

***TREK***

# HOW TO HAVE MORE FUN ON YOUR NEW BIKE



A person is silhouetted on a bicycle, standing in a vast, flat desert landscape at night. The ground is dark and reflective. In the background, a range of mountains is visible, with their peaks illuminated by a low light source, possibly the moon or a distant city. The sky is a deep blue, filled with numerous stars and a few wispy clouds. The overall mood is serene and adventurous.

# OUR BEST ADVICE FROM 40+ YEARS OF HAVING FUN ON BIKES

**Make damn sure your front wheel is on right and tight.** Check it before every ride. Seriously. If you're not sure how the wheel attaches, the details are inside (see pages 16, 17, and 50).

**You only get one brain.** Helmets are really inexpensive compared to the cost of crashing without one. We're gonna preach now: *just wear one.*

**Avoid anything that can get stuck in your front wheel.** For example: a shopping bag in your hand, purse, backpack straps, or sticks on the trail. If the front wheel stops suddenly, you're going to have a bad time.

**Use bike lights on every ride, day and night.** Light technology is amazing these days. Using them on every ride, even when the sun is shining, is the single best way to stand out to motorists.

**If it doesn't feel or sound right, get it checked out.** Just like planes, bikes are easier to fix before you take off. Trek retailers are there to help.

**We'll take care of you.** No matter what. If you ever have a problem your local Trek shop can't solve, connect with Trek customer service or write Trek President John Burke directly at [j.burke@trekbikes.com](mailto:j.burke@trekbikes.com).

**Read the rest of this manual.** 40 years on the road and trail have taught us a lot of stuff worth sharing.

## First things first

We know you want to get out there and ride. Before you do, it's important that you complete steps 1 & 2 below. They won't take long.

### 1 Register your bike

Registration records your serial number (which is important if your bike is ever lost or stolen), and serves as a means of communication with Trek if there are any safety alerts about your bicycle. If you have questions about your bicycle, even years down the line, in just seconds your registration lets us know exactly which bike we're discussing, so we can give you the best service possible.

If you or your bike shop haven't already registered your bike, please do so in the **Support** section at the bottom of the home page at [trekbikes.com](https://trekbikes.com). It's quick and easy.



### 2 Read this manual

This manual contains essential safety information. Even if you've ridden a bicycle for years, it's important that you read and understand the information in this manual before riding your new bicycle. You can read it here or online in the **Support** section at the bottom of the home page at [trekbikes.com](https://trekbikes.com).



Parents or guardians, if this bicycle is for a child or dependent, please make sure he or she understands all safety information in this manual.

## How to use this manual

This manual covers all Trek bicycle models. It contains useful information for the life of your bicycle.

### Read the fundamentals

Read Chapter 1, **Fundamentals**, before you ride your bike.

If you purchased an electric-assist bicycle (e-bike), please also read the quick start guide, and the supplemental Electric Bicycle Owner's Manual. They are also available in the **Support** section of [trekbikes.com](https://trekbikes.com).


### Go online for more great info

You'll find the most current and detailed information, including FAQs, maintenance schedules, troubleshooting guides, and how-to videos, online at [trekbikes.com](https://trekbikes.com). Scroll down to the **Support** section at the bottom of the home page.



## A note about warnings

As you read this manual, you'll see gray warning boxes like this:

 **WARNING!** *Text in a gray box with the safety alert symbol will warn you about a situation or behavior that could cause severe injury or death.*

The reason for these warnings is that we don't want you — or your loved ones, or your bicycle — to get hurt.

We want you to have fun on your bicycle, just like we love to have fun on our bicycles.

We know what it's like to tip over at a stop sign, to bloody our knuckles while fixing a chain, to crash on slick pavement. We've done it all. At best, those mishaps aren't fun. At worst, you could get hurt.

So please pay attention to the warnings. It's our way of letting you know we care about your safety.

## Keep this manual for reference

This manual shows you how to ride safely, and how and when to do basic inspections and maintenance (Chapter 2). Keep it for the life of your bicycle. We also recommend that you keep your proof of purchase along with the manual in case you need to make a warranty claim.

*This manual complies with these standards: ANSI Z535.6; AS/NZS 1927:1998, CPSC 16 CFR 1512, ISO 4210-2 and ISO 8098.*

# Fundamentals

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## Important safety information

Read this important safety information before riding your bicycle.

### A bicycle can't protect you in an accident

The most common cause of injury on a bicycle is falling. In a crash or impact, it is not uncommon for your bicycle to sustain damage and for you to fall. Cars have bumpers, seat belts, air bags, and crumple zones. Bicycles do not. If you fall, your bicycle cannot prevent injury.

If you are involved in any kind of impact, crash, or accident, check yourself thoroughly for injuries. Then have your bicycle thoroughly inspected by your bike shop before you ride it again.

### Know your limits

A bicycle can be dangerous, especially if you try to ride beyond the limits of your ability. Know your skill level and don't ride beyond it.

### Know your bike's limits

#### Use conditions

Your bicycle is made to withstand the stress of "normal" riding within specific use conditions (see **Use conditions** section). If you misuse your bicycle by riding outside those conditions, it can be damaged by stress or fatigue (*You'll see the word "fatigue" frequently in this manual. It means the weakening of material over time due to repeated load or stress.*). Any damage can drastically reduce the life of the frame, fork, or other parts.

#### Lifespan

A bicycle is not indestructible, and its parts will not last forever. Our bicycles are made to withstand the stress of "normal" riding because those stresses are well known and understood.


However, we cannot predict the forces that might occur if you use your bicycle in competition, if you ride in extreme conditions, if it is involved in an accident, if it is used for rentals or for commercial purposes, or if it is used in other ways that apply high stress or fatigue loads.

With damage, the life of any part can be drastically reduced and may fail without warning.

The safe life of a part is determined by its construction, materials, use, maintenance, rider weight, speed, terrain, and environment (humidity, salinity, temperature, etc.), so it is not possible to give an accurate timetable for replacement.

Any crack, scratch, or change of color in a high-stress area indicates the part (including the frame or fork) has reached the end of its life and should be replaced. If you are not sure or you don't feel comfortable inspecting or repairing your bicycle, consult your bike shop.

In some cases, a lighter frame or part has a longer life than a heavier one. However, regular maintenance, frequent inspections, and frequent replacement of parts are necessary for a lightweight, high-performance bicycle.

 **WARNING:** *A bicycle is subjected to wear and high stress. Different materials and parts may react to wear or stress fatigue in different ways. If the design life of a part has been exceeded, it may suddenly fail.*

For a maintenance schedule, see the **Caring for your bike** section.

## Handle with care

Some parts of your bicycle can injure you if mishandled. There are sharp points, for example, on the teeth of the chainrings and some pedals. Brakes and their parts get hot. Rotating wheels can cut skin and even break bones. Clamps and pivoting parts such as brake levers can pinch, as can the chain where it runs onto sprocket teeth.

E-bike components are especially vulnerable. Electric cables, connectors, battery dock, battery, and the controller can be easily damaged if handled incorrectly.

## Think safety

Stay tuned to your environment and avoid dangerous situations which are usually obvious (traffic, obstacles, drop-offs, and so on), but sometimes are not. Many of those situations are shown in this manual.

Some of the high-risk stunts and jumps seen in magazines or videos are very dangerous; even skilled athletes get severe injuries when they crash (and they do crash).

Modifications to your bicycle can make it unsafe. Each part of your new bicycle has been carefully chosen and approved. The safety of accessory

or replacement parts, and especially how those parts attach and interface with other parts of the bicycle, is not always apparent. For this reason, you should only replace parts with original equipment or parts that are approved. If you are not sure what parts are approved, ask your bike shop.

Examples of modifications include this partial list:

- Physically altering existing parts (sanding, filing, drilling, etc.)
- Any repairs made to carbon composite structures
- Removing safety equipment such as reflectors or secondary retention devices
- Using adapters for brake systems
- Adding a motor or engine
- Installing accessories
- Changing parts

## Important e-bike information

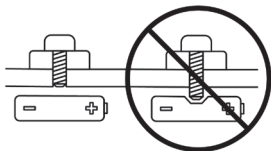
It is important to read this manual, the e-bike quick start guide, and the supplemental Electric Bicycle Owner's Manual carefully before you ride your new electric bike.

- There's good stuff in each manual about your e-bike.
- We're partners in protecting the earth, so you need to properly use, maintain, and dispose of electrical components.

In addition to the operation of your e-bike section, we recommend you read the **Important to read before the first ride** section of the supplement.

An electric bike has hidden wiring inside the frame and has other critical parts like the drive unit and battery pack. When mounting additional,

non-standard accessories (e.g. a bottle cage), be sure not to impact the wiring or battery pack (e.g. using too long or pointed bolts). This might cause a short circuit to the electric system and/or damage to the battery.



