



CYCLIST MANUAL





Table of Contents

The Bicycle	<u>5</u>
Parts of a Bicycles	<u>6</u>
How to Avoid Accidents	<u>10</u>
Other Mechanical Concepts	<u>12</u>
Cyclist Essentials	<u>14</u>



The Bicycle



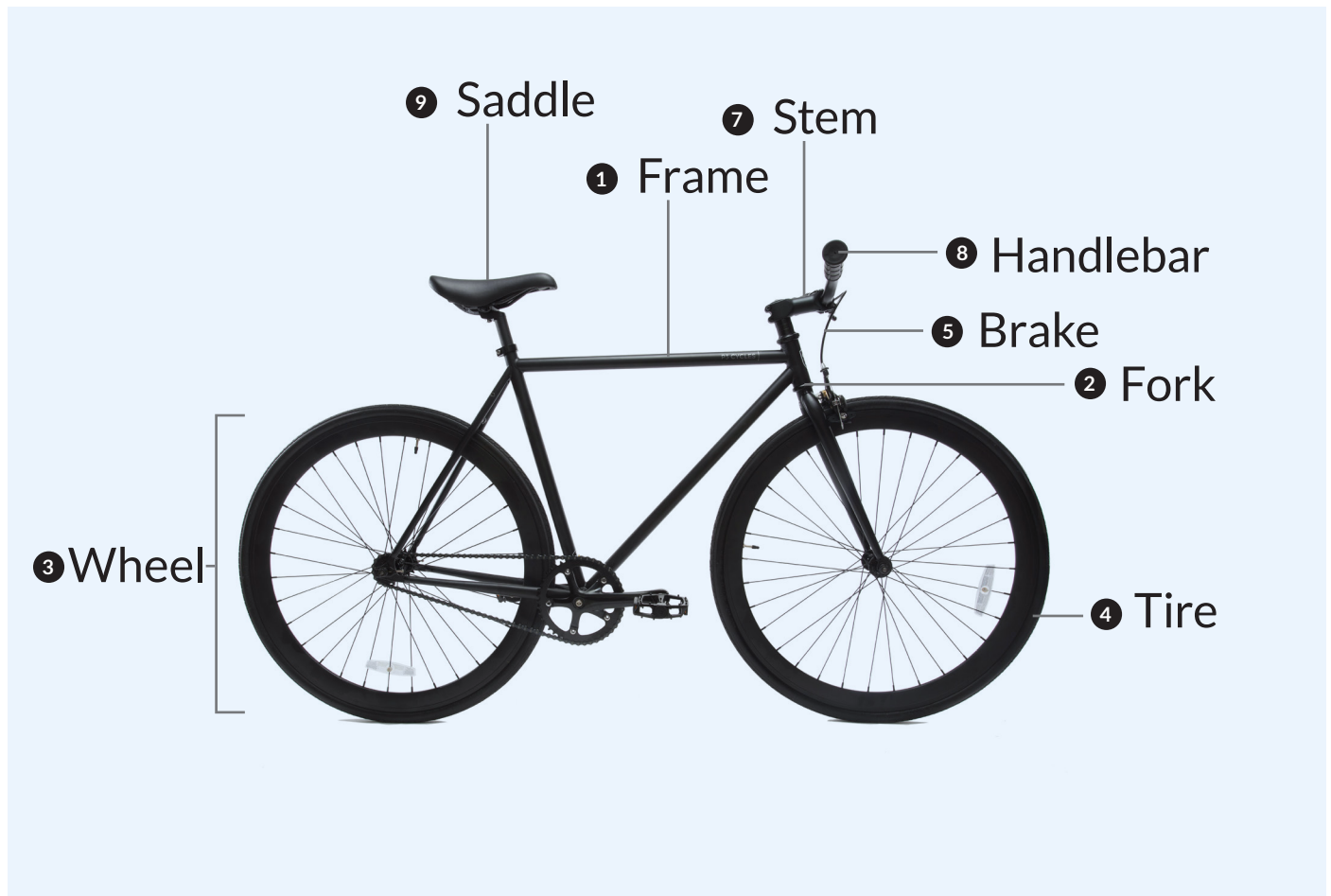
A bicycle is a vehicle with 2 wheels that functions based on human traction. This definition is very important to understand so that you're able to move without depending on anything besides your own energy.

The first recorded bicycle was created at the end of the 18th century weighing around 48 lbs, it was wooden and didn't have any pedals. Ever since its invention, the bicycle has always been used as a mode of alternative transportation. In the current context of urbanization, where traffic congestion and climate change make it necessary to find an efficient and also environmentally friendly vehicle, the bicycle has a

real possibility to become the leading method of transportation for the future of city folks.

