

**TRANSLATION OF THE ORIGINAL
OPERATING INSTRUCTIONS**

EPAC EN 15194

OPERATING INSTRUCTIONS

EN ISO 4210-2 AND EN ISO 8098

RAYMON

E-bike/EPAC/EAPC City/Trekking

IMPORTANT!

This manual includes three parts:

In the first part you find – short and crisp – the **substantial safety information** for your Raymon bicycle/Raymon bike or Raymon EPAC/EAPC/Raymon e-bike.

The second part describes the **special features of electric Raymon bicycles** (also referred to as EPAC/EAPC/e-bike). The focus in this part is on the electric side.

The third part includes **detailed information and tips on operating your Raymon bicycle and lots of interesting facts about bicycle technology, maintenance and care**. The focus in this part is on the mechanical side.

Read all parts of this manual thoroughly!

Before your first ride, read the respective chapters **“General Safety Instructions”**, **“Intended Use”** and **“Before Your First Ride”**!

Perform the functional check described in the respective chapter **“Before Every Ride”**!

Observe the maintenance intervals of the chapter **“Service and Maintenance Schedule”** in your extensive Raymon operating instructions.

The Raymon operating instructions system in digital form is available under the following link:

<https://media.raymon-bicycles.com/direct/vTQbnMWu6I>



Frame:

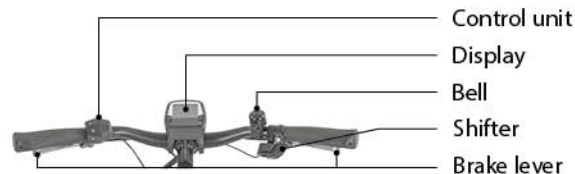
- ① Seat tube
- ② Rear stay
- ③ Chainstay
- ④ Central tube
- ⑤ Head tube

Suspension fork:

- A Fork crown
- B Stanchion tube
- C Lower leg
- D Dropout

- I Motor/drive unit
- II Rechargeable battery

Handlebar:



- Saddle
- Seat post
- Seat post clamp
- Pannier rack with rear light
- Reflector
- Mudguard
- Rear brake
- Cassette sprockets
- Kickstand
- Rear derailleur
- Chain
- Crank

- Handlebar
- Front headlamp
- Stem
- Headset

- Suspension fork
- Front brake
- Brake disc/rotor

Wheel:

- Quick-release/thru axle
- Spoke
- Rim
- Reflector ring
- Tyre
- Hub
- Valve



Frame:

- ① Top tube
- ② Down tube
- ③ Seat tube
- ④ Rear stay
- ⑤ Chainstay
- ⑥ Head tube

Suspension fork:

- A Fork crown
- B Stanchion tube
- C Lower leg
- D Dropout

Handlebar:

- Bell
- Shifter
- Brake lever



SUBSTANTIAL SAFETY INFORMATION FOR RAYMON BICYCLES AND ELECTRIC RAYMON BICYCLES

The safety information is integral part of your Raymon operating instructions system, in which all relevant information is described. This safety information does not replace the comprehensive Raymon manuals including detailed notes on handling, care and maintenance.

Use, checks and adjustments have to be carried out in accordance with the Raymon manuals.

The Raymon operating instructions system in digital form is available under the following link:

<https://media.raymon-bicycles.com/direct/VTQbnMWu6l>



If required, you can order the Raymon manuals in paper form free of charge from the following address:

R Raymon Bicycles GmbH
Rudolf-Diesel-Str. 35
97424 Schweinfurt – Germany
info@raymon-bicycles.com

In addition, you find there:

- the system instructions of the drive system manufacturer,
- the manuals of the component manufacturers, if available, and
- further manuals, e.g. for assembly and the appropriate use of accessories, if available.

Be sure to read this safety information carefully before you set off on your new Raymon bicycle or electric bicycle for the first time. Furthermore, read at least the chapters “**Intended Use**”, “**Before Your First Ride**” and “**Before Every Ride**” in your Raymon manuals.

The terms in bold are direct references to the respective chapters in your Raymon manuals.

Keep in mind that in the following bicycles are referred to as *bikes* and electric bicycles of the legal classification EPAC/EAPC are colloquially referred to as *e-bikes* for better reading flow.

WARNING

- **Reading this safety information does not release you from the obligation to read and observe the Raymon manuals!**
- **Non-observance of the Raymon manuals can lead to dangerous riding situations, falls, accidents with unforeseeable consequences and damage to property.**
- **Get in touch with your Raymon dealer if you are unable to carry out the described work on your Raymon bike or e-bike (e.g. making adjustments) on your own, if you feel unsure or if you do not have the suitable tools.**
- **Keep in mind that the Raymon manuals may require further explanation, depending on the experience and/or skills of the person doing the work. For some jobs you may require additional (special) tools or supplementary instructions. If you have the slightest doubt ask your Raymon dealer.**

GENERAL SAFETY INSTRUCTIONS

WARNING

Failure to observe the intended use can lead to component and material failure with the risk of accident and injury:

- Keep in mind that each Raymon bike or e-bike is built for a specific intended purpose, also referred to as category. Be sure to use your Raymon bike or e-bike only according to its intended use, as it may otherwise not withstand the stress, fail and cause an accident with unforeseeable consequences!
Observe the restrictions of the specified categories. You find detailed information on the categories in the chapter **"Intended Use"** and in the **Raymon bike card**. Ask your Raymon dealer to confirm the category to which your Raymon bike or e-bike belongs.
- Do not exceed the maximum permissible overall weight including the rider, the luggage, the Raymon bike or e-bike and the child seat or trailer load, if permitted.
The maximum permissible overall weight is specified on the type plate on your Raymon bike or e-bike or in the **Raymon bike card**. If you are in doubt, contact your Raymon dealer.
- Observe the legal regulations and the manufacturer's specifications as to the transportation of passengers and goods. You find them in the Raymon manuals and in the **Raymon bike card**.
- Check your Raymon bike or e-bike before every ride for possible damage, in particular on the frame, the fork, the handlebar/stem unit, the drive unit and the saddle/seat post, see the chapter **"Before Every Ride"**.

- Be sure to only use your Raymon bike or e-bike if you have not detected any malfunctions or damage during the checks described in the chapters **"Before Your First Ride"**, **"Before Every Ride"** or **"After an Accident"**.
- Observe the legal regulations and the manufacturer's specifications as to the installation of add-on parts (bags, lock, child seat, carrier systems etc.) and the usage of a trailer. You find them in the Raymon manuals and in the **Raymon bike card**.
- Observe the legal regulations applicable in the respective country for use on public roads. For more information see the chapter **"Legal Requirements for Riding on Public Roads"**.
- When transporting your Raymon bike or e-bike, observe the manufacturer's, the legislator's or the transport company's instructions. You find more information in the chapter **"Transporting the EPAC/EAPC"** or **"Bicycle Transport"**.

WARNING

Do not modify or manipulate ("tune") your Raymon e-bike. In addition to the imminent risk of accident, the liability for material defects and the warranty will expire.

For your own safety, do not overestimate your riding skills. Note that though looking easy the riding manoeuvres of a professional are hazardous to your life and limb. Always protect yourself with suitable clothing.

CAUTION

Be aware of the risk of injury due to potentially high temperatures of individual components (e.g. brakes, drive unit, headlights).

BEFORE YOUR FIRST RIDE

Before you set off for the first time on your new Raymon bike or e-bike, you should therefore read at least the chapters **"Intended Use"**, **"Before Your First Ride"**, **"Before Every Ride"** and **"Adjusting the Bicycle to the Rider"** in the Raymon manuals.

Before your first ride, check in particular the correct functioning and adjustment of:

- the brakes (chapter **"Brake System"**),
- the steering (chapter **"Headset"**),
- the saddle and the seat post (chapter **"Adjusting the Bicycle to the Rider"**),
- the gears (ch. **"Gears"**),
- the front and rear wheel (ch. **"Wheels and Tyre Equipment"**),
- suspension elements/chassis (if available) (ch. **"Suspension"**),
- the pedals (ch. **"Pedals and Shoes"**),
- the lighting (ch. **"Lighting"**),
- if available, control element and rechargeable battery (ch. **"Useful Tips for Riding an EPAC/EAPC"** and **"Safe Handling of the Rechargeable Battery"**).

BEFORE EVERY RIDE

For your own safety, carry out the following functional checks before every ride:

- quick-releases, thru axles and bolted connections (ch. **"How to Use Quick-Releases and Thru Axles"**),
- brake test in standing (ch. **"Brake System"**),
- lighting (ch. **"Lighting"**),
- if available, suspension fork, rear shock, suspension seat post (ch. **"Suspension"**),
- the tight fit of the handlebar, the stem, the saddle and the seat post (ch. **"Adjusting the Bicycle to the Rider"**),
- the tyre pressure and, whether the tyres are in sound condition (ch. **"Wheels and Tyre Equipment"**),
- is the kickstand, if available, fully folded in.

If you have a Raymon e-bike check in addition:

- the tight fit, the state of charge and the functioning of the rechargeable battery (ch. **"Safe Handling of the Rechargeable Battery"**),
- the values displayed on the control element (ch. **"Useful Tips for Riding an EPAC/EAPC"**).

NOTICE

Take a lock with you on your rides to prevent theft and avoid unauthorised use of your Raymon bike or e-bike.

AFTER AN ACCIDENT

After an accident, check that all functions and/or components are still working correctly and without damage.

Be sure to only ride back very carefully by taking the shortest route, if your Raymon bike or e-bike passed all checks without any faults. Do not accelerate or brake hard and do not ride out of the saddle. If you are in doubt about the performance of your Raymon bike or e-bike, have yourself picked up by car, instead of taking any risk.

You find detailed information on the behaviour after an accident in the chapter **"After an Accident"** in the Raymon manuals.

SAFE RIDING – RIDING BEHAVIOUR

First, make yourself familiar with the riding and braking behaviour as well as the electric assistance modes and the pushing aid (if available) in an area free of traffic, especially with different loads, in wet conditions and on loose ground.

Never ride without a properly adjusted helmet and without glasses and take care to always wear suitable, bright clothing. As a minimum you should wear straight cut trousers or use trouser clips and shoes fitting the pedal system. Always ride carefully on public roads and observe the traffic rules so as not to endanger yourself or others.

You find detailed information in the chapters **"Adjusting the Bicycle to the Rider"** and **"Useful Tips for Riding an EPAC/EAPC"**.

AFTER THE RIDE / MAINTENANCE

- In the event of damage or malfunctions, you have to have your Raymon bike or e-bike checked by your Raymon dealer before further use.
- Have your Raymon bike or e-bike regularly inspected and, if necessary, serviced by your Raymon dealer in order to avoid hazards, e.g. due to wear and tear. You find further information in the chapter **"Service and Maintenance Schedule"**. Or contact your Raymon dealer.
- Observe the specified torque values (Nm) for the assembly of components using a high-quality torque wrench. You find the torque values on the components themselves, in the chapter **"Recommended Torque Values"** or in the manuals of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.
- Be sure to only use rechargeable batteries and chargers approved by the manufacturer.
- Observe the manufacturer's instructions for charging and using the battery, in particular with regard to the ambient temperature and location of the charging process. Be sure to only use undamaged and unmodified rechargeable batteries and chargers. You find more information in the chapter **"Safe Handling of the Rechargeable Battery"** and in the system instructions of the drive system manufacturer.

WARNING

*Regular maintenance of your Raymon bike or e-bike is essential for its suitability and crucial for your safety. You as owner are the only one who knows how often you use your Raymon bike or e-bike, where you use it and how hard you do. It is therefore your responsibility, to have regular servicing and maintenance carried out. For more information see the chapter **"Service and Maintenance Schedule"**. Or contact your Raymon dealer.*

TRANSLATION OF THE ORIGINAL
OPERATING INSTRUCTIONS
EN 15194

RAYMON

E-bike/EPAC/EAPC

Pay particular attention to the following symbols:

⚠ WARNING

This symbol indicates a hazardous situation which could result in death or serious injury – if the relevant operational instructions are not followed or if the relevant protective measures are not taken.

⚠ CAUTION

This symbol indicates a hazardous situation which could result in minor or moderate injury – if the relevant operational instructions are not followed or if the relevant protective measures are not taken.

NOTICE

This symbol is used to address practices not related to physical injury – which may, however, result in damage to property and the environment.

SAFETY INSTRUCTIONS

This symbol indicates specific safety-related instructions or procedures about how to handle the product or refers to a section in the operating instructions that deserves your particular attention.

The described possible consequences will not be repeated in the translation of the Raymon original operating instructions for Raymon EPACs/EAPCs every time one of the symbols appears.

For the sake of better legibility, the male form is used with personal names and personal nouns throughout these Raymon original operating instructions. The terms in question principally apply to all genders in the spirit of equal treatment. The abbreviated language form is used solely for editorial reasons and does not represent any value judgement.

NOTES ON THE TRANSLATION OF THESE RAYMON ORIGINAL OPERATING INSTRUCTIONS

The illustrations show typical Raymon EPACs/EAPCs (c+d) – one of these types may look similar to the Raymon EPAC/EAPC you purchased. Today's EPACs/EAPCs come in various types that are designed for specific uses and equipped accordingly.

The translation of these Raymon original operating instructions is not applicable to any other than the displayed EPAC/EAPC types.

SAFETY INSTRUCTIONS

Read in any case the detailed, type-specific general Raymon bicycle user manual and the system instructions of the drive system manufacturer that you received from your Raymon dealer.

Also observe the enclosed manuals of the component manufacturers. The translation of these Raymon original operating instructions is subject to European law. If delivered to countries outside Europe, supplementary information has to be provided by the bicycle manufacturer.



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The translation of these Raymon original operating instructions is a supplementary manual as to the characteristics of EPACs/EAPCs. It is part of a system together with the drive system manufacturer's system instructions and the detailed, type-specific general Raymon bicycle user manual that you obtained with your Raymon EPAC/EAPC.

The translation of these supplementary instructions together with the additional manuals comply with the requirements of the EN ISO standards 4210-2, the EN 15194 Cycles – Electrically power assisted cycles – EPAC bicycles in the respective current version as well as with the Machinery Directive 2006/42/EC (UK: Supply of Machinery (Safety) Regulations 2008).

In the translation of these Raymon original operating instructions bicycles with drive support and described as EPACs in the European standards EN 15194 and EN 17404 are referred to as EPACs/EAPCs. For a precise description of the different EPAC/EAPC types see the chapter “**Intended Use**”.

The translation of these operating instructions is not intended to help you assemble a Raymon EPAC/EAPC from individual components, to repair it or to make a partly assembled EPAC/EAPC ready-for-use!

SAFETY INSTRUCTIONS

Keep the translation of these Raymon original operating instructions for future reference and hand it over to the respective user, in case you sell, lend or pass on the EPAC/EAPC otherwise.

Technical details in the text and illustrations of the translation of these Raymon original operating instructions are subject to change.

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GENERAL SAFETY INSTRUCTIONS

Dear Raymon Customer,

In purchasing this Raymon EPAC/EAPC (e-h) you have chosen a product of high quality and technology. Each component of your new Raymon EPAC/EAPC has been designed, manufactured and assembled with great care and expertise. Your Raymon dealer gave the Raymon EPAC/EAPC its final assembly and adjustment to guarantee proper operation and many enjoyable riding experiences with complete peace of mind from the very first metres enjoying the tailwind due to the auxiliary drive.

This manual contains a wealth of information on the proper use of your Raymon EPAC/EAPC, its maintenance and operation as well as interesting information on bicycle and EPAC/EAPC design and engineering. Read this manual thoroughly. We are sure that even if you have been cycling (bicycle or EPAC/EAPC) all your life you will find useful and detailed information. EPAC/EAPC technology has developed at a rapid pace during recent years. Therefore, before setting off on your new EPAC/EAPC, be sure to read at least chapter **"Before Your FIRST Ride"**.

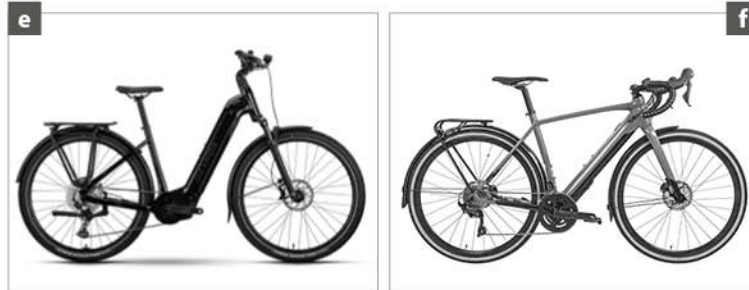
To have as much fun as possible during cycling, be sure to carry out the functional check described in chapter **"Before EVERY Ride"** before setting off.

Even a manual as big as an encyclopaedia could not describe any possible combination of EPAC/EAPC models and components or parts on the market. Therefore, these operating instructions together with the system instructions of the drive system manufacturer and your general Raymon bicycle user manual focus on your newly purchased Raymon EPAC/EAPC and standard components and provide useful information and warnings.

When doing any adjusting and servicing, be aware that the detailed instructions provided in your manual only refer to this Raymon EPAC/EAPC.

The information included here is not applicable to any other EPAC/EAPC or EPAC/EAPC type. As bicycles and EPACs/EAPCs come in a wide variety of designs with frequent model changes, the routines described may require complementary information. Be sure to also observe the instructions of the component suppliers that you may have obtained from your Raymon dealer.

Be aware that these instructions may require further explanation, depending on the experience and/or skills of the person doing the work. For some jobs you may require additional (special) tools or supplementary instructions. This manual cannot teach you the skills of a bicycle mechanic. If you have the slightest doubt ask your Raymon dealer.



E-BIKE/EPAC/EAPC



Before you set off, let us point out a few things to you that are very important to every cyclist. Never ride without a properly adjusted helmet and without glasses (a) and take care to always wear suitable, bright clothing. As a minimum you should wear straight cut trousers or use trouser clips and shoes (b) fitting the pedal system. Always ride carefully on public roads and observe the traffic rules so as not to endanger yourself or others.

This manual cannot teach you how to ride the EPAC/EAPC. Be aware that riding an EPAC/EAPC is a potentially dangerous activity, especially on public roads that requires the rider to stay in control of his or her EPAC/EAPC at all times. Be aware from the moment you set off that you ride at a higher speed. Always keep this fact in mind and ride considerably!

Like any sport, riding an EPAC/EAPC involves the risk of injury and damage. When you set off on an EPAC/EAPC you should be aware and accept this risk. Please note that on an EPAC/EAPC you have no safety devices around you (e.g. bodywork, ABS, airbag) like you have in a car. Therefore, always ride carefully and respect the other traffic participants. Never ride under the influence of drugs, medication, alcohol or when you are tired. Do not ride with a second person on your EPAC/EAPC and never ride without having both hands on the handlebar.

Observe the legal regulations concerning cycling with EPACs/EAPCs off public roads (c). These regulations may differ in each country.

Respect nature when riding through the forest and in the open countryside. Only use your Raymon EPAC/EAPC on signposted, well maintained trails and hard-surface roads.

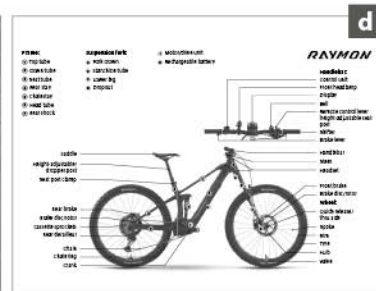
Always bear in mind that you travel rapidly and quietly. Do not startle pedestrians or other cyclists. Always make others aware of your presence well ahead of time and by ringing your bell or make use of the brakes so as to avoid accidents. Familiarise yourself with your Raymon EPAC/EAPC.

First we would like to familiarise you with the components of your Raymon EPAC/EAPC. Unfold the cover of these Raymon original operating instructions. There you will find an exemplary Raymon EPAC/EAPC showing all the essential components (d).

⚠ WARNING

For your own safety, never do any maintenance work or adjusting on your EPAC/EAPC unless you feel absolutely sure about it. If you are in doubt or if you have any questions, contact your Raymon dealer.

Note: Do not hitch yourself and your bike to a car. Do not ride free-hand. Only take your feet off the pedals, if required by the condition of the road. Also bear in mind that riding with headphones is in some countries allowed as long as the acoustic perception is not impaired. Inform yourself about the law situation in the country where you use your EPAC/EAPC.



Displays of Different Manufacturers

- | | |
|----------------------------|--------------------|
| 1 Level/mode of assistance | 5 Gear |
| 2 State of charge | 6 Time |
| 3 Current speed | 7 Total kilometres |
| 4 Average speed | |



There are now nearly all types of bicycles also available as electric bicycles. The types of bicycles are subdivided in the following categories:

- Category 1:** e-city, e-fitness bicycles
- Category 2 "Everyday":** e-trekking, e-touring, e-cross, e-youth bicycles
- Category 2 "Sports":** e-gravel bikes
- Category 3:** e-cross-country, e-marathon, e-touring mountain bikes
- Category 4:** e-enduro, e-all mountain bikes (d), e-trail bikes
- Category 5:** e-downhill, e-freeride mountain bikes
- Category 6:** e-road racing bicycles

It is imperative that you read chapters **"Intended Use"** and **"Before Your First Ride"** of your general Raymon bicycle user manual. There you will find detailed information on the use of the bicycles of the respective category.

The starting or pushing aid (e) provides assistance during pushing (f) or when doing a hill start, even without pedalling, up to a speed of 6 km/h (3.7 mph). Be sure to also read chapter **"Riding an Electric Carrier Cycle – Special Features"**.



⚠ WARNING

Do not modify or manipulate ("tune") your Raymon EPAC/EAPC. Risk of accident! Modifications and manipulations (e.g. dongles etc.) will render the warranty void and result in a loss of the private liability insurance cover. The EPACs/EAPCs are then possibly no longer approved for use on public roads (scope of the Road Traffic Licensing Regulation) and on forest trails.

NOTICE

We recommend that you take out private liability insurance. Make sure that coverage for damage caused during cycling by bicycle or EPAC/EAPC is provided by your insurance. Contact your insurance company or agency.

SAFETY INSTRUCTIONS

The regulations and rules for EPACs/EAPCs and speed pedelecs are continuously revised. Read the daily press to keep you informed about current legislative changes.

For more information on the approval of using trailers (g) and child seats (h) with your Raymon EPAC/EAPC have a look at the Raymon bike card.

2. **Speed pedelecs** (a) are bicycles with an auxiliary motor which provides assistance to the rider even beyond a speed of 25 km/h to max. 45 km/h (15.5 mph to max. 28 mph), as long as you continue pedalling. Without pedalling a speed pedelec provides assistance to a maximum speed of 20 km/h (12.4 mph). In the UK EPACs/EAPCs that can be propelled without pedalling, i.e. by a throttle alone, are also referred to as 'twist and gos'. They require type approval (if bought as of January 2016).

The legal regulations for riding a speed pedelec with regard to driving licence, registration, type approval, requirement to wear a helmet (b), insurance, regulations on the use of cycle lanes etc. are listed in the **"Overview on EPACs/EAPCs, Speed Pedelecs and 'Twist and Gos' – Legal Regulations in Great Britain"** at the end of this chapter. Speed pedelecs are considered motor vehicles and therefore subject to strict regulations relating to the replacement of component and to changes.

One-way streets with signs stating it is permitted for cyclists to ride the wrong way down are not open for speed pedelec riders. Roads which are closed for motor vehicles, motor cycles and mopeds, must neither be used by speed pedelecs.

When you ride a speed pedelec in **Great Britain**, wearing a motorcycle helmet is compulsory.

Most of the speed pedelecs are designed for cycling exclusively on lanes and roads with a smooth surface. Only use trails and tracks that are open to speed pedelecs. Typical speed pedelecs are in general not suitable for off-road use. Using typical speed pedelecs off-road can result in crashes with unforeseeable consequences.

There are now many types of bicycles among the electric speed bicycles belonging to different categories. It is imperative that you read chapters **"Intended Use"** and **"Before Your First Ride"** of your general Raymon bicycle user manual. There you will find detailed information on the use of the bicycles of the respective category.

⚠ WARNING

Do not modify or manipulate ("tune") your speed pedelec. Risk of accident! Modifications and manipulations will render the warranty void and result in a loss of the private liability insurance cover. The speed pedelecs are then possibly no longer approved for use on public roads.

SAFETY INSTRUCTIONS

The regulations and rules for EPACs/EAPCs and speed pedelecs are continuously revised. Read the daily press to keep you informed about current legislative changes.



Overview on EPACs/EAPCs, Speed Pedelecs and 'Twist and Gos' – Legal Regulations in Great Britain¹

	EPAC/EAPC (also with pushing aid)	Speed pedelec	'Twist and go' EAPC
Pedal assistance up to max. km/h (mph)	25 km/h (15.5 mph) MDS ² without pedal assistance 6 km/h (3.7 mph)	45 km/h / 28 mph (with pedalling) 20 km/h / 12.4 mph (without pedalling) MDS ²	Propulsion without pedalling, with throttle
Helmet	recommended	compulsory (motorcycle helmet) ³	compulsory (motorcycle helmet) ³
Rear-view mirror	no	yes (c)	yes (c)
Horn	no	yes	yes
Driving licence	no	yes (cat. AM)	yes (cat. AM)
Registration or type approval	no, however UKCA mark and UKNI mark (North Ireland) and/or CE mark (until 2024/12) ⁴	yes, tax disc, number plate, MOT certificate	yes, tax disc, number plate, MOT certificate
Insurance	no	yes	yes
Riding on cycle lanes permitted	in town: yes out of town: yes	in town: no out of town: no	in town: no out of town: no
Riding on forest trails	yes	no	no
Vehicle class	bicycle	moped	moped
Legal age	14 years	16 years	16 years
Child seat	yes ⁵	forbidden (d)	forbidden (d)
Child trailer	yes ⁵	forbidden	forbidden

¹ In accordance with www.gov.uk/electric-bike-rules

The regulations and rules are continuously revised. Read the daily press to keep you informed about current legislative changes.

² MDS – maximum design speed

³ All helmets worn must meet either the British Standard BS 66558:1985 and carry the BSI Kitemark or the UNECE Regulation 22.05

⁴ UKCA (UK conformity assessed) plus UKNI where North Ireland is involved, see www.gov.uk/guidance/using-the-ukca-marking

⁵ For many bike models this legal authorisation is restricted. Observe the Raymon bike card.

Last update 2024/01

WARNING

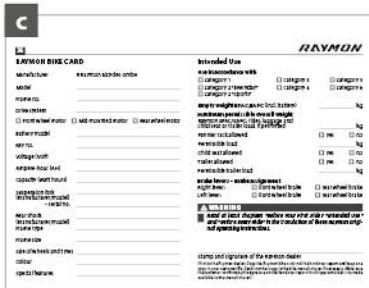
Tuning, i.e. improvement in performance and speed, is not a trivial offence, but has far-reaching consequences ranging from loss of insurance cover, prohibition of use on public roads and paths, to possible material failure due to overload.

1. Have you ever ridden an EPAC/EAPC? Note the particular riding characteristics of this revolutionary hybrid drive concept (a+b). Set off for your first ride by selecting the lowest level of drive assistance. Slowly approach the potential of your Raymon EPAC/EAPC in an area free of traffic.

For more information in this regard, read chapter “**Useful Tips for Riding an EPAC/EAPC**”.

2. Your Raymon EPAC/EAPC is designed for a **maximum permissible overall weight** including the rider, the luggage, the Raymon EPAC/EAPC and the child seat or trailer load, if permitted. The maximum permissible overall weight is specified on the type plate on the Raymon EPAC/EAPC or in the Raymon bike card (c) in these operating instructions. If you are in doubt, contact your Raymon dealer.

Do not hang any bags or other heavy or big objects (such as umbrellas) to the handlebar of your Raymon EPAC/EAPC. Risk of accident!



Strictly observe the category to which your Raymon bicycle/EPAC/EAPC belongs. From the category you can conclude which grounds and riding actions are suitable for your bicycle. You find the categories in chapter "Intended Use" as well as in the same chapter in your detailed, general Raymon bicycle user manual as well as in the Raymon bike card.

- Do not wear long skirts, flared trousers or ponchos and do not hang long strings, bands or the like to your Raymon EPAC/EAPC during the ride. There is the risk of getting caught in the wheels or in the drive. Risk of accident!***

The weight or the weight distribution on EPACs/EAPCs differs significantly from that on bicycles without drive system. An EPAC/EAPC is clearly heavier than a bicycle without drive assistance. For this reason parking, pushing, lifting and carrying the EPAC/EAPC is more difficult. Bear this in mind when loading your Raymon EPAC/EAPC into a car and unloading it or when mounting it on a bicycle carrier system (d).

- The A-weighted emission sound pressure level at the rider's ears is less than 70 dB(A).**

3. If you want to use your Raymon EPAC/EAPC on public roads, it has to comply with the respective legal requirements, in particular as regards the lighting. These requirements may vary in each country. The equipment of your Raymon EPAC/EAPC is therefore not necessarily complete. Ask your Raymon dealer for the laws and regulations applicable in your country or in the country you intend to use the Raymon EPAC/EAPC. Have your Raymon EPAC/EAPC equipped accordingly, before using it on public roads (e).
4. The rechargeable battery of your Raymon EPAC/EAPC must be charged before you set off for the first time (f). Are you familiar with the handling and mounting of the rechargeable battery? Before you set off for the first time, check whether the battery is properly mounted, that it has engaged audibly and that it is locked.

You find more information in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.

⚠ WARNING

- **We recommend that you charge your battery during the day and only in dry rooms which have a smoke or a fire detector; but keep it off your bedroom. Place the battery during the charging process on a big, non-inflammable plate made of ceramics or glass!**
- **Charge your battery with the supplied charger only. Do not use the charger of any other manufacturer, not even when the connector of the charger matches your rechargeable battery. The rechargeable battery can heat up, catch fire or even explode!**
- **Do not charge and park the Raymon EPAC/EAPC in the blazing sun. Temperatures above 40 °C (104 °F) may result in a failure of the battery.**

SAFETY INSTRUCTIONS

- **Note that the rechargeable battery switches into the sleep mode after a few days of non-use. If you want to know how to awake the battery, you find more information in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.**



5. The functions of your Raymon EPAC/EAPC are operated with the buttons on the control element at the handlebar (g+h, p. 11).

Are you familiar with all functions and displays? Check whether you know the functions of all buttons (a).

You find more information in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.

6. Are you familiar with the brake system? Have a look at the Raymon bike card and check whether you can actuate the front brake with the same brake lever or brake lever/shifter (right or left) you are used to. If it is not, have it modified by your Raymon dealer before you set off for the first time! Make sure that the lever-to-brake assignment is the same across all your bikes.

Your new Raymon EPAC/EAPC is equipped with modern brakes (b) which may be far more powerful than those you were used to so far. Be sure to first practise using the brakes on a level, non-slip surface off public roads! If you have an e-mountain bike also practise on loose ground.

Slowly approach higher brake performances and speeds. For more information see chapter **"Brake System"** of your general Raymon bicycle user manual and the enclosed operating instructions.

⚠ WARNING

- **The brakes of your Raymon EPAC/EAPC are always more effective than the drive system. If you have problems with your drive (e.g. because it pushes you forward in front of a bend), stop pedalling and actuate both brakes of your Raymon EPAC/EAPC carefully.**
 - **Pull the brake lever or brake lever/shifter of the rear brake and stop pedalling. The Raymon EPAC/EAPC stops. Emergency stop/ Emergency switching off! With a front motor, however, the front brake must be actuated carefully. The shortest possible stopping distance is achieved by braking with both brakes simultaneously and gradually.**
7. Are you familiar with the type and functioning of the gears (c+d)? Ask your Raymon dealer to explain the gear system to you and make yourself familiar with your new gears in an area free of traffic, if necessary. For more information see chapter **"Gears"** of your general Raymon bicycle user manual and the enclosed operating instructions.



8. Are both saddle and handlebar properly adjusted? The saddle should be set to a height from which you can just reach the pedal in its lowest position with your heel. Check whether your toes reach to the floor when you are sitting on the saddle.

Your Raymon dealer will be pleased to help you, if you are not happy with your seating position. For more information see chapter **"Adjusting the Bicycle to the Rider"** of your general Raymon bicycle user manual.

9. If your Raymon EPAC/EAPC is equipped with clipless or step-in (e) pedals: Have you ever tried cycling with the respective cycling shoes? Do not set off until you have practised engaging and disengaging the shoes from the pedals in standing. Ask your Raymon dealer to explain the pedals to you. For more information see chapter **"Pedals and Shoes"** of your general Raymon bicycle user manual and the enclosed operating instructions.
10. If you bought a Raymon EPAC/EAPC with suspension (f+g), you should ask your Raymon dealer to carry out the proper adjustment of the chassis. Improperly adjusted suspension forks or suspension elements can result in malfunction or damage to the suspension elements. In any case they will impair the performance of your Raymon EPAC/EAPC as well as your safety and joy whilst cycling.

For more information see chapters **"Suspension Forks"**, **"Rear Shock"** and **"Suspension Seat Posts"** of your general Raymon bicycle user manual. Further instructions regarding suspension forks are possibly enclosed with these operating instructions.

11. Are parts of your Raymon EPAC/EAPC made of carbon? Note that this material requires special care and must be used carefully. Read in any case the chapter **"Carbon – Important Information"** in your general Raymon bicycle user manual.

⚠ WARNING

- *When mounting your Raymon EPAC/EAPC, make sure not to step in the pedals until you sit in the saddle and grip the handlebar tight and that one pedal is at the lowest position when you get on. The motor assistance might switch on suddenly and result in an uncontrolled start of your Raymon EPAC/EAPC. Risk of accident!*
- *Be aware that the distance you need to stop your Raymon EPAC/EAPC may increase, when you are riding with your hands on bar ends or multi position handlebars. The brake levers are not in all gripping positions within easy reach.*
- *Note that both braking effect and tyre grip can be reduced drastically in wet conditions. Look well ahead when riding on wet roads and on loose ground and ride clearly slower than you would in dry conditions.*



⚠ WARNING

A lack of practice when using clipless pedals or too much spring tension in the mechanism can lead to a very firm connection, from which you cannot quickly step out. Risk of accident!

⚠ CAUTION

The weight or the weight distribution on EPACs/EAPCs differs significantly from that on bicycles without drive system. An EPAC/EAPC is clearly heavier than a bicycle without drive assistance. For this reason parking, pushing, lifting and carrying the EPAC/EAPC is more difficult. Bear this in mind when loading your Raymon EPAC/EAPC into a car and unloading it or when mounting it on a bicycle carrier system.

Make particularly sure there is enough space between your crotch and the top tube (h, p. 13) so that you do not hurt yourself, if you have to get off your Raymon EPAC/EAPC quickly.

NOTICE

Note that not all Raymon EPACs/EAPCs are equipped with kickstands. Therefore, when parking your Raymon EPAC/EAPC, make sure it stands safe and secure and is not at risk of toppling over or being knocked over. If your Raymon EPAC/EAPC topples over, it can suffer from damage.

Check with your insurers that the Raymon EPAC/EAPC as well as the storekeeping and the charging of lithium-ion batteries are covered by your household and fire insurance. Read the daily press to keep yourself informed about current legislative changes.

SAFETY INSTRUCTIONS

For more information on the approval of using trailers and child seats on your Raymon EPAC/EAPC, have a look at the Raymon bike card (c).

BEFORE EVERY RIDE

Your Raymon EPAC/EAPC has undergone numerous tests during production and a final check has been carried out by your Raymon dealer.

Nevertheless, be sure to check the following points before every ride to exclude any malfunctioning that may be due to the transport of your Raymon EPAC/EAPC or to modifications a third person may have performed on your Raymon EPAC/EAPC during a standing time:

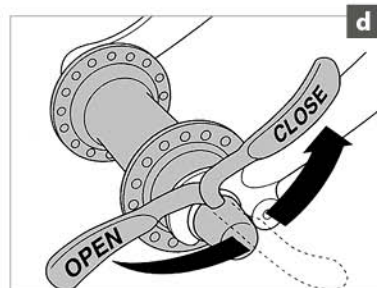
1. Are the quick-releases (d), thru axles or the bolted connections of the front and rear wheel, the seat post and other components properly closed?

For more information see chapter "How to Use Quick-Releases and Thru Axles" of your general Raymon bicycle user manual and the enclosed operating instructions.

⚠ CAUTION

Remove the rechargeable battery or the display before doing any work on your Raymon EPAC/EAPC (e.g. servicing, repairs, assembly, maintenance, work on your drive etc.). Activating the drive systems unintentionally bears the risk of injury!

RAYMON	
RAYMON BIKE CARD	Intended Use
Model:	Intended use with:
Serial no.:	☐ category 1 ☐ category 2 ☐ category 3
Year of manufacture:	☐ category 4 ☐ category 5
Weight:	☐ category 6
Weight distribution:	☐ category 7
Weight of the battery:	☐ category 8
Weight of the display:	☐ category 9
Weight of the motor:	☐ category 10
Weight of the controller:	☐ category 11
Weight of the sensor:	☐ category 12
Weight of the pedal:	☐ category 13
Weight of the seat:	☐ category 14
Weight of the handlebar:	☐ category 15
Weight of the stem:	☐ category 16
Weight of the fork:	☐ category 17
Weight of the rear frame:	☐ category 18
Weight of the front frame:	☐ category 19
Weight of the wheel:	☐ category 20
Weight of the tire:	☐ category 21
Weight of the tube:	☐ category 22
Weight of the valve:	☐ category 23
Weight of the pump:	☐ category 24
Weight of the tool:	☐ category 25
Weight of the repair kit:	☐ category 26
Weight of the spare part:	☐ category 27
Weight of the accessory:	☐ category 28
Weight of the bag:	☐ category 29
Weight of the lock:	☐ category 30
Weight of the key:	☐ category 31
Weight of the chain:	☐ category 32
Weight of the cassette:	☐ category 33
Weight of the chainring:	☐ category 34
Weight of the pedal:	☐ category 35
Weight of the crank:	☐ category 36
Weight of the bottom bracket:	☐ category 37
Weight of the headset:	☐ category 38
Weight of the handlebar:	☐ category 39
Weight of the stem:	☐ category 40
Weight of the fork:	☐ category 41
Weight of the rear frame:	☐ category 42
Weight of the front frame:	☐ category 43
Weight of the wheel:	☐ category 44
Weight of the tire:	☐ category 45
Weight of the tube:	☐ category 46
Weight of the valve:	☐ category 47
Weight of the pump:	☐ category 48
Weight of the tool:	☐ category 49
Weight of the repair kit:	☐ category 50
Weight of the spare part:	☐ category 51
Weight of the accessory:	☐ category 52
Weight of the bag:	☐ category 53
Weight of the lock:	☐ category 54
Weight of the key:	☐ category 55
Weight of the chain:	☐ category 56
Weight of the cassette:	☐ category 57
Weight of the chainring:	☐ category 58
Weight of the pedal:	☐ category 59
Weight of the crank:	☐ category 60
Weight of the bottom bracket:	☐ category 61
Weight of the headset:	☐ category 62
Weight of the handlebar:	☐ category 63
Weight of the stem:	☐ category 64
Weight of the fork:	☐ category 65
Weight of the rear frame:	☐ category 66
Weight of the front frame:	☐ category 67
Weight of the wheel:	☐ category 68
Weight of the tire:	☐ category 69
Weight of the tube:	☐ category 70
Weight of the valve:	☐ category 71
Weight of the pump:	☐ category 72
Weight of the tool:	☐ category 73
Weight of the repair kit:	☐ category 74
Weight of the spare part:	☐ category 75
Weight of the accessory:	☐ category 76
Weight of the bag:	☐ category 77
Weight of the lock:	☐ category 78
Weight of the key:	☐ category 79
Weight of the chain:	☐ category 80
Weight of the cassette:	☐ category 81
Weight of the chainring:	☐ category 82
Weight of the pedal:	☐ category 83
Weight of the crank:	☐ category 84
Weight of the bottom bracket:	☐ category 85
Weight of the headset:	☐ category 86
Weight of the handlebar:	☐ category 87
Weight of the stem:	☐ category 88
Weight of the fork:	☐ category 89
Weight of the rear frame:	☐ category 90
Weight of the front frame:	☐ category 91
Weight of the wheel:	☐ category 92
Weight of the tire:	☐ category 93
Weight of the tube:	☐ category 94
Weight of the valve:	☐ category 95
Weight of the pump:	☐ category 96
Weight of the tool:	☐ category 97
Weight of the repair kit:	☐ category 98
Weight of the spare part:	☐ category 99
Weight of the accessory:	☐ category 100



2. Is the battery tight in its holder (e) and properly locked up (f)? Never set off with a loose and unlocked battery.

You find more information in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.

3. Does the display on the control element and the cycle computer on the handlebar show all values (g+h)? Is there any error message or warning on the display? Check the values are correct before every ride. Do not set off on your Raymon EPAC/EAPC when the control element shows a warning.

You find more information in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.

4. Are the connections of the rechargeable battery, the control element on the handlebar and the drive (a+b, p. 16) properly plugged?

You find more information in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.

5. Is your battery fully charged? Remember to fully recharge the battery after each longer ride (e.g. less than 50 % charged). Modern lithium-ion batteries have no memory effect. However, it does not matter if your Raymon EPAC/EAPC is left as it is for a short time (e.g. overnight) when less than 50 % charged. However, you should not wait until the battery is fully discharged!

You find more information in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.



6. Are the tyres in good condition and do they have sufficient pressure (c)? Note that an EPAC/EAPC weighs heavier and that your usual tyre pressure may be insufficient. A higher pressure gives a better riding stability and reduces the risk of a puncture. The minimum and maximum pressure (in bar or psi) is indicated on the tyre side.

For more information see chapter **“Wheels and Tyre Equipment”** of your general Raymon bicycle user manual and the enclosed operating instructions.

7. Spin the wheels to check whether the rims are true. If you have disc brakes, watch the gap between frame and rim or tyre and, if you have rim brakes, between brake pad and rim. Untrue rims can be an indication of tyres with ruptured sides or broken axles or spokes.

For more information see chapter **“Wheels and Tyre Equipment”** of your general Raymon bicycle user manual and the enclosed operating instructions.

8. Test the brakes as the bicycle is standing by firmly pulling the brake levers or brake levers/shifters towards the handlebar (d). Make sure you cannot pull the brake levers all the way to the handlebar. If your bicycle has hydraulic brakes, check the hydraulic brake cables for oil or brake fluid leaks! Also check the thickness of the brake pads.

With disc brakes you should have a stable pressure point at once. If you have to actuate the brake lever more than once to get a positive braking response, have the Raymon EPAC/EAPC checked by your Raymon dealer.

The brake pads of rim brakes must hit the rim evenly with their entire surface without touching the tyre during braking, in open condition or in between.

For more information see chapter **“Brake System”** of your general Raymon bicycle user manual and the enclosed operating instructions.

9. Let your Raymon EPAC/EAPC bounce on the ground from a small height. If there is any rattling, check where it comes from. Check the bearings, the bolts and the proper seat of the battery, if necessary.



10. If you want to ride on public roads, make sure your Raymon EPAC/EAPC is equipped according to the regulations of your country (e). Riding without lights and reflectors in dark or dim conditions is very dangerous because you will be seen too late or not at all by other road users.

A permissible lighting system is a must on public roads. Turn on the lights as soon as dusk sets in.

For more information see chapter “**Legal Requirements for Riding on Public Roads**” of your general Raymon bicycle user manual.

11. If your Raymon EPAC/EAPC has suspension (f), check it as follows: Press down on your Raymon EPAC/EAPC and see whether the spring elements retract and extend as usual.

For more information see chapters “**Suspension Forks**”, “**Rear Shock**” and “**Suspension Seat Posts**” of your general Raymon bicycle user manual as well as the enclosed operating instructions.

12. If your bike has a kickstand, make sure it is fully raised before you set off. **Risk of accident!**
13. Do not forget to take a high-value folding, D- (g) or chain lock with you on your ride. The only way to effectively protect your EPAC/EAPC against theft is to lock it to an immovable object.



⚠ WARNING

- **Improperly closed quick-releases (h) and other fastenings can cause components to come loose and result in serious accidents!**
- **Do not use your Raymon EPAC/EAPC, if it fails on one of these points! Riding a defective Raymon EPAC/EAPC can result in serious accidents! If you are in doubt or if you have any questions, contact your Raymon dealer.**
- **The drive is free of vibrations. During use your Raymon EPAC/EAPC is undergoing stress resulting from the surface of the road and through the rider's action. Due to these dynamic loads, the different parts of the Raymon EPAC/EAPC react with wear and fatigue. Please check your Raymon EPAC/EAPC regularly for wear marks, scratches, deformations, colour changes and any indication of cracking. Components which have reached the end of their service life may fail suddenly without previous warning. Let your Raymon dealer maintain and service your Raymon EPAC/EAPC regularly and in cases of doubt it is always best to replace components.**

NOTICE

- **Remove, if possible, the display when parking the Raymon EPAC/EAPC. This is to protect the Raymon EPAC/EAPC against theft; in addition, it cannot be used with drive assistance ad hoc.**

USEFUL TIPS FOR RIDING AN EPAC/EAPC

Your Raymon EPAC/EAPC is designed to be used like a conventional bicycle. The unique riding experience, however, starts when you actuate the drive system (a). At that moment the assistance generated by the powerful motor/drive unit increases with its high torque the stronger you pedal.

Set off for your first ride by selecting the lowest level of drive assistance. Gradually get used to the additional propulsion. Slowly approach the potential of your Raymon EPAC/EAPC in an area free of traffic. Practise typical riding situations such as starting off and braking, tight corners and riding on narrow cycle paths and lanes. This is where an EPAC/EAPC clearly differs from a conventional bicycle.

⚠ WARNING

The brakes of your Raymon EPAC/EAPC are always more effective than the drive system. If you have problems with your drive (e.g. because it pushes you forward in front of a bend), stop pedalling and actuate both brakes of your Raymon EPAC/EAPC carefully.

Pull the brake lever or brake lever/shifter of the rear brake and stop pedalling. The Raymon EPAC/EAPC stops. Emergency stop/Emergency switching off! With a front motor, however, the front brake must be actuated carefully. The shortest possible stopping distance is achieved by braking with both brakes simultaneously and gradually.



Riding with Drive Assistance

The system is switched on and off at the buttons of the control element on the battery (b) or on the handlebar (c). Furthermore, different assistance modes can be selected, the remaining capacity of the rechargeable battery is displayed and different functions of the cycle computer (d) can be selected, if necessary.

When switched on, the system activates during pedalling and the drive assistance is available. Sensors measure your pedalling movements and control the fully automated drive assistance according to the selected assistance mode. The level of the additional propulsion depends on the assistance mode, your speed and, as applicable, the amount of force applied to the pedals.

The assistance switches off when you reach a speed of more than 25 km/h (15.5 mph).

Keep in mind that you may have to change your riding habits:

Do not mount by placing one foot on the pedal and by trying to throw the other leg over the saddle. The Raymon EPAC/EAPC would set off suddenly. **Risk of accident!**

Stop pedalling earlier than you are used to before riding a turn or bend. Otherwise there may be too much propulsion and your cornering speed may be too high.

Do not give in to the temptation to always ride in a high gear, due to the powerful motor/drive unit. Shift gears frequently (e) in the same way that you are used to doing with a conventional bicycle so as to make your own contribution to your forward progress as efficient as possible. Your cadence should always be in a smooth flow. In other words, you should pedal at more than 60 crank rotations per minute. Shift down before stopping.

Keep in mind that the other road users are not yet used to EPACs/EAPCs and their higher speeds. Ride with this fact in mind and anticipate the actions of other road users. Be aware that the speed you ride at will be clearly faster than you are used to. Therefore, keep these facts in mind and be ready to brake whenever an unclear or a possibly dangerous situation comes into your field of vision.

⚠ WARNING

Do a test ride in an unfrequented area (f) to make yourself familiar with the riding characteristics of your Raymon EPAC/EAPC and the possibly higher speed and acceleration, before riding on public roads. Risk of accident! Never ride without a helmet!



⚠ WARNING

When getting on your Raymon EPAC/EAPC make sure not to step in the pedals until you sit in the saddle and have a firm grip on the handlebars or that the pedal is at its lowest point when getting on. The motor assistance may switch on unexpectedly and result in an uncontrolled start of your Raymon EPAC/EAPC. Risk of accident!

Keep in mind that due to the higher driving power at the rear wheel and in particular in the case of the much less frequently used front wheel motors (g) the risk of an accident increases with slippery roads (due to wetness, snow, gravel etc.). This applies all the more when riding bends. Risk of accident!

Note that car drivers and other road users may underestimate your speed. Always wear bright clothing. Therefore, always ride on public roads with this fact in mind and anticipate the actions of other road users. Risk of accident!

Keep in mind that pedestrians do not hear you when you approach at high speed. Therefore, ride particularly defensive and anticipating when using cycle lanes and cycle/footpaths to avoid accidents. If necessary, ring the bell to warn others (h).

Range – Useful Information for a Long Ride

How long and how far you can benefit from the auxiliary drive depends on several factors, i.e. the road conditions, the weight of the rider and any additional load, the rider's pedal force, the degree or mode of assistance, (head)winds, frequent stops, temperature, weather conditions, topography, tyre pressure etc.

The charge state of your rechargeable battery can be read from the display of the control element on the handlebar (a+b) or, additionally, on the rechargeable battery (c).

You find more information in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.

To extend the range it is recommended that you ride with low or no assistance at all on level or downhill trails and only select maximum drive assistance with headwinds, heavy additional loads and/or when climbing hills.

Furthermore, you can extend the range by

- checking the tyre pressure regularly, i.e. once a week with pressure gauge (d), and changing it, if necessary
- shifting gears down in front of traffic lights and intersections or in general in cases of stops and by setting off in low gears

- changing gears regularly, as you are used to on a bicycle without drive, i.e. by not only riding in high gears
- riding with these facts in mind and always looking ahead to avoid any unnecessary stops
- reducing your additional load, i.e. without unnecessary luggage
- storing your battery in your home and installing it only shortly before you set off on your Raymon EPAC/EAPC in cooler weather, in particular when it is cold
- not parking the Raymon EPAC/EAPC in the blazing sun

Some EPACs/EAPCs offer the possibility to switch downhill into the recuperation mode for energy recuperation. For more information on whether your Raymon EPAC/EAPC has the possibility of energy recuperation, read the system instructions of the drive system manufacturer.

If your battery has not enough capacity to reach your destination, benefit from the decisive advantage of the hybrid concept of your Raymon EPAC/EAPC: Without drive assistance you can ride your Raymon EPAC/EAPC like a conventional bicycle with an unlimited range and nearly without compromising on riding characteristics.



⚠ WARNING

If your rechargeable battery runs empty during the ride, be sure to charge it only with the supplied charger (e). Do not use the charger of any other manufacturer, not even when the connector of the charger matches your rechargeable battery. The rechargeable battery can heat up, catch fire or even explode!

NOTICE

The batteries of Raymon EPACs/EAPCs have no memory effect. It is recommended that you charge the battery after every long ride. Avoid any deep discharge of the rechargeable battery.

Fully discharge your rechargeable battery every three month and recharge it then immediately. This calibrates the capacity indicator and restores its accuracy.

Note that the rechargeable battery of your EPAC/EAPC will show signs of wear over the years. The capacity of the battery will constantly reduce as a result thereof; in addition, the range per battery charge will be significantly shorter than in the beginning. After a certain period of time it is even necessary to replace the battery.

SAFETY INSTRUCTIONS

For more information about how to use the battery's performance to the maximum, see chapter "Safe Handling of the Rechargeable Battery".

**Riding without Drive Assistance**

You can also use your Raymon EPAC/EAPC without drive assistance, i.e. just like a conventional bicycle.

Observe the following points when riding with the drive switched off or with a discharged rechargeable battery:

- Switch on the control element of your Raymon EPAC/EAPC at the handlebar, even when riding without drive assistance; the functions of your cycle computer are only then available.
- If the lighting system (f) is powered by the rechargeable battery, it can even be used when the battery is empty. It is, however, recommended that you recharge the battery immediately after you have returned.
- After you have removed the battery of your Raymon EPAC/EAPC from the down tube (g) or the pannier rack: Keep the connections of the rechargeable battery (h) free of dirt and moisture. Protect the connections of your rechargeable battery with the protective covers, if supplied. With the battery removed the display and in particular the lighting system will most probably no longer work. You should no longer use the Raymon EPAC/EAPC on public roads and under no circumstances ride in poor visibility, twilight or darkness.

RIDING AN ELECTRIC CARRIER CYCLE – SPECIAL FEATURES

Your electric carrier cycle was specifically designed for transporting cargo as well as heavier and bulky goods (a). With specific seats and straps some electric carrier cycles are also suitable for transporting children. Transporting cargo differs a lot from riding a classic bicycle or EPAC/EAPC and requires that you get used to it.

Be sure to load the loading surface evenly. Heavy packages should be loaded as far down and backwards as possible. Make sure the cargo does not protrude on the sides. Secure the cargo against shifting, e.g. by using tightening straps (b).

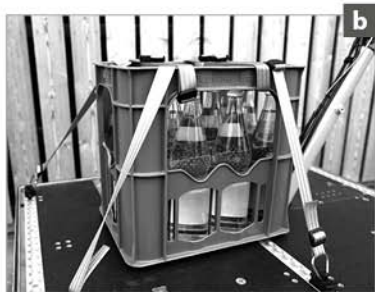
Riding an electric carrier cycle requires special skills and care. Start by riding your electric carrier cycle in unloaded condition in an area free of traffic (c) and other road users until you have full control of it. Also practise cornering (d) and riding downhill as well as braking and emergency braking. Once you feel secure try out riding with cargo which you should increase gradually.

You will quickly notice that the riding characteristics are much slower than that of a classic bicycle. Ride therefore defensively and anticipate a larger turning circle, longer evasive manoeuvres and stopping distances.

Also practise parking (jacking up) the electric carrier cycle.

⚠ WARNING

- ***Do not set off before having safely stowed, i.e. actively secured the items in the transport box with tightening straps. Cargo shifting may otherwise modify the centre of gravity and result in critical riding situations. Risk of accident!***
- ***Stow heavy items in the transport box or on the loading surface as far down and towards the middle of the electric carrier cycle as possible. When distributing the loads make sure your electric carrier cycle is loaded as evenly as possible.***
- ***Do not overload your electric carrier cycle. Your EPAC/EAPC is designed for a maximum permissible overall weight including the rider, the luggage, the EPAC/EAPC and the child seat or trailer load, if permitted. The maximum permissible overall weight is specified on the type plate on the EPAC/EAPC or in the Raymon bike card in these operating instructions. If you are in doubt, contact your Raymon dealer.***
- ***Adjust the tyre pressure to the additional weight. The maximum pressure is indicated on the tyre side.***



WARNING

Both luggage and loads modify the riding characteristics of your electric carrier cycle in general and lengthen the braking distance! Therefore, practise riding and braking with your loaded electric carrier cycle in a place free of traffic. Ride particularly considerate and anticipate critical situations.

Different carrier cycles are designed for different purposes of use. Please note that not every model is suitable for the transport of children. The transport of children in carrier cycles without specific equipment is dangerous and therefore forbidden! Ask your Raymon dealer whether your model is suitable for child transport in general and whether it can be retrofitted with specific equipment for the transport of children.

Keep in mind that too much additional load will also increase wear. Check therefore the condition of the wearing parts regularly, at least observe the intervals given in the chapter "Service and Maintenance Schedule" in your general Raymon bicycle user manual. Under adverse conditions, e.g. when you ride a lot in rainy and dirty conditions and with a lot additional load or when you do a lot of altitude metres, you have to anticipate even clearly shorter intervals.

SAFETY INSTRUCTIONS

Your electric carrier cycle is longer and wider than a usual bicycle or EPAC/EAPC. There is not always enough space for electric carrier cycles provided in bike-parking facilities. Make sure that you neither obstruct the road nor the bike lane/footpath, e.g. for wheelchair users, when parking your electric carrier cycle.

The regulations and rules for electric carrier cycles are continuously revised. Read the daily press to keep you informed about current legislative changes.

SAFE HANDLING OF THE RECHARGEABLE BATTERY

When you do not use your Raymon EPAC/EAPC for a longer period of time (e.g. during the winter season) observe some particularities. Store the rechargeable battery (g) or the complete Raymon EPAC/EAPC when the battery is integrated in the frame in a dry room at temperatures between 5 and 20 °C (41 and 68 °F). The state of charge should be 50 to 70 % of the charging capacity. Check the state of charge, if the rechargeable battery is left unused for more than two months, and recharge it in between, if necessary (h).

Clean the battery housing with a dry or, if at all, a slightly moist rag. Look out for possible defects of the housing. Do not direct the water jet of a high-pressure cleaner at the rechargeable battery, as there is a risk of water entry and/or short-circuit. Check after every cleaning process whether the area around the rechargeable battery is free of water and whether the contacts are dry.

You find more information on the proper handling of your rechargeable battery in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.



⚠ WARNING

Charge your battery (a) with the supplied charger only. Do not use the charger of any other manufacturer, not even when the connector of the charger matches your rechargeable battery (b). The rechargeable battery can heat up, catch fire or even explode!

Charge the battery with an ambient temperature of 15 to 25 °C (59 to 77 °F). Let hot batteries cool down beforehand. You should also let the battery warm up to room temperature before connecting it to the charger in winter or after a ride in cold weather.

We recommend that you charge your battery during the day and only in dry rooms which have a smoke or a fire detector; but keep it off your bedroom. Place the battery during the charging process on a big, non-flammable plate (c) made of ceramics or glass! Unplug the battery once it has been charged up.

Make sure your rechargeable battery (d) is in sound condition. Do not open, disassemble or crush the battery. Risk of explosion!

Do not use a rechargeable battery or a charger that is defective. If you are in doubt or if you have any questions, contact your Raymon dealer.

⚠ WARNING

Keep the rechargeable battery and the charger out of the reach of children!

Do not charge any other electrical devices with the supplied charger of your Raymon EPAC/EAPC!

Keep your battery away from fire and heat. Risk of explosion!

The drive is not approved for steam cleaning, high-pressure cleaning or cleaning with a water hose. The contact of the electrics or the drive with water can destroy the units. Risk of explosion!

Do not short-circuit rechargeable batteries. Store them therefore in a safe storage place and make sure there is no accidental contact with other conductive materials, e.g. metal parts, which might cause a short-circuit with each other. Do not deposit any objects in the storage area (e.g. clothes).

Keep the rechargeable battery and the charger away from moisture and water during the charging process to exclude electric shocks and short circuits.

Do not expose your battery or the charger to the blazing sun during charging. Temperatures above 40 °C (104 °F) may result in a failure of the battery.



WARNING

Make sure to use the battery only for the Raymon EPAC/EAPC for which it is designed.

If the rechargeable battery or the charger (or parts of it) must be replaced, only use original spare parts. Contact your Raymon dealer.

NOTICE

When you remove your battery (e) from the holder for charging it with your Raymon EPAC/EAPC left in the open during the charging process, you should protect the connections (f), e.g. with a plastic bag against rain, water, moisture and dirt. If the connections of the rechargeable battery are soiled, clean them with a dry rag.

Make sure not to discharge your rechargeable battery completely (also referred to as depth discharge). This occurs often when the battery has run out completely and the Raymon EPAC/EAPC was left standing for some days. Depth discharge will affect the rechargeable battery of your Raymon EPAC/EAPC permanently. A deep-discharged battery can only be recharged in exceptional cases and with special chargers. Contact your Raymon dealer.

NOTICE

If possible, remove the rechargeable battery from your Raymon EPAC/EAPC or e-bike if you do not use your Raymon EPAC/EAPC for a longer period of time and keep it clean and dry.

Do not charge your battery over a long period of time, if you do not need it. When the battery is fully charged remove the charger at short term.

Do not dispose of your rechargeable battery in the normal household rubbish (g)! It must be disposed of according to battery disposal regulations. Therefore, sellers of new rechargeable batteries must provide collection of old batteries and appropriate disposal. If you are in doubt or if you have any questions, contact your Raymon dealer.

SAFETY INSTRUCTIONS

Lithium-ion batteries have no memory effect; they can therefore be charged regardless of their state of charge without affecting their charging capacity.

Also observe the notes on the respective labels on the rechargeable battery or on the charger (h).



TRANSPORTING THE EPAC/EAPC

By Car

Raymon EPACs/EAPCs can be transported like conventional bicycles outside (a) or inside the car. Always make sure the EPAC/EAPC is securely fastened outside or inside the car and check the fastenings regularly. In addition, you should always remove the battery from the EPAC/EAPC (b), if possible, prior to fastening the EPAC/EAPC on the car roof. Stow the battery in its original cardboard box (from the Raymon dealer) and, if mounted, the removable display unit inside the car and secure it appropriately to avoid any damage during transport. Also dismount accessories, such as a tyre pump, panniers, etc.

For more information see chapter “Transporting the Bicycle by Car” of your general Raymon bicycle user manual.

CAUTION

The weight or the weight distribution on EPACs/EAPCs differs significantly from that on bicycles without drive system. An EPAC/EAPC is clearly heavier than a bicycle without drive assistance. For this reason parking, pushing, lifting and carrying the Raymon EPAC/EAPC is more difficult. Bear this in mind when loading your Raymon EPAC/EAPC into a car and unloading it or when mounting it on a bicycle carrier system.



NOTICE

Before transporting several Raymon EPACs/EAPCs with a roof mounting or a rear mounting carrier system, inform yourself about the maximum load capacity of the bicycle carrier. Keep in mind that the weight of an EPAC/EAPC is higher than the weight of a bicycle without drive. It could be that you are only allowed to transport one or two Raymon EPACs/EAPCs instead of three bicycles without drive.

Make sure to remove all movable and loose parts (c) and above all the rechargeable battery, the control element and the cycle computer on the handlebar before transporting the Raymon EPAC/EAPC inside or outside the car. If you transport your Raymon EPAC/EAPC without its battery on a bike carrier system, protect the connections against water, moisture and dirt, e.g. with a plastic bag.

SAFETY INSTRUCTIONS

If necessary, inform yourself about the laws and regulations concerning bicycle or EPAC/EAPC transport in the countries that you intend to transit during your journey. The laws and regulations differ, e.g. with regard to the marking (d).

By Train / By Public Transport

Raymon EPACs/EAPCs (e) can be transported like conventional bicycles by public transport.

Taking bicycles or EPACs/EAPCs with you by public transport is permitted in general (f), the regulations applicable in the cities differ, however. There are e.g. some places where you are only allowed to travel with your EPAC/EAPC during off-peak hours and with an additional bicycle ticket. Inform yourself in time about the regulations of carrying the EPAC/EAPC before you start the trip!

In some countries regional trains have special spaces for the storage of EPACs/EAPCs and other things. This is an option to take your Raymon EPAC/EAPC with you. They are often at the front or end of a train and marked with a bicycle sign.

When taking a high-speed train check whether you can take your EPAC/EAPC or bicycle with you.

CAUTION

If the rechargeable battery of your Raymon EPAC/EAPC is mounted to the down tube (g) or to the pannier rack, you can remove the battery (h) for an easier boarding and disembarking.



SAFETY INSTRUCTIONS

Before you start your trip inform yourself in time about the conditions of carriage and also observe the regulations and rules about bicycle transport in the countries through which you intend to travel.

By Plane

If you intend to take your Raymon EPAC/EAPC by plane or to dispatch it by a forwarding agent, you have to observe particular packing and labelling requirements for rechargeable batteries which are considered as hazardous goods. Contact the airline, an expert for hazardous items or the forwarding agent in time.

SAFETY INSTRUCTIONS

Contact the airline with which you intend to travel in time and inform yourself about conditions and possibilities of taking your Raymon EPAC/EAPC with you.

AFTER AN ACCIDENT

1. Check the rechargeable battery (a). If the rechargeable battery is no longer properly in its holder or shows any damage, do not use your Raymon EPAC/EAPC any longer, at least not in the assistance mode. Switch off the motor/drive unit and the battery separately, if necessary. A damaged battery can lead to a short-circuit resulting in a sudden failure of the Raymon EPAC/EAPC assistance right at the moment when you need it.

Damage to the outer housing of the rechargeable battery can result in water or moisture entry which can lead to short circuits or electric shocks. The rechargeable battery may catch fire or even explode! In such a case, contact your Raymon dealer immediately.

2. Check the display. Are all values displayed as usual (b)? Do not use your Raymon EPAC/EAPC, if the display shows an error message or a warning. If necessary, switch off the system and wait ten seconds at least before you check it again.

Do not set off on your Raymon EPAC/EAPC with motor assistance when the control element shows a warning. In such a case, contact your Raymon dealer immediately.

You find more information in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.

3. Check whether the wheels are still firmly fixed in the drop-outs (c) and whether the rims are still centered with respect to the frame or fork. Spin the wheels and observe the gap either between frame and tyre or between brake pads and rim sides.

If the width of the gap changes markedly and you have no way to true the wheel where you are, you will need to release the rim brake a little so that the rim can run between the brake pads without touching them. Note that in this case the brakes may not act as powerfully as you are used to.

For more information see chapters **"How to Use Quick-Releases and Thru Axles"**, **"Brake System"** and **"Wheels and Tyre Equipment"** of your general Raymon bicycle user manual as well as the enclosed operating instructions.



4. Check that handlebar and stem are neither bent nor broken and that they are level and upright. Check whether the stem is firmly fixed in the fork by trying to turn the handlebar relative to the front wheel (d). Briefly lean on the brake levers or brake levers/shifters to make sure the handlebar is firmly fixed in the stem.

Realign the components, if necessary, and gently tighten the bolts to ensure a reliable clamping of the components. You find the torque values on the components themselves, in the chapter **“Recommended Torque Values”** in your general Raymon bicycle user manual or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.

For more information see chapters **“Adjusting the Bicycle to the Rider”** and **“Headset”** of your general Raymon bicycle user manual and the enclosed operating instructions.

5. Check whether the chain still runs on the chainrings and the sprockets. If your Raymon EPAC/EAPC fell over to the chain side, verify the proper functioning of the gears. Ask somebody to lift the Raymon EPAC/EAPC by the saddle and carefully shift through all the gears.

Pay particular attention when switching to the small gears, making sure the rear derailleur does not get too close to the spokes as the chain climbs onto the larger sprockets (e+f).

If the rear derailleur or the drop-outs/derailleur hanger are bent, the rear derailleur may collide with the spokes. This in turn can destroy the rear derailleur, the rear wheel or the frame. If necessary, check the function of the front derailleur, as a displaced front derailleur can throw off the chain, thus interrupting suddenly the drive of the Raymon EPAC/EAPC.

For more information see chapter **“Gears”** of your general Raymon bicycle user manual and the enclosed operating instructions.

6. Make sure the saddle is not out of alignment using the top tube or the bottom bracket shell as a reference. If necessary, open the clamping, realign the saddle and retighten the clamping (g).

For more information see chapters **“How to Use Quick-Releases and Thru Axles”** and **“Adjusting the Bicycle to the Rider”** of your general Raymon bicycle user manual and the enclosed operating instructions.



7. Let your Raymon EPAC/EAPC bounce on the ground from a small height. If there is any rattling, check the proper fit. Check the bearings, the bolts and the proper seat of the battery (h, p. 29) and the connector (a+b), if necessary.

You find more information in your general Raymon bicycle user manuals and in the system instructions of the drive system manufacturer. If you are not absolutely sure about the manufacturer of your drive system, contact your Raymon dealer.

8. Finally, take a good look at the whole Raymon EPAC/EAPC to detect any deformations, colour changes or cracks (c).

Ride back very carefully by taking the shortest route possible, even if your Raymon EPAC/EAPC went through this check without any problems. Do not accelerate or brake hard and do not ride your Raymon EPAC/EAPC out of the saddle. If you are in doubt about the performance of your Raymon EPAC/EAPC, have yourself picked up by car, instead of taking any risk.

Back home you need to recheck your Raymon EPAC/EAPC (d) thoroughly. The damaged parts must be replaced. Ask your Raymon dealer for help.

⚠ WARNING

Deformed components can break without previous warning. They must not be repaired, i.e. straightened, as this will not reduce the imminent risk of breakage. This applies in particular to the fork, the handlebar, the stem, the cranks, the seat post and the pedals. When in doubt, it is always recommendable to have these components replaced, as your safety comes first. Ask your Raymon dealer for help.

NOTICE

After an accident or after your Raymon EPAC/EAPC toppled over, make it a rule to check the functioning and in particular the limit stops of the rear derailleur.



SERVICE AND MAINTENANCE

Your Raymon dealer will have assembled and adjusted your Raymon EPAC/EAPC ready for use when you come to collect it. Nevertheless, your Raymon EPAC/EAPC needs regular servicing (e). Have your local Raymon dealer do the scheduled maintenance work. This is the only way to ensure that all components function safely and reliably for many kilometres/miles.

The Raymon EPAC/EAPC will be due for a first inspection after 100 to 300 kilometres (60 to 180 miles) or 5 to 15 hours of use and/or three to six weeks. The Raymon EPAC/EAPC must be serviced, because in this initial "break-in" period of use, safety-relevant bolted connections and spokes can slightly lose tension or gears may go out of adjustment. This "break-in" period is unavoidable.

Therefore, remember to make an appointment with your Raymon dealer for the first inspection of your new Raymon EPAC/EAPC. The first service is very important for both functioning and durability of your Raymon EPAC/EAPC.

⚠ WARNING

The individual drive components can be cleaned with a soft rag and neutral detergents. You may use a moist rag, but not excessive water. Keep the rechargeable battery dry and do not submerge it! Risk of explosion!



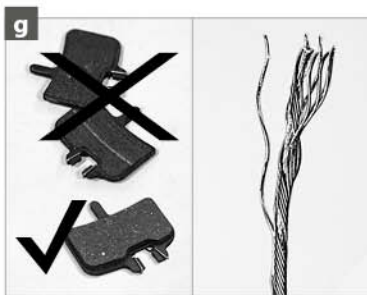
NOTICE

Note that the battery of your Raymon EPAC/EAPC will show signs of wear over the years. This will result in a degradation of the battery and more and more reduce the range per battery charge. After a certain period of time it is even necessary to replace the battery.

Keep in mind that the auxiliary drive may lead to partly higher wear than you are used to. This applies in particular to the brakes and the tyres and in the case of mid-mounted motors to the chain (f) and the sprockets.

The intended use of the Raymon EPAC/EAPC includes regular servicing and the replacement of worn out parts in time, e.g. chains, brake pads (g) or Bowden and brake cables (g), and therefore has an influence on the warranty and the guarantee as well.

You should have your Raymon EPAC/EAPC serviced regularly by your Raymon dealer after the initial "break-in" period of use. If you ride often on poor road surfaces and with adverse weather conditions, the time between the service intervals (h) will shorten according to the harder use. The off-season during the winter months is a very good time to take your Raymon EPAC/EAPC to your Raymon dealer for the strongly recommended, comprehensive annual inspection, as they will have plenty of time for you and your Raymon EPAC/EAPC.



RAYMON	
1st SERVICE SCHEDULE - STAMP FIELDS 1st service After 100-300 kilometres (60-180 miles) or 5-15 hours of use or the latest at the one year Order no. _____ Date _____ Make _____ () All necessary maintenance work carried out per service and maintenance schedule, replaced or repaired parts.	
Stamp and signature of the Raymon dealer: _____	
2nd service After 1 year (12 months) or 1000 km (600 miles) or 100 hours of use or the latest at the one year Order no. _____ Date _____ Make _____ () All necessary maintenance work carried out per service and maintenance schedule, replaced or repaired parts.	
Stamp and signature of the Raymon dealer: _____	

If in case of a repair no original spare parts are available, observe the "Guidelines for the parts replacement on CE marked e-bikes/EPACs/EAPCs with 250 watts and a pedal assist of up to 25 kmh (15.5 mph)" issued by the German umbrella organisation for the cycle industry guilds BIV, velotech, the German service and bicycle association VSF, Zedler-Institut and the German bicycle association ZIV. It can be downloaded on the websites. If you have any questions, contact your Raymon dealer.

Note that the components of your **speed pedelec** must be replaced by original spare parts only to grant type approval and provide insurance cover.

Components which must not be replaced or only after a type test, e.g. carried out by a technical inspection authority: Frame, fork, drive unit, rechargeable battery, tyres, rims, brake system, front and rear light, kickstand, handlebar, stem (a), control element/display. If a component needs to be replaced, make it a rule to only use original spare parts (b).

The following components may be replaced, even without any further test: Pedals (pedal reflectors are compulsory) (c), mudguards (with rounded edge at the front mudguard), pannier rack (d), saddle and rubber grips on the handlebar, gear components (provided the highest transmission remains identical), seat post, chain, headset, inner tube and hub as well as bell and rear view mirror (when replaced by equivalent models).



⚠ WARNING

Servicing and repairs are jobs best left to your Raymon dealer. If you have your Raymon EPAC/EAPC serviced by anyone else than an expert, you run the risk that parts of your Raymon EPAC/EAPC will fail. Risk of accident! When working on your Raymon EPAC/EAPC restrict yourself to jobs for which you are equipped e.g. with a torque wrench including bits and have the necessary knowledge.

If a component needs to be replaced, make it a rule to only use original spare parts. Wearing parts of other manufacturers, e.g. brake pads or tyres that are not of identical size, may cause harm to the safety of your Raymon EPAC/EAPC. Risk of accident! In the case of speed pedelecs be sure to only assemble original spare parts, otherwise the operating licence expires.

SAFETY INSTRUCTIONS

For further information on the parts replacement see the "Guidelines for the parts replacement on speed pedelecs with type or individual approval with a pedal assist of up to 45 kmh (28 mph)" issued by the German umbrella organisation for the cycle industry guilds BIV, TÜV Rheinland, velotech, the German service and bicycle association VSF, Zedler-Institut and the German bicycle association ZIV. They can be downloaded on the websites.

⚠ WARNING

Do not position your Raymon EPAC/EAPC upside down in general (e). When turning the Raymon EPAC/EAPC upside down the add-on parts, in particular those of the handlebar, may sustain damage. This can render the brakes ineffective!

Only use original spare parts for servicing and repair. If you do not, the CE marking as well as your warranty will become null and void. Ask your Raymon dealer for help.

⚠ CAUTION

Remove the rechargeable battery (f) or the display (g) before doing any work on your Raymon EPAC/EAPC (e.g. servicing, repairs, assembly, maintenance, work on your drive etc.). Activating the drive systems unintentionally bears the risk of injury!

Do neither touch rotating wheels on surface or spokes nor disc brakes during the ride or servicing. Risk of injury!

Do not reach between chain and cassette sprockets during servicing and repair of the chain and the sprockets with the chainguard removed. Risk of injury!

NOTICE

A rechargeable battery that has reached the end of its service life may not be disposed of in the normal household rubbish. Bring the rechargeable battery to the dealer (h) where you buy your new one. For more information see the system instructions of the drive system manufacturer. Ask your Raymon dealer for help.

SAFETY INSTRUCTIONS

If in case of a repair no original spare parts are available, observe the "Guidelines for the parts replacement" issued by the German umbrella organisation for the cycle industry guilds BIV, velotech, the German service and bicycle association VSF, Zedler-Institut and the German bicycle association ZIV. They can be downloaded on the websites. If you have any questions, contact your Raymon dealer.

For your own safety, bring your newly purchased Raymon EPAC/EAPC to your Raymon dealer for its first service after 100 to 300 kilometres (60 to 180 miles), 5 to 15 hours of initial use or three to six weeks, at the very latest, however, after three months.

Note and follow the instructions given in the chapters on service and maintenance of the system instructions of the drive system manufacturer and in the general Raymon bicycle user manual of your Raymon EPAC/EAPC.



WARRANTY AND GUARANTEE

Your Raymon EPAC/EAPC was manufactured with care. Normally it is delivered to you by your Raymon dealer fully assembled.

As direct purchaser you have full warranty rights within the first two years after purchase. Please contact your Raymon dealer in the event of defects.

To ensure a smooth handling of your complaint, it is necessary to present your receipt, your Raymon bike card, the handover report and the service reports. Therefore, be sure to keep these documents in a safe place.

To ensure a long service life and good durability of your Raymon EPAC/EAPC, use it only for its intended purpose (see chapters **"Before Your First Ride"** and **"Intended Use"**). Observe the maximum permissible overall weight that is specified on the type plate on the Raymon EPAC/EAPC or in the Raymon bike card in these operating instructions. If you have any questions, contact your Raymon dealer. Be sure to follow the manufacturers' mounting instructions (above all, the torque values of the bolts) as well as the prescribed maintenance schedule.

Observe the checks and routines listed in the present supplementary EPAC/EAPC instructions, the system instructions of the drive system manufacturer, your general Raymon bicycle user manual and in any other operating instructions enclosed with this Raymon EPAC/EAPC (see chapter **"Service and Maintenance Schedule"** in your general Raymon bicycle user manual) as well as any instructions as to the replacement of safety-relevant components, such as handlebars, brakes etc.

SAFETY INSTRUCTIONS

This warranty law is only valid in the countries that have implemented the EU Directive into national law. Inform yourself about the regulations in your country. In the United Kingdom, see the respective regulations in the Consumer Rights Act 2015 (CRA 2015).

A Note on Wear

Some components of your Raymon EPAC/EAPC are subject to wear due to their function. The rate of wear will depend on care and maintenance and the way you use your Raymon EPAC/EAPC (mileage, riding in the rain, dirt, salt, additional cargo etc.). Raymon EPACs/EAPCs that are often left standing in the open may also be subject to increased wear through weathering.

The components below require regular care and maintenance. Nevertheless, sooner or later they will reach the end of their service life, depending on conditions and intensity of use. Parts that have reached their limit of wear must be replaced.

This concerns:

- Rechargeable battery
- Drive chain
- Brake pads
- Brake fluid (DOT)
- Brake discs/rotors
- Brake cables
- Brake cable housings
- Seals of suspension elements
- Rims (of rim brakes)
- Rubber grips
- Cables/connectors
- Chainrings
- Illuminants
- Tyres and inner tubes
- Sprockets
- Saddle covering
- Bowden cables
- Bowden cable housings
- Pulleys
- Lubricants

SAFETY INSTRUCTIONS

Ask your Raymon dealer about any additional guarantee given by the manufacturer of your Raymon EPAC/EAPC and insist on having it as printed version.

HANDOVER REPORT

The above-described Raymon EPAC/EAPC was delivered to the customer ready for use, i.e. after its final assembly, inspection and functional check as described below (additionally required routines in parentheses).

- ☐ Battery partially charged ☐ Lighting ☐ Brakes front and rear
☐ Suspension elements (adjusted to suit customer)
☐ Wheels (trueness/spoke tension/tyre pressure)
☐ Handlebar/stem (position/bolts with torque wrench)
☐ Pedals (adjustment of release force, if necessary)
☐ Saddle/seat post (saddle height and position of saddle adjusted to suit customer, bolts with torque wrench)
☐ Gears (limit stops!)
☐ Bolted connections of add-on parts (with torque wrench)
☐ Motor/drive unit/display
☐ Other routines performed _____

- ☐ Test ride carried out

Name
Raymon dealer _____

Street _____

ZIP code/city _____

Phone/Fax _____

E-mail _____

Delivery date,
 stamp,
 signature of
 Raymon dealer _____

The customer confirms with his signature that he received the Raymon EPAC/EAPC in proper condition along with the accompanying documents specified below and that he was instructed on the proper use of the Raymon EPAC/EAPC.

- ☐ General Raymon bicycle user manual

Additional instructions

- ☐ Brake system ☐ Drive system ☐ Battery ☐ Gear system
☐ Seat post, stem ☐ Suspension fork ☐ Pedal system ☐ Others
☐ System instructions of the drive system manufacturer

Name customer _____

Street _____

ZIP code/city _____

Phone/Fax _____

E-mail _____

City, date _____

Signature of
 customer _____

- ☐ I hereby expressly consent that my above-mentioned data are stored by the Raymon dealer and made available to the manufacturer so that I can be contacted directly e.g. in the event of a recall. The data will not be transmitted to third parties or used otherwise

Signature of
 customer _____

RAYMON BIKE CARD

Manufacturer	R Raymon Bicycles GmbH	
Model		
Frame no.		
Drive system		
☐ Front wheel motor	☐ Mid-mounted motor	☐ Rear wheel motor
Battery model		
Key no.		
Voltage (Volt)		
Ampere-hour (AH)		
Capacity (watt hours)		
Suspension fork (manufacturer/model)		
– serial no.		
Rear shock (manufacturer/model)		
Frame type		
Frame size		
Size of wheels and tyres		
Colour		
Special features		

Intended Use

Use in accordance with

- ☐ category 1
- ☐ category 2 "Everyday"
- ☐ category 2 "Sports"
- ☐ category 3
- ☐ category 4
- ☐ category 5
- ☐ category 6

Empty weight EPAC/EAPC (incl. battery) _____ kg

Maximum permissible overall weight

Raymon EPAC/EAPC, rider, luggage and
child seat or trailer load, if permitted _____ kg

Pannier rack allowed ☐ yes ☐ no

Permissible load _____ kg

Child seat allowed ☐ yes ☐ no

Trailer allowed ☐ yes ☐ no

Permissible trailer load _____ kg

Brake levers – Brake assignment

Right lever: ☐ front wheel brake ☐ rear wheel brake

Left lever: ☐ front wheel brake ☐ rear wheel brake

⚠ WARNING

Read at least chapters "Before Your First Ride," "Intended Use" and "Before Every Ride" in the translation of these Raymon original operating instructions.

Stamp and signature of the Raymon dealer

(Hint to the Raymon dealer: Copy the Raymon bike card and the handover report and keep one copy in your customer file. Send another copy to the bike manufacturer, if necessary. Make sure the customer confirms by his signature on the handover report that his personal data are made available to the manufacturer.)

OPERATING INSTRUCTIONS
EN ISO 4210-2 AND EN ISO 8098

RAYMON

City/Trekking

Pay particular attention to the following symbols:

⚠ WARNING

This symbol indicates a hazardous situation which could result in death or serious injury – if the relevant operational instructions are not followed or if the relevant protective measures are not taken.

⚠ CAUTION

This symbol indicates a hazardous situation which could result in minor or moderate injury – if the relevant operational instructions are not followed or if the relevant protective measures are not taken.

NOTICE

This symbol is used to address practices not related to physical injury – which may, however, result in damage to property and the environment.

SAFETY INSTRUCTIONS

This symbol indicates specific safety-related instructions or procedures about how to handle the product or refers to a section in the operating instructions that deserves your particular attention.

The described possible consequences will not be repeated in the Raymon operating instructions every time one of the symbols appears.

For the sake of better legibility, the male form is used with personal names and personal nouns throughout these Raymon operating instructions. The terms in question principally apply to all genders in the spirit of equal treatment. The abbreviated language form is used solely for editorial reasons and does not represent any value judgement.

SOME NOTES ON THIS RAYMON MANUAL

The illustrations (c+d) show typical Raymon city/trekking bicycles – one of these types may look similar to the Raymon bicycle you have purchased. Today's bicycles come in various types that are designed for specific uses and equipped accordingly.

These operating instructions are not intended to help you assemble a Raymon bicycle from individual components, to repair it or to make a partly assembled Raymon bicycle ready-for-use.

These Raymon operating instructions are not applicable to any other than the displayed or specified bicycle type.

Technical details in the text and illustrations of these Raymon operating instructions are subject to change.

This Raymon manual complies with the requirements of the EN ISO standard 4210-2 and EN ISO 8098 in the respective current version.

Also observe the enclosed operating instructions of the component manufacturers. These Raymon operating instructions are subject to European law. If delivered to countries outside Europe, supplementary information has to be provided by the bicycle manufacturer.



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GENERAL SAFETY INSTRUCTIONS

Dear Raymon Customer,

In purchasing this Raymon bicycle (a) you have chosen a product of high quality and technology. Each component of your new Raymon bicycle has been designed, manufactured and assembled with great care and expertise. Your Raymon dealer gave the Raymon bicycle its final assembly and adjustment to guarantee proper operation and many enjoyable riding experiences with complete peace of mind from the very first metres.

This manual contains a wealth of information on the proper use of your Raymon bicycle, its maintenance and operation as well as interesting information on bicycle design and engineering. Read this manual thoroughly. We are sure that even if you have been cycling all your life you will find useful and detailed information. Bicycle technology has developed at a rapid pace during recent years (b). Therefore, before setting off on your new Raymon city/trekking bicycle, be sure to read at least chapter **"Before Your FIRST Ride"**.

To have as much fun as possible during cycling, be sure to carry out the functional check described in chapter **"Before EVERY Ride"** before setting off.

Even a manual as big as an encyclopedia could not describe any possible combination of bicycle models and components or parts on the market. It therefore focuses on your newly purchased Raymon bicycle and standard components and provides useful information and warnings.

When doing any of the adjusting or servicing (c), be aware that the instructions and notes provided in your manual only refer to this Raymon city/trekking bicycle.

The information included here is not applicable to any other bicycle type. As bicycles come in a wide variety of designs with frequent model changes, the routines described may require complementary information. Be sure to also observe the instructions of the component suppliers (d) that you received from your Raymon dealer.

Be aware that these instructions may require further explanation, depending on the experience and/or skills of the person doing the work. For some jobs you may require additional (special) tools or supplementary instructions. This manual cannot teach you the skills of a bicycle mechanic.

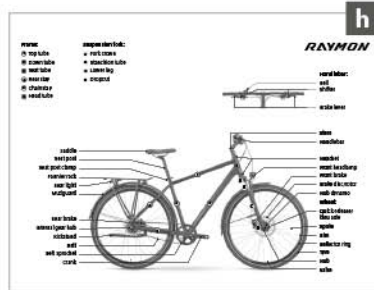
Always ride carefully on public roads and observe the traffic rules so as not to endanger yourself or others.



Respect nature when riding through the forest and in the open countryside (g). Only use your Raymon bicycle on signposted, well maintained trails and hard-surface roads.

First we would like to familiarise you with the various components used on your Raymon bicycle. Unfold the cover of this Raymon manual (h). Here you find an exemplary bicycle showing all the essential components. Leave the page unfolded as you read so that you can easily locate the components as they are referred to in the text.

For your own safety, never do work on your Raymon bicycle unless you feel absolutely sure about it. If you are in doubt or if you have any questions, contact your Raymon dealer.



INTENDED USE

Note that each type and/or kind of bicycle, referred to as **category** in the following, is designed for a specific use. Use your Raymon bicycle only according to its intended use, as it may otherwise not withstand the loads, fail and cause an accident with unforeseeable consequences! If you use your Raymon bicycle for another than its intended purpose, the warranty will become void, in addition.

Ask your Raymon dealer to confirm the category to which your Raymon bicycle belongs. Have a look at your Raymon bike card.

Category 1: city, fitness and children's bicycles

Bicycles and components of the category 1 (a) are used for commuting and for leisure rides. Bicycles and components of this category are intended for riding on paved surfaces, i.e. on asphalted or cobble roads, where the front and rear wheels remain in permanent contact to the ground. Drops are intended to be limited to a maximum of 15 cm.

Bicycles and components of the category 1 are not suitable for off-road use (in the terrain) and not for competitive use of any kind whatsoever.



Category 2 "Everyday": trekking, touring, cross and youth bicycles

Bicycles and components of the category 2 "Everyday" (b) are used for leisure and trekking rides with moderate effort. Bicycles and components of this category are intended for riding on paved and unpaved surfaces as well as on gravel paths of moderate classification. Under these conditions contact with uneven terrain and loss of tyre contact with the ground may occur. Drops are intended to be limited to a maximum of 15 cm.

Bicycles and components of the category 2 "Everyday" are not suitable for off-road use (in the terrain) and not for competitive use of any kind whatsoever.

Due to their design and equipment, bicycles of the categories 1 and 2 "Everyday" are not always suitable for being used on public roads. If you want to use them on public roads, these bicycles must be equipped according to the respective rules (c).

Observe the traffic rules when cycling on public roads.

For more information see chapter "**Legal Requirements for Riding on Public Roads**".



BEFORE YOUR FIRST RIDE

1. Your Raymon bicycle is designed for a **maximum permissible overall weight** including rider, luggage, Raymon bicycle and child seat or trailer load, if permitted. The maximum permissible overall weight is specified on the type plate on the Raymon bicycle or in the Raymon bike card in these operating instructions. If you are in doubt, contact your Raymon dealer.
2. If you want to use your Raymon bicycle on public roads, it has to comply with the respective legal requirements. These requirements may vary in each country. The equipment of your Raymon bicycle is, therefore, not necessarily complete. Ask your Raymon dealer for the laws and regulations applicable in your country or in the country you intend to use the Raymon bicycle.

Have your Raymon bicycle equipped accordingly (a), before using it on public roads.

NOTICE

We recommend that you take out private liability insurance. Make sure that coverage for this kind of damage is provided by your insurance. Contact your insurance company or agency.

3. Are you familiar with the brake system? Have a look at the Raymon bike card and check whether the brake lever of the front brake (b) is on the side you are used to (right or left). If it is not, ask your Raymon dealer to change the brake levers before you set off for the first time.

Your new Raymon bicycle is equipped with modern brakes (c) which may be far more powerful than those you were used to so far. Be sure to first practise using the brakes on a level, non-slip surface off public roads!

For more information see chapter **"Brake System"** and the enclosed operating instructions.

4. Are you familiar with the type and functioning of the gears (d)? Ask your Raymon dealer to explain the gear system to you and make yourself familiar with your new gears in an area free of traffic.

For more information see chapter **"Gears"** and the enclosed operating instructions.



5. Are both saddle and handlebar properly adjusted? The saddle should be set to a height from which you can just reach the pedal in its lowest position with your heel. Check whether your toes reach to the floor when you are sitting on the saddle (e). Your Raymon dealer will be pleased to help you, if you are not happy with your seating position.

For more information see chapter “Adjusting the Bicycle to the Rider”.

6. If your Raymon bicycle is equipped with clipless or step-in pedals (f): Have you ever tried cycling with the respective cycling shoes? Do not set off until you have practised engaging and disengaging the shoes from the pedals in standing. Ask your Raymon dealer to explain the pedals to you.

For more information see chapter “Pedals and Shoes” and the enclosed operating instructions.

7. If you have bought a Raymon bicycle (g+h) with suspension you should ask your Raymon dealer to adjust the suspension mechanism to your needs before delivery. Improperly adjusted suspension components are liable to malfunction or damage. In any case they will impair the performance of your Raymon bike as well as your safety and joy whilst riding.

For more information see chapters “Suspension Forks” and “Suspension Seat Posts”. Further notes regarding suspension seat posts and suspension forks are possibly enclosed with this manual.

⚠ WARNING

Use your Raymon bicycle only for its intended purpose, as it may otherwise not withstand the loads and fail! Risk of accident!

A lack of practice when using clipless pedals or too much spring tension in the mechanism can lead to a very firm connection, from which you cannot quickly step out. Risk of accident!

⚠ CAUTION

Make particularly sure there is enough space between your crotch and the top tube so that you do not hurt yourself, if you have to get off your Raymon bicycle quickly.

SAFETY INSTRUCTIONS

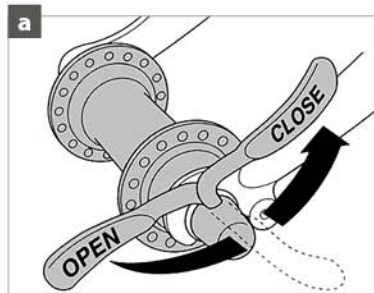
Before hitching a trailer to your Raymon bicycle or mounting a child seat, have a look at the Raymon bike card and contact your Raymon dealer.



BEFORE EVERY RIDE

Your Raymon bicycle has undergone numerous tests during production and a final check has been carried out by your Raymon dealer. Nevertheless, be sure to check the following points to exclude any malfunctioning that may be due to the transport of your Raymon bicycle or to a work a third person may have performed on your Raymon bicycle before delivery:

1. Are the quick-release levers (a) of the front and rear wheel properly closed and the bolts of the seat post and other components accurately tightened? For more information see chapter **"How to Use Quick-Releases"**.
2. Are the tyres in good condition and do they have sufficient pressure (b)? A higher pressure gives a better riding stability and reduces the risk of a puncture. The minimum and maximum pressure (in bar or psi) is indicated on the tyre side. For more information see chapter **"Wheels and Tyre Equipment"** and the enclosed operating instructions.
3. Spin the wheels to check whether the rims are true. Watch the gap between rim and brake pad or, in the case of disc brakes, between frame and rim or tyre. Untrue rims can be an indication of tyres with ruptured sides, broken axles or spokes.



For more information see chapter **"Wheels and Tyre Equipment"** and the enclosed operating instructions.

4. Test the brakes in standing by firmly pulling the brake levers towards the handlebar (c).

The brake pads of **rim brakes** must hit the rim evenly with their entire surface (d) without touching the tyre during braking, in open condition or in between. You should not be able to pull the lever all the way to the handlebar. If your Raymon bike has hydraulic brakes, check the hydraulic brake hoses for oil leaks! Also check the thickness of the brake pads.

With **disc brakes** you should have a stable pressure point at once. If you have to actuate the brake lever more than once to get a positive braking response, have the Raymon bicycle checked by your Raymon dealer. You should not be able to pull the lever all the way to the handlebar. If your Raymon bike has hydraulic brakes, check the hydraulic brake hoses for oil or brake fluid leaks! Also check the thickness of the brake pads.

For more information see chapter **"Brake System"** and the enclosed operating instructions.

5. Let your Raymon bicycle bounce on the ground from a small height. If there is any rattling, check the proper fit. Check the bearings and bolted connections, if necessary.

6. If you want to ride on public roads, make sure your Raymon bicycle is equipped according to the regulations of your country. Riding without lights and reflectors in dark or dim conditions is very dangerous. A permissible lighting system is a must on public roads (e). Turn on the lights as soon as dusk sets in. For more information see chapter "**Legal Requirements for Riding on Public Roads**".
7. In case you have a Raymon bicycle with suspension, press down on your Raymon bicycle and see whether the spring elements retract and extend as usual (f). For more information see chapters "**Suspension Forks**", and "**Suspension Seat Posts**" as well as the enclosed operating instructions.
8. If your Raymon bike has a kickstand, make sure it is fully raised before you set off. **Risk of accident!**
9. Do not forget to take a high-value D-, folding (g) or chain lock with you on your ride. The only way to effectively protect your Raymon bicycle against theft is to lock it to an immovable object.
10. If you have bought an Raymon e-bike/EPAC/EAPC, check the battery's charge state before you set off. For more information see the **supplementary instructions** enclosed with your e-bike/EPAC/EAPC.



⚠ WARNING

- Improperly closed fastenings (h) can cause components to come loose and result in serious accidents!
- Do not use your Raymon bicycle, if it fails on one these points! Riding a defective Raymon bicycle can result in serious accidents! If you are in doubt or if you have any questions, contact your Raymon dealer.
- During use your Raymon bicycle is undergoing stress resulting from the surface of the road and from the rider's action. Due to these dynamic loads, the different parts of the Raymon bicycle react with wear and fatigue. Check your Raymon bicycle regularly for wear marks, scratches, deformations, colour changes and any indication of cracking. Components which have reached the end of their service life may fail suddenly without previous warning. Let your Raymon dealer maintain and service your Raymon bicycle regularly and in cases of doubt it is always best to replace components.
- Be aware that the distance you need to stop your Raymon bicycle increases, when you are riding with your hands on bar ends. The brake levers are not in all gripping positions within easy reach.

AFTER AN ACCIDENT

1. Check whether the wheels are still firmly fixed in the drop-outs (a) and whether the rims are still centred with respect to the frame or fork. Spin the wheels and observe the gap either between brake pads and rim sides or between frame and tyre. If the width of the gap changes markedly and you have no way to true the rim where you are, you have to open the rim brake a little so that the rim can run between the brake pads without touching them. Note that in this case the brakes may not act as powerfully as you are used to. For more information see chapters **"Brake System"**, **"How to Use Quick-Releases"** and **"Wheels and Tyre Equipment"** as well as the enclosed operating instructions.
2. Check that handlebar and stem are neither bent nor broken and that they are level and upright (b). Make sure the stem is firmly fixed on the fork by trying to turn the handlebar relative to the front wheel (c). Briefly lean on the brake levers to make sure the handlebar is firmly fixed in the stem. Realign the components, if necessary, and gently tighten the bolts to ensure a reliable clamping of the components.

You find the torque values on the components themselves, in the chapter **"Recommended Torque Values"** or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers. For more information see chapters **"Adjusting the Bicycle to the Rider"**, **"Headset"** and the enclosed operating instructions.

3. Check whether the chain still runs on the chainrings and the sprockets. If your Raymon bicycle fell over to the chain side, verify the proper functioning of the gears. Ask somebody to lift the Raymon bicycle by the saddle and carefully shift through all the gears. Pay particular attention when shifting to the small gears and make sure the rear derailleur does not get too close to the spokes (d+e) as the chain climbs onto the larger sprockets.

If the rear derailleur or the drop-outs/derailleur hanger are bent, the rear derailleur may collide with the spokes or the chain may slip. This can result in damage to the rear derailleur, the rear wheel and the frame. Check the function of the front derailleur, as a displaced front derailleur can throw off the chain, thus interrupting the drive train of the Raymon bicycle.

For more information see chapter **"Gears"** and the enclosed operating instructions.



4. Make sure the saddle is not out of alignment using the top tube or the bottom bracket shell as a reference. If necessary, open the clamping, realign the saddle and retighten the clamping. For more information see chapters **"Adjusting the Bicycle to the Rider"**, **"How to Use Quick-Releases"** and the enclosed manuals of the component manufacturers.
5. Lift your Raymon bicycle up a few centimetres and let it bounce onto the ground (f). If this causes any sort of noise, search for loosened bolts or components. Tighten them slightly, if necessary.
6. Finally, take a good look at the whole Raymon bicycle to detect any deformations, colour changes or cracks (g).

Ride back very carefully by taking the shortest route possible, even if your Raymon bicycle went through this check without any problems. Do not accelerate or brake hard and do not ride your Raymon bicycle out of the saddle. If you are in doubt about the performance of your Raymon bicycle, have yourself picked up by car, instead of taking any risk.

Back home you need to check your Raymon bicycle thoroughly. The damaged parts must be repaired. Ask your Raymon dealer for help.

⚠ WARNING

Deformed components, especially components made of aluminium, can break without previous warning. They must not be repaired, i.e. straightened, as this will not reduce the imminent risk of breakage. This applies in particular to the fork, the handlebar, the stem, the cranks, the seat post and the pedals. When in doubt, it is always recommendable to have these components replaced, as your safety comes first. Ask your Raymon dealer for help.

If your Raymon bicycle is assembled with carbon components (h), it is imperative that you have your Raymon bicycle checked by your Raymon dealer after an accident or similar incident. Carbon is an extremely strong material which allows producing components of very high strength and low weight. It is, however, one of the inherent properties of carbon that possible overstress may compromise the inner carbon-fibre structure without showing any visible deformation as is the case with steel or aluminium. A damaged component can fail without previous warning. Risk of accident!



HOW TO USE QUICK-RELEASES

Most city/trekking bikes are equipped with quick-releases to ensure quick adjustments, assembly and disassembly. Be sure to check whether all quick-releases are tight before you set off on your Raymon bicycle. Quick-releases should be handled with greatest care, as they affect your safety directly.

Practise the proper use of quick-releases to avoid any accidents.

Quick-release mechanisms essentially consist of two operative elements:

1. The hand lever on one side of the hub which creates a clamping force via a cam when you close it (a).
2. The tightening nut on the other side of the hub with which the preload on the threaded rod (quick-release axle) is set (b).



⚠ WARNING

- Make sure the levers of both wheel quick-releases are always on the side opposite to the chain (c). This will help you to avoid mounting the front wheel accidentally the wrong way round. In the case of bicycles with disc brakes and quick-releases having a 5-mm-axle, it may be reasonable to mount the quick-release with the levers on the side of the chain drive. This would help you not to come into contact with the brake disc, also referred to as rotor, and prevent you from having your fingers burnt. If you are in doubt or if you have any questions, contact your Raymon dealer.
- Never ride a Raymon bicycle without having checked first whether the wheels are securely fastened (d). Risk of accident!

⚠ CAUTION

- Do not touch the brake disc/rotor directly after having stopped – you may burn your fingers! Always let the brake disc/rotor cool down before opening the quick-release.

NOTICE

- If your Raymon bicycle is equipped with quick-releases, be sure to lock it to an immovable object together with the frame when you leave it outside.

How to Fasten Components Securely with a Quick-Release

Open the quick-release. The marking "Open" on the lever should become visible now (e).

Make sure the component to be fastened is in the accurate position. For more information see chapters "Wheels and Tyre Equipment" and "Adjusting the Bicycle to the Rider".

Move the lever back, as if to close it. Now you should be able to read "Close" on the outside of the lever (f). When you start closing the lever you should feel virtually no resistance with your hand until the lever is at a right angle to the frame/fork.

When continuing to close the lever the resistance you feel should increase significantly and towards the end even more strength is required to close the lever. Use the ball of your thumb to push it in all the way while your fingers pull on an immovable part, such as the fork (g) or the rear stay, but not on a brake disc/rotor or spoke. In its end position, the lever should be at right angle to the quick-release axle, i.e. it should not stick out to the side. The lever should lie close to the frame or the fork so that it cannot be opened accidentally. Make sure, however, the lever is easy to handle for an actually quick use.



To check whether the lever is securely locked apply pressure to the end of the hand lever and try to turn it while it is closed. If you can turn the lever around, open it and increase the preload. Screw the tightening nut on the opposite side clockwise by half a turn. Close the quick-release lever and check it again for tightness.

Finally lift the wheel a few centimetres so that the wheel no longer touches the ground and hit the tyre from above. A securely fastened wheel remains in the axle mounts of frame or fork and will not rattle.

If your seat post is equipped with a quick-release mechanism, check whether the saddle is firmly fixed by trying to twist it relative to the frame (h).

⚠ WARNING

With an insufficiently closed quick-release the wheel can come loose. Imminent risk of accident!

NOTICE

To be on the safe side you can replace the quick-releases by special locks. They can only be opened and closed with a special, coded key or an Allen key. If you are in doubt or if you have any questions, contact your Raymon dealer.

ADJUSTING THE BICYCLE TO THE RIDER

Your body height and proportions are decisive for the frame size of your Raymon bicycle. Make particularly sure there is enough space between your crotch and the top tube so that you do not hurt yourself, if you have to get off your Raymon bicycle quickly (a).

By choosing a specific type of bicycle you roughly determine the posture you will be riding in (b). However, some components of your Raymon bicycle are especially designed so that you can adjust them to your body proportions up to a certain degree (c). This includes the seat post, the stem and the brake levers.

As these adjustments require know-how, experience, appropriate tools and a certain amount of skill, you should restrict yourself to the adjustment of the seating position. Ask your Raymon dealer for the correct seating position or if you want something changed. They will see to your wishes the next time you leave your Raymon bicycle at the workshop, e.g. for the first inspection.

After any adjustment/assembly work, be sure to make a short functional check as described in chapter **"Before Every Ride"** and do a test ride in an area free of traffic.

⚠ WARNING

- *If you have a very small frame, there may be the danger of your foot colliding with the front wheel. Therefore, make sure the cleats of your clipless pedals are properly adjusted.*
- *All tasks described in the following require the know-how of a mechanic and appropriate tools. Make it a rule to tighten the bolted connections always with greatest attention. Increase the torque values bit by bit and check the fit of the component in between. Use a torque wrench and never exceed the maximum torque values! You find the torque values on the components themselves, in the chapter "Recommended Torque Values" or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.*

SAFETY INSTRUCTIONS

- *If sitting on the saddle is painful, e.g. because it numbs your crotch, this may be due to the saddle. Your Raymon dealer has a very wide range of saddles available and can offer advice on position (d).*



Adjusting the Height of the Saddle

The correct saddle height for almost all bicycle types is the height which gives maximum pedalling comfort and efficiency. During pedalling the ball of your foot should be positioned above the centre of the pedal axle. With your feet in this position you should not be able to stretch your legs completely straight at the lowest point (e), otherwise your pedalling will become awkward.

Check the height of your saddle with flat-soled shoes. This is best done with suitable cycling shoes.

Sit on the saddle and put your heel on the pedal at its lowest point. Your leg should be fully stretched and your hips should remain horizontal.

To adjust the saddle height loosen the quick-release lever (see chapter "How to Use Quick-Releases") or the binder bolt of the seat post clamp (f) at the top of the seat tube.

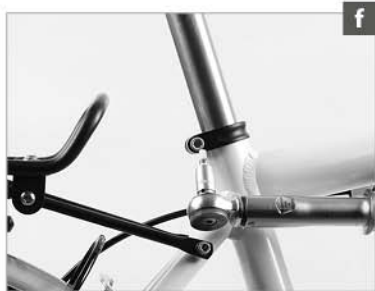
The latter requires suitable tools, e.g. an Allen key, with which you turn the bolt two to three turns anticlockwise. Now you can perform the vertical adjustment of the seat post.

Be sure not to pull out the seat post too far – the mark on the seat post (g) (min. insert, minimum, maximum, stop or the like) should always remain within the seat tube – and to grease the surface of an aluminium or titanium seat post that is inserted into a seat tube made of aluminium, titanium or steel.

Do not grease **carbon seat posts** and/or **carbon seat tubes** in the clamping area! Use special **carbon assembly paste** instead.

Align the saddle with the frame by using the saddle nose and the bottom bracket or top tube as a reference point (h).

Clamp the seat post tight again, by closing the quick-release, as described in chapter "How to Use Quick Releases" or by turning the seat post binder bolts clockwise in half turns. You should not need much strength in your hands to clamp the seat post sufficiently tight. Otherwise the seat post does not match the frame.



Verify in between that the seat post is sufficiently tight by taking hold of the saddle at both ends and then trying to rotate the seat post inside the seat tube (a). If it does rotate, gently retighten the clamping bolt by half a turn and do the check again.

Does the leg stretch test now produce the correct result? Check by moving your foot and pedal to the lowest point. When the ball of your foot is exactly above the pedal centre in the ideal pedalling position, your knee should be slightly bent. If it is, you have adjusted the saddle height correctly.

Check whether you can touch the ground safely while sitting on the saddle by stretching your feet to the floor (b). If you cannot, you should lower the saddle a little, at least to begin with.

⚠ WARNING

Never apply grease or oil into a seat tube of a frame made of carbon, unless an aluminium sleeve is inside the frame. If you mount a carbon seat post, do not put any grease on it, even if the frame is made of metal. Once greased, carbon components (c) may never again ensure reliable clamping! Use special carbon assembly paste instead.



⚠ WARNING

Never ride your Raymon bicycle with the seat post drawn out beyond the min. insert, maximum, limit or stop mark! The seat post might break or cause severe damage to the frame. In the case of frames with seat tubes that extend beyond the top of the frame's top tube the seat post should be inserted into the seat tube at least below the bottom of the top tube and below the top of the rear stays! If seat post and frame require different minimum insertion depths, you should opt for the deeper insertion depth.

⚠ CAUTION

Tighten carefully by approaching the prescribed maximum torque value in small steps (0.5 Nm increments) (d) and check in between the proper fit of the component. Do not exceed the maximum torque value indicated by the manufacturer! You find the torque values on the components themselves, in the chapter "Recommended Torque Values" or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.

SAFETY INSTRUCTIONS

If the seat post does not move easily inside the seat tube or if it cannot be tightened sufficiently, ask your Raymon dealer for advice. Do not use brute force!

Adjusting the Height of the Handlebar

The height of the handlebar compared to the saddle and the distance between saddle and handlebar determines how much your upper body will be inclined forward. Lowering the handlebar gives you a streamlined position and brings more weight to bear on the front wheel. However, it also entails an extremely forward leaning posture which is tiring and less comfortable, because it increases the strain on your wrists, arms, back, upper body and neck.

There are three different stem systems that allow vertical adjustment of the handlebar, i.e. the conventional, the adjustable and the Ahead-set®-stem. These systems require special knowledge. In this regard, the descriptions hereafter may be incomplete. If you are in doubt or if you have any questions, contact your Raymon dealer.

⚠ WARNING

The stem is one of the load bearing parts of your Raymon bicycle. Changes to it can impair your safety. If you are in doubt or if you have any questions, contact your Raymon dealer!

⚠ WARNING

- **Stems come in varying lengths (e) as well as shaft and binder tube diameters. A stem of inappropriate dimension can become a source of danger: Handlebars or stems can break, resulting in an accident. When replacing any parts, be sure to only use suitable original spare parts that bear the appropriate mark. Your Raymon dealer will be pleased to help you.**
- **The bolted connections of stem and handlebar have to be tightened to the prescribed torque values (f). If you disregard the prescribed values, the handlebar or stem may come loose or break. Use a torque wrench (g) and never exceed the maximum torque value! You find the torque values on the components themselves (h), in the chapter "Recommended Torque Values" or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.**
- **Make sure the handlebar/stem-combination is approved by the handlebar and/or stem manufacturer.**
- **Make sure the handlebar clamping area is free of sharp edges.**



Conventional Stems

Handlebars with conventional stems allow limited vertical adjustment. This is done by moving the stem up or down inside the fork steerer tube.

Release the expander bolt by two to three complete turns. The stem should now turn freely inside the fork. If it does not, release the bolt by tapping it gently with a rubber hammer (a). With Allen bolts, you need to stick the Allen key into its head first, as it is normally counter-sunk and therefore impossible to be hit directly.

Now you can move the handlebar/stem-unit up and down as a whole. Be sure not to pull out the stem too far. The mark on the stem (min. insert, minimum, maximum, stop or the like) should always remain within the tube (b). Setting the stem to a lower position can only add to your safety!

Realign the handlebar with the front wheel (c). Retighten the expander bolt with a torque wrench.

Tighten carefully by approaching the prescribed maximum torque value in small steps (0.5 Nm increments) and check in between the proper fit of the component.

Do not exceed the maximum torque value indicated by the manufacturer! You find the torque values on the components themselves, in the chapter **"Recommended Torque Values"** or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.

Make sure the stem is firmly fixed by taking the front wheel between your legs and trying to turn the handlebar and stem relative to the wheel (d). If there is movement, you have to increase the torque value. If the handlebar is still too high or too low, you can replace the stem. This can be quite a big job, as it may mean taking off and re-mounting the entire handlebar equipment. Inform yourself at your Raymon dealer about the various stem types available.

⚠ WARNING

Never ride a bicycle with a stem that has been drawn out beyond the mark for the maximum permissible height! Check all bolted connections and test your brakes before you set off!

NOTICE

Never try to unscrew the top race of the headset when you only want to adjust the stem, as you will otherwise alter the bearing play.



Adjustable Stems

There are various solutions for adjusting the tilt of the front part of adjustable stems (e):

Some designs use bolts on the sides of the joint (f), others have bolts coming from above or below (g), and other again are equipped with additional locking mechanisms or adjusting bolts.

Before adjusting read the enclosed operating instructions of the stem manufacturer. Ask your Raymon dealer to explain you both function and adjustment of your stem or let him do that work.

⚠ WARNING

Note that the bolted connections of adjustable stems and handlebars have to be tightened to the specified torque values. Otherwise the handlebar or stem may come loose or break. Use a torque wrench (h) and observe the minimum and maximum torque values! You find the torque values on the components themselves, in the chapter "Recommended Torque Values" or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.

SAFETY INSTRUCTIONS

Keep in mind that readjusting the position of the stem changes the position of handlebar, brake and shift levers. Readjust these components, as described in chapter "Adjusting the Tilt of the Handlebar, Bar Ends and Brake Levers".



Stems for Threadless Systems, the Aheadset®-System

(Aheadset® ist ein eingetragener Markenname der Firma DiaCompe)

In the case of bicycles with Aheadset® the stem also serves to adjust the bearing preload. If you change the position of the stem you have to readjust the bearing play (see chapter **"Headset"**). The vertical setting range is determined by the intermediate rings, also referred to as spacers. In the case of flip-flop stem models the stem can be mounted the other way round to achieve a different handlebar height.

Unscrew the preload bolt at the top of the fork steerer tube, remove the Ahead® cap and release the bolts on either side of the stem by up to three turns (a). Remove stem and spacers from the fork steerer tube. In doing so keep hold of both frame and fork to prevent the fork from slipping off the head tube.

You can determine the handlebar height by the arrangement of stem and spacers (b). Slip the remaining spacers onto the fork steerer tube above the stem. Adjust the headset, as described in chapter **"Headset"**.

If you want to turn the stem around, you have to also release the bolts of the faceplate securing the handlebar (c).

If the stem has a faceplate, you can simply remove the handlebar. If it has no faceplate, you have to remove the handlebar equipment.

Mount the handlebar and, if necessary, the handlebar equipment, as described in chapter **"Adjusting the Tilt of the Handlebar, Bar Ends and Brake Levers"** and/or in the manuals of the component manufacturers.

Check whether the handlebar is firmly seated in the stem by trying to rotate the handlebar downwards. Verify whether the handlebar/stem-combination can be turned relative to the fork. Do this by taking the front wheel between your knees and trying to twist the handlebar (d). If there is movement, carefully tighten the bolts a little more and check the proper fit again.

Tighten carefully by approaching the prescribed maximum torque value in small steps (0.5 Nm increments) and check in between the proper fit of the component. Do not exceed the maximum torque value indicated by the manufacturer! You find the torque values on the components themselves, in the chapter **"Recommended Torque Values"** or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.



⚠ WARNING

These routines require a certain amount of manual skill and (special) tools and are best left to your Raymon dealer. If you nevertheless want to try it by yourself, read the operating instructions of the stem manufacturer carefully before you start.

In the case of turned stems, the cables may be too short. Riding with too short cables is dangerous. Ask your Raymon dealer for help.

Stems come in varying lengths (e) as well as shaft and binder tube diameters. A stem of inappropriate dimension can become a source of danger: Handlebars and stems can break and thus cause an accident!

NOTICE

When removing spacers the fork steerer tube must be shortened. This procedure is irreversible. The shortening should be carried out by you Raymon dealer, but only after you have found your preferred position.

SAFETY INSTRUCTIONS

If you want your handlebar in a higher position, you may opt for a riser bar model which has an upward bend. Ask your Raymon dealer for help.

**Adjusting the Tilt of the Handlebar, Bar Ends and Brake Levers**

The handlebars of city, trekking and children's bikes are usually slightly bent at the ends. Set the handlebar to a position in which your wrists are relaxed and not turned too much outwards.

To adjust the angle of the handlebar, release the Allen bolt(s) on the underside or front side of the stem (c). Turn the handlebar to the desired position. Make sure the handlebar is accurately centred in the stem (f). Carefully retighten the bolt(s) in a cross pattern by using the torque wrench until they lightly hold the handlebar in place (g). Make sure the upper and lower clamping slots of the stem are parallel and identical in width (h). Tighten the bolt(s) evenly in a cross pattern by using a torque wrench and observe the recommended torque values.

Once clamped in the stem try rotating the handlebar and tighten the bolt a little more, if necessary. Use a torque wrench and never exceed the maximum torque values! You find the torque values on the components themselves, in the chapter **"Recommended Torque Values"** or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.

After adjusting the handlebar you need to adjust the brake lever/shifter units.

Release the Allen bolt at either brake lever unit. Turn the levers on the handlebar. Sit in the saddle and place your fingers on the brake levers. Check whether the back of your hand forms a straight line with the line of your forearm (a). Retighten the units with a torque wrench and do a twist test (b)!

Bar ends give you additional ways of gripping the handlebar. They are usually fixed in a position that gives the rider a comfortable grip when pedalling out of the saddle. The bar ends are then almost parallel to the ground or tilted slightly upwards (by about 25°).

Release the bolts, which are usually located on the underside of the bar ends, by one to two complete turns. Turn the bar ends to the desired position making sure the angle is the same on both sides. Retighten the bolts to the required torque value (c). Check whether the bar ends are firmly fixed by trying to turn them out of position.

⚠ WARNING

- **Note that the bolted connections of the stem, handlebar, bar ends and brakes have to be tightened to their prescribed torque values. Use a torque wrench and never exceed the maximum torque values! You find the torque values on the components themselves, in the chapter "Recommended Torque Values" or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.**
- **Never fix bar ends in vertical position or with their ends pointing rearwards as this would increase the risk of injury in the event of a fall.**
- **Be aware that the distance you need to stop your Raymon bicycle may increase, when you are riding with your hands on bar ends (d). The brake levers are not in all gripping positions within easy reach.**
- **If you intend to mount bar ends to a handlebar, verify first that the handlebar is suitable and approved for the mounting of the bar ends. Some handlebars must be equipped with specific reinforcing sleeves (handlebar plugs). If you are in doubt or if you have any questions, contact your Raymon dealer.**



Adjusting the Brake Lever Reach

With most brake systems the distance between the brake levers and the handlebar grips (e) is adjustable. This gives in particular riders with small hands the convenience of bringing the brake levers closer to the handlebar. The first knuckles of middle and index fingers should be able to grip around the lever (f).

On most bicycles there is a small adjusting screw near the point where the brake cable of a cable brake enters the brake lever unit or at the lever itself. Turn the bolt clockwise and watch, whether and how the lever adjusts as you do so.

Hydraulic brakes also have adjusting devices at the brake lever (g). There are different systems. Ask your Raymon dealer for help or read the respective manual.

When adjusting the lever reach, make sure the first knuckle of the index finger reaches around the brake lever. Check the proper adjustment and functioning of the brake system (h) subsequently, as described in chapter **"Brake System"** and/or in the brake manufacturer's instructions. Some brake models allow the adjusting of the lever distance and the pressure point.

⚠ WARNING

- After the adjusting do a test ride in a place free of traffic or in an unfrequented place.
- Make sure you cannot pull the brake levers all the way to the handlebar. Your maximum brake force should be reached short of this point.

SAFETY INSTRUCTIONS

- If you have hydraulic brakes and disc brakes, follow the instructions of the brake manufacturer. If you are in doubt or if you have any questions, contact your Raymon dealer.



Correcting the Fore-to-Aft Position and Tilt of the Saddle

The position of the saddle is essential for your ride and for painless riding.

The distance between the handlebar grips and the saddle has an effect on the inclination of your upper body (a) and hence on your riding comfort and riding dynamics. This distance can be modified to a small extent by changing the position of the saddle rails in the seat post. However, moving the saddle rails in the seat post also influences pedalling. The rider pedals more or less from the back.

If the saddle is not in horizontal position, the rider cannot pedal in a relaxed manner. He must constantly support himself or hold on the handlebar to avoid sliding off the saddle.

Make sure that the seat of the saddle remains horizontal (b) as you retighten the bolt(s). The Raymon bicycle or EPAC/EAPC should stand on level ground while you adjust the saddle.

With Raymon full suspension bicycles, especially mountain bikes, it can be advantageous to lower the saddle nose, i.e. to tilt it slightly.

The adjustment range of the saddle is very small. With adjustable stems or stems at different lengths you can realise more important adjustments in length. In parts, you can realise a difference of more than 10 cm. In most of the cases you also have to adjust the Bowden and brake cables; a job best left to your Raymon dealer!

After the mounting check whether the re-tightened saddle tilts (c) or can be twisted (d) when you alternately apply load with your hands on the nose and the end of the saddle.

⚠ WARNING

There bolts of the saddle clamp are among the most sensitive ones on the entire bicycle. Therefore, make absolutely sure that you do not fall below the recommended minimum torque value and do not exceed the recommended maximum torque value and always use a torque wrench.

You find the torque values on the components themselves, in the chapter "Recommended Torque Values" or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.



⚠ WARNING

- Make sure the saddle rails are only clamped within the range of the marking (e). Otherwise the saddle rails can fail!**
- If the saddle rails do not fit, do not try to force them into the clamp grooves of the seat post. The clamp device or the saddle rails could break. Use another saddle model instead or ask your Raymon dealer.**
- Poorly tightened or loosening bolts can fail. Check the bolts once a month by using a torque wrench (f) according to the values indicated on the components themselves (g), in the chapter "Recommended Torque Values" or in the possibly enclosed instructions of the component manufacturers.**

SAFETY INSTRUCTIONS

- The saddle and/or seat post manufacturers possibly supply their products with detailed instructions. Read them carefully before adjusting the position of your saddle. If you are not absolutely sure or have any questions, contact your Raymon dealer.**



Patent clamp with one or two parallel bolts

In the case of patent seat posts one (a) or two (b) central Allen bolts hold the head that fixes both the tilt and the horizontal position of the saddle. Most seat posts have two bolts side by side.

To adjust the saddle position undo the bolt (c) or the bolts (d) at the seat post head. To do so loosen both bolt(s) two to three turns at the most, otherwise there is a risk that the entire mechanism will fall apart. Move the saddle horizontally to adjust the fore-to-aft position. Often you have to give the saddle a light tap to move it. Observe the marking on the saddle rails and do not go beyond (e+f).

After you have found the desired position, check that both halves of the clamp mechanism fit snugly around the saddle rails.

Make sure that the saddle or the clamp mechanism engages in one of the serrations on the seat post head while you start to tighten. Tighten the bolt(s) step by step.

If everything fits turn the bolt (g) or the bolts (h) by using a torque wrench according to the instructions of the manufacturer.

SAFETY INSTRUCTIONS

Also read the general part at the beginning of the chapter.



Yoke clamp with two bolts in line

In the case of seat posts with yoke clamp (i) two vertical Allen bolts hold the head that fixes both the tilt as well as the horizontal position of the saddle. One bolt is behind the seat post, another one in front of it or in the centre (k) of the seat post.

To adjust the saddle position undo both bolts two to three turns at the most (l+m), otherwise there is a risk that the entire mechanism will fall apart. Move the saddle horizontally to adjust the fore-to-aft position. Often you have to give the saddle a light tap to move it. Observe the marking on the saddle rails (n) and do not go beyond. After you have found the desired position, check that both halves of the clamp mechanism fit snugly around the saddle rails.

Tighten both bolts evenly so that the saddle remains at the same angle. If you wish to lower the saddle nose a little, turn the front bolt clockwise. If necessary, you even have to loosen the rear bolt a little. To lower the rear part of the saddle, the rear bolt has to be turned clockwise and the front bolt to be loosened, if necessary.

If everything fits turn the bolts by using a torque wrench according to the instructions of the manufacturers (o+p).

SAFETY INSTRUCTIONS

Also read the general part at the beginning of the chapter.



Candle seat post with separate saddle clamp

In the case of candle seat posts a bracket with horizontal bolt and two nuts hold the head (a+b) that fixes both the tilt and the horizontal position of the saddle.

To adjust the saddle position undo the nut(s) of the saddle clamp at the top of the seat post one to two turns at the most (c), by using an open-end spanner, otherwise the entire mechanism will fall apart.

Move the saddle horizontally to adjust the fore-to-aft position. Often you have to give the saddle a light tap to move it. Observe the marking on the saddle rails and do not go beyond. Bring the saddle now in the desired position. Tighten the nuts(s) step by step.

Make sure that the saddle engages in one of the serrations in the saddle clamp while you are tightening. Try tilting the saddle a little, then you will notice whether the mechanism is engaged. Also check that the saddle is still aligned in direction of motion. Look from behind and make sure that the saddle is in line with the frame and the front wheel. If this is the case tighten the nut(s) step by step.

If everything fits tighten the nut(s) by using a torque wrench according to the instructions of the manufacturers (d).

SAFETY INSTRUCTIONS

Also read the general part at the beginning of the chapter.



CHILDREN'S BICYCLES

Useful Information for Parents

Children are among the most vulnerable road user groups, not only because of their lack of experience and practice, but also for the simple reason that they are smaller and may therefore have difficulties overseeing things and be easily overlooked by other road users.

If you want your child to use his/her Raymon bicycle on the road, you should be willing to invest time in road safety instruction and help him/her improve his/her riding skills (e). Children are not as observant as adults, and you should therefore get into the routine of checking the children's bicycle and performing adjustments and maintenance as necessary. If you are in doubt or if you have any questions, contact your Raymon dealer.

Bear in mind that it is your responsibility to supervise your child on his/her first rides and do not overchallenge your child! Inform yourself about the traffic rules in your country. They vary from country to country. In the UK cycling on a pavement (f) alongside a road is forbidden by law, unless it has been marked as a cycle track. Children aged under 10 are, however, below the age of criminal responsibility. Therefore, they cannot be prosecuted for a criminal offence either.

What is important is that your child has good control of his/her Raymon bicycle before riding on public roads. As a first step in this direction we recommend that you give your child a scooter or a pedalless bicycle (g) so that he/she can train his/her sense of balance.

This being accomplished you will need to make your child familiar with the functioning of the brakes and gears before you let him/her sit on the Raymon bicycle. Find a place away from the road, ideally a backyard or park, where you can practise braking and shifting gears with your child under your supervision.

Once your child has progressed to a point where he/she can ride in traffic, teach him/her how to cross kerbs and railway tracks, i.e. to cross these obstacles, if possible, at right angle. Your child should also learn to look ahead and back for any danger before taking this kind of obstacle.

Set a good example when it comes to wearing a cycling helmet (h) and to riding on cycle lanes. It is also advisable to let your child take part in road safety lessons offered at schools or by local clubs and associations.



⚠ WARNING

It is important to tell children when they practise braking that in wet conditions the brake performance is less effective and the tyre grip reduced and that they should therefore ride more slowly and brake more carefully.

Take care your child is wearing the helmet while cycling only. For example, wearing the helmet at a park or playground can be hazardous; the helmet can get caught on features or obstacles and result in strangulation by helmet straps.

Children should not ride near precipices, staircases or swimming pools as well as on paths used by automotive mobiles.

Make sure the child always wears a properly fitting cycling helmet and well visible, i.e. bright, clothing. It is also advisable to wear reflector stripes to increase visibility.

⚠ WARNING

Children can be vain. Therefore, buy a cycling helmet that the child feels happy with. Take your child with you to make sure you buy one which is comfortable and fits correctly. This will increase the chances that the helmet is actually worn, which one day might be a life-saver. Make sure the helmet is always fastened!

When you buy the helmet, have yourself explained how to adjust the straps of the helmet to the head. Only a properly fitted helmet (a) can provide full protection in case of an accident!

SAFETY INSTRUCTIONS

Make sure the cycling helmet complies with the BSEN 1078 standards.



Adjustment

Adjusting the Raymon bicycle to the bodily proportions of a child (b-d) is even more important than in the case of an adult. When determining the saddle height you should find a compromise that allows the child to reach the ground with both feet when sitting in the saddle while at the same time giving them enough space for pedalling (e). A safe standing (when stopping) takes absolute priority!

Handlebars that are too far away from the saddle or adjusted in a too high/low position can also lead to the fact that the child is less confident and relaxed during cycling. Normally, children's bicycles allow adjustments of the saddle tilt and sometimes the tilt of the handlebar can be adjusted, as well.

Special attention should be paid to the adjustment of the control elements, such as brake levers. Easy reach and operation should be ensured for the child.

For more information on how to perform the adjustments of the Raymon children's bicycle to the proportions (f) and needs of your child, read chapter "Adjusting the Bicycle to the Rider". If you are in doubt or if you have any questions, contact your Raymon dealer.

Get into the habit of doing the checks as described in chapter "Before Every Ride" together with your child. In this way, your child will

learn to handle the Raymon bicycle properly and you will be able to detect any defects that have developed during use. Encourage your child to tell you, if anything should not be working properly on his/her Raymon bicycle. Rectify the fault immediately or take the Raymon bicycle to your Raymon dealer for repair.

⚠ WARNING

Only buy tested training wheels, e.g. in accordance with BS or GS standards.

⚠ CAUTION

Children and adolescents need to have the saddle height (g) and the position of saddle and handlebar checked at least every 3 months!

SAFETY INSTRUCTIONS

If you want to install training wheels (h), ask your Raymon dealer about suitable models. Read the mounting instructions of the supplier and ask your Raymon dealer for more information, if necessary.

The training wheels are only an unsatisfactory riding aid for very small children and should be removed as soon as possible to train the sense of balance of your child.



BRAKE SYSTEM

General Information on Brakes

Brakes (a-c) are used for adjusting one's speed to the surrounding terrain and traffic. In an emergency situation, the brakes must bring the Raymon bicycle to a halt as quickly as possible.

In the event of such emergency braking, the rider's weight shifts forward abruptly, thus reducing the load on the rear wheel. The rate of deceleration is primarily limited by the danger of the rear wheel losing contact with the ground resulting in an overturning of the Raymon bicycle and secondly by the tyres' grip on the road. This problem becomes particularly acute when riding downhill. Therefore, in case of an emergency braking situation you must try to put your weight back and down as far as possible.

Actuate both brakes simultaneously and bear in mind that, due to the weight transfer, the front brakes can generate a far better braking effect on a surface with good grip.

The braking conditions on unpaved surfaces differ, i.e. overbraking the front wheel can make the wheel slip away. Therefore, be sure to practise braking on different kinds of surface.

Wet weather reduces the braking power. Actuate the brakes carefully when riding on wet or slippery ground, as the tyres can easily slip away. Therefore, reduce your speed when riding in such conditions.

SAFETY INSTRUCTIONS

Be sure to obtain the relevant operating instructions from the brake manufacturer so that you can adjust the brake yourself if necessary. After each adjustment, practise braking in a place free of traffic to get used to it.



There are various types of brake systems that may be subject to the following problems:

Rim brakes (d+e) are liable to overheating as a result of too long braking or brake dragging. This can damage the inner tube or make the tyre slip on the rim causing a sudden loss of air which could lead to a serious accident in the process.

Rims also wear down over time. They are even likely to burst. Therefore, they have to be replaced from time to time.

With **roller, drum, back-pedal and disc brakes** (f) prolonged braking or permanent dragging of brake pads can also lead to an overheating of the brake system. This can result in a reduction of the brake force or brake failure. **Risk of accident!**

When riding downhill, get used to braking hard and then releasing the brake again, whenever the road surface and the situation allows for it. If you are in doubt about the braking action, stop and let the brake system cool down.

⚠ WARNING

- *The brake lever to brake setup can vary, e.g. left lever acts on front brake. Have a look at the Raymon bike card and check whether you can actuate the front brake with the same brake lever (right or left) you are used to. If it is not, ask your Raymon dealer to change the brake levers before you set off for the first time.*
- *Make yourself carefully familiar with your brakes. Practise emergency stops in a place clear of traffic until you are comfortable controlling your Raymon bicycle. This can save you from having accidents.*
- *Wet weather reduces the braking effect and the road grip of the tyres. Be aware of longer stopping distances when riding in the rain, reduce your speed and actuate the brakes carefully.*
- *Ensure that braking surfaces and brake pads are absolutely free of wax, grease and oil. Risk of accident!*

SAFETY INSTRUCTIONS

- *When replacing any parts, be sure to only use suitable original spare parts that bear the appropriate mark (g+h). Your Raymon dealer will be pleased to help you.*



Rim Brakes

V-Brakes and Cantilever Brakes

Operation and wear

V-brake (a) and cantilever brake designs have two brake arms mounted separately on either side of the rim. When actuating the brake lever, both arms are pressed together by the cable, the pads touching the rim.

The friction generated by braking causes wear to the brake pads as well as to the rims. Frequent rides in the rain and dirt and over hilly terrain can accelerate wear on both braking surfaces. Some rims are provided with wear indicators, e.g. grooves or circular indentations. If the rim is worn down to the point where the grooves or indentations are no longer visible, they need to be replaced. Once the abrasion of the rim has reached a certain critical point, the rim may break under the tyre pressure. This can make the wheel jam or the inner tube burst. **Risk of accident!**

Functional check

Check whether the brake pads (b) are accurately aligned with the rims and still sufficiently thick. You can judge the wear of the brake pads by the appearance of grooves.

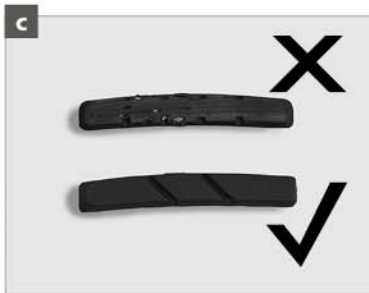
If the pads are worn down to the bottom of the grooves (c), it is time to replace them. Be sure to observe the according instructions of the respective manufacturers.

See your Raymon dealer and ask them to examine the remaining thickness of the rims when you have worn through your second set of brake pads at the latest (d). Your Raymon dealer has special measuring devices for determining the remaining thickness of the rims.

The brake pads must hit the rim simultaneously, first touching it with the front portion of their surface. At the moment of first contact the rear part of the pads should be a millimetre away from the braking surface. Viewed from the top the brake pads form a "V" with the trough pointing to the front. This setting is to prevent the brake pads from screeching when applied.

The brake lever must always remain clear of the handlebar. You should not even be able to pull them all the way to the handlebar in the event of an emergency stop. If this is the case, however, observe the following chapter "**Synchronising and Readjusting**".

Only a successful passing of all these points will ensure a correctly adjusted brake.



⚠ WARNING

Brake cables which are damaged, e.g. frayed (e), must be replaced immediately, as they can otherwise fail in a critical moment, possibly causing a fall!

Adjusting the position of the brake pads relative to the rims requires a considerable degree of skill. Replacing and adjusting the brake pads is a job best left to your Raymon dealer.

Have your rims regularly checked and measured by the Raymon dealer.

Synchronising and readjusting

Almost all brake designs have a bolt located next to one or both brake callipers for adjusting the spring preload (f). Turn the bolt slowly and watch how the gap changes between brake pads and rim.

Adjust the spring in a way that with an unapplied brake the gaps are equal on either side and the brake pads touch the rim simultaneously during braking.

The position of the brake lever where the brake starts to act, also referred to as pressure point, can be adjusted to the size of the hand as well as to individual convenience by readjusting the brake cable. Make absolutely sure you cannot pull the brake lever all the way to the handlebar grip. With an unapplied brake the brake pads should not be too close to the rim sides, otherwise they could drag along the rim during riding. Before making this adjustment, observe the notes in chapter **"Adjusting the Brake Lever Reach"**.

To readjust the brakes, unscrew the knurled lock ring located at the point where the brake cable enters the brake lever on the handlebar (g). Unscrew the knurled, slotted adjusting bolt by a few turns. This reduces the free travel of the brake lever. Keeping the adjusting bolt firm, tighten the lock ring against the brake lever unit. This prevents the adjusting bolt from coming loose by itself. Ensure that the slot of the bolt faces neither forward nor upward, as this would permit water or dirt to enter more easily.

⚠ WARNING

Always test the brakes' function in standing after adjusting them (h), making sure the brake pads engage fully with the rim when you pull them hard.



Hydraulic Rim Brakes

Operation and wear

Common hydraulic rim brakes (a+b) consist of two brake assemblies that are mounted on the left and right side of the rim and connected by an assembly plate and, if necessary by a brake booster. Actuating the brake lever compresses the hydraulic pistons through oil pressure, pushing the brake pads against the rims.

The friction generated by braking causes wear to the brake pads (c) as well as to the rims. Frequent rides in the rain and dirt and over hilly terrain can accelerate wear on both braking surfaces. Some rims are provided with wear indicators, e.g. grooves or circular indentations. If the rim is worn down to the point where the grooves or indentations are no longer visible, they need to be replaced. Once the abrasion of the rim has reached a certain critical point, the rim may break under the tyre pressure. This can make the wheel jam or the inner tube burst. **Risk of accident!**

Keep the hydraulic brake assemblies, especially the brake pad area, clean (d), as dirt can prevent the pads from travelling back in their rest position. Regularly check the hoses and connections for leaks.

⚠ WARNING

Loose connections and leaky brake hoses can drastically impair the braking effect. If you find leaks in the brake system or buckled hoses, contact your Raymon dealer. Risk of accident!

Functional check

Check whether the brake pads are accurately aligned with the rims and still sufficiently thick. You can judge the wear of the brake pads by the appearance of grooves. If the pads are worn down to the bottom of the grooves, it is time to replace them. Be sure to observe the according instructions of the respective manufacturers.

See your Raymon dealer and ask them to examine the remaining thickness of the rims when you have worn through your second set of brake pads at the latest. Your Raymon dealer has special measuring devices for determining the remaining thickness of the rims (e).



The brake pads must hit the rim simultaneously and in parallel (b). This setting is to prevent the brake pads from screeching when applied.

The brake lever must always remain clear of the handlebar. You should not be able to pull it all the way to the handlebar (f), not even in the event of an emergency stop. If this is the case, however, observe the following chapter **"Synchronising and Readjusting"**.

Only a successful passing of all these points will ensure a correctly adjusted brake.

⚠ WARNING

Adjusting the position of the brake pads relative to the rims requires a considerable degree of skill. Replacing and adjusting the brake pads is a job best left to your Raymon dealer.

Have your rims regularly checked and measured by the Raymon dealer.

Synchronising and readjusting

Hydraulic rim brakes are synchronised together with the alignment of the brake pads. At the same time the position of the brake lever where the brake starts to act, also referred to as pressure point, can be adjusted to the size of the hand as well as to individual convenience (g). For more information also observe the notes in chapter **"Adjusting the Brake Lever Reach"**.

As the brake pads wear down, the pressure point moves towards the handlebar grips. Make absolutely sure you cannot pull the brake lever all the way to the handlebar grip. Most brake models, however, have a bolt (h) or a small knob at the brake lever unit to compensate the wear. For more information observe the brake manufacturer's instructions or contact your Raymon dealer.

SAFETY INSTRUCTIONS

Manufacturers of hydraulic brakes deliver their products with detailed manuals. Read them carefully before removing the wheel or doing any maintenance. Improper operation can lead to brake failure.



Disc Brakes

Operation and wear

The most striking feature of disc brakes is their outstanding braking effect. They respond a lot faster in wet conditions than rim brakes do and achieve their normal high braking power within a very short time. They require little maintenance and do not wear down the rims as rim brakes do.

Disc brakes (a) consist of the brake calliper (1), the brake disc/rotor (2), the brake hose or cable (3) as well as the brake grip/lever (b). Actuating the brake lever compresses the hydraulic pistons through hydraulic pressure or mechanically, pushing the brake pads against the brake disc/rotor. The friction generated by braking causes wear to the brake pads (c) as well as to the brake discs/rotors. Frequent rides in the rain and dirt and over hilly terrain can accelerate wear of the brake discs/rotors. Depending on the manufacturer and the model there are different ways of checking the brake pads and brake discs/rotors for their wear limits.

⚠ WARNING

New brake pads need a "break-in" period before they reach their optimal braking performance. For this purpose, accelerate the bicycle 30 to 50 times to around 30 km/h (18 mph) and bring it to a standstill each time. This procedure is finished, when the force required at the lever for braking has stopped decreasing.



⚠ WARNING

- Dirty brake pads and brake discs/rotors can lead to drastically reduced brake force. Therefore, make sure the brake remains free of oil and other fluids, especially when you clean your Raymon bicycle or grease the chain. Dirty brake pads can under no circumstances be cleaned, they must be replaced! Brake discs/rotors can be cleaned with special brake cleaners and with a clean absorbing cloth or with warm water and detergent (d).**
- Unusual noises (scratching, chafing etc.) during braking and/or a noticeable change of the brake force (stronger or weaker) are indications that the brake pads are soiled or worn down. Check the brake pads and replace them, if necessary. Otherwise you risk further damage, e.g. to the brake disc/rotor, or even an accident due to brake failure! If you are in doubt, contact your Raymon dealer.**

⚠ CAUTION

- Disc brakes get hot in use. For this reason do not touch the rotors directly after stopping, especially after a long downhill ride.**

Hydraulic Disc Brakes

Functional check

Regularly check the hoses (e) and connections for leaks while pulling on the lever. In case of a brake liquid leakage, contact your Raymon dealer immediately. A leak in the brake lines can render the brake ineffective. **Risk of accident!**

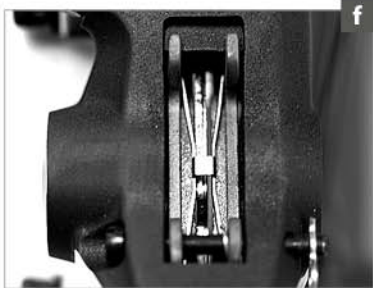
Wear and maintenance

Check the pads for wear at regular intervals (f) by following the service instructions in the manual of the respective manufacturer.

Measure the thickness of the brake pad on the mount by using a calliper gauge (g). The brake pad must all over be 0.5 mm thick at least. Measure the pad and the mount together as well as the mount alone; the difference is the thickness of the pad. Re-insert the cleaned brake pads into the cleaned calliper.

⚠ WARNING

Loose connections and leaky brake hoses drastically impair braking effect. If you find leaks in the brake system or buckled hoses, contact your Raymon dealer immediately!



⚠ WARNING

Do not place a Raymon bicycle with hydraulic disc brakes upside down. Air could get into the system. This could render the brake ineffective (h).

⚠ CAUTION

Do not open the brake hoses. Risk of brake fluid leakage which is harmful to health and coating.

SAFETY INSTRUCTIONS

If your brake system works with DOT brake fluid, the latter needs to be replaced regularly according to the intervals prescribed by the manufacturer.

The manufacturers of hydraulic disc brakes usually deliver their products with detailed manuals. Be sure to read them carefully before removing a wheel or doing any maintenance work.

Mechanical Disc Brakes

Functional check

The more brake pads of mechanical disc brakes wear down, the longer is the brake lever travel. Regularly check whether you get a positive braking response before the lever touches the handlebar. Make sure the brake cables are in sound condition!

⚠ WARNING

Damaged cables (a) should be replaced immediately, as they can snap. Risk of accident!

Wear and maintenance

To a certain extent, wear of the brake pads can be compensated directly at the brake lever. Unscrew the knurled lock nut on the bolt through which the cable enters the grip (b) and then unscrew the bolt until the lever has the desired travel. Retighten the lock nut thereby taking care that the slot of the bolt does not face upward or forward, as this would permit an unnecessarily high amount of water or dirt to enter.



Now check the functioning of the brake and make sure the brake pads do not drag on the brake disc/rotor (c+d) when you release the brake lever and let the wheel spin.

Repeated readjustment at the brake lever makes the arm on the brake calliper change its position. This can reduce braking power and result in a complete brake failure in an extreme case. **Risk of accident!**

Some models offer further ways of adjusting the brakes directly at the brake calliper, though this requires a certain amount of skill. In any case, be sure to read the original instructions of the brake manufacturer before adjusting the brakes. If you are in doubt or if you have any questions, contact your Raymon dealer.

⚠ WARNING

Repeated readjustment at the brake lever can drastically reduce the maximum braking performance.

SAFETY INSTRUCTIONS

The manufacturers of mechanical disc brakes usually deliver their products with detailed manuals. Be sure to read them carefully before removing a wheel or doing any maintenance work.

Roller, Drum and Back-Pedal Brakes

These types of brakes have an enclosed design; brake pads and surfaces inside the hub body are largely protected against the influences of the weather. The braking force is transmitted through cables from the levers to the brakes. As rear brake they are mostly connected to an internal gear hub (e) and sometimes they are operated by back pedalling.

With back-pedal brakes maximum brake force is achieved by stepping on one of the pedals in its rearmost position with the cranks horizontal. With internal gear hubs from SRAM the brake force increases by shifting into a lower gear.

The risk of overheating is particularly high with these brake systems. Brake overheating occurs on prolonged (steep) downhill rides with permanent brake dragging. Brake fading is a result thereof which, in extreme cases, can lead to brake failure.

Therefore, if you notice that the braking effect deteriorates, stop and let the brake system cool down. Sometimes, it will be enough to operate the front and rear brake in an alternating pattern. If that will not suffice, stop for a couple of minutes before you set off again.



⚠ WARNING

- *Brake cables which are damaged, e.g. frayed, must be replaced immediately, as they can otherwise fail in a critical moment, possibly causing a fall!*
- *If during braking the travel of the brake lever increases, unusual noises occur and/or the braking effect is more or less effective than usual, do not ride your Raymon bicycle. In such a case, contact your Raymon dealer immediately.*
- *Check regularly whether the torque support is firmly attached to the frame (f) or fork. Use a torque wrench and never exceed the maximum torque values!*

Checking and Readjusting Back-Pedal Brakes

The chain tension (g) of Raymon bicycles with back-pedal brakes has to be checked and retensioned, if necessary, after approx. 1,000 km (600 miles) or 50 hours of use. For more details read chapter “Chain – Care and Wear”.

⚠ WARNING

- *Keep in mind that the back-pedal brake is ineffective with a fall-en-off chain (h). Risk of accident!*

GEARS

Derailleur Gears

The gears (a+b) of your Raymon bicycle serve to adjust the gear ratio to the terrain you are riding on and the desired speed. A low gear (where in the case of derailleur gears the chain runs on the small chainring and a large sprocket) allows you to climb steep hills with moderate pedalling force. You must, however, pedal at a faster pace. High gears (large chainring, small sprocket) are for riding downhill. Every turn of the pedals takes you many metres forward at correspondingly high speed.

⚠ WARNING

Practise shifting gears in a place free of traffic until you are familiar with the functioning of the levers or twist grips of your Raymon bicycle.

SAFETY INSTRUCTIONS

Read the gear manufacturer's operating instructions and make yourself familiar with gear shifting before you set off for the first time.



Operation and Control

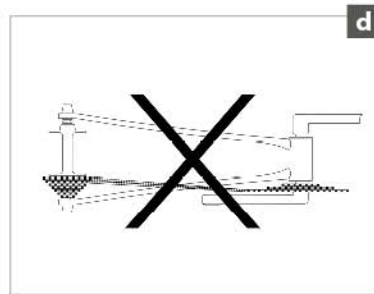
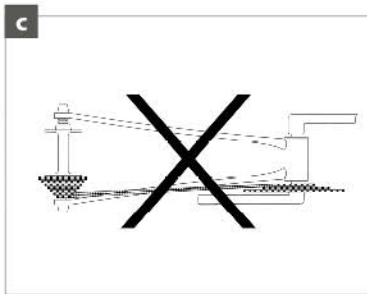
Derailleur gears always work according to the following principle:

Large front chainring – high/heavy gear – bigger gear ratio
 Small front chainring – low/easy gear – smaller gear ratio
 Large rear sprocket – low/easy gear – smaller gear ratio
 Small rear sprocket – high/heavy gear – bigger gear ratio

Normally, the shifters are mounted as follows:

Shift lever right – rear sprockets
 Shift lever left – front chainrings

Modern Raymon city/trekking bicycles can have up to 30 gears. As there are, however, overlapping ranges, actually 15 to 18 gears are usable. It is not advisable to use gears which involve an extremely oblique run of the chain, as this reduces power transmission efficiency and hastens wear of the chain. An unfavourable run of the chain is when the smallest chainring is used with one of the two or three outermost (smallest) sprockets (c) or when the largest chainring is used with one of the inmost (largest) sprockets (d).



The bottom bracket (e) is the interface between cranks and frame. There are different designs, in some cases the bearing shaft is part of the bottom bracket, in some other cases it is integrated into the right crank. Sealed bottom brackets are maintenance free and delivered without play ex works. The bottom bracket in the frame and the cranks on the shaft must be checked for play at regular intervals.

Also check at regular intervals whether the cranks are firmly attached to the bearing shaft or whether there is play. Grab the crank and try to jiggle it forcefully. It must be absolutely free of play (f). If you notice any play, contact your Raymon dealer immediately.

Depending on the gear system, gear shifting is initiated by actuating a shift lever or by a short turn of the wrist with twist grips (g). Continue pedalling during gear shifting, however, at reduced pedalling force.

Find below the principles of the shift lever types and their operation. It is, however, also possible that your new Raymon bicycle has a gear system that is not listed below.

In the case of shift levers pressing the large shifter (thumb shifter) moves the chain towards the larger chainrings/sprockets.

That means that any gear shift made by pressing the large thumb shifter on the right produces a lower gear. This is an indexed shifting system with the option of shifting several gears with one action. Actuating the large thumb shifter on the left produces a higher gear.

Pulling the small lever located in front of the handlebar from the rider's viewpoint and actuated with the index finger (index finger lever) shifts the chain towards the smaller chainrings/sprockets, i.e. on the right side to the heavy gears and on the left side to the easy gears.

SAFETY INSTRUCTIONS

The gear manufacturers usually deliver their products with detailed manuals. Read them thoroughly. Make yourself familiar with your new gears, if necessary, in an area free of traffic, if necessary (h). If you are in doubt or if you have any questions, contact your Raymon dealer.

The principle is different with **twist grips**. Turning the right-hand grip towards you makes for a lower gear ratio, while the same movement on the left produces a higher gear – and vice versa. The shifting direction may vary in this case, as well.



⚠ WARNING

Always wear straight-cut trousers or use trouser clips or the like (a) to make sure your trousers do not get caught in the chain or the chainrings. Risk of accident!

Shifting gears under load, i.e. while pedalling hard, can make the chain slip. At the front derailleur the chain may even slip off the chainrings and result in an accident! At least the service life of the chain will be shortened considerably.

NOTICE

If there is play between bearing shaft and cranks, they can sustain damage. Risk of breakage!

Avoid gears with the chain running at an extreme angle, as this will increase wear!

It is therefore crucial when switching gears to continue pedalling smoothly and without too much force. Do not shift under load, in particular not at the front derailleur (b), as this will shorten the service life of your chain considerably. Furthermore, this can lead to a chain-suck, i.e. the chain can get jammed between chain stay and chainrings.

Checking and Readjusting

The derailleur gears of your Raymon bicycle were carefully adjusted by your Raymon dealer before delivery (c). However, Bowden cables may stretch a little on the first kilometres/miles, making gear shifting imprecise and the chain rattle.

Adjusting the front and rear derailleur (d) accurately is a job for an experienced mechanic. If you want to try it by yourself, observe the gear manufacturer's operating instructions. If you have any problems with the gears, contact your Raymon dealer.

⚠ WARNING

For your own safety, bring your Raymon bicycle to your Raymon dealer for its first inspection after 100 to 300 kilometres (60 to 180 miles), 5 to 15 hours of initial use or four to six weeks, at the very latest, however, after three months.



Adjusting the Rear Derailleur

Increase the tension of the Bowden cable by turning the adjustable cable stop at the shifter lever (e) or the adjusting bolt through which it runs into the rear derailleur (f). To do so, shift to the smallest sprocket and turn the bolts anticlockwise in half turns until the cable is slightly tensioned.

After tensioning the Bowden cable check whether the chain immediately climbs onto the next larger sprocket. To find out you either have to turn the cranks by hand (g) or ride the Raymon bicycle and shift through the gears.

If the chain easily climbs onto the next larger sprocket, check whether it just as easily shifts to the small sprockets. If it does not, release the respective adjusting bolt a little. You may need several tries.

⚠ WARNING

Adjusting the front and rear derailleur accurately is a job for an experienced mechanic. Observe the instructions of the gear manufacturer. If you have any problems with the gears, contact your Raymon dealer.



SAFETY INSTRUCTIONS

Ask a helper to lift the rear wheel. By turning the cranks and shifting through you can easily check the function.

Adjusting the limit stops

The rear derailleur is equipped with limit screws (h) which limit the movement range of the derailleur, thus preventing the derailleur and chain from colliding with the spokes or the chain from dropping off the smallest sprocket. The limit screws are adjusted by your Raymon dealer. They do not alter their position during normal use.

If necessary, correct the position of the jockey wheels by means of the limit screws. The limit screws on rear derailleurs are often marked "H" for high gear and "L" for low gear. High gear means that the chain is running on the smallest sprocket. Turn the screw clockwise to move the rear derailleur towards the wheel and anticlockwise to move it away from the wheel.

Shift to the biggest (inmost) sprocket and check whether the teeth of the sprocket and the teeth of the guide pulley are all in a perfectly vertical line. Turn the limit screw marked "L" clockwise until the rear derailleur stops moving towards the spokes and can neither be moved by actuating the shift lever nor by pushing it with your hand (a, p. 48).

This adjustment prevents the chain from getting stuck between sprocket and spokes or the rear derailleur or the derailleur cage from touching the spokes, which could result in damage to the spokes, the rear derailleur and the frame. In the worst case, it could be impossible to continue cycling.

⚠ WARNING

If your Raymon bicycle has tipped over or the rear derailleur received a blow, the rear derailleur or its mount, also referred to as derailleur hanger, might be bent. It is advisable to check its range of movement and readjust the limit screws, if necessary, after such an incident or after mounting a new rear wheel on your Raymon bike.

Do a test ride in a place free of traffic, after adjusting the gears of your Raymon bicycle.

NOTICE

Poorly adjusted gears are one of the main causes for irreparable damage to frame, rear derailleur and wheels.

SAFETY INSTRUCTIONS

Have your Raymon bicycle checked by your Raymon dealer at regular intervals.

Adjusting the Front Derailleur

The range within which the front derailleur (b) keeps the chain on the chainring without itself touching the chain is very small. The swivelling range is reduced in the same way as with the rear derailleur, i.e. by turning the limit screws marked "H" and "L". The limit screws are adjusted by your Raymon dealer. They do not alter their position during normal use.

As with the rear derailleur, the cable of the front derailleur (c) is subject to lengthening which leads to a reduced precision in gear changing. If necessary, shift to the small chainring and increase the tension of the Bowden cable by turning the adjusting bolt through which it passes at the entry to the gear shifter (d).

⚠ WARNING

Always check after an accident whether the guide plates of the front derailleur are still parallel to the chainrings. Make sure they do not touch the large chainring which would block the drive. Risk of accident!

Adjusting the front derailleur is a very delicate job. Improper adjustment can cause the chain to jump off, thus interrupting the driving force. This can cause a fall!

Do a test ride in a place free of traffic, after adjusting the gears of your Raymon bicycle.



Multi-Speed Hubs (Internal Gear Hubs)

General Information on Multi-Speed Hubs

The gears of your Raymon bicycle serve to adjust the gear ratio to the terrain you are riding on and the desired speed. A low gear allows you to climb steep hills with moderate pedalling force. You must, however, pedal at a faster pace. High gears are for riding downhill. Every turn of the pedals takes you many metres forward at correspondingly high speed.

The advantages of multi-speed hubs (e) are their enclosed design. Unlike derailleur gears the gear drive is within the hub body, only the primary ratio from the chainring to the sprocket being outside. What is more, all gears can be shifted through with one gear shifter (f).

Provided that it is serviced regularly, the drive chain has a comparatively longer service life. And this even more when it is protected from the influences of the weather by a sealed chain box.

With multi-speed hubs normally the power transmission and the gear ratio adjustment is guaranteed via one or several planetary gears, depending on the number of gears. To change gears the pedal force should be reduced significantly for a short time.

Always make sure changing gears makes as little noise as possible and is absolutely jerk free. This increases the service life considerably.

Make yourself familiar with the operation of your gears in a place free of traffic (g) and practise operating the shifters or the twist grips as well as the brake system, before using your Raymon bicycle on public roads.

In contrast to derailleur gears, multi-speed hubs cannot only be combined with manually actuated brakes (rim, drum, roller or disc brakes). They can also be actuated with back-pedal brakes (roller or drum brakes) by a reverse rotation of the pedals. Most effective braking is achieved with the pedals in horizontal position (h).

Removing and mounting wheels differs from that of derailleur gears. For more details read the chapters **"Tyre Puncture"** and **"Readjusting the chain tension"** and observe the notes given in the operating instructions of the manufacturer.



Operation and Control

The gear drive in multi-speed hubs is operated with a shifter that is usually positioned on the right side of the handlebar.

The gear mechanism works either mechanically by cable or electronically by shifting cable or by radio transmission (a).

During the shifting process you should interrupt pedalling or avoid strong pressure on the pedal.

If you have a back-pedal brake, be sure to use an additional second or if available a third brake for long and steep downhill rides (b) to avoid an overheating of the back-pedal brake.

Excessive heating of the hub (c) can result in a loss of lubricant and thus in reduced or strong braking power. In this case, be sure to contact your Raymon dealer.

Do not use the Raymon bicycle until it has been repaired. Also observe the operating instructions of the hub manufacturer.

⚠ WARNING

If untypical noises occur during braking or if the brake force decreases or increases unexpectedly, you should stop riding immediately and contact your Raymon dealer!



Check, Readjustment and Maintenance

Multi-speed hubs require only little maintenance and need not be adjusted very often. Check the chain tension (d), in particular when removing and mounting wheels and read in addition the chapter “Chain – Care and Wear”. If the gear steps do not engage and function trouble-free, even after the control or adjustment described in the following, contact your Raymon dealer.

⚠ WARNING

If your Raymon bicycle has hydraulic disc brakes, do not place it upside down for repair purposes, i.e. handlebar and saddle on the ground. This would render the brake ineffective.

⚠ CAUTION

When working in the area of the rear wheel hub and its cassette joint, be aware of the risk of crushing the fingers. Therefore, do not turn the cranks during the work or do not push the Raymon bicycle backwards.

CAUTION

Brake discs/rotors, roller and back-pedal brakes can become hot. Let them cool down before doing any work on the wheels.

NOTICE

Do not pull the (disc) brake lever (e) with a removed wheel and make sure to mount the safety locks when removing the wheel.

SAFETY INSTRUCTIONS

In addition, observe the information and the operating instructions of the gear manufacturers. They are available on their websites:

<https://si.shimano.com>

www.rohloff.de/en/service

<https://support.enviolo.com/hc/en-us>

www.pinion.eu/en/downloads/

If you have any questions, contact your Raymon dealer.

Adjusting 5-/7-/8-/11-speed Shimano Nexus and Alfine internal gear hubs (mechanically operated)

Set the shift lever to the setting gear required for the respective hub.

For the 5-speed Shimano Nexus it is gear 3. For the 7 and 8-speed Shimano Nexus and the 8-speed Shimano Alfine it is gear 4 (f). For the 11-speed Shimano Alfine it is gear 6.

Check the setting lines at the cassette joint positioned on the right side of the hub in direction of motion. The mainly yellow setting lines under the window of the cassette joint must be aligned (g).

If they are not, turn the barrel adjuster on the shifter gradually, i.e. in quarter turns, clockwise or anticlockwise (h), until the setting lines under the window are aligned.

Turn the crank and shift through all gears several times with the shift lever before shifting back to the respective setting gear.



Re-check whether the setting lines are still aligned. If necessary, you have to slightly readjust the setting once again. Do to so turn the barrel adjuster on the shifter gradually once again clockwise or anti-clockwise until the setting lines are aligned.

Adjusting 14-speed Rohloff (mechanically operated)

The setting of the 14 speeds of the Rohloff gears cannot be adjusted from outside.

The mark of the gear number and the play of the twist shifter can however be adjusted with the two barrel adjusters at the frame or at the gear box.

For the Rohloff hub with internal activation the barrel adjusters are in most cases on the top left or bottom rear stay in direction of motion (a). For the Rohloff hub with external activation they are located at the gear box. The gear box is on the left side of the Rohloff hub in direction of motion.

The mark on the twist shifter can be aligned without changing the cable tension (b).

To do so one of the barrel adjusters has to be screwed in and the other one to be unscrewed to the same extent (c).

The play of the twist shifter is adjusted via the cable tension with the barrel adjusters. Unscrewing both barrel adjusters increases, screwing in both barrel adjusters reduces the cable tension and thus the play. The play of the twist shifter should be approx. 1–2 mm. Proceed step-by-step, e.g. in quarter turns.

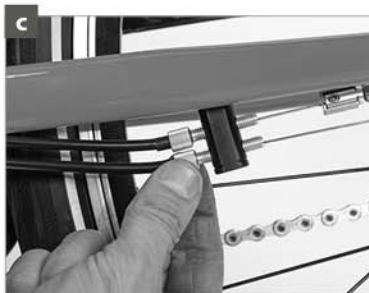
Adjusting Enviolo (mechanically operated)

The Enviolo gear is a stepless gearbox without fixed gear steps. Therefore, the gears cannot be adjusted.

The cable tension can be adjusted with the two barrel adjusters at the twist shifter (d). The ideal play is 0.5 mm.

SAFETY INSTRUCTIONS

The setting and diagnosis of electronically operated internal gear hubs (Shimano Alfine Di2, Rohloff E14, Enviolo H-Sync) can only be performed with the soft and hardware of the respective manufacturer. If you have any questions, contact your Raymon dealer.



Adjusting Pinion

The setting of the speeds of the Pinion gears (e) cannot be adjusted from outside.

The mark of the gear number and the play of the twist shifter can however be adjusted with the two barrel adjusters at the twist shifter (f).

The mark on the twist shifter can be synchronised without changing the cable tension. To do so one of the barrel adjusters has to be screwed in and the other one to be unscrewed to the same extent. Proceed step-by-step, e.g. in quarter turns.

The play of the twist shifter is adjusted via the cable tension with the barrel adjusters. Unscrewing both adjustment barrels increases and screwing in both adjustment barrels reduces the cable tension and thus the play.

The cable tension is properly set when the ends of the shift cable housings are in the barrel adjusters without play, but unpressurised. The play of the twist shifter should be approx. 2 mm.



Chain tension

After a certain period of time every chain extends. On a Raymon bicycle with multi-speed hub the chain play midway between chainring and rear sprocket should be approx. 1–2 cm (g). If there is more play, the chain has to be re-tensioned.

Check the chain tension in varying crank positions.

NOTICE

Adjusting the chain tension is only necessary on Raymon bikes with multi-speed hubs, because the chain on a Raymon bike with derailleur gears is automatically tensioned by the rear derailleur.

Readjusting the chain tension

To adjust the chain tension the two rear axle nuts and, if available, the clamp bolt (of the brake arm) have to be loosened (h). By pulling the rear wheel back in the drop-outs the chain tension is increased until the optimum chain tension is reached.



Tighten the wheel nuts then to a torque value of 35 Nm (a) and the clamp bolt of the brake arm to a torque value of 3–4 Nm.

Some frame designs do not have a horizontally opened drop-out. The drop-outs are slidable and screwed to the frame instead. To tension the chain the bolted connection of the slidable drop-out has to be released (b+c).

Regularly check the reliable fit of the bolted connection of the hub and, if available, of the brake arm on the frame.

Maintenance of the internal gear hubs

Shimano recommends that you have lubricated the Nexus and Alfine internal gear hubs every second year or every 5,000 kilometres (3,000 miles) of intensive use (d). The 11-speed Alfine internal gear hub requires a first oil change after 1,000 kilometres (600 miles). Subsequently, the oil has to be changed every 5,000 kilometres (3,000 miles) or every two years. With this fact in mind read the operating instructions or contact your Raymon dealer.

Internal gear hubs must be maintained regularly. Observe the intervals in the chapter **"Service and Maintenance Schedule"**.

SAFETY INSTRUCTIONS

In addition, observe the information and the operating instructions of the gear manufacturers. They are available on their websites:

<https://si.shimano.com>

www.rohloff.de/en/service

<https://support.enviolo.com/hc/en-us>

www.pinion.eu/en/downloads/

If you are in doubt or if you have any questions, contact your Raymon dealer.



CHAIN – CARE AND WEAR

Regular and correct lubrication of your Raymon bicycle chain ensures enjoyable riding and prolongs its service life. It is not the quantity but the distribution and regular application of lubricant that counts. Clean the dirt and oil off your chain with an oily rag from time to time (e). Special degreasers are not necessary; they even have a damaging effect.

Apply chain oil, wax or grease to the bright chain links (f). To lubricate the chain, drip the lubricant onto the rollers of the lower run of the chain while you turn the crank. Once this is done, turn the cranks a few more times; then let the bicycle rest for a few minutes so that the lubricant can disperse. Finally wipe off excess lubricant with a rag so that it does not spatter around during riding or can collect road dirt.

⚠ WARNING

Make sure the braking surfaces of the rims, the brake discs/rotors and the brake pads remain clear of lubricants. This would render the brake ineffective!

NOTICE

For the sake of the environment, only use biodegradable lubricants. Bear in mind that some of the lubricant can end up on the ground, especially in wet conditions.



Although the chain is one of the wearable parts of the bicycle, there are still ways for you to prolong its life. Make sure the chain is lubricated regularly, especially after riding in the rain. Try to only use gears which run the chain in the straightest line between the sprockets and chainrings and get in the habit of high cadence pedalling.

Chains of Raymon bicycles with derailleur gears are worn out after approx. 800 to 2,500 km (480 to 1,500 miles) or 40 to 125 hours of use. Heavily stretched chains impair the operation of derailleur gears. Cycling with a worn-out chain also accelerates the wear of the sprockets and chainrings. Replacing these components is relatively expensive compared with the costs of a new chain. It is therefore advisable to check the condition of the chain at regular intervals.

Your Raymon dealer has accurate measuring instruments for checking the chain wear (g). Replacing the chain should ideally be left to an expert, as this requires special tools. In addition, you need to select a chain matching your gear system.

⚠ WARNING

An improperly joined or heavily worn chain can break and cause an accident.

SAFETY INSTRUCTIONS

When replacing your chain, only use appropriate and suitable original spare parts (h). Your Raymon dealer will be pleased to help you.

GATES BELT DRIVE

In the case of the Gates belt drive (a) a carbon drive belt (b) replaces the usual chain. Gates belts can only be combined with internal gear hubs and Pinion gears, however not with derailleur gears (c).

Maintenance and Care

Thanks to the carbon fibre surface, the belt remains free of dirt. Therefore, it will do to clean the belt with water, if necessary. The carbon drive belt must or may not be lubricated or oiled.

Checking the Belt Tension

The optimum operation of the Gates belt drive requires the proper tension of the belt. An unusually low tension can make the belt skip and thus affect the performance. Too high a tension of the belt will render the drive sluggish and unnecessarily increase the wear of the belt and the bearings.

Setting the tension requires specific equipment and experience and is therefore a job for your Raymon dealer.

If you want to try it nevertheless: The tension can be easily adjusted with the Gates Carbon Drive™ mobile app (d) or the belt tension gauge (Gates Kriket Gauge).

SAFETY INSTRUCTIONS

Contact your Raymon dealer to have your Gates belt drive checked or re-tensioned. More information is also available at: www.gatescarbondrive.com



WHEELS AND TYRE EQUIPMENT

The wheel consists of the hub, the spokes and the rim. The tyre is mounted onto the rim so that it encases the tube. There is a rim tape running around the rim well (e) to protect the sensitive tube against the spoke nipples and the edges of the rim trough, which are often sharp.

Due to the rider's weight and the luggage as well as unevennesses in the field, the wheels are subjected to considerable load. Although wheels are manufactured with great care and delivered accurately trued, spokes and nipples can lose a little tension on the first kilometres/miles. Therefore, ask your Raymon dealer to check and true up the wheels after a short period of operation already, i.e. after about 100 to 300 kilometres (60 to 180 miles) or 5 to 15 hours of use.

After the initial "break-in" period, check the wheels regularly. It will, however, rarely be necessary to tighten the spokes (f).

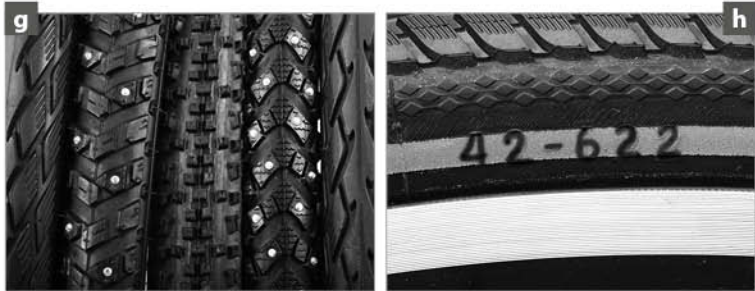


Tyres, Inner Tubes, Rim Tape, Inflation Pressure

The tyres should provide grip and traction. At the same time they should run smooth and enhance the rider's comfort by absorbing small shocks. Both the rolling friction and the grip depend on the nature of the tyre carcass, the rubber compound and the tyre tread. Your Raymon dealer will be pleased to help you choose from the numerous types of tyres (g).

If you want to mount a new tyre, you need to mind the sizing system and the actual size of the old tyre. The latter is specified in two different units on the side of the tyre. One of the sizes is the standardised size in millimetres which is more precise, e.g. the number sequence 42-622 means that the tyre is 42 mm wide when fully inflated and has an (inner) tyre diameter of 622 millimetres (h). The other size is indicated in inches (e.g. 28x1.6").

Tyres must be inflated to the proper inflation pressure to provide an optimal compromise between smooth running and riding comfort. Properly inflated tyres are also more resistant to punctures. An insufficiently inflated tyre can easily get pinched ("snakebite"), when it goes over a sharp kerb.



The air pressure recommended by the manufacturer is given on the tyre side or on the type label. The lower of the two pressure specifications makes for better cushioning for lightweight riders and is therefore best for cycling on a rough surface. Rolling resistance on level ground decreases with growing pressure, but so does comfort. Highly inflated tyres are therefore most suitable for heavy riders and for riding on smooth asphalt.

Inflation pressure is often given in the old system of units, i.e. in psi (pounds per square inch). The table (a) gives the most common pressure values in terms of both systems.

The tyre and rim alone are not able to hold the air. To maintain the pressure inside an inner tube is placed inside the tyre and filled through a valve.

⚠ WARNING

Are the tyres in good condition and do they have sufficient pressure? A higher pressure gives a better riding stability and reduces the risk of a puncture. The minimum and maximum pressure (in bar or psi) is indicated on the tyre side.

a			
psi	bar	psi	bar
45	3.1	75	5.2
50	3.4	80	5.5
55	3.8	85	5.9
60	4.1	90	6.2
65	4.5	95	6.6
70	4.8	100	6.9



Valves

There are three valve types in general use on Raymon city and trekking bicycles:

1. **Sclaverand or Presta valves (b):** This valve is nowadays used on almost all types of bicycles. It is designed to withstand extremely high pressures.
2. **Schrader or American valve (c):** This is an adapted car tyre valve.
3. **Dunlop or Woods valve (d):** the usual valve.

All valve types come with a plastic cap to protect them from dirt.

The **Schrader** and **Dunlop valve** can be inflated with a suitable pump directly after removing the protective cap.

In the case of **Presta valves** you first have to undo the small knurled nut a little and depress it carefully until air starts to escape. Check the nut is tightened and seated in its stem, otherwise air may slowly leak out. Do not forget to tighten by hand the valve nut after inflating.

Tyres with **Schrader valves** can conveniently be inflated at car filling stations with a compressed air dispenser. The same applies to **Dunlop** and **Presta valves** equipped with special adapter. A compressed air dispenser must be used very carefully as you may otherwise overinflate the tyre and make it burst. To let out air, shortly press the pin in the centre of the Schrader valve (e) or the knurled nut of the Presta valve (f).

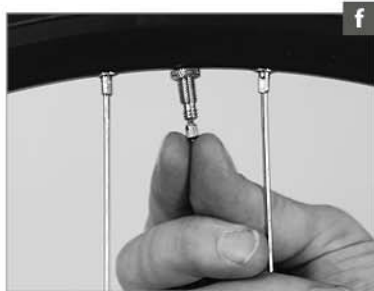
In the case of the **Dunlop valve** unscrew the knurled nut until air comes out of the valve. Retighten the knurled nut subsequently. Normally, you have to inflate the tyre completely.

It can be hard to inflate tyres to the necessary pressure by using hand pumps. It is much easier with a track pump equipped with a pressure gauge (g).

⚠ WARNING

Replace tyres with a worn tread or with brittle or frayed sides. Dampness and dirt penetrating the tyre can cause damage to its inner structure. The tube might burst. Risk of accident!

Treat your tyres with care. Never inflate your tyres beyond the maximum permissible pressure, otherwise they might burst or come off the rim during the ride. Risk of accident!



⚠ WARNING

Tyres allowing an inflation pressure of 5 bars or more have to be mounted on Crochet-type rims, identifiable by the designation "C". If you are in doubt or if you have any questions, contact your Raymon dealer.

If you mount a tyre of another size than the standard one, it may be that the tyre will rub against the suspension fork, the mud-guard, the brakes or other components and sustain damage. This can even lock up the wheel. When buying tyres, ask your Raymon dealer for advice.

Are the tyres in good condition and do they have sufficient pressure (h)? A higher pressure gives a better riding stability and reduces the risk of a puncture. The minimum and maximum pressure (in bar or psi) is indicated on the tyre side.

SAFETY INSTRUCTIONS

Always ride your Raymon bicycle with the prescribed tyre pressure and check the pressure at least once a week.

Observe the maximum pressure value of the rim. The pressure is dependent on the tyre width. You will find the values in the enclosed instructions of the rim or wheel manufacturer.



Rim Trueness and Spoke Tension

For the true running of the wheel the spokes must be tensioned evenly (a). If the tension of a single spoke changes, e.g. as a result of riding fast over a kerb or of a loose nipple, the tensile forces acting on the rim become unbalanced and the wheel will no longer run true. The functioning of your Raymon bicycle may even be impaired before you notice the wobbling appearance of a wheel that has gone out of true.

In the case of rim brakes the sides of the rims also serve as braking surfaces (b). An untrue wheel can impair the braking effect. It is therefore advisable to check the wheels for trueness from time to time. For this purpose lift the wheel off the ground and spin it with your hand. Watch the gap between the rim and the brake pads (c). If the gap varies by more than a millimetre, you should ask a Raymon dealer to true up the wheel (d).

⚠ WARNING

Do not ride with untrue wheels. In the case of extreme side-to-side wobbles, the brake pads of rim brakes can miss the rim and get caught in the spokes! This normally instantly jams the wheel and throws you off your Raymon bicycle.

Loose spokes must be tightened at once. Otherwise the load on the other spokes and the rim will increase.

NOTICE

Truing (retruing) wheels is a difficult job which you should definitely leave to your Raymon dealer.



TYRE PUNCTURE

Flat tyres are the most common cause of puncture during cycling. However, as long as you have the necessary tools and a spare tube or a repair kit, this need not mean the end of your cycle ride. If your wheels are attached with quick-releases to the frame and the fork, you only need two tyre levers and a pump.

SAFETY INSTRUCTIONS

Before removing a wheel read chapters "Wheel Mounting" and "How to Use Quick-Releases". If you are in doubt or if you have any questions, contact your Raymon dealer.

Wheel Removal

If your Raymon bicycle has **mechanical rim brakes** (cantilever and V-brakes), you have to unhook the brake cable from the brake arm first (e). To do this, grip the rim with one hand and press the brake pads or the brake arms together. In this position the usually barrel-shaped nipple of the lateral brake cable or the brake hose (of V-brakes) can easily be disengaged.



If your Raymon bicycle has **hydraulic rim brakes** from Magura, open their quick-release lever on one side of the brake (f) and remove the brake from the cantilever socket.

If you have (hydraulic or mechanical) **disc brakes**, you should first check the exact position and condition of the brake pads and/or wear indicators (g). This will help you to verify subsequently, whether the brake pads are still in the proper position after dismounting. Read the brake manufacturer's operating instructions. Do not actuate the brake lever when the wheel is removed.

If you have **derailleur gears**, you should shift the chain to the smallest sprocket before removing the rear wheel. This shifts the rear derailleur right to the outside where it does not interfere with the removal of the wheel.

Open the quick-release of the wheel, as described in chapter "How to Use Quick-Releases". If you still cannot remove the front wheel, this is due to the drop-out safety tabs. These are tabs in the fork ends (drop-outs). You have to release the preload nut of the quick-release a little and slip the wheel from the safety tabs.

You will find it easier to remove the rear wheel, when you pull the rear derailleur slightly backwards (h). Lift the Raymon bicycle off the ground and give the wheel a gentle tap with your hand so that it drops out.



Wheel Removal Front Wheel

⚠ WARNING

If your Raymon bicycle has hydraulic disc brakes, do not place it upside down for repair purposes (a), i.e. handlebar and saddle on the ground. This would render the brake ineffective.

⚠ CAUTION

Brake discs/rotors, roller and back-pedal brakes can become hot. Let them cool down before removing a wheel.

NOTICE

Do not pull the (disc) brake lever with a removed wheel and make sure to mount the safety locks when removing the wheel.

Front wheel with axle nuts

The axle is clamped in the fork either by means of hex lock nuts (b) or by means of quick-release lever or thru axle (c).

If it is clamped with hex lock nuts, loosen the two axle nuts by three to four turns.

The axle nuts do not have to be dismantled completely. Slide both lock washers from the fork drop-outs, if available.

⚠ WARNING

Most Raymon bicycles have integrated drop-out safety tabs on their fork. In this case, no additional lock washers are necessary (d). A grooved washer has to be mounted between axle nut and fork nevertheless in a way that the grooves show towards the fork.

To loosen the hex nuts you need a 15-mm open-end wrench or still better a 15-mm ring spanner (e).



Front wheel with quick-release

Open the quick-release of the wheel, as described in chapter “How to Use Quick-Releases”.

If you still cannot remove the front wheel, this is due to the drop-out safety tabs. These are tabs in the fork ends (drop-outs) (f). You have to release the preload nut of the quick-release a little and slip the wheel from the safety tabs.

SAFETY INSTRUCTIONS

If your Raymon bicycle has thru axles, observe the operating instructions of the fork manufacturer.

Front wheel with hub dynamo

Loosen the plug connection from the hub dynamo's connection terminal first (g). Loosen then the axle nuts or the quick-release lever of the front wheel.

Wheel Removal Rear Wheel

⚠ WARNING

If your Raymon bicycle has hydraulic disc brakes, do not place it upside down for repair purposes (a), i.e. handlebar and saddle on the ground. This would render the brake ineffective.

⚠ CAUTION

When working in the area of the rear wheel hub and its cassette joint, be aware of the risk of crushing the fingers. Therefore, do not turn the cranks during the work or do not push the Raymon bicycle backwards.

Brake discs/rotors, roller and back-pedal brakes can become hot. Let them cool down before removing a wheel.

NOTICE

Do not pull the (disc) brake lever with a removed wheel and make sure to mount the safety locks (h) when removing the wheel.



SAFETY INSTRUCTIONS

In the case of drum and roller brakes as well as of internal gear hubs the brake arm supporting the drive and brake forces on the frame has to be loosened. The shift cables must also be dismounted before removing the wheel (a).

In addition, observe the information and the operating instructions of the gear manufacturers. They are available on their websites:

<https://si.shimano.com>

www.rohloff.de/en/service

<https://support.enviolo.com/hc/en-us>

www.pinion.eu/en/downloads/

If you have any questions, contact your Raymon dealer.

If your Raymon bicycle has **mechanical rim brakes** you have to unhook the brake cable from the brake arm first. To do this, grip the rim with one hand and press the brake pads or the brake arms together. In this position the usually barrel-shaped nipple of the lateral brake cable or the brake hose (of V-brakes) can easily be disengaged.



If your Raymon bicycle has **hydraulic rim brakes** from Magura, open their quick-release lever on one side of the brake (b) and remove the brake from the cantilever socket.

With 5-/7-/8-/11-speed Shimano Nexus and Alfine multi-speed hubs

First relieve the shift cable by shifting to gear one with the twist shifter.

Pull the cable housing from the limit stop in the gear unit positioned on the right side of the hub in direction of motion (c). Remove the shift cable including threaded nipple from the guide and its mount (d).

SAFETY INSTRUCTIONS

The gear unit shows a high spring preload. The shift cable is dismounted opposite to this spring preload and therefore requires a certain manual force. You can also use a 2-mm Allen key to relieve the mechanism (e).

Now loosen the axle nuts anticlockwise by means of an open-end spanner or still better with a ring spanner. In most cases, the axle nuts do not have to be removed completely. It will do to release them by a few turns. Slide the lock washers on the axle outwards so that the metal catches no longer engage with the drop-out. If you remove the axle nuts and the lock washers (f) completely from the axle, note the mounting position of the lock washers for later remounting.

Now you can remove the rear wheel from the drop-outs of the frame. Subsequently, take down the chain and remove the wheel from the frame.

If your Raymon bicycle has a drive belt, it has to be absolutely free of tension before you take it down carefully and without bending from the rear belt sprocket. The belt must be easy to remove.

SAFETY INSTRUCTIONS

Depending on tyre equipment and frame design it may be helpful to deflate the rear wheel partly or even completely before removal.

If your Raymon bicycle has horizontal drop-outs open towards the rear (g), the removal of the rear wheel deviates from the above-described proceeding. This requires, however, a high degree of craftsmanship. If you are in doubt or if you have any questions, contact your Raymon dealer.

With 5-/7-/8-speed Shimano Nexus multi-speed hubs with back-pedal brake

The removal is basically the same as the above-described removal with the 5-/7-/8-/11-speed Shimano Nexus and Alfine internal gear hubs. However, before you loosen the axle nuts of the rear wheel also loosen the bolt of the brake arm clip (h) completely and remove it.



With 14-speed Rohloff (mechanically operated)

Before removing the rear wheel the shift cables have to be separated or the gear box (a) has to be detached from the hub.

If you have a Rohloff hub with internal activation, set a middle gear with the twist shifter first. Subsequently, both bayonet connectors have to be loosened by turning them opposite to one another.

If you have a Rohloff hub with external activation, set gear 14 with the twist shifter first. After unscrewing the grooved bolt the gear box can be removed from its mount at the hub (b).

NOTICE

As long as the gear box is removed from the hub the twist shifter should not be activated until the gear box was screwed back to the hub after remounting of the rear wheel.

Loosen the quick-release lever or the lock nuts subsequently. Now you can take down the chain and remove the rear wheel from the frame.

If your Raymon bicycle has a drive belt, it has to be absolutely free of tension before you take it down carefully and without bending from the rear belt sprocket. The belt must be easy to remove.

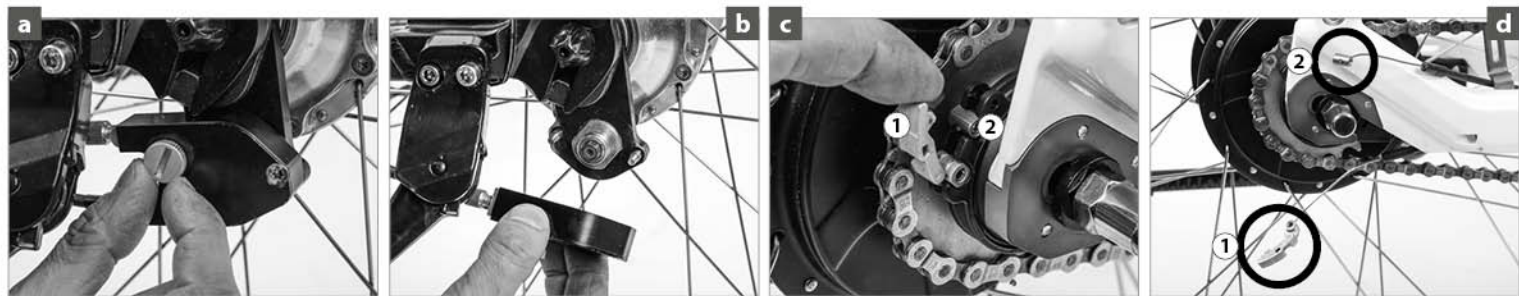
With Enviolo (mechanically operated)

Before removing the rear wheel the cables have to be removed from the cassette joint. Undo the shift cable with fastener (c) from its guide (1) and also remove the second shift cable (2) including its threaded nipple (d) from the cassette joint.

Now loosen the axle nuts anticlockwise by means of an open-end spanner or still better with a ring spanner. In most cases, the axle nuts do not have to be removed completely. It will do to release them by a few turns. Slide the lock washers on the axle outwards so that the metal catches no longer engage with the drop-out. If you remove the axle nuts and the lock washers completely from the axle, note the mounting position of the lock washers for later remounting.

Now you can remove the rear wheel from the drop-outs of the frame. Now you can take down the chain (e) and remove the wheel from the frame.

If your Raymon bicycle has a drive belt, it has to be absolutely free of tension before you take it down carefully and without bending from the rear belt sprocket. The belt must be easy to remove.



SAFETY INSTRUCTIONS

Depending on tyre equipment and frame design it may be helpful to deflate the rear wheel partly or even completely before removal.

With Pinion

Loosen the quick-release lever or the lock nuts. Now you can take down the chain and remove the rear wheel from the frame.

If your Raymon bicycle has a drive belt (f), it has to be absolutely free of tension before you take it down carefully and without bending from the rear belt sprocket. The belt must be easy to remove.

SAFETY INSTRUCTIONS

Depending on tyre equipment and frame design it may be helpful to deflate the rear wheel partly or even completely before removal.

Clincher and Folding Tyres

Tyre Removal

Remove the cap and the fastening nut from the valve and deflate the tyre completely (g). Press one tyre side from the rim sides towards the centre of the rim. This will ease the removal.

Apply a plastic tyre lever under one bead of the tyre about 5 cm beside the valve and lever the tyre side over the rim edge (h). Hold the lever in this position. Slip the second tyre lever between rim and tyre at a distance of about ten centimetres on the other side of the valve and lever the next portion of the bead over the edge of the rim.

After levering a part of the tyre side over the edge of the rim you should normally be able to slip off the whole tyre on one side by moving the tyre lever around the whole circumference. Now you can remove the inner tube. Make sure the valve does not get caught in the rim, as this can damage the inner tube. If necessary, you can remove the whole tyre by pulling the other tyre side off the rim. Repair the puncture according to the instructions of the repair kit manufacturer or replace the inner tube.



When you have removed the tyre, you should also check the rim tape (a). It should be positioned evenly, covering all spoke nipples and holes, and must not be damaged or brittle.

In the case of double wall rims the tape must cover the entire rim base, but it should not be so broad as to stand up along the inside edges of the rim trough. Rim tapes for this type of rim should only be made of fabric or durable plastic. If you are in doubt or if you have any questions, contact your Raymon dealer.

⚠ WARNING

If the fabric of the tyre is destroyed by the perforating object, replace the tyre to be on the safe side.

Replace spoilt rim tapes immediately.

NOTICE

Keep in mind when buying spare tubes that Schrader valves do not fit in all rims!

NOTICE

If you have a puncture en route, inflate the inner tube and bring it close to your ear. In most cases you can hear the air coming out. At home you can help yourself with a bucket of water where you can locate the hole by the bubbles. When you have found the hole, look for the corresponding place on the tyre and check it, as well. The foreign object is often still in the tyre. Remove it, otherwise the next puncture is bound to occur.

Tyre Mounting

When mounting a tyre make sure no foreign matter, such as dirt or sand, gets inside the tyre and you do not damage the inner tube in the process.

Slip one bead of the tyre onto the rim. Using your thumbs, press one bead over the edge of the rim and then around the entire circumference. This should normally be possible without using tools.

Stick the valve of the inner tube through the hole in the rim (b). Inflate the inner tube slightly so that it becomes round and push it into the tyre all the way round. Make sure not to leave any folds in the inner tube.



To finish mounting the tyre, start at the opposite side of the valve. Using your thumbs, press as much of the second bead of the tyre over the edge of the rim as you can.

Make sure the inner tube does not get pinched and squashed between the tyre and the rim. You can prevent this by pushing the inner tube into the hollow of the tyre (c) with a finger as you work along.

Work the tyre into the rim by approaching the valve symmetrically from both sides. Towards the end, you will have to pull the tyre forcefully downwards (d) to make the already mounted section of the tyre slip towards the deepest part of the rim well. This will ease the job noticeably on the last centimetres.

Before fitting the tyre completely on the rim check again whether the inner tube lies properly inside the tyre and press the last stretch of tyre over the edge of the rim using the balls of your thumbs.

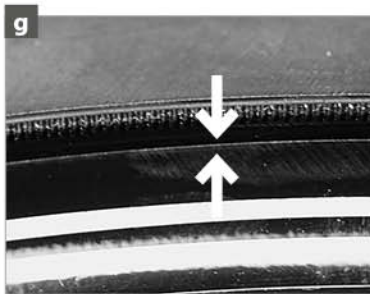
If this does not work, you have to use the tyre levers (e). Make sure the bent ends point towards the inner tube and the inner tube does not get damaged.

Push the valve a little into the tyre so that the inner tube does not get caught between the rim and the tyre beads. Check whether the valve stands upright. If not, dismount one bead again and reposition the inner tube.

To make sure the inner tube does not get pinched between the rim and the bead, move it sideways back and forth between the sides of the rim. While doing so, also check whether the rim tape has shifted.

Inflate the inner tube to the desired pressure (f). The maximum pressure is indicated on the side of the tyre.

Check whether the tyre is properly seated by inspecting the fine witness line (g) just above the rim edge. This line should be even to the rim all around the tyre. Starting from the maximum tyre pressure you can now reduce the pressure through the valve to suit your needs. Observe the recommended tyre pressure range (h).



Wheel Mounting

⚠ WARNING

If your Raymon bicycle has hydraulic disc brakes, do not place it upside down for repair purposes, i.e. handlebar and saddle on the ground. This would render the brake ineffective.

⚠ CAUTION

When working in the area of the rear wheel hub and its cassette joint, be aware of the risk of crushing the fingers. Therefore, do not turn the cranks during the work or do not push the Raymon bicycle backwards.

NOTICE

Do not pull the (disc) brake lever with a removed wheel and make sure to mount the safety locks when removing the wheel.

SAFETY INSTRUCTIONS

*In addition, observe the information and the operating instructions of the gear manufacturers. They are available on their websites: <https://si.shimano.com>
www.rohloff.de/en/service
<https://support.enviolo.com/hc/en-us>
www.pinion.eu/en/downloads/*

SAFETY INSTRUCTIONS

If you have any questions, contact your Raymon dealer.

Mounting the wheel is generally done in reverse order to the removal. Make sure the wheel is properly seated in the drop-outs and accurately centred between the fork legs or the seat and chainstays. Make sure the quick-release and the possibly available safety tabs are properly seated (a). For more information see chapter **"How to Use Quick-Releases"**.

If you have disc brakes, check before mounting the wheel whether the brake pads rest snugly in their seats in the brake calliper body. The gap between the brake pads and the wheel should be parallel and the wear indicators in their correct position. Make sure you slide the rotor between the brake pads (b).

After mounting the wheel and tightening the axle nut or the quick-release and possibly a thru axle pull the brake lever (c) (several times, if you have disc brakes). Lift the Raymon bicycle and then spin the wheel with your hand (d). With the wheel spinning the rotor should not drag along the brake calliper or the brake pads and the rim should keep off the (rim) brake pads.



Wheel Mounting Front Wheel

When mounting a front wheel with hub dynamo (e) make sure the hub dynamo's connection terminal is on the right side in direction of motion. The connection terminal has to be aligned with the front wheel fork in a way that it points slightly backwards and upwards (f). Do not try to turn the connection terminal after having fixed the front wheel in the fork.

If your front wheel has no quick-release, you need a 15-mm open-end wrench or ring spanner (g) or still better a torque wrench to tighten the axle nuts.

Axle nuts have to be tightened alternately on both sides. Otherwise the hub axle can twist with the lock washers and be subject to stress. The torque value is 20–25 Nm.

After you have securely fixed the wheel in the fork, re-connect the plug of the lighting cable to the connection terminal.

⚠ WARNING

Never ride with the plug connection (h) disconnected, as the lighting cable can get caught in the spokes. Risk of an accident!



Finish by checking the front and rear lights on the Raymon bicycle by turning the front wheel.

Wheel Mounting Rear Wheel

⚠ CAUTION

When working in the area of the rear wheel hub and its cassette joint, be aware of the risk of crushing the fingers. Therefore, do not turn the cranks during the work or do not push the Raymon bicycle backwards.

SAFETY INSTRUCTIONS

In addition, observe the information and the operating instructions of the gear manufacturers. They are available on their websites:

<https://si.shimano.com>

www.rohloff.de/en/service

<https://support.enviolo.com/hc/en-us>

www.pinion.eu/en/downloads/

If you have any questions, contact your Raymon dealer.

With 5-/7-/8-/11-speed Shimano Nexus and Alfine multi-speed hubs

Insert both lock washers on the left and right side of the hub axle in direction of motion. Turn the hub axle in a way that the metal catches of the lock washers engage with the recesses of the drop-outs (a). Mount the axle nuts on both sides of the hub axle.

Tension the chain and tighten the axle nuts to 30–45 Nm (b) to attach the wheel to the frame.

Remount the shift cable to the cassette joint of the multi-speed hub. Hook the shift cable including threaded nipple in the guide of the cassette joint (c). Position the shift cable along the intended guide around the cassette joint. Pull the cable housing to the front (d) and hook it into the holder of the cassette joint.

⚠ WARNING

After having mounted the rear wheel and the shift cable check the setting and the function of the gears (f).

SAFETY INSTRUCTIONS

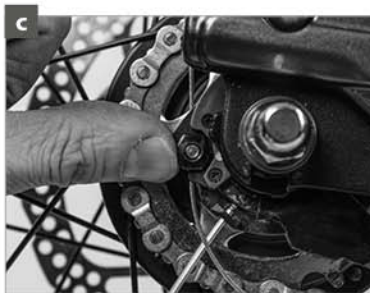
The gear unit shows a high spring preload. The shift cable is mounted opposite to this spring preload and therefore requires a certain manual force and technical skills. You can also use a 2-mm Allen key to relieve the mechanism (g).

Check the function of the brake and whether the wheel rotates easily before you set off.

With 5-/7-/8-speed Shimano Nexus multi-speed hubs with back-pedal brake

Insert both lock washers on the left and right side of the hub axle in direction of motion. Turn the hub axle in a way that the metal catches of the lock washers engage with the recesses of the drop-outs (a). Mount the axle nuts on both sides of the hub axle.

Align the bore in the brake arm with the bore in the brake arm clip and insert the clamp bolt. Place a nut including washer from the rear on the clamp bolt thread. Screw these components by 3 to 4 turns on one another.



Tension the chain and tighten the axle nuts to 30–45 Nm (b) to attach the wheel to the frame.

Tighten the clamp bolt of the brake arm to a torque value of 3–5 Nm (e). Make sure that the thread projects from the clamp nut by about 2–3 mm. If it does not, you need a longer bolt.

Remount the shift cable to the cassette joint of the multi-speed hub. Hook the shift cable including threaded nipple in the guide of the cassette joint. Position the shift cable along the intended guide around the cassette joint. Pull the cable housing to the front (d) and hook it into the holder of the cassette joint.

⚠ WARNING

After having mounted the rear wheel and the shift cable check the setting and the function of the gears (f).

SAFETY INSTRUCTIONS

The gear unit shows a high spring preload. The shift cable is mounted opposite to this spring preload and therefore requires a certain manual force and technical skills. You can also use a 2-mm Allen key to relieve the mechanism (g).

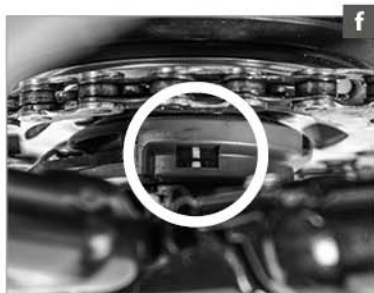
Check the proper function of the brake and whether the wheel rotates easily before you set off.

With 14-speed Rohloff (mechanically operated)

Mounting the rear wheel with a Rohloff speedhub is generally done in reverse order to the removal.

Make however sure the torque arm is positioned properly (h).

For more information read the operating instructions of the gear manufacturer or contact your Raymon dealer.

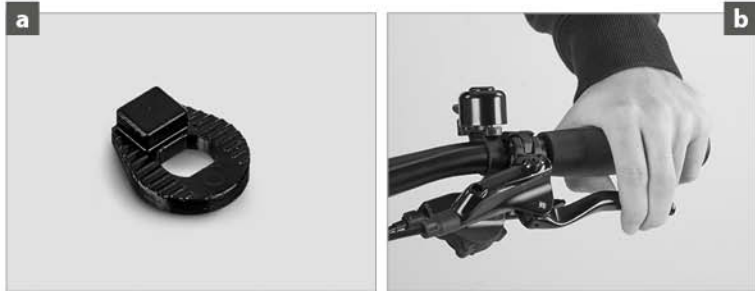


With Enviolo

Place the rear wheel into the frame. Make sure not to clamp the shifting cables in doing so. Insert one no-turn washer (a) respectively on either end of the axle. The grooves of the no-turn washer must point to the rear frame. The rectangular boss must engage in the rear frame. Tighten the axle nuts to a torque value of 30–40 Nm. If your Raymon bicycle has roller brakes, observe the operating instructions of the manufacturer. Mount both shifting cables to the cassette joint according to the manufacturer's instructions.

⚠ WARNING

- If you have disc brakes, pull the brake levers (b) several times after you have mounted the wheel. You must reach a precise positive braking response.**
- If you have rim brakes, make sure you hook up the brake cable immediately after the wheel mounting!**
- If you have hydraulic rim brakes, remount the brake body immediately and close the quick-release (c)! Make sure the brake calliper does not touch the rim, the tyre or the spokes, when the wheel rotates.**



⚠ WARNING

- Before setting off again check whether the brake surfaces and/or brake discs/rotors are still free of grease or other lubricants after the wheel mounting.**
- If you have a hub dynamo, re-insert the connector into the respective connection terminal.**
- Check whether the brake pads hit the brake surfaces of the rims (d). Make sure the wheel is properly seated and firmly fixed in the drop-outs. Be sure to do a brake test as the Raymon bicycle is standing as described in chapter "Before Every Ride"!**

NOTICE

- Improper mounting of the no-turn washer may result in damage to the rear frame and the hub. Overtightening may damage parts, undertightening may result in the axle sliding in the rear frame.**

With Pinion

Mounting the rear wheel of a Raymon bicycle with Pinion gearbox is generally done in reverse order to the removal.



HEADSET

The headset connects the fork to the frame, but allows it to move freely. It must turn with virtually no resistance, if the Raymon bicycle is to run straight, stabilising itself as it travels. Shocks caused by uneven road surfaces expose the headset to considerable levels of stress. In this way it can become loose and go out of correct adjustment.

⚠ WARNING

Riding the Raymon bicycle with a loose headset increases the loads on the fork and the bearing. The fork can break. Risk of accident!

Checking and Readjusting

Check the headset for play by placing your fingers around the upper headset cup (e).

Bring your weight to bear on the saddle, pull the front brakes with your other hand and push the Raymon bicycle firmly back and forth with the wheel remaining on the ground (f).



If the bearing has play, you will feel the upper head tube race moving in jerks relative to the lower head tube race – visible as a small gap in between the head tube races.

To check whether the headset runs smoothly, lift the frame up until the front wheel no longer touches the ground. The handlebar should turn from far left to far right without feeling roughness or tightness at any point. With a gentle tap on the handlebar the fork should turn easily from the middle position (g).

If you face any problems during the test, contact your Raymon dealer.

⚠ WARNING

Check the secure fit of the stem after adjusting the headset by taking the front wheel between your legs and trying to turn the handlebar and stem relative to the wheel (h). Otherwise, a loose stem can cause an accident.

SAFETY INSTRUCTIONS

Adjusting the headset requires a certain amount of experience and should therefore be left to your Raymon dealer.



SUSPENSION

Glossary

Suspension fork

Bicycle fork absorbing and damping shocks through moving components. The most common among these forks are the telescopic suspension forks (a). What is designated as stanchion tubes are the thinner tubes press fitted or screwed to the fork crown of a telescopic fork. What is designated as lower legs are the lower tubes the stanchion tubes slide in.

Spring rate or hardness

The force that is required to compress the spring by a certain travel – measured in Newton per millimetre (N/mm) or pound per inch (lbs/in). A higher spring rate requires more force for the travel. With air spring elements a higher rate means a higher pressure.

Spring preload

In the case of the widespread air suspension systems, the air pressure in the fork is crucial for the spring rate and the spring preload. Observe your manufacturer's recommendations. Within a certain range a preload can be applied to the steel springs. Then the suspension only reacts when a greater load is applied.

The spring rate remains, however, unchanged. Heavier riders cannot compensate a too soft spring rate with a higher preload.

Negative suspension travel ("sag") (b)

The spring travel of the rear frame or the fork during compression when the rider takes up his or her usual riding position at a standstill. This is usually specified as a percentage of the overall spring travel.

Rebound damping (c)

In most cases a red adjusting knob. Decelerates and/or slows down the speed at which the fork or shock recovers or bounces back. Prevents bike bobbing.

Lockout (d)

In most cases a lever on the suspension element or the handlebar. A device to block the fork or the rear shock so that the suspension element does not cause bob when riding on asphalted roads or smooth surfaces. Must not be used off road.

Platform damping

Increases the (low speed) compression damping rate and suppresses bobbing. In contrast to the lockout function, the suspension is not blocked completely.



SUSPENSION FORKS

Most Raymon trekking and many Raymon city bicycles are equipped with suspension forks (e+f). This feature gives you better control of your Raymon bicycle when riding cross-country or on rough road surfaces and ensures more ground contact for the tyre. It noticeably reduces the strain on you and your bicycle caused by the mechanical shocks from the terrain. Suspension forks differ in their types of spring elements and damping. The suspension is usually provided by coil springs, special types of plastic (elastomers) or sealed air compartments or combinations of these options. The damping is usually done by oil or by the self-damping properties of the elastomers.

SAFETY INSTRUCTIONS

Suspension fork manufacturers normally include manuals with their deliveries. Read them carefully before changing any settings or doing any maintenance work on your suspension fork.

Adjusting the Spring Rate

To work perfectly, the fork has to be adjusted to the weight of the rider, the sitting posture and the intended use. The suspension fork should yield by about 10–25 % of its total travel under the rider's weight.



Be sure to have this adjustment carried out by your Raymon dealer at the moment of delivery.

If you can hear the fork hit the end of its travel in the terrain or on poor road surfaces, the spring is adjusted too soft. In this case the spring preload/the pressure must be increased (g). If the adjustment range of the coil springs is too small, have the springs replaced by your Raymon dealer.

⚠ WARNING

Suspension forks are designed in a way to absorb shocks. If the fork is too rigid and jammed, shocks hit the frame undiminished. In these areas the frame is normally not designed to bear these loads. If your suspension fork has a lockout mechanism (h), do not activate the lockout function when riding in rough terrain, but only when riding over smooth terrain (roads, field tracks).

The suspension fork must be designed or set in a way that it bottoms out only in extreme cases. A spring rate which is too soft (or too low an air pressure) can usually be heard or felt as a "clunk" type noise. This noise is caused by the sudden complete compression of the suspension fork as it reaches bottom out. If the suspension fork frequently reaches bottom out, it will sustain damage over time, and so will the frame.



Damping and Lockout

The damping is adjusted by inside valves. Excessive bobbing of the suspension fork after having ridden over an obstacle is prevented.

For long uphill rides involving hard pedalling out of the saddle it is advisable to disable the damping, if the suspension fork has a lockout mechanism. For downhill rides on uneven ground the lockout mechanism must be open.

Suspension forks with adjustable rebound damping are equipped with an adjusting knob to slow down or accelerate the rebound movement. Start the adjusting with a completely open damping (" - "). Ride over an obstacle (e.g. a kerb) and turn the rebound damping in small steps towards the "+" setting. You have found the proper rebound setting when the suspension fork does not cycles more than once. Always check a modified adjustment during a test ride.

⚠ WARNING

A too strong damping of the fork can result in a sluggish rebound movement with a suspension fork that will not recover when exposed to a quick series of impacts. Risk of accident!



⚠ WARNING

- **Do not turn any screws in the vague hope of adjusting them somehow. You could release the fastening mechanism, thus causing a fall. All manufacturers normally mark adjustment devices with a scale or with "+" signs (a) (for stronger damping/harder suspension) and with "-" signs (b).**
- **When mounting a new front tyre, make sure there is enough clearance between tyre and fork crown as the fork compresses entirely. The front wheel can get jammed. Risk of accident!**
- **Do not ride your Raymon bicycle, if the suspension fork often bottoms out. This could damage the suspension fork itself as well as the frame.**
- **Do not actuate the lockout function when riding over rough terrain, but only when riding over smooth terrain (roads, field tracks) (c).**

SAFETY INSTRUCTIONS

- **Contact your Raymon dealer or follow the respective notes in the operating instructions of the suspension fork manufacturer (d).**

Maintenance

Suspension forks are components of sophisticated design that require regular maintenance and care. This has led almost all suspension fork manufacturers to establish service centres where you can have your fork thoroughly checked and overhauled at regular intervals according to use, e.g. once a year. Be sure to have all bolted connections checked at regular intervals by your Raymon dealer.

The following routines are essential for maintenance:

Make sure the sliding surfaces of the stanchion tubes are absolutely clean.

Clean the fork with water and a soft sponge (e) when soiled.

After washing your Raymon bike, spray the stanchion tubes of the suspension fork with a little grease spray (f) approved by the manufacturer or apply a very thin film of hydraulic oil. Compress the fork several times and wipe off excess lubricant with a clean rag before you set off for your next ride.

Do not use a steam jet (g) or aggressive cleaning agents for cleaning! Ask your Raymon dealer for an appropriate lubricant.

If your fork has an elastomer filling, you should regularly clean and lubricate the synthetic springs with a non-corrosive resin-free grease. Some fork manufacturers supply special greases (h) for fork maintenance. Strictly observe the recommendations of the manufacturers. Suspension forks with air spring have to be checked regularly for air pressure, as the air escapes over time.

SAFETY INSTRUCTIONS

Suspension elements are of sophisticated design. The maintenance routines and above all the disassembly of the suspension elements are jobs best left to your Raymon dealer.

Have your Raymon bicycle with suspension fork checked by a service centre of the fork manufacturer once a year at least.



SUSPENSION SEAT POSTS

Suspension seat posts (a+b) enhance the cyclist's comfort when riding on uneven ground. They can be used on roads and field tracks.

The seat posts are usually designed for a cyclist of average weight, i.e. 75 kilograms. Their shock-absorbing properties can be altered either by adjusting the spring preload and/or by replacing the springs.

⚠ WARNING

Be sure not to pull out the seat post too far. The mark on the seat post (c) (min. insert, minimum, maximum, stop or the like) should always remain within the seat tube.

SAFETY INSTRUCTIONS

Seat post manufacturers normally include instructions with their deliveries. Read them carefully before changing any settings or doing any maintenance work on your rear shock.

Check and Maintenance

Grasp the saddle at both ends and try to move it from side to side (d). That is how you can check the seat post for side-to-side play.

If you notice any play, have it checked and, if necessary, reduced by your Raymon dealer.

SAFETY INSTRUCTIONS

Have the seat post checked once a year by your Raymon dealer.



LIGHTING

For riding on public roads a functioning lighting set is obligatory (see chapter **"Legal Requirements for Riding on Public Roads"**). You should be familiar with the assembly of the lighting set so that you can repair possible failures yourself.

Rear light (e) and front lamp (f) are powered by the generator (also referred to as dynamo). They are connected with two cables each to the generator. In some cases the front lamp and the rear light are wired with only one cable each the frame being in this case the return line.

Rear Light

Either bulbs or LEDs beam through a (red) diffusion disc rearwards and are visible at best even from the side. Meanwhile, most rear lights provide a stand light function that are powered by a condensator or a battery when the Raymon bicycle has to stop e.g. at a traffic light.

Front Lamp

Illuminants are either bulbs, halogen lamps or one or several LEDs, i.e. light emitting diodes, beaming white light by means of a reflector and/or a diffusion disc on the road lane. Some models are equipped with a sensor that automatically switches on the front lamp when it gets dark; the dynamo must, however be activated. An additional feature of particularly high quality front lamps is a stand light function or even daytime running lights (both with LEDs).

Bottle Dynamo

The bottle dynamo (g) should be mounted with its drive shaft vertical to the wheel axle and with its roller in full contact to the tyre. The bottle dynamo can be mounted to the front or rear wheel. When switched on it tilts with its roller against the tyre side. To switch off the dynamo it is tilted back in its initial position where it locks in place.



Hub Dynamo

Hub dynamos (h, p. 81+a) are built into the hub of the front wheel. They are virtually non-wearing and extremely effective. Some models are switched on electronically, some others mechanically. Hub dynamos are either switched on by a lever at the handlebar or directly at the front lamp (b). Other models offer the comfort of being switched on and off automatically by means of a sensor.

Battery-Powered Lighting

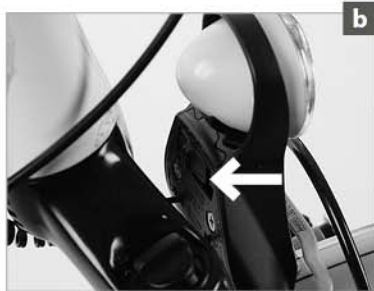
Check the usage of battery-powered front lamps and rear lights (c) on the basis of the road traffic licensing regulations in your country. Read also chapter "Legal Requirements for Riding on Public Roads".

⚠ WARNING

- Switch on and off a bottle dynamo (d) only while standing and make sure it keeps clear of the spokes! Caution: In wet conditions the roller of the bottle dynamo can slip against the tyre surface resulting in the dynamo becoming less effective.
- An incomplete or inoperative lighting set is not only against the law, it is also a hazard to your life. Cyclists riding in the dark without a light are liable to be overlooked and at risk of getting involved in serious accidents!

SAFETY INSTRUCTIONS

- Carefully read the enclosed operating instructions of the lighting and dynamo manufacturers and follow the instructions. In case you need more information on your lighting, set contact your Raymon dealer.



THINGS WORTH KNOWING ABOUT BICYCLES AND CYCLING

Cycling Helmets and Glasses

Cycling helmets are a must when riding a bicycle. Your Raymon dealer has a variety of styles and sizes (e).

Cycling helmets are only approved for use during cycling. Observe the manufacturer's instructions.

⚠ WARNING

Never ride without a helmet and glasses (f)! But remember that even the safest helmet is useless unless it fits properly and is correctly adjusted and fastened.

Apart from a cycling helmet and suitable clothing, cycling glasses (g) are absolutely essential when you set off on your Raymon bicycle.

They do not only protect your eyes from the sun and the wind, but also keep out flies and other impurities that may impede your vision when they fly into your eyes. **Risk of accident!**

Your Raymon dealer has a wide range of cycling glasses available and will be pleased to advise you.



Clothing

⚠ WARNING

Never ride with wide-cut trousers or skirts that might get caught in the spokes, chain or chainrings. To avoid any such mishap, use suitable clips or straps, if necessary.

For increased visibility to other road users be sure to wear bright-coloured clothing!

Pedals and Shoes

Cycling shoes (h) should be made of solid material to provide firm support for your feet. In addition, they should have a stiff sole so that the pedal cannot press through. The sole should not be too wide; otherwise you will not be able to assume a natural foot position.

Special cycling shoes are obligatory, if your Raymon city/trekking bike is equipped with clipless pedals. With these shoes small cleats are fixed to the sole. They give you a firm connection between shoe and pedal and allow an acceptable walking position.

The main advantage is that these cycling shoes and clipless pedals (a) prevent your feet from slipping off when pedalling fast or when riding over rough ground. They enable you not only to push but also to pull the pedals.

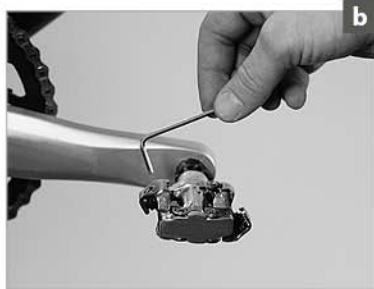
The usual way to engage with the pedal is to turn it from the lowest position of the crank to the horizontal using the tip of the cleat and push down on the back of it. Normally, the shoe engages with the pedal with a click which you will hear and feel clearly.

The release force of clipless pedals is adjusted by means of an Allen key (b). If there are any creaking or squeaking noises occurring, some grease will solve the problem in most cases. These noises as well as lateral play of the shoe on the pedal can, however, be also signs of wear. Check the cleats at regular intervals.

⚠ WARNING

Make sure the fastening bolts of the cleats are properly tightened, as you will find it almost impossible to disengage your shoe from the pedal, if the cleat is loose. Risk of accident!

Taking up the pedals, engaging and disengaging the shoes should first be practised in standing (c). Later you can refine your technique in a place clear of traffic.



⚠ WARNING

Only use clipless pedals allowing you to engage and disengage smoothly. A defective pedal or a badly worn cleat can make the shoe disengage from the pedal. Or unclipping the shoe from the pedal is sometimes very difficult or even impossible. In both cases, there is the danger of an accident!

Make sure pedals and shoe soles are always free of mud and other impurities (d) and grease the lock-in mechanism with lubricant at regular intervals.

SAFETY INSTRUCTIONS

Read the pedal manufacturer's operating instructions and ask your Raymon dealer to inform you about the different cycling shoe models.

Accessories

In purchasing this Raymon bicycle you laid the foundation for many years and miles of enjoyable cycling. Whatever you are planning to do with your Raymon bicycle, be sure to have proper equipment and to keep a few tips in mind. Your Raymon dealer has a variety of useful accessories on offer enhancing both your safety and convenience.

Your Raymon bicycle can be equipped with various kinds of accessories (e). Make sure to observe the requirements according to the traffic regulations in your country and of the BSEN standards. Any retrofitted part must be compatible with your Raymon bicycle.

⚠ WARNING

Improper accessories may change the qualities of your Raymon bicycle and even cause an accident. Therefore, before fitting any accessories contact your Raymon dealer and observe the instructions regarding the intended use of your Raymon bicycle.

Bicycle Locks

Do not forget to take a high quality D-, folding or chain lock (f) with you on your ride. The only way to effectively protect your Raymon bicycle against theft is to lock it to an immovable object.



Puncture Kit

The most important accessories for a successful cycle tour are a tyre pump and a small tool kit. The tool kit should include two plastic tyre levers, the most commonly used Allen keys, a spare tube, a tyre repair kit, your mobile phone, if necessary, and a little cash (g). In this way you will be well prepared in the event of a puncture or some other mishap.

SAFETY INSTRUCTIONS

Retrofitted accessories, such as mudguards, pannier racks etc. can impair the functioning of your Raymon bicycle. Ask your Raymon dealer for advice before mounting any kind of accessories to your Raymon bicycle.

Before buying any additional bells (h), horns or lighting accessories, inform yourself thoroughly whether they are permitted and tested and accordingly approved for use on public roads. Make sure additional battery/accumulator-powered lamps are marked with the wavy line and the letter "K".



TRANSPORTING LUGGAGE

Transporting Luggage with Hardtail Frames

There are various ways of carrying luggage on a Raymon bicycle. Your choice depends primarily on the weight and volume of the luggage. Using a bicycle rucksack (a) is a convenient way of transporting luggage on a Raymon bicycle. But for longer cycling tours and heavy and bulky cargo your Raymon trekking bike is equipped with a pannier rack (b).

It is advisable to carry luggage in stable pannier bags with a very low centre of gravity.

Another possibility of transporting luggage are handlebar bags (c). They often have snap buckles for quick mounting and removal. Handlebar bags are particularly suitable for valuables, the photographic equipment and maps that should be within easy reach during your tour.

When buying pannier bags, make sure they are watertight so that your belongings are protected and you will not have any unpleasant surprises after the first rain shower.

Bags designed to be mounted at the front, also referred to as low-rider bags, are attached to the fork with special holders. If you are in doubt or if you have any questions, contact your Raymon dealer.

⚠ WARNING

- Your Raymon bicycle is designed for a maximum permissible overall weight including rider, luggage, Raymon bicycle and child seat or trailer load, if permitted. The maximum permissible overall weight is specified on the type plate on the Raymon bicycle or in the Raymon bike card in these operating instructions. If you are in doubt, contact your Raymon dealer. Do not overload your Raymon bicycle and also observe the permissible load capacity that may be imprinted or impressed on the pannier rack.**
- Adjust the suspension fork and the tyre pressure to the additional load.**
- Luggage generally changes the riding characteristics of your Raymon bicycle and increases your stopping distance! Therefore, practise riding a loaded Raymon bicycle (d) in a place free of traffic.**



TAKING CHILDREN WITH YOU

SAFETY INSTRUCTIONS

There are some Raymon city and trekking bikes that are not suitable for mounting child seats with a special mounting device. Have a look at the Raymon bike card and ask your Raymon dealer for advice.

Prior to towing a trailer with your Raymon bicycle, check that it is designed for this purpose. Have a look at the Raymon bike card or ask your Raymon dealer for advice.

The only possible and legal way of transporting children by bicycle is in special child seats (e) or trailers (f).

⚠ WARNING

Always secure the little passenger(s) with the seat belt, as erratic movements inside the trailer can make the Raymon bicycle or the trailer topple over.

Make sure the child you are taking with you wears a helmet. A child seat or a trailer only provide insufficient protection in the event of an accident. Keep in mind that you always wear a helmet, as well.



⚠ WARNING

Note that your stopping distance increases due to the additional load of the child seat or trailer.

Be sure to only buy tested child seats and child trailers (e.g. BSEN/GS-tested systems) and always make sure they are properly mounted. Detailed information in this regard is provided in the manuals of the manufacturers that you have obtained with your purchase.

Child Seats

⚠ CAUTION

Cover the springs of your saddle to make sure that your child will not have the fingers pinched.

Child Trailers

With special child trailers that are towed behind a Raymon bicycle you can transport one or two children.

Trailers affect the braking behaviour of your Raymon bicycle and occupy far more width than the bicycle would alone. First, practise drawing the trailer without passengers. Equip the trailer with a long pole with coloured pennant to increase visibility. It should be equipped with all active and passive lights that are prescribed for riding on public roads in your country. As this depends on the type of trailer, inform yourself in the instructions of your trailer manufacturer.

⚠ WARNING

Prior to towing a trailer with your Raymon bicycle be sure to equip the trailer according to the regulations prescribed in your country and switch on the lighting as soon as darkness sets in or with poor visibility.

Kids' Tandem Bicycles/Trailer Systems

There are different systems on the market (a+b) that allow a children's bicycle to be attached to an adult bicycle to cycle together with your child on public roads.

Inform yourself at your Raymon dealer about the different types of kids' tandem bicycles.

These trailer systems also affect the braking behaviour of your Raymon bicycle. Therefore, before riding with a children's bicycle tandem on public roads, practise riding and brake behaviour without passengers in an area free of traffic!

⚠ WARNING

Trailer systems affect the bicycle's riding characteristics a lot. The weight of both the hitched bicycle and the child will make the bicycle somewhat top-heavy. It may tend to wobble. Practise getting on and off your Raymon bicycle as well as cycling. Keep in mind, in particular when turning, that your Raymon bicycle including trailer system is much longer.



⚠ WARNING

It is also important for you to practise with your child how to behave on a hitched Raymon bicycle during the ride. Make sure your child wears a helmet even when riding on a tandem bicycle. Set a good example by wearing a helmet, as well!

Only buy tested trailer systems (e.g. BSEN/GS tested systems) and have them mounted correctly. The manuals of the manufacturers included in the delivery of your trailer system, provide detailed information in this regard.

When riding in the dark the attached kid's bicycle should be equipped with the prescribed lighting, i.e. the latter should be marked with a wavy line and the letter "K" (c). For more information see chapter "Legal Requirements for Riding on Public Roads". If the bottle dynamo's roller does not spin, we recommend a tested battery-powered rear light (d).

