling start	take-off quickly and confidently	flat	slow	2 to 5 minutes	1 to 7 days	while standing, take a few quick steps to get rolling, drop into the seat, coast, then pedal	
5	rapid stopping	make controlled stops safely	flat	slow	2 to 5 minutes	1 to 7 days	practice using front and rear brakes, plant feet as you stop	
6	Sitting up	lean forward and back while riding	flat	slow	2 to 5 minutes	1 to 7 days	a basic skill, unique to recumbents	
7	Look back	visually check the lane behind your shoulder	flat	slow	2 to 5 minutes	1 to 7 days	it's not that easy on any recumbent	
8	Using a mirror	use a mirror to see behind you	flat	slow	2 to 5 minutes	1 to 7 days	important to see vehicles approaching from behind	
9	U-turn: wide	make a U-turn	flat	slow	2 to 5 minutes	1 to 7 days	try within a 20 ft lane	

Skill #	Drill	Gain ability to:	Terrain	Speed	Time per day	Master in:	Comment	Check when done
10	Downhill coasting: medium	confidently pick up speed	downhill	medium	5 to 10 minutes	3 to 10 days	feel the speed	
11	climbing hills	climb hills	uphill	slow	5 to 10 minutes	3 to 10 days	Get in the right gear and feel the upper body working	
12	downhill pedaling: medium	pick up more speed	downhill	medium	5 to 10 minutes	3 to 10 days	Carefully initiate pedaling on downhills. Sloppy pedaling can make the bike weave.	
13	take-off on incline	start up a hill	uphill	slow	2 to 5 minutes	3 to 10 days	start on a gentle hill	
14	straight-line takeoff	take-off without weaving	flat	slow	2 to 5 minutes	3 to 10 days		
15	straight-line take-off on incline	take-off uphill without weaving	uphill	slow	2 to 5 minutes	7 to 20 days		
16	pedaling through corners: medium	corner confidently while pedaling	flat	medium	5 to 10 minutes	7 to 20 days	watch for gravel/sand	
17	One hand riding: slow	release one grip while riding	flat	slow	5 to 10 minutes	7 to 20 days	needed to make traffic signals, scratch nose, etc.	
18	Shifting body weight: slow	make minor adjustments to position	flat	slow	5 to 10 minutes	7 to 20 days	try left/right and front/back	
19	Drink water: slow	hydrate while riding	flat	slow	5 to 10 minutes	7 to 20 days	carefully reach for your bottle	
20	Figure-8s: narrow	to make sharper right and left turns	Flat	slow	5 to 15 minutes	15 to 30 days	set two cones 10 to 20 ft (3 to 6 meter) apart and do figure 8s.	
21	straight-line riding: medium	adding a bit more power	flat	medium	5 to 15 minutes	15 to 30 days	think smooth pedaling	
22	U-turn: narrow	make a U-turn in a narrow lane	flat	slow	2 to 5 minutes	15 to 30 days	try within a 10 ft lane	
23	One hand riding: medium	release one grip while riding	flat	medium	5 to 10 minutes	15 to 30 days	needed to make traffic signals, scratch nose, etc.	
24	Shifting body weight: medium	make minor adjustments to position	flat	medium	5 to 10 minutes	15 to 30 days	try left/right and front/back	
25	Drink water: medium	hydrate while riding	flat	medium	5 to 10 minutes	15 to 30 days	carefully reach for your bottle	
26	straight-line riding: fast	ride fast without weaving	flat	fast	5 to 15 minutes	30 to 60 days	think smooth pedaling	

Skill #	Drill	Gain ability to:	Terrain	Speed	Time per day	Master in:	Comment	Check when done
27	Downhill coasting: fast	safely coast down a larger hill	downhill	fast	5 to 10 minutes	30 to 60 days	Don't shift weight at high speeds. For now, don't pedal	
28	Downhill pedaling: fast	picking up more speed	downhill	fast	5 to 10 minutes	30 to 60 days	Carefully initiate pedaling on downhills. Sudden or sloppy pedaling can cause a wreck	
29	riding in groups	have confidence in social rides	any	any	20 to 60 minutes	60 to 100 days	learn rules of group riding	
30	clipping into pedals	Pedals such as SPD, Look, Frog, etc.	any	any	20 to 60 minutes	60 to 100 days	Clip-out early and often! Use of clip-in is OPTIONAL	
31	one-legged pedaling	only if you clip-in	any	slow	5 to 15 minutes	60 to 100 days	useful to get started when clipped-in	
32	no-hands riding	steer with feet only	flat	slow	5 to 15 minutes	6 months to 1 year	OPTIONAL. Be careful, but it's FUN!	