It's important that you know the technical aspects of your bike and that you start to go deeper into its mechanics, so on the following page we will give you some definitions and explications about its technical aspects:

Parts of a Bicycle



The whole bicycle is made up by its frame, fork, and components.

1. Frame

This corresponds to the structure or framework of the bicycle. The frame is what gives the bike its identity, and its geometry determines the reason it was designed. A frame can be evaluated by weight, material, rigidity and aerodynamics, among other criteria.

2. Fork

This is the piece that connects the front wheel to the frame. It can exist with or without shock. At the moment at P3, we only have rigid forks

f r a m e		
Material	Advantages	Disadvantages
Steel	Very rigid. Extremely resistant, cheap	Heavy
Aluminum	Lightweight, flexible, corrosion resistant	Low resistance to mechanical fatigue
Chromoly	Very rigid and resistant, lightweight	Expensive, difficult to control quality

(without shock). The tube that is inserted in the frame is called the steerer tube, and in order to assemble the frame and fork correctly you need to use bearings (headset).

3. Wheel

This element is greatly important for the performance of the bicycle, it is made up of the tire, tube, rim, spokes, and hub. If it's the rear wheel, it

also has a cog.

4. Tire

The tire is a part of the wheel and it's the combination of a protective cover and an inflatable tube installed around the rim that makes it rigid and serves as the structure of the roll axis of the bike

Depending on how they



retain air, a tire can be tubular itself or use an inner tube. At P3, all our bicycles use inner tubes, which goes to say that the tire is separate from the tire. In the case of flats, you should patch or replace the inner tube, but you could keep the same tire on the wheel.

Depending on its size, it's important to clarify some aspects:

Currently, there are 3 ways of expressing the measurements of the rim and tire on a wheel: ISO, inches, and french (mm). It's important to know each one of these methods to be able to give the best explanation to customers, and to understand the contents

that we see day to day in bicycles.

It's also good to mention that the diametric values of the previous figure are approximate. 28 inches and 700 mm are very similar values, but not exactly equal.

5. Brakes

The brakes represent a fundamental component of the bicycle. Making sure that they are in good shape is necessary to ensure a responsible ride and to avoid accidents.

Hub brakes are those that slow the bike down by applying pressure in the area, another example being a coaster brake like the nomad, or bikes with disk brakes

(hybrids). The brakes of the rim on the other hand, apply pressure in certain parts of the wheel to slow it down, which happens in the urban, aventon, messenger, road, and cruiser bikes.

The rim brakes have various subtypes: calipers, v-brakes, etc. Basically the brake kit is composed of: Calipers, Brake pads, Brake Cables, Shift lever, and Clamp. The maintenance of this brake is basically to see how long it is, evaluate the shape of the brake pads, and to check that the cables are good.

For the hub brakes, if it's a coaster brake, we will not dive into the mechanics because of its complexity.

Regarding the disk brakes with our bike mechanics, the structure is basically the same as the rim brakes, but with the distinctive characteristic that its maintenance and adjustment is more complicated. For its maintenance, it's very important to make sure you degrease the disk, never touch it with your hands, and to sand and clean the brake pads.

6. Gear Shifts

The only bicycle lines that we sell that have gear shifts are: the velo, hybrid, and nexus. The bikes' systems of external gear shifts are made up of: shift lever, cables, front derailleur, rear derailleur, cog. It's important to know how to adjust the superior and inferior limits of both derailleurs, and also adjust the cable tension to keep the shifts under control.

7. Stem

Also called a goose neck, is the piece that connects the front fork to the handlebar.

8. Handlebar

They come in many shapes and sizes. It's important to know what the diameter is of the handlebar at the height of the stem, and what the diameter is of the height where the brake levers go. Knowing this information will be important to sell and install handlebars without making the mistake that they won't be compatible. Not all of our bicycles have the same measurements. Another aspect to have in mind, being that the measurements are correct, is that the shape and form of the handlebar

