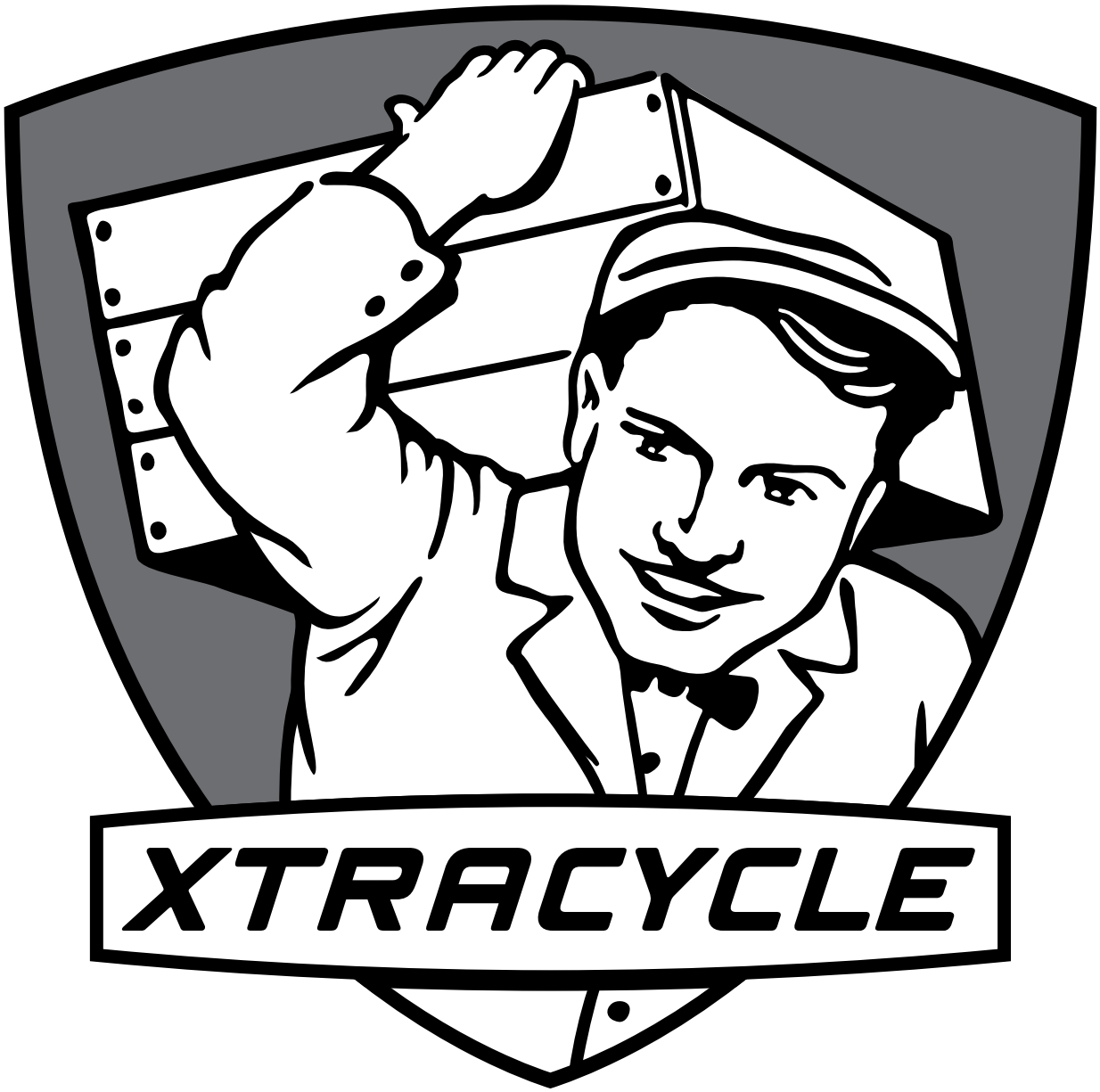

OWNER'S MANUAL

WELCOME TO XTRACYCLE

The purpose of this manual is two-fold: to keep you and your passengers healthy, and to encourage you to safely stretch the bounds of what you do on a bicycle.

Get ready for a life-changing experience.

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IMPORTANT:

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.

Additional safety, performance and service information for specific components such as suspension or pedals on your bicycle, or for accessories such as helmets or lights that you purchase, may also be available. Make sure that your dealer has given you all the manufacturers' literature that was included with your bicycle or accessories. In case of a conflict between the instructions in this manual and information provided by a manufacturer, always follow the manufacturer's instructions.

If you have any questions or do not understand something, take responsibility for your safety and consult with your dealer or Xtracycle.

NOTE:

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

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 which, 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 which, 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 which, 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 which 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:

As a parent or guardian, you are responsible for the activities and safety of your minor child, and that includes making sure that your Xtracycle is in good repair and safe operating condition; that you and your child have learned and understand the safe operation of the bicycle; and also the common sense rules of safe and responsible bicycling.

⚠ **WARNING: Make sure that your child always wears an approved bicycle helmet when riding as a passenger; but also make sure that your child understands that a bicycle helmet is for bicycling only, and must be removed when not riding. A helmet must not be worn while playing, in play areas, on playground equipment, while climbing trees, or at any time while not riding a bicycle.**

1. First

Your Xtracycle is designed for riding on pavement, plus smooth gravel roads and improved trails with moderate grades where the tires do not lose ground contact. It's **NOT INTENDED** for off-road or mountain bike use, or for any kind of jumping.

NOTE: We strongly urge you to read this Manual in its entirety before your first ride. At the very least, read and make sure that you understand each point in this section, and refer to the sections on any issue which you don't completely understand. Please note that not all Xtracycles have all of the features described in this Manual. Ask your dealer to point out the features of your bicycle.

