# RIESE & MÜLLER



# **INSTRUCTION MANUAL BIRDY**

TRANSLATION OF THE ORIGINAL GERMAN INSTRUCTION MANUAL





### Dear customer,

Congratulations on your new Birdy. Thank you for choosing us for your mobility needs. Riese & Müller builds lightweight and practical bikes that are characterized by exceptional handling and award winning design.

Your dealer has performed the final assembly of the Birdy and possibly implemented some requested changes for you. They have performed a test ride to ensure an enjoyable riding experience from the very start.

During the design process, we constantly think about your riding enjoyment and safety. Even though we cannot anticipate every possible scenario, this manual answers many of the key questions you may have and gives you many tips on using your bike.

Furthermore, a lot of interesting facts about bicycle technology, maintenance and upkeep are summarized for you to ensure that you enjoy your new Birdy for many years for come. If after reading this manual, you still have guestions, please feel free to contact your dealer or us directly.

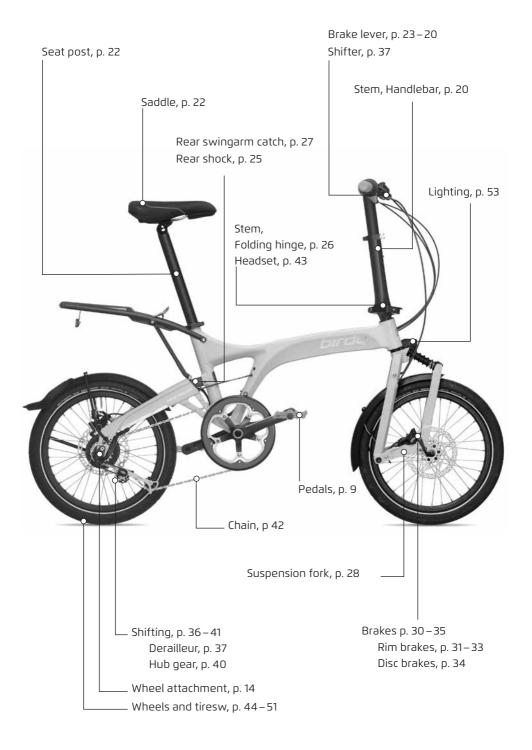
Since our bikes are constantly being updated and improved,we may provide additional supplementary pages to ensure you have the most up to date information. Please be mindful that some updated information may have already been included with your new bike.

#### The Riese & Müller Team



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# DANGER!

Torque settings in this manual are specified in Nm. Do not rely on your feeling: "tight" is simply not precise enough. ONLY a torque wrench can ensure that the bolt is properly tightened. You must always use this tool to tighten the components when a torque setting is specified. A bolt that is too tight or too loose can cause malfunctions which could lead to an accident with serious injuries as a result.

# **GENERAL INFORMATION**

Riese & Müller folding bicycles are equipped with innovative technology. So please read this manual even if you are an experienced cyclist.

We'll begin by telling you about the parts of your Birdy. Open the front cover of this brochure. Here you'll find a Birdy with all of the relevant parts clearly shown

[] Tip! Keep the front cover opened as this makes orientation easier!

We have tried to vividly portray all of the relevant information to ensure your satisfaction with your new Birdy. Therefore we use the following symbols:



**Attention!** Here is a hint that will help you quickly become familiar with your bike and its technology.



**Danger!** This symbol indicates that life-threatening risks are possible if the corresponding instructions are not followed. Please read carefully.

- Tip! This symbol indicates useful additional information.
- This sign indicates the need of a torque wrench and that you must keep the specified torque setting.

To ensure you always have a fun and safe ride, you should perform the quick check before every ride. For instructions on this quick check please see page 12.

In this manual, a number of maintenance and repair tasks are described in detail. If you engage in this activity you must always consider that the instructions are exclusively for the designated Birdy and are not transferable to other bikes.

Through a variety of design and model changes it is possible that the included instructions are not up to date. If necessary, review the separately attached instructions.

Note that the successful execution of the included instructions may require special tools or technical expertise.



### **DANGER!**

This manual covers the installation and maintenance work that may be best performed by your local dealer (p. 66-67). Do not perform any task that you are uncomfortable with. Many of these tasks require special knowledge and tools and should only be performed by an expert. Never ride your bike with incomplete or improper maintenance. You could endanger your life or the lives of others.

If you reach a certain point where you are not sure how to proceed, please contact your local dealer or us directly. We are happy to help!

WE HOPE YOU ENJOY YOUR NEW BIRDY!

# **SAFETY**

#### THE FOLLOWING ARE A FEW THINGS THAT WE HOLD VERY DEAR:

- Always take care in traffic as not to endanger yourself or others.
- Respect the rules of the road so you don't draw the ire of other road users.
- If you tour through forests and meadows, please respect nature by cycling only on marked or paved roadways. Observe the legal requirements for the off-road use of bicycles. These are available from your local authorities.
- Never ride without a helmet.
- Make sure you always wear appropriate clothing.
- Make sure you always wear shoes with non-slip and rigid sole.
- Do not ride with hands off the handlebar.
- Do not ride with headphones and do not use your phone on the Birdy. Do not drive if you are impaired in your driving ability by medication, alcohol or other drugs
- Check if the quick releases or axle bolts are properly secured.
- Adapt your driving style to the weather conditions. Wet or slippery roads increase the braking distance.
- Adjust your speed to the terrain and your riding ability.



# ATTENTION!

After a crash or accident your dealer must inspect the Birdy for damages before you use it again.

# **LEGAL REQUIREMENTS**

When you ride your Birdy on the road, it must comply with traffic laws and guidelines. These will vary from country to country. In general, there are minimum standards for brakes, reflectors and lighting systems, as well as usually a general responsibility to ensure that your vehicle is in roadworthy and in safe condition. You also have a duty to ride in a safe and responsible manner. If you ride your Birdy in traffic, be sure to observe all relevant laws and regulations. Please ask your local transportation administration for current information.

#### **BRAKES**

In most countries, including Germany and the UK, two independent brakes are required. Do not ride with only one functioning brake!

#### LIGHTS

Bicycle lighting systems need to comply with the relevant national standards.

# INTENDED USE

Your Birdy is designed for use on roads and paved trails only. When using the Birdy in public traffic it must be equipped conforming national legislation.

YourBirdy is not approved for extreme loads. Riese & Müller is not liable for damages resulting from improper use, incorrect assembly, negligence, accidents, racing, jumping, wheelies or similar activities.

Terms of use and maintenance described in this manual are part of the intended use.

The manufacturer or dealer accepts no liability or warranty if the Birdy is out of intended use, when safety instructions are not observed, when overloaded or improperly deficiencies are eliminated. The warranty does not cover damage caused by installation errors, intent, crashes and poor care or poor maintenance.



### **DANGER!**

Your Birdy is basically intended for the transportation of a single person only. One exception is the transportation of a child in a child trailer. Please note the terms of your national legis-lation. Pay attention to the use of high quality trailers. Pay attention to the maximum gross weight (see page 65, technical data).



### **NOTICE!**

Gross weight = Riders weight + Birdy weight + luggage weight

# **PEDALS**

Grease the threads before assembly and insert the pedal by rotating the axle 2 or 3 turns by hand. The left/right pedal has a "L"/"R"-sign.



Tighten the pedals to 35 Nm.



The stamp is located either directly adjacent to the threads or on the top side of the pedal body.

# BEFORE THE FIRST RIDE

Make sure that your dealer has performed the final assembly of your Birdy and adjusted it to your preferred riding position.

This includes:

- · adjustment of the brakes
- adjustment of the brake levers, so you can reach them every time
- wheel attachment to frame and front fork
- adjustment and attachment of saddle, handlebar and stem for a secure and comfortable riding position

#### **CARRIER, CHILD SEATS**

Please note that carriers are not allowed to be modified. The Birdy is not approved for the use of child seats.

#### TRAILER/TRAILERBIKES

The Birdy is only approved for use with two wheeled trailers. With some adjustment work it is possible to attach the Weber coupling, type ER (see fig.).





### ATTENTION!

The authorized dealer must make the Birdy ready to ride, so that safe operation is guaranteed. The dealer must do a final check and a test ride with your Birdy. Check the tight fit of quick releases and all important bolts and nuts.

Check the tyres air pressure. You will find the required air pressure at the sidewall of the tyres. Do not exceed the minimum and maximum air pressure! Make sure that tyres and rims are free from damages, cracks and deformations. Become familiar with the functions of all controls.



### DANGER!

Other trailer hitches do not guarantee perfect function of trailer and suspension and could cause accidents or damage!

#### **BREAKING SYSTEM**

Are you familiar with the braking system? Check to make sure that the front brake lever is on the side of the handlebar that you are used to. If it isn't then you can either train with the new arrangement or have your dealer change the arrangement to fit your needs. More details on brakes can be found on pages 30 – 35.



### DANGER!

Modern brakes are much more powerful than simple rim or drum brakes. Make sure to first test the braking power before heading into traffic. Unintended braking can lead to an accident. Slowly squeeze the brake to generate more braking force. When riding with a full load, the handling is affected and it takes longer to stop. Be sure to make some handling and braking test prior to heading into traffic.

#### **SHIFTING**

Conduct a test ride to familiarize yourself with the shifting system in a low-traffic area. More details on the shifting on page 36.



#### DANGER!

If your Birdy is fitted with pedals with rubber or plastic cage, please become familiar with their grip. Pedals with rubber or plastic cage may get slippery when wet!

#### **SEATING POSITION**

Is the saddle and handlebar in the right position? Your dealer can assist you in finding the best seating position. More details on seating position on page 20 – 24.

#### SUSPENSION

Is the suspension adjusted to suit your needs? More information regarding suspension on page 25.