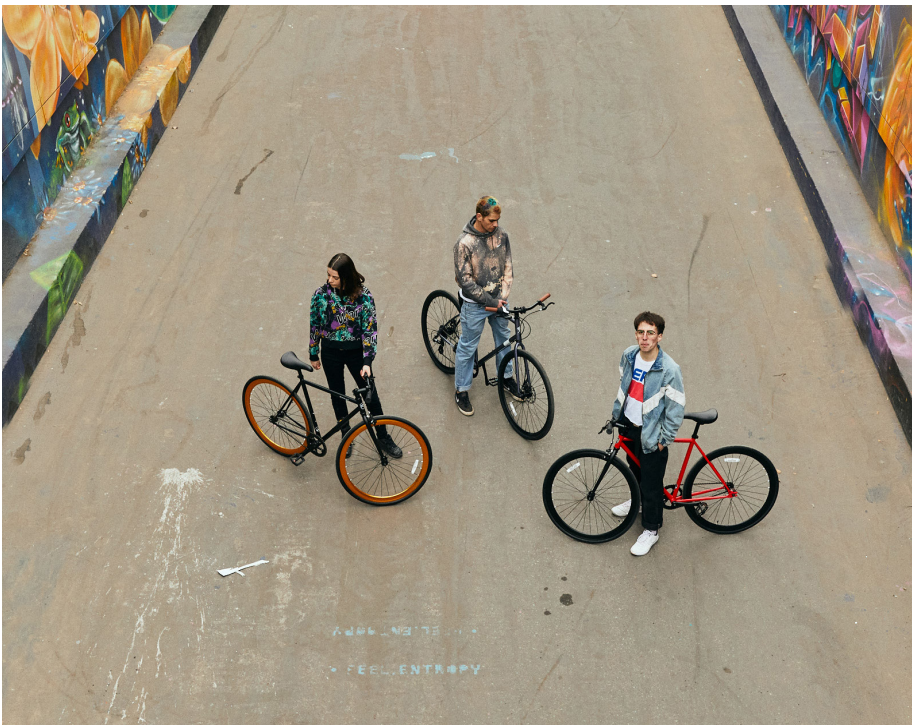
could make the installation more difficult (e.g. nomad and bullhorn).

9. Saddle

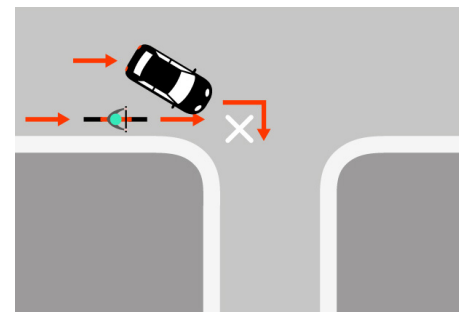
The saddle, or seat, is one of the 3 support points of our body on the bike (apart from pedals and handlebar). It's fundamental to adjust it well to avoid injuries and to be able to pedal comfortably. The saddle can be adjusted in height, angle, and distance from the handlebar. The tube of the saddle is called seat post, and the seat post clamp tightens the tube and is usually a quick release, so it is easy to adjust.



How to avoid accidents



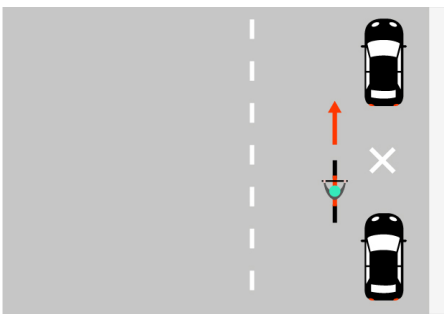
We know how difficult it is to get out on the street for the first time. Being aware of accidents is good, it's never fun to have one and the idea is to do everything possible to avoid them. Next, we will explain the most common accidents riding bikes and our advice to save yourself from them.



Trap

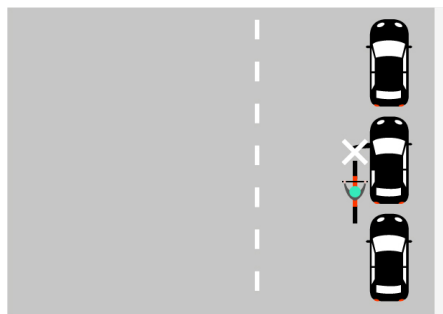
This happens when a car recklessly passes and then turns. To avoid this type of accident, the best way is to pedal more towards the center of the lane, occupying the street and incentivizing the car to rather slow down and wait behind you. Another important thing to consider is to never advance forward to your right. Lastly, and only in the worst case scenario, if you face a trap, the best you can do is turn with the car that passes you and not risk trying to pass them quickly before they cross.

Following the line



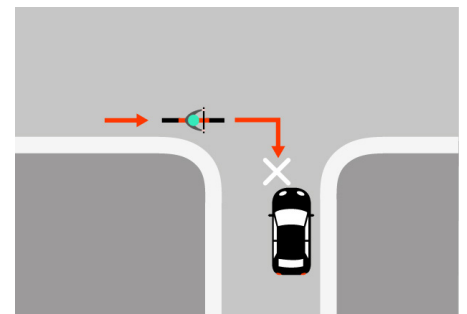
A classic mistake when we have a lane of cars parked on one side is trying to take advantage of the empty parking spaces so vehicles can pass us more easily. The danger of this is that it makes us ride zigzag, creating a more unpredictable ride and puts us at risk of crashing with a car coming from behind when we leave the parking spot. The recommendation is to maintain a straight line and don't fall into the temptation of leaving the lane.

Careful with doors



No one wants to have an accident where a car passes us, so it is natural that we glue ourselves as close as possible to edge of the street. The problem is that this means that if you get close to parked cars, eventually someone will open their door. Our advice is to not panic and stress and maintain a prudent distance from parked cars. Depending on your state, cars have to maintain distance from cyclists. You have as much of a right to ride on the street as cars do.

Turning and crashing from the front



This type of accident occurs when you have just turned and you find yourself in front of a car. To avoid this, it's ideal to pedal towards the center of the lane that you're in, in a way that the car that's at the intersection can see you. Another important aspect is to make your curve as tight as possible and have special caution when the street that you turn on is a two-way.

Other mechanical concepts

Gear Ratio

Each time that the wheel rotates per pedal is calculated by dividing the teeth of the crankset by teeth of the cog. For example, our urban bikes: $44/16=2.75$. For each pedal, the wheel makes 2.75 rotations. Being that this is a division, the gear ratio gets more difficult by making the crankset bigger and cog smaller, or gets easier by making the crankset smaller and the cog bigger.

rider has their knees slightly bent when pedaling.

Air Pressure

All bicycles should be filled with the correct air pressure. This is found written on the tire and can be expressed in PSI or pounds. It's worth mentioning that the size of the tire and the air pressure is reverse. When the tire is smaller, you'll need more air pressure, and vice versa.

Size

Bicycles have size. With our bikes, different than mountain bikes, is expressed by centimeters (and S/M/L/XL/XXL) depending on the length of the "vertical" tube of the bike (where the seat post is inserted). The idea is that the



Cyclist Essentials

Accessories and tools that you can't forget

Some say that the bike makes the cyclist, and other say that you need some accessories and tools first. On this page we will explain the essential items that you should count on to be able to ride safely and independently.



Allen Wrench

Allen wrenches are hexagonal wrenches and used to adjust the majority of the components for our bikes. It's very important to learn what measurement serves for which part of the bike, and use them carefully. The most used measurements are 4mm, 5mm, and 6mm.

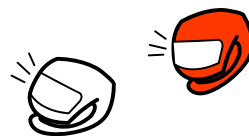
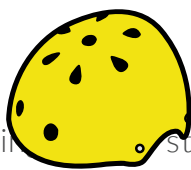


Flare Nut Wrench

This works to tighten screws or nuts with the hexagonal head. Most of our bikes need them for the nuts on the wheels, as well as adjusting the pedals. The most common measurement is 15mm.

Helmet

Depending on state, helmets may or may not be required by law. Regardless, helmets are a great way to prevent injuries caused by accidents or falling off your bike. There are many studies that backs the fact that using helmets can decrease risk of head injury by up to 85%.



use bright white headlights when it's dark, and if you use a rear light, it has to be red. You can never be too safe and use reflective objects on you backpack, clothing, or bike in order to be visible.

Repair Kit

Flat tires is part of every cyclist's life and sooner or later you will face this situation. It's never fun, but having a repair kit with a spare inner tube can be a great help (along with a bike pump).



Bike Pump

Maybe at first, you will not realize the importance of inflating your wheels, but with time you will see the difference of pedaling with the recommended air pressure vs with a deflated wheel. Pedaling with a pump will help you to repair a flat and help you to ride your bike feel as if it were the first day riding it.



Bike Lock

Although they are heavy and carrying them everywhere can be a burden and extra responsibility, if you are going to move through the city and leave your bike parked, you should count on a good bike lock that gives you security. Get one that ensures that if you leave your bike on a post or bike racks, it will still be there when you return.



Lights and reflectors

Most states require that you



How do you secure your bike? You will not always have access to a bike rack. We recommend that you find objects that are secure in the ground and you can't lift, like light posts. You should always secure the lock to your bike frame, never the wheels, saddle, or handlebar.

#TakeOverTheCity

