



# riese und müller

s u s p e n d e d   c y c l i n g

*Avenue Culture*  
***Delite*** ***HOMAGE***

Gemini not included

## *manual*

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## **Gemini**

Not translated

*(all page numbers refer to the German language version)*

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**Dear customer,**

Congratulations on the purchase of your new riese und müller bike. Thank you for deciding on a bicycle from our range. riese und müller build lightweight, practical full-suspension bikes, which stand out with their great handling and sensible design.

Your dealer will have carefully prepared the cycle for you, possibly taking into account your requests for changes to some parts, and has carried out a test ride to ensure that from the first metre you can pedal away happily.

In the design of the bikes we are always thinking of your riding pleasure and safety. Naturally, though, we can't foresee every aspect of your varied use of the bikes. But this user manual answers all of the most important questions and offers many tips on the use of your cycle.

Furthermore, it brings together a good collection of information about cycle technology and about care and maintenance, so that your riese und müller bike can give you pleasure for many years.

Should you have further questions after reading the manual, please get in touch with your dealer or direct with us.

Riese und müller is permanently developing their bikes. So it may happen that this manual is kept up to date by separate pages. So please note eventual added informations.

Your riese und müller team

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**Danger:** In this handbook tightening torques are given in **Nm**. Never rely on 'feel': „tight“ is not always the same as „tight“. ONLY the proper use of a torque wrench ensures that bolts are tightened appropriately. Always use such a tool, wherever a torque setting is given in this manual. Screws tightened too much or not enough can result in breakage, which can lead to dangerous accidents.

## PAGE 2

### Using this handbook

riese und müller bikes take advantage of unusually innovative technology, so even if you're an 'old hand' who has been riding bikes for a lifetime, do read and observe the following tips carefully before you first use the bike.

So that every ride is a pleasure, and for your own safety, the quick check procedure should be performed before every ride. You can read how to do this check on *page 6* of this booklet.

**Danger:** *Do not ride if the bike doesn't pass the check 100%!*

There are a whole series of maintenance and assembly procedures described in this manual. If you carry out any of these, you must always remember that the instructions apply only to the relevant riese und müller bike and not to any other bike. It's also possible that because of the wide range of models, and regular model changes, that the instructions are not entirely complete.

Due to many configurations and development this manual may not describe all details. Please also read eventually added separate pages.

Also consider that the explanations may, depending on your level of experience and mechanical aptitude, be insufficient, and may also require special tools and knowledge of common (not described here) mechanical operations.

**Danger:** *This manual describes a series of procedures to be carried out between the regular maintenance inspections to be carried out by your dealer (see page 62-63).*

*Never carry out any other, further work on your bike. Such tasks require special tools and skills and can therefore only be carried out by your dealer.*

*In the interests of your own safety, don't go beyond your limits. Never ride with unfinished or improperly carried out repair work on the bike. You will endanger both yourself and other road users.*

Should you be uncertain at any point, and would like advice, approach your dealer, or get in touch with us. We'll be delighted to help!

## PAGE 3

A few things important for any cyclist. In traffic, always ride with full attention, so that you do not endanger yourself or others. Observe traffic laws and regulations, so that you don't attract the anger of other road users. Respect nature when you're riding in the countryside. Ride only on marked and surfaced roads. Observe any laws and regulations for the use of bicycles off-road – including regional or local bye-laws. Never ride without a helmet, and always ride in suitable cycling clothing. **We hope you have great fun on your new riese und müller bike!**

First, we'll tell you about the parts of your new riese und müller bike. Fold the front cover flap of this brochure out. Here you'll find a riese und müller bike with all of the relevant parts clearly shown, so you can see them as you read the manual. Make yourself familiar with your new riese und müller bike and its care before the first ride. That's what this book is for.

**Tip:** *Unfold the front cover foldout. It'll make everything clearer!*

We have tried to present all of the relevant work and procedures necessary for pleasurable ownership of a new riese und müller bike as clearly as possible in this manual. We use the following symbols:

**Note:** *Here you will find tips to help you become quickly familiar with your bike.*

**Danger:** *This denotes possible danger for your life and health, if the appropriate procedures are not followed properly. In your interests, pay close attention.*

**Hint or Tip:** *These notes provide useful tips or extended explanations.*

## Before the **first** ride

### Load capacity

riese und müller bikes are designed for a maximum rider height of around 1.95m (6' 5). Determine the maximum loading from the following table:

|                      | Total weight (rider and luggage) | Rear carrier | Lowrider |
|----------------------|----------------------------------|--------------|----------|
| Avenue               | 130 kg                           | 25 kg*       |          |
| Culture              | 130 kg                           | 25 kg*       | 15 kg    |
| Delite silver/yellow | 130 kg                           | 18 kg        | 10 kg    |
| Delite black/grey    | 150 kg                           | 25 kg        | 15 kg    |
| Homage               | 130 kg                           | 25 kg        | 15 kg*** |

\* inkl. Weight of basket or children's seat

\*\*\* Homage silver only

Bikes from riese und müller are suitable for use with two-wheeled trailers. A 'Weber' coupling system should be used. The maximum load (carrier and load) is 50 kg.

**Danger:** *It isn't possible to guarantee that other coupling systems will not affect the performance of either the suspension or the trailer.*

**Danger:** *'Single track trailers' such as the 'BOB YAK 16' are not approved for use with any of the bikes in the riese und müller range, because the rear suspension and support bearings are not designed for such use.*

### Use riese und müller bikes 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 suiting clothes (tight trousers, shoes with firm soles). Never ride without wearing a helmet (as well as your children).

### Are you confident using the brakes?

Check whether the front brake is operated with the lever you usually use. If this isn't the case, you should get used to the arrangement thoroughly, as an unintended application of the front brake can lead to a fall. Alternatively, let your dealer re-assemble the brakes the other way round.

**Danger:** *Modern brakes are much more powerful than old ones! Take care!  
In any case, before you take to the streets, test your brakes and get familiar with them away from the traffic!*

You can read more about the braking system on *pages 22-26*.

**Danger:** *The bike's behaviour is changing while carrying loads. The braking distance will increase. In any case, before you take to the streets, test your bike and get familiar with the behaviour of the loaded bike!*

### Are you confident that you know how to change gear, and how the gears work?

Ensure that you're familiar with the gears somewhere where there's no traffic.

You can read more about gearing systems on *pages 27-32*.

### Are saddle and handlebars correctly adjusted?

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 9-16*.

## **Suspension**

Is the suspension fitted to your needs? You can read more about suspension on *pages 17-21*.

## *PAGE 6*

### *Before every journey*

Are the quick-releases and nuts and bolts on front and rear wheels, on the stem and on the seatpost clamp all correctly fastened?

Read more on *page 36*.

***Danger:*** *If quick-releases and securing nuts and bolts are not correctly fastened, parts of the bike could come loose. This could result in a dangerous fall!*

## **Suspension**

Satisfy yourself that both front and rear suspension is working: Hold one brake on, and standing beside the bike, press on the saddle to test the rear suspension. Also check the front fork by putting your weight on the handlebar. In both cases the suspension should move in and out without significant noise or uneven resistance. No parts of the bike should rub or grind against each other.

## **Tyres**

Are the tyres in good condition, do they run round and are they at the correct pressure? More on this topic on *pages 34-36*.

## **Brake system**

Perform a stationary brake test by pulling the levers hard towards the handlebar. The brake blocks 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 22-26*.

## **Lighting system**

Check that the dynamo is securely mounted. Does the light illuminate properly? More on lighting on *pages 48-49*.

## **Loading**

Check if basket, luggage or children's seat is fixed correctly. You can read more on Loading on *page 50*.

## **Max. load**

Never exceed the max. load (*page 4*).

## **Unusual noises**

As you ride, always listen out for unusual rattling noises or unusual handling – these could indicate a problem. If this occurs, check bearings, pivots and all fastenings.

***Danger:*** *Do not ride the bike if your bike fails any of these checks! In case of doubt, always consult your dealer. A defective bike can lead to serious accidents!*

## *PAGE 7 – Internationalised*

### *Legal Requirements*

When you ride your bike on the road, it must comply with national legislation 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 duty to ensure that your vehicle is in roadworthy and safe condition. There will also be a duty to ride in a safe and responsible manner. If you ride your Riese und müller bike in traffic you should be sure to observe all relevant laws and regulations which apply.

## **Brakes**

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

## Lights

Bicycle lighting systems need to comply with the relevant national standards: in Britain this is the relevant British Standard. Lights complying with this will have the BS symbol moulded or printed onto each light unit. In Britain both dynamo and battery lights are permitted. The front light must be white and the rear light must be red.

Note: The sections of the German-language riese und müller manual on pages 7 and 8 are not translated, as they refer in detail to German traffic regulations which do not apply in other countries.

## PAGE 8 NOT RELEVANT

## PAGE 9

### *Fitting the bike to the rider*

#### **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 as precisely as possible to fit.

Several components on riese und müller bikes are designed to adjust the fit to suit your body dimensions.

These include the seatpost, the stem assembly and the brake levers.

This chapter describes how to adjust the seating position on the riese und müller bikes.

**Danger:** *All of the procedures we are about to describe require a certain degree of skill, suitable tools and mechanical aptitude. After any assembly operation perform the Quick Check (see page 6) 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 to explain any changes you'd like to your specialist dealer.*

#### **Adjusting for the correct saddle height**

The need for a comfortable pedalling action determines the saddle height. It's important that when you pedal, the ball of the foot should be over the centre 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 pedalling 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 seatpost bolt.
- The loosened seatpost can now be adjusted for height. Make sure that the seatpost is always greased. If it doesn't slide smoothly in the frame, clean out and re-grease inside the frame and on the seatpost. If you have further problems, consult your dealer. In no event use force.
- Set the saddle straight, by lining up the saddle nose either with the bottom bracket or the main frame tube.
- Don't pull the seatpost out beyond the marking on the shaft. At least 80mm must remain inside the frame.
- Re-fasten the seat clamp bolt (tightening torque 9-12 Nm).

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- 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 that you still reach the ground with your tiptoes. If this isn't the case, put the saddle a little lower.