#### **FOLDING THE BIRDY**

Are you familier with the folding and unfolding process? Ask your dealer or read the pages 16-18.

# **BEFORE EVERY RIDE (QUICK CHECK)**

Before every journey you must check the following points:

#### **QUICK RELEASES / AXLE NUTS**

Are the quick releases on the wheels, the stem and the seatpost clamp all correctly fastened? Read more on page 14.



### **DANGER!**

Quick releases and fittings that are not properly closed can result in severe accidents!

Check the tight fit of quick releases, thru axles and bolts even if you parked your Birdy only shortly at an unattended place. Do not ride your Birdy with untightened quick releases.

#### **FOLDING STEM**

Is the tension lever on the stem hinge closed correctly? Are all hinge parts for the stem hinge present? More information on page 26. Is the quick release lever on the height adjustable stem closed? Is the pin of the height adjustable stem fully snapped into one of the holes. Read more on page 21.

#### FRONT AND REAR SWINGARM

Are the rear swingarm catch and the front swingarm catch both correctly engaged? More about this on pages 27–29.

#### **SUSPENSION**

Check to make sure the suspension is functioning. Press down on the saddle to check the rear saddle. While holding the front brake, press down on the handlebars to check the suspension fork. In both cases the suspension should move up and down with uniform resistance and without significant noise. No components of the Birdy should scrape or rub together.

#### **TYRES**

Are the tyres in good condition? Is the air pressure correct? More information regarding tyres can be found on page 44.

#### LIGHTING

Does the light illuminate properly? More on lighting on page 53.

#### **BRAKES**

Perform a stationary brake test by pulling the levers hard towards the handlebar. The brake pads of rim brakes should press with their full area against the rims, without touching the tyre. You should not be able to pull the lever right up to the handlebar! Further tips on braking on pages 30–35.

#### **LOADING**

Check the fixation of basket. The luggage must be fixed securely and nothing should get caught by the wheels. Please note that your Birdy may change under loading.

#### **WEIGHT LIMITS**

Check to ensure the gross vehicle weight rating is not exceeded. Please see page 65.

#### **UNUSUAL NOISES**

Be aware of any unusual noises or changes to handling characteristics which may indicate a problem. Check the bearings and couplings.



# DANGER!

Do not ride your Birdy if concerned about any of these points! If in doubt please consult your dealer. A faulty bicycle can result in accidents!



#### ATTENTION!

After a crash or accident your dealer must inspect the Birdy for damages before you use it again.

# **QUICK RELEASES**

Even though quick releases are very convenient, many accidents occur because of their misuse. So please pay attention to this article

#### **DESIGN OF QUICK RELEASES**

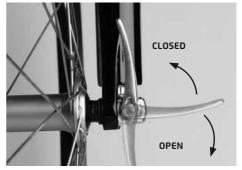
The quick release consists of two control elements:

- A lever **A** on one side of the hub that produces the clamping force.
- A locking nut **B** which is threaded on the opposite side that sets the tension

#### **HANDLING OF QUICK RELEASES**

- Open the lever **A** You should now be able to read the word "Open".
- To close it, move the lever so that on the outside it reads "Close". At the beginning of the closing movement, about halfway through its travel, the lever must be slightly tight.
- During the second half of the lever's travel, the leverage increases significantly. Finally, the lever is very tight and is difficult to move. Use the palm of the hand to close the lever. Once closed the lever must be parallel to the wheel and not project out laterally.





- Check the fit by attempting to turn the closed lever. When the lever rotates, it is not safe to use the bike. You have to open it again to retighten it. Do this by turning the locking nut **B** one-half turn (while holding quick release).
- Repeat the closing process and check the fit again. When the lever no longer rotates, it is clamped properly.
- Check the tightness of the wheel: lift the wheel several inches off of the ground and give the top of the tyre a little whack.
   A securely fixed wheel should remain in the frame.
- Check the tight fit of saddle and handlebar by trying to twist them.



### **DANGER!**

Never ride a Birdy without first checking that the wheels are securely attached to the frame with a quick release or bolt. If not securely attached, the wheel could fall out during the ride and lead to a severe injury!

Check the tight fit of quick releases, thru axles and bolts even if you parked your Birdy only shortly at an unattended place. Do not ride your Birdy with untightened quick releases.



#### TIP!

Components secured with a quick release are at risk of theft. If possible place an additional lock on the wheels when you park the Birdy.

# **UNFOLDING YOUR BIRDY**





- Unfold the stem and handlebars.
- Close the hinge lever.

- Open the seatpost quick-release and raise the seatpost to the appropriate height (notice the height marks on the post).
- Close the quick-release again. Do not raise the seatpost beyond the minimum insertion mark (see page 21).



## **ATTENTION!**

Do not pull out the seat post above the minimum insertion mark. Please read page 23.

# 05

- If your Birdy is equipped with a height-adjustable stem, open the height-adjustment quick-release, press the pin and raise the stem to the desired height.
- Carefully close the quick-release.
- Check that everything is secure on the stem, by holding the front wheel between your legs and attempting to twist the handlebar with your hands. If it doesn't turn, it's secure.

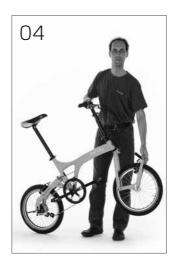




- Lift the Birdy by the saddle, so that the rear swingarm swings backwards.
- Engage the rear swingarm catch.

  If you have one, unfold the kickstand.





- Lift the Birdy by the handlebar, unfold the front wheel and put the Birdy back on the ground.
- Press briefly on the handlebar, so that the front spring audibly engages in the front swingarm catch.

# **(!)**

### ATTENTION!

Under no circumstances should the stem be raised beyond the 'MINIMUM INSERTION' mark. Check that the pin engages in one of the holes at the stem.

## 06

- Adjust the seatpost to the correct height. Turn the saddle so it is in line with the bike, by lining up the front of the saddle with the bottom bracket or along the main frame tube.
- Check that the seatpost is securely fixed by grasping the front and rear of the saddle and attempting to twist it. If it doesn't move at all, it's secure.

# **FOLDING YOUR BIRDY**

With a little practice you can easily fold the Birdy very quickly. The folding procedure is as follows:

- Select the highest gear the chain should be on the smallest sprocket.
- If your Birdy is equipped with a heightadjustable stem, open the height-adjustment quick-release, press the pin and lower the stem to the lowest pin hole. Close the quick release again.
- Ensure the right-side pedal points upwards (the crank should be in line with the seatpost).
- Stand on the left side of the Birdy and grip the handlebar with your right hand. Press the front swingarm catch with the left hand, so that it releases the spring from the fork.



• Fold the front swingarm right under until the front wheel rests next to the main frame tube, and the tire grips up against the fixing screw on the front forks.



- Put the bike back down. If you have one, fold up the kickstand. Lift the bike a little by the saddle and open the rear swingarm catch with a light outward pull.
- Now fold the rear swingarm forward and put the Birdy back on the ground.
- Now open the seatpost quick release and lower the saddle as far down as it will go.
   Close the quick release.
- Finally, open the stem hinge lever and fold the handlebars down. Finished!

# ! NOTICE!

Do not store the Birdy Rohloff on its side for a long time. There is the possibility of oil leakage from the Rohloff Speedhub. This is technically harmless but should be remembered when storing the Birdy in sensitive areas.

# ADJUSTING THE RIDING POSITION

### **HOW CAN I CHECK MY SEATING POSITION?**

A good riding position is important for your comfort and for optimal performance on the bike. You need to adjust saddle and handle-bars very precisely to ensure the best possible fit. Several components on the Birdy are designed to adjust to suit your body dimensions. If required, you dealer will be pleased to change the stem on your Birdy.

#### Adjusting for the correct saddle height

The need for a comfortable pedaling action determines the saddle height. It's important that when you pedal, the ball of the foot should be over the center of the pedal axle. When the pedal is at its lowest position your leg should not be quite fully extended. If the saddle is too high, it's hard to get round

<u>(1)</u>

#### **DANGER!**

All of the procedures we are about to describe require a certain degree of skill, suitable tools and mechanical aptitude. After any assembly or maintenance procedure, perform the Quick Check (see page 8) and take a short test-ride somewhere quiet, away from traffic. If you have any doubts, it's best just to do the riding position check, and then to explain any changes you'd like to your dealer. They can carry out your requests, perhaps in conjunction with the first inspection.

this lowest point, and the pedaling action becomes uneven. If the saddle is too low, you're likely to experience knee pain.

Check the seat height using the following simple procedure. Use shoes with a flat sole for this check:

 Sit on the saddle and put your heel on the pedal, so that it moves to its lowest position. In this position the leg should be fully extended. Note that the hips should stay straight and level.



- To adjust the seat height, you need to undo the quick-release.
- The loosened seatpost can now be adjusted for height. Make sure that the seatpost is not greased. If it doesn't slide smoothly in the frame, clean out and remove all grease from inside the frame and on the seatpost. If you have further problems, consult your dealer. It should never require extreme force to adjust the seatpost.

- Set the saddle straight, by lining up the saddle nose either with the bottom bracket or the main frame tube. Close the quick release.
- Check that the seatpost is securely fixed by grasping the front and rear of the saddle and attempting to twist it. If it doesn't move at all, it's secure.
- Does the leg extension seem correct when you repeat the test? Check it by moving your foot to the ideal pedaling position, with the ball of the foot above the pedal axle. The knee should now be slightly bent if this is so, you've reached the correct saddle height.
- Check that you can stay in the saddle and still reach the ground with your tiptoes.
   If this isn't the case, put the saddle a little lower
- Memorize the insertion mark on the seatpost so that when later unfolding you immediately know the correct height of the seatpost.