7. Technical Information

It's important to your safety, performance and enjoyment to understand how things work on your bicycle. We urge you to ask your dealer or local bike shop how to do the things described in this section before you attempt them yourself, and that you have your dealer or local bike shop check your work before you ride the bike. If you have even the slightest doubt as to whether you understand something in this section of the Manual, talk to your dealer or local bike shop.

A. Wheels

1. Wheel Quick Release

⚠ WARNING: Riding with an improperly adjusted wheel quick release can allow the wheel to wobble or fall off the bicycle, which can cause serious injury or death. Therefore, it is essential that you:

1. Ask your dealer or local bike shop to help you 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.

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, how to use it properly, and how much force you need to apply to secure the wheel.

⚠ WARNING: 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.

a. 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 tension-adjusting nut controls the amount of clamping force. 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.

b. Front Wheel Secondary Retention Devices

Some Cruzbike bicycle models have front forks that utilize 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:

- (1) The clip-on type is a part that the manufacturer adds to the front wheel hub or front fork.
- (2) The integral type is molded, cast or machined into the outer faces of the front fork dropouts.

Ask your dealer or local bike shop to explain the particular secondary retention device on your bike.

⚠ WARNING: If so equipped, do not remove or disable the secondary retention device.

As its name implies, it serves as a back up for a critical adjustment. If the quick release is not adjusted correctly, the secondary retention device can reduce the risk of the wheel disengaging from the fork. Removing or disabling the secondary retention device may also void the warranty.

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.

2. Removing and Installing Quick Release Wheels

a. Removing a Quick Release Rear Wheel

- (1) If your bike has rim brakes, disengage the brake's quick-release mechanism to open the clearance between the tire and the brake pads.
- (2) Move the wheel's quick-release lever from the locked or CLOSED position to the OPEN position.
- (3) If your rear fork does not have secondary retention devices go to step (5).
- (4) If your rear 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 nut enough to allow removing the wheel; then go to the next step.
- (5) Raise the rear 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 Rear Wheel

⚠ CAUTION: If your bike is equipped with disk brakes, be careful not to damage the disk, caliper or brake pads when re-inserting the disk into the caliper. Never activate a disk brake's control lever unless the disk is correctly inserted in the caliper. See also Section 7.C.

- (1) Move the quick-release lever so that it curves away from the wheel. This is the OPEN position.
- (2) Insert the rear wheel between the dropouts of the rear triangle so that the axle seats firmly at the top of the slots. 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 dropout.
- (4) While pushing the wheel firmly to the top of the slots in the dropouts, and at the same time centering the wheel rim in the fork, move the quick-release lever upwards and swing it into the CLOSED position. The lever should now be parallel to one of the triangles tubes and curved toward the wheel. To apply enough clamping force, you should have to wrap your fingers around the tube for leverage, and the lever should leave a clear imprint in the palm of your hand.

⚠ WARNING: Securely clamping the wheel takes considerable force.

If you can fully close the quick release without wrapping your fingers around the tube 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) Re-engage the brake quick-release mechanism to restore correct brake pad-to-rim clearance; spin the wheel to make sure that it is centered in the frame and clears the brake pads; then squeeze the brake lever and make sure that the brakes are operating correctly.

c. Removing a Quick Release Front Wheel

- (1) Shift the rear derailleur to high gear (the smallest, outermost rear sprocket).
- (2) If your bike has rim brakes, disengage the brake's quick-release mechanism to open the clearance between the wheel rim and the brake pads.
- (3) Pull the derailleur body back with your right hand.
- (4) Move the quick-release lever to the OPEN position.
- (5) Lift the front 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 Front Wheel

NOTE: If your bike is equipped with disk brakes, be careful not to damage the disk, caliper or brake pads when re-inserting the disk into the caliper.

