

# Quattrocycle

## User Manual



Last update February 2010

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## Chapter 1

### Introduction

Read all information in this manual carefully before using the Quattrocycle.

The Quattrocycle is an innovation in the area of 4-wheel bikes. It combines the joy of cycling together on a bike with the comfort level that is also delivered in normal modern bikes:

- Everyone has a freewheel, so you don't have to pedal all the time.
- Each rider can choose its own gear independent from the others
- Both front wheels and rear wheels have suspension
- The front riders are riding leaned back as in modern recumbent bikes

The design of the Quattrocycle is protected by a patent and design rights and may therefore not be copied without the written permission of Quattrocycle BV.

This guide describes instructions for use, safety and maintenance of the Quattrocycle.

In case of lending or renting of the Quattrocycle, the person providing the Quattrocycle has to instruct the user on the safe use of the Quattrocycle.

Quattrocycle BV is not liable for personal injury or damage arising from use of the Quattrocycle if regulations as contained in this manual are not observed.

Keep this manual for future reference.

## Chapter 2

### Instructions for use and safety

#### 2.1 Who sits where on the Quattrocycle

The Quattrocycle has 4 adult seats. The seats can be shifted on the frame, with the distance to the pedals to fit the leg of the rider. Older children can also sit on the Quattrocycle. The front seats are about 40 cm adjustable so that children from about 6 years can already ride. The rear seats are about 30 cm adjustable, so here kids can ride from about 8 years.

**The person who sits left at the rear left seat has to brake and steer. This should always be an adult with enough length to have good visibility to the entire bike, road and other traffic. Controlling the Quattrocycle without sufficient overview is dangerous for the riders of the Quattrocycle and for other road users.**

**The adult seats do not have seat belts. People who cannot ride safely without belts (eg children under 6 years) should not sit on these seats.**

Only 1 person should sit on a seat. This also applies for children or one adult with one child.

Adults are only allowed to ride the Quattrocycle in the four adult seats. Riding in a different location (e.g. on the luggage rack) is dangerous.

#### 2.2 Adjustment of the seats

The seat must be placed at a distance from the pedals such that you can ride comfortably. This goes as follows:

1. Unlock the clamp by pulling the clamp arm toward you and then moving it down. The seat is now loose on the frame
2. Move the seat to the desired position
3. Lock the clamp by pushing the clamp arm back.
4. Make sure the seat is firmly on the frame

**Warning:**

**Do not adjust seats while riding! It can cause dangerous situations which could result in personal injury.**

#### 2.3 Getting on the Quattrocycle

Getting on the Quattrocycle is done as follows:

1. Stand near the pedals belonging to the place where you want to sit
2. Move one leg over the frame beam to which the pedals are attached
3. Move back to sit in the seat

Do not step on sensitive parts as the steering mechanism or the chain covers. These can

deform if you do this.

#### 2.4 Taking young children on the Quattrocycle

As described in Section 2.1, children who can ride independently can sit on the seats of the Quattrocycle. Smaller children can ride on the back of the Quattrocycle in child seats mounted in the square holes in the luggage rack. There are two types of child seats:

- For children up to 15kg a special approved child seat (eg Bobike) with three point belts should be used. This seat can be mounted on the luggage rack by using a special bracket that is mounted in one of the square holes in the luggage rack.
- Children between 15 and 25kg can ride in child seats mounted on the luggage rack. These have a lap belt. Besides separate child seats one can also use a bench for three children with lap belts.

**Warning:**

**Children should always wear safety belts to prevent they can stand while driving and to prevent that they can fall off the bicycle during braking or taking turns.**

**Children should never ride the Quattrocycle on a different place than in a child seat (e.g. on the luggage rack).**

**Always lock the child seat with the included spring clip. The child seat can never be detached from the frame of the Quattrocycle then.**

#### 2.5 Taking luggage on the Quattrocycle

The Quattrocycle has a luggage rack at the rear side for carrying luggage. Luggage should be secured on the rack such that it cannot fall off during riding.

No other places on the Quattrocycle are suitable for taking luggage because the drive system, steering system or brakes can be blocked by this.

#### 2.6 Maximum load of the Quattrocycle

The Quattrocycle is designed for people till 100 kg. The use of the Quattrocycle by heavier persons can lead to damage to the Quattrocycle and accidents.

The child seats on the luggage rack are suitable for children till 25 kg.

The maximum total weight on the luggage rack is 75kg. This means one can take 75kg of luggage, reduced by the weight of the children on the child seats on the luggage rack.

#### 2.7 Steering the Quattrocycle

Steering of the Quattrocycle is done by two handle bars. To steer left, move the left handle bar to the rear and the right handle bar to the front. To steer right, move the left handle bar to the front and right handle bar to the rear.

The brakes in the front wheels are operated by pushing both handle bars to the front.

The rear brakes are operated by the brake levers on the handle bars. These brake levers should always be operated simultaneously to prevent the Quattrocycle to pull to one side.