**Danger:** *Do not ride if the seatpost is withdrawn beyond the 'MIN INSERT' mark! This marking must not be visible: if it is, the seatpost could break or the frame could be damaged.*

**Hint:** *Full suspension bicycles have a bigger BB height. So it may happen that you can reach the ground with your toes only.*

#### **Adjusting the handlebar height**

Stems on riese und müller bikes are generally height-adjustable, so that you can adjust for either an upright or a stretched-out position.

### Upright position

Advantage: less stress for wrists, arms and cervical spine.

Disadvantage: higher stress at the seating area.

### Stretched-out position

Advantage: less stress at the seating area, higher power efficiency, more grip of the front wheel.

Disadvantage: higher stress for wrists, arms and cervical spine.

### Adjusting the wedge-bolt stems

The stem fits inside the steerer of the fork, and use an expander/wedge to attach to the steerer.

- To adjust the height, loosen the stem wedge bolt **A** on the top of the stem shaft.

## PAGE 11

- If necessary, tap lightly with a rubber mallet on the Allen key, so that the internal wedge is loosened.
- You can now adjust the stem for height. Then re-tighten it (bolt **A**, tightening torque 20 Nm).
- Finally, hold the front wheel between your legs, and attempt to turn the handlebar. This should not be possible.

**Note:** Be sure that the shaft which fits into the top of the fork (steerer tube), and the screw, are greased.

### Adjusting the angle of wedge-bolt stems

- To adjust the stem for angle, loosen the bolts **B** and **C**.
- The stem can now be adjusted for angle.
- Re-tighten the bolt **B** first and then bolt **C** (torque 15 Nm).
- You may have to re-adjust the angle of the handlebars to ensure that they are ergonomically comfortable. The procedure is described on page 14.
- Ensure that you have properly re-tightened the bolts after adjustment. Check that in the new position no brake or gear cables are stretched or get caught. If this is the case, ask your dealer to fit cables of the appropriate length.

**Danger:** Do not ride if the stem is withdrawn beyond the 'MIN INSERT' mark! This marking must not be visible: if it is, the stem could break. Stem manufacturers vary this marking: 'MIN INSERT' and 'MAX HT' are the most common.

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### Adjusting the height of A-Headset stems

The height adjustment can be done with spacers.

**Danger:** Adjusting the A-Headset stem involves adjusting the headset bearings, and errors in the job run a high risk of causing accidents. Before your first ride you must let your dealer check the work, or carry it out themselves.

**Note:** When you loosen the stem clamp bolts the forks come loose. When you remove the stem hold the forks in place or arrange a cable tie or the like to hold them secure to the down tube before you start.

- Loosen first the two screws **A** on the stem's handlebar clamp, and undo them completely together with the cap **B**.
- Loosen the bolts **C**. The handlebar is now separate from the stem. For adjusting the stems height, you must place the spacers **D** above or below the stem.
- Push the stem and all spacers onto the steerer tube.
- Push the stem back onto the cleaned and greased steerer tube. Adjust the handlebar and slightly tighten the bolts **C**. Lay the end cap **B** on the top of the steerer tube and re-fit the Allen bolt **A**.

**Note:** This screw adjusts the bearing play in the headset.

**Note:** Make sure that as you tighten bolt **A**, you don't clamp any of the headset seals. If the sealing rings get clamped up, it hinders the proper operation of the bearings and can cause damage. Check their position before tightening the headset.

**Danger:** The length of the steerer tube is fitted exactly to the dimensions of the frame head-tube and to the spacers **D**. For this reason you can neither add more spacers nor take any away. When changing the stem or removing spacers, the steerer tube must be shortened. Let your dealer do this.

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### Adjusting the A-Headset play

- Hold the front brake on, and with finger and thumb of the other hand, hold the upper headset bearing area. Push the bike forwards and back firmly.
- If there's play in the bearings, the upper bearing shell will move noticeably with respect to the lower one. You must then tighten the end cap screw **A** further.
- If the two parts of the bearing don't move, you must check that the bearing is not tightened too much. To check that the bearing is turning easily, lift the frame up with one hand, so that the front wheel loses contact with the ground. Move the handlebar from left to right. The front wheel should move easily from far left to far right, without 'indexing'. If the handlebar is lightly touched, the wheel should move as if of its own accord from the straight-ahead position. If it does not, the bearings are too tight, and the bolt **A** must be slightly loosened.
- Finally, loosen the clamp bolts **C** and pull the steerer tube up by moving the stem. Retighten the clamp bolts **C** hand-tight. If the bearing play is acceptable, tighten the clamp bolts **C** fully (torque: 12-14Nm).

**Danger:** Adjusting the headset bearings requires a degree of experience, so this work should be left to your dealer if in any doubt.

### Adjusting the angle of A-Headset stems

Apart from the height you can adjust the angle of the stem.

- Loosen the four bolts **E**.
- Fit the angle to your needs and re-tighten the four bolts **E** (torque 5.5 Nm).
- It may be necessary to adjust the handlebar again. Please read *pages 14-15*.
- Take care that all bolts are tightened correctly. Please check if the gear and brake cables do get stretched by the new adjustment. Otherwise your dealer has to assemble new longer cables.

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### Adjusting the handlebars

Another possibility for adjusting the riding position is to mount bar ends or similar handlebar extensions, or to mount a different handlebar. Gear and brake cables may need to be changed for longer ones.

### Adjusting angle of handlebars

Adjust the handlebars so that your wrist joints and hands are relaxed and are not too sharply angled outwards. To adjust the handlebar position by turning the handlebar:

- Open the two bolts **F** and **G** of the handlebar clamp.
  - Turn the handlebar until it reaches the desired position.
  - Check that the stem clamp is exactly in the middle of the handlebars.
  - Re-tighten the bolt **G** first and then bolt **F** (torque 10 Nm).
- 
- Open the four bolts **H** of the handlebar clamp.
  - Turn the handlebar until it reaches the desired position.
  - Check that the stem clamp is exactly in the middle of the handlebars.
  - Re-tighten the four bolts **H** cross-wise (torque 5.5 Nm). Take care of same split at both sides.

### 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 blocks hit the rim. If this 'bite point' comes after just a short movement of the levers, you'll have to adjust the cable if you want to adjust lever reach (see *page 25*). 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'.

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

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### Adjusting angle of brake levers

- 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.
- Re-tighten the bolts (torque 5–6 Nm) and check that the brake lever housings don't twist!

### Adjusting angle of 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 leant-forward position. They usually make about a 25 degree angle upwards.

**Danger:** *Always be sure that securing bolts on stem, handlebars, bar ends and brakes are tightened with the appropriate tightening torque. The appropriate values are listed on pages 64-65. Otherwise, it's possible that parts may come loose or break. This can lead to serious accidents.*

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### 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 forwards or back on the seatpost clamp. This will also affect pedalling: if the saddle is right back, you'll be pedalling more 'from behind', and vice versa.

The saddle should in general be set dead level.

- Undo the (one or two) seatpost clamp bolts **A**, turning each of them at most two or three turns anticlockwise. No more, or the whole assembly can fall apart.
- Move the saddle forwards or backwards as required. If you have a model with two bolts depending on which of the bolts is done up first, the saddle angle may change.
- Re-tighten the bolt(s) **A**. Torque for one bolt: 12-15Nm. Torque for two bolts: 9-12Nm
- 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 7 to 8mm clamp. Other types of saddle rail may cause failure of the seat clamp and a nasty accident.*

## PAGE 17

### Adjusting the suspension

Your new riese und müller bike can be adjusted to your individual requirements: naturally this includes the suspension.

Your riese und müller bike is fitted with an almost maintenance-free rear suspension system with generously dimensioned bearings. The suspension element combines a steel spring or an air chamber with a hydraulic oil damper. For adjusting air shocks please refer to the separate manual of the air shock manufacturer.

### Adjusting the rear suspension

You must choose the correct spring to achieve the desired riding characteristics to match your weight, and the overall weight. Further, the suspension preload can be altered and on some models the damping can also be adjusted (see table).

| Model                     | Spring element | Rear Travel |
|---------------------------|----------------|-------------|
| Avenue black/silver       | RST 22 A       | 87mm        |
| Culture                   | RST 22 A       | 90mm        |
| Delite black/grey         | SUSPA rho pro  | 86/96mm     |
| Delite silver             | SUSPA Rho pro  | 80mm        |
| Delite yellow/Homage grey | Manitou Radium | 90mm        |
| Homage silver             | RST 22A        | 70mm        |

### Changing the spring

By changing the spring on the rear suspension element you can match the suspension to your weight, comfort requirements and favoured riding style. The standard spring is designed to satisfy 90% of all applications.

If your suspension is too soft (when you sit on it, the bike sinks a fair way down, and the suspension bottoms out even on small bumps) you need to choose a harder spring.

If your suspension is too soft (the bike sinks very little when you sit on it, and hardly reacts to small bumps) you should have a smaller spring fitted.

Softer and harder springs are available as accessories, so that customers' special wishes can be accommodated. Choose the correct spring for your bike from the following diagrams.

Comfort allround sporty

Avenue (upper value)

Culture (lower value)

Delite silver (upper value)

Delite black/grey (mid value)

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### Changing the rear spring

- Clamp the bike into a repair stand by the main frame.
- Un-stretch the spring by turning the ring **A** counter-clockwise. You can use a 3mm allen key which can be inserted into the holes of the ring.
- Secure the swing-arm against swinging down uncontrolled. Do this by securing a cable tie or strong string through the spring mounting bracket and the main frame.

**Danger:** *If the swing-arm is not secured, It can swing down unchecked and can injure you. In addition, gear and brake cables will be stretched beyond their elastic limit and may have to be replaced.*

**Danger:** *If the spring element is removed from the bike which is standing on the ground, ensure that the frame and swing-arm come up against each other in a controlled and gentle fashion. Otherwise, there's danger that you might catch a hand between swingarm and frame, and that the bike might be damaged.*

- Loosen the mounting screws at both ends of the spring element with a 5mm Allen key and a 10mm spanner. Carefully remove both bolts. Take care of plastic washers.
- Remove the spring element.
- Remove the cups **B** at the side of the ring **A**.
- Turn the adjustment ring **A** counter-clockwise, to remove it.
- Pull the spring plate **D** out and remove the spring.
- Clean the thread and apply some grease.
- To re-assemble follow the procedure in reverse.
- Now replace the spring element in the frame and fix it with the appropriate bolts. Tightening torque: 7-9 Nm.