Never activate a disk brake's control lever unless the disk is correctly inserted in the caliper.

- 18 (1) Make sure that the rear derailleur is still in its outermost, high gear, position
- (2) Pull the derailleur body back with your right hand.
- (3) Move 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 freewheel sprocket. Then, insert the wheel into the frame dropouts and pull it all the way in to the dropouts.
- (5) Tighten the quick-release adjusting nut until it is finger tight against the frame dropout; then swing the lever toward the front of the bike until it is parallel to the frame's chainstay or fork leg and is curved toward the wheel. To apply enough clamping force, you should have to wrap your fingers around a frame tube for leverage, and the lever should leave a clear imprint in the palm of your hand.

⚠ WARNING: Securely clamping the wheel takes considerable force.

If you can fully close the quick release without wrapping your fingers around the seat stay or chainstay 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.

The front wheel must be secured to the bicycle frame with sufficient force so that the chain, even under the greatest pedaling force, cannot pull it forward. If the wheel moves under pedaling force, the tire can touch the frame, which can cause you to lose control and fall.

- (6) If the lever cannot be pushed all the way to a position parallel to the chainstay or seat stay 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) Re-engage the brake quick-release mechanism to restore correct brake pad-to-rim clearance; spin the wheel to make sure that it is centered in the frame and clears the brake pads; then squeeze the brake lever and make sure that the brakes are operating correctly.

3. Removing and Installing Bolt-On Wheels (for example the front wheel of some Quest models).

a. Removing a Bolt-On Rear Wheel

- (1) If your bike has rim brakes, disengage the brake's quick-release mechanism to open the clearance between the tire and the brake pads.
- (2) Using a correct size wrench, loosen the two axle nuts.
- 19 (3) If your rear fork has a clip-on type secondary retention device, disengage it and go to the next step. If your rear fork has an integral secondary retention device, loosen the axle nuts enough to allow wheel removal; then go to the next step.
- (4) Raise the rear 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 Rear Wheel

- (1) Insert the wheel between the dropouts so that the axle seats firmly at the top of the slots. The axle nut washers should be on the outside, dropouts 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 dropouts, and at the same time centering the wheel rim, use the correct size wrench to tighten the axle nuts enough so that the wheel stays in place; then use a wrench on each nut simultaneously to tighten the nuts as tight as you can.
- (3) Re-engage the brake quick-release mechanism to restore correct brake pad-to-rim clearance; spin the wheel to make sure that it is centered in the frame and clears the brake pads; then squeeze the brake lever and make sure that the brakes are operating correctly.

c. Removing a Bolt-On Front Wheel

⚠ WARNING: If your bike is equipped with an internal gear rear hub, do not attempt to remove the rear wheel. The removal and re-installation of internal gear hubs require special

knowledge. Incorrect removal or assembly can result in hub failure, which can cause you to lose control and fall.

- (1) If your bike has rim brakes, disengage the brake's quick-release mechanism to open the clearance between the tire and the brake pads.
- (2) Shift the rear derailleur to high gear (the smallest rear sprocket) and pull the derailleur body back with your right hand.
- (3) Using the correct size wrench, loosen the two axle nuts.
- (4) Lift the front 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 Front 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 completely in to the dropouts. The axle nut washers should be on the outside, between the 20 frame and the axle nut.
- (3) Using the correct size wrench, tighten the axle nuts enough so that the wheel stays in place; then use a wrench on each nut simultaneously to tighten the nuts as tight as you can.
 - (4) Push the rear derailleur back into position.
 - (5) Re-engage the brake quick-release mechanism to restore correct brake pad-to-rim clearance; spin the wheel to make sure that it is centered in the frame and clears the brake pads; then squeeze the brake lever and make sure that the brakes are operating correctly.