SAFETY INSTRUCTIONS

Prior to mounting a trailer system to your Raymon bicycle, check that it is designed for this purpose. Have a look at the Raymon bike card or ask your Raymon dealer for advice.



BICYCLE TRANSPORT

By Car

Nearly every car accessory dealer and car company offers carrier systems (e) that allow the transport of a Raymon bicycle without disassembly.

The usual design involves rails fixed to the roof of the car onto which the Raymon bicycles are fixed with clamps gripping the down tubes. This can result in irreparable damage to the frame. High-end, very thin-walled aluminium or carbon frames are particularly susceptible to such kind of damage. Due to the material properties of carbon, you may not see a severe damage at first sight. This can result in an unforeseeable severe accident at a later date. There are, however, special suitable models available in the car accessory trade.

Rear carriers are becoming more and more popular. Their big advantage over roof carriers is that you do not have to lift up the Raymon bicycle so high to attach it. Make sure the clamps do not cause any damage to the fork or frame. **Risk of breakage!**

Whatever system you opt for, make sure it complies with the relevant safety standards of your country.



Read the operating instructions of your bicycle carrier (f) and observe the maximum load capacity and recommended or prescribed speed limit. Observe the necessary drawbar load, if available.

⚠ WARNING

- **Make sure to remove all parts of your Raymon bicycle (tools, pannier bags (g), child seats (h) etc.) which might come loose during transport. Risk of accident!**
- **Do not buy a carrier on which the Raymon bicycle has to be mounted upside down, i.e. with the handlebar and saddle fixed face down to the carrier. This way of fastening the Raymon bicycle exposes handlebar, stem, saddle and seat post to extreme stress during transport. Do not opt for a carrier system with crank arm fit. Risk of breakage!**
- **Check whether your Raymon bicycle is properly fastened before and at regular intervals during the ride. A Raymon bicycle that detaches from the roof carrier may endanger other road users.**
- **Always secure the Raymon bicycle or bicycle components when putting it/them into the interior of your car. Parts shifting around can impair your safety.**

⚠ WARNING

Make sure the lights and the number plate of your car are not hidden from view. For some carriers, a second exterior rear view mirror is required by the road traffic regulations.

Pull the brake lever and secure it with a strong rubber band when transporting a Raymon bicycle with hydraulic disc brakes horizontally or hanging.

NOTICE

Most clamps are a potential source of damage to large-diameter frame tubes (a) that are not designed to be fixed in such clamps! Do not use such systems with carbon frames.

Bear in mind that your car has a greater overall height with the Raymon bicycle on it. Measure the overall height and place a sign stating the height somewhere in the cockpit or on the steering wheel so that it can be easily seen.

If your Raymon bicycle has disc brakes, be sure to mount the safety locks (b) before transporting the Raymon bicycle with the wheels dismantled.

Secure the Raymon bicycles on the bicycle carrier with an additional lock e.g. during a halt.

**By Rail / By Public Transport**

In cities the regulations for taking bicycles (c) by public transport (d) differ. There are e.g. some places where you are only allowed to travel with your bicycle during off-peak hours and with an additional bicycle ticket. Inform yourself in time about the regulations of carrying the bicycle before you start the trip!

In some countries regional trains have special spaces for the storage of bicycles and other things. This is an option to take your bicycle with you. They are often at the front or end of a train and marked with a bicycle sign.

When taking a high-speed train check whether you can take your bicycle with you.

⚠ CAUTION

Remove, if necessary, heavy or bulky pannier bags and luggage for an easier boarding and disembarking of the train.

SAFETY INSTRUCTIONS

Before you start your trip inform yourself in time about the conditions of carriage and also observe the regulations and rules about bicycle transport in the countries through which you intend to travel.

GENERAL NOTES ON CARE AND SERVICING

Maintenance and Servicing

Your Raymon dealer will have assembled and adjusted your Raymon bicycle ready for use when you come to collect it. Nevertheless, your Raymon bicycle needs regular servicing (e). Have your local Raymon dealer do the scheduled maintenance work. This is the only way to ensure that all components function safely and reliably for many kilometres/miles.

The bicycle will be due for its first service after 100 to 300 kilometres (60 to 180 miles), 5 to 15 hours of initial use or four to six weeks. The bicycle must be serviced, because in this initial "break-in" period of use, safety-relevant bolted connections and spokes can slightly lose tension or gears may go out of adjustment. This "break-in" period is unavoidable. Therefore, remember to make an appointment with your Raymon dealer for the first inspection of your new Raymon bicycle. The first service is very important for both functioning and durability of your bicycle.

The intended use of the Raymon bicycle includes regular servicing and the replacement of worn out parts in time, e.g. brake pads (f) or Bowden and brake cables (g), and therefore has an influence on the liability for material defects and the warranty, as well.

You should have your Raymon bicycle serviced regularly by your Raymon dealer after the initial "break-in" period of use.

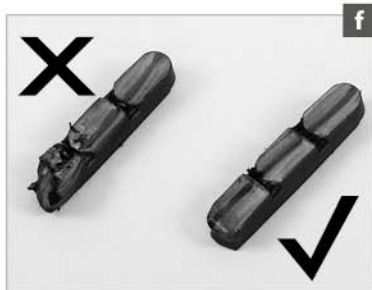
If you ride a great deal on poor road surfaces or cross-country, it will require correspondingly shorter service periods.

⚠ WARNING

- **Servicing and repairs are jobs best left to your Raymon dealer. If you have your Raymon bicycle serviced by anyone else than an expert, you run the risk that parts of your Raymon bicycle will fail. Risk of accident! When working on your Raymon bicycle restrict yourself to jobs for which you are equipped e.g. with a torque wrench including bits (h) and have the necessary knowledge.**
- **If a component needs to be replaced, make it a rule to only use original spare parts (a, p. 92). Wearing parts of other manufacturers, e.g. brake pads or tyres that are not of identical size, may cause harm to the safety of your Raymon bicycle. Risk of accident!**
- **For your own safety, bring your Raymon bicycle to your Raymon dealer for its first inspection after 100 to 300 kilometres (60 to 180 miles), 5 to 15 hours of initial use or four to six weeks, at the very latest, however, after three months.**

NOTICE

- **Multi-speed hubs must be maintained regularly. Observe the intervals in chapter "Service and Maintenance Schedule".**



Cleaning and Caring for the Bicycle

Dried sweat, dirt and salt from riding during the winter or in sea air can harm your Raymon bicycle. You should therefore make it a habit of cleaning all components at regular intervals.

Avoid cleaning your Raymon bicycle with a pressure water washer. The high-pressure water ejected in a narrowly focused jet may pass through seals and penetrate bearings. This leads to the dilution of lubricants and consequently to greater friction. This destroys and impairs the functioning of the bearing races in the long term. Pressurised water also tends to abrade frame stickers.

A much more gentle way of cleaning your Raymon bicycle is with a low pressure water jet or a bucket of water and a sponge or a large brush. Cleaning your Raymon bicycle by hand has another positive side-effect: you may discover defects in the paint (b) as well as worn or defective components at an early stage.

Inspect the chain after you have finished cleaning and oil it, if necessary (c) (see chapter “Chain – Care and Wear”).

Apply a coat of standard hard wax on painted, metal and carbon surfaces (except from brake surfaces) (d). Polish the waxed surfaces after drying to give them a nice shine.

⚠ WARNING

- While cleaning, watch out for cracks, scratches, dents as well as bent or discoloured material. Have defective components replaced immediately and touch up paint defects. If you are in doubt or if you have any questions, contact your Raymon dealer.
- Keep cleaning agents and chain oil free of the brake pads, brake discs/rotors and rim sides (brake surfaces). This could render the brake ineffective (see chapter “Brake System”)! Never grease or lubricate the clamping areas of a frame made of carbon, e.g. handlebar, stem, seat post and seat tube. Once greased, carbon components may never again ensure reliable clamping.

NOTICE

- Do not clean your Raymon bicycle with a high-pressure water or steam jet and if you do, be sure to keep it at a distance.
- Only use petroleum based solvents for cleaning tough oil or grease stains from paint and carbon surfaces. Never use degreasing agents containing acetone, methyl chloride or the like, or solvent-containing, non-neutral or chemical cleaning agents that could attack the surface!



Sheltering and Storing the Bicycle

If you regularly service your Raymon bicycle during the year, you will not need to take any special precautions when storing it for a short time, apart from securing it against theft. It is advisable to store the Raymon bicycle in a dry and airy place.

There are some things to bear in mind, when putting the Raymon bicycle away for the winter: Inflated tubes tend to gradually lose air when the Raymon bicycle is not used for a long time. If the Raymon bicycle is left standing on flat tires for an extended period, this can cause damage to the structure of the tyres. It is therefore better to hang the wheels or the entire Raymon bicycle or to check the tyre pressure regularly (e).

Clean the Raymon bicycle (f) and protect it against corrosion. Your Raymon dealer offers a variety of care products, such as spray wax etc. (g).

Dismount the seat post and let dry away possibly penetrated humidity. Spray atomized oil into the seat tube exclusively in the case of metal frames. Shift the gear to the smallest chainring and the smallest sprocket (h). This relaxes both cables and springs.

SAFETY INSTRUCTIONS

There is usually minimal waiting time for repairs and servicing at your Raymon dealers during the winter months. What is more, many dealers offer annual checks at a special price. Use the off-season to take your Raymon bicycle to your dealer for inspection!



SERVICE AND MAINTENANCE SCHEDULE

You should have your Raymon bicycle serviced regularly after the initial "break-in" period of use. The schedule given in the table below is a rough guide for cyclists who ride their bike between 1,000 and 2,000 km (600 and 1,200 miles) or 50 to 100 hours of use a year.

If you consistently ride more or if you ride a great deal on poor road surfaces, the maintenance periods will shorten accordingly.

Component	What to do	Before every ride	Monthly	Annually	Other intervals
Lighting	Check function	■			
Tyres	Check pressure	■			
	Check tread and side walls		■		
Brakes (rim brakes)	Check lever travel, wear of brake pads, position of pads relative to rim, if necessary; test brakes in standing	■			
Brakes (drum/roller)	Lever travel, test brakes in standing	■			
Brakes, brake pads (rim brakes)	Clean		■		
Brake cables, pads, hoses	Visual inspection		■		
Brakes (disc brakes)	Check lever travel, wear of brake pads, check seals, test brakes in standing	■			
	Replace liquid (DOT-liquids)			×	
Suspension fork	Check bolts			×	
	All-inclusive service (change oil or grease elastomers)			×	
Rims (of rim brakes)	Check thickness, replace, if necessary				× After 2nd set of brake pads at the latest
Fork (rigid)	Check and replace, if necessary				× At least every two years
Suspension seat post	Service			×	
Multi-speed hub/ internal gear hub	8-speed internal gear hub: oil gear			×	
	11-speed internal gear hub: change gear oil				× After the first 1,000 km (600 miles) or after 1 year, then every 5,000 km (3,000 miles)
	Check for bearing play			×	

Component	What to do	Before every ride	Monthly	Annually	Other intervals
Bottom bracket	Check for bearing play		■		
	Dismount and regrease (cups)			×	
Chain	Check and grease, if necessary	■			
	Check wear, replace, if necessary				×
	Derailleur gears				After 1,000 km (600 miles) or 50 hours of use
Crank	Check and retighten, if necessary		■		
Painted/anodized/carbon surfaces	Polish				■ At least every 6 months
Wheels/spokes	Check for trueness and tension		■		
	True or retighten				×
Handlebar and stem (aluminium and carbon)	Check and replace, if necessary				×
Headset	Check for bearing play		■		
	Regrease			×	
Metal surfaces	Polish (except rim sides of rim brakes, brake discs/rotors)				■ At least every 6 months
Hubs	Check for bearing play		■		
	Regrease			×	
Pedals (all)	Check for bearing play		■		
Pedals (clipless)	Clean and grease locking mechanism		■		
Seat post/stem	Check bolts		■		
	Disassemble and regrease			×	
	Carbon: new assembly paste (no grease!)				
Front/rear derailleur	Clean and grease		■		
Quick-releases	Check seat	■			
Bolts and nuts	Check and retighten, if necessary		■		
Valves	Check seat	■			
Cables gears/brakes	Dismount and regrease			×	

If you have a certain degree of mechanical skills, experience and suitable tools, such as a torque wrench, you should be able to do the checks marked ■ by yourself. If you come across any defects, take appropriate measures without delay. If you are in doubt or if you have any questions, contact your Raymon dealer.

Jobs marked × are best left to your Raymon dealer.

RECOMMENDED TORQUE VALUES

All bolted connections of the bicycle components have to be tightened carefully and checked regularly to ensure the safe and reliable operation of the Raymon bicycle. This is best done with a torque wrench that disengages as soon as the desired torque value is reached or a click-type torque wrench.

Tighten carefully by approaching the prescribed maximum torque value in small steps (0.5 Nm increments) and check in between the proper fit of the component. Never exceed the maximum torque value indicated by the manufacturer!

Where no maximum torque value is given start with 2 Nm. Observe the indicated values and follow the enclosed manuals of the component manufacturers.

⚠ WARNING

Always use a torque wrench and do not exceed the maximum torque values! You find the torque values on the components themselves, in the chapter "Recommended Torque Values" or in the possibly enclosed instructions of the component manufacturers. Alternatively, you find them in the download area on the websites of the respective component manufacturers.

Component	Manufacturer	Type	Fixing bolt	Cable clamp	Pulleys
Rear derailleur	Shimano	All	8–10	6–7	2.5–5
	SRAM	Single (Apex mech.)	10–12	4–5	
		Single (Eagle, also AXS)	11	4–5	
		Single (Eagle Transmission)	35		3
		Single (Road AXS / XPLR AXS)	5		
		Double (Road AXS)	5		
Front derailleur	Shimano	Clamp mount / direct mount / e-type mount	5–7	6–7	
		Clamp mount / direct mount / Sora (R3000) / Claris (R2000)	5–7	5–7	
	SRAM	Clamp mount / direct mount (AXS)	6		

Component	Manufacturer	Type	Fixing bolt/nut
Shifter	Shimano	Straight handlebar – Sora (R3000) / Claris (R2000)	3–5
		Straight handlebar – Tiagra (4700)	3
		XTR / Deore XT / SLX / Deore / Cues (U8000)	3
		Alivio / Acera / Altus / Cues (U6000)	5
		Tourney	2.5
		I-Spec Adapter	4–6
		I-Spec adjusting bolt	3 (4 – M9100)

Component	Manufacturer	Type	Fixing bolt/nut
Shifter	SRAM	Discrete / Infinity Clamp	2
		Discrete Clamp AXS	2 / 3 / 2
		MatchMaker X – adapter	3
		MatchMaker X – clamp	5.5
		MatchMaker X – Pod Controller	2 / 2
		Split clamp / MatchMaker – adapter	2
		Split clamp / MatchMaker – clamp	3
		Single bolt clamp	3 / 4

Component	Manufacturer	Type	Fixing bolt/nut	Cable clamp	Bleeder screw/valve
Brake calliper	Magura	Disc – calliper, adapter (PM / IS2000)	6		4
		HS – easy mount – adapter bolt – 2 pcs. – top	6		4
		HS – easy mount – socket screw – bottom left – top view	4		4
		HS – easy mount – with brake booster adapter bolt top right – top view	4		4
		HS – EVO 2 – adapter bolt – 2 pcs. – top	6		4
		HS – EVO 2 – socket screw – bottom left – top view	6		4
		HS – EVO 2 – with brake booster adapter bolt top right – top view	6		4
		HS – socket screw– quick-release (closed)	4.5		4
	Shimano	Side-pull brake – double joint	8–10	6–8	
		Side-pull brake – direct mount	5–7	6–8	
		V-brake	5–7	6–8	
		Disc – post mount / flat mount	6–8		
		Dura Ace – Tiagra			4–7
		XTR – Deore, Saint, ZEE, Cues, group-free			4–6
		Roller brake	20–25	6–8	
		Back-pedal brake (clamp torque support)	2–3		
	SRAM	Disc – flat mount	5		1.6
		Disc – post mount	6		1.6
		Disc mech. – post mount / IS2000	9.5 (9–10)	8–10	

Component	Manufacturer	Type	Fixing bolt/nut	Cable clamp	Bleeder screw/valve
Brake calliper	Tektro	Side-pull brake – dual pivot / V-brake	8–10	6–8	
		Disc – IS2000 adapter	6–8		
		Disc – post mount	6–8		6–8
		Disc (mech) – flat mount – front	5–7	6–8	6–8
		Disc – flat mount – rear – adapter	5–7		
		Disc – flat mount – rear	6–8		6–8
Component	Manufacturer	Type	Fixing bolt/nut	Safety bolt Disc	Safety bolt cartridge
Brake pad	Magura	Disc		2.5	
	Shimano	Side-pull brake – dual pivot / direct mount	5–7		1–1.5
		V-brake	6–8		
		Disc – slot		0.2–0.4	
		Disc – hexagon socket		2–4	
	SRAM	Disc – hexagon socket		1.1	
	Tektro	Side-pull brake – dual pivot	5–7		1–1.5
		V-brake	6–8		
		Disc – hexagon socket		0.8–1.2	
Component	Manufacturer	Type	Fixing bolt (clamp)	Bleeder screw/valve adjusting bolt	
Brake lever	Magura	Disc / HS	4	0.5	
	Shimano	Disc	4–6	0.5–1.0	
		Disc – (Tiagra 4700)	6–8	0.5–0.7	
		Side-pull brake – (Sora R3000 / Claris R2000)	6–8		
		V-brake	6–8		
	SRAM	Disc	4–5	1.6	
		Split clamp / MatchMaker X clamp	5.5		
		Split clamp / MatchMaker – clamp / single bolt clamp	3		

Component	Manufacturer	Type	Union nut/screw	(Banjo) connector fixing bolt
Brake hose	Magura	Disc – brake lever	4	
		Disc – brake calliper – (RHR)		3
		HS	4	
	Shimano	Disc – brake lever – (flat mount)	5–6	
		Disc – brake lever – (post mount)	5–7	
		Disc – brake calliper – (flat mount / post mount)	5–6/7	
		Disc – brake calliper		depending on model
	SRAM	Disc – brake lever	8	
		Disc – brake calliper – (flat mount/post mount)	5–6	
		Disc – brake calliper – (post mount) – Torx		5
		Disc – brake calliper – (post mount) – outside hex		10.8
		Disc – brake calliper – (post mount) – inside hex		9.3
	Tektro	Disc – brake lever	5–7	
		Disc – brake calliper		6–8

Component	Manufacturer	Type	Lock nut/disc	Fixing bolts
Brake disc/rotor	Magura	6-hole		4
	Shimano	Center Lock	40	
		6-hole / 5-hole		2–4
	SRAM	Center Lock	40	
		6-hole		6.2
	Tektro	6-hole		4–6

Component	Manufacturer	Type	(Crank) fixing bolts	Others
Crankset	Shimano	Square-head	35–50	
		Octalink	35–50	
		Hollowtech II – left crank arm	12–14	0.7–1.5
		XTR (FC-M9100-M9130)	45–55	
		Cues (FC-U6000)	35–50	
	SRAM	DUB	54	
		DUB – preload adjuster	flush	
		DUB – self-extracting bolt	hand-tight	

Component	Manufacturer	Type	(Crank) fixing bolts
Crank set	SRAM	30 mm spindle	54
		30 mm spindle– preload adjuster	flush
		24 mm GXP	48–54
		Power spline	42
Component	Manufacturer	Type	Fixing bolts/ lock ring
Chainring/ crank spider	Shimano	Dura Ace (R9200 / R9200-P) – double	12–16
		Ultegra (R8100 / R8100-P) – double	12–16
		105 (R7100 / R7000) – double	12–16
		Tiagra (4700 / 4703)– double/triple big/medium	12–16
		Sora (R3000 / R3030) – double/triple big/medium	12–14
		Sora (R3030) – triple small	16–17
		GRX (RX820 / RX810) – single/double	12–16
		GRX (RX610 / RX600) – single/double	16–17
		XTR / Deore XT / SLX (M9100 / M8100 / M7100) – double	16–17
		Deore (M5100 / M4100) – double	16–17
		Deore (M5100 / MT511) / group-free MT610 – single	12–14
		Deore (MT510) – single	16–17
		Direct mount – all	12–14
		Cues (U8000 / U6000) – double	16–17
		Cues (U8000) – single	16–17
		Cues (U6000) – single	12–14
	SRAM	3-bolt – direct mount	9
		3-bolt – crank spider	9
		4-bolt MTB	9
		4-bolt AXS – single/double	12
		5-bolt X-Sync	9
		8-bolts	4
		Transmission – screwed chainring – locking pin	0.8
		Transmission – XX – bash guard	6
		Transmission – X0/ GX – bash guard	4

Component	Manufacturer	Type	Fixing of the BB cups		
Bottom bracket	Shimano	Square-head / Octalink	50–70		
		Hollowtech II	35–50		
	SRAM	DUB BSA / Italian / T47	50		
		GXP / power spline	34–41		
Component	Manufacturer	Type	Lock/ safety ring		
Cassette sprockets	Shimano	HG / Microspline	40		
	SRAM	XDR / XD	40		
		Splined non-XD	40		
Component	Manufacturer	Type	Pedal axle		
Pedals	Shimano		35–55		
	SRAM	Crank – non-DUB	47–54		
		Crank – DUB	54		
Component	Manufacturer	Type	Fixing bolt		
Shoes	Shimano	Cleat	5–6		
Component	Manufacturer	Type	Axle nut	Clamp – torque support	Di2 – motor unit
Internal gear hub	Shimano	Nexus, Alfine	30–45	2–3	6–10

Do not apply these torque values to the components from other manufacturers. Also observe the values in any enclosed instructions from the component manufacturers.

<https://www.campagnolo.com>
<https://si.shimano.com>
www.sram.com
www.tekro.com

LEGAL REQUIREMENTS FOR RIDING ON PUBLIC ROADS

In **Great Britain** (as of January 2024)

According to the **Highway Code** in Great Britain your Raymon bicycle must be equipped as follows:

1. Lighting, rear lights, reflectors:

At night your bicycle must have:

- a white front light (a)
- a red rear light
- a red rear reflector
- four amber pedal reflectors (if manufactured after October 1, 1985)

In addition, it should be equipped with:

- a white front reflector
- spoke reflectors
- flashing lights are permitted, a steady front lamp is however recommended.

(Law RVL R regs 13, 18 & 24)

It is not required that the prescribed lighting is mounted upon sale of the bicycle. If it is, however, it must comply with these regulations. Bicycles that are only used with good daylight visibility, such as e.g. road racing bicycles, are exempt from the lighting regulations.



2. Brakes

Every bicycle must be equipped with at least one braking system (b). (Laws PCUR regs 6 & 10)

3. Signalling devices

It is recommended that a bell be equipped.

4. Cycle helmets

Wearing a cycle helmet which conforms to current regulations in the correct size and securely fastened is recommended.

5. Child transport

There are no rules as to the transport of children with bicycles.

6. Bike trailer lighting

Cycle trailers must be equipped with a red rear light as well as a triangular rear reflector with an ECE mark III or IIIA.

7. Hand held mobile phones

Cycling with a hand held mobile phone is not illegal as such. You could, however, commit an offence of "careless riding" or "riding without due care and consideration". For safety reasons, you are strongly advised against using a mobile phone during cycling.

8. Other issues

Using cycle lanes is not compulsory, but can make your journey safer. You must not cycle on a pavement.

(Laws HA 1835 sect 72 & R(S)A 1984, sect 129)

SAFETY INSTRUCTIONS

For more important information on cycling, see chapter "General Safety Instructions".

For further information see:

www.direct.gov.uk

www.dft.gov.uk

www.ctc.org.uk

WARRANTY AND GUARANTEE

Your Raymon bicycle was manufactured with care and delivered to you by your Raymon dealer fully assembled.

As direct purchaser you have full warranty rights within the first two years after purchase. Contact your Raymon dealer in the event of defects.

To ensure a smooth handling of your complaint, it is necessary to present your receipt, your Raymon bike card, the handover report and the service reports. Therefore, keep these documents in a safe place.

To ensure a long service life and good durability of your Raymon bicycle, use it only for its intended purpose (see chapters **"Before Your First Ride"** and **"Intended Use"**). Observe the permissible weight specifications indicated on the type plate on the Raymon bicycle or in the Raymon bike card in these operating instructions. If you are in doubt, contact your Raymon dealer. In addition, you have to follow the manufacturers' mounting instructions of the (above all, the torque values of the bolts) as well as the prescribed maintenance schedule.

Observe the checks and routines listed in this manual or in any other manual enclosed with this delivery (see chapter **"Service and Maintenance Schedule"**) as well as any instructions as to the replacement of safety-relevant components, such as handlebars, brakes etc.

SAFETY INSTRUCTIONS

This warranty law is only valid in the countries that have implemented the EU Directive into national law. Inform yourself about the regulations in your country. In the United Kingdom, see the respective regulations in the Consumer Rights Act 2015 (CRA 2015).

A Note on Wear

Some components of your Raymon bicycle are subject to wear due to their function. The rate of wear will depend on care and maintenance and the way you use your Raymon bicycle (mileage, riding in the rain, dirt, salt etc.). Raymon bicycles that are often left standing in the open may also be subject to increased wear through weathering.

The components below require regular care and maintenance. Nevertheless, sooner or later they will reach the end of their service life, depending on conditions and intensity of use. Parts that have reached their limit of wear must be replaced.

This concerns:

- Drive chain
- Brake pads
- Brake fluid (DOT)
- Brake discs/rotors
- Brake cables
- Brake cable housings
- Seals of suspension elements
- Rims of rim brakes
- Rubber grips
- Chainrings
- Illuminants
- Tyres and inner tubes
- Sprockets
- Saddle covering
- Bowden cables
- Bowden cable housings
- Pulleys
- Lubricants

SAFETY INSTRUCTIONS

Ask your Raymon dealer about any additional guarantee given by the manufacturer of your Raymon bicycle and insist on having it as printed version.

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3rd service

After 4,000 kilometres (2,400 miles) or 200 hours of use at the latest or after two years

Order no.: _____

Date: _____

Mileage: _____

- ☐ All necessary maintenance work carried out (see service and maintenance schedule); replaced or repaired parts:

Stamp and signature of the Raymon dealer:

4th service

After 6,000 kilometres (3,600 miles) or 300 hours of use at the latest or after three years

Order no.: _____

Date: _____

Mileage: _____

- ☐ All necessary maintenance work carried out (see service and maintenance schedule); replaced or repaired parts:

Stamp and signature of the Raymon dealer:

5th service

After 8,000 kilometres (4,800 miles) or 400 hours of use at the latest or after four years

Order no.: _____

Date: _____

Mileage: _____

- ☐ All necessary maintenance work carried out (see service and maintenance schedule); replaced or repaired parts:

Stamp and signature of the Raymon dealer:

6th service

After 10,000 kilometres (6,000 miles) or 500 hours of use at the latest or after five years

Order no.: _____

Date: _____

Mileage: _____

- ☐ All necessary maintenance work carried out (see service and maintenance schedule); replaced or repaired parts:

Stamp and signature of the Raymon dealer:

7th service

After 12,000 kilometres (7,200 miles) or 600 hours of use at the latest or after six years

Order no.: _____

Date: _____

Mileage: _____

- ☐ All necessary maintenance work carried out (see service and maintenance schedule); replaced or repaired parts:

Stamp and signature of the Raymon dealer:

8th service

After 14,000 kilometres (8,400 miles) or 700 hours of use at the latest or after seven years

Order no.: _____

Date: _____

Mileage: _____

- ☐ All necessary maintenance work carried out (see service and maintenance schedule); replaced or repaired parts:

Stamp and signature of the Raymon dealer:

9th service

After 16,000 kilometres (9,600 miles) or 800 hours of use at the latest or after eight years

Order no.: _____

Date: _____

Mileage: _____

- ☐ All necessary maintenance work carried out (see service and maintenance schedule); replaced or repaired parts:

Stamp and signature of the Raymon dealer:

10th service

After 18,000 kilometres (10,800 miles) or 900 hours of use at the latest or after nine years

Order no.: _____

Date: _____

Mileage: _____

- ☐ All necessary maintenance work carried out (see service and maintenance schedule); replaced or repaired parts:

Stamp and signature of the Raymon dealer:

HANDOVER REPORT

The above-described Raymon bicycle was delivered to the customer ready for use, i.e. after its final assembly, inspection and functional check as described below (additionally required routines in parentheses).

- ☐ Lighting ☐ Brakes front and rear
☐ Suspension elements (adjusted to suit customer)
☐ Wheels (trueness/spoke tension/tyre pressure)
☐ Handlebar/stem (position/bolts with torque wrench)
☐ Pedals (adjustment of release force, if necessary)
☐ Saddle/seat post (saddle height and position of saddle adjusted to suit customer, bolts with torque wrench)
☐ Gears (limit stops!)
☐ Bolted connections of add-on parts (with torque wrench)
☐ Other routines performed _____

- ☐ Test ride carried out

Name
Raymon dealer _____

Street _____

ZIP code/city _____

Phone/Fax _____

E-mail _____

Delivery date,
 stamp,
 signature of
 Raymon dealer _____

The customer confirms with his signature that he received the Raymon bicycle in proper condition along with the accompanying documents specified below and that he was instructed on the proper use of the Raymon bicycle.

- ☐ Raymon operating instructions

Additional instructions

- ☐ Brake system ☐ Suspension seat post ☐ Pedal system
☐ Suspension fork ☐ Seat post, stem ☐ Gear system
☐ Supplementary instructions "E-bike/EPAC/EAPC" ☐ Others

Name customer _____

Street _____

ZIP code/city _____

Phone/Fax _____

E-mail _____

City, date _____

Signature of
 customer _____

- ☐ I hereby expressly consent that my above-mentioned data are stored by the Raymon dealer and made available to the manufacturer so that I can be contacted directly e.g. in the event of a recall. The data will not be transmitted to third parties or used otherwise.

Signature of
 customer _____

RAYMON BIKE CARD

Manufacturer R Raymon Bicycles GmbH

Model _____

Frame no. _____

Suspension fork
 – manufacturer _____
 – model _____
 – serial no. _____

Frame type _____

Frame size _____

Size of wheels and tyres _____

Colour _____

Special features _____

Intended Use**Use in accordance with**

☐ category 1 ☐ category 2 "Everyday"

Maximum permissible overall weight

Raymon bicycle, rider, luggage and child seat
 or trailer load, if permitted _____ kg

Pannier rack allowed ☐ yes ☐ no

Permissible load _____ kg

Child seat allowed ☐ yes ☐ no

Trailer allowed ☐ yes ☐ no

Permissible trailer load _____ kg

Brake levers – Brake assignment

Right lever: ☐ front wheel brake
 ☐ rear wheel brake

Left lever: ☐ front wheel brake
 ☐ rear wheel brake

⚠ WARNING

Read at least chapters "Before Your First Ride", "Intended Use" and "Before Every Ride" in these Raymon operation instructions.

 Stamp and signature of the Raymon dealer

(Hint to the Raymon dealer: Copy the Raymon bike card and the handover report and keep one copy in your customer file. Send another copy to the bike manufacturer, if necessary. Make sure the customer confirms by his signature on the handover report that his personal data are made available to the manufacturer.)

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97424 Schweinfurt – Germany

www.raymon-bicycles.com