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### Adjusting the spring preload

The suspension preload determines how far the bicycle sinks when you sit on it when it's stationary. The rear should sink about 20-25% of the travel (*see the table on p. 17*).

If it sinks too far, the spring element must be preloaded further (turn the adjustment ring **A** clockwise).

**Attention:** The adjustment ring only can be tightened three turns. If this is not enough you need a harder spring. For best riding comfort the spring pre-load has to be as small as possible.

If it doesn't sink enough, reduce the preload (turn the adjustment ring **A** counter-clockwise) or change to a softer spring.

**Hint:** To check the sink easily, ries und müller offers a special gauge. You can order it at your dealer (Art.-No. 759601).

### Adjusting the damping

The Culture orange/silver and the Delite also allow the adjustment of the rebound damping on the rear wheel. This adjusts the rebound ('bounce') characteristics of the suspension. To test it, ride over a kerb. The suspension should compress just once.

If the suspension recovers too slowly after a bump, or becomes ever more compressed when bumps follow each other closely, the damping can be reduced by turning the adjuster knob counter-clockwise.

**Danger:** While you are adjusting and are working with your hands or tools on the spring element, never load the bicycle, for example by leaning on the saddle or handlebars, or by loading the rear carrier. If the rear swingarm compresses it could trap your hands.

**Note:** During riding the rear fender stays can come close to the frame or carrier. Please check the stays from time to time. The front part of the rear stays must have a buckling. The frame could be damaged by touching fender stays!

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### Adjusting the suspension travel

The Delite black/grey tourer offers the possibility of adjusting the suspension travel on the rear wheel. The suspension swingarm has two separate mounting points for the spring element. To adjust the travel, mount the spring element into the other location. (the procedure is as described in 'Changing the spring' page 19). The higher mounting point **A** gives 86mm travel, the lower **B** gives 96mm travel.

### Maintenance of the spring element

The spring elements used by riese und müller stand out thanks to their excellent suspension characteristics and very user-friendly service intervals. Under normal riding conditions the elements only require maintenance every 5000 km. If you ride often off-road on bad surfaces or in bad weather, it is advisable to carry out maintenance more often, to avoid possible damage which might require replacement of the spring element.

To maintain the spring element, dismount it and clean the following parts:

- the mounting bolts
- the cups **A**
- the thread **B**
- the damper shaft **C**

The following parts must be greased:

- the cups **A**
- the thread **B**

For the maintenance of air shocks please refer to the manufacturers manual.

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### Adjusting the suspension fork

Use the following table to determine whether your rise und müller suspension bike has an adjustable fork:

| Model                        | Fork           | Travel | Adjustable Preload? | Adjustable rebound? |
|------------------------------|----------------|--------|---------------------|---------------------|
| Avenue                       | RST CT Com     | 50mm   | Yes                 | No                  |
| Culture                      | RST Capa       | 63mm   | Yes                 | No                  |
| Culture red/<br>Delite black | RST Gila/Omega | 80mm   | Yes                 | No                  |

|               |                       |       |     |     |
|---------------|-----------------------|-------|-----|-----|
| Delite grey   | Marzocchi MX pro coil | 80mm  | Yes | Yes |
| Delite silver | RST Capa              | 63mm  | Yes | No  |
| Delite yellow | Marzocchi Gran Fondo  | 100mm | Yes | Yes |
| Homage silver | RST Capa              | 63mm  | Yes | No  |
| Homage grea   | Marzocchi Gran Fondo  | 100mm | Yes | Yes |

You can adjust the preload on the suspension forks of riese und müller bikes by turning the plastic end cap nuts on the fork crown. They are marked with + and – arrows. Turn in the ‘-’ direction to reduce the preload, and in the ‘+’ direction to increase the spring tension. This method is identical on all riese und müller bikes with adjustable suspension forks.

**Danger:** Do not turn to strong in “+”-direction. Otherwise the bolts can get loose. Danger of accident!

If the preload range is to small, you can get harder or softer springs and elastomers. Please contact your dealer.

### Air suspension

At Marzocchi front forks you can adjust the preload by adjusting the air pressure. Please refer to the separate Marzocchi manual.

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### Brakes

riese und müller bikes are equipped with particularly powerful brakes. These allow you to stop with maximum braking power in any situation, with little hand force on the lever.

Braking distance is, however, very much determined by the rider’s skill, and can be improved with practice. Weight is transferred from the rear to the front when you brake, and loading on the rear wheel reduces. This is why braking distance is determined first by the tendency of the bike to flip you over the bars, and only as a second order effect by the limits of adhesion of the tyre. This problem becomes particularly acute when descending steeply. If you use full braking, ensure that your weight is placed as far back as possible.

Use both brakes simultaneously and note that because of the weight transfer effect, the front brake needs to provide the vast majority of the braking power. But you also need to avoid locking the front wheel, which could lead to going over the bars or an uncontrolled slide.

Use the table below to see which lever operates which brake:

| Model  | Front brake | Rear brake |
|--|-------------|------------|
| Avenue, Culture black with back-peddalling brake hub | Right       | Back-pedal |
| Avenue, Culture black with rear roller brake         | Left        | Right      |
| Culture, Delite, Homage                              | Left        | Right      |

**Danger:** Some dealers may alter the arrangement of the brake levers, because there are differing views about what is ‘correct’. Check before your first ride whether the set-up matches the table and what you are used to.

Be sure to get familiar with this arrangement, or ask your dealer to swap the brakes over to your preferred set-up.

**Danger:** Be careful as you get used to your brakes! Practice emergency stops away from traffic, until you have the bike under complete control. This can be vital for avoiding accidents in traffic.

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### How they work, and how they get worn out:

When you apply the brakes, using a hand-operated lever or a back-pedal (coaster) brake, a fixed brake pad presses against a rotating braking surface, and friction occurs. The bike is slowed down through this friction. Alongside the force with which the blocks push against the rim, another important factor is the so-called coefficient of friction between the two surfaces.

If water, dirt or oil get onto the braking surface, this coefficient of friction will change. This is why a rim brake has poorer performance when it’s wet, and doesn’t stop you as quickly.

**Warning:** Wet conditions diminish braking performance. You need longer braking distances when it's raining. When you change brake blocks, use only approved brands compatible with your rims. Your dealer will be happy to advise. Ensure that your braking surfaces remain absolutely free of wax, grease and oil. Get your rims checked at the latest after wearing out a second set of brake blocks. Worn-out rims can lead to blow-out punctures and dangerous accidents!

### **Wearout**

Friction also causes wear on both brake pads and rim. This wear is accelerated if you ride a lot in the wet. If the rim wall is worn away far enough, the pressure of the tyre can blow the rim apart. The wheel can then lock up, and the inner tube split: in either case it can lead to a crash. Once you've worn out your second pair of brake pads, you should take the bike to your dealer and let him check the wall thickness of the rims. At rims with a wearout indicator the rim has to be replaced when the indicator disappears.

**Warning:** Get your rims checked at the latest after wearing out a second set of brake blocks. Worn-out rims can lead to blow-out punctures and dangerous accidents!

**Danger:** Damaged brake cables, with, for example, individual strands poking out, must be replaced immediately, to prevent brake failure and possible accidents. Ask your dealer for advice!

### **Hydraulic brakes**

Please refer to the separate manual of the brake manufacturer.

## **PAGE 24**

### **Checking V-Brakes**

V-brakes consist of left and right-hand arms, mounted separately each side of the wheel. When you use the brake, the two arms are drawn together by the cable. The arms pivot inwards on their mounting points and the blocks rub against the rim walls.

- Check that the brake blocks are aligned precisely with the rim, and have plenty of braking material left. If the grooves in the block are worn away, it's time to replace them.
- The brake blocks should touch the rim with the front part of the block making contact first. The rear part of the block should at that point be one or two millimetres from the rim. Seen from above, the brake blocks should make a V-shape. This V-shaped adjustment helps avoid squealing brakes.
- The brake blocks should both hit the rim at the same time when you pull the lever.
- The brake lever must have some movement in reserve – when applying full braking power it must not reach the handlebar.

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### **Balancing V-Brakes**

- To balance the brakes, use the adjustment screw **A** in the side of the brake arm body. Adjust this screw until the blocks are the same distance from the rim on each side.

### **Adjusting the brake cable**

- To adjust the brakes, loosen the knurled locknut **B** where the cable enters the handlebar brake lever.
- Turn the knurled and slotted adjustment screw **C** out by a few turns. The 'dead' lever motion before the brakes bite will be reduced.
- Hold the adjustment screw in place, and turn the knurled locknut **B** tight against the brake lever housing. This stops the adjustment screw vibrating loose.
- Check that the slot in the screw does not face upwards or forwards, as this can allow water and dirt to get in.

**Hint:** It is essential after any brake adjustment that you carry out a brake test, and that you ensure that the brakes are hitting the rim with their full area. Brake failure or a locked-up wheel could otherwise cause an accident.

**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!

### Roller-brakes at Culture black

Roller brakes offer good performance and low maintenance. They function very reliably and are particularly suitable for daily town use. For further information please refer to the separate Shimano manual.

### Back-pedal brake

Back-pedal brakes (coaster brakes) allow you to brake the rear wheel at any time by moving the pedals backwards. riese und müller use only back-pedal brakes whose effect is constant and is not affected by which gear you are in.

**Danger:** Check before every ride and after any maintenance that the brake reaction arm is securely attached to the frame. The attachment bolt should be tightened to 4-6Nm.

### Magura brakes at Culture red

For adjusting the rear brake pads, you need a extra short 5mm allen key. Unfortunately this special tool is not available. You have to buy a standard 5mm allen key (L-shape). Cut the short end to 2cm length.

## Pedals

### Assembly

Grease the pedal threads before assembly, and screw the right-hand pedal in clockwise. The right-hand pedal is marked with a 'R' stamp.

The left-hand pedal is screwed in anticlockwise. The left-hand pedal is marked with an 'L' stamp.

**Note:** The stamp is found either right by the threads or on the top of the pedal body.

Tightening torque is 15Nm.