B. Seatpost Quick Release

Some bikes are equipped with a quick-release seat post binder. The seatpost quick-release binder works exactly like the wheel quick-release (Section 7.A.1) 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 assembly can allow the seat to turn or move and cause you to lose control and fall. Therefore:

1. Ask your dealer or local bike shop to help you make sure you know how to correctly clamp your seat assembly.
2. Understand and apply the correct technique for clamping your seat post quick release.
3. Before you ride the bike, first check that the seat is securely clamped.

Adjusting the seatpost 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 tension-adjusting nut controls the amount of clamping force. 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 and unsafe clamping force.

⚠ WARNING: The full force of the cam action is needed to clamp the seat 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.

⚠ WARNING: If you can fully close the quick release without wrapping your fingers around the seat post or a frame tube 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.

C. Brakes

WARNING:

1. Riding with improperly adjusted brakes or worn brake pads is dangerous and can result in serious injury or death.
2. Applying brakes too hard or too suddenly can lock up a wheel, which could cause you to lose control and fall. Sudden or excessive application of the front brake may pitch the rider over the handlebars, which may result in serious injury or death.
3. Some bicycle brakes, such as disc brakes and linear-pull brakes, are extremely powerful. Take extra care in becoming familiar with these brakes and exercise particular care when using them.
4. Disc brakes can get extremely hot with extended use. Be careful not to touch a disc brake until it has had plenty of time to cool.
5. See the brake manufacturer's instructions for installation, operation and care of your brakes. If you do not have the manufacturer's instructions, see your dealer or local bike shop or contact the brake manufacturer.

1. Brake controls and features

It's very important to your safety that you learn and remember which brake lever controls that brake on your bike.

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 or local bike shop 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 pads 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. Ask your dealer or local bike shop to 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.

2. How brakes work

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

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.

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 is transferred 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 descents, because descents shift weight forward.

Two keys to effective speed control and safe stopping are controlling wheel lockup and weight transfer. This weight transfer is even more pronounced if your bike has a front suspension fork. Front suspension “dips” under braking, increasing the weight transfer (see also Section 4.F).

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 pads reduces their ability to grip. The way to maintain control on loose or wet surfaces is to go more slowly to begin with.

D. Shifting gears

Your bicycle has a derailleur drive train.

1. How a derailleur drive train works

If your bicycle has a derailleur drive train, the gear-changing mechanism will have:


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

a. Shifting Gears

There are several different types and styles of shifting controls: levers, twist grips, triggers, combination shift/brake controls, push buttons, and so on. Ask your dealer or local bike shop to explain the type of shifting controls that are on your bike, and to show you how they work.

The vocabulary of shifting can be pretty confusing. A downshift is a shift to a “lower” or “slower” gear, one that is easier to pedal. An upshift is a shift to a “higher” or “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.

 **CAUTION: Never move the shifter while pedaling backward, or pedal backwards immediately after having moved the shifter. This could jam the chain and cause serious damage to the bicycle.**

b. Shifting the Rear Derailleur

The right shifter controls the rear derailleur .

The function of the rear derailleur is to move the drive chain from one gear sprocket to another. 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 move the chain from one sprocket to another, the rider must be pedaling forward.

c. Shifting the Front Derailleur

The Quest models have an internally geared hub and no front derailleur. Other models have a front derailleur, which is controlled by the left shifter which shifts the chain between the larger and smaller chain rings. Shifting the chain onto a smaller chain ring makes pedaling easier (a downshift). Shifting to a larger chain ring makes pedaling harder (an upshift).

d. Which gear should I be in?

Use the larger rear cogs for climbing hills and the smaller rear cogs for the greatest speed. Find the “starting gear” which is right for your level of ability, probably 2 or 3 — 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.

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. Learn to anticipate the need to shift, and shift to a lower gear *before* the hill gets too steep. Also, BEFORE you come to a stop at an intersection, downshift to an easy gear so that your start will be easier. If you have difficulties with shifting, the problem could be mechanical adjustment. See your dealer or local bike shop for help.

▲ WARNING: Never shift a derailleur onto the largest or the smallest sprocket if the derailleur is not shifting smoothly. The derailleur may be out of adjustment and the chain could jam, causing you to lose control and fall.