**⚠ WARNING!** A short circuit in the electric system and/or damage to the battery might lead to over-heating. In an extremely rare case, a battery pack that has been severely impacted could potentially catch fire.

**⚠ CAUTION!** Any unauthorized modification (tampering) of your e-bike's drive system is prohibited. If you suspect your e-bike has been tampered with, or you experience a change in the speed at which your drive assistance cuts off, stop riding and contact an authorized Trek retailer for assistance.

## Get to know your bike shop

The best way to ensure many happy hours of trouble-free cycling is to build a relationship with your favorite bike shop.

### The ultimate resource

This manual contains lots of valuable information about your bicycle — and there's even more in the **Support** section of [trekbikes.com](https://trekbikes.com).

But a manual or a website can't fix a flat, tune your derailleur, correct your saddle height, pour you a cup of coffee, or wax endlessly about that one time when you almost won that one thing.

Locally owned bike shops are the heart and soul of cycling. Here's just a sampling of what they offer:

### Knowledgeable staff

Bike shop staff aren't just sales-people. They're riders who use and understand the products they sell.

### The right fit

Your shop can set up and adjust your bike to fit you, your riding style, and your preferences.

### Professional mechanics

Service staff at your shop will keep your bike or e-bike in tip-top shape season after season.

### Warranty service

If you have an issue with a product we sell, your bike shop is committed to making it right.

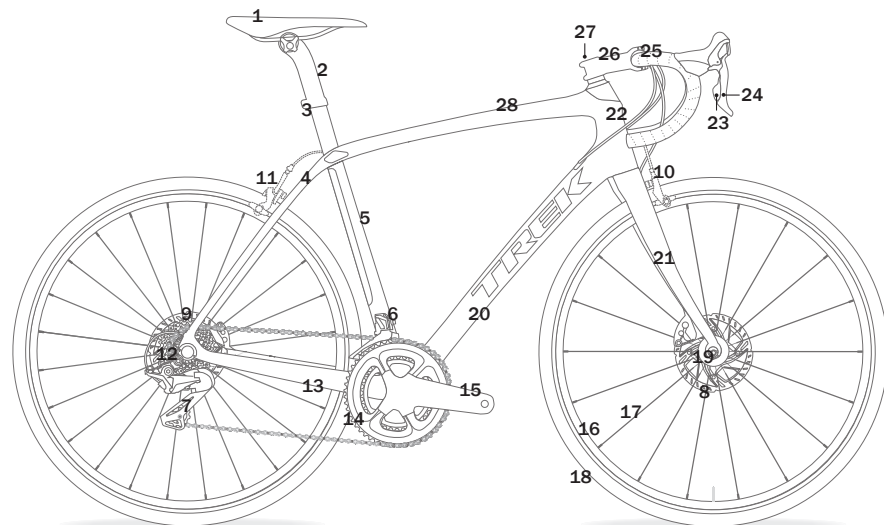
## There's a shop for every rider

We work with over 3,000 local bike shops in the US and hundreds more worldwide. Some specialize in racing, some cater to commuters, some are all about the trails — and many offer something for everyone.

If you don't already have a favorite shop, the best place to find one is **Find a retailer** at [trekbikes.com](https://trekbikes.com).

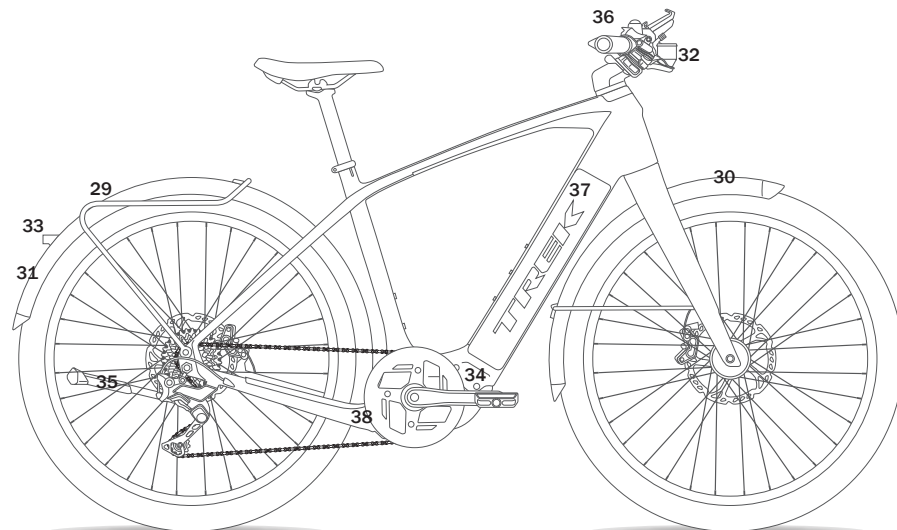


# Bike diagrams

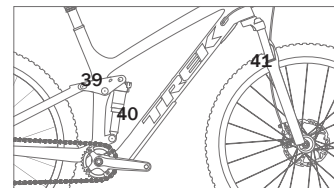


- |                    |                    |              |                |
|--------------------|--------------------|--------------|----------------|
| 1 Saddle           | 8 Front disc brake | 15 Crank arm | 22 Head tube   |
| 2 Seat post        | 9 Rear disc brake  | 16 Rim       | 23 Shifter     |
| 3 Seat post clamp  | 10 Front rim brake | 17 Spoke     | 24 Brake lever |
| 4 Seatstay         | 11 Rear rim brake  | 18 Tire      | 25 Handlebar   |
| 5 Seat tube        | 12 Cassette        | 19 Hub       | 26 Stem        |
| 6 Front derailleur | 13 Chainstay       | 20 Down tube | 27 Headset     |
| 7 Rear derailleur  | 14 Chainring       | 21 Fork      | 28 Top tube    |

These diagrams include basic bike parts. Your specific model may not have all the parts shown. Visit the **Support** section of [trekbikes.com](http://trekbikes.com) for more specific information.



- |                 |                    |
|-----------------|--------------------|
| 29 Rack         | 36 Control unit    |
| 30 Front fender | 37 Battery         |
| 31 Rear fender  | 38 Chain guard     |
| 32 Front light  | 39 Rocker arm      |
| 33 Rear light   | 40 Rear shock      |
| 34 Motor        | 41 Suspension fork |
| 35 Kickstand    |                    |





# Before your first ride

Make sure your bicycle is ready for use before your first ride.

## Ride the right size bike

Your shop will help you find a bicycle that fits.

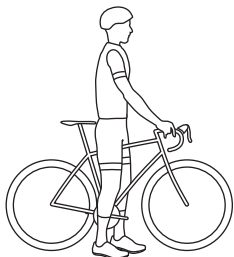


Figure 1.1: Correct ride height.

- For a bicycle with a standard straight top tube, there should be at least 25mm (1 in) of clearance between you and the top tube when you stand over your bike (Figure 1.1)
- For a stepthrough or mountain bike frame, verify size using a corresponding standard top tube frame.

## Stay within the weight limit

Your bicycle has a weight limit. See the **Use conditions** section for general guidelines.

## Adjust your saddle to a comfortable height

Test that you have the right height by sitting on the saddle with your heel on the lower pedal and your leg slightly bent (Figure 1.2).

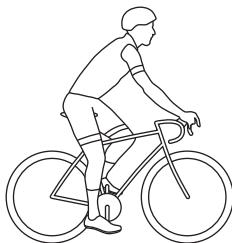


Figure 1.2: Adjusting seat height.

If your leg is bent more than slightly, your seat should be adjusted up. If you can't reach the pedal, your seat should be adjusted down.

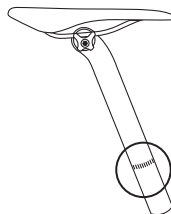


Figure 1.3: The seatpost minimum insertion line.

To avoid damage to the seatpost or bike frame, do not position the saddle beyond the minimum insertion line on the seatpost or seatmast (Figure 1.3). If you can't properly position your saddle, see your bike shop.

**Rear suspension bikes** - When adjusting your saddle, consider the upward travel of your rear wheel in relation to your saddle position.

**WARNING:** With the seat post fully compressed, the saddle in the rearmost position, and a fully compressed rear suspension, the rear tire may interact with the saddle. To alleviate this, adjust your saddle up and forward.

## Adjust your handlebar and stem to a comfortable height

Handlebar position is important for control and comfort. You point the handlebar and the bike follows.

Special tools and training are necessary to align, adjust, and torque your stem, so only your bike shop should do this. Do not attempt to make the adjustments yourself as these changes may also require adjustments to the shift levers, brake levers, and cables.

**WARNING:** An incorrect headset and stem assembly, and incorrect torque can cause damage to the fork's steerer tube, possibly causing the tube to break. If the steerer tube breaks, you could fall.