## Gears

A bike's gears have the job of matching your power output to the gradient and to your desired speed. The amount of physical work you need to do won't be reduced by the gears, because this remains constant for the same distance covered at the same speed. What does change is the power input per turn of the cranks. In other words, this means that in a 'smaller' gear you can get up steep hills without undue effort, but to do so you'll have to turn the pedals more often.

Going downhill you can choose a higher ratio. This means that each turn of the cranks takes you several metres, so your speed can be high.

To ride energy-efficiently, you need to change gear often. Just like a motor vehicle, you must keep you 'motor' running in its 'cruising' rev-band, to ensure you get the best performance.

On the flat, a pedalling frequency, also known as 'cadence', of around 60 turns per minute is reasonable. Racing cyclists increase this on the flat to around 90-110 revolutions per minute. When climbing, the cadence naturally falls somewhat – but you should always be able to pedal smoothly.

The fine steps between gears and the easy action of modern gearing systems put you in the best position to ride efficiently. In addition, wear on chain and sprockets, as well as the loading on your knee joints, can all be much reduced.

### Derailleur gearing

Derailleur gearing is currently the most efficient form of gearing for bicycles. With a well-maintained and lubricated chain, 97-98% of the power you put in is transmitted to the rear wheel. Despite this near-perfect performance many riders worry about the 'gears locking up'. This fear is unfounded with modern equipment. Both ease-of-use of the gearing and the power of modern brakes are excellent.

With special tooth-profiles on the sprockets, flexible chains and accurate indexing in the changers, changing gear is extremely easy. During shifting it is important to keep on pedaling but with low forces. The special tooth-profiles allow a shifting under load but this is decreasing the lifetime of chain and sprockets. So avoid changing gears while pedaling hard.

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riese und müller bikes are equipped with three different kinds of shifting levers:

### Twist-grips

Turning the right-hand twist-grip towards the rider gives an easier gear. The twist-grip shows you which gear you're in. The twist-grip transmits your gear-change command to the rear derailleur through the gear cable. The rear derailleur moves across, and directs the chain onto the next sprocket.

### Rapid Fire shifter

On the left, the thumb shifts into a harder gear, and on the right into an easier gear. You shift in the other direction with your index finger.

### Tap fire shifter

The thumb shifts into both directions. Pressing "LOW" shifts into smaller gears. Pressing "HIGH" shifts into higher gears.

**Danger:** Practice changing gear on a traffic-free street. Make yourself familiar with the functioning of the twist-shifters. Getting used to the gears in traffic could distract your attention from possible dangers.

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### Checking and adjusting the gears

Your dealer will have carefully adjusted your derailleur gearing system before he handed the bike over. But in the first kilometres of riding, the gear cables can stretch, making the gear indexing imprecise. The chain can then climb unintended onto the next sprocket.

### Adjusting the rear derailleur:

- Adjust the barrel adjuster, where the gear cable goes into the rear derailleur.
- Check after each adjustment whether the chain moves cleanly up to the next larger sprocket. To do this, either turn the cranks by hand or ride the bike.
- When the chain climbs up easily, you need to check that it still goes down easily onto the smallest sprocket. Several attempts can be needed to get the adjustment right.

**Hint:** If you have problems to adjust the derailleurs, the reason may be wornout or buckled shifter cables. Ask your dealer for new shifter cables.

### End-limit adjusters:

To stop the derailleur or chain hitting the spokes, or to stop the chain falling off the smallest sprocket, the movement of the derailleur must be controlled by the so-called end limit adjustment screws. These will have been pre-adjusted by your dealer. In normal use they won't move, and need no adjustment.

If the bike falls over, there's a danger that the derailleur or its mounting may be bent. After an accident, or if you fit a new rear wheel, the motion limits should be checked.

- Change gear with the twist-grip to the highest gear (smallest sprocket). The gear cable is then fully relaxed, and the chain moves to the smallest sprocket. The Culture is equipped with an 'inverse shifting' rear derailleur, and in this case a slack chain moves the chain to the largest sprocket.
- Look from behind at the sprocket cluster and check that the derailleur's guide roller (upper jockey wheel) lies exactly under the tips of the teeth of this sprocket.
- If this is not the case, you need to adjust its position with one of the end limit screws. On most derailleurs the screws are marked 'H' for 'High gear' and 'L' for 'Low gear' (see picture). The 'high' gear in this case means the highest gear, and hence the smallest sprocket.
- Turn the screw right (clockwise) if the derailleur needs to move inwards (towards the wheel) or in the other direction if it needs to move outwards.

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- Change onto the largest sprocket at the rear wheel. Take care, in case the derailleur goes right into the spokes at this point. Move the chain just onto the largest sprocket, then shift further at the twist-grip. Push the derailleur inwards by hand, moving the wheel gently by hand.
- If the derailleur cage hits the spokes, or if the chain climbs off the sprocket, you need to adjust the limit screws. Adjust the 'L' screw until collisions are reliably avoided.

- Check the position of the derailleur cage. There must be at least one or two chain links between the upper guide roller (jockey wheel) on the derailleur and the largest sprocket.
- To adjust this spacing, the derailleur has a screw which bears against a tab on the back of the derailleur hanger.

**Danger:** Adjusting derailleur gears 'from scratch' is a job for an experienced cycle mechanic. Misadjustment can lead to serious mechanical damage. If you have problems with your gears, ask your dealer to help.

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### Adjusting the front derailleur

Adjusting the front derailleur requires much experience. It must be in a very exact position to guide the chain onto the chainrings without rubbing.

- As with the rear derailleur, the cable can stretch and cause deterioration of shifting performance.
- Adjust the cable with the adjuster where the cable enters the shifter unit. This functions in a similar way to the rear derailleur adjuster.
- Ensure that the front derailleur is exactly parallel to the chainrings and that the gap between changer and the largest chainring is 1-3mm: this guarantees optimum performance.
- You can adjust the overall position of the changer by loosening the clamp screw **A** by 2-4 turns anticlockwise. You can then move the changer for height and angle. Retighten the clamp bolt (clockwise) to 5-7 Nm torque.
- The end limit adjusters are adjusted in the same way as has been described for the rear derailleur.

**Hint:** The cross-head end limit screws are hard to get at on the Culture. Before adjusting them, change into the biggest ring, so that they are more accessible.

**Danger:** The adjustment for the front derailleur is very sensitive. Incorrect adjustment can lead to the chain coming off and the loss of transmission. Danger! Adjustment is a job for the professional cycle mechanic.

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### Hub gears

One advantage of hub gears is that they are enclosed: the mechanism is almost completely hidden away inside. Dirt has little chance of getting at it. The transmission on the Avenue, which is equipped with hub gears, will last considerably longer than a derailleur system – if properly cared for. The disadvantage is the somewhat higher level of power losses within the hub. Hub gears can be combined with derailleur gears and rim brakes or with an integrated back-pedal (coaster) brake.

#### How they work, and how to use them.

A twist-grip controls the gears. The chosen gear is clearly displayed. The Shimano hub gear can be shifted under load. When changing gear on the SRAM or Rohloff hub gear, you should pedal lightly.

**Danger:** Practice changing gear on a traffic-free street. Make yourself familiar with the functioning of the twist-shifters. Getting used to the gears in traffic could distract your attention from possible dangers.

#### Adjustment and checking

The various gears are selected via the gear cable. The adjustment method varies between the different hub models. If you have questions, consult your dealer.

#### Rohloff hub gears

Please refer to the separate Rohloff manual.

#### 3x8 Intego hub gears

Please refer to the separate Shimano manual.

#### Shimano 8 speed gear hub

Adjusting the gears is simple:

- Eventually dismount the rear chain cover.
- Change into fourth gear.

- The two yellow marks should now line up.
- You must adjust the cable to make it so. This is done by turning the adjuster where the cable enters the shifting unit. If you screw the adjuster in, the red mark will move forwards (in the direction of travel). Screw the adjuster out, and it will move backwards.

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### Chain care

Lubricate well, ride well. The amount of lubricant is not critical: more important are how it is applied and the regularity of its use.

- Clean your chain from time to time with a dry cloth to remove any old dirt and oil. There should be no need to use special chain degreasers.
- When the chain is as clean as possible oil it with chain oil, grease or wax. Wax is a particularly clean lubricant, and we recommend it for riese und müller bikes.
- Turn the cranks and dribble or spray onto the chain.
- When you've finished, turn the cranks round several times. After that, let the bike stand for a few minutes, to let the lubricant find its way inside the chain.
- Finally, remove excess lubricant with a rag, so that it doesn't fly off when you ride.

**Hint:** *To protect the environment use only biodegradable lubricants, because with use, some lubricant inevitably finds its way onto the ground, particularly in the wet.*

### Chain wear

The chain is one of the parts of the bike which will wear out, but its life can be extended by the rider. Always make sure that the chain is adequately lubricated, particularly after riding in the rain. Chains on derailleur systems are usually worn out after about 1500 to 3000 km. Very worn chains also shift gear poorly, and wear chainrings and sprockets away very quickly. As replacing these components is relatively expensive compared to a new chain, replace the chain regularly.

Your dealer will have an accurate measurer to check chain wear precisely. Changing the chain should be done by an expert, because most modern chains have no joining link. They are 'endless' and a special tool is needed. You dealer can, if necessary, select and mount a new chain suitable for your gearing system.

**Danger:** *A poorly joined chain can break, and lead to an accident. Let your dealer change the chain.*

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### Wheels and tyres

The wheels of a bike are your points of contact with the ground. They are highly loaded with the weight of the rider, luggage, and by bumps on the road surface. Although the wheels are carefully manufactured and centred before delivery, they will 'settle in' in the first few kilometres of riding. After an initial running-in period of 200 to 400 km (125 to 250 miles) you should get your wheels trued by your dealer. After this running-in period you should regularly check the wheels, though in general re-truing is seldom necessary.

### Wheel structure

The wheels consist of hubs, spokes and rim. The tyre is mounted on the rim, with the inner tube inside it. To protect the delicate inner tube a rim tape is glued over the often-sharp edges of the spoke holes and over the ends of the spokes.

### Tyres, tubes, rim tape, valves and air pressure

Tyres are responsible for traction on the riding surface, vital for braking, accelerating and turning. They should also have low rolling resistance.