E. Pedals

1. Bent Leg is when the outside foot cannot squarely sit on the pedal because the steering is turned very tight. This is common on all Moving Bottom Bracket Front Wheel Drive bicycles and is avoided by keeping the pedals at the 6 o’clock and 12 o’clock position when making sharp turns.

2. Some bicycles come equipped with pedals that have sharp and potentially dangerous surfaces. These surfaces are designed to add safety by increasing grip between the rider’s shoe and the pedal. If your bicycle has this type of high-performance pedal, you must take extra care to avoid serious injury from the pedals’ sharp surfaces. Based on your riding style or skill level, you may prefer a less aggressive pedal design, or chose to ride with shin pads. Your dealer or local bike shop can show you a number of options and make suitable recommendations.

3. Toeclips and straps are a means to keep 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 or local bike shop can explain how toeclips and straps work.

Shoes with deep treaded soles or welts that might allow the foot to be trapped should not be used with toeclips and straps.

▲ 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 that 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.

4. Clipless pedals (sometimes called “step-in pedals”) are another means to keep feet securely in the correct position for maximum pedaling efficiency. They have a plate, called a “cleat,” on the sole of the shoe, which clicks into a mating spring-loaded fixture on the pedal. They only engage or disengage with a very specific motion that must be practiced until it becomes instinctive. Clipless pedals require shoes and cleats that are compatible with 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 disengage the foot. Follow the pedal manufacturer’s instructions, or ask your dealer or local bike shop to show you how to make this adjustment. Use the easiest setting until engaging and

disengaging becomes a reflex action, but always make sure that there is sufficient tension to prevent unintended release of your foot from the pedal.

⚠ WARNING: Clipless pedals are intended for use with shoes specifically made to fit them and are designed to firmly keep the foot engaged with the pedal. Using shoes that do not engage the pedals correctly is dangerous.

Practice is required to learn to engage and disengage the foot safely.

Until engaging and disengaging the foot becomes a reflex action, the technique requires concentration that can distract your attention and cause you to lose control and fall. Practice engaging and disengaging clipless pedals in a place where there are no obstacles, hazards or traffic; and be sure to follow the pedal manufacturer's setup and service instructions. If you do not have the manufacturer's instructions, see your dealer or local bike shop or contact the manufacturer.

F. Bicycle Suspension

Some Cruzbike bicycles are equipped with suspension systems. If your bicycle has a suspension system of any kind, be sure to read and follow the suspension manufacturer's setup and service instructions and refer to the Assembly manual that came with your bicycle. If you do not have the manufacturer's instructions, see your dealer or local bike shop or contact the manufacturer.

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

If your bike has suspension, the increased speed you may develop also increases your risk of injury. For example, when braking, the front of a suspended bike dips. You could lose control and fall if you do not have experience with this system. Learn to handle your suspension system safely. See also Section 7.C.

⚠ WARNING: 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.

Suspension can increase control and comfort by allowing the wheels to better follow the terrain. 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 have learned to handle the full capabilities of your bike.

⚠ 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.

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. If, once you've gained experience with your new bike, you feel that a different tire might better suit your riding needs, your dealer or local bike shop 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 that is most important to you is Tire Pressure.

⚠ WARNING: Never inflate a tire beyond the maximum pressure marked on the tire's sidewall. Exceeding the recommended maximum pressure may blow the tire off the rim, which could cause damage to the bike and injury to the rider and bystanders.

The best and safest way to inflate a bicycle tire to the correct pressure is with a bicycle pump that has a built-in pressure gauge.

⚠ WARNING: 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.

⚠ 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.

Ask your dealer or local bike shop to recommend the best tire pressure for the kind of riding you will most often do, and have the dealer or local bike shop inflate your tires to that pressure. Then, check inflation as described in Section 1.C so you'll know how correctly inflated tires should look and feel when you don't have access to a gauge. Some tires may need to be brought up to pressure every week or two.

Some special high-performance tires have unidirectional treads: their tread pattern is designed to work better in one direction than in the other.

The sidewall marking of a unidirectional tire will have an arrow showing the correct rotation direction. If your bike has unidirectional tires, be sure that they are mounted to rotate in the correct direction.

2. Tire Valves

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

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

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 Schraeder 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 Schraeder 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.

⚠ WARNING: 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.

8. Service

⚠ WARNING: Technological advances have made bicycles and bicycle components more complex, and the pace of innovation is increasing. It is impossible for this manual to provide all the information required to properly repair and/or maintain your bicycle. In order to help minimize the chances of an accident and possible injury, it is critical that you have any repair or maintenance that is not specifically described in this manual performed by your dealer or local bike shop. Equally important is that your individual maintenance requirements will be determined by everything from your riding style to geographic location. Consult your dealer or local bike shop for help in determining your maintenance requirements.

⚠ WARNING: Many bicycle service and repair tasks require special knowledge and tools. Do not begin any adjustments or service on your bicycle until you have learned from your dealer or local bike shop how to properly complete them. Improper adjustment or service may result in damage to the bicycle or in an accident that can cause serious injury or death.

If you want to learn to do major service and repair work on your bike, you have three options:

1. Ask your dealer or local bike shop for copies of the manufacturer's installation and service instructions for the components on your bike, or contact the component manufacturer.
2. Ask your dealer or local bike shop to recommend a book on bicycle repair.
3. Ask your dealer or local bike shop about the availability of bicycle repair courses in your area.

Regardless of which option you select, we recommend that you ask your dealer or local bike shop to check the quality of your work the first time you work on something and before you ride the bike, just to make sure that you did everything correctly. Since that will require the time of a mechanic, there may be a modest charge for this service.

A. Service Intervals

Some service and maintenance can and should be performed by the owner, and require no special tools or knowledge beyond what is presented in this manual.

The following are examples of the type of service you should perform yourself. A qualified bicycle mechanic using the correct tools and procedures specified by the manufacturer should perform all other service, maintenance and repair in a properly equipped facility.

1. Break-in Period: Your bike will last longer and work better if you break it in before riding it hard. Control cables and wheel spokes may stretch or "seat" when a new bike is first used and may require readjustment by your dealer or local bike shop. Your Mechanical Safety Check (Section 4) will help you identify some things that need readjustment. But even if everything seems fine to you, it's best to take your bike back to the dealer or local bike shop for a checkup. Dealer or local bike shops typically suggest you bring the bike in for a 30-day checkup. Another way to judge when it's time for the first checkup is to bring the bike in after three to five hours of hard off-road use, or about 10 to 15 hours of on-road or more casual off-road use. But if you think something is wrong with the bike, take it to your dealer or local bike shop before riding it again.
2. Before every ride: Mechanical Safety Check (Section 4)
3. After every long or hard ride: if the bike has been exposed to water or grit; or at least every 100 miles: Clean the bike and lightly oil the chain.

Wipe off excess oil. Lubrication is a function of climate. Talk to your dealer or local bike shop about the best lubricants and the recommended lubrication frequency for your area.

4. After every long or hard ride or after every 10 to 20 hours of riding:

- Squeeze the front brake and rock the bike forward and back.

Everything feel solid? If you feel a clunk with each forward or backward movement of the bike, you probably have a loose headset. Have your dealer or local bike shop check it.

- Lift the front wheel off the ground and swing it from side to side. Feel smooth? If you feel any binding or roughness in the steering, you may have a tight headset. Have your dealer or local bike shop check it.

- Grab one pedal and rock it toward and away from the centerline of the bike; then do the same with the other pedal. Anything feel loose? If so, have your dealer or local bike shop check it.

- Take a look at the brake pads. Starting to look worn or not hitting the wheel rim squarely? Time to have the dealer or local bike shop adjust or replace them.
- Carefully check the control cables and cable housings. Any rust? Kinks? Fraying? If so, have your dealer or local bike shop replace them.
- Squeeze each adjoining pair of spokes on either side of each wheel between your thumb and index finger. Do they all feel about the same? If any feel loose, have your dealer or local bike shop check the wheel for tension and trueness.
- Check to make sure that all parts and accessories are still secure, and tighten any that are not.
- Check the frame, particularly in the area around all tube joints; the handlebars; the stem; and the seatpost for any deep scratches, cracks or discoloration. These are signs of stress-caused fatigue and indicate that a part is at the end of its useful life and needs to be replaced.

⚠ WARNING: Like any mechanical device, a bicycle and its components are subject to wear and stress. Different materials and mechanisms wear or fatigue from stress at different rates and have different life cycles. If a component's life cycle is exceeded, the component can suddenly and catastrophically fail, causing serious injury or death to the rider. Scratches, cracks, fraying and discoloration are signs of stress-caused fatigue and indicate that a part is at the end of its useful life and needs to be replaced. While the materials and workmanship of your bicycle or of individual components may be covered by a warranty for a specified period of time by the manufacturer, this is no guarantee that the product will last the term of the warranty. The bicycle's warranty is not meant to suggest that the bicycle cannot be broken or will last forever. It only means that the bicycle is covered subject to the terms of the warranty.

5. As required: If either brake lever fails the Mechanical Safety Check (Section 1.C), don't ride the bike. Have your dealer or local bike shop check the brakes.

If the chain won't shift smoothly and quietly from gear to gear, the derailleur is out of adjustment. See your dealer or local bike shop.

6. Every 25 (hard off-road) to 50 (on-road) hours of riding: Take your bike to your dealer or local bike shop for a complete checkup.

B. If your bicycle sustains an impact:

First, check yourself for injuries, and take care of them as best you can. Seek medical help if necessary. Next, check your bike for damage. If you see any damage, don't ride the bike until it has been repaired. After any crash, take your bike to your dealer or local bike shop for a thorough check.

⚠ WARNING: A crash or other impact can put extraordinary stress on bicycle components, causing them to fatigue prematurely. Components suffering from stress fatigue can fail suddenly and catastrophically, causing loss of control, serious injury or death.


9. Warranty

Cruzbike Bicycle Limited Warranty

All bicycle frames, forks, and CB-kit parts manufactured for Cruzbike, Inc. are warranted to the original purchaser to be free from defects in materials and workmanship for a period from the date of purchase of TWO YEARS. Original equipment components on Cruzbike bicycles are warranted to the original purchaser to be free from defects in materials and workmanship for a period from the date of purchase of ONE YEAR. Cruzbike, Inc. will replace without charge the component parts that are determined by Cruzbike, Inc. to be defective in manufacture under normal use and service during the warranty period. Our warranty does not apply to any unit that has been abused, misused, altered by component parts substitution, or used for commercial or rental purposes.

Replacement of bicycle component parts determined to be defective shall be the remedy of any original purchaser and replacement of parts must be handled through Cruzbike, Inc. If upon examination it is determined that a replacement is justified, replacement will be made without charge. Transportation costs and labor charges incurred in the replacement of parts are not covered by this warranty. It is the responsibility of the owner of the bicycle to ensure proper installation and adjustment of all functional parts such as caliper brakes, gear shift cables, handlebars, etc. that are required for proper operation. If the owner is not capable of this, then it is their responsibility to have this maintenance done routinely (at least annually) at their local bicycle shop prior to use.

Activating your Warrantee

 **Caution:** Designed For Maximum Rider Weight of 250 Lbs.: All Cruzbike bicycles are engineered for a maximum rider weight of 250 lbs. (115 kg) and heavier persons should not ride these models. Failure to heed this Warning may result in a structural failure that could cause an accident resulting in serious injury.

To activate your warrantee, please go to <http://www.cruzbike.com/warrantee.html> and follow the instructions there to enter you serial # details. You will receive a confirmation email from us. (If you purchased your Cruzbike online from Cruzbike.com, you are already registered and your warrantee is activated) Below, note your purchase details:

Date of Purchase: _____

Purchased From: _____
(Retailer name and location)

Model: _____

Main Frame Serial #: _____
(see the underside of the rear suspension pivot)

Front Triangle Serial #: _____
(see the underside crank bearing shell)

Do you fully understand how to operate your new bicycle? If after reading this entire manual you still have questions, call Cruzbike, Inc. at 888-225-2789 for an explanation of any functions or features which you do not understand. Information and assistance is also available online at www.cruzbike.com or by email to sales@cruzbike.com. Your local bike shop may also be a good resource.