## Get to know your bike

For the most possible enjoyment from your bicycle, familiarize yourself with:

- Pedals (flat, clipless, or toeclips & straps)
- Brakes (levers or pedals)
- Shifting (if equipped)
- Suspension (if equipped)

You will enjoy yourself more if you have a comfortable and confident ride.

# Before every ride

Before riding your bicycle, perform a safety check on level ground and away from traffic. If any part doesn't pass the safety check, fix it or have your bike serviced before riding.

## Pre-ride checklist

### Check the handlebar

- Make sure the bar is at 90 degrees to the wheel (Figure 1.6).
- Check that the handlebar is tightened sufficiently so that it will not twist out of alignment and does not rotate in the stem.
- Make sure that no cables are pulled or caught when you turn the handlebar from side to side.

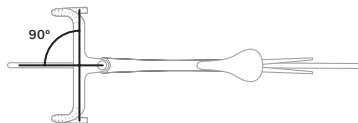


Figure 1.6: Proper alignment of handlebar and saddle.

### Check the saddle and seat post

- Make sure the saddle is in line with the center of the bike (Figure 1.6).
- Check that the saddle rails or collar is tightened sufficiently so that it will not twist out of alignment, or move or tilt up and down.

**⚠ WARNING:** A wheel quick-release lever that is not correctly adjusted and closed can move and catch in spokes or a brake rotor. It may also allow the wheel to be loose or come off unexpectedly. This could cause loss of control, a fall, and may result in serious injury or death. Before every ride, make sure the quick-release is adjusted and closed correctly.

### Check the wheels

- Check rims and spokes for damage. Give the wheel a spin. It should spin straight through the fork (front) and chainstays (rear), and not contact the brake pads (rim brakes).
- Check that the axles are fully seated in the dropouts.
- Lift your bicycle and hit the top of the tire with a solid blow. The wheel should not come off, be loose, or move from side to side.

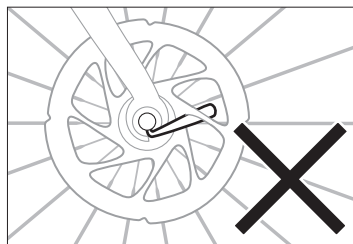


Figure 1.7: An incorrectly positioned quick release lever can interfere with the brake system.

- If your wheel is equipped with a quick-release, make sure the lever is properly closed and positioned: does not touch the fork or an accessory part

(rack, fender, bags, etc.), and does not interfere with the spokes or disc brake system as the wheel rotates (Figure 1.7).

**⚠ WARNING:** Securely clamping the wheel with a quick release system takes considerable force. If the wheel is not properly secured, the wheel can become loose or fall off causing serious injury.

The adjustment nut should be tightened enough that the closing force of the quick-release lever leaves an imprint in your palm. If the lever does not close properly, due to contact with the fork or accessory, reposition and close the lever.

If the lever touches anything, it may not be closed. If you have a quick-release axle assembly (not a thru axle), and proper closure is not possible, remove the quick-release axle and place the lever on the opposite side of the bicycle. Adjust and close properly or contact your bike shop for replacement.

### Check the tires

- Use a tire pump with a gauge to make sure your tires are inflated within the recommended pressure range. Do not exceed the pressure limit as stated on the side of the tire or rim; whichever is lowest.

**NOTE:** It is better to use a hand or foot pump than a service station pump or electric compressor. The latter are more likely to allow for over-inflation, which can cause the tire to blow out.

## Check the brakes

- While standing still, make sure you can apply full braking force without the brake lever touching the handlebar. (If the lever touches, your brakes may need adjustment.)

- Check that the front wheel brake is working properly. Ride the bike at slow speed and apply the front wheel brake. The bike should come to an immediate stop.



Figure 1.8: Apply both brakes together. Using the front brake only could cause the bike to pitch forward.

**⚠ WARNING:** Brake force applied to the front wheel suddenly or too fully could lift the rear wheel off the ground. This could decrease your control and cause you to fall. For best results, apply both brakes at the same time. (Figure 1.8)

- For rim or disc brakes, repeat the process with the rear wheel brake.

- For coaster brakes, start with the back pedal crank slightly higher than horizontal. Apply pressure downwards on the back pedal. When you move the pedal downward, the brake should engage.

## Check the chain

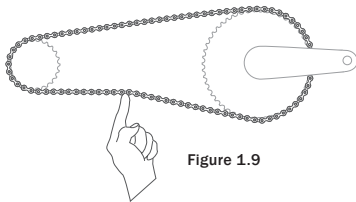


Figure 1.9

- Make sure your chain or belt has the correct tension so that it can't fall off. If you're unsure of the correct tension, see your bike shop.

- Check that the chain has no kinks, rust, broken pins, plates, or rollers.

- Coaster brake: There should be between 6-12mm (0.25-0.50 in) total vertical movement in the middle of the chain (Figure 1.9).

## Check the cables

- Make sure all cables and housings are properly secured to the frame or fork so that they cannot interfere with or get caught on moving parts.

## Check reflectors, lights, and accessories

- Check that reflectors are clean and positioned perpendicular with the rim.
- Make sure your front and rear lights and any other accessories are securely attached, properly positioned, and working properly.
- Position your lights parallel to the ground. Make sure your batteries are charged.

## Check your e-bike battery and controller

- With an e-bike, check that your battery is locked in the dock and fully charged, and your controller and e-bike system are functioning properly.

## Check your suspension (if applicable)

- Adjust your suspension for your use, and make sure that no suspension component can “bottom out” or be fully compressed. Suspension adjustment instructions are available in the **Support** section of [trekbikes.com](http://trekbikes.com).

## Check your pedals

- Make sure your pedals and shoes are clean and free of debris that could affect your grip or interfere with the pedal system.
- Grab your pedals and crank arm and wiggle to see if there's any looseness. Also spin the pedals to make sure they rotate freely.


# Safety precautions

Follow these essential safety precautions to reduce your risk of harm when riding your bicycle.

## Gear up

- Always wear a helmet when riding your bicycle to reduce the risk of head injury in an accident. Make sure your helmet fits you properly and meets the required safety standards.
- Dress appropriately. Loose clothing or accessories can get caught in your wheels or other moving parts and cause you to fall (e.g. pants leg in the chainring).
- Make sure all loose straps and accessories are secured (bikepacking harness, panniers, etc.).

- Increase your visibility by wearing fluorescent apparel during daylight, and reflective apparel at night. On a bike, the unique up and down pedaling motion is what makes you recognizable on the road. At night, highlight your feet, ankles, and legs with products that feature reflective materials. During daylight, wear fluorescent socks, shoes, covers, or warmers.
- Use front and rear lights, day and night. Make sure your reflectors are clean and properly positioned.

 **WARNING:** Reflectors, which function only when light shines on them, are not a substitute for lights. Riding in dark conditions or at times of poor visibility without adequate lighting is extremely hazardous.

## Ride smart


Know your skill level and do not ride above it.

- Do not ride distracted. Using a mobile phone, music player, or similar device while riding can lead to an accident.
- Do not ride too fast. Higher speed creates higher risk, and results in higher forces if a crash occurs. You may be surprised at the power of an e-bike.
- Do not ride hands-free. Always keep at least one hand on the handlebar.
- Do not ride double except on a tandem bicycle.
- Do not ride while intoxicated or while using medications that can make you drowsy or less attentive.

• Do not ride in large groups. Riding close to other riders reduces visibility with the road and can cause you to lose control of your bicycle. Also, large groups of cyclists can cause problems for other users of the roadway.

• Do not ride in a manner not specified for your bicycle type (see section **Use conditions**).

**E-bike Note:** Be aware that other road users do not expect that an e-bike can ride faster than a normal bike. Riding faster may also increase the risk of an accident.

 **WARNING:** You add to your risk of injury when you use your bicycle in an incorrect manner. Misuse can add stress to your bike. High stress can cause the frame or a part to break and increase your risk of injury. To decrease your risk of injury, use your bicycle in the manner for which it was designed.

## Avoid misuse

Examples of misuse include jumping your bicycle; riding over sticks, debris, or other obstacles; performing stunts; riding in severe off-road terrain; riding too fast for conditions, or riding in an unusual manner. These and other misuses add to the stress on each part of your bicycle.

## Avoid hazards

Watch for cars, pedestrians, and other cyclists. Assume others do not see you, and be prepared to avoid them or their actions such as opening a door in your path.

Ride carefully when off-road. Ride only on the trails. Do not ride over rocks, branches, or depressions.

Do not ride with a loose object or pet's leash attached to the handlebar or other part of your bicycle.

Watch for and avoid road hazards like potholes, drain grates, soft or low shoulders, or debris that could impact your wheels, make your wheels slide, cause your wheels to "lock up," or catch your wheels in a rut, all of which could cause you to lose control. If you're uncertain of the road conditions, walk your bike.

When you cross railroad tracks or drain grates, approach them carefully and cross them at a 90-degree angle to keep your wheels from getting caught in the ruts (Figure 1.10).

