RIESE & MÜLLER

INSTRUCTION MANUAL

Birdy

Frog

Because we believe.

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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 should always use this tool to tighten the components to the specified torque setting. A bolt that is too tight or too loose can cause malfunctions which could lead to an accident.

Dear customer,

Congratulations on your new Riese & Müller bike. 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 bike 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 Riese & Müller bike for many years for come. If after reading this manual, you still have questions, 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

CONTENTS

GENERAL INFORMATION

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

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 6.

DANGER!

Do not ride if the test wasn't passed with 100% certainty.

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 Riese & Müller bicycles 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. If you are uncomfortable performing any of the listed tasks, please seek the assistance of a professional.

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!

The following are a few things that we cyclists 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, which are available from your local authorities. Never ride without a helmet and make sure you always wear appropriate clothing.

We hope you enjoy your new Birdy!

DANGER!

This manual covers the installation and maintenance work that may be best performed by your local dealer (p. 62 - 63). 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.

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 Riese & Müller bike. 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.

BEFORE THE FIRST RIDE

HEIGHT

The Birdy accommodates riders up to a height of 195cm.

BIRDY GROSS VEHICLE WEIGHT RATING

(Birdy, rider and carrier load)	120 kg (265 lbs)

MAX. CARRIER WEIGHT RATING

Expedition carrier	15 kg (33 lbs)
Lowrider	10 kg (22 lbs)
SL carrier	12 kg (26 lbs)

CARRIERS/TRAILER BIKES

Only two-wheel trailers with attachment at the rear axle are approved for use with the Birdy.

Max. trailer weight rating (including carrier weight)	50 kg (110 lbs)

TRAILER HITCH

We recommend the “Weber-trailer hitch”.

DANGER!

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

INTENDED USE

Use the Birdy only on streets and surfaced roads. We can take no responsibility for the consequences of inappropriate use, assembly errors, accidents, racing, jumping or similar activities.

CLOTHING
Wear bike appropriate clothes. Never ride without wearing a helmet!

BRAKES
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.

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. You can read more about the braking system on pages 30-35.

SHIFTING
Are you confident that you know how to change gears?
Conduct a test ride to familiarize yourself with the shifting system in a low-traffic area. You can read more about gearing systems on pages 36-42.

SEATING POSITION
Are the saddle and handlebar in the right position? Your dealer can assist you in finding the best seating position. The saddle should be adjusted so that with the pedal in its lowest position, you can just reach it with your heel. Check that you can stay in the saddle and still reach the ground with your tiptoes. Your dealer will be able to help you if you're not happy with your saddle position. You can read more about seating position on pages 16-20.

SUSPENSION
Is the suspension adjusted to suit your needs? More information regarding suspension on page 21.

BEFORE EVERY RIDE

Before every journey you must check the following points:

Are the quick releases on the wheels, the stem and the seatpost clamp all correctly fastened? Read more on pages 22 – 23 of this manual.

- Is the tension lever on the stem hinge closed correctly? Are all hinge parts for the stem hinge present? More information on page 24 – 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 18.

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

- Are the tires in good condition, are they running true and are they at the correct pressure? More on this topic on pages 44 – 45.

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

- Check that the dynamo is securely mounted. Does the light illuminate properly? More on lighting on page 55.

- Is the max. load not exceeded (page 6)?

- As you ride, always listen out for unusual rattling noises or unusual handling – these could indicate a problem. If this occurs, check bearings, pivots, all fasteners and parts of the folding mechanism.

DANGER!

Do not ride the bike if your bike fails any of these checks! If in doubt, always consult your dealer. A defective bike can lead to serious accidents!

LEGAL REQUIREMENTS

When you ride your bike 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.

UNFOLDING YOUR BIRDY

01

02

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

ATTENTION!

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

- 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 15).

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.

03

- 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.

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.

04

- 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.

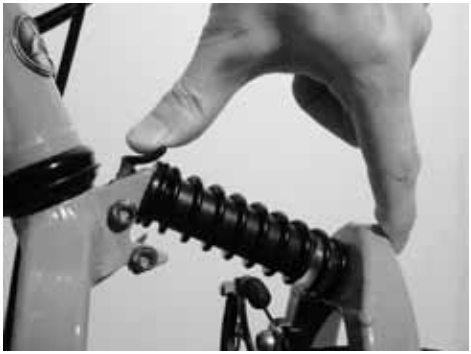
06

- 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 height-adjustable 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!

BIRDY RACE

The drop bars on this model increase its folded size. Depending on the setting of the bar, the end of the bar can touch the brake disc. This should be avoided as it can cause brake pad deformation. Additionally the stem should not be raised to the highest position because this can place too much pressure on the brake and shifting cables. Prior to folding ensure that the chain is on the largest chainring and the smallest sprocket to ensure the chain does not jam or fall off during folding.

TIP!

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.

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.

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.

Cover

Backpack

Suitcase

TIP!

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

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 handlebars 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 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

DANGER!

All of the procedures we are about to describe require a certain de-gree 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. This lets you check in safety that everything works properly. 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 with all the proper tools and skills, perhaps in conjunction with the first inspection.

– 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.

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

Your dealer can change the stem following your needs.

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

ADJUSTING THE HANDLEBARS

- Open the quick 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!

ADJUSTING 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.

DANGER!

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

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.

- Check when the brake pads hit the rim. If this "bite point" comes after just a short movement of the levers, you'll have to adjust the cable in order to alter the lever reach (see page 31). Otherwise, the brakes may rub on the rims after the reach adjustment. If, however, the brakes only bite after the levers are halfway to the bars, you have some "play" with which to adjust lever reach.
- 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 31).

ADJUSTING THE RIDING POSITION, PEDALS

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 the saddle 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).

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.

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.

ATTENTION!

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

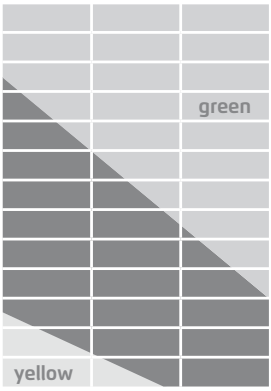
PEDALS

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 15 Nm.

CHANGING THE REAR ELASTOMER

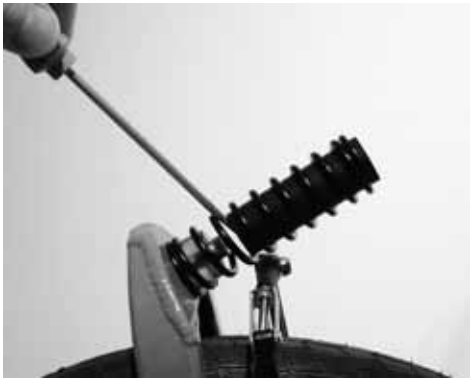
The Birdy is fitted as standard with a red elastomer, which is suitable for a very wide range of conditions. It can, however, sometimes make sense to fine-tune the riding qualities to your personal taste by changing the rear elastomer to reflect your particular weight, riding style and the state of your 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.

Choice of rear elastomer



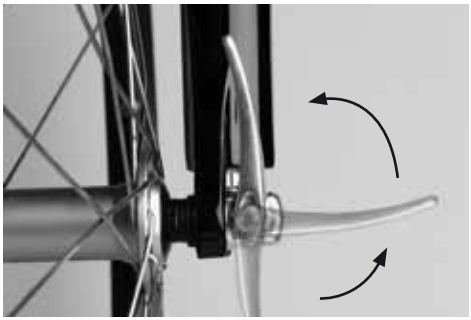
CHANGING THE FRONT ELASTOMER

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.



QUICK RELEASE

Quick releases hold wheels, seatpost and the height-adjustable stem in position.



DANGER!

An incompletely or improperly closed quick-release can result in parts coming loose or even a crash resulting in serious injury!

A quick release consists of two basic parts:
- A lever (1) on one side of the hub that produces the clamping force.
- A locking nut (2) which is threaded on the opposite side that sets the tension.

HANDLING OF QUICK RELEASES

Open the lever. 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 half of the lever 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 one-half turn (while holding quick release).

- Check the fit again. When the lever no longer rotates, it is clamped properly.
- Lift the wheel several inches off of the ground and give the top of the tire a little whack. A securely fixed wheel should remain in the frame.
- To check the handlebar quick release, wedge the front wheel between your legs and attempt to twist the handlebar. If it doesn't turn when you do this test, the stem is secure.

SEATPOST CLAMP

The quick release nut has to be adjusted that on the one hand the seatpost is fixed tight enough and on the other hand the seat-post can slide easily after opening the quick release.

The position of the clamp should be with the lever at the right side. When used with the expedition carrier the clamp must be rotated about 90 degrees.

ATTENTION!

Check the position of the clamp regularly. The clamp should sit completely flush with the seat tube to ensure best clamping function.

STEM FOLDING HINGE

TENSION LEVER

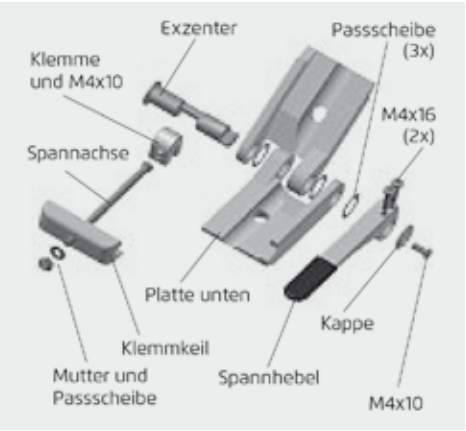
This type of folding hinge type allows the adjustment of tension and action point.

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!

FUNCTION OF THE FOLDING HINGE

The folding hinge is correctly adjusted by Riese & Müller at our factory. However it can be maintained by an expert.
The following description helps to find and eliminate errors.



HOW TO ADJUST THE CLAMPING FORCE

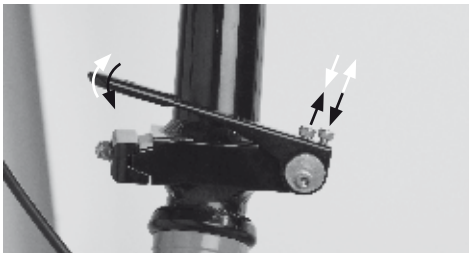
The mechanism is adjusted by turning the tension rod.

- Close the lever. Loosen the nut several turns.
- Open the lever.
- Now you can adjust the tension rod with a 2.5 mm allen wrench.

- Close the lever again and tighten the nut (torque setting 2-3Nm)
- Check the tightening force. The lever should move easily but should have no play when closed. If this is not, the tension rod has to be adjusted again.

HOW TO ADJUST THE ACTION POINT

The point of maximum clamping force should be reached shortly before the end position. Otherwise it has to be adjusted.



- Open the left bolt M4x10 for a half rotation.
- Loosen one of the M4x16 bolts and tighten the other one (see arrows in picture). The white arrows show how to achieve an earlier action point.
- After correct adjustment of the action point please tighten both bolts M 4x16.
- Check again for correct tightening force.

ATTENTION!

Always tighten the left bolt M4x10 after tightening both bolts M4x16. Otherwise the axial play can change!

HOW TO ADJUST THE AXIAL PLAY

If there is too much play first check if the right bolt M4x10 is sufficiently tightened.

- To reduce the play, first loosen both bolts M4x16. Slightly tighten the left bolt M4x10. Watch for correct fit of the cap.
- Tighten both bolts M4x16 again (torque setting 2-3 Nm).
- If the lever becomes stiff, there is too little play. Loosen both bolts M4x16 and then bolt M4x10.
- Loosen the lever and tighten both bolts M4x16 again (torque setting 2–3 Nm).
- Tighten left bolt M4x10 (torque setting 1 Nm).

STEM FOLDING HINGE

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.

HOW TO DISMANTLE THE FOLDING HINGE

The folding hinge should be dismantled only by an expert.

- Open the lever and remove left and right bolt M4x10.
- Loosen both bolts M4x16.
- Push the eccentric to the right side until you can see the grub screw at the right side. Loosen the grub screw.
- Remove bolt from the eccentric.
- Clean all parts with a dry cloth.

ATTENTION!

Now the stem is loose and can fall down! Watch out for the thin washers.

HOW TO ASSEMBLE THE FOLDING HINGE

- Grease inside of shell and the areas of eccentric and bolt which touch the folding hinge. Grease the cone and the washers.
- Place the washers on the folding hinge plates (use some grease to hold them on).
- Place the cone and the tension rod together with the shell into the folding hinge plate.
- Push the eccentric through washer, folding hinge plate and shell.
- Push the bolt onto the eccentric and assembly the right bolt M4x10. Tighten the grub screw. Take care that the grub screw hits the flat section of the eccentric.
- Put the lever onto the eccentric. Assemble cap and left bolt M4x10. Do not tighten the bolts.
- Adjust clamping force, action point and axial play. Take care of correct tightening of all bolts.

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 allen bolts inside the rear swingarm box profile.
- The catch can then be pushed inwards or outwards.

- Finally, retighten both bolts with a torque of 2-3 Nm.
- Open and close the catch several times to check the adjustment.

- The M6 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.

- 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.

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. If this hook doesn't move or if it is not being pulled back properly by the spring, the two fork clamping bolts may be too tight, or the spring may have failed. In this case, please ask your dealer to help. The hook should engage in the last turn of the spring and should fix it in position. To fold, press down on the suspension catch: this moves the hook clear of the spring.

HOW TO ADJUST THE FRONT SWINGARM CATCH

- If the catch hook doesn't engage cleanly in the first turn of the spring, the spring must be rotated.
- Loosen the fastener at the bottom of the spring with a long 5mm hex key, which you should insert from the free end 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.

ATTENTION!

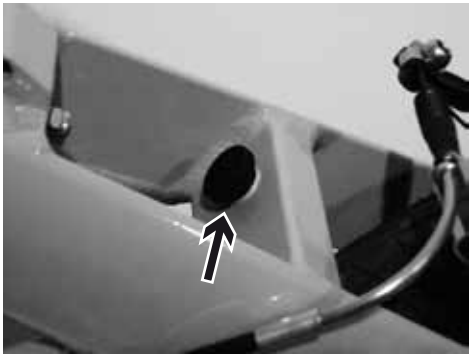
Do not ride if the front swingarm catch is not engaged correctly. The result could be a sudden unwanted folding of the front swingarm which could lead to a serious accident!

• Finally reattach the spring in place with a 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.

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.



The bolt at the bottom has an additional lock nut. Adjust the bolt to achieve minimal play in the rear swingarm after pushing down on the seatpost.

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 tires. 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.

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.

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.

WEARING

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 tire pressure will cause the rim to burst. The wheel can jam or the tube may burst, both of which can lead to an accident.

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. For rims with a wear indicator, the rim must be replaced when the indicator is no longer visible.

BRAKES

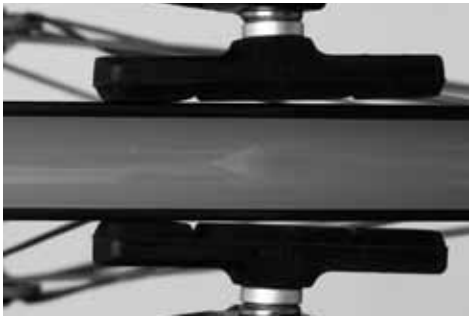
CHECKING, ADJUSTING AND BALANCING V-BRAKES

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.

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.

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 tires. Incorrectly set brake pads can cause tire rub-through leading to a tire failure.

DANGER!

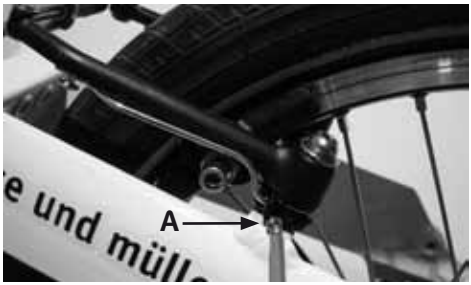
Adjusting brake blocks against the rim requires a good degree of mechanical skill. Errors could lead to brake failure and accidents. If in any doubt, leave the adjustment of brakes or changing brake blocks to your dealer. Poorly adjusted brakes can lead to serious accidents!

TIP!

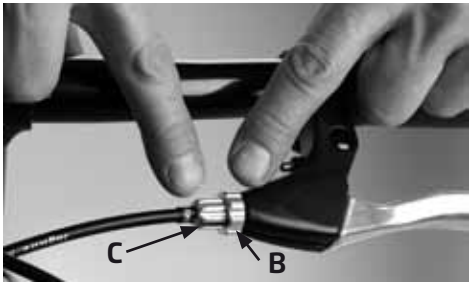
Be sure to try the brakes in a traffic free area to get a feel for the newly adjusted brakes!

Adjusting:

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



- 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.
- Check that the slot in the screw does not face upwards or forwards, as this can allow water and dirt to get in.

BRAKES

REAR COASTER BRAKE

The Birdy city is equipped with a coaster brake. Coaster brakes allow you to apply the brake to the rear wheel at any time by pedaling backwards. Riese & Müller only use coaster brakes whose braking performance is not influenced by the current gear that one is using.

- Check regularly the tight fit of the bolts which are fixing brake reaction arm of the coaster brake.

TIP!

The Birdy city is equipped with a chain tensioner and so you have to pedal back a little until the brake becomes active.

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.

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.

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.

Transporting the bike

The hydraulic brake system is completely sealed so the bike can be transported lying or upside down without brake fluid leaking out or air intruding.

TIP!

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

Mechanical Disc Brakes

To adjust the break pods use the special screw which is located near the stem. For more information about settings, please refer to the instructions supplied by the brake manufacturer.

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.

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.

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.

SHIFTERS

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. The shifter transmits the commands to the transmission via the Bowden cable.

Rapid Fire shifter

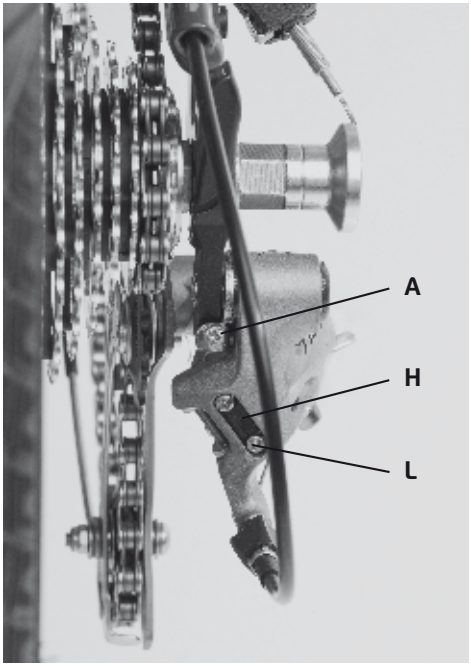
The thumb on the left side shifts to harder gears and on the right side, easier gears. The index finger on each sides shifts in the other direction.

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.

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.

TIP!

If you cannot properly adjust your shifting system, it could be due to worn or kinked shifting cables. See your local dealer for replacements.

Setting limit screws on the derailleur
Limit screws restrict the swing area of the derailleur to prevent the chain from dropping off the small sprocket or from jumping into the spokes. These screws are adjusted by your dealer and are not adjusted during normal use. If the bike has fallen over, check to see if the derailleur or the hanger is bent. Check the swing area. This also applies if you install other rear wheels.

- Shift the chain to the right. Shift the lever to the smallest sprocket.
- Look from behind to see whether the idler wheel of the derailleur is located exactly over the smallest sprocket. If the idler pulley is too far out, you'll have to adjust the corresponding limit screw.
- The limit screws are often marked „**H**" as the stopping point for the smallest sprocket and „**L**" for the stopping point for the largest sprocket.
- Shift to the largest rear sprocket. Be careful that the derailleur doesn't shift immediately into the spokes. With the chain on the larg

DANGER!

The adjustment of the front derailleur is very sensitive. Incorrect adjustment can cause the chain to come off possibly resulting in an accident. The adjustment of the front derailleur is a matter for the professional in the workshop.

est sprocket, cautiously move the derailleur with your hand in the direction of the spokes while rotating the rear wheel.

- If the idler pulley touches the spokes or the chain begins to climb over the sprocket, you should limit the pivot area. Turn the "**L**" marked screw until the derailleur reliably stops at the appropriate point.
- Now look at the position of the derailleur cage relative to the cassette. There should be space between the upper idler pulley and the largest sprocket.
- The derailleur has a screw (**A**) to adjust this distance on the front side of the dropout
- For the Birdy, screw this out as far as it will go. The derailleur must be in its forward most position.

TIP!

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.

THE CHAIN TENSIONER

The chain tensioner keeps the chain under tension during the whole folding process. The chain tensioner is mounted on the lower derailleur jockey wheel, replacing its bolt with a longer one. The bolt is secured on the other side with a nut.

ATTENTION!

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.

SHIFTING SYSTEM

How to adjust the chain tensioner

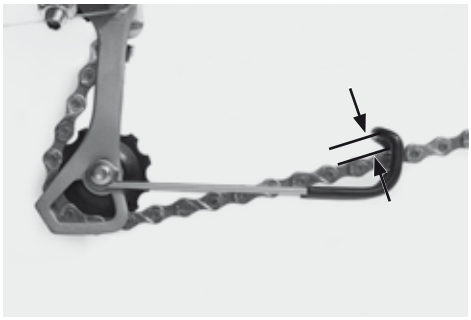
- Shift to the smallest sprocket
- The distance between chain and tensioner should be 1–2 mm.
- To adjust the chain tensioner, first loosen the nut at the lower derailleur jockey wheel. Then loosen the bolt.
- Adjust the chain tensioner.
- It is important that first the bolt is tight, then the nut is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

The Birdy city chain tensioner

The chain tensioner Shimano Alfine with additional chain tensioner is used for this model. Adjustment is as describe above.

TIP!

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



ADJUSTING THE FRONT DERAILLEUR

The adjustment of the front derailleur requires a lot of experience. The setting in which the chain does not rub the front derailleur is extremely small, the cable operating the front derailleur can stretch leading to impaired shifting.

- Tighten the cable using the adjusting screw just as you would on the rear derailleur
- For optimal performance, align the front derailleur exactly parallel to the chainrings with between 1 and 3 mm of clearance between the derailleur and the largest chainring
- To adjust the starting position of the front derailleur, loosen the Allen screw on the front side 2 to 4 times.
- The cable stops of the front derailleur are set up as described in the section rear derailleur adjustment.

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.

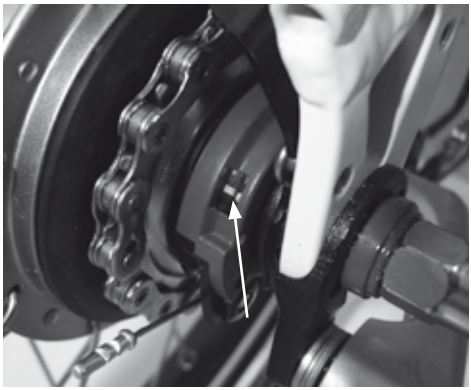
It uses a twist grip shifter to select the desired gears. The Shimano IGH can be shifted under load while the Rohloff system requires a momentary pause in the application of pedal power. There are several methods used to select gears for IGH and each hub is different. For questions, see the instruction manual of the manufacturer or your dealer.

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.

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.



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.

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 shift cable.

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.

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.

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.

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.

DANGER!

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

WHEELS AND TIRES

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.

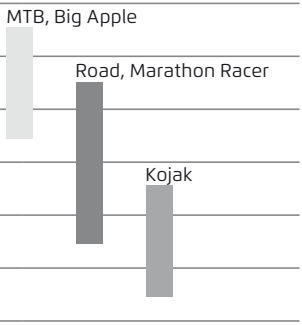
CONSTRUCTION OF A WHEEL

The wheel consists of a hub, rim and spokes. The tire 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.

TIRES AND AIR PRESSURE

The tire provides grip and traction on the road which is required during braking, accelerating, and cornering. Furthermore, it ensures smooth running.
Both street tires (speed, road) and knobbies (MTB) for rough tracks are available. Tires 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 tire pressure that is too low. The manufacturer's suggested pressure is indicated on the sidewall of the tire in bar and PSI.

PSI	BAR
45	3,0
50	3,5
65	4,5
85	6,0
95	6,5
120	8,0



TIP!