Tyres can only function well when inflated to the correct pressure. Puncture resistance is also improved when running at the correct pressure. In particular, rupturing of the inner tube when going over a sharp edge (so-called 'snake-bike' punctures) are caused by too little pressure.

The pressure recommended by the manufacturer is marked on the side of the tyre.

**Tip:** *Because riese und müller bikes are fully suspended, you can always ride with maximum tyre pressures. This gives the best and safest roadholding, low rolling resistance, and avoids wasting effort, and so gives maximum comfort.*

**Danger:** Never pump your tyres up above the maximum recommended pressure! The tyre could blow away from the rim as you ride, or explode. Accident danger!

**Danger:** Always ride with the recommended tyre pressure, and check it at regular intervals.

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### Tube and valve

The tyres and rim alone are not airtight. To retain the internal pressure the inner tube is placed inside the tyre. It is filled through a Presta valve (also known as a 'racing' or 'French-type valve'). With Presta valves you must undo the small, knurled nut on the end before you pump, and press it down briefly until some air escapes.

If the valve body of the Presta valve isn't properly screwed down, this can lead to air loss. Check the location of the valve body in the valve shaft. 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.

Check that the valve is an appropriate diameter for the hole in the rim, and that it always stands up straight!

### Checking the tyres

Tyres with the tread worn away, or with damaged side-walls, should be replaced. The interior of the tyre can be damaged should moisture or dirt get in. Defective rim tape should be replaced immediately. Damage to tyres can in extreme cases lead to sudden blow-outs, which could cause serious accidents!

### Tyres at the Delite grey

Please note that the Delite grey rim manufacturer has an air pressure limit depending on the tyre size:

| Tyre size (Inch)   | 1.5 | 1.75 | 2.0 | 2.2 |
|--------------------|-----|------|-----|-----|
| Air pressure (Bar) | 6   | 5.2  | 4.3 | 3.7 |
| Air pressure (PSI) | 88  | 76   | 63  | 55  |

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### Rim truing, spoke tension.

The spokes keep the hub in the centre of the rim. Even spoke tension is necessary for the true running of the wheel. If the tension of one spoke changes, for example after hitting a step at speed, or because of spoke breakage, the tension forces go out of balance and the rim will no longer run true.

Even before you notice this imbalance through wobbling, the functioning of your bike will already be impaired. The side-walls of the rims are usually contacted by the brake blocks simultaneously. If the wheel is no longer running true, braking performance can be affected.

**Danger:** Do not ride with wheels which are not true (round). With extreme side-wobble the brake pads could leave the rim braking surface and get caught in the spokes! This generally leads to instant lock-up of the wheels, and severe danger of a nasty crash!

Check the roundness of your wheels from time to time. Lift the wheel off the ground and give it a spin by hand. Watch the gap between brake blocks and rim. If this gap varies by more than a millimetre, the wheel should be re-trued by an expert.

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

## Securing the wheels

Wheels are fixed to the frame via the hub axles. The axle will either be fitted with six-sided axle nuts, or will have a quick-release to secure it in the 'drop-outs'.

**Danger:** Never ride a bike if you haven't first checked that the wheels are secure. If a wheel comes loose as you are riding, you'll have a nasty crash!

Despite the simple method of operation of quick-releases, accidents still happen because they are not used correctly. The correct procedure is described on page 39.

### How do I use a quick-release?

A quick-release consists of two basic parts:

- The lever **A** on one side of the hub – this provides the clamping force.
- The adjusting nut **B** on the other side: by adjusting this on the screw thread, the clamping tension can be adjusted.
- Open the quick-release. The inscription 'Open' should be visible on the lever.
- To close the quick-release, move the lever so that the word 'Close' is visible on the outward side of the lever. At the start of the lever's motion, for, say, half of its movement, the lever should move very easily, without any clamping action.
- In the second half of the lever's movement, the force on the lever should rise considerably. At the end, it should be hard to move. Use the ball of your hand. In its final position the lever should lie parallel with the bike, and should not stick out to one side.
- Check the security of the lever by attempting to twist the lever. Press on the end of the lever from above.
- If the lever can be made to pivot around in a circle, you can't guarantee that the wheels are secure. You must re-open the quick-release and increase the clamping tension. Do this by screwing the adjusting nut on the other end of the quick-release half a turn clockwise.
- Repeat the closing procedure and check that the lever is secure. If the lever can't be rotated, it's clamping properly.
- Finally, check that the part being secured is firmly fixed: Lift each wheel an inch or so off the ground, and give it a slap onto the tyre from above. A properly fixed wheel will remain secure in the frame's axle slots.

**Tip:** Components secured by quick-release are more susceptible to theft. Secure your wheels with an extra lock, if you're leaving your riese und müller bike unattended.

### Axle nuts

Please take care of the correct tightening torque, see page 65.

## Fixing a puncture

A puncture is a pain for any rider. But the dreaded hiss need not mean the end of a day's cycling, so long as you carry with you the tools needed to replace tyre and inner tube:

- a pump
- a spare tube or puncture-kit
- two tyre levers
- 15mm spanner for axle nuts
- for bikes with back-pedal brake or enclosed drive: 5mm allen key and 10mm spanner
- Latex-gloves to keep the hands clean

### Preparing the wheel removal

Some actions depending on the riese und müller model are necessary before removing the wheel.

#### Dynamo hub

Unplug the light cable.

#### Unhook the V-brake cable

With V-brakes, you must first unhook the cable. To do this, put one hand on the cable hanger **A** and unhook the 'noodle' **B** with the other. If the brake cable is adjusted to strong, you can turn in the cable adjuster at the brake lever.

#### Unhook the Roller-brake

You must unhook the brake cable. Please refer to the separate Shimano manual.

#### Disc brake at Delite grey

Please refer to the separate disc brake manual.

#### Magura brake at Culture red

Please refer to the separate Magura manual. First you must release the air from the rear tube.

### **Rohloff hub**

Please refer to the separate Rohloff manual.

### **Derailleur gears**

On rear wheels with derailleur gearing, you should change gear to the smallest sprocket. This moves the derailleur outwards, where it won't get in the way.

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### **Hub gear at Delite silver**

First you must release the air from the rear tube.

### **Hub gear with back-pedal brake**

The hub gear is attached to the frame with anchor **A**, which transmits drive and braking loads to the frame. Uncouple this with bolt **B**.

### **3x8 Intego hub gears**

The gear-change mechanism for the hub gear must also be uncoupled. Loosen the bolt **C** for several turns. Take care not to lose the internal push rod.

### **Removing rear wheels with Quick-release**

Open the quickrelease lever as described at *page 37*.

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 the rear wheel at Delite silver 8-speed**

Loosen the axle nuts. Remove axle nuts and Anti-turning nuts.

Pull the chain tensioner back and remove the wheel.

**Attention:** *There are two washers at the axle which belong under the drop outs.*

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### **Removing the wheel at enclosed drives**

**Hint:** *Memorize the position of the small parts. This will make the assembly easier.*

- Loosen the right axle nut **A** and remove the chain tensioner **B** and the anti-turning nut **C**.
- Remove the bolts **D** or **E** and remove the rear chain cover.
- Remove the left axle nut, the chain tensioner and the anti-turning nut.
- Take care that the Shimano gear adapter is pointing upwards (see arrow) and move the rear wheel to the front.
- At Rohloff hubs you have to disconnect the shifter cables.
- Take the wheel out.
- Remove the Shimano gear adapter.

**Hint:** *Removing the wheel is easier using a bike workstand.*

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### **Removing the tyre**

- Unscrew the valve cap and retaining nut from the valve stem and let all the air out.
- Press the tyre from the edges of the rim towards the middle, around the whole tyre. This makes removal easier.
- Put the tyre levers to the left and right of the valve, and hook them under the bead of the tyre. Lift the edge of the tyre over the rim edge. Hold the levers in this position.
- Push the second lever about 10 cm from the first and again lift the tyre bead over the rim.

- After part of the tyre bead is over the rim, the rest of the bead can usually be lifted off just by pushing the tyre lever around the rim.
- Now you can remove the inner tube. Take care that the valve doesn't get caught in the rim, and that the inner tube isn't damaged.

**Hint:** *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 clean puddle may be of some help. Once you've found the hole, check at that point on the tyre and examine it closely for whatever caused the puncture. Remove this if necessary.*

### Repairing the punctured tube

- Repair the punctured inner tube, following the instructions from your puncture repair kit.
- If you have removed the tyre, you should check the rim tape. The tape should be seated evenly, and should not be damaged or torn, and must cover all the spoke holes. If you are in any doubt, consult your dealer.

### Fitting the tyre

When you re-fit the tyre, be careful that no foreign bodies like sand or mud get into the inside, and that you do not damage the inner tube.

- Put the rim over one tyre bead. Push this bead completely into the rim using your thumbs. This process should be possible without tools for any tyre. Then put the valve through the hole in the rim.
- Pump up the inner tube slightly, so that it goes into shape, and place it completely inside the tyre. Check that it's not folded or creased anywhere.
- Start pushing the final tyre bead onto the rim, starting opposite the valve. Push the bead over the rim with your thumbs as far as you can.

Check that the inner tube isn't caught between tyre and rim, where it could get pinched. Push the inner tube back to the centre of the tyre with your index finger.

- Work evenly around both sides, moving towards the valve. At the end you should pull the tyre forcefully downwards, so that the part you've already mounted can move into the deeper centre of the rim. This makes getting the last few centimetres noticeably easier.
- Check the position of the inner tube again, and push the tyre over the rim with the ball of your hand.
- If this doesn't work, you will need to use a tyre lever. Be careful that the blunt edge is towards the inner tube, and that the inner tube is not damaged.
- Push the valve inwards, so that the inner tube does not get pinched under the tyre bead.
- Is the valve straight? If not, you need to take off one side of the tyre and re-arrange the inner tube. If you want to be totally sure that the inner tube isn't getting caught under the bead, you should half-pump up the tyre and push it back and forth around the whole rim. This also lets you check that the rim tape hasn't moved.
- Pump the tube up to the desired pressure. The maximum allowable pressure is printed on the side of the tyre.
- Check that the tyre is properly seated using the mounting line on the tyre side-wall. It is important that the line is a constant distance from the top of the rim the whole way round the tyre.