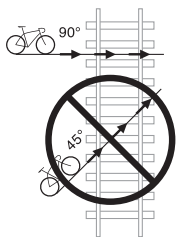


Figure 1.10 Crossing railroad tracks.

## Respect the weather

Take extra precautions when you ride in wet or snowy weather, because the grip of your tires is greatly reduced.

Braking distances increase in wet weather. Apply your brakes earlier and use extra caution than when riding in dry conditions.

## Listen to your bike

If your bicycle behaves in an unusual manner (it shakes or wobbles, for example), or you hear an unusual noise, immediately stop riding the bicycle and identify the problem.

After any crash or impact (especially on a carbon bike), have your bike shop thoroughly inspect your bicycle. Damage to your bicycle may not be readily visible. Repair any problem before riding again or take the bicycle to your bike shop for service.

## Plan ahead

It's a real drag to have a flat tire or other mechanical problem when out on an enjoyable bike ride. Carry a pump, spare inner tube, patch kit, tools, and spare batteries, or chargers for your lights and batteries. Be ready to fix your bike so you can return safely from your ride.

## Follow the rules on and off-road



It is your responsibility to be aware of the laws that apply where you ride. Observe all laws and regulations regarding e-bikes, bicycle lighting, riding on roads or paths, helmets, child carriers, and traffic.

# Use conditions & weight limits

Your bicycle has a frame sticker that indicates its use condition. Ride only in the use condition specified for your bicycle type.




## Frame sticker




Check your frame for the use condition sticker and/or the following Electrically Power Assisted Cycles (EPAC) sticker:

Fast Electric Bicycle (Speed EPAC) 45 kmph (28 mph)	EU EPAC ISO label, CE specific to model	US EPAC ISO label, Class label
<p>Diamant Fahrradwerke GmbH Lle-B e1*168/2013*xxxxx WID2xxxxxxxxxxxxx -- dB(A), -- min - 0.3 kW 45km / h max 145 kg</p>  <p>RECOMMENDED TYRE PRESSURE BAR (PSI), COLD</p> <p>FRONT 2.4 (35) REAR 2.4 (35)</p>	<p>2022 250 W max 50 kg max 55 km/h</p>  <p>max 126 kg</p> <p>Bikeurope BV / Trek Benelux Colindaleham 2-20C 3847 LG Harderwijk The Netherlands</p> <p>ISO 4210-2 City/Trekking</p>	<p>ISO 4210-2 City/Trekking</p> <p>Class I Max 250 W Max 20 mph</p> <p>EN 15194 City/Trekking EPAC</p>

**WARNING:** If your use of a bicycle applies more stress than the Use Condition for which it is intended, the bicycle or its parts can be damaged or broken. A bicycle that has damage could decrease your control and cause you to fall. Do not ride in use conditions that apply more stress than the limits of the bicycle. If you are not sure of the limits of the bicycle, consult your bike shop.

**Weight limit** = rider + bicycle + gear/cargo.

Condition	Terrain	Weight limit	Bicycle type or definition
<b>Child Bicycle</b>  	Riding for children. A child should not ride without the supervision of a parent. Children should not ride near slopes, curbs, stairs, drop-offs, pools; or areas that automobiles use.	36kg (80lb)	Maximum saddle height of 635mm  Usually a bicycle with 12", 16", or 20" wheels; a child's tricycle; and includes a trailer bicycle  No quick-release wheel attachment systems
<b>Condition 1</b>  	Riding on a paved surface where the tires are always on the ground.	125kg (275lb)        136kg (300lb)  250kg (550lb)	Road bicycle with drop-type handlebar Triathlon, time trial, or speed bicycle  Cruiser with large, 26" tires and swept-back handlebar Road electric-assist bicycle with drop-type handlebar  Standard pedelec electric-assist bicycle (e-bikes) Tandem
<b>Condition 2</b>  	Riding in Condition 1, plus smooth gravel roads and groomed trails with low-angle grades.  Drop-offs of less than 6" (15cm).	80kg (175lb)  125kg (275lb)  136kg (300lb)	Mountain or hybrid bike with 24" wheels  Cyclocross bicycle: drop-type handlebar, knobby 700c tires, and cantilever or disc brakes  Hybrid or DuoSport bicycle with 700c wheels, tires wider than 28c, and flat handlebar Standard pedelec electric-assist bicycle

<b>Condition 3</b>  	Riding in Conditions 1 and 2, plus rough trails, small obstacles, and smooth technical areas.  Jumps should be no more than 24" (61cm).	80kg (175lb)  136kg (300lb)	Mountain bike with 24" wheels  Any mountain bicycle that does not have rear suspension is designed for Condition 3. Any mountain bicycle with short-travel rear suspension is also designed for Condition 3.  <ul style="list-style-type: none"> <li>• "Standard," "race," "cross-country," or "singletrack trail" mountain bicycle with wide, knobby 26", 27.5", or 29" tires</li> <li>• Short-travel rear suspension (3"/75mm or less)</li> </ul>
			Mountain electric-assist bicycle
<b>Condition 4</b>  	Riding in Conditions 1, 2, and 3; plus rough technical areas and obstacles of moderate height. Jumps should be no more than 48" (120cm).	136kg (300lb)	"Heavy-duty," "technical trail," or "all-mountain" mountain bicycle with wide, knobby 26", 27.5", or 29" tires, and medium-travel rear suspension (4"/100mm or more)
<b>Condition 5</b>  	Riding where you jump, ride at high speeds, ride aggressively on rougher surfaces, or complete jumps on flat surfaces.	136kg (300lb)	"Freeride," "jumping," or "gravity" bicycle with heavy-duty frames, forks, and components with long-travel rear suspension (7"/178mm or more)  This type of use is very dangerous and puts large forces on a bicycle. Large forces can apply dangerous stress to a frame, fork, or the parts. If you ride in Condition 5 terrain, you should practice safety precautions such as more frequent bicycle inspections and more frequent replacement of equipment. You should also wear comprehensive safety equipment such as a full-face helmet, pads, and body armor.

## Basic riding technique

Use the following tips and techniques to get the most out of your riding experience.

### Turning and handling

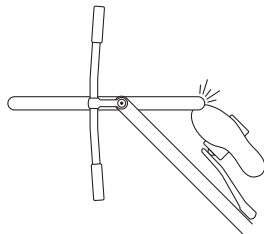


Figure 1.11: Toe overlap.

Be careful of "toe overlap." When you turn the handlebar at very slow speeds, your foot could overlap or touch the front wheel or fender. Do not pedal when you ride slowly with the handlebar turned.

Wet, debris-strewn, or uneven pavement will affect the handling of your bicycle. Paint (crosswalks, lane lines) and metal surfaces (grates,

manhole covers) can be especially slippery when wet. Try to avoid sudden changes in direction on less-than-ideal surfaces.

### Aerobars and handling

An aerobar is a forward extension of the handlebar with arm rests. When riding with your forearms or elbows on an aerobar, your ability to steer and stop the bicycle can be reduced. When you need more control, change your position so your hands are near the brake levers and you are not leaning on your elbows or forearms.

Do not use the arm rests as handles; they are only intended to support your forearms when placed in the center of the pad. Leaning on the edges of the arm rests could break them.



## Stopping

Always ride with a safe distance between you and other vehicles or objects to give yourself adequate room to stop. Adjust distances and brake forces to suit riding conditions and speeds.

For safest braking, use your brakes smoothly and evenly. Look ahead and adjust your speed in advance to avoid hard braking.

Different bikes have different brake systems and different levels of brake power depending on their use condition (see **Use conditions & weight limits** section). Be aware of your bicycle's braking power and don't ride beyond it. If you want more — or less — braking power, consult your bike shop.

Wet, debris-strewn, or uneven pavement will affect how your bike reacts to braking. Take extra care when braking under less-than-ideal road conditions. Keep it smooth, and allow more time and distance for stopping.

### Coaster brakes

*Parents or guardians: explain this to your child or dependent.*

If your bicycle has a coaster brake (a brake activated by the pedals), apply the brake by pedaling backwards.



Figure 1.12

For greatest braking force, the crank arms should be horizontal when you apply the brake. The crank will rotate some before the brake starts to work, so start to apply the brake with the rear pedal slightly higher than horizontal (Figure 1.12).

### Hand brakes

Before riding, make sure you know which brake lever controls which brake (front or rear).

If you have two hand brakes, apply both brakes at the same time.

The front brake provides more stopping power than the rear, so do not use it too forcefully or too abruptly. Gradually add pressure to both brakes until you slow to the desired speed or stop.

If you must stop quickly, shift your weight back as you apply the brakes to keep the rear wheel on the ground.

**⚠ WARNING:** Brake force applied to the front wheel suddenly or too fully could lift the rear wheel off the ground or cause the front wheel to slide out from under you. This will decrease your control and cause you to fall.