The braking distance is minimal if all brakes are operated simultaneously by operating the brake levers and pushing the handle bars to the front.

**Warnings:**

- **As steering and operation of the brakes are different compared to normal bikes, riders should get acquainted to this while standing still before riding.**
- **Always check that the Quattrocycle is fully OK before riding; the functioning of the steering and brakes in particular.**
- **Always check before riding that everyone is well seated, with the children in the child seats having their seats belts fastened.**

## 2.8 Riding in reverse

For maximum comfort and safety, the Quattrocycle has a freewheel. By application of this freewheel, one cannot ride in reverse by pedaling in reverse. If riding in reverse is required, it can be done by the persons on the rear seats by stepping with their feet on the ground.

**Warning:**

**Ride in reverse only at a very low speed! The freewheels only work when riding forward. When riding in reverse, people can get trapped by pedals and chains turning in reverse. Never ride down on a slope in reverse!**

**Riders are warned for this danger by warning stickers on the Quattrocycle. The standard warning stickers are in Dutch. Replace these by warning stickers in other language(s) depending on the nationality of the riders. Always check that riders do understand the warning stickers before riding. Make sure the stickers are well readable en replace them when they are damaged.**

## 2.9 On the road with the Quattrocycle

The Quattrocycle complies with all requirements to vehicles in the Netherlands. In this way, the Quattrocycle is permitted as vehicle in the Netherlands. Other countries or even areas may have different requirements. You need to check if the Quattrocycle fulfills all requirements in the area you want to use the Quattrocycle.

When riding the Quattrocycle, normally the same traffic rules apply as for a normal bike. You should check however that this is the same in your area.

For riding the Quattrocycle safely, follow the following rules:

- Everyone should remain seated with feet on the pedals during riding. If feet are not on the pedals, they can get trapped between the Quattrocycle and the ground. If people cannot keep their feet on the pedals (e.g. handicapped), you should tie their shoes to the pedals.

- Children in the child seats on the luggage rack should remain seated while riding. Always fasten the seat belts to enforce this.
- Take curves at low speeds to prevent capsizing of the Quattrocycle and people to fall off.
- Do not ride on steep hills or uneven terrain. The Quattrocycle is designed to ride on terrain with a maximum unflatness of 30 cm. At a higher unflatness, the frame can be damaged.
- A Quattrocycle without lighting (standard model) may not be used at night or at daytime with bad visibility.
- Do not use alcohol or drugs before or during riding the Quattrocycle.

## 2.10 Parking

Always park the Quattrocycle on flat terrain and use the park brake. The park brake is applied by applying the brake levers on the handle bars and then blocking them by pushing the grey button. You can release the park brake by applying the brake levers once again.

The Quattrocycle does not come with a lock standard. To prevent theft, you can use standard locks as used for bikes, mopeds or motor cycles.

If you do not use the Quattrocycle for a long time, you can choose to store it upright to save space. To do this, remove the child seats from the luggage rack and place the storage bracket (option) in the square tubes in the luggage rack. Lock the storage bracket with spring clips. Apply the park brake and lift the front of the Quattrocycle till it rests on the storage bracket.

### **Warning:**

**When the Quattrocycle is stored upright, it can easily fall. Always secure it to e.g. a wall using a rope or chain.**

## 2.11 Other points of attention

Wear suitable clothes to ride the Quattrocycle. Do not wear a long coat or scarf; they can easily get trapped between the chains or under the wheels. Always wear shoes to ride the Quattrocycle.

A Quattrocycle is not a toy for children. Do not let hem climb on it or play with it in any way.

## Chapter 3

### Maintenance

The Quattrocycle should be checked by a bike mechanic after transportation and after each 500 to 1000 km of riding. The check points are described in the following chapters.

#### 3.1 Tensioning the chains

The chains will gradually elongate during riding. Therefore they need to be checked and tensioned time by time. In particular new chains will initially elongate considerably.

Therefore, tensioning the chains for the first time will be needed quite soon, typically after something like 20 km.

Tensioning the chains is done as follows:

1. Tensioning of the two rear chains:

- Remove the gear shifter from the rear gear hub using an allen key.
  - Loosen the nuts of the gear hub
  - Move the gear hub to the front until the chain is tight and tighten the nuts.
  - Put the gear shifter back on the gear hub.
2. Tensioning the chains between the two gear hubs. This is done by moving the front gear hub to the front, in the same way as done for the rear hub in step 1.
  3. Tensioning of the four chains between the gear hubs and the crank sets:
    - Loosen the M4 bolt that connects the chain cover to the frame a couple of turns so that the chain cover can move through the slotted hole in the frame.
    - Loosen the M8 bolts that connect the crank shaft housing to the frame a couple of turns.
    - Move the crank shaft housing to the front till the chain is tight.
    - Tighten the M8 bolts.
    - Tighten the M4 bolt at the rear of the chain cover.