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### Mounting the wheels

This chapter describes how to mount the rear wheel at all riese und müller bikes. Please read the complete chapter. But not all steps are relevant for every bike. Principally mounting the wheels follows the reverse procedure to their removal.

### Mount the Shimano gear adapter

The gear adapter must be mounted at Shimano 8-speed gear hubs. Turn the lock ring clockwise. Take care of the position of the colored dots and that you have chosen first gear at the shifter.

### Releasing the air

At Culture red and Delite silver with gear hub you must release the air from the tube.

### Place the chain on the sproket and insert the wheel

- At bikes with derailleur push the derailleur back and place the chain at the smallest sproket.
- Insert the wheel into the drop outs.
- Take care that the gear adapter point upwards between the chainstays (see arrow).
- Assemble washers, chain tensioners, axle nuts and back-pedal brake anchor..

**Attention:** Take care of correct assembly order and position of small parts. Incorrect assembly can lead to poor functioning or failure of the brakes.

#### Wheel position, Chain tension

- Ensure that the wheels fit perfectly into the dropouts, and run centrally in the front forks or rear swing-arm. Check the chain tension, more on *page 46*.
- Ensure that the chain lays correct at the front chainwheel, read more on *page 46*.

#### Tightening the bolts

- Tighten the axle nuts or the quick-release correctly (torques see *page 64-65*).
- Tighten the anchor of back-pedal or roller-brake. (torque 4-6Nm).
- Check the correct position of the chain tensioner at Deliter silver 8-speed. Check correct position of washers under the drop outs.

#### Testing the brakes

- Re-hook the brake cables.
- Check the position of the brake pads (especially after adjusting the chain tension).
- All braking surfaces must be clean and free from grease.

#### Mount the rear chain cover

Necessary at bikes with enclosed drive.

#### Rohloff hub

Attach the shifter cables.

**Danger:** Incorrect assembly can lead to poor functioning or failure of the brakes. You absolutely must test your brakes! Errors in mounting wheels can lead to loss of control, and could lead to serious accidents.

### Enclosed drive

Some riese und müller bikes are equipped with an enclosed drive. The chain runs inside of the chainstays. This keeps the chain cleaner and increases their durability.

#### Front chaincover

The front chaincover has to be removed for disassembly of chain, BB or chainwheel.

- Undo the three bolts and remove the chaincover.
- The backplate of the chaincover is fixed by the BB. After every disassembly of the BB the backplate has to be re-adjusted.
- Slightly tighten the BB. Adjust the backplate until there are equal gaps to upper and lower chainstay. Place the chaincover on the backplate. If the holes fit together, the position is correct.
- Hold the backplate while tightening the BB.
- After completing assembly you have to check for unusual noise while turning the chainwheel.

**Hint:** The chainline has to be constant after replacing BB or chainwheel to prevent that the chain will touch the chainstays. Use identic spare parts or spare parts with same chainline.

#### Checking the chain tension

Always take care of correct adjusted chain tension. If the chain is too loose it may rattle against the inside of the chainstays and cause noise.

- Test the chain tension by pressing a finger on the chain at the accessible area at the rear chaincover. You should be able to move the chain a few millimeter.
- If you can move the chain more or if the chain is touching the chainstay, the tension is too loose and has to be tightened.
- Lift the rear wheel and turn the chainwheel.
- If it is hard to turn the chainwheel or if you feel an unregular resistance, the chain tension is too high.

### Adjusting the chain tension

- Open the axle nuts for some turns.
- Open the anchor of the back-pedal or roller-brake.
- Turn both nuts **C** of the chain tensioners **B** equally. Turning clockwise increases the chain tension, turning counter-clockwise decreases it.
- Check the chain tension again.
- Tighten all bolts again.

### Checking brake and gears

- The rear wheel position is affected by the modification of the chain tension. So please always check that the brake pads hit the rim exactly. Read more on *page 24*.

**Danger:** *Incorrect assembly can lead to poor functioning or failure of the brakes. You absolutely must test your brakes! Errors in mounting wheels can lead to loss of control, and could lead to serious accidents.*

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## Steering bearings or headset

The fork, stem, handlebar and front wheel are fixed to the frame by the steering bearings, also known as the headset. This bearing must be able to turn easily. It can come loose and go out of adjustment thanks to road shocks and bumps.

**Danger:** *If you ride with a loose headset, extremely high loads are imposed on fork and bearings. Damage to the bearings or even a fork breakage could be the result, with possibly serious consequences.*

### Checking and adjustment

- Check for play by putting your fingers around the upper bearing shell.
- Hold the front brake with your other hand, and push the bike firmly forwards and backwards.
- If the bearing has play, you will feel noticeable movement between upper and lower parts.
- To check that the bearing is turning easily, lift the frame up with one hand, so that the front wheel loses contact with the ground. Move the handlebar from left to right. The front wheel should move easily from far left to far right, without 'indexing'. If the handlebar is lightly touched, the wheel should move as if of its own accord from the straight-ahead position.

**Caution:** *Adjusting the headset bearings requires a degree of experience, so this work should be left to your dealer.*

### Adjustment of the classic headset

To adjust the classic-type headsets you need two flat 36mm headset spanners.

- Hold the front wheel firmly between your legs, put the two spanners in place, and loosen the upper locknut.
- Turn the lower bearing housing in until the 'bearing play' is taken up. On no account tighten it up firmly! You can destroy the bearings like this!
- Hold the bearing housing firm with the lower spanner, so that the adjustment is held. Tighten the locknut against it with the upper spanner.
- Carry out the check for play again. If the fork doesn't now turn easily and smoothly, you've tightened it too far.

Re-adjust the play. Adjustment can take several attempts. It is important that the bearings turn play-free and easily, as only thus will they have a long working life.

## Lighting

In many countries an effective lighting system is a legal requirement for using a bicycle on public roads. In other countries, lights are only required in poor light or at night. See *page 7* for more details. The following section considers dynamo lighting in particular (dynamos are legally required in Germany).

You should know how your lights work, so that if something does go wrong, you have a good chance of fixing it yourself. Difficulties most often arise if you ride a lot in the rain, or in winter.

The dynamo's roller wheel can slip against the tyre, and the light then dims or goes out completely. The Culture silver and Avenue silver use hub dynamos, which are unaffected by the weather. A further advantage is that these types have a higher efficiency – in other words, the effort necessary to produce a certain electrical power is less than with normal bottle dynamos.

Assembly should be carried out only by your dealer. If you want to equip your riese und müller bike with a lighting system, consult your dealer.

The dynamo generates the current needed to power the lamps. Two wires go from the dynamo to front light and rear light.

### Using the dynamo lighting set (hub dynamos)

Many riese und müller bikes are equipped with a hub dynamo and a lamp with a light sensor. This switches the dynamo on automatically at dusk. (switch setting 'S'). You can also operate the dynamo manually (switch setting '1' or middle setting (off)). The switch for this is on the top of the headlamp unit.

Check that your lighting system works each time you ride your bike. It would be dangerous to find yourself suddenly without lights at night. Should either front or rear light not work, this will lead in a short time to the other still-working light burning out. Also check for loose cables and intermittent contacts.

**Danger:** *Never use your bike if the lights aren't working! You will be very easily overlooked by other road users. You could also end up not seeing road hazards. Serious accidents could result! non-functioning or incomplete lighting system is not only often illegal, it also puts your life at risk. Unlit cyclists are easily overseen at night, and risk serious accidents!*

### Troubleshooting

- First, check the bulb in the front light. The bulb element must be intact. Blackened glass indicates a burned-out bulb.
- Check the bulb contacts, and the connections to the lamp. Are these shiny, or greenish and corroded? If necessary remove the corrosion with a penknife, screwdriver, sandpaper or steel wool, until the contact surfaces are white and shiny.
- Follow the wire and check that it isn't damaged. Check all contact points. Push-on connectors often get corroded by salt and rain. Pull such connections apart then fit them together again.
- If you still have no success, use a 4.5V flat battery to put current into the circuit. If the lamps light up, then the dynamo is probably defective. If the lamps don't light up, then you should move the battery step by step nearer the lamps and check when the current starts to flow.

### Adjusting the front light

German regulations specify that the centre of the area illuminated by the front light should hit the road at most 10 m from the bike. To adjust this, loosen the mounting bolt and tilt the lamp unit as required. Re-tighten the mounting bolt.

### Mounting a basket

At Culture bikes the front light is mounted at the top of the front fork. If you want to mount a basket, the light has to move up to the handlebar. This is not necessary for Avenue.

**Hint:** *You will find more about lighting on page 7*

## Integrated carrier

Avenue and Culture are equipped with an integrated carrier. This allows an easy mounting of basket or children's seat. You only need special bolts and a special plate which are available at your riese und müller dealer.

### **Mount basket or children's seat**

- Hang the carrier expander as shown in the picture.
- Open the fixation rod.
- Hook in the basket at the rear end.
- Stick both bolts into the carriers holes.
- Close the fixation rod again.

**Hint:** We recommend to close the fixation rod even if you do not use a basket or children's seat to prevent rattling noise.

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### *Carrying loads or children*

Before you ride with loaded basket or children's seat please check the following items:

- Is the basket or children's seat fixed correctly?
- Is the child belted or the load secured against falling down.
- Is the max. load not exceeded?
- Does the child wear a helmet?
- Is everything secured in a way that nothing can get inbetween the spokes?
- Is the tyre pressure high enough?

**Danger:** Do not ride the bike if your bike fails any of these checks! Basket or children's seat can get lost and cause accidents!

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### *Kickstand "Pletscher comp"*

Many riese und müller bikes are equipped with this kickstand. Please check regular if the bolts are tightened.

**Attention:** A loose bolt may damage the kickstand mount at the frame.

### *Mounting accessories*

If you buy additional bells or horns, or lighting accessories, you must carefully check that these accessories are legal for street use in your country. Additional battery or rechargeable lighting systems must conform to the relevant standards (see page 7).

Mirrors can improve your view to the rear. When you buy one, make sure the mounting is solid and vibration-free.