A. Bike fit

1. Is your bike the right size? To check, see Section 3.A. If your bicycle is too large or too small for you, you may lose control and fall. If your new bike is not the right size, ask your dealer to exchange it before you ride it.
2. Is the seat at the right height? To check, see Section 3.B. If you adjust your seat height, follow the Minimum Insertion instructions in Section 3.B.
3. Are seat and seat post securely clamped? A correctly tightened seat will allow no seat movement in any direction. See Section 3.B.
4. Are the stem and handlebars at the right height for you? If not, see Section 3.C.
5. Can you comfortably operate the brakes? If not, you may be able to adjust their angle and reach. See Section 3.D and 3.E.
6. Do you fully understand how to operate your new bicycle? If not, before your first ride, have your dealer explain any functions or features which you do not understand.

B. 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 2. It's your responsibility to familiarize yourself with the laws of the areas where you ride, and to comply with all applicable laws.
3. Can you comfortably ride with large loads or passengers? Read sections 2.C and 2.D for important considerations when riding an Xtracycle.
4. Do you know how to correctly secure your front and rear wheels? Check Section 4.A to make sure. Riding with an improperly secured wheel can cause the wheel to wobble or disengage from the bicycle, and cause serious injury or death.
5. Do you have "toe overlap"? On smaller framed bicycles your toe or toeclip may be able to contact the front wheel when a pedal is all the way forward and the wheel is turned. Read Section 4.E. to check whether you have toeclip overlap.

C. Mechanical and cargo check

Routinely check the condition of your bicycle before every ride and make sure that cargo is securely attached.

 Nuts, bolts screws & other fasteners: To make sure that the many fasteners on your bicycle are correctly tightened, refer to the Fastener Torque Specifications in the Appendix of this manual or to the torque specifications in the instructions provided by the manufacturer of the component in question. Correctly tightening a fastener requires a calibrated torque wrench. A professional bicycle mechanic with a torque wrench should torque the fasteners on your bicycle. If you choose to work on your own bicycle, you must use a torque wrench and the correct tightening torque specifications from the bicycle or component manufacturer or from your dealer. If you need to make an adjustment at home or in the field, we urge you to exercise care, and to have the fasteners you worked on checked by your dealer as soon as possible. *Note that there are some components which require special tools and knowledge. In Sections 3 and 4 we discuss the items which you may be able to adjust yourself. All other adjustments and repairs should be done by a qualified bicycle mechanic.*

⚠ **WARNING: Correct tightening force on fasteners –nuts, bolts, screws– on your bicycle is important. Too little force, and the fastener may not hold securely. Too much force, and the fastener can strip threads, stretch, deform or break. Either way, incorrect tightening force can result in component failure, which can cause you to loose control and fall.**

 Make sure nothing is loose. Lift the front wheel off the ground by two or three inches, then let it bounce on the ground. 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 4.G). 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 take the bike to a qualified bike shop to have the wheel trued.

⚠ **WARNING: Bicycle wheel rims are subject to wear. Riding a wheel that is at the end of its usable life can result in wheel failure, which can cause you to loose control and fall.**

 Brakes: Check the brakes for proper operation (see Section 4.C). Squeeze the brake levers. Are the brake quick-releases closed? All control cables seated and securely engaged? Do the brakes begin to engage 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 the brakes are properly adjusted by a professional bicycle mechanic.
 Wheel retention system: Make sure the front and rear wheels are correctly secured. See Section 4.A
 Seat post: Check that it is properly adjusted and in the locked position. See Section 4.B.
 Handlebar and seat alignment: Make sure the seat and handlebar stem are parallel to the bike's center line and clamped tight enough so that you can't twist them out of alignment. See Sections 3.B and 3.C.

 Handlebar ends: Make sure the handlebar grips are secure and in good condition, with no cuts, tears, or worn out areas. If not, have your dealer replace them. Make sure the handlebar ends and extensions are plugged. If not, have your dealer plug them before you ride. If the handlebars have bar end extensions, make sure they are clamped tight enough so you can't twist them.

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

 Check all the elements of the cargo and passenger area to ensure they are securely fastened. Make sure that there is no play or movement in the attachment of any of the following:

- RackLocks
- V-Racks
- FlightDeck
- KickBack
- CarryAll Bags
- Hooptie uprights and handrails:
- U-Tubes
- MagicCarpet
- Child Seats
- PorterRack
- PorterPack

⚠ **WARNING: Failure to properly secure passenger and cargo carrying accessories may result in serious injury or death.**

D. First ride

When you buckle on your helmet and go for your first familiarization ride on your Xtracycle, be sure to pick a controlled environment, away from cars, other cyclists, obstacles or other hazards. Ride without passengers to become familiar with the controls, features and performance of your new bike.

Familiarize yourself with the braking action of the bike (see Section 4.C). Test the brakes at slow speed, putting your weight toward the rear and gently applying the brakes, rear brake first. Sudden or excessive application of the front brake could pitch you over the handlebars. 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.

Practice shifting the gears (see Section 4.D).

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 before you ride again.

2. Safety

A. The Basics

WARNING: The area in which you ride may require specific safety devices. It is your responsibility to familiarize yourself with the laws of the area 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 bicycle lighting, licensing of bicycles, riding on sidewalks, laws regulating bike path and trail use, helmet laws, child carrier laws, special bicycle traffic laws. It's your responsibility to know and obey the laws.

1. Always wear a cycling helmet which 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 which 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 and cargo check (Section 1.C) before you get on a bike.
3. Be thoroughly familiar with the controls of your bicycle: brakes (Section 4.C.); pedals (Section 4.E.); shifting (Section 4.D.)
4. Be careful to keep body parts and other objects away from the sharp teeth of chainrings, 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. Make sure that shoe laces cannot get into moving parts, and 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. Your Xtracycle was not designed for off-road use. Don't ride off-road or jump with your bike.
7. Ride at a speed appropriate for conditions. Higher speed means higher risk.