#### TIP!

Your dealer can change the stem following your needs.



### **DANGER!**

Do not ride if the seatpost is withdrawn beyond the 'MINIMUM INSERTION' mark! This mark must not be visible: if it is, the seatpost could break or the frame could be damaged. The seatpost is not designed for mounting bags or carriers on the seatpost or the saddle. This could overload of the seatpost!

#### **BIRDY STEMS**

Two different handlebar stems are available for the Birdy:

- Sport stem, adjustable allows sporty position for riders of all sizes
- Comfort stem, adjustable the handlebar is closer to the saddle and allows a more upright rider position.

#### Upright rider's position

Advantage: lower load on the wrists, arms and cervical spine.

Disadvantage: higher load on the saddle.

#### Sporty rider's position

Advantage: less loads for the seating area, more efficient performance, less air resistance, more weight on the front wheel. Disadvantage: higher loads for the wrists, arms and cervical spine.

# ADJUSTING THE RIDING POSITION

#### AD JUSTING THE HANDLEBARS

- Open the guick release at the stem.
- Press the pin and adjust the stem to the desired height. The pin has to engage again into one of the holes.





### **DANGER!**

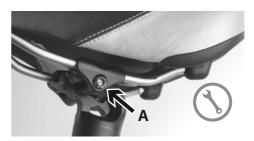
Do not ride if the stem is extended beyond the 'MINIMUM' INSERTION' mark! Do not ride if the quick release of the adjustable stem is not tightened or the pin is not engaged in one of the holes. Never open the quick release while riding!

# AD JUSTING REACH AND SETTING THE SADDLE ANGLE

The distance between the handlebar grips and the saddle (reach), and the angle of the saddle, are important factors when it comes to how much you're leaning forwards, and hence for your riding comfort and performance. The reach can be adjusted over a short distance using the saddle rails, by sliding the saddle forward or backward on the seatpost clamp. This will also affect pedaling: if the saddle is all the way back, you'll be pedaling more "from behind", and vice versa.

The geometry of the Birdy was designed so that for normal use, the saddle is positioned as far forwards as possible. This minimizes folded size. The saddle should in general be set dead level.

 Release seatpost clamp bolt A, turning at most three or four turns anticlockwise.
 No more, or the whole assembly can fall apart.



 Move the saddle forward or backward as required. Often only a light bump to the saddle is needed. Retighten the bolts, turning them clockwise.



Adjust the saddle angle and tighten bolt **A**. Observe the recommended torque setting of 9–12 Nm.

 When you've tightened everything, check whether the saddle tilts, by pushing alternately on the front and back.



#### **DANGER!**

When you change saddles, check that the saddle rails are designed for a 7mm clamp. Other types of saddle rails may cause failure of the seat clamp and lead to an accident. The handlebar clamp must be tightened first and gapless at the inscripted side (see arrow **A**). Observe the tightening torque (6–8 Nm). Fix the handlebar by tightening the opposite bolts **B**.



#### **DANGER!**

After modifications of stem and handlebar position you must check if all cables are still long enough. It is necessary to have the full steering range without any limitations by the cables.

#### ADJUSTING THE ANGLE OF THE HANDLEBARS

Adjust the handlebars so that the wrists are relaxed and not too strongly twisted.
Adjust the handlebar position by rotating the handlebar.

- Loosen the two bolts **A** and **B** on the handlebar clamp.
- Rotate the handlebar to the desired position.
- Make sure that the handlebar is clamped exactly in the middle of the stem.



#### **ROTATING THE BRAKE LEVERS**

Once you've adjusted the handlebar angle, you need to adjust the brake lever position. Loosen the hex-key bolt on the lever housing clamps.

 Turn the lever on the handlebar. Sit on thesaddle and grip the levers with your fingers. Check that your hand makes a straight line with your forearm.



Retighten the bolts (torque setting 5-6 Nm).



# ADJUSTING THE RIDING POSITION

# ADJUSTING THE REACH OF THE BRAKE LEVERS

The distance between brake levers and handlebar grips is adjustable. The levers can be brought closer to the bars, making them easier to use for riders with small hands. The lever position where the brakes start to "bite" also needs to be adjusted for finger length.

- There's a small adjuster screw just near where the cable goes into the lever housing (see arrow on diagram). Screw this adjuster in, and observe how the lever position changes.
- When you've reached the desired position, you must check that there's still enough available motion so that there's a little lever movement before the brakes "bite" (see page 33).



### **DANGER!**

Always be sure that securing bolts on stem, handlebars, bar ends and brakes are tightened to the appropriate torque setting. The appropriate values are listed on pages 62. Otherwise, it's possible that parts may come loose or break. This can lead to serious accidents.





## **DANGER!**

You shouldn't be able to pull the levers all the way to the handle-bar! Maximum braking power should be reached before this!



### (!) ATTENTION!

The handlebar stem is designed for handlebar bags or baskets up to 3 kg (max. load including the weight of bar and basket).

#### **BAR ENDS**

Bar ends offer additional hand positions. They are generally fitted so that the hands rest comfortably on them, when the rider is in a slightly leaned forward position. They are usually angled upwards at about 25 degrees.

# **ADJUSTING THE SUSPENSION**

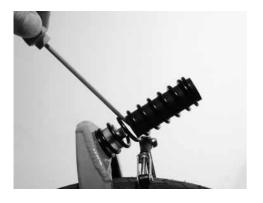
#### **CHANGING THE REAR ELASTOMER**

The Birdy is fitted as standard with a red elastomer, which is suitable for a very wide range of conditions. It can, however, sometimes make sense to fine-tune the riding qualities to your personal taste by changing the rear elastomer to reflect your particular weight, riding style and the state of your local roads. A softer yellow elastomer and a harder, green one are available. To change it simply fold the rear swingarm down and pull the elastomer off with your hand. The following table may help you select the correct elastomer.

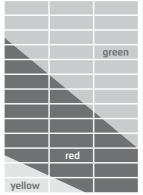
Please note that elastomers get "harder" at low temperatures. It could therefore be a good idea to change to a "softer" elastomer in winter.

#### CHANGING THE FRONT ELASTOMER

The front elastomer can also be exchanged for a harder version. The standard version is hollow, while the harder version is solid. The elastomer can be pushed out of the spring with a screwdriver.



#### Choice of rear elastomer



Komfort Allround Sport

50

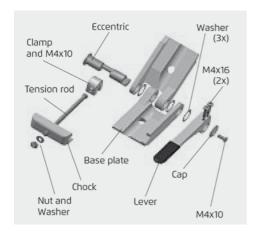
# STEM FOLDING HINGE

#### **FUNCTION OF THE FOLDING HINGE**

The folding hinge is correctly adjusted by Riese & Müller at our factory. In case of play or malfunction it must be maintained by your local dealer.

#### HOW TO GREASE THE FOLDING HINGE

In general there is no maintenance needed. But after frequent use or after heavy rain we recommend to clean the folding hinge and to apply some viscous oil.





### **ATTENTION!**

This folding hinge consists of many parts and any maintenance is best done by your dealer. Incorrect assembly can lead to malfunction and loss of steering control!

# **REAR SWINGARM CATCH**

When unfolded, the rear swingarm is attached to the frame with a black plastic catch. You should adjust the position of this catch so that it engages automatically when you unfold the Birdy, and so that there's no play.



#### TIP!

Lean on the saddle during adjustment to reduce play!

#### **HOW TO ADJUST THE REAR CATCH**

- To adjust it, you must loosen both allenbolts inside the rear swingarm box profile.
- The catch can then be pushed inwards or outwards.



 The M 6 x 12 bolt is secured into the main frame with threadlock adhesive. The bolt should be screwed in just far enough that when the catch is engaged, it's under slight tension inwards.



**(** 

Finally, retighten both bolts with a torque of 2–3 Nm

• Open and close the catch several times to check the adjustment.

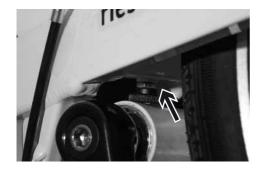
 If the tension is no longer sufficient for the catch to engage, you need to pretension the catch: fold the rear swingarm slightly forwards, remove the elastomer and bend the plastic catch firmly inwards for a few seconds.

#### **HOW TO ADJUST THE STOP-BOLTS**

The new Birdy with monocoque frame has two bolts with plastic head to adjust the swingarms end position at folding. The front bolt always has to be tightened completely. The thread has to be secured with a small drop of Loctite.



Fold the front swingarm right under until the front wheel rests next to the main frame tube, and the tire grips up against the fixing screw on the front forks.



## FRONT SWINGARM CATCH

When you unfold the Birdy the front suspension spring engages in the front swingarm catch. This catch consists of a metal hook, which pivots on a shaft mounted on the fork crown, and it's kept in tension with a small spring. To fold, press down on the suspension catch: this moves the hook clear of the spring.



- Only turn the spring far enough to ensure that the top turn of the spring ends in the seven-o-clock position, and engages the catch hook without play. The spring must be carefully lined up with the black plastic cap so that it slides easily onto the cap and engages with the catch.
- Finally re-fix the spring in place with a tightening torque of 6–8 Nm.

If the fork spring doesn't engage without play, both the spring position and that of the black plastic cap can be adjusted. Exact adjustment can require some experience, and any problems should be referred to your Birdy dealer.

#### **SWINGARM CATCH**

- The plastic cap on which the end of the spring rests is fixed in place with an asymmetrically-placed Allen bolt. The cap should be fixed so that it is central with the fork. The fixing bolt should be tightened to 3-4 Nm.
- If the catch hook doesn't engage cleanly in the first turn of the spring, the spring must be rotated.
- Loosen the fastening at the bottom of the spring with a long 5 mm hex key, which you should insert from the free end of the spring.







#### ATTENTION!

Do not ride if the front swingarm catch is not engaged correctly. The result could be a sudden unwanted folding of the front swingarm which could lead to a serious accident! Visit your local dealer to re-adjust the front swingarm catch.

# **BRAKES**

#### **HOW TO USE THE BRAKES CORRECTLY**

The Birdy is equipped with particularly powerful brakes. The stopping distance however depends also on the rider's skill. No worries as this can be trained.



### **DANGER!**

Make sure to familiarize yourself with the brakes gradually.
Practice emergency braking in a traffic-free area until you are able to safely control the bike.
This can prevent accidents while on the road.

When you brake, your weight is shifted to the front wheel from the rear wheel. The strength of the deceleration is the primary factor in bicycle rollover with the secondary factor being the traction of the tyres. This can be particularly problematic when riding downhill. During an emergency stop try to shift your weight as far back as possible.



#### DANGER!

After long downhill sections the rims can become very hot.
Rest regularly to let the rims cool down. Overheated rims can lead to a puncture or even an accident!

Press both brake levers at the same time and note that the front brake transmits much more braking force due to the shifting weight. Avoid, however, locking the front wheel as this can cause slipping or even a rollover.

#### **BELEGUNG DER BREMSHEBEL**

If your bike is equipped with a coaster brake and only one hand brake, the brake lever will be located on the right side and will operate the front brake. If your bike is equipped with two brake levers, the one on the right operates the rear brake and the one on the left operates the front brake. Familiarize yourself with the orientation or ask your dealer to change them to your liking.



### **DANGER!**

Some dealers change the orientation of the brake levers because there are different opinions as to which orientation is correct. Therefore please check before your first ride, whether the above orientation matches your bike and your preferences.

# HOW THEY WORK, AND HOW THEY GET WORN OUT

By using a brake lever or reverse pedaling a fixed pad is pressed onto a rotating braking surface and causes friction. This friction causes the rotating wheel to slow. In addition to the force with which the pad presses against the surface, the so called friction coefficient between the fixed pad and the braking surface is crucial. If water, dirt or oil gets onto the braking surface, the friction coefficient is worsened. This is the reason why a rim or disc brake does not respond as well in the rain.

#### **WEAR AT RIM BRAKES**

The friction between the brake pads and the rim leads to the wearing of both the pad and the rim! Riding often in the rain increases the wear. If the rim sidewall is abraded to a critical level, the tyre pressure will cause the rim to burst. The wheel can jam or the tube may burst, both of which can lead to an accident. By the time you have worn through your second set of brake pads, it is time to visit your dealer to check the thickness of your rims' sidewalls. For rims with a wear indicator **A**, the rim must be replaced when the indicator is no longer visible.



#### ATTENTION!

Moisture decreases the braking effectiveness. When riding in rainy conditions expect longer braking distances! When replacing brake pads, you should only use pads that have been specified for your system. Your dealer can advise you in the matter. The braking surface of rims should be absolutely wax, grease and oil free.





### **DANGER!**

Damaged brake cables in which individual wires protrude must be replaced immediately. Brake failure and an accident can result. Ask your dealer for advice.



### **ATTENTION!**

By the time you have worn through your second set of brake pads, it is time to have your dealer check the thickness of your rims' sidewalls. Worn-out rims malead to accidents.

# **BRAKES**

#### V-BRAKES

V-brakes consist of separately mounted brake arms on the left and right side of the wheel. When the brake arms are pulled together with a cable the pads rub on the rim generating friction.



# <u>(1)</u>

## **DANGER!**

Make sure that the pads touch the sidewall with their entire surface. Otherwise brake failure or wheel lock could lead to an accident. Also make sure that the surfaces of the brake do not touch the tyres. Incorrectly set brake pads can cause tyre rubthrough leading to a tyre failure. If in any doubt, leave the adjustment of brakes or changing brake blocks to your dealer. Poorly adjusted brakes can lead to serious accidents!

#### **Function check**

 Check that the brake pads are properly aligned with the rim and that they have sufficient thickness. This can be seen by checking the transverse grooves in the brake pad. When these grooves are worn down, it's time to change them.



 Additionally the front portion of the brake pads should be the first to touch the rim.
 Once touching the rear portion of the pad should be one millimeter away from the rim. This v-shaped orientation helps prevent the squealing of the brake pads.

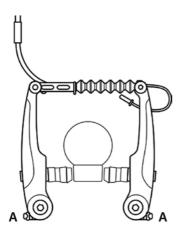


- Both pads must simultaneously hit the rim when the lever is pulled
- The brake lever must exhibit a reserve in its travel. It should not pull up to the handlebars even during emergency braking.

#### V-brakes synchronization

The V-brakes have to be synchronized by adjusting the spring preload using the respective adjustment screws **A**.

• Turn these screws until the pads are the same distance from the rim.



#### Adjusting the brake cable

When the brake lever pulls all the way to the handlebar, the brake cable must be readjusted.

- Loosen the knurled lock ring **B** where the brake cable enters the brake lever.
- Turn slotted barrel adjuster C a few turns.
   The free travel of the brake lever is reduced.
- Hold the barrel adjuster C while tightening the lock ring B firmly against it so that the barrel adjuster is locked in place.



 Take care that the slot of the adjustment screw is not orientated to top or front.
 Otherwise water and dust could enter.



Be sure to try the brakes in a traffic free area to get a feel for the newly adjusted brakes!

# **BRAKES**

#### HYDRAULIC RIM BRAKES

For information regarding hydraulic rim brakes please refer to the separate enclosed instructions from Magura.



#### **DISC BRAKES**

The Birdy Disc models use a powerful disc brake system that supplies enormous braking power while being easy to modulate. Make sure to familiarize yourself with the brakes gradually. For information regarding hydraulic disc brakes please refer to the separate enclosed instructions from the brake manufacturer.

#### Wear

These brakes compensate pad-wear automatically making it unnecessary to readjust your brake pads. As such you won't be able to recognize pad wear by a changing brake lever feel. Please make sure, that the thickness of your brake pads is checked regularly by your authorized dealer.



### TIP!

It is useful to carry spare brake pads with you on longer tours.

### Maintenance of disc brakes

Check the function of the brakes on a regular base (braking performance, brake pad wear, leakage). Brake pads must be replaced when they are contaminated or thinner than one millimeter. In no condition the brake pad carrier plate must touch the brake disc.

### Disassembling the wheels

After the wheel is removed you should no longer operate the brake lever. The brake pads will press together making it difficult to mount the wheel. After removing the wheel, insert the transportation safety shims to ensure a sufficient distance between the brake pads.



### **ATTENTION!**

Let the dealer replace worn out brake pads.





### TIP!

New brake pads only reach their optimum braking performance after 30 to 40 strong braking attempts.



### **ATTENTION!**

- Let the dealer replace worn out brake pads.
- The braking effect of disc brakes can be greatly reduced when contaminated with oil, maintenance, or cleaning fluids! When cleaning your E-bike or lubricating the chain make sure you don't contaminate the rotors. Oily brake pads must be replaced and brake discs must be cleaned with a brake cleaner.
- Before every ride, check the brake system for leaks or kinks in the lines. The loss of brake fluid can lead to the reduction and even failure of the brakes! Go immediately to a dealer to have the leak corrected.
- Do not transport your Birdy with the wheels up as this can render the brakes ineffective.

### SHIFTING SYSTEM

### THEORETICAL FOUNDATION

The shifting system on the bike is used to adapt one's own performance to the terrain and the desired speed. The physical work is not reduced by the shifting system rather the force required per crank revolution is changed.

### **PROPER SHIFTING**

Gradients can be powered up using low gears and moderate force but you'll have to pedal faster. Downhill you can travel a greater distance per turn of the crank. The speed will be correspondingly high. Like a car you must maintain your optimum "engine" speed to perform well. What's key to your performance is keeping the number of crank revolutions per minute (cadence) above 60. Racing cyclists typically ride with a cadence of 90 - 110. This rate naturally falls off a bit during hill climbs but you should still maintain smooth pedaling. The incremental shifting steps and ease of use of modern shifting systems offer the best conditions for an efficient ride that is easy on your knees.



### **DANGER!**

Practice shifting in a traffic-free area so that you can become familiar with the rotation of the shifters and pressing the levers. The practice area should be free of potential hazards.



### > ATTENTION!

Never pedal backwards while changing the gears. The shifting system could be damaged.

#### **SHIFTERS**

The shifter transmits the commands to the transmission via the bowden cable. Two different kinds of shifters are used at the Birdy.

### Twist grip

Rotating the right grip towards the driver leads to an easier gear and rotating the left grip away from the driver leads to an easier gear. The grip indicates which gear you are currently using.



#### **DERAILLEUR SYSTEM**

The derailleur on the bike is currently the most effective systems in terms of power transfer. In a clean and well-oiled system about 97 – 98 percent of the energy placed in the pedals is transferred to the rear wheel. Despite this near optimal performance, many cyclists fear a bike without a coaster brake. This fear is unfounded. The operation of the derailleur system leaves nothing to be desired. With specially designed sprocket teeth, flexible chains and precisely spaced shifting steps, the system shifts very easily. Remember to engage the shifter smoothly and momentarily stop applying pressure to the pedals until the chain is on the next sprocket. Even though the special tooth forms of today's sprockets allows shifting under load, it shortens the life of the chain and therefore should be avoided.

### Rapid Fire shifter

The thumb on the left side shifts to harder gears and on the right side, easier gears.

The index finger on each sides shifts in the other direction.





### SHIFTING SYSTEM

### Checking and adjusting shifting system

Your derailleur system was carefully set by your dealer before handing it over to you. During the first few kilometers the shifting cables may lengthen thereby leading to imprecise shifting. The chain then only reluctantly moves to the next sprocket or chainring.



### (!) ADVICE!

ADVICE!

If you replace the rear derailleur, check that the new one has the same cage length as the old one. Otherwise problems can arise during folding, as it can't be guaranteed that the chain will remain under tension.

*If you cannot properly adjust your* 

shifting system, it could be due to

worn or kinked shifting cables. See

your local dealer for replacements.

### Tensioning the rear derailleur

- Tension the cable using one of the screws through which the cable passes (barrel adjuster).
- After each tensioning check to see whether the chain moves easily to the next larger sprocket. To check this you must turn the cranks by hand or ride the bike.
- If the chain moves easily to the next larger sprocket, then you must also make sure that it also changes easily to the next smaller sprocket. For precise setting, several attempts may be necessary.



### DANGER!

The adjustment of the rear derailleur is difficult and should be left to an experienced mechanic. Incorrect settings can cause serious mechanical damage. If you have problems with the system, please contact your dealer.

Even after a crash, falling over or transport damage the rear derailleur should be checked by an expert.

### THE CHAIN TENSIONER

The chain tensioner keeps the chain under tension during the whole folding process. Depending on the shifting system, different chain tensioners are used.

### Birdy city and World Birdy comfort

Chain tensioners as shown below are used. There is no need to adjust them.



### Birdy speed, rohloff and dualdrive

The chain tensioner is mounted at the bottom bracket.

### How to adjust the chain tensioner

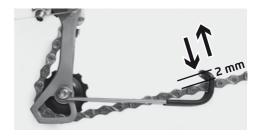
- Loosen the bolt with a 4mm allen key.
- Adjust the chain tensioner parallel to the frame tube.
- Tighten the bolt with 2-3Nm

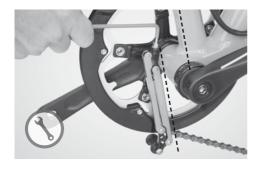
### **World Birdy sport**

A rear derailleur with additional chain tensioner ist used

### How to adjust the chain tensioner

- Shift to the smallest sprocket
- The distance between chain and tensioner should be 1 – 2 mm.
- To adjust the chain tensioner, first loosen the nut at the lower derailleur jockey wheel. Then loosen the bolt.
- Adjust the chain tensioner.
- It is important that first the bolt is tight, then the nut is screwed tightly against it.
- Shift to the biggest sprocket. The chain tensioner must not touch the tyre or the rim.





### (!) ADVICE!

Adjust a bigger distance between chain and tensioner if your Birdy is equipped with Big Apple tyres. This prevents touching between tensioner and tyres while shifting into the smallest gear.

### SHIFTING SYSTEM

### **HUB GEARS**

One advantage of an internally geared hub (IGH) is the encapsulated construction. The technical mechanisms are almost completely enclosed inside the hub. This prevents contamination from dirt and grime. The chain on an IGH system lasts longer than on an equivalent derailleur system. A disadvantage is the slightly higher power losses within the hub. IGH are sometimes used in combination with a derailleur, freewheel and rim, roller, or integrated coaster brake.

### How they work and how to use them

It uses a twist grip shifter to select the desired gears. The Shimano IGH can be shifted under load while the Rohloff system requires a momentary pause in the application of pedal power. There are several methods used to select gears for IGH and each hub is different. For questions, see the instruction manual of the manufacturer or your dealer. Practice shifting in a traffic free area. Practice also using the brakes. In road traffic you may be distracted from shifting and braking by potential hazards.



### **DANGER!**

Practice shifting in a traffic free area. Practice also using the brakes. In road traffic you may be distracted from shifting and braking by potential hazards.

### **ADJUSTMENT**

The various gears are selected using the shifter. The exact method varies from hub to hub. Please contact your local dealer if you have questions.

### Shimano 8-speed hub

- Shift into fourth gear
- Now the two marks on the hub must be brought into alignment. This is done using the adjustment screw that passes through the cable and into the shifter. By tightening the screw, the mark moves forward and loosening it moves the mark rearward.



### Rohloff hub gear

Please follow instructions in the manual supplied separately from Rohloff.

### 3x8 Dual Drive hub gear

- Shift the hub gear into first gear using the shifter on the left side.
- With the help of the plastic box, slightly tension the shifter cable.



### CABLE LENGTH

The table helps you to find the right length when replacing shifter and brake cables.

Birdy (from June 2015)	
COMPONENT	LENGTH CABLE HOUSING
Front brake	120 cm
Rear brake	165 cm
Shifter cable derailleur	117 + 55 cm
Shifter cable Shimano Shimano IGH	156 cm
Shifter cable Rohloff	2 x 155 cm
Shifter cable Dual Drive	149 cm
World Birdy COMPONENT	LENGTH CABLE HOUSING
Front brake	160 cm
Rear brake	165 cm
Shifter cable derailleur	131 + 55 cm
Shifter cable Shimano Shimano IGH	161 cm

### **CHAIN**

### **CHAIN CARE**

The old saying is still true: "Whoever oils well, rides well". The amount of lubrication is not as important as the distribution and regularity of application.

- Clean your chain from time to time with a dry cloth the removed built up dirt and oil.
- Lubricate the most clean chain possible using chain oil, grease or wax. Wax is a very clean lubricant which is recommended for Riese & Müller bikes.
- Turning the crank and drizzle or spray
  the rollers of the chain. Rotate the chain
  several times. Let the bike stand for several
  minutes to allow the lubricant to penetrate
  the chain.
- Finish up by wiping excess lubricant off with a cloth to prevent it from slinging off while riding.

### **CHAIN WEAR**

Chains are one of the consumable parts on a bicycle but the lifespan of the chain is determined by how the rider maintains it. Be sure the chain is lubricated regularly, especially after riding in the rain. Chains of derailleurs often last from 1500 – 3000 km before needing replacement. Greatly elongated chains impair shifting and wear down sprockets and chainrings more quickly. Replacing these items cost much more than a chain so we recommend changing the chain regularly.

#### **CHAIN REPLACEMENT**

The replacement of a chain is best left to your dealer who has special tools to accurately measure your chain and to cut your chain to the appropriate length. Many modern chains have no chain lock and a special tool is required to link up the two halves of the chain. Your dealer has all of the tools that match your chain.



### DANGER!

A poorly riveted chain can break and lead to a fall. It's best to let your dealer replace the chain.



### TIP!

For the protection of the environment use only biodegradable lubricants because a small amount of lubricant always ends up on the ground, especially during rain.



### DANGER!

Be sure to use the correct chain length when replacing the chain.

### **HEADSET**

The fork, stem, handlebars and front wheel are able to rotate because of the headset bearings. The headset must always move easily. Large bumps or other changes can cause the headset to loosen and develop play.



### **DANGER!**

Riding the bike when there is play in the headset bearings exposes the bearing and fork to extremely high loads which can lead to serious damage including fork breakage!



### ATTENTION!

Setting the headset requires certain expertise. Therefore leave this work to your dealer only.

### **CHECKING PLAY IN BEARINGS**

• With the other hand, squeeze the frontbrake and rock the bike back and forth.



- If the bearing has play in it the upper shell will move relative to the lower shell and you'll detect this movement with your finger.
- To ensure the smooth running of the headset, grab the frame with one hand and raise the front wheel off of the ground. Rotate the handlebar through its full range of motion. It should move smoothly and without sticking through its entire range of motion. If the handlebar is released from your hand, it should automatically return to the central position.

### WHEELS AND TYRES

#### WHEELS AND TYRES

The wheels on the bike keep you in contact with the road. They experience heavy loads during riding over irregular surfaces and when carrying cargo. Although the wheels are carefully manufactured and trued, they settle in after the first few kilometers. After a short break-in period from 200 to 400 kilometers, your dealer should true the wheels again. Regularly check the wheels but additional tensioning is rarely necessary.

**CONSTRUCTION OF A WHEEL** 

The wheel consists of a hub, rim and spokes. The tyre is mounted to the rim in which the tube is inserted. Rim tape is applied to protect the sensitive tube from the often sharp-edged rim.

#### **TYRES AND AIR PRESSURE**

The tyre provides grip and traction on the road which is required during braking, accelerating, and cornering. Furthermore, it ensures smooth running.

Tyres can only work well if it filled to the correct air pressure. The correct inflation pressure also prevents failures such as the crushing of the tube especially when traveling over an edge, the so called "snake bite". Snake bites are caused when going over an edge such as a curb with a tyre pressure that is too low. The manufacturer's suggested pressure is indicated on the sidewall of the tyre in bar and PSI.

Both street tyres (speed, road) and knobbies (MTB) for rough tracks are available.



### TIP!

Always ride with the prescribed air pressure and check it regularly. Because Riese & Müller bikes are full suspension you can always inflate the tyres to the maximum recommended pressure. This provides you the best and safest riding position and low rolling resistance which saves energy. Comfort is maintained because of the full suspension system.

PSI	BAR	
45	3,0	MTB, Big Apple
50	3,5	Marathon Racer
65	4,5	
85	6,0	
95	6,5	
120	8,0	



### DANGER!

Always ride with the prescribed air pressure and check it regularly. Never pump the tyres over the maximum recommended pressure rating! The tyre can spring from the rim or burst leading to an accident!

### **TUBE AND VALVE**

The tyre and rim alone are not airtight. To maintain the pressure on the interior, the tube is inserted into the tyre. It is filled through a valve. Riese & Müller bikes use presta valves exclusively. Before inflation, the small knurled nut is unscrewed and then pressed back down into the valve. It is normal for a little air to escape during this process.



If the presta valve is not sufficiently tightened, this leads to the gradual loss of air. Check the tightness of the of the valve body in the elongated shaft. Make sure the valve diameter matches the hole in the rim and that the valve stands up straight.



### **DANGER!**

If the tread is worn or the edges are brittle, you should replace them. The inside of the tyre may be damaged if is contaminated by moisture or dirt. Defective rim tape must be replaced immediately. Damage to the tyres can lead to their sudden bursting which could be dangerous.

### **CHECKING THE TYRES**

Regularly check the tyres. If the tread is worn or the edges are brittle, you should replace them. The inside of the tyre may be damaged if is contaminated by moisture or dirt. Defective rim tape must be replaced immediately. Damage to the tyres can lead to their sudden bursting which could be dangerous.

#### RIM RUNOUT AND SPOKE TENSION

The spokes connect the rim with the hub in the center of the wheel. The uniform spoke tension is responsible for maintaining the concentricity of the wheel. When a spoke breaks when running over a severe bump, the tension of the spokes is no longer in equilibrium. Even before the rider notices the malfunction it is affecting your bike. The side walls of the rims no longer run parallel to the braking surface so braking effectiveness cannot be ensured.

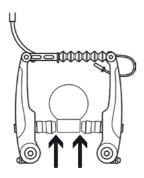


### **DANGER!**

Do not ride with wheels that are out of true. The brake pad can miss the rim sidewall and actually strike the spokes leading to an accident!

### WHEELS AND TYRES

Be sure to check the concentricity (runout) from time to time. Lift the wheel from the ground and spin it with your hand. Watch the gap between the rim and brake pad. If this gap changes by more than one millimeter it needs to be trued by a professional.



### ! TIP!

Truing wheels is a difficult business, which should definitely be left to your dealer!



### **DANGER!**

Never ride a bike without first checking that the wheels are securely attached to the frame with a quick release or bolt. If not securely attached, the wheel could fall out during the ride and lead to a severe injury!

#### WHEEL ATTACHMENT

The wheels are attached to the frame via either an axle with a hex nut or a quick release clamped in the dropouts

 To remove the front wheel you have to open the quick-release or loosen the axle nuts for some turns.

### Axle nuts

Watch the necessary tightening torque at page 65.

### Quick-release

Even though quick releases are very convenient, many accidents occur because of their misuse. The correct use is described at page 14.



### TIP!

The quick-release lever should be located at the right side to reduce the folding dimensions.

### **FIXING A PUNCTURE**

A flat tyre can happen to any cyclist. A flat tyre doesn't have to mean the end of the tour as long as the necessary tools and spare tube/ patch kit are available

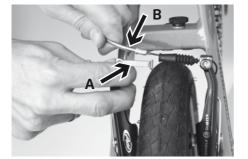
#### You will need:

- Air pump
- Repair kit or spare tube
- Tyre lever
- For bikes with an axle nut: 15mm wrench
- For bikes with a coaster brake 10 mm spanner

### V-brakes

The brake cable must first be unhooked.

- Grasp it with one hand, moving the cable hanger A and the guide tube B with the other hand. If the brake cable is set too tight, you can reduce the tension by turning the barrel adjuster on the brake lever.
- For the front brake or with Big Apple tyres we recommend opening the cable fixing bolt at the brake arm.



### Rohloff gear

On the Birdy Rohloff, you must also dismount the gear box. Please see the Rohloff manual.

### Derailleur gear

Before removing the rear wheel of derailleur systems, be sure to shift to the smallest sprocket. Thus the derailleur is all the way to the outside and does not hinder the removal.

### WHEELS AND TYRES

### Dual Drive gear on Birdy touring

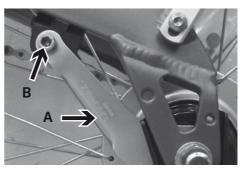
• Shift to the lowest hub gear (left shifter to gear 1) and the highest derailleur gear (right shifter to gear 8). The gear-change mechanism (Clickbox) must be uncoupled from the hub gear. Press on the latch **C** and push out the thread rod.



 Loosen both axle nuts and remove the rear wheel.

### Internally geared hub with coaster brake

The brake arm **A** which attaches to the frame and supports the hub while under brake torque. Loosen the screw **B**.



### Rear wheels with quick-release

- Open the quick-release as described at page 14.
- To make removal of the rear wheel easier, you should pull the derailleur back a little by hand.
- Lift the bike a little and give the wheel a slap it should fall out and down.



### **REMOVING TYRES**

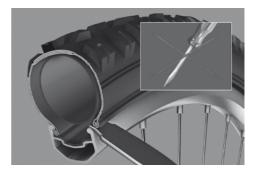
- Unscrew the valve cover and mounting nuts and let all of the air out.
- Press the tyre from the sidewall towards the center of the rim. Do this over the entire circumference to make removing the tyre easier.
- Insert the brake levers on the right and left side of the valve at the lower edge of the tyre and pry the rim bead over the sidewall.
   Keep the lever in this position.
- Now you can remove the tube. Make sure the valve doesn't get caught in the rim and that the tube isn't damaged.



- Patch hole according to the instructions from the patch manufacturer.
- If you have removed the tyre, you should also check the rim tape. It should sit evenly and must not be cracked or damaged and should cover all spoke holes. If you have questions about your rim tape, please ask your dealer.

#### **MOUNTING TYRE**

- Make sure when installing the tyre that no foreign matter such as dirt or sand gets inside as this could damage the tube.
- Place the rim with a horn in the tyre. Press
  the tyre sidewall completely over the rim.
  This should be possible with every tyre
  without using a tool. Insert the valve in
  the valve hole in the rim.
- Inflate the tube lightly so that it assumes a round shape. Insert it completely in the tyre being careful not to crease it.



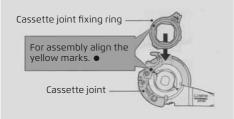
Source: Schwalbe

Begin the installation on the side opposite
 of the valve. Press the tyre on the rim making sure not to pinch the tube between the
 rim and the tyre. Push the tube repeatedlyinto the interior of the tyre.

### WHEELS AND TYRES

- Work both sides evenly around the circumference of the wheel. Towards the end you will need to press the tyre down firmly. Pull the already mounted portion deep into the rim as this facilitates mounting the last few centimeters
- Check again to make sure the tube is well seated and press the tyre with your palm over the rim bead. If this fails, you must use tyre levers. Make sure that the dull side is facing the tube so as not to damage it.
- Press the valve into the interior of the tyre so that the tube is not pinched between the tyre and rim.





Source: Shimano techdocs



### (!)

### TIP!

Depending on the Birdy type it is more difficult to remove and mount the rear wheel as compared to a standard bicycle. We recommend you practice this work before the first ride. Then it will be easier on the road.

#### MOUNTING THE WHEELS

Mounting the wheels follows the reverse procedure to their removal. Kette auflegen und Rad einsetzen

### Mounting the gear arm

 For a Birdy with Shimano gear hubs the gear arm must be assembled before mounting the rear wheel. The lock ring must be turned clockwise. Note the position of the colored dots and that gear is shifted to gear 1.

# Placing the chain on sprocket and inserting rear wheel

- Push the rear derailleur backwards and put the chain on the smallest sprocket
- Insert the rear wheel into the rear drop outs

### Mounting brake arm



Mount the coaster brake arm and tighten the bolt with a torque of 6 Nm

### Tightening wheel

- Put all washers and tabbed fixing washers in correct position onto the axle.
- Tighten axle nuts or quick-release (for torque settings see page 62).

### Checking the brake

- Re-hook the brake cable in position or tighten it again.
- Check if the adjustment of the brake pads is still correct.
- Check that after the repair the braking surfaces are still free from grease or other lubricants.

#### Rohloff hub

Mount the shifter cables (see Rohloff manual).



### ATTENTION!

Take care of correct position of all washers. Incorrect positioning will lead to malfunction.

### Birdy touring with Dual Drive hub

- Insert the thread rod into the plastic housing when the axle nuts are tightened. The shifter cable should be slightly tight in first gear.
- Take care of correct position of all washers.



### **DANGER!**

Incorrect assembly can lead to poor functioning or failure of the brakes. Proceed in strict accordance with the manufacturer's instructions. You absolutely must test your brakes! Errors in mounting wheels can lead to loss of control, and could lead to serious accidents. Incorrect positioning will lead to malfunction.

### SUSPENSION PIVOT BEARINGS

### FRONT SUSPENSION BEARINGS

The front wheel swingarm on the Birdy is supported by maintenance-free IGUS 'Iglidur' bearings. The pivot bolts can be adjusted from the outside with an 8mm hex key. The inner part of the bolt is secured to the fork against rotation and cannot be moved. If the front suspension develops play and starts to wobble or oscillate as you ride, the outer pivot bolt can be tightened somewhat. If the front suspension is hard to fold, the outer pivot bolt can be slightly loosened. If the bearing is completely disassembled, please secure the thread of the pivot bolt with thread-lock adhesive.



### **REAR SUSPENSION BEARINGS**

The Birdy's rear swingarm is supported on a very precise and maintenance-free INA sealed cartridge needle bearing, which requires neither adjustment nor maintenance. However, the position of the pivot axle and its corresponding clamp bolts should be checked regularly. Should the axle have moved over to left or right, so that it is no longer completely locked into the swingarm on both sides, please consult your dealer.



The clamp bolts must be tightened to 5 Nm torque.

The rear swingarm bearing has a grease nipple and can be greased if necessary.

### LIGHTING SYSTEM

To safely use roadways a functioning lighting system is mandatory (see page 7). You should know how the system operates so that you can resolve and any problems that might arise. Difficulties sometimes arise if you ride in the rain a lot or in the winter.

#### **HUB DYNAMO**

At Birdy disc the hub dynamo supplies the power for front and tail light. The lights are allways switched on so you will be seen by other road users.

At Birdy world comfort the hub dynamo supplies the power for the front light only. The tail light has a battery and switches on automatically at dawn. It has a manual switch also.



### DANGER!

Never use your E-bike without working lights! At night it is very difficult to see obstacles and to be seen by other road users. Serious accidents can result! An incomplete or malfunctioning lighting system is not only illegal but also endangers your life.

### **LIGHTING SYSTEM**

### **LOCATING DEFECTS**

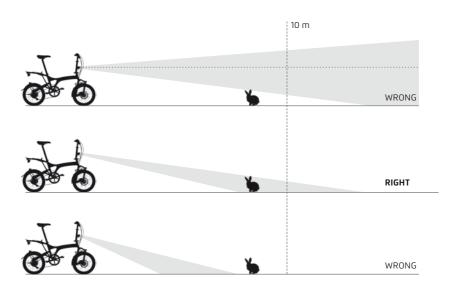
- Visually inspect the entire length of the wire for damage. Verify all of the contact points are intact. Often connections are corroded by salt water or rain. Unplug the power cord and plug it back together.
- Check the polarity. The bright cable is the ground cable.

### **HEADLIGHT ADJUSTMENT**

- The center of the front light's beam should hit the road at a maximum of 10 meters in front of the bike.
- For correction of the adjustment loosen the mounting screw and tilt the front light as desired. Tighten the screw.

### **MOUNTING ACCESSORIES**

Before buying additional bells, horns or lights you must check their legal use (see page 7).



### LUGGAGE AND CHILDREN TRANSPORT

### **CARRYING CHILDREN AND LUGGAGE**

Before you start to ride with your loaded Birdy or attached child trailer, please check the following points:

- Is the child fastened or is the luggage secured?
- Is the maximum gross weight not exceeded?
- Does the child wear a helmet? Do you wear a helmet?
- Does nothing can get caught by the wheel/ spokes?
- Is the tyre pressure high enough?
   Otherwise there is a risk of a puncture.



### **DANGER!**

Do not ride your Birdy if concerned about any of these points. Basket or child seat can loosen if not fixed securely and may cause heavy accidents!



### **ATTENTION!**

Do not ride your Birdy if concerned about any of these points. Basket or child seat can loosen if not fixed securely and may cause heavy accidents!

### TRANSPORTING YOUR BIRDY

Once folded, your Birdy is easily transported in the trunk of a car, on trains, buses, ferries and airplanes.

#### TRAIN TRAVEL

Some train services require that your Birdy is covered up in a bag, especially if it is carried on as normal luggage, rather than placed in the luggage car or designated storage area. Two Birdy bags are available: the protective cover and the rucksack bag.

The protective cover slides over the Birdy in one easy motion, and is closed at the bottom with a pull on the drawcord. The cover is made from tear-resistant nylon. Like a poncho, it folds up very small into its integrated mesh pouch, and is then fastened to the bike.

The rucksack bag is an ideal Birdy accessory. Two large compartments carry all of your belongings. Open up another zip and another compartment opens up to allow you to stow your Birdy. The bike can then be easily carried with the padded shoulder strap or the carry-handle. You can still use the other luggage compartments. It's made from extremely durable Cordura Plus



Protective cover



Rucksack bag

### **AIR TRAVEL**

We recommend that when you take your Birdy on a plane you package it in a strong box – for example, the box in which it arrived at your dealer. The pedals should be removed and packaged separately. Another possibility is the use of the rucksack bag – we recommend that in this case you use plenty of additional cardboard and bubblewrap to protect against bumps. The rear derailleur is the most vulnerable part of the bike: we recommend that you unscrew it from the frame, wrap it in bubblewrap, and tape it to the frame so that it won't be vulnerable to impacts.

The Birdy suitcase has two small wheels and can be used like a trolley because of its telescopic grip. Before putting the Birdy into the suitcase the pedals must be removed. Because of the many variations of the Birdy accessories (fenders, kickstand, carriers, lighting) is may be necessary to remove some of them.



Birdy suitcase



If the suitcase gets damaged during the flight please contact the airlines baggage department immediately to file a damage claim.

### **GENERAL CARE/INSPECTIONS**

### **ROUTINE MAINTENANCE**

The bike you have purchased is a very high quality product. When you pick the bike up from the dealer, he has already made the bike ready for you to ride. Nevertheless the bike does require some routine maintenance which is best performed by your dealer. Only then can the safe operation of all parts be guaranteed. This will keep you riding happily and safely for many years.

### WASHING AND CARING FOR YOUR BIKE

Dried sweat, dirt and salt from winter riding or from sea air can harm your bike. Therefore we recommend regularly cleaning and corrosion protection of all susceptible bike components.

A gentle way to wash the bike is with a gentle spray of water or a bucket of water and a sponge/brush. Cleaning by hand has another positive side effect. You can detect paint damage, worn parts, loose spokes other defects early.



### ATTENTION!

Only perform maintenance tasks for which you have the appropriate tools and expertise.



### ATTENTION!

Do not clean your bike using a pressure washer or steam cleaner at close range. The high pressure stream of water can push past the seals and into the interior of the bearings. This dilutes the lubrication which increases friction that ultimately destroys the bearing surfaces and the smooth functioning of the bearing. Also, decals are often accidentally blown off by the powerful stream.

As part of this regular maintenance, you should check tyre pressure, light and brake functions and examine the bike for damage.

### ! TIP!

Protect areas where cables could touch paintwork, such as underneath the chainstays, with a plastic film or similar. This avoids unsightly scratches and damage to paintwork.

## ! ADVICE!

Protect the bottom of the chainstay and the places where the cables could chafe to avoid unsightly scratches.

### Protecting the finish

After the bike is dried, you should protect the paint and metallic surfaces with a hard wax. Also protect spokes, hubs bolts and nuts, etc with a wax film. Polish the waxed surfaces with a soft cloth so that they shine and repel water

### Caring for anodized surfaces

The aluminum parts of your Riese & Müller bike are protected by a special anodizing process during which an electrochemical process generates a special protective layer. This layer is very hard and therefore relatively resistant to scratches. Despite the positive attributes the anodized coating requires care. Clean with water and if necessary use mild detergents to dissolve grease. Dry and apply a special anodized surface treatment (available from your local dealer) with a soft cloth which helps remove paint, tar and oil residue. Lastly rub the parts with a soft, clean cloth to remove excess treatment and repel dust.



### ATTENTION!

While cleaning look for cracks, scratches, dints, or discolorations. If in doubt, contact your local dealer and let them replace damaged components and touch up damaged paint.



### TIP!

After cleaning it is recommended to lubricate the chain if necessary (see page 42).



### DANGER!

Ensure no lubricant or wax contaminates the braking surfaces of the disc brakes! Imminent brake failure could cause an accident!

### **GENERAL CARE / INSPECTIONS**

### **DISPOSAL/ENVIRONMENTAL TIPS**

### Care products/detergents

Protect the environment while maintaining and cleaning your E-bike. Preferably use biodegradable products. Detergents should not enter drains. Used chemicals must be disposed properly at the respective disposal site.

### Brake cleaner and lubricants

Please read the notes of the manufacturer of these products.

### Tyres and tubes

Tyres and tubes are no usual waste and should be sorted for environmental-friendly recycling.

### STORING YOUR BIRDY

If you regularly maintained your bike during the season, you won't need to perform any special preparations to store it on a short term basis. It is recommended to store the bike in a dry, well-ventilated area.

#### **OVERWINTERING YOUR BIRDY**

When storing your bike for the winter, there are some things to consider:

- During extended storage the tyres may gradually lose air. If the tyre remains flat for an extended period, it could damage it.
- Clean the bike and protect it against corrosion as previously described.
- Store the bike in a dry place.
- Switch the derailleur to the smallest sprocket so the cables and springs are as relaxed as possible. For Shimano hub gears, shift to the first gear.

### INSPECTIONS

A regular check of the bike guarantees long term function and enjoyment. As with a car, annual inspections can help prevent costly repairs. The adjustment of the bearings or shifting system and the timely exchange of worn parts can prevent severe damage to the operating parts of the bicycle. After the initial break-in period, you should have your Birdy inspected at regular intervals.

The recommended service intervals listed in the table in the appendix (page 66 –67) are intended for riders who ride between 1,000 and 2,000 miles per year. When riding more or on poor roads/off-road, these intervals are shortened. This also applies to taking frequent trips in the rain or in a generally humid climate.



### TIP!

In the winter months when most bike dealers aren't very busy, many shops offer special priced annual checks. Take advantage of these seasonal offers and bring your Birdy to the dealer for inspection.



### **ATTENTION!**

After 200 – 400 km, but no later than three months, bring your Birdy back to the dealer for an initial inspection.

### **WARRANTY / GUARANTEE**

Your dealer is legally required to provide a Birdy that is not defective, of reduced value or suitability. Your right to claims ends after two years from the date you accept delivery of the bike from the dealer. Notwithstanding the statutory warranty of quality, we also provide you a ten year warranty against frame or swingarm breakage.

Extended warranty claims are only valid if the following conditions are met:

- You are the original owner of the Birdy
- Within four weeks of your purchase, you have registered your bike in our online system: www.en.r-m.de/registration
- The service record in the appendix is completed and all required inspections were performed and noted by the dealer.

In case of damage, the completed service record must be submitted along with the frame or the complete Birdy. Therefore protect these important documents. If all criteria are met, then we will replace the defective item but shipping and labor will be charged to the customer. This warranty only applies to the original buyer. Further claims such as damages or other losses are not covered. Any warranty claims do not extend the original warranty period.

Damages due to wear and tear, neglect (insufficient maintenance), jumping, overloading or amateur assembly or modifications (additions to or alterations of existing components) are not covered.

Damages caused by competitive racing, jumping or other types of overstressing are not covered.

### INFORMATION REGARDING WEAR

Some parts of your Birdy are subject to functional wear. The amount of wear depends on the maintenance of the Birdy and the riding conditions (mileage, riding in the rain, dirt, salt, etc.). Bicycles that are often standing outside in the weather are subject to increased wear. These parts require regular maintenance and care but will (depending on the intensity of use and riding conditions) eventually reach the end of their useful life. These parts must be replaced when they reach there wear limit.

These include:

- chain
- brake cables
- grips
- chain ring and sprockets
- shift cables
- tyres
- saddle cover
- brake pads
- rims

The pads or rim and disc brakes are subject to functional wear. Sporty use or riding in mountainous terrain shortens the life of the pads. Check the pads regularly and replace them as needed. You can acquire replacements from your local dealer.

Rim brakes not only wear out the pad but also the rim itself. Therefore check the rim regularly such as when inflating the tyre. The sidewall of the rim contains a groove that functions as a wear indicator. When this groove is no longer visible, the rim must be replaced. If deformations or fissures in the rim sidewalls occur when inflating the tyre, the rim has reached the end of its service life and needs to be replaced.

The bearings and seals in suspension forks and rear swingarms are always in motion when the suspension is activated. Environmental conditions such as rain, dirt, etc. cause these moving parts to wear out. These areas must be cleaned and regularly maintained. Depending on the operating conditions it is possible that these parts may need to be replaced due to wear such as the development of bearing play.

Your point of contact for claims and services is the dealer from which you purchased the Birdy. Upon request we can refer you to your nearest dealer (dealers can also be

### **WARRANTY / GUARANTEE**

Additionally, we recommend that you contact your dealer to ensure the fastest and most cost-effective solution. Please note that if your Birdy is sent to us by your dealer for repair:

- the Birdy must be sufficiently clean before repairs can take place.
- Remove any accessory items like computers, mirrors, trailer hitches, locks, etc. prior to shipping.

Service is only performed on the original standard equipment. Individual modifications will be restored to the original standard equipment.

In the context of service no worn out parts will be replaced and no inspections carried out. In addition, payments and materials are handled exclusively through our dealers. Ensure that either you or your dealer includes sufficient postage.

To ensure a long service life the components must be installed to the manufacture's recommended torque specifications and the recommended service intervals must be strictly adhered to.



### ATTENTION!

The dealer must ensure the bike is roadworthy in order to validate the functional warranty.

The dealer conducts a final quality check and performs a test ride.

# TECHNICAL DATA / TORQUE SETTINGS

MODEL	WEIGHT BIRDY	MAX. WEIGHT RIDER	MAX. LOAD CARRIER <sup>1</sup>	MAX. LOAD LOWRIDER	GROSS WEIGHT
Birdy (from 6/2015)	10.9 – 13.1 kg	100 kg	15 kg	10 kg	120 kg
World Birdy	11.9 – 14.2 kg	100 kg	15 kg	10 kg	120 kg

<sup>&</sup>lt;sup>1</sup> incl. weight of carrier

PART	THREADED COMPONENT	TORQUE
Rear derailleur	Mounting bolt	8–10 Nm
	Cable clamp bolt	4-6 Nm
	Jockey wheel bolts	3–4 Nm
Twist-grip	Securing bolt (hex key)	1–2 Nm
Brake lever	Securing bolt (hex key)	5-6 Nm
Hub Brake	Brake reaction arm at frame	4-5 Nm
Internal Gear Hub	Locknut for bearing adjustment (quick-release hubs)	10-25 Nm
	Axle nut for hub gears	40-45 Nm
	Dual drive hub	30 Nm
Freehub body	Freehub body securing bolt	35-49 Nm
	Freehub body securing bolt	35-44 Nm
	Cassette lockring	29-49 Nm
Crankset	Crank bolt	35 Nm
Sealed-bearing housing bottom bracket	Housing	49-69 Nm
V-brakes	Brake socket bolts	5-9 Nm
	Cable clamp nut	6-8 Nm
	Brake shoe fastening bolt	8–9 Nm
Seatpost	Saddle rail clamp bolts	9–12 Nm
Rear swingarm	Clamp bolts	5 Nm
Front swingarm	Fork clamp bolt to 'steerer tube'	5 Nm
Stem hinge	Nut M5 for tension rod	2–3Nm
	Bolts M4x16 for reaction point Tension rod	2–3 Nm
	Bolt M4x10, left side, Loctite	1 Nm
	Bolt M4x10 at clamp, Loctite	1 Nm
Stem	Handlebar w/2 clamp bolts	12–14 Nm
	Handlebar w/4 clamp bolts	
Bar ends	Clamp bolts	See manufacturers' instructions

### SERVICE AND MAINTENANCE PLAN

The jobs marked ● you can carry out yourself, provided that you have a certain amount of mechanical competence, experience, and suitable tools (for example, a torque spanner).

If any checks indicate something wrong, take suitable remedial measures immediately. If you are in any doubt, or if something is unclear, please consult your dealer.

The jobs marked **\*** should be carried out only by your dealer during the anual inspection.

PART	JOB
Lighting	kontrollieren
Tyres	Check mounting screw
	Check tread and sidewall
Brakes	Check lever travel, pad thickness
	and position on rim
Brake cables	Visual check
Brake housing	Visual check
Stem hinge	Hinge lever closed?
Rims, Aluminium	Check sidewall thickness/wear indicator (possibly replace)
Bottom bracket	Check bearing for play
Chain (derailleur)	Check, lubricate if necessary
	Change if necessary
Chain (hub gear)	Check, lubricate if necessary
	Change if necessary
Crank	Re-tighten if necessary
Paint	Protect
Wheels/spokes	Check trueness and spoke tension
Handlebar, aluminum	Visual check
	Replace
Headset	Check bearing play
	Re-grease
Metallic surfaces	Wax (not at rims or brake discs)
Hubs	Check for bearing play, lubricate
Pedals	Check for bearing play, lubricate
Quick release	Check, re-tighten if necessary
Nuts and bolts	Check, re-tighten if necessary
Valves	Check
Front swingarm catch	Check for play and proper functioning
Rear swingarm catch	Check for play and proper functioning
Stem hinge	Check for play, grease
Stem and steerer	Visual check
	Replace
Front swingarm	Check for play
	Replace
Brake and gear cables	Disassemble, re-grease or replace

<sup>&</sup>lt;sup>1</sup>After a crash or 10.000 km or 3 years (whichever comes first).

В	EFORE EVERY RIDE	MONTHLY	ANNUALLY	SPECIAL INTERVALS
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	•			
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	•			
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	•			
	•			
				* After the second set of
				brake pads at the latest
			×	
		•		
				🗱 After 1.500 km
		•		
				<b>★</b> After 3.000 km
			×	
				At least every 6 months
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		•		
				<b>X</b> 1
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			×	
			×	
			×	
		•		
				<b>X</b> 1
			×	
				* At least every 20,000 km
			×	→ At least every 20,000 KII

### **DOCUMENTS**

In the appendix of this manual you'll find:

- the Riese & Müller service record which should be filled out by your dealer after each inspection/service. In case of a warranty claim this record and a copy of the proof of purchase must be submitted to Riese & Müller. All of the service must be completed by an authorized/ registered dealer.
- a service and maintenance schedule can be found on pages 66 – 67.
- a list of torque settings for all of the critical parts of your bike can be found on page 62.
   The dealer requires these for repairs and inspections.

Enclosed you'll find

- the instruction manuals of various component manufacturers which contain detailed information and instructions. There you can also find details on use, maintenance and care. Make sure to keep the instruction manuals together with this manual.
- the instruction manual for E-bike technology.
- proof of purchase, which proves that you are the first owner and how long you have owned it.

We hope your bike will always provide a good ride. Should any issue occur, please contact your dealer for further assistance. In case of additional problems that your dealer cannot resolve, you can call us at any time.

Your Riese & Müller Team



### ATTENTION!

As the first owner of the bike please fill in the service record in the appendix and have all inspections/ service listed in there by an authorized/registered dealer.

### SERVICE RECORD

Model:
Color:
Number of gears:
Frame number:
Date of purchase:
The transfer was made:
City:
Date:
Dealer stamp:
Signature of dealer:

Please have your authorized/registered dealer include all inspections performed on your bike in this service record. The extended warranty is only valid if you have registered your bike within four weeks of the purchase, can provide a completed service record (by authorized/registered dealers) and proof of purchase.

# **SERVICE RECORD**

<b>1st Inspection</b> Within 3 months of purchase or within the first 400 km:	Replaced or repaired parts:
Order number: Date:	
Stamp/Signature of dealer:	
<b>2nd Inspection</b> Within 1 year of purchase or within the first 2,000 km:	Replaced or repaired parts:
Order number: Date:	
Stamp/Signature of dealer:	
<b>3rd Inspection</b> Within 2 years of purchase or within the first 4,000 km:	Replaced or repaired parts:
Order number: Date:	
Stamp/Signature of dealer:	

Within 3 years of purchase or within the first 6,000 km:	Replaced or repaired parts:
Order number: Date:	
Stamp/Signature of dealer:	
<b>5th Inspection</b> Within 4 years of purchase or within the first 8,000 km:	Replaced or repaired parts:
Order number: Date:	
Stamp/Signature of dealer:	
<b>6. Inspection</b> Within 5 years of purchase or within the first 10,000 km:	Replaced or repaired parts:
Order number: Date:	
Stamp/Signature of dealer:	

NOTES			
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			 •••••••••

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All current instruction manuals can be found at en.r-m.de/infocenter/downloads/ Or simply scan the QR code with your martphone.