Starting 2009, Quattrocycles have automatic chain tensioners on all chains except the chains between the rear crank set and the rear gear hubs. The above procedure is then only needed for these chains and for the other chains once the automatic tensioners are at the end of their range.

#### 3.2 Checking of the brakes

The Quattrocycle has 4 mechanically operated drum brakes. The brakes need to be checked frequently, also the park brakes on the brake levers. After some time the brake cables will elongate somewhat and the brake shoes will wear, then the brake cables need to be readjusted using the adjustment screws at the wheels to keep the right braking performance. Brake cables that show wear and worn out brake shoes need to be replaced in time to keep a good braking performance.

#### 3.3 Checking of the steering

Check the steering mechanism. The steering mechanism may only have little play. If the play becomes too large, the ball joints or the nylon bearing bushes need to be replaced.

The alignment of the front wheels needs to be checked as well. Badly aligned front wheels cause a higher rolling resistance and accelerated wear of the front tires. Check the alignment by measuring the distance between the wheels at the front and at the rear. If these distances are not the same, the alignment can be fixed by elongating or shortening the steering bars that run parallel to the front axle. The length can be changed by loosening the ball joint at one side and then rotating it.

### 3.4 Tires

The right tire pressure is important for the rolling resistance of the Quattrocycle. The recommended pressure is 2.5 bar.

Tires with insufficient profile should be replaced by new ones of the same size.

### 3.5 Checking of the freewheels

The Quattrocycle has six freewheels. Four freewheels are integrated in the gear hubs. The other two are on the rear axle. These freewheels are needed for safety. If a rider would get trapped between the chains (e.g. with his cloths), the chains will stop turning while the Quattrocycle is still riding. Therefore the Quattrocycle may only be used with well operating freewheels. **In particular the freewheels on the rear axles may be blocked at no time.**

### 3.6 Reflectors

The Quattrocycle has the following reflectors:

- 2 white reflectors at the front
- 4 yellow reflectors at the sides
- 2 red reflectors at the rear
- 2 reflectors in each pedal

These reflectors improve the visibility of the Quattrocycle in traffic and are required by law. Check that all reflectors are clean and undamaged. Replace damaged or missing reflectors.

### 3.7 Fixation of the seats

The seats on the Quattrocycle are clamped on the frame beams by means of a cam clamp. During clamping, the seat is first pulled down on its feet on the frame beams. Subsequently the seat is clamped horizontally against the side of the frame beam. The seat clamp may need to be adjusted later because of wear or overload.

If the vertical clamping is insufficient, follow these steps:

- Loosen the seat clamp
- Loosen the 2 M8 nuts of the clamp a couple of turns (see photo below)

- Move the part of the seat clamp that is located in the frame beam up
- Fasten the 2 M8 bolts firmly
- Tighten the seat clamp again

If the horizontal clamping is insufficient, follow these steps:

- Loosen the seat clamp
- Tighten the long M6 bolt under the frame beam somewhat
- Tighten the seat clamp again



If the seat is clamped with high force to the frame, but it can still move sideways, the horizontal clamping only happens at the top or bottom of the clamp block. One can check with a feeler gauge whether the clamp block is in contact with the frame beam over the full height. If one side is not touching the frame beam, use the M8 nuts at that side to push the clamp block further to the frame beam.

Check that the clamping force is sufficient to mount the seat stably on the frame.

Also check the connection of the child seats on the luggage rack.

Check the condition of the seat belts. Only use the child seats with properly working seat belts.

### 3.8 Adjustment of the gears

In order to shift gears, the shifter cable needs to be well adjusted. You check the adjustment by shifting to the second gear. On the gear shifter the yellow bracket inside should be exactly between the two yellow stripes on the housing (see photo). The adjustment can be made with a cable adjustment screw on the gear shifter.



### 3.9 Lubrication of moving parts

All moving parts like chains and ball joints are to be lubricated with oil or grease. The nylon bearing bushes or seat guides do not need any lubrication.

### 3.10 Checking of the whole construction

Check the whole construction of the Quattrocycle regularly. Parts that show cracks or deformation should be replaced.

Check all bolt connections that everything sits tight and check that moving parts to not have too much play.

The fabric of the seats may not be damaged. Damaged seats should be replaced.

## Chapter 4

### Warranty

The Quattrocycle comes with one year warranty, starting at the date of delivery. The warranty does not cover parts that wear by intensive use like chains, tires and brake shoes. Damage caused by improper use of the Quattrocycle is also not covered by the warranty.

Warranty does not apply when non-original parts are used or when something is changed to the design. Original parts can only be delivered by Quattrocycle BV. Although many standard parts are used, it is recommended to buy the parts from Quattrocycle BV because some parts are modified for use in the Quattrocycle.

The warranty only covers the cost of spare parts. Not covered are:

- Labor cost and transportation cost
- Consequential damages
- Foregone income

If you need to claim warranty or for information not present in the manual, you can contact the manufacturer of the Quattrocycle: Quattrocycle BV.

Manufacturer data:

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