Some front brakes include a 'modulator', a device that makes application of the front brake more gradual.

## Shifting gears

The gears on your bicycle allow you to pedal comfortably in different conditions — like riding up a hill, pedaling into a headwind, or riding fast on flat terrain. Select the gear that is most comfortable for the conditions; a gear that lets you pedal at a constant rate.

There are two shifting systems on most bicycles: the derailleur which is external, and the internal gear hub (IGH). Use the proper technique for your setup.

Different shifters and derailleurs function differently. Get to know your system.

## To shift with a derailleur

**⚠ WARNING:** *Improper derailleur shifting technique could cause your chain to jam or come off, causing you to lose control and fall.*

A derailleur moves your chain from one gear to another. You shift gears by changing the position of a shift lever (also called a shifter), which controls the derailleur. On most bicycles the left shifter controls the front derailleur and the right shifter controls the rear derailleur.

Shift gears only when the pedals and chain are moving forward.

Decrease the force on the pedals as you shift gears. Reduced chain tension helps the chain shift gears quickly and smoothly, which decreases chain, derailleur, and gear wear.

Use only one shifter at a time.

Do not shift gears when you ride over bumps to prevent dropping or jamming the chain or missing a gear.

Do not ride with the chain in the “cross-over” position. Cross-over is when you shift the derailleur so the chain crosses from the biggest front sprocket to the biggest rear sprocket (also the smallest sprocket to the smallest sprocket).

In this position, the chain is placed at an extreme angle causing the chain and gears to run roughly, and the parts to wear at a faster rate (Figure 1.13).

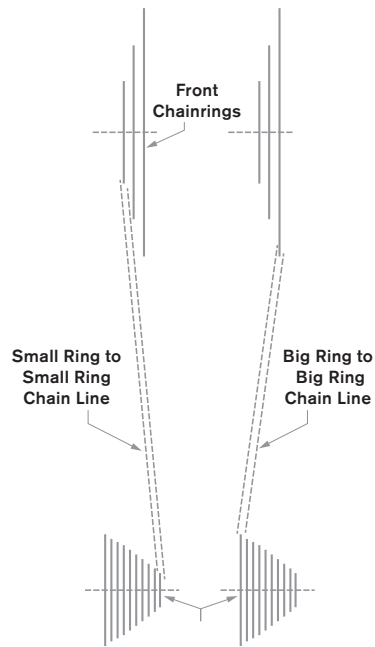


Figure 1.13

## To shift with an internal gear hub (IGH)

When you shift gears, coast (do not pedal). Tension on the chain prevents the correct operation of the gear change mechanism and could damage the mechanism.

With most IGH systems you can shift while the bike is not moving — for example, you could shift into a lower gear at a stop sign for easier startup.

## Pedaling

Before riding, get to know your pedal system and learn to pedal smoothly.

There are three pedal options: Flat, toe clips, and clipless. Toe clips and clipless pedal systems connect your feet to the pedals, allowing you to apply greater power throughout the pedal stroke (pulling up and pushing down) for greatest efficiency.

Only wear shoes that are compatible with your pedal system. If you have any doubt about compatibility, consult your bike shop.

## Flat

Flat pedals are exactly what they sound like. They don't require special footwear, and your feet are free to move on and off the pedal.

## Toe clips

These attach your feet to the pedals with a clip and a strap which wraps around and in front of your toes.

## Clipless pedals

Clipping in to what is known as a clipless pedal system requires special cycling shoes that have a cleat that engages with the pedal.

To clip in: Line up the cleat on the bottom of your shoe with the pedal mechanism and push down.

To clip out: Rotate your heel away from the bike until you feel your shoe disengage from the pedal.

### ***If you use toe clips or clipless pedals:***

You must be able to release from the pedals quickly and easily, so practice getting into and out of the pedals before you ride.

**TIP:** put your bike on a trainer or position yourself in a doorway where you can hang onto the door frame for balance.

Make sure any release mechanism operates correctly and adjust it if necessary before your ride.

**⚠ WARNING:** *Improper technique, incompatible gear, or a pedal system that operates incorrectly could cause your feet to become trapped or allow your feet to release from the pedal unexpectedly, causing you to lose control.*

# Riding with a child

Take these precautions to give young riders the safest, best experience possible.

## Towing or carrying a child on your bike

**⚠ WARNING:** *Adding a child carrier to your bicycle adds weight and raises the center of gravity, which can make the bike take longer to stop, become hard to control, and be easier to tip over. Do not leave your child unattended in a child carrier. Take extra care when balancing, braking, and cornering with a child carrier. Tipping over or loss of control may lead to severe injury or death to you or your child passenger.*

**⚠ WARNING:** *Certain bicycle racks are not intended for use with child carriers. If you are unsure, contact your Trek bike shop.*

**⚠ WARNING:** *Child carrier manufacturers have different mounting systems which may or may not be compatible with certain bicycle racks. If you are unsure, contact the child carrier manufacturer.*

**⚠ WARNING:** *If you attach a rack that is incompatible, it could come loose or come off unexpectedly, cause the child to come in contact with moving parts or fall, and lead to severe injury or death.*

- If you allow a child to ride in a seat or trailer attached to a bicycle, be extra vigilant to ensure the child's safety. Make sure your bicycle is suitable for the attachment of a child seat or trailer. Trailers should use the flag provided.
- You should not attach a child seat to a carbon fiber frame (e.g. seat tube) or seatpost unless it's specifically equipped for it. Ask your bike shop if you're unsure.
- Check its attachment or connection to your bike before every ride.


**⚠ WARNING:** *Do not mount a clamp to a bicycle frame (e.g. carbon) that is not equipped for it. The frame material may become damaged resulting in unsafe conditions.*

- Luggage carriers (racks) are designed for carrying luggage and not passengers, unless an approved child carrier is used.
- 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.
- Keep in mind the maximum allowed load of your bicycle when attaching a child seat on a rear rack. On e-bikes with a rear rack battery, the maximum load is lower due to the weight of a battery. The maximum allowed load can be found on the rack or rack support bracket.
- If you attach a child seat to the rear of your bicycle, exposed saddle springs could injure a child's fingers. Cover the springs or use a saddle that does not have springs.
- Never leave a child unattended in a child seat or trailer. The bicycle could fall over and injure the child.


- Make sure the child wears protective gear, especially an approved, properly fitted helmet.
- Frequently check to be sure a child on a trailer (with pedals) is awake and alert.
- Reduce your speed. Read and follow the instructions that came with your child seat or trailer.

## Accompanying a child riding his/her own bike

- Make sure your child is dressed properly for riding in bright, highly visible clothing.
- Make sure your child is riding the right size bike, and that the seat and handlebar are properly positioned for maximum comfort and control.
- Children are less likely than adults to recognize hazards and may not respond correctly in an emergency situation, so you'll need to lend your eyes and ears, and judgment to keep them safe.
- Children should not ride near slopes, curbs, stairs, drop-offs, pools, or areas that automobiles use.
- Teach your child the rules of the road and emphasize the importance of obeying them.
- Clearly establish your own riding rules that suit your location, including where, when, and for how long your child can ride.

 **WARNING:** Training wheels prevent the regular lean of a bicycle during a turn. If the child turns too quickly, the bicycle can fall and cause injury. With training wheels, do not permit a child to ride fast or turn suddenly.

- Inspect your child's bicycle before every ride (see section **Before every ride**).
- Pay extra attention to the grips and end plugs on the handlebars of your child's bicycle. In the event of a crash, an exposed handlebar end presents a puncture hazard.

 **WARNING:** A handlebar end that is not plugged or covered can cause serious injury or death in a crash. Parents should regularly inspect a child's bicycle and replace damaged or missing grips and end plugs.

# Caring for your bike

37	Safeguard your bike
41	Maintenance
42	Inspection
47	Five easy fixes every rider should know
53	Carbon fiber care

## Safeguard your bike

We build our bicycles to last a long time — with a little help from you. Follow these safeguards to keep your bicycle in good shape for the long haul.

### Keep it clean

Clean your bicycle with water or mild detergent and a non-abrasive sponge if your bicycle is very dirty. Never spray your bicycle using high pressure, and never spray directly onto bearing points or electrical parts on e-bikes. Never use harsh chemicals or alcohol wipes to clean your bike. See the **Five easy fixes** section for more details on washing your bicycle.

### Part replacement

If you need to replace any bike parts (worn brake pads, for example, or broken parts from an accident), visit your bike shop or the **Equipment** section of [trekbikes.com](http://trekbikes.com).

Use only genuine replacement parts. If you use anything other than genuine replacement parts you may compromise the safety, performance, or warranty of your bicycle.

### A warning about servicing your bike

Special tools and skills are necessary for the servicing of your bicycle. If a repair or adjustment is not specifically listed in this manual, for your safety only your bike shop should make that repair.

### Suggested tools list

Not all these tools are necessary for all bicycles.

- 2, 4, 5, 6, 8mm hex wrenches
- 9, 10, 15mm open-end wrenches

- 15mm box end wrench
- Socket wrench, 14, 15, and 19mm socket
- T25 Torx wrench
- No. 1 Phillips-head screwdriver
- Bicycle inner tube patch-kit, tire pump with gauge, and tire levers
- Torque wrench

**⚠ 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 bike shop how to properly complete them. We recommend that significant mechanical repairs be carried out by a qualified bicycle mechanic. Improper adjustment or service may result in damage to the bicycle, or an accident that can cause serious injury or death.*

Your safety depends on the correct maintenance of your bicycle. If a repair, adjustment, or software update is not specifically listed in this manual, only your bike shop should make that repair.

After any repair or accessory installation, check your bicycle as shown in the **Before every ride** section.

## Parking, storing, and transporting your bike

### Prevent theft

Do not park your bicycle unless you secure it to a fixed object with a bike lock that resists bolt cutters and saws. For an e-bike, lock the battery in place and remove the controller, if applicable.

Register your bicycle online (see section **Register your bike**). Record the serial number in this manual and put the manual in a safe location.

### Park or store your bike safely

Park your bicycle where it cannot fall or roll away. Any fall can cause damage to your bicycle or property around you.

Incorrect use of a bicycle parking rack could bend your wheels, damage brake cables, or in the case of e-bikes, damage electric system cables.

Do not rest your bicycle on its derailleurs. The rear derailleur could bend or dirt could get on the drivetrain.

Protect your bike from the elements when possible. Rain, snow, hail, and even direct sunlight can damage your bicycle frame, finish, or parts.

Before you put away your bicycle for an extended time, clean and service it and apply frame polish. Hang your bicycle off the ground with the tires at approximately half the recommended inflation pressure.

See the quick start guide or the supplemental Electric Bicycle Owner's Manual for proper battery storage.

### Protect your bike's finish

The finish or paint on your bicycle can be damaged by chemicals (including some sports drinks) or abrasive contact. Dirt can scratch or remove

paint (and even frame material) especially where a cable rubs or a strap is placed around a tube. Use adhesive padding to prevent rubbing in critical spots.

### Avoid excessive heat

Excessive heat may damage the adhesive that joins carbon fibers together or the joints of frame parts. Do not exceed 65°C (150°F) exposure to your bicycle. The interior of a car parked in the sun can reach this temperature.

### Use care with car racks, work stands, trailers, and trainers

Clamping devices such as those found on a work stand, car carrier, trainer, or child's trailer can cause damage to bicycle frames. Follow the instructions for your specific accessory to protect your bicycle from harm. And do not clamp any of these devices to a carbon fiber tube unless the frame is specifically designed to accept it. Not all bicycles are compatible with a luggage carrier, bicycle trailer, etc.... If you are not sure, ask your bike shop.

**⚠ WARNING:** Adding a child carrier to your bicycle adds weight and raises the center of gravity, which can make the bike take longer to stop, become hard to control, and be easier to tip over. Do not leave your child unattended in a child carrier. Take extra care when balancing, braking, and cornering with a child carrier. Tipping over or loss of control may lead to severe injury or death to you or your child passenger.

**⚠ WARNING:** Certain bicycle racks are not intended for use with child carriers. If you are unsure, contact your Trek bike shop.

**⚠ WARNING:** Child carrier manufacturers have different mounting systems which may or may not be compatible with certain bicycle racks. If you are unsure, contact the child carrier manufacturer.

**⚠ WARNING:** If you attach a rack that is incompatible, it could come loose or come off unexpectedly, cause the child to come in contact with moving parts or fall, and lead to severe injury or death.

## Package your bicycle carefully for shipping

An incorrectly packed bicycle is easily damaged in transit. Always use a hard case or carton that will protect your bicycle when you package it for shipping. Attach foam pads to all the frame and fork tubes, and use a rigid block to protect the fork tips and maintain structural support of the fork blades.

There are also special rules and considerations when shipping an e-bike. If you are not sure of what you're doing, see the supplemental Electric Bicycle Owner's Manual at [trekbikes.com](http://trekbikes.com) or ask your bike shop to package your bicycle for you.



# Maintenance

Technological advances continue to make bicycles more complex. It's impossible for this manual to provide all the information required to properly repair and maintain every bicycle.



To help minimize the chances of an accident and possible injury, it's critical that you have your bike shop perform any repair or maintenance not specifically described in this manual.

The longer you neglect maintenance, the more it becomes critical. Your bike shop can help you decide your maintenance requirements.

After initial use, new bicycles should be checked. As an example, cables stretch through use, and this can affect the operation of shifting or braking. Approximately two months after you purchase your new bicycle, have your bike shop fully check it. Have your bike shop fully service your bicycle each year even if you did not ride your bicycle much.

Before each ride, perform an inspection as outlined in the **Before every ride** section.

See the **Service** section of [trekbikes.com](http://trekbikes.com) for a list of comprehensive maintenance schedules.

Maintenance schedules are based on normal use. If you ride your bicycle more than the time indicated, perform maintenance more frequently than recommended. If a part malfunctions, check and service it immediately, or consult your bike shop. If a part has wear or damage, replace it before you ride your bicycle again.

If your inspection shows your bike needs maintenance, visit the **Support** section at [trekbikes.com](http://trekbikes.com) for further instructions and helpful videos, or see your bike shop for service.



# Inspection

As listed in the Maintenance schedule, perform the following inspections and maintenance when indicated.

## Check tightness

Your new bicycle left the shop with bolts and connections properly tightened — but those bolts and connections loosen over time. This is normal. It's important to check and adjust them to proper torque specifications.

### Know your torque specs

Torque is a measure of the tightness of a screw or bolt.

Too much torque can stretch, deform, or break a bolt (or the part it attaches). Too little torque can allow the part to move and may lead to fatigue and breakage of the bolt (or the attached part).

A torque wrench is the only reliable method of determining correct tightness. If you do not have a torque wrench, you cannot properly inspect for tightness and should consult your bike shop.

The torque specification is often written on or near the bolt or part. If a part does not have a specification on it, check the **Support** section of [trekbikes.com](http://trekbikes.com), or ask your bike shop. It shouldn't take more than a few minutes to check the following and adjust as necessary to proper torque specs:


- Saddle clamp bolt(s)
- Seatpost clamp bolt
- Stem bolts
- Shift lever attachment bolts
- Brake lever attachment bolts

- Brake bolts, front and rear, including any bolt that attaches a cable housing stop
- Suspension attachment bolts and pivot bolts

## Handlebar

Check:

- That the handlebar grips are secure (they shouldn't move or rotate).
- The handlebar tape (if applicable) and replace if it's loose or worn.
- That any handlebar extensions or bar ends are properly positioned and secure, and that bar caps are secure.

 **WARNING:** A handlebar end that is not plugged or covered can result in severe injury or death in the event of a crash. Parents should regularly inspect each bicycle and replace damaged or missing grips.

## Frame and fork

Examine your frame and fork, especially near junctions, and clamping or attachment areas.

Look and feel for signs of fatigue: dents, cracks, scratches, deformation, discoloration, unusual noises (e.g. chain slap or brake rub during acceleration). If you find any, contact your bike shop before riding the bicycle.

## Brakes

Check the brake pads for wear.

- Rim brakes: If the grooves in the brake pad surface are less than 2mm deep (or 1mm deep for direct-pull brakes), replace the brake pads.
- Disc brakes: Replace brake pads that are thinner than 1mm.
- Disc brake rotors: Check the thickness/wear of the rotor. The minimum thickness is often printed on the disc.

## Wheels and tires

Check the tires for damage or a worn area. As a tire wears thin, it may become more susceptible to puncture. If a cut goes all the way through the casing, or any casing thread shows through the tread, replace the tire.

Your bike shop should fix or replace loose spokes or spokes with damage.

A word about rim wear. Brake pads remove rim material when you apply the brake. If the brakes remove too much material over time, the rim can become weak and break. Aluminum rim wear-indicators:

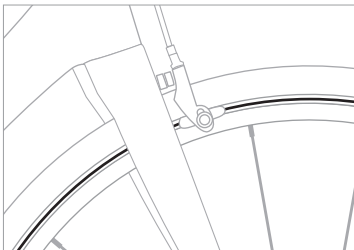


Figure 2.1 Aluminum rim wear-indicator.

- A shallow groove around the circumference of the rim (Figure 2.1). If the groove is no longer visible in any spot, replace the rim.

- A dot on the rim – typically near the valve stem. If this indicator is worn such that the dot is no longer visible, replace the rim

Carbon composite rims: A woven material covers the interior unidirectional fibers. If these fibers are exposed, replace the rim. If you're not sure, see your bike shop.

If a hub feels loose or makes a grinding noise, your bearings may need attention. Only your bike shop should adjust bearings.

## Derailleurs

Shift gears through all the sprocket combinations to make sure the derailleurs operate correctly and smoothly, and the chain does not come off.

## Pedals

Wiggle the pedals to make sure they're secure on the crank arms. Rotate the pedals on the crank arm. If the pedals don't rotate smoothly, see your bike shop to adjust your pedal bearings.

If necessary, tighten your pedals. The right pedal is threaded in the usual direction. The left pedal is left-hand threaded. Please see your bike shop to tighten your pedals to the correct torque.

## Crank

Gently wiggle the crank arms and turn the crank (chainring) with the rear wheel off the ground.

If the crank feels or sounds loose, or if you hear a grinding noise when you turn the crank, do not ride your bicycle. Your bottom bracket (the bearing system that allows the crank arms to turn in the frame) may need adjustment.

If your inspection shows that your bike needs maintenance, visit the **Support** section on our website for further instructions and helpful videos, or take your bike to your bike shop for service. Only your bike shop should adjust bearings.

## Chain

Check the chain for stiff link pins or wear and dirt. Clean and lubricate the chain (see section **Five easy fixes**).

## Accessories

Check all accessories to make sure they're correctly and securely attached.

Some bikes include accessories, such as a kickstand, or you may have added some of your own. Visit the **Support** section on our website for further instructions on operation and maintenance, or follow the instructions that came with your accessories.

## Cables

Check the cables for problems: kinks, rust, broken strands, or a frayed end. Cables should have an end cap to prevent fraying. Also check the cable-housing for loose wire strands, bent ends, cuts, and worn areas. If there is a problem with a cable or housing, do not ride your bicycle. Unless you feel comfortable adjusting your wire cables, take your bicycle to your bike shop for service.

## E-bikes

Check all wires and connectors for damage. Check the operation of the system. Check the controller docking for damage. Check the operation of all lights and horn (if applicable).

## Fenders

When mounting a front fender, you must coat the top mounting bolt threads with fresh Loctite Blue 242 adhesive (or similar) with each installation.

This is for all fork mounting locations: front, rear, or under the fork crown (Figure 2.1.1).

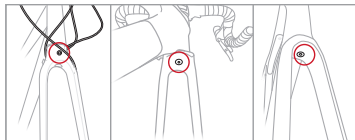


Figure 2.1.1 Front fender mounting bolt locations. L-R: front, rear, under the crown.

**⚠ WARNING:** When re-installing a fender, make sure you use the bolt(s) supplied with the bicycle or fender assembly. These bolts have specific sizes and locking capabilities. Failure to use these bolts may result in a loose or detached fender contacting the tire causing an abrupt stop.

**⚠ WARNING:** Fender mounting bolts may become loose. To avoid loose top bolts, coat the bolt threads with fresh Loctite Blue 242 adhesive (or similar) with each installation. Failure to use an adhesive on the bolts may result in a loose or detached fender contacting the tire causing an abrupt stop.

# Five easy fixes every rider should know

We know not everybody is mechanically inclined ... but every rider should master these five basic skills. We cover the highlights below, but if you need a little deeper dive, you'll find how-to videos on the Trek Bike YouTube channel: [youtube.com/user/trekbikesusa](https://youtube.com/user/trekbikesusa).



## 1. Check your tires

Properly inflated tires make for an enjoyable ride. Checking your tires for inflation and wear is your first step to improve your bicycle's performance.

pressure recommended for the rim, whichever is lower. Make sure your pump is suitable for your valve: Presta, Schrader, or Dunlop/Woods (see Figure 2.2).

### Check your tire pressure

Use a tire gauge, or a pump equipped with a gauge, to check your tire pressure.

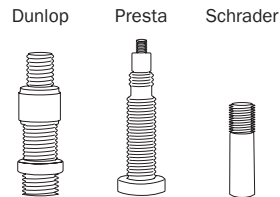


Figure 2.2

### Inflate (or deflate) your tires

Use a hand pump to inflate your tires to the air pressure recommended on the sidewall of the tire or to the

With a Presta valve, you must loosen the top valve two turns before trying to inflate the tire.

Do not over-inflate your tires. If your tire is over the recommended range, release air and recheck the pressure.

**NOTE:** It is better to use a hand or foot pump than a service station pump or electric compressor. The latter is more likely to allow for over-inflation, which can cause the tire to blow out.

PSI	BAR	kPA	PSI	BAR	kPA
35	2.41	241	80	5.52	552
40	2.76	276	85	5.86	586
45	3.10	310	90	6.21	621
50	3.45	345	95	6.55	655
55	3.79	379	100	6.89	689
60	4.14	414	105	7.24	724
65	4.48	448	110	7.58	758
70	4.83	483	115	7.93	793
75	5.17	517	120	8.27	827

## 2. Wash your bike

It just feels better to ride a clean bicycle. Not only does it look good, it will also add to the life of the bike. Constant attention to your bicycle's details will keep you up to date with maintenance as well.

All you need is a water hose, a bucket, mild soap, a soft brush, and a towel.

Wet your bicycle with the hose, then work with the brush from the top down using plenty of soapy water. Rinse the soap off and wipe it down.

**NOTICE:** High pressure water may damage bicycle parts. Do not clean your bicycle with a high-pressure washer. High pressure water might also seep into electric connectors, motors, controllers or other parts of the electric system.

## 3. Degrease and lube your chain

Proper lubrication will keep your chain running smoothly and quietly and will prolong the life of your chain. We recommend you clean (degrease) the chain prior to lubrication.

### Degrease

It's a dirty job so leave your dress clothes in the closet. You'll need a bike-specific degreaser (a biodegradable option is good). There are designated chain-cleaner tools, but you can also use a toothbrush.

Apply the degreaser with a toothbrush or a chain-cleaner tool to the bottom length of the chain and pedal backwards. After degreasing, wash the chain with soapy water and a brush, rinse it clean, and allow to dry.

**WARNING:** Do not get lubricant on rim sidewalls or disc brake rotors. Lubricant on brake surfaces can cause decreased braking function, and increase the possibility of an accident or injury. Wipe off any lubricant that contacts brake surfaces.

### Lubricate

Use a bicycle-specific chain lubricant. Apply lubricant to each link pin as you slowly pedal backwards. Wipe off any excess lubricant.

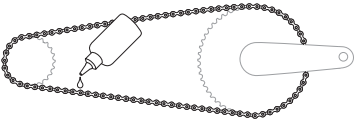


Figure 2.3: Apply lubricant to the bottom of the chain.

**TIP:** Apply the lubricant to the bottom length of the chain and hold a rag under the chain. This will keep the lube from dripping on your chainstay (frame) or wheel and make the process less dirty (Figure 2.3).

## 4. Remove & replace your wheels

**⚠ WARNING:** If you have an e-bike, or your bike is equipped with a hub brake, or if it has 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.

**NOTE:** If you have disc brakes, be careful not to press the brake lever after removing the wheel. This may close the brake pads making it difficult for the rotor to go back inside the pads.

### Remove the rear wheel

1. Shift down to the smallest gear in the cassette. If you have rim brakes, open the quick release cable mechanism for the rear brake to open the brake arms.

2. Loosen the quick release, nuts, or through axle on the wheel.

3. Grab the derailleur body and push down, then back and release the wheel from the dropouts.

4. Tilt the wheel and remove the chain from the cassette. Set the wheel and your bike down with the gears up.

### Replace the rear wheel

1. Standing at the rear of the bike, with the wheel between your knees, grab the rear derailleur with your right hand and pull back and push down making sure the top of the chain drops over the first (or smallest) gear on the cassette. Make sure the wheel axle fits all the way into the frame of the bicycle.

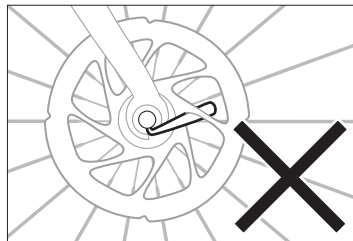


Figure 2.4

2. Tighten the quick release making sure that it is properly positioned within the dropouts and closed. If the quick release is not closed correctly (in-line with the chain stay), the lever can catch in a disc brake rotor (Figure 2.4).

3. Replace the quick release cable mechanism for the rear brake (rim brakes) and you're done.

**⚠ WARNING:** A quick-release device not correctly adjusted and closed can move independently and catch in spokes or a brake rotor. In addition, the wheel may become loose or come off, suddenly stop the wheel, decrease your control, and cause you to fall. Make sure the quick release lever is correctly positioned in the dropouts and closed before you ride your bicycle.

See page 17 for more complete quick release information.

## 5. Remove & replace your tire

These instructions are written for standard tire systems with tubes. For another type of tire, consult your bike shop or visit the **Support** section of our website.