**Danger:** Accessories fitted after sale can affect the functioning of your bike. You could even lose control of the bike when riding. Always consult your dealer before you add any accessories to your bike. Your dealer will have available many accessories developed specifically for riese und müller bikes. You will find plenty of information about this in this handbook. In particular, stem and handlebar should always be changed in a specialist workshop.

### **Avenue/Culture accessories**

#### **U-lock bracket for carrier**

The U-lock can be placed easily below the carrier. It is easy to reach and allows the use of panier bags, children's seat and so on.

#### **Panier adapter**

Permits the use of modern side-hanging panniers.

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### **Adapter plate for children's seat**

Allows to mount the children's seat directly on the integrated carrier.

### **Basket and adapter plate for basket**

The basket is especially engineered for Avenue and Culture. To mount other baskets a special adapter plate is available.

### **KLICKfix front basket adapter**

Attaches a basket to the steerer tube in seconds.

### **Delite/Homage accessories**

#### **Luggage carrier**

The Delite can be equipped with an optically-integrated frame-mounted luggage rack, which can carry up to 18kg. The load gets the full benefit of the suspension. It weighs 850g (including reflector, luggage elastic and mounting bolts).

#### **Lowrider (Delite and Culture)**

The lowrider is fixed to the fork crown and supported by the headset. It allows you to put a proportion of your luggage on the front of the bike and so to distribute the load optimally.

The lowrider doesn't fit other riese und müller models and is currently only approved for use on the RST suspension fork used on the Delite black/silver, Culture red and Homage. There is no approval for other models.

#### **U-lock**

This ABUS U-lock fits in the Delite frame and helps protect your Delite from theft.

## PAGE 55

### **Hub-Dynamo kit**

With the dynamo kit a Delite/Homage can keep active even at night, and it ensures your clear vision at dusk or at night. It's only possible to mount the kit at the Delite along with the optional rear carrier.

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### *Transporting your riese und müller bike*

If you're travelling with your riese und müller bike, always take a lock with you. Whether by train, in or on a car, always lock the bike. Even if it's in the back of a large car or mobile home, the bike should always be anchored to the body of the vehicle with a strong steel cable (for example through the seat mounting of the car). Most lock manufacturers offer such 'extensions'. Thefts from trains or from cars are no rarity, unfortunately.

#### **Transport by air**

The same goes for airline travel. Cycle carriage is possible on most lines provided it is arranged in advance, the bike is properly packed, and a fee is paid. Ask your travel agent to check the details for your particular flight. You should do the packing carefully: get a bike box from a bike shop, remove seatpost, stem, the wheels and pedals. Unscrew the rear derailleur, and strap it inside the rear triangle. Wedge a block of wood between the dropouts, so that they can't get bent. Wrap this and the rest of the frame with bubble-wrap and pipe lagging and tie all small parts together with cable ties (zip ties), and fix this inside the box.

#### **Transport by train**

German railways and many other railways internationally have in recent years extended their facilities for cycle transport. So in many trains, riese und müller bikes travel with no problems. Investigate the situation beforehand and if necessary, book. Cycle compartments are often full, particularly in summer. Remove all luggage and accessories (e.g. computer, waterbottles) to protect them from damage or theft, and to make carrying the bike easier.

#### **Transport on car roof-rack**

All full-suspension bikes from riese und müller can be easily transported on the car's roof using carriers made by 'd.frey' in Germany. The system makes it particularly easy to mount the bikes.

Model 10510/2 and 10520/2 (lockable) allow the fixing of bikes with seat tube diameters of 28-40mm. Naturally, other manufacturers also make carriers which will fit riese und müller bikes. If you are interested in another carrier, ask your

dealer to let you test mounting the bike, to make sure it works. Check that the clamp which holds the large tube closes safely and securely.

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**Attention:** *Some clamps could deform the frames tubes. In any case of doubt please ask your dealer.*

**Hint:** *Sometimes, to fix the Culture securely it is necessary to push the seatpost right down, to allow the clamp to be fixed to the seatpost below the seat tube. For this, make yourself familiar with the operation of the seatpost clamp bolt.*

We would also advise you to watch out for the effect of the bikes on the handling of the car, and to adapt your driving style accordingly.

### Transport in a car

Whether you can transport your bike inside your car depends on the size of the car. Despite their full suspension, riese und müller bikes are no bigger than normal bikes. If it's tight, you can remove stem, saddle, pedals and wheels. If you do this, your bike will fit in most cars. Try disassembling and packing your bike before a big trip, and make yourself familiar with the reassembly process.

### Transport on the back of a car

The choice of a rear carrier will principally be guided by your type of car. We can't really offer much guidance here, and suggest you contact your car manufacturer for advice.

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### General care and inspection tips

The bicycle you now own is a high-quality product. When you collect your bike from your dealer, he will have assembled it ready to ride. Nevertheless, like any other vehicle, your bike needs regular care and must be serviced at intervals by your dealer. Only in this way can the reliable and safe functioning of all parts be guaranteed, so that you will be able to cycle safely and enjoyably for many years.

**Caution:** *Only attempt maintenance work for which you have the necessary expertise and the correct tools.*

### Washing and care

Dried sweat, mud and road salt from winter riding, or sea air, can all attack your bike. You should carry out regular cleaning and corrosion protection of all parts of your bike.

Easiest is to blow away all dirt and deposits with a steam cleaner. This express cleaning method has serious drawbacks: the very strong, high-pressure water jet can push past bearing seals and reach the inside of bearings, where it can displace lubricant and increase friction. In the longer term, the bearing surfaces can be destroyed and the bearing will refuse to turn smoothly. Steam cleaners also often loosen frame stickers.

**Caution:** Do not clean your bike with a very strong water jet or with a steam cleaner.

Far more appropriate is to wash the bike with a gentle flow of water, or from a bucket, using a damp cloth or a large paintbrush – for example a wallpaper brush. Hand-washing has another beneficial side-effect: you can detect early signs of damaged paint-work, worn-out components, loose bolts, slack spokes or other problems. As you carry out this regular cleaning you should check tyre pressure, functioning of brakes and lights, and generally check the bike for damage or problems.

**Caution:** As you clean, check for cracks, scratches, any deformed material or discoloration. If in any doubt contact your dealer. Replace any damaged parts immediately, and touch up any damaged paintwork.

### Care of surfaces

When the bike has dried, you should treat the paintwork and metal surfaces with wax polish. Also protect spokes, hubs, nuts and bolts etc with a wax film. Polish the waxed surfaces with a soft cloth, so that they shine, and water will bead and run off.

**Hint:** 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.

**Hint:** Some care products may detach the frame decals.

### Care of the anodised finish

A special anodised finish protects the aluminium parts of your Riese und müller bike. This is a protective film which is part of the material itself, and which is created using an electro-chemical process. This film is particularly hard, and so is scratch-resistant. Despite this, the anodised finish also requires care.

Clean using just water, with, if necessary, a little washing-up liquid to shift grease. After drying, treat the surfaces with anodised aluminium polish, which your dealer can supply. Distribute the polish evenly over the surface using a clean cloth – this lets you remove paint, tar or oil traces.

Finally, rub the parts with a clean, soft cloth, so that excess polish is removed and does not attract dust.

**Hint:** After cleaning is completed you should if necessary lubricate your chain (see page 34-35).

**Danger:** Make sure that you get no cleaning polish and no chain oil on the brake blocks or rim braking surface! Brake failure can lead to serious accidents!

### Storage

If you use your bike regularly, you need take no particular precautions, except against theft, when storing it for short periods. We recommend that the bike be stored in a dry, well-ventilated room.

Should you wish to store the bike for the winter, please note:

During long periods of storage the inner-tubes lose pressure. If the bike stands for long periods on flat tyres, the tyre carcass can be damaged. So it's best to hang the bike up, or regularly check tyre pressure.

- Clean the bike and protect against corrosion, as described above.
- Store the bike in a dry room.
- Change gear onto the smallest sprocket. This ensures that cables and springs are under the least possible tension. With the Avenue, change to first gear. On the Culture silver, use the left-hand shift unit to change the hub to third gear.

**Hint:** Often, cycle dealers have very short waiting times in the winter, and many have special offers for servicing. Use this slack period to take your bike for inspection!

Regular check-ups on your bicycle guarantee reliable functioning and riding pleasure. As with a car, annual inspections mean that you can often avoid expensive remedial work. Adjustment of bearings and timely replacement of worn parts can avoid serious damage to your machine, so after the run-in phase, you should have your bike serviced at regular intervals. The service intervals recommended in the appendix (page 62) are for cyclists who cover between 1000 and 2000 km per year. If you regularly cover greater distances, or often ride on bad roads or off-road, shorten the service intervals to reflect the harder use. This also applies if you ride often in the rain or in a damp climate.

**Caution:** For your own safety, take your bike to your dealer for its first inspection after 200 to 400 km (125 to 250 miles), or after 4 to 8 weeks, or at the latest after three months.

## *Guarantee*

Your cycle dealer is obliged by law to ensure, amongst other things, that your bike is not affected by defects, which materially diminish its value or fitness for purpose. The exact details will vary according to country. In Germany, this guarantee ends 24 months after purchase. We offer a guarantee, in addition to your statutory rights 25 years on Riese und Müller bike mainframes and rear swingarms. This additional guarantee is only applicable when the accompanying Bicycle Passport is filled out completely, including inspection reports from your dealer, and in cases of guarantee claims this must be sent, together with a copy of the receipt, to Riese und Müller. The guarantee only applies to the original purchaser who registered by sending the register card within four weeks after purchase to the following address:

Riese und Müller GmbH  
Haasstr. 6  
64293 Darmstadt, Germany.

Damage through wear and tear, neglect (inadequate care and maintenance), crashes, overloading through excess weight, incorrect assembly, or modifications to the bike (additional or changed components) is excluded. Competitive use, jumping or similar overloading is also not covered by guarantee.

In the interest of long life and component reliability, the manufacturer's assembly instructions (including torque settings for bolts) and the correct service intervals must be precisely observed. The guarantee is void if assembly instructions or service intervals are neglected. Carry out the checks indicated in this handbook, and replace any safety-critical parts when necessary, for example handlebar, brakes etc.