Always ride with the prescribed air pressure and check it regularly. Because Riese & Müller bikes are full suspension you can always inflate the tires 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.

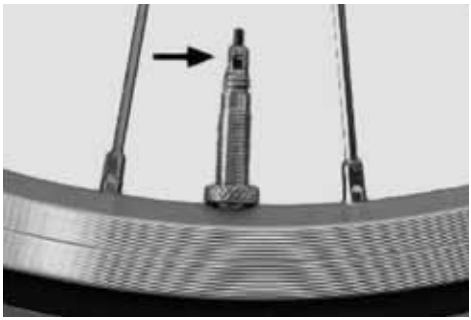
DANGER!

Always ride with the prescribed air pressure and check it regularly.

Never pump the tires over the maximum recommended pressure rating! The tire can spring from the rim or burst leading to an accident!

TUBE AND VALVE

The tire and rim alone are not airtight. To maintain the pressure on the interior, the tube is inserted into the tire. 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.
Hand-pumps are often not suitable for achieving high pressure. Track pumps with a gauge are better, as you can check the pressure as you pump.

TIP!

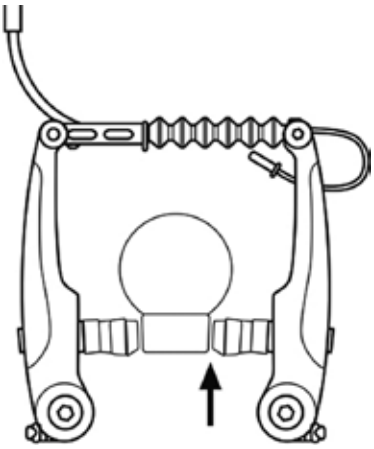
Truing wheels is a difficult business, which should definitely be left to your dealer!

CHECKING THE TIRES

Regularly check the tires. If the tread is worn or the edges are brittle, you should replace them. The inside of the tire may be damaged if is contaminated by moisture or dirt. Defective rim tape must be replaced immediately. Damage to the tires 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.



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.

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!

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 62.

Quick-release

Even though quick releases are very convenient, many accidents occur because of their misuse. The correct use is described at page 22.

TIP!

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

TIP!

Lock your quick-release wheels and the frame to a solid object if you leave your bike unattended.

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!

REPAIRING A PUNCTURE

A flat tire can happen to any cyclist. A flat tire 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
- Tire lever
- For bikes with an axle nut: 15mm wrench
- For bikes with a coaster brake or encapsulated drive: 5 mm Allen wrench and 10 mm spanner
- Latex gloves to keep chain grease off of hands

PREPARING TO REMOVE THE WHEEL

Each model has certain things that must be done before the wheel can be removed. These are described below.

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 tires 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

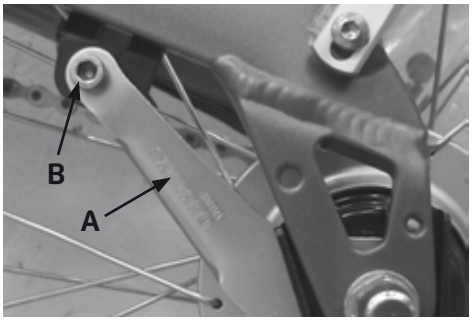
Before removing the rear wheel of derailleur systems, be sure to shift to the smallest sprocket. Thus the derailleur is all the way to the outside and does not hinder the removal.

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 18.

- 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.

TIP!

If you have a puncture on the road, you can attempt to fix it without removing the wheel, by only removing part of the inner tube. Leave the valve in the rim, and first try to find the hole where air is escaping, by pumping more air into the tube. A bucket of water or a puddle may be of some help. Once you've found the hole, check at that point on the tire and examine it closely for the source of the puncture. Remove this if necessary.

REMOVING TIRES

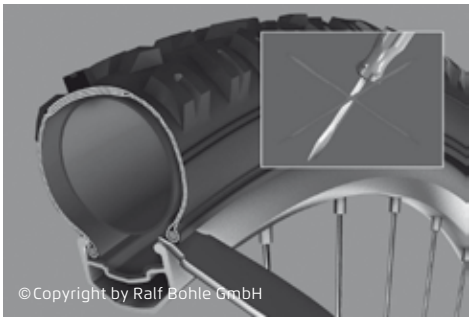
- Unscrew the valve cover and mounting nuts and let all of the air out.
- Press the tire from the sidewall towards the center of the rim. Do this over the entire circumference to make removing the tire easier.
- Insert the brake levers on the right and left side of the valve at the lower edge of the tire 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.