### Remove the tire from the wheel

1. Deflate the inner tube and loosen the valve nut (Presta or Dunlop valves).
2. Loosen the tire from the rim.
3. Use your hands or tire levers to remove the tire from one side of the rim. Do not use a sharp object such as a screwdriver to remove the tire.
4. With one side of the tire removed, you can reach in and remove the inner tube.
5. To remove the tire completely use your hands or tire levers to remove the other side of the tire from the rim.

### Replace the tire on the wheel

1. Take this opportunity to examine the tire, rim tape, and the rim for defects.
2. Inflate the inner tube just enough for it to take shape.
3. Place the inner tube in the tire so that it is inside the tire all the way around. Insert the valve stem through the hole in the rim.
4. With your hands only, push one side of the tire over the rim. Make sure the tube is now inside the rim.
5. Push the other side of the tire over the rim.
6. From the outside of the tire, prop the valve stem up through the rim.
7. Inflate the tire to the pressure indicated on the side of the tire. Do not over-inflate.
8. Check to make sure the tire bead is set on the rim.

## Carbon fiber care

We want you riding your bike safely, so we make it easy to replace a damaged carbon frame or part through Carbon Care, a program exclusive to Trek owners. Through Carbon Care, Trek offers a significant discount to replace a damaged carbon fiber frame, fork, or part.

### What is carbon fiber?

Carbon fiber is a lightweight, strong material, making it the material of choice for the manufacture of high-performance bicycle frames, forks, and other parts. Carbon fiber is also used by many other industries, including automotive and aerospace.

### Carbon fiber is not indestructible

Like any material, carbon fiber can suffer damage. And not all damage to carbon fiber will be visible. (Figure 2.5)

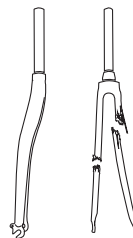


Figure 2.5: **Left:** Metal fork bent when overloaded. **Right:** Carbon fork withstood a higher load, but completely separated when overloaded.

Compare a carbon fiber part to a metal part. When you damage a metal part, it will bend or deform. When you damage a carbon fiber part, the damage may not be visible to the naked eye and may not be safe to ride.

## How can carbon be damaged?

While it is impossible to list all the scenarios that can damage a carbon fiber part, below are a few examples. If you experience any of the following, stop riding your bicycle immediately and take it to an authorized Trek retailer to replace the damaged part:

- You hit a curb, guardrail, pothole, parked car, or anything that causes the bicycle to stop abruptly.
- An object becomes stuck in the front wheel, causing the bicycle to stop abruptly.
- You get hit by a car or truck.
- You crashed your bicycle and it doesn't feel or sound right.
- Your bicycle is in a roof rack when you drive your car into a garage.

If your carbon frame, fork, or part has been potentially damaged and you have any doubt about its integrity, you should replace it.

## What to do if you suspect your bike may be damaged

1. Stop riding the bicycle.
2. Take the bicycle to an authorized Trek retailer.
3. Replace the damaged frame or part through Trek Carbon Care.



**WARNING:** Carbon fiber parts with damage can break suddenly, causing serious injury or death. Carbon fiber can conceal damage to a bicycle part. If you suspect your bicycle has had an impact or crash, immediately stop the bicycle. Replace the part before riding or take the bicycle to your bike shop for service.

## CHAPTER 3

# Reference

- 56 Additional resources
- 58 Glossary of cycling terms



## Additional resources

This basic manual is just the beginning. Here's some additional information to help support fun bicycling.

### How-to videos

Trek Bikes has its own YouTube channel: [youtube.com/user/trekbikesusa](https://www.youtube.com/user/trekbikesusa) which applies to all bikes and all models.



### Social Responsibility

#### PeopleForBikes

[peopleforbikes.org](https://peopleforbikes.org)

PeopleForBikes aims to make riding better for everyone. By collaborating with millions of individual riders, businesses, community leaders, and elected officials, they unite people to create a powerful, united voice for bicycling and its benefits.

#### World Bicycle Relief

[worldbicyclerelief.org](https://worldbicyclerelief.org)

This organization provides specially designed, locally assembled bicycles across rural Africa through sustainable work-to-own and study-to-own programs.

#### DreamBikes

[dream-bikes.org](https://dream-bikes.org)

DreamBikes is a non-profit that hires and trains teens in disadvantaged neighborhoods to fix and sell used bikes.

#### Trek 100

[trek100.org](https://trek100.org)

The Trek 100 is a charity bicycle ride hosted annually at the world headquarters of Trek Bicycle in Waterloo, Wisconsin. Funds raised benefit Midwest Athletes Against Childhood Cancer (MAACC Fund).

#### NICA

[nationalmtb.org](https://nationalmtb.org)

The National Interscholastic Cycling Association (NICA) develops mountain biking programs for student athletes, providing guidance and leadership for communities and coaches.

## Warranty

### Trek Care Limited Warranty

#### We've Got You Covered

Every new Trek bicycle comes with our industry's best warranty and loyalty program - Trek Care. Once your Trek bicycle is registered, the Trek Bicycle Corporation provides each original retail purchaser a warranty against defects in materials and workmanship. For the full warranty statement, please see [trekbikes.com/us/en\\_US/trek\\_bikes\\_warranty](https://trekbikes.com/us/en_US/trek_bikes_warranty).

#### First things first

Contact an authorized Trek retailer or distributor to initiate a warranty claim. Proof of purchase is required.

# Glossary of cycling terms

## **Aerobars**

Forward handlebar extensions allowing the rider to rest their elbows for improved aerodynamics.

## **Bead**

Part of the tire that clinches to the wheel's rim.

## **Bar ends**

Perpendicular extensions to the end of straight handlebars for additional hand positions.

## **Bike share**

A fun, easy, affordable urban transit system in which users rent bikes for short rides, checking them in and out at docking stations.

## **Biomotion or body movement**

Highlighting the movement of your feet and legs with contrasting colors to improve your visibility. Use fluorescent during daylight and reflective at night.

## **Cadence**

The rate at which a cyclist pedals (in revolutions per minute).

## **Captain**

The rider on a tandem bike steering (shifting, braking) the bike. Also pilot.

## **Carbon fiber**

Strong, light, woven material used to make bike frames and parts that are ultra-light, stiff, and resilient.

## **Chainguard**

A housing around your chain.

## **Drive side**

Refers to the side of the bike where the chain and related drivetrain components sit.

## **Drivetrain**

The system that transfers pedaling power to the wheels. Components include crank, chainring, and chain (or belt), as well as derailleurs and a cassette in geared bikes.

## **Dropout**

Small notch in the bike frame where the seatstay meets the chainstay. The rear wheel skewer or axle rests in the dropouts.

## **Dynamo hub**

A small electrical generator built into the hub of a bicycle wheel usually used to power lights.

## **e-bike assist**

An e-bike amplifies your pedal power with a motor and battery. When riding, the electric motor only kicks in when pedaling.

## **Fat bike**

A tough, capable mountain bike built to accommodate extra-wide tires and designed to ride on any kind of terrain—snow, sand, rocks, pretty much anywhere you darned well please.

## **Frameset**

The bicycle frame plus the front fork.

## **Hardtail**

A mountain bike with no rear suspension.

## **High-vis**

Short for high-visibility. High-vis gear and apparel makes riders more likely to be seen.

## **Hybrid**

A versatile style of bike that combines traits of road and mountain bikes. Equally suited to city streets and gravel paths, but not intended for rigorous off-road use.

## **Lockout**

The ability to lock a suspension fork so that it's rigid for more pedaling efficiency on smooth terrain.

## **Pannier**

A bag or similar container attached to the frame, handle bars, or on racks above the wheels of a bicycle.

## **Quick release**

A mechanism for attaching a wheel to a bicycle. It consists of a rod threaded on one end and a lever-operated cam assembly on the other.

## **Ride tuned**

Tuned for optimal ride feel.

## **Road rash**

Skin abrasions caused from sliding on the asphalt in a crash.

## **Seatmast**

A seatpost integrated into the frame as an extension of the seat tube.

## **Singlespeed**

A beautifully simple bicycle: one free-wheel gear, no shifting.

## **Singletrack**

A trail just wide enough for a single bike to ride.

## **Steerer tube**

The part of the fork that is inserted into the head tube of the frame. Used to attach the fork to the frame using a headset.

## **Stepthrough**

A type of bicycle frame with a low or absent top tube or cross-bar (a.k.a. open frame or low-step frame).

## **Stoker**

The rider on a tandem bike not steering.

## **Tandem**

A bicycle built for two.

## **Thru axle**

An alternative to the quick-release skewer. A thru axle slides through holes in closed dropouts. It's a stronger, stiffer axle, and has long been a standard for mountain bike wheels.

## **Wheelie**

Lifting the front wheel of the bicycle in the air while riding on only the back wheel.

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