B. Riding Safety

1. Obey all Rules of the Road and all local traffic laws.
2. You are sharing the road or the path with others — motorists, pedestrians and other cyclists. Respect their rights.
3. Ride defensively. Always assume that others do not see you.
4. 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.
5. 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.
6. 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.

7. Use approved hand signals for turning and stopping.
8. 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 anything which obstructs your vision or your complete control of the bicycle, or which could become entangled in the moving parts of the bicycle.
9. Never hitch a ride b holding on to another vehicle.
10. Don't do stunts, wheelies or jumps.
11. Don't weave through traffic or make any moves that may surprise people with whom you are sharing the road.
12. Observe and yield the right of way.
13. Never ride your bicycle while under the influence of alcohol or drugs.
14. 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.

C. Riding With Passengers

Riding with passengers is fun for all, and can present some unique challenges.

⚠ **WARNING: When riding with passengers, use the following guidelines:**
- **Maximum number of passengers is 3 children or 1 adult, totaling no more than 200 lbs.**
- **Only carry passengers with Xtracycle bags installed. The bags block limbs from getting caught in the rear wheel.**
- **Passengers should always wear helmets.**
- **Use your best judgment in selecting routes, and choosing how to place your children on the bike.**

RIDING WITH PASSENGERS UNDER 4 YEARS OLD

Children under the age of four need to be in a child seat with a safety harness. A good child seat will be durable, safety tested, and will cushion passenger from bumps. A properly installed Yepp EasyFit Maxi is recommended for ages 9 months to about four years, up to 48 lbs. Any child riding on your Xtracycle, regardless of age, should be strong enough to hold up their head and withstand the bouncing that comes with riding on the back of the bike.

⚠ **WARNING: Always use a child seat when riding with passengers under 4 years of age. Check with your pediatrician before riding with a passenger under 9 months old.**

RIDING WITH PASSENGERS 4 YEARS AND UP

One way to evaluate if your child is ready to graduate from a childseat and safely ride with the Hooptie, is to evaluate whether they could ride on their own bike along side you. Riding on the back of an Xtracycle with a Hooptie and U-Tubes requires a similar level of self awareness and attention to holding on, while offering more safety and security.

⚠ **WARNING: Always use Hooptie handlebars and U-Tube foot rests when riding with passengers not in a child seat.**

TIPS FOR RIDING WITH PASSENGERS

LOADING UP

Practice loading and unloading and slow speed maneuvering on flat ground with no traffic around before taking to the road with passengers.

⚠ **WARNING: Always hold onto your Xtracycle when loading and unloading passengers.**

Child passengers can be loaded into the Hooptie from above with the assistance of an adult. They can be lifted into place, or supported while climbing over the top of the Hooptie. Before putting on their helmet and with the Hooptie in the narrow setting, children may be able to slip under the Hooptie rails, and they may exit the Hooptie from below after removing their helmet. An Xtracycle KickBack centerstand makes loading and unloading more safe and stable.

⚠ **WARNING: Passengers not in a kids seat must hold onto the inner rail of the Hooptie at all times while on an Xtracycle. Never allow passengers to place their hands on the outer Hooptie rail.**

Little passengers are more likely to fall asleep on the ride, often resulting in a drowsy head droop.

⚠ **WARNING: Do not tie anything around the child's neck in an effort to pad their neck.**

OPTIMAL PASSENGER PLACEMENT

When carrying one child under 4, position the child seat in the front position on the deck for maximum comfort and control while riding. When carrying one child under 4 & one child over 4, position the child seat in the rear position and use a MagicCarpet for the older passenger in front. Use the Hooptie for extra passenger protection. Hooptie has three settings: wide, medium and narrow. A kid seat fits between the inner rails of Hooptie in its widest setting.

Child passengers, not in a child seat can face forward or backwards in the Hooptie, but their position may impact the handling of the bicycle for the rider, and may also impact their ability to anticipate riding conditions. When in the narrow setting, the Hooptie does a good job of containing children while enabling them freedom to face in either direction.

RIDE CAUTIOUSLY

While riding with children, be especially aware of the following:

1. Sudden braking can cause injury to your passengers, who could lose grip of the Hooptie. Ride slowly and defensively with passengers.
2. Watch out for potholes. Hitting a pothole at even slow speeds can be shocking and painful for your passengers, and potentially damaging for your bike and rear wheel. Passengers experience the jolt of potholes much more intensely than the rider. Watch the road and take it slow on unfamiliar roads when carrying passengers.
3. Do not go up or down curbs with passengers on board - both for their comfort and safety, and to preserve the longevity of your rear wheel.

D. Hauling Cargo

MAXIMUM WEIGHT LIMITS

⚠ **WARNING: Maximum weight of rider and cargo is 400 lbs.**
Only ride with loads that *you* are comfortable with.

Carrying large objects requires more planning than your average ride. For starters, route planning becomes really key - slipping between bollards might not be possible, and streets with one lane and lots of traffic pose a hazard. Hills become a major obstacle, both going up and coming down - carting 350 pounds up a hill is no small feat, and it requires good braking practices to bring it all safely down the other side. Ask your shop to explain how to use disk brakes
safely on hills.

Large cargo will also change the handling of the bike dramatically: Box springs make for a large sail, long ladders can set the bike a-wiggling, and lopsided loads can pull the bike to one side.

For this reason it's important to get a feel for the bike and cargo's behavior in a low-traffic area before charging onto the streets. It's also important to make sure you've secured your load and to check it after the first few minutes of riding. Ratcheting straps are great for this because they let you get everything much tighter than with rope or plain webbing, and you don't need to be great at tying knots to use them. There are a few accessories to help you carry bulky cargo on the EdgeRunner. As mentioned before, ratcheting straps are invaluable, but a Kickback and U-tubes make it significantly easier to load the bike.

⚠ **WARNING: Your bike will handle differently when hauling cargo. Ride cautiously and never perform stunts (like riding without hands).**

TIPS TO LOAD CARGO

1. CLEARANCE

Make sure that you have enough room to get onto the bike, pedal, and control it safely. This means that long objects should be positioned so that they clear the pedals, tall ones so that you can still sit in the seat, and no cargo should block the normal operation of the rear brake and derailer. If you cannot position the cargo to fulfill ALL of these requirements, do not attempt to carry it!

2. CENTER OF GRAVITY

Center of gravity is the balance point of the bike. Position the cargo so that its center of gravity is as close to the centerline of the bike as possible: The bike should be able to balance more-or-less vertically when loaded. For example, when carrying boxed bikes, you should try to carry two if possible.

A box per side balances the bike nicely, but just one will make the bike pull strongly towards that side. Try to keep as much weight near the front of the rack as possible, because the farther back the weight is the more likely it is to induce vibrations in the bike.

3. GOOD VIBES

Good vibes are something that we think about more when listening to music than loading cargo bikes, but it comes into play with long, flexible cargo. Like a guitar string, long cargo can start wiggling at a specific frequency - resonating - and that in turn can make the bike wiggle too.

The trick is to minimize these big wiggles and turn them into smaller, higher frequency vibrations

that affect the ride less. To do this you can either make the object shorter or more rigid. Odds are you're not going to chop your ladder in half to make it shorter, but making it more rigid is surprisingly easy. In the case of ladders or 2x4s, lay them flat on the U-tube or SideCar rather than standing them on edge: They are much more rigid across their width than their edge. When transporting tubes, bundle them together tightly, so they act as one rigid, large-diameter object rather than a bunch of floppy individual ones. Again, test riding before you embark on your journey is key: You don't want to be surprised by a violent wobble.

⚠ **WARNING: Always make sure your cargo is secured by straps rated over the weight of your cargo, and attach warning flags to any cargo extending behind or infront of your bike.**

E. 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.

F. 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 or be passengers 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 car lights and street 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 reduces 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 a 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 loose 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 for where you live 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 about traffic safety classes or a good book on bicycle traffic safety.

G. Changing Components or Adding Accessories

There are many components and accessories available to enhance the comfort, performance and appearance of your bicycle. However, if you change components or add accessories from other manufacturers, you do so at your own risk. Xtracycle hasn't tested all components or accessories for compatibility, reliability, or safety on your bicycle. Before installing any component or accessory, including but not limited to a different size tire, a lighting system, a luggage rack, a child seat, etc. make sure that it is compatible with your bicycle by checking with your dealer. Be sure to read, understand and follow the instructions that accompany the products you purchase for your bicycle.

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

⚠ **WARNING: Exposed springs on the seat of any bicycle fitted with a child seat can cause serious injury to the child.**

⚠ **WARNING: Changing the components on your bike with other than genuine replacement parts may compromise the safety of your bicycle and may void the warranty. Check with your dealer before changing the components on your bike.**

3. Fit

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

A. Standover height

Standover height is the basic element of bike fit. It is the distance from the ground to the top of the bicycle's frame at that point where your crotch is when straddling the bike. To check for correct standover height, straddle the bike while wearing the kind of shoes in which you'll be riding, and bounce vigorously on your heels. If your crotch touches the frame, the bike is too big for you. Don't even ride the bike around the block. A bike which you ride only on paved surfaces and never take off-road should give you a minimum standover height clearance of two inches.

B. Seat position

Correct seat adjustment is an important factor in getting the most performance and comfort from your bicycle. If the seat position is not comfortable for you, see your dealer.

The seat can be adjusted in three directions:

1. Up and down adjustment. To check for correct seat height:
   - sit on the seat;
   - place one heel on a pedal;
   - rotate the crank until the pedal with your heel on it is in the down position and the crank arm is parallel to the seat tube.

If your leg is not completely straight, your seat height needs to be adjusted. If your hips must rock for the heel to reach the pedal, the seat is too high. If your leg is bent at the knee with your heel on the pedal, the seat is too low.

Ask your dealer to set the seat for your optimal riding position and to show you how to make this adjustment. If you choose to make your own seat height adjustment:

- loosen the seat post clamp
- raise or lower the seat post in the seat tube
- make sure the seat is straight fore and aft
- re-tighten the seat post clamp to the recommended torque (Appendix).

Once the seat is at the correct height, make sure that the seat post does not project from the frame beyond its "Minimum Insertion" or "Maximum Extension" mark.

⚠ **WARNING: If your seat post is not inserted in the seat tube as described in B.1 above, the seat post, binder or even frame may break, which could cause you to lose control and fall.**

2. Front and back adjustment. The seat can be adjusted forward or back to help you get the optimal position on the bike. Ask your dealer to set the seat for your optimal riding position and to show you how to make this adjustment. If you choose to make your own front and back adjustment, make sure that the clamp mechanism is clamping on the straight part of the seat rails and is not touching the curved part of the rails, and that you are using the recommended torque on the clamping fastener(s) (Appendix).
3. Seat angle adjustment. Most people prefer a horizontal seat; but some riders like the seat nose angled up or down just a little. Your dealer can adjust seat angle or teach you how to do it. If you choose to make your own seat angle adjustment and you have a single bolt seat clamp on your seat post, it is critical that you loosen the clamp bolt sufficiently to allow any serrations on the mechanism to disengage before changing the seat's angle, and then that the serrations fully re-engage before you tighten the clamp bolt to the recommended torque (see appendix).

⚠ **WARNING: When making seat angle adjustments with a single bolt seat clamp, always check to make sure that the serrations on the mating surfaces of the clamp are not worn. Worn serrations on the clamp can allow the seat to move, causing you to lose control and fall. Always tighten fasteners to the correct torque. Bolts that are too tight can stretch and deform. Bolts that are too loose can move and fatigue. Either mistake can lead to a sudden failure of the bolt, causing you to lose control and fall.**

Small changes in seat position can have a substantial effect on performance and comfort. To find your best seat position, make only one adjustment at a time.

⚠ **WARNING: After any seat adjustment, be sure that the seat adjusting mechanism is properly seated and tightened before riding. A loose seat clamp or seat post clamp can cause damage to the seat post, or can cause you to lose control and fall. A correctly tightened seat adjusting mechanism will allow no seat movement in any direction. Periodically check to make sure that the seat adjusting mechanism is properly tightened.**

If, in spite of carefully adjusting the seat height, tilt and fore-and-aft position, your seat is still uncomfortable, you may need a different seat design. Seats, like people, come in many different shapes, sizes and resilience. Your dealer can help you select a seat which, when correctly adjusted for your body and riding style, will be comfortable.

⚠ **WARNING: Some people have claimed that extended riding with a seat which is incorrectly adjusted or which does not support your pelvic area correctly can cause short-term or long-term injury to nerves and blood vessels, or even impotence. If your seat causes you pain, numbness or other discomfort, listen to your body and stop riding until you see your dealer about seat adjustment or a different seat.**

C. Handlebar height and angle

Your Xtracycle is equipped either with a "threadless" stem, which clamps on to the outside of the steerer tube, or with a "quill" stem, which clamps inside the steerer tube by way of an expanding binder bolt. If you

aren't absolutely sure which type of stem your bike has, ask your Xtracycle dealer or any bike shop.

If your bike has a "threadless" stem your dealer may be able to change handlebar height by moving height adjustment spacers from below the stem to above the stem, or vice versa. Otherwise, you'll have to get a stem of different length or rise. Consult your dealer. Do not attempt to do this yourself, as it requires special knowledge.

If your bike has a "quill" stem you can ask your dealer to adjust the handlebar height a bit by adjusting stem height.

A quill stem has an etched or stamped mark on its shaft which designates the stem's "Minimum Insertion" or "Maximum Extension". This mark must not be visible above the headset.

⚠ **WARNING: A quill stem's Minimum Insertion Mark must not be visible above the top of the headset. If the stem is extended beyond the Minimum Insertion Mark the stem may break or damage the fork's steerer tube, which could cause you to lose control and fall.**

⚠ **WARNING: On some bicycles, changing the stem or stem height can affect the tension of the front brake cable, locking the front brake or creating excess cable slack which can make the front brake inoperable. If the front brake pads move in towards the wheel rim or out away from the wheel rim when the stem or stem height is changed, the brakes must be correctly adjusted before you ride the bicycle.**

Some bicycles are equipped with an adjustable angle stem. If your bicycle has an adjustable angle stem, ask your dealer to show you how to adjust it. Do not attempt to make the adjustment yourself, as changing stem angle may also require adjustments to the bicycle's controls.

⚠ **WARNING: Always tighten fasteners to the correct torque. Bolts that are too tight can stretch and deform. Bolts that are too loose can move and fatigue. Either mistake can lead to a sudden failure of the bolt, causing you to lose control and fall.**

Your dealer can also change the angle of the handlebar or bar end extensions.

⚠ **WARNING: An insufficiently tightened stem clamp bolt, handlebar clamp bolt or bar end extension clamping bolt 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.**

D. Control position adjustments

The angle of the brake and shift control levers and their position on the handlebars can be changed. Ask your dealer to make the adjustments for you. If you choose to make your own control lever angle adjustment, be sure to re-tighten the clamp fasteners to the recommended torque (See appendix).

E. Brake reach

Many bikes have brake levers which can be adjusted for reach. If you have small hands or find it difficult to squeeze the brake levers, your dealer 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 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.**

4. Tech

It's important to your safety, performance and enjoyment to understand how things work on your bicycle. We urge you to ask your dealer how to do the things described in this section before you attempt them yourself, and that you have your dealer 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 local Xtracycle dealer.

A. Wheels

Bicycle wheels are designed to be removable for easier transportation and for repair of a tire puncture. Wheel axles are inserted into slots, called "dropouts" in the fork and frame. Your wheels are secured with a quick release mechanism.

⚠ **WARNING: Riding with an improperly secured wheel 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 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.

3. Each time, before you ride the bike, check that the wheel is securely clamped.

The clamping action of a correctly secured wheel must emboss the surfaces of the dropouts.

1. Front Wheel Secondary Retention Devices

Your Xtracycle has a front fork which utilizes an integrated secondary wheel retention device to reduce the risk of the wheel disengaging from the fork if the wheel is incorrectly secured. Secondary retention devices are not a substitute for correctly securing your front wheel.

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

⚠ **WARNING: 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 wheel is not secured 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 correctly securing your wheel. Failure to properly secure the wheel can cause the wheel to wobble or disengage, which could cause you to loose control and fall, resulting in serious injury or death.

2.Wheels with Quick Releases

The wheel hub is clamped in place by the force of the over-center 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.

⚠ **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 a cam action wheel safely in the dropouts.**

3. Removing and Installing wheels

⚠ **WARNING: If your bike is equipped with an internal gear rear hub, do not attempt to remove the wheel. The removal and re-installation of most hub brakes and internal gear hubs requires special knowledge. Incorrect removal or assembly can result in brake or gear failure, which can cause you to lose control and fall.**

CAUTION: Your bike has disc brakes, so exercise care in touching the rotor or caliper. Disc rotors have sharp edges, and both rotor and caliper can get very hot during use.

a. Removing a disk brake Front Wheel

(1) Disengage the brake's quick-release mechanism to increase the clearance between the tire and the brake pads

(2) If your bike has a quick release front wheel retention system, move the cam lever from the locked or CLOSED position to the OPEN position.

(3) Your front fork has an integral secondary retention device. Loosen the tension adjusting nut enough to allow removing the wheel from the dropouts. You may need to tap the top of the wheel with the palm of your hand to release the wheel from the front fork.

b. Installing a disk brake Front Wheel

⚠ **CAUTION: Your bike is equipped with a front disk brake. 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 4.C.**

(1) Move the cam 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 fork dropouts. The cam lever should be on rider's left side of the bicycle.

(3) Hold the cam lever in the ADJUST 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:

Move the cam lever upwards and swing it into the CLOSED position. The lever should now be parallel to the fork blade and curved toward the wheel. To apply enough clamping force, you should have to wrap your fingers around the fork blade for leverage, and the lever should leave a clear imprint in the palm of your hand.

NOTE: 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.

⚠ **WARNING: Securely clamping the wheel with a quick release lever takes considerable force. If you can fully close the cam lever without wrapping your fingers around the fork blade for leverage, the lever does not leave a clear imprint in the palm of your hand, and the serrations on the wheel fastener do not emboss the surfaces of the dropouts, the tension is insufficient. Open the lever; turn the tension adjusting nut clockwise a quarter turn; then try again.**

(6) If you disengaged the brake quick-release mechanism in 3. a. (1) above, re-engage it to restore correct brake pad-to-rim clearance.
(7) 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 disk brake Rear Wheel

(1) If you have an EdgeRunner with a rear derailleur, shift the rear derailleur to high gear (the smallest, outermost rear sprocket).
If you have an internal gear rear hub (EdgeRunner 11i), consult your dealer or the hub manufacturer's instructions before attempting to remove the rear wheel.
(2) On a derailleur gear system, pull the derailleur body back with your right hand.
(3) With a cam action mechanism, move the quick-release lever to the OPEN position. With a through bolt or bolt on mechanism, loosen the fastener(s) with an appropriate wrench, lock lever or integral lever; then push the wheel forward far enough to be able to remove the chain from the rear sprocket.
(4) Lift the rear wheel off the ground a few inches and remove it from the rear dropouts.

d. Installing a disk brake Rear Wheel

⚠ **CAUTION: If your bike is equipped with a rear disk brake, 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.**

(1) 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.
(2) On a derailleur bike, make sure that the rear derailleur is still in its outermost, high gear, position; then pull the derailleur body back with your right hand. Put the chain on top of the smallest freewheel sprocket.

(3) Then, insert the wheel into the frame dropouts and pull it all the way in to the dropouts.
(4) On an internal gear hub, replace the chain on the chainring; pull the wheel back in the dropouts so that it is straight in the frame and the chain has about 1/4 inches of up-and-down play.
(5) With a cam action system, move the cam lever upwards and swing it into the CLOSED position. The lever should now be parallel to the seat stay or chain stay and curved toward the wheel. To apply enough clamping force, you should have to wrap your fingers around the fork blade for leverage, and the lever should leave a clear imprint in the palm of your hand.
(6) With a through-bolt or bolt-on system, tighten the fasteners to the torque specifications in Appendix or the hub manufacturer's instructions.

NOTE: If the quick release lever cannot be pushed all the way to a position parallel to the seat stay or chain stay, return the lever to the OPEN position. Then turn the tension adjusting nut counterclockwise one-quarter turn and try tightening the lever again.

⚠ **WARNING: Securely clamping the wheel with a cam action retention device takes considerable force. If you can fully close the cam lever without wrapping your fingers around the seat stay or chain stay for leverage, the lever does not leave a clear imprint in the palm of your hand, and the serrations on the wheel fastener do not emboss the surfaces of the dropouts, the tension is insufficient. Open the lever; turn the tension adjusting nut clockwise a quarter turn; then try again.**

(8) If you disengaged the brake quick-release mechanism, re-engage it to restore correct brake pad-to-rim clearance.

(9) 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. Seat post

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

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

C. Brakes

Xtracycles come with disc brakes which operate by squeezing a hub-mounted disc between two brake pads.

⚠ **WARNING:**

1. **Riding with improperly adjusted brakes, worn brake pads, or wheels on which the rim wear mark is visible 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. Disc 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 operation and care of your brakes, and for when brake pads must be replaced. If you do not have the manufacturer's instructions, see your dealer or contact the brake manufacturer.

6. If replacing worn or damaged parts, use only manufacturer-approved genuine replacement parts.

7. Do not use drum, roller, or coaster brakes. They are not suited to hilly riding or heavy loads and can fail.

1. Brake controls and features

It's very important to your safety that you learn and remember which brake lever controls which brake on your bike. Squeeze one brake lever and look to see which brake, front or rear, engages. Now do the same with the other brake lever.

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.

2. How brakes work

The braking action of a bicycle is a function of the friction between the braking surfaces. To make sure that you have maximum friction available, keep your wheel rims and brake pads or the disk rotor and caliper 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. Practice braking and weight transfer techniques where there is no traffic or other hazards and distractions.

Everything changes when you ride with heavy loads, on loose surfaces, or in wet weather. It will take longer to stop. Tire adhesion is reduced on slippery or loose surfaces, 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 with heavy loads, or on loose or wet surfaces is to go more slowly.

D. Shifting gears

Your Xtracycle will have a derailleur drivetrain (see 1. below), a derailleur drivetrain with a Bosch electric motor (see 2. below), or an internal gear hub drivetrain (see 3. below).

1. How a derailleur drivetrain works

If your Xtracycle has a derailleur drivetrain, the gear-changing mechanism will have:

- a rear cassette
- a rear derailleur
- two shifters
- three front sprockets called chainrings
- a drive chain

a. Shifting Gears

Your Xtracycle has rapid fire shifters. Ask your dealer 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 which 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, nor 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 rear derailleur is controlled by the right shifter.

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 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).

d. Which gear should I be in?

The combination of largest rear and smallest front gears is for the steepest hills. The smallest rear and 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. Learn not to use either the "smallest to smallest" or "largest to largest" gear combinations because they may cause unacceptable stress on the drive train. Learn to anticipate the need to shift, and shift to a lower gear *before* the hill gets too steep. If you have difficulties with shifting, the problem could be mechanical adjustment. See your dealer 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. What if it won't shift gears?

If moving the shift control one click repeatedly fails to result in a smooth shift to the next gear chances are that the mechanism is out of adjustment. Take the bike to your dealer to have it adjusted.

2. How a derailleur drivetrain with a Bosch electric motor works

If your Xtracycle has a **derailleur drivetrain with a Bosch electric motor** (like the EdgeRunner 10e, 9e, or 8e), the gear changing mechanism will consist of:

- a rear cassette
- a rear derailleur
- a shifter (on the right side)
- one front sprocket called a chainring
- a drive chain
- an operating unit (on the left side) to increase or decrease the level of electric assist
- a Bosch Intuvia display

The eBike drive unit assists you when riding, as long as you step on the pedals. Without pedaling, there is no assistance. The motor output always depends on the amount of your pedaling power.

When applying less pedaling power, the assistance or support will be lower than when applying a lot of pedaling power. This applies independent of the assistance level.

The eBike motor assistance automatically switches off at speeds in excess of 20 mph. When the speed falls below 20 mph, the motor assistance is automatically available again.

The eBike can also be ridden as a normal bicycle without assistance at any time, by either switching off the eBike system or setting the assistance level to “OFF”. The same applies when the battery pack is empty.

Interaction of the eBike System with the Bicycle Gears

By selecting the right gear, you can increase the speed and range with the same pedaling effort.

For this reason, follow the shift recommendations provided by indications g and h on your Intuvia display. If indication g is displayed, you should shift to a higher gear with lower cadence. If indication h is displayed, you should select a lower gear with higher cadence.

TIP FOR USING THE BOSCH EBIKE SYSTEM

You’ll get more assistance going up hills or carrying heavy loads if your cadence is fast, so downshift going up hills to keep your cadence quick.

View Section 4.D.1 to learn about operation of the rear derailleur.

View the Bosch Performance Line Manual for additional information about the operating unit and the Bosch eBike System.

3. How an internal gear hub drivetrain works

If your Xtracycle has an internal gear hub drivetrain (like the EdgeRunner 11i), the gear changing mechanism will consist of:

- a multi-speed internal gear hub
- one shifter
- one or two control cables
- one front sprocket called a chainring
- 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 ratio. 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 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. Learn to anticipate the need to shift, and shift to a lower gear *before* the hill gets too steep. If you have difficulties with shifting, the problem could be mechanical adjustment. See your dealer for help.

c. What if it won't shift gears?

If moving the shift control one click repeatedly fails to result in a smooth shift to the next gear chances are that the mechanism is out of adjustment. Take the bike to your dealer to have it adjusted.

E. Pedals

1. Toe Overlap is when your toe can touch the front wheel when you turn the handlebars to steer while a pedal is in the forwardmost position. This is common on small-framed bicycles, and is avoided by keeping the inside pedal up and the outside pedal down when making sharp turns. On any bicycle, this technique will also prevent the inside pedal from striking the ground in a turn.

NOTE: Changing tire size or pedal crank arm length affects toe overlap.

⚠ **WARNING: Toe Overlap could cause you to lose control and fall. Ask your dealer to help you determine if the combination of frame size, crank arm length, pedal design and shoes you will use results in pedal overlap. Whether you have overlap or not, you must keep the inside pedal up and the outside pedal down when making sharp turns.**

2. Some Xtracycles 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. Your dealer can show you a number of options and make suitable recommendations.

F. Tires and Tubes

1. Tires

Bicycle tires are available in many designs and specifications. Tires on Xtracycles are wide for absorbing shock and feature relective sidewalls for greater visibility. 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 and pressure rating are marked on the sidewall of the tire. The part of this information which is most important to you is Tire Pressure.

⚠ **WARNING: 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 maximup 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.**

The best and safest way to inflate a bicycle tire to the correct pressure is with a bicycle pump which 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.

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.

Ask your dealer to recommend the best tire pressure for the kind of riding you will most often do, and have the dealer inflate your tires to that pressure. Then, check inflation 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, so it is important to check your tire pressures before every ride.

2. Tire Valves

There are primarily two kinds of bicycle tire 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 tire, 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 tire 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.

⚠ **WARNING: We highly recommend that you carry spare inner tubes when you ride your bike, unless the bike is fitted with tubeless tires. 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 loose control and fall. Replace a patched tube as soon as possible.**

5. 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 which is not specifically described in this manual performed by your dealer. Equally important is that your individual maintenance requirements will be determined by everything from your riding style to geographic location. Consult your dealer 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 how to properly complete them. Improper adjustment or service may result in damage to the bicycle or in an accident which can cause serious injury or death.**

If you want to learn to do major service and repair work on your bike:

1. Ask your dealer 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 to recommend a book on bicycle repair.
3. Ask your dealer about the availability of bicycle repair courses in your area.

We recommend that you ask your dealer 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.

We also recommend that you ask your dealer for guidance on what spare parts, such as tires, inner tubes, light bulbs, batteries, Pach Kit, lubricants etc. it would be appropriate for you to have once you have learned how to replace such parts when they require replacement.

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. All other service, maintenance and repair should be performed in a properly equipped facility by a qualified bicycle mechanic using the correct tools and procedures specified by the manufacturer.

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. Your mechanical and cargo check 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 for a checkup. Xtracycle suggests you bring the bike in for a 30 day checkup. But if you think something is wrong with the bike, take it to your dealer before riding it again.
2. Before every ride: mechanical and cargo check.
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 lubricate the chain's rollers with a good quality bicycle chain lubricant. Wipe off excess lubricant with a lint-free cloth. Lubrication is a function of climate. Talk to your dealer 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 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 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 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 adjust or replace them.
• Carefully check the control cables and cable housings. Any rust? Kinks? Fraying? If so, have your dealer 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 check the wheel for tension and trueness.
• Check the tires for excess wear, cuts or bruises. Have your dealer replace them if necessary.
• Check the wheel rims for excess wear, dings, dents and scratches. Consult your dealer if you see any rim damage.
• Check to make sure that all parts and accessories are still secure, and tighten any which 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 Xtracycle or of individual components may be covered by a warranty, this is no guarantee that the product will last the term of the warranty. Product life is often related to the kind of riding you do and to the treatment to which you submit the bicycle. 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 and cargo check (Section 1), don't ride the bike. Have your dealer 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.
6. Every 50 hours of riding: Take your bike to your dealer for a complete tune-up.

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:
After any crash, take your bike to your dealer for a thorough check.

⚠ **WARNING: Do not ride a bicycle or component with any crack, bulge or dent, even a small one. Riding a cracked frame, fork or component could lead to complete failure, with risk of serious injury or death.**

Appendix

Fastener Torque Specifications

Correct tightening torque of threaded fasteners is very important to your safety. Always tighten fasteners to the correct torque. In case of a conflict between the instructions in this manual and information provided by a component manufacturer, consult with your dealer or the manufacturer's customer service representative for clarification. Bolts that are too tight can stretch and deform. Bolts that are too loose can move and fatigue. Either mistake can lead to a sudden failure of the bolt.

Always use a correctly calibrated torque wrench to tighten critical fasteners on your bike. Carefully follow the torque wrench manufacturer's instructions on the correct way to set and use the torque wrench for accurate results.

FASTENER RECOMMENDED TORQUE

Headset/Handlebar

11i with threaded headset
- Threaded Headset Locknut 16-24 Nm (142-212in-lb)
- Stem Expander Bolt (quill type) 17-22 Nm (150-195in-lb)
- Handlebar Binder Bolt (quill type) 17-22 Nm (150-195in-lb)

27D, 30D, 9E, 10E, 11i with threadless headset
- Stem Binder Bolt (threadless) 13.5-166 Nm (120-14453 in-lb)
- Compression Cap 2-3 Nm (20-26in-lb)
- Stem Faceplate Bolts 6 Nm (53 in-lb)13.5-19 Nm (120-168in-lb)

24D, 8E
- Stem Binder Bolt (threadless) 5 Nm (44in-lb)
- Compression Cap 2-3 Nm (20-26in-lb)
- Stem Faceplate Bolts 5 Nm (44in-lb)

Pedals
- Pedals 34.5-40 Nm (307-354in-lb)

Wheels
- Axle Nut 30-42 Nm (260-372in-lb)

Seat
- Seat Post Binder 4-6.5 Nm (36-60in-lb)
- Seat Rail Binder 18-34 Nm (160-300in-lb)

Derailleur/Shifting
- Rear Derailleur Mounting Bolt 8-10 Nm (70-86in-lb)
- Rear Derailleur Cable Pinch Bolt 4-5 Nm (35-45in-lb)
- Rear Derailleur Pulley Wheel Bolt 3-4 Nm (27-36in-lb)

Brakes
- Disc Brake Rotor To Hub 4-7 Nm (36-60in-lb)
- Disc Brake Caliper Mount 6-9 Nm (52-84in-lb)
- Brake Levers/Shifters 6-8 Nm (53-69in-lb)

Fenders
- Fender Bolts 6-9 Nm (53-78in-lb)
- Fender Brace Bolts 2.5-4 Nm (25-35in-lb)

Xtracycle Racklocks
- 5 Nm (44in-lbs)

Xtracycle Tail Piece
- 5 Nm (44in-lbs) (while holding nuts stationary)

Xtracycle KickBack
- Kickstand Plate Bolt 18-23 Nm (160-200in-lbs)
- Forward Attachment Point Bolt 5 Nm (44in-lbs)
- Telescoping Leg Bolts 6 Nm (53 in-lb)

Xtracycle Flight Deck
- Deck Bolts 2.5-4 Nm (22-35in-lb)

Xtracycle, Inc. LIMITED WARRANTY

Xtracycle, Inc. warrants each frame, fork, and original component part of the bicycle against defects in workmanship and materials:

The bicycle frame and fork are covered for three years.

Extend your frame and fork warranty to the lifetime of the original owner by registering your bike within 30 days of purchase at www.xtracycle.com/register

All original parts are covered for a period of one (1) year, except for the parts listed: bar end plugs, brake pads, chain, cassettte, chainrings, grips, kickstand ends, lights, nipples, spokes, rims, tires, tubes, and valves.

This warranty does not cover:

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

This warranty is void in its entirety by any modification of the frame, fork, or components. This warranty is expressly limited to the repair or replacement of a defective item and is the sole remedy of the warranty. This warranty extends from the date of purchase, applies only to the original owner, and is not transferable. Xtracycle, Inc. is not responsible for incidental or consequential damages. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you. Claims under this warranty must be made to the dealer you purchased from or at xtracycle.com.
Please email us at support@xtracycle.com or call us at 888-537-1401.

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

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