Check tire and apply patch

- Patch hole according to the instructions from the patch manufacturer.
- If you have removed the tire, 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 TIRE

- Make sure when installing the tire 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 tire. Press the tire sidewall completely over the rim. This should be possible with every tire 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 tire being careful not to crease it.
- Begin the installation on the side opposite of the valve. Press the tire on the rim making sure not to pinch the tube between the rim and the tire. Push the tube repeatedly into the interior of the tire.
- Work both sides evenly around the circumference of the wheel. Towards the end you will need to press the tire 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 tire with your palm over the rim bead. If this fails, you must use tire 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 tire so that the tube is not pinched between the tire and rim.
- Is the valve facing straight up? If it is not remove one side of the tire and readjust the tube. If you want to make sure that the tube is not crushed under the edge, you should halfway inflate the tire and roll it back and forth around the circumference of the wheel.
- Pump up the tire to the desired pressure. The maximum pressure is indicated on the sidewall of the tire.
- Check the fit of the tire specifically the wire (or Kevlar) bead against the sidewall of the rim. The important thing is that the whole tire has a uniform distance from the rim.

MOUNTING THE WHEELS

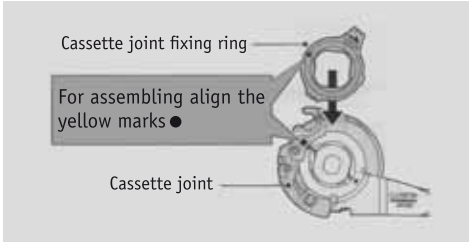
Mounting the wheels follows the reverse procedure to their removal.

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 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).

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.

ATTENTION!

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

- Tightening torque of the axle nuts: 30Nm.
- Tighten axle nuts or quick-release (for torque settings see page 62).

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.

FUNCTION OF THE 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!

CORRECTING PLAY IN BEARINGS

- Check the clearance by curling your finger around the upper steering bearing shell.

- With the other hand, squeeze the front brake 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.

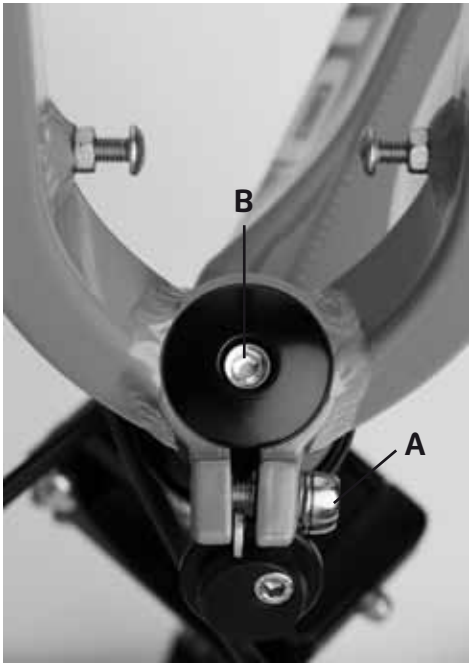
ATTENTION!

Setting the headset requires certain expertise. Therefore it is best to leave this work to your dealer.

ADJUSTMENT

The headset bearings consist of an inverted Aheadset arrangement. The 'steerer tube' goes from the stem hinge downwards. At its lower end the fork pushes onto it, and is fixed by two clamp screws **A** (similar to the way an Aheadset stem is fixed). In addition, the fork is held in place from below with a fixing cap secured by bolt **B**.

- To adjust the headset, the two clamping screws **A** must first be loosened.
- The play can now be adjusted out using the recessed bolt **B**. Tighten this up gently 'by feel'.
- Align the stem again so that the handlebars are straight.
- Re-tighten the side clamp bolts **A**. Apply a torque of 5 Nm.
- Carry out the test for play as described above. Also, make sure that the bearing isn't adjusted too tight.



ATTENTION!

*Do not completely tighten up this bolt **B**, or you will be 'dialing in' play.*

DANGER!

*Check that the stem is completely secure against turning after you've adjusted the headset bearings! **A** loose stem could lead to a crash!*

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.

CABLE LENGTH

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

COMPONENT	LENGHT CABLE HOUSING
Front brake Birdy Race*	360 + 780 mm
Rear brake Birdy Race*	360 + 1200 mm
Shifter cable front derailleur Birdy Race*	360 + 920 mm
Shifter cable rear derailleur Birdy Race*	360 + 920 + 550 mm
Front brake	1300 mm
Rear brake	1300 mm

COMPONENT	LENGHT CABLE HOUSING
Shifter cable rear derailleur	1250 + 550 mm
Shifter cable Birdy city	1530 mm
Shifter cable hub gear Birdy touring	1530 mm
Shifter cable hub gear Birdy rohloff	1530 mm

***** Values are only valid for fix stem for adjustable stems an additional 150 mm must be added.

FUNCTION OF THE 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. The dynamo generates the current necessary to power the lights. There is a cable connecting the dynamo to the front light. In the front there is a light switch for controlling lighting. From the front light there is a cable going to the tail light.

HUB DYNAMO

Many Birdys are fitted with a hub dynamo that works regardless of weather conditions. Another advantage of hub dynamos is that they are more efficient than side runner dynamos. This means the power required to generate electricity is lower.

RETROFITTING LIGHTING SYSTEM

If you would like to upgrade to a newer lighting system, please contact your dealer.

Operating lighting system

- Some lights are equipped with a photocell which turns the lights on automatically at dusk (switch position "S").
- You can also operate the lighting manually (switch position "on" and "off").
- Some lights with only an "on" and "off" switch.
- Before each ride ensure your lighting system is working correctly. Also check for loose wires or connections.

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.
- Verify the correct polarity. The light wire is the ground wire.

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.

TIP!

Read more about lighting on page 9.

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.

ATTENTION!

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

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.

TIP!

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

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. The easiest way to remove dirt and salt is using a pressure washer but this method has serious disadvantages, 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.

ATTENTION!

Do not clean your bike using a pressure washer or steam cleaner at close range.

A much more 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.

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

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 43).

To avoid rust, apply a little spray wax to all screw heads.

Polished aluminum surfaces (Birdy disc)
The Birdy disc has a high polished and compacted surface which is quite resistant to oxidation. After a certain time it may be necessary to polish the surface with the enclosed polish to maintain a perfect surface. This natural oxidation poses no technical issues and does not indicate material failure.

DANGER!

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

GENERAL CARE/INSPECTIONS

STORING YOUR BIKE

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 bike

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

- During extended storage the tires may gradually lose air. If the tire 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 bike inspected at regular intervals.

The recommended service intervals listed in the table in the appendix (page 64 – 65) 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.

ATTENTION!

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

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 bike to the dealer for inspection.

Your dealer is legally required to provide a bike 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 bike
- Within four weeks of your purchase, you have registered your bike in our online system: http://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 bike. 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.

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.

Battery

The battery of your Birdy hybrid is a consumable item; the electronic components of the system are subject to the two year statutory warranty. We provide a voluntary guarantee for the complete battery for one year. We guarantee that the battery after a year or 500 charging cycles (whichever comes first) will still have a residual caparity of 70%. Even a “used” battery, which perheps has only a residual capacity of 65%, can be used for a long time with stable performance. The battery should last over 1000 charge cycles without a problem.

INFORMATION REGARDING WEAR

Some parts of your bike are subject to functional wear. The amount of wear depends on the maintenance of the bike 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
- tires
- saddle cover
- brake pads
- rims
- filament (lights)

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 tire. 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 tire, 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 bike. Upon request we can refer you to your nearest dealer (dealers can also be found on our website www.r-m.de). Additionally, we recommend that you contact your dealer to ensure the fastest and most cost-effective solution. Please note that if your bike is sent to us by your dealer for repair: the bike 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.

Failure to comply with the installation requirements and inspection intervals voids the warranty. Please note that actions/ inspections outlined in your instruction manual may dictate the replacement of safety related components such as handlebars, brakes, etc.

TORQUE SETTINGS

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 / Internal Gear Hub	Brake reaction arm at frame	4–5 Nm
	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 nut	35–44 Nm
	Cassette lockring	29–49 Nm
Crankset	Crank bolt	35 Nm
Sealed-bearing 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 clamp bolt	12–14 Nm
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.

PART	JOB
Lighting	Check mounting screw
Tires	Check air pressure
	Check tread and sidewall
Brakes	Check lever travel, pad thickness and position on rim
Brake cables	Visual check
Brake housing	Inspect for leaks
Stem hinge	Hinge lever closed?
Rims, Aluminium	Check sidewall thickness / wear indicator (possibly replace)
Bottom bracket	Check bearing for play
Chain check	Lubricate if necessary
	Change if necessary
Chain (hub gear)	Check chain tension
	Oil chain
Crank check	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)
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

[1]After crash or 10.000 km or 3 years (whichever comes first).

	BEFORE EVERY RIDE	MONTHLY	ANNUALLY	SPECIAL INTERVALS
	•			
	•			
		•		
	•			
		•		
	•			
	•			
				✖ after the second set of brake pads at the latest
			✖	
		•		
				✖ After 1.500 km
				• Every 1.000 km
				• Every 3 months
			✖	
				• At least every 6 months
		•		
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				✖[1]
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				✖[1]
			✖	
				✖ At least every 20,000 km
			✖	

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 64 – 65.
- 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

1st Inspection Within 3 months of purchase or within the first 400km: Order number: Date: Stamp/Signature of dealer:	Replaced or repaired parts:
2nd Inspection Within one year of purchase or within the first 2000km: Order number: Date: Stamp/Signature of dealer:	Replaced or repaired parts:
3rd Inspection Within two years of purchase or within the first 4000 km: Order number: Date: Stamp/Signature of dealer:	Replaced or repaired parts:

4th Inspection Within three years of purchase or within the first 6000 km: Order number: Date: Stamp/Signature of dealer:	Replaced or repaired parts:
5th Inspection Within four years of purchase or within the first 8000 km: Order number: Date: Stamp/Signature of dealer:	Replaced or repaired parts:
6th Inspection Within five years of purchase or within the first 10000 km: Order number: Date: Stamp/Signature of dealer:	Replaced or repaired parts:

SPACE FOR NOTES

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