## *Information about wearout*

Some components of your bicycle have a wearout which is caused by their function principle. The wearout depends on the maintenance and kind of use (riding performance, riding in rain, dirt, salt, etc.). Bicycles which are parked mainly outside have a higher wearout too.

All these components need a regular maintenance, but sooner or later they have to be replaced. Such components are:

- Chain
- brake cables
- handlebar grips
- chainwheels and sprockets
- shifter cables
- tyres
- saddle
- brake pads
- rims
- light bulbs

The brake pads of rim- and discbrakes are subject to wearout. Sporty use or many rides in hilly areas may need a shorter replacement period. Check the brake pads regularly and ask your dealer to replace them if necessary.

At rim brakes also the rim is subject to wearout. So please do a regular check of the rims. The rims have a circular groove as wear indicator. When the wear indicator disappears, it is time to replace the rim. The rim has to be replaced too, if there are deformations or small cracks at the rims after inflating the tyre.

The suspension bearings and sealings are always moving if the suspension works. These components are subject to wearout, even if you maintain and clean them regularly. They have to be replaced if bearing play occurs.

Contact person for complaints and service is your Riese und Müller dealer only. We will tell you the nearest dealer. Before starting any service actions please always contact your dealer. This will ensure the fastest and cheapest procedure for you. Please note the following hints if your bike has to be maintained at your dealer or at Riese und Müller:

Service and maintenance only will be done at adequately cleaned bikes. Please dismount all individual accessory parts before shipment. Service actions are calculated for serial bikes and do not cover all individual customizing. Maintenance will not be done. All payments and shipments are processed through your dealer. Be sure that you or your dealer stamped the shipment correctly.

It is necessary to obey all assembly instructions (e. g. tightening torques of bolts) and maintenance intervals to reach a long durability.

The warranty is void if you do not obey these items. Please note the necessary replacement of safety relevant parts as handlebar, brake, etc..

**Caution:** Your authorised dealer must make your bike rideable, so that safe functioning is guaranteed. The dealer must do a final safety check and carry out a test ride.

PAGE 64-65

## Tightening torques

| Part                          | Threaded component                                  | Tightening torque |
|-------------------------------|---|-------------------|
| Back-pedal reaction arm       | Fixing bolt   | 4-6 Nm            |
| Brake lever                   | Fixing bolt   | 5-6 Nm            |
| Dynamo                        | Fixing bolt   | 8-10 Nm           |
| Spring element                | Fixing bolts  | 7-9 Nm            |
| Freehub body                  | Cassette lockring                                   | 29-49 Nm          |
| Sealed-bearing bottom bracket | Housing   | 49-69 Nm          |
| Carrier Delite black/grey     | Fixing bolt   | 8-10 Nm           |
| Rear swing-arm pivots         | Clamp bolts   | 5 Nm              |
| Hydraulic brakes              | Fixing bolts  | *                 |
|                               | Bolts of hydraulic hoses                            | *                 |
| Crankset                      | Crank bolt  | 35 Nm             |
|                               | Chainring bolt                                      | 8-11 Nm           |
| Bar ends (Delite black/grey)  | Clamp bolts   | 8-10 Nm           |
| Hub                           | Quick-release operating lever                       | 9-12 Nm           |
|                               | Locknut for bearing adjustment (quick-release hubs) | 10-25 Nm          |
|                               | Axle nut for Shimano hub gears                      | 30-45 Nm          |
|                               | Axle nuts for Rohloff hub gears                     | 30-35 Nm          |
| Pedal                         | Axle  | 15 Nm             |
| Pletscher kickstand           | Fixing bolts  | 6-8 Nm            |
| Rohloff gears                 |   | *                 |
| Toplight (rear light)         | Fixing bolts  | 3-4 Nm            |
| Seatpost                      | Saddle rail clamp bolts (1 or 2)                    | 12-15/9-12 Nm     |
|                               | Seat tube clamp bolt                                | 9-12 Nm           |
| Gear shifters                 | Shimano shifters                                    | 4-6 Nm            |
|                               | Twist-grips   | 1-2 Nm            |
| Rear derailleur               | Mounting bolt                                       | 8-10 Nm           |
|                               | Cable clamp bolt                                    | 4-6 Nm            |
|                               | Jockey wheel bolts                                  | 3-4 Nm            |
| Mudguards                     | Front and rear fixing bolts                         | 3-4 Nm            |
| Front derailleur              | Fixing bolt   | 5-7 Nm            |
|                               | Cable clamp bolt                                    | 4-6 Nm            |
| V-brakes                      | Brake socket bolts                                  | 5-9 Nm            |
|                               | Cable clamp nut                                     | 6-8 Nm            |
|                               | Brake shoe fastening bolt                           | 8-9 Nm            |
| Stem                          | wedge-bolt stems                                    |                   |
|                               | • handlebar clamp                                   | 10 Nm             |
|                               | • angle adjustment                                  | 15 Nm             |
|                               | • wedge bolt  | 20 Nm             |
|                               | A-Headset stems                                     |                   |
|                               | • handlebar clamp                                   | 5.5 Nm            |
|                               | • angle adjustment                                  | 5.5 Nm            |
| • steerer clamp               | 10 Nm   |                   |

\* please refer to separate manual of the component manufacturer

## Service and maintenance intervals

| Part                   | Job   | Before every ride | Monthly | Annually | Other interval                                       |
|------------------------|---|-------------------|---------|----------|--|
| Lighting               | Check   | ●                 |         |          |  |
| Tyres                  | Check pressure  | ●                 |         |          |  |
| Tyres                  | Check tread and side walls  |                   | ●       |          |  |
| Brakes                 | Check brake lever movement, block wear, and position on the rims. Do stationary brake test. | ●                 |         |          |  |
| Brake cables           | Visual inspection   |                   | ●       |          |  |
| Hydraulic hoses        | Visual inspection   | ●                 |         |          |  |
| Dynamo mounting        | Check   |                   | ●       |          |  |
| Spring element         | Maintenance (p. 17)   |                   |         |          | ● Every 5000km                                       |
| Front fork             | Check for play  |                   |         | ■        |  |
| Rims (aluminium)       | Check wall thickness, change if necessary.  |                   |         |          | ■ At the latest after the second set of brake blocks |
| Rear swing-arm         | Check function and for play   |                   |         | ■        |  |
| Bottom bracket bearing | Check for play  |                   |         | ■        |  |
| Chain                  | Check, lubricate if necessary   |                   | ●       |          |  |
| Chain                  | Check, change if necessary  |                   |         |          | ■ After 1500 km                                      |
| Cranks                 | Check, re-tighten if necessary  |                   |         | ■        |  |
| Paintwork              | Wax   |                   |         | ●        |  |
| Wheels/spokes          | Check trueness and spoke tension  |                   | ●       |          |  |
| Handlebar, aluminium   | Check, replace if necessary   |                   |         |          | ■ At least every two years                           |
| Headset bearings       | Check for play  |                   | ●       |          |  |
| Headset bearings       | Re-grease   |                   |         | ■        |  |
| Metallic surfaces      | Wax   |                   |         | ●        |  |
| Hubs                   | Check for play in bearings  |                   |         | ■        |  |
| Pedals                 | Check for play in bearings  |                   |         | ■        |  |
| Seatpost, seat tube    | Clean and re-grease   |                   |         | ●        |  |
| Rear derailleur        | Clean, lubricate  |                   | ●       |          |  |
| Quick-releases         | Check   | ●                 |         |          |  |
| Nuts and bolts         | Check, re-tighten if necessary  |                   | ●       |          |  |
| Valves                 | Check   | ●                 |         |          |  |
| Stem                   | Check   |                   |         | ■        |  |
| Brake and gear cables  | Disassemble, re-grease or replace   |                   |         | ■        |  |

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.

## Which documents are important?

In the appendix of this handbook you will find:

- A list of recommended tightening torques for all important parts of your bike is on *page 64-65*. The cycle workshop which carries out repairs and inspection will need this.
- A service and maintenance interval planner on *page 62*.

- The riese und müller Bicycle Passport, in which service inspections carried out by your dealer will be recorded. The extra guarantees provided by riese und müller over and above your statutory rights are only valid when claims are accompanied by a completely filled-out Bicycle Passport, together with a copy of your purchase receipt. The appropriate service inspections must have been carried out by your dealer and recorded in the Bicycle Passport (*page 64*).
- The riese und müller dealer maintenance record. This document is intended for the dealer's records.

We wish you and your riese und müller bike a very pleasant ride. If you do have any further questions, your dealer will be delighted to help. If you do have any problems which your dealer can't help you with, please feel free to call us at any time.

Your riese und müller team

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### *riese und müller Bicycle Passport*

(This Bicycle Passport is intended for the customer)

Model:

Avenue  Culture  Delite  Homage

Colour:

black  silver  red  yellow  blue  grey  white

Gears:

8  14  18  24  27  30

Frame number:

Date of purchase:

The bike was handed over:

Place:

Dealer's stamp:

Date:

Dealer's signature:

Please ensure that all inspections and servicing carried out by your dealer are recorded in this Passport. The extra guarantees provided by riese und müller over and above the statutory guarantee are only valid when claims are accompanied by a completely filled-out Bicycle Passport, together with a copy of your purchase receipt. The appropriate service inspections must have been carried out by your dealer and recorded in the Bicycle Passport.

**First service inspection**

After at most **400 km (250 miles)** or at latest three months after purchase.

Job number:

Dealer's stamp and signature

Date:

Parts replaced or repaired:

**Second service inspection**

After **2000 km (1250 miles)** or one year after purchase.

Job number:

Dealer's stamp and signature

Date:

Parts replaced or repaired:

**Third service inspection**

After at most **4000 km (2500 miles)** or two years after purchase.

Job number:

Dealer's stamp and signature

Date:

Parts replaced or repaired:

**Fourth service inspection**

After at most **6000 km (4000 miles)** or three years after purchase.

Job number:

Dealer's stamp and signature

Date:

Parts replaced or repaired:

**Fifth service inspection**

After at most **8000 km (5000 miles)** or four years after purchase.

Job number:

Dealer's stamp and signature

Date:

Parts replaced or repaired:

**Sixth service inspection**

After at most **10000 km (6000 miles)** or five years after purchase.

Job number:

Dealer's stamp and signature

Date:

Parts replaced or repaired: