



Owner's manual

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Dear Customer,

By purchasing a **Lepus** you have chosen the comfortable and safe type of recumbent trike riding.

To ensure prolonged enjoyment of the **Lepus**, it must be cared for and worn parts must be renewed as with any technical equipment. With these instructions we offer you assistance in ensuring the **Lepus** remains fun and safe to use over a long period of time.

The **Lepus** is the result of many years of development work. But as with any product, it is important that it is continually improved. We are therefore interested in your experiences from normal daily use and from cycling holidays/tours. Do you have any suggestions for improvement, requests, complaints, criticism? Talk to us. That way you can help to further improve the **Lepus**.

The info pouch

So many customers asked for it, and now it's finally available: The info pouch attached to the seat. In it you will find not just the owner's manual, but also postcards that you can give to curious "still-pedastrians". This way you can avoid lengthy explanations. The postcards can be re-ordered free of charge at any time.

We recommend that you read these instructions thoroughly.

Have fun!

Like any sport, bicycling involves risk of injury and damage. By choosing to ride a bicycle, you assume the responsibility for that risk, so you need to know - and to practise - the rules of safe and responsible riding and of proper use and maintenance. Proper use and maintenance of your bike reduces risk of injury.

- The **Lepus** comes with very powerful brakes with excellent modulation. Beside of having a excellent modulation it is still possible to block the wheels. Make yourself comfortable with the brake setting, before riding in the traffic
- A Recumbent-trike allows you very fast cornering-speed due to it's low center of gravity. But riding to fast through corners will result in tipping the **Lepus** or in skidding wheels. This might causes accidents. Hectic manouvers might also tip the bike. Avoid hectic manouvers.
- For your own safety: Always wear an approved helmet when riding your bike and follow the helmet manufacturer's instruction for fit, use and care of your helmet.
- On the **Lepus**, the rider should wear clothing that is close-fitting enough to make it impossible for garments to get caught in the wheel or the drive. Watch out also for hanging string/tying cords for example from jackets or a scarf.
- Do not reach into spokes with hands, fingers or other body parts while the trike is in motion. This also applies for the drive train. Due to its recumbent rider-position, your feet might slip from the pedal. Make shure that you have enough hold on the pedal or use spd-style Pedals or our Special-pedals with hooks and straps.
- Always cycle with lights from dusk til dawn.
- In order that you can be seen by other road users, the flag supplied must be secured to the trike.
- The **Lepus** must be checked by a professional workshop frequently.

If your **Lepus** is sent by post, the following must be observed.

On receipt of delivery...

please check the packaging for damage. If you discover anything, have the delivery person confirm it to you in writing. Damage can occur anywhere on the journey from Waltrip to the recipient. The parcel service is liable in case of damage.

Items supplied:

Please check the contents of the package.

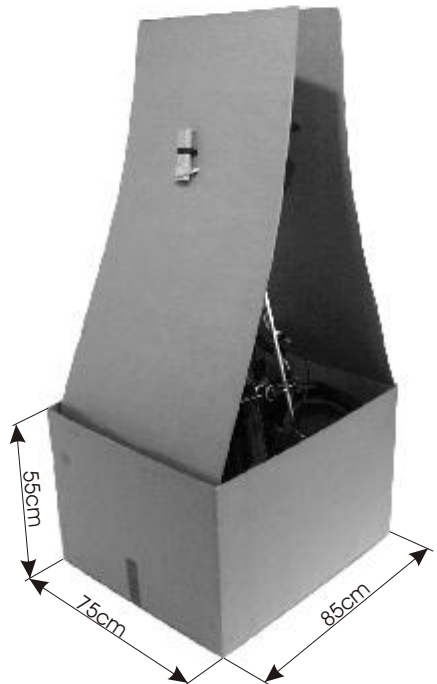
Apart from the parts fitted on the frame, you should find:

- Owner's manual (you've found it already)
- Brake manufacturer's instructions
- One pair of pedals
- one front wheel
- Flag
- The ordered extras

Assembly:

Once the **Lepus** is out of the box, assemble the front wheel. Then put the pedals on (watch for left and right pedal) and adjust the length like shown in chapter "Length".

Flag: take the endplug out of the upper end of the seat tube. Then insert the flag with its own endplug deeply in the seat tube.



The length of the trike can be quick adjusted in a range of approx. 100 mm. Simply unlock the two quick release levers.

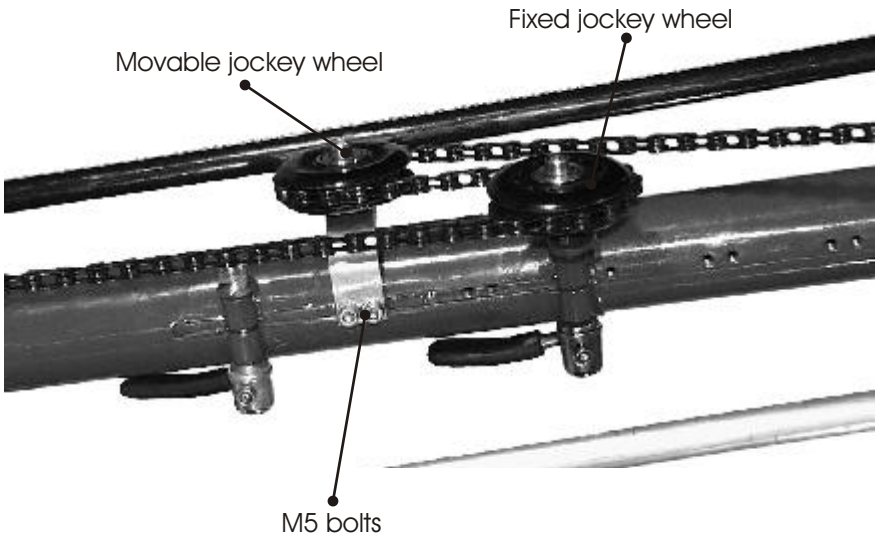


The best way to adjust:

To adjust the front assembly, position yourself on the right-hand side of the trike. Once the quick release levers have been unlocked, the front assembly can be moved in or out by turning the front wheel against the handlebar inwards or outwards. The front assembly then slides within the frame. For further adjustment, adapt the steering relay lever and repeat the process.



Finally relock the quick release levers firmly .



If further adjustment is necessary, the movable jockey wheel must be removed by unscrewing the M5 bolts. The trike length should be adapted as described above and the jockey wheel secured in a suitable hole position.

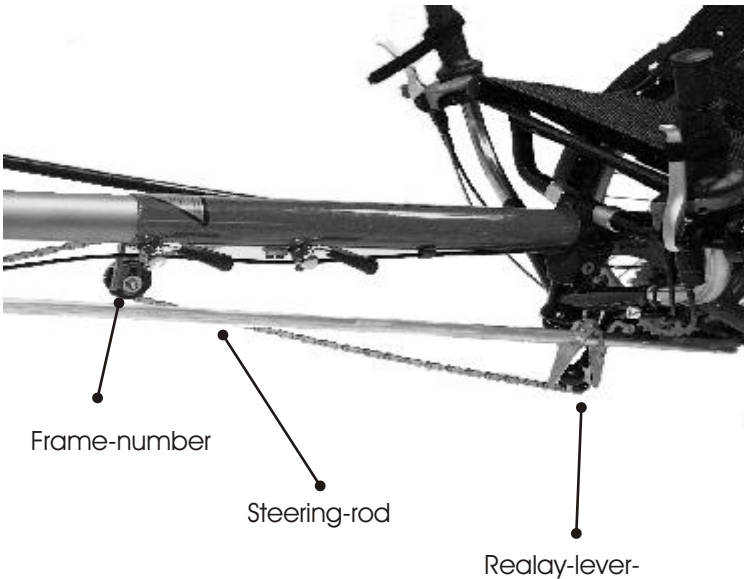
For extremely small riders, it may be necessary to completely remove the jockey wheels as they will otherwise come into contact with the crank. The Teflon tube (chain protector) may then need shortening.

Once the correct position for the rider has been attained, the chain length must be adapted. **For each hole pair the jockey wheel has been moved, four links of the chain must be removed.**



The front assembly is extended to its maximum when the front jockey wheel contacts the front quick release lever!

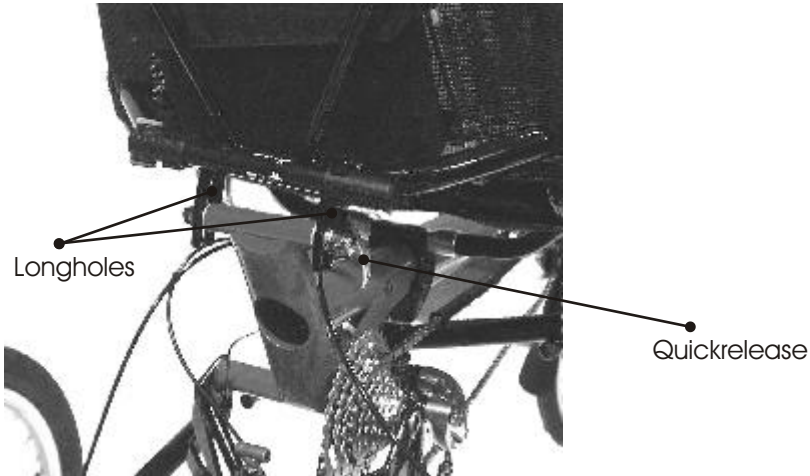
The new steering adjustment can be carried out without using tools.



By pressing the relay lever clip together, the steering rod can be pushed into the required position.
Release the clip and the steering is secured.

Frame number:

The frame number of your **Lepus** is stamped on the front jockey wheel mounting. Make a note of the number and keep it somewhere safe.



Seat angle adjustment:

To adjust the seat angle, the quick release lever of the upper seat mounting must be unlocked. The elongated holes in the mounting plates allow infinitely variable adjustment. Once completed, relock the quick release lever.

Note:

Locking and unlocking the quick release levers is always done either by levering up or down respectively.

To adjust the locking force, screw the nut at the other end in or out.

Tip:

For "beginners" it is advised to set the seat angle slightly more upright as the recumbent position is likely to be a new experience.

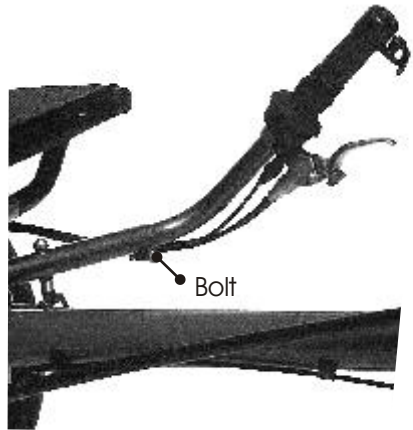


The upper seat mounting is the main mounting of the seat. At greater loads (heavy riders), the quick release lever must be secured tighter.

Handelbar adjustment

The position of the handlebar grips can be adjusted on the **Lepus**. To do this, the clamp bolts on the handlebar must be loosened. The grips can then be rotated and extended.

Once adjustment is complete, retighten the bolts.



The handlebar grips must be inserted at least 4cm in the clamps of the handlebar.

Parking-brake:

For attaching the parking-brake, use the velcrostrap that wraps around the handlebar. Open it, pull the brakelever and wrap the velcrostrap around brakelever and handlebar. If you want to start riding, just take a seat, open the velcro and wrap the strap around the handlebar.



The **Lepus** suspension is preset in the workshop.

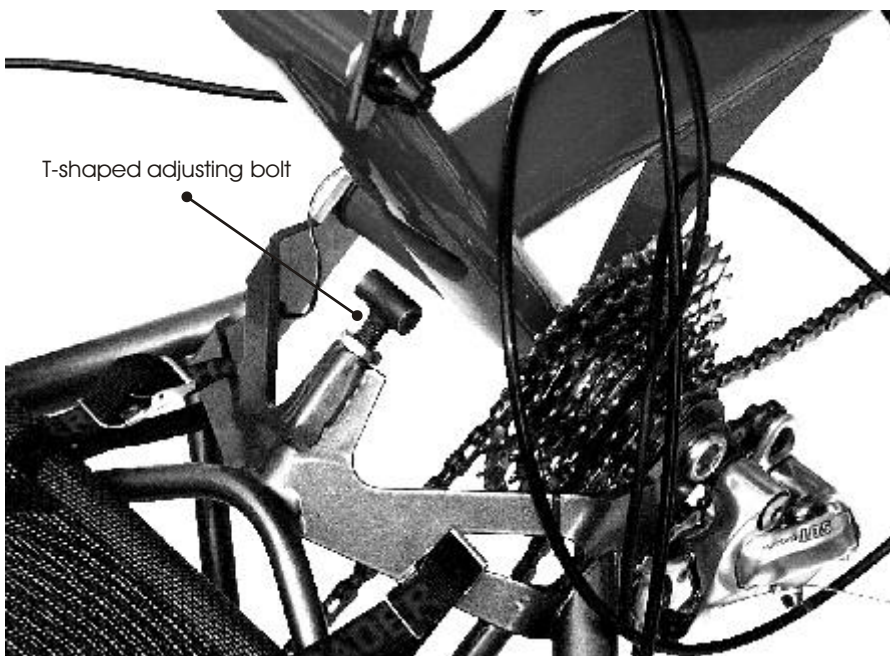
Your trike has the best handling properties when the track is adjusted optimally.

But you still have the opportunity to adjust the seat height by turning the T-shape adjusting bolt in and out (high position). After changing the seat height, you need to adjust the track and the basket, like shown on the next page. Once complete, secure it by using the lock nut.

Heavy riders can cause the suspension to knock on the frame. In this case, unscrew the adjusting bolt until the knocking ceases.



The adjusting bolt must be at least 8 turns in the thread!



With a high seat adjustment, there is a change to the angle of the **Lepus** rear- frame in relation to the ground. Because the rear wheels are set at an angle, the track must be readjusted.

Track adjustment

To reposition the brake retainer, unscrew the M8 Allen head bolt, press out the brake retainer, reposition and then retighten the M8 Allen head bolt.

Position 1

Position 3

M8 Allen head bolt

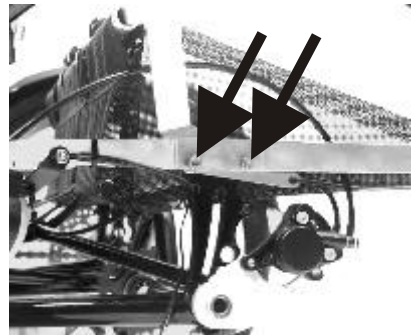


Mudguard adjustment

To adjust the mudguards unscrew both 6mm screws (5mm allenkey) and realign them like shown on the pictures. In the highest position, a third screw must stabilize the mudguard mounting. The **Lepus** comes with ready adjusted track and basket for the lowest position.



High position



Lowest position (factory setup)

The **Lepus** can be folded without the need for tools.

- On the intermediate shaft, the chain must be on the smallest sprocket (9th gear on right-hand shifter).
- Stand behind the **Lepus**, lift the **Lepus** seat and press the rear frame down using your knee, until it disengages from the suspension.
- Fold rear frame. Warning! The chains must not be under tension.
- Don't let the steering rod get caught in the rearframe
- Unlock the quick release lever on the upper seat mounting and fold the seat.



If you wish to lift the **Lepus** in its folded state, you can prevent the rear assembly from unfolding by means of a bungee.



Fold the **Lepus** carefully!

If you use excessive force when folding, damage could be caused by impacting parts.

If you ride the **Lepus** in short position only, we recommend to shorten the steering rod.

Clothing:

On the Kettwiesel, the rider should wear clothing that is close-fitting enough to make it impossible for garments to get caught in the wheel or the drive. Watch out also for hanging string/tying cords for example from

Health:

When you ride the **Lepus**, different muscle groups are used compared to riding a standard bicycle. Take into account, therefore, that you will need a short period of time to adjust.

You should avoid cycling too hard. A higher pedalling frequency (above 70 rpm) is better for your joints.

Carrying luggage

If you're planning a long journey with the **Lepus** and intend taking a lot of luggage, we recommend the use of a front carrier with panniers.

This way the weight distribution is balanced and the riding characteristics are improved.

Front carriers can be fitted to the fork via the threaded inserts brazed into each side. They are available in bike shops. Standard front carriers can be fitted as used on two wheel bicycles.

Tyre pressure:

Ideally the tyre pressure should be checked before commencing any journey.

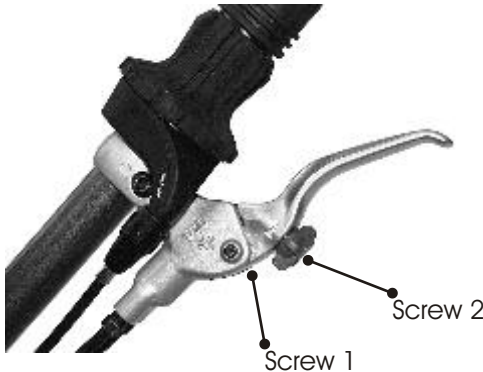
To minimise rolling resistance, it is recommended that the pressure indicated on the sidewall of the tyre be adhered to.

The tyres fitted as standard on the **Lepus** have a permitted maximum

Means of adjustment:

- Brake lever: Two means of adjusting on brake lever.
Screw 1: Adjustment of distance from brake lever to handlebar
Screw 2: Adjustment of distance from brake pads to rim/disc

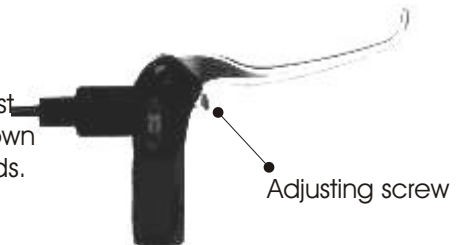
This screw has blue coloured locking fluid. If worn, the screw should be renewed as the adjustment could otherwise become altered. Only screw in until it is flush on the lever.



Renewing brake pads - front:

First screw out the adjusting screw (2) on the brake lever and provide free access to the brake pads by removing the front wheel. Then pull off the old pad and press in a new one while observing the direction of rotation (arrow on brake pad). Finally, fit the front wheel back in place.

The back wheels are braked by Magura Julie disc- brakes. To readjust them, turn the adjustment screw shown on the picture on the right clockwards.



Renewing brake pads - rear:

If the brake pads are worn, they must be renewed immediately. Otherwise damage to the brake disc may occur.

For this reason please make regular checks, especially if you notice a different braking sound.

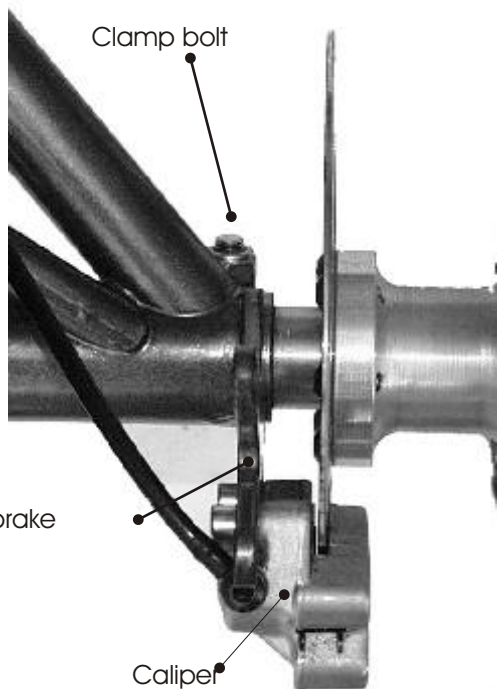
The procedure for renewing the brake pads can be found in the manufacturer's operating instructions included.

To renew the brake pads on the Lepus, it is easier to remove the calliper instead of the wheel.

Adjustment:

The distance of the brake to the frame can be adjusted by placing washers between discbrake mount and caliper.

It is also possible to move the axle unit by loosening the clamp bolts. Following this, the gears will need adjusting.

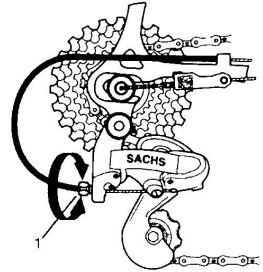


Warning: Never use normal brake fluid in the brake system!

Further details can be found in the manufacturer's operating instructions included or at www.magura.de.

Adjusting lowest gear

- Select 9th gear on the right-hand shifter. The chain should be on the smallest sprocket.
- Turn the crank via the pedal. If the chain already makes a noise on the second sprocket or shifts onto it, screw in adjusting screw 1 clockwise until the noise stops or the chain shifts back onto the smallest sprocket.
- Select 8th gear on the grip shifter while turning the crank in direction of drive via the pedal.

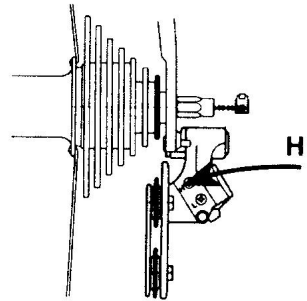


Turn the crank in direction of drive via the pedal or select all gears one after the other, going up the range and back down. Adjust if necessary.

-Slowly guide the derailleur by hand back under the smallest sprocket.

-The derailleur features an adjusting screw with which the clearance between the jockey wheel and the sprockets can be adjusted.

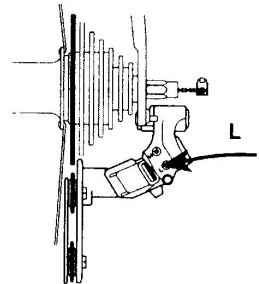
Adjustment with chain fitted and upper jockey wheel under largest sprocket - adjust the clearance so that when the crank is turned backwards, it is just possible for the chain to drive without making any noise.



Pre-adjustment of derailleur

(This can be carried out easiest with the chain removed)

-Guide the upper jockey wheel under the smallest sprocket (and hold in place). Turn adjusting screw H in or out until the jockey wheel is centred under the smallest sprocket.



-Guide the upper jockey wheel under the largest sprocket (and hold in place). Turn adjusting screw L in or out until the jockey wheel is centred under the largest sprocket.

-If the chain does not shift, turn adjusting screw 1 clockwise, i.e. adjust the cable until the chain shifts onto the second sprocket.

Trouble shooting

Problem	Cause	Remedy
CHANGING GEAR		
Chain slips off smallest sprocket onto frame.	-Adjusting screw H is screwed out too much.	Turn screw H clockwise (diagram 17) until upper jockey wheel is flush with smallest sprocket.
Chain shifts onto smallest sprocket with difficulty or not at all.	-Adjusting screw H is screwed in too much. -Cable too tight. -Cable not operating correctly.	-Turn screw H (diagram 17) anti-clockwise until upper jockey wheel is flush with smallest sprocket. -Turn adjusting screw 1 (diagram 21) clockwise (or on right-hand grip shifter) until chain shifts down with ease. -Check cable and lubricate if necessary.
Chain slips off largest sprocket in between spokes and sprocket, or chain guide scrapes on spokes.	-Adjusting screw H is screwed out too much. -Derailleur or chain stay end deformed.	-Turn screw L clockwise until upper jockey wheel is flush with largest sprocket. -Align or renew.
Chain shifts up with difficulty but shifts down with ease.	-Cable too loose.	-Turn adjusting screw 1 (diagram 21) anti-clockwise (or on right-hand grip shifter) until chain shifts up with ease.
Chain shifts down with difficulty but shifts up with ease.	-Cable too tight. -Cable not operating correctly.	-Turn adjusting screw 1 (diagram 21) clockwise (or on right-hand grip shifter) until chain shifts down with ease. -Check cable and lubricate if necessary.

Service and care:

Gear change: Lubricate cable and derailleur occasionally. Clean and lightly lubricate chain and jockey wheels on derailleur as and when necessary.

Do not use a high-pressure cleaner as the grease will be forced out of the bearings by the force of the jet.

In case the bike is to be placed out of service for some time, select 9th gear on the grip shifter to relieve spring pressure.

Spokes:

If spokes become loose or one of the wheels does not run true, the wheel must be aligned.

The front wheel can be aligned like any "normal" wheel in a centring gauge or in the fork.

The rear wheels should not be removed for alignment!

If at any time the wheel is to be aligned in situ (frame or fork), it is recommended that an alignment guide be used.

This could be, for example, an old spoke clamped to the mudguard and bent to the rim. This way any deformation of the wheel can be pin-pointed.

Bolt torque settings

The torque settings are determined according to specifications (Dubbel). A torque wrench should be used when tightening.

Bolt quality 8.8

M5	5.5	Nm
M6	9	Nm
M8	23	Nm
M10	46	Nm
M12	79	Nm

The M14 axle bolt only needs to be tightened lightly as it is tightened further automatically by the drive torque.

Before commencing any journey, check the bolts for tightness.

Renewing the chain:

The **Lepus** has a relatively long chain, which means it has a longer service life. Thus the chain need not be renewed so often compared with normal bicycles.

The most accurate way of checking the chain is with the use of a wear indicator gauge available from bicycle shops.

When joining the link of a chain, it is essential to check that the chain has not become twisted in the chain protector tube.

The chain length for the maximum frame length of the **Lepus** is approx. 3000 mm. The chain must be shortened or lengthened 100 mm for every hole the movable jockey wheel is moved /this equates to 4 links).

The rear chain has a length of approx. 890 mm.

Chain protector tube:

The clamp of the chain protector tube must be bolted to the retainer plate so the tube can follow the line of the chain without rattling. A lock nut is fitted in the workshop to prevent the bolt from becoming loose.

Removing suspension unit

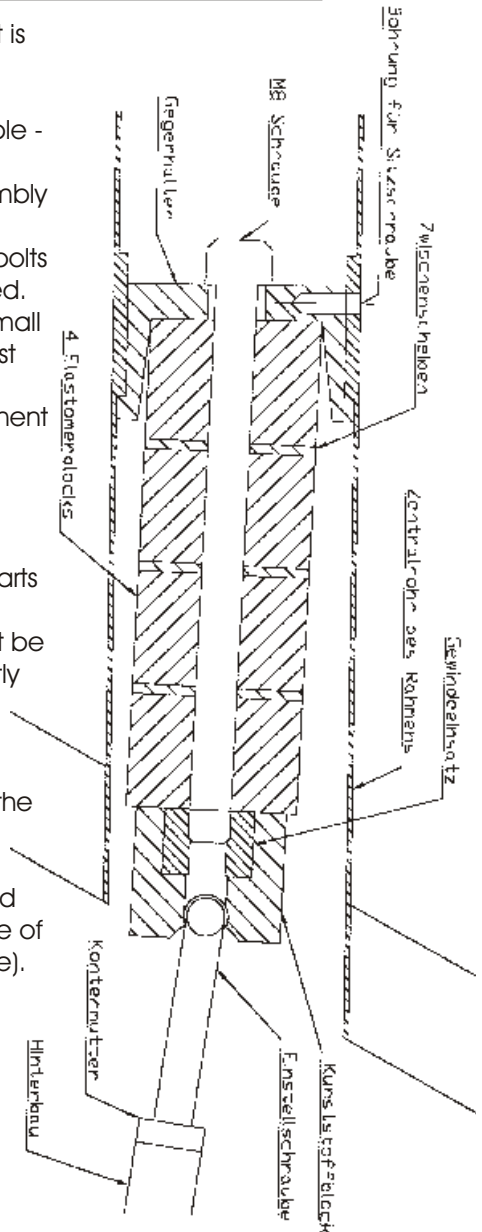


Only by qualified dealers

Service work on the suspension unit is not normally necessary.

However, should this be unavoidable - when encountering squeaks or by accident damage - the rear assembly must first be disengaged from the suspension and the seat securing bolts on both sides of the frame removed. The light cable is fed through a small drilling in the counter-hold and must therefore be cut. A long M8 bolt is then screwed in the threaded element of the plastic block to draw the suspension unit out of the frame.

If removal came about due to squeaking, the bolt and contact parts must be lubricated well. When installing, the lamp wire must be re-routed. It should always be slightly taut as it cannot be kinked and damaged from within the frame. When pushing in the counter-hold, it is essential that the marking is at the bottom as the counter-hold is symmetrical. The suspension unit must be pushed home fully in the frame (lower edge of plastic block approx. 10mm in tube). Finally screw in the seat securing bolt and engage the rear assembly in the suspension.





Removing intermediate shaft

The intermediate shaft need not normally be removed.

Removal may be necessary -by a specialist dealer- to get at the sprocket set if this is worn.

Removal of the intermediate shaft may also be necessary if it is suspected that the needle bearings beneath the free-wheel body are not sufficiently lubricated. This can happen, for example, if a jet wash cleaner is used despite advice being given against using such equipment. (If this is the case, all other bearings should be checked for correct lubrication as well.)

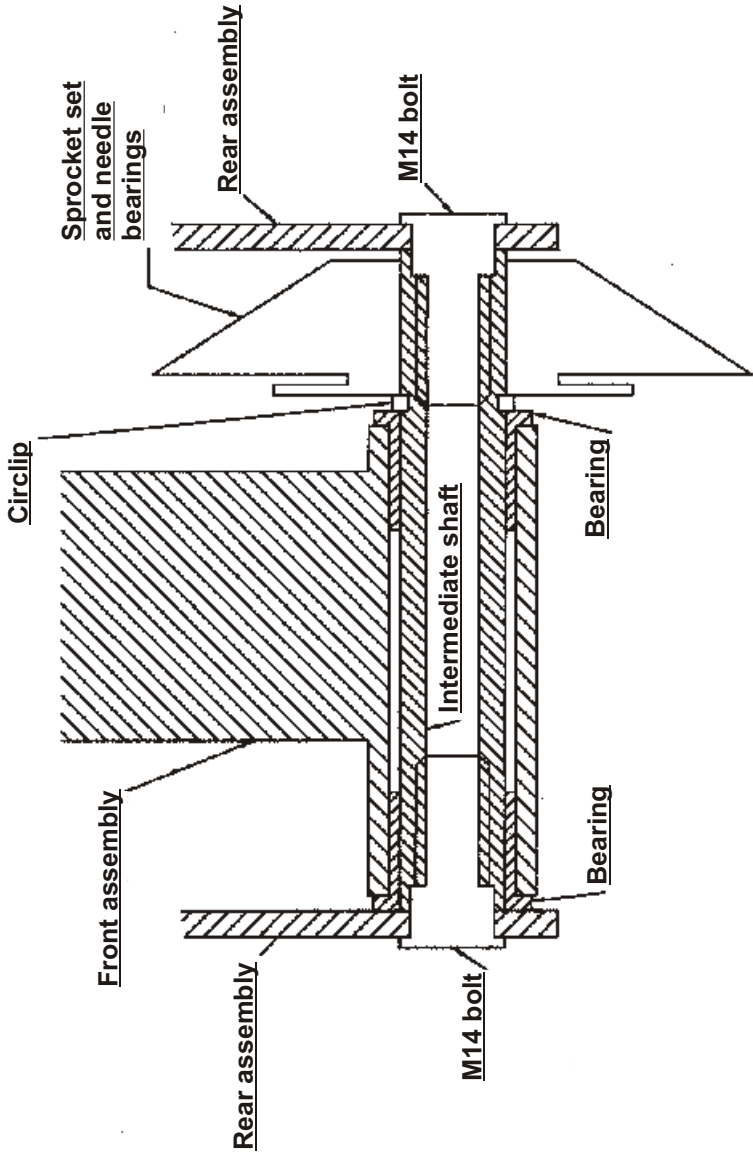
First completely unscrew the M14 Allen head bolts and remove. Then pull up the rear assembly. The intermediate shaft can now be pushed out of the frame towards the drive. The free-wheel body and sprocket set can be pushed downwards to the side.

Before installing, the parts must be cleaned and the needle bearings thoroughly lubricated. Also lightly lubricate the intermediate shaft.

First insert the intermediate shaft in the frame. The circlip must be on the drive side. Slide on the sprocket set. Then push the rear assembly onto the intermediate shaft so that the bolts can be screwed in and tightened to 90 Nm.



Removing intermediate shaft





Only by qualified dealers

There are left-hand threads at each end of the drive shaft. This way all of the components are tightened by the drive torque created when the trike is in use and the drive torque can be transmitted to the drive gear. Please bear this in mind so that you know which way to loosen the nuts.

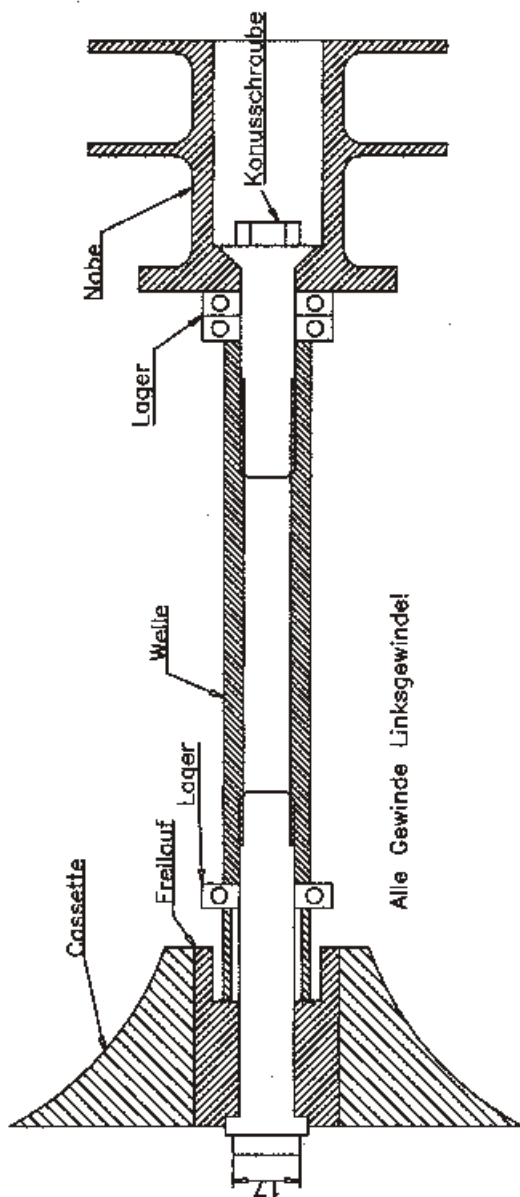
For removal of the drive shaft, the calliper must first be dismantled. This is done by unscrewing the two M6 bolts. Then counter-hold the nut (on multi-point) on the sprocket end of the shaft using a 17 mm open-end spanner. The driven wheel must be turned clockwise (loosening direction of left-hand thread).

One of the threaded joints will then loosen. This then must be unscrewed completely. If the threaded joint on the sprocket set end loosens first, the wheel can be removed together with the drive shaft out of the frame once the frame clamp has been loosened. If the wheel end loosens, the sprocket set and drive shaft must be pushed as far as possible to the left. The aluminium shaft can then be held using pliers and the sprocket set unbolted.

When the sprocket set is unbolted, the drive shaft and wheel can be removed together out of the frame once the frame clamp has been loosened. If the shaft is to be unscrewed from the wheel, suitable jaw adapters (or pliers/vice) can be used in order to secure the shaft in the vice.

When installing, the bearings must be fitted to the tapered bolt, which is inserted into the hub and bolted to the shaft. Then insert the wheel together with the drive shaft into the frame. Fit the wheel bearing, spacer, freewheel body and nut and tighten. Assemble the brake calliper. Align the shaft in the frame suitably for the gears and brake and tighten the clamp (M8 bolt) on the frame. Only tighten the M8 clamp bolt enough to allow the shaft to turn freely.

Thereafter it may be necessary to re-adjust the gears.



Instead of a sprocket set, there are just three sprockets on the Lepus

<u>Dimensions:</u>	Ready to roll	Folded
Total length:	190 - 220cm	140-165cm (120 without front wheel)
Total width:	81cm	81cm
Total height unloaded:	97cm	58cm
Seat height unloaded:	58cm	
Bottom bracket height:	50cm	
Weight:	22kg	
Suspension:	Seat and frame suspension, 15 cm travel	

All frame parts are coated with an extremely durable synthetic coating. This painting method is particularly environmentally friendly.

Equipment:

Front wheel:	20 inch
Spokes:	2 x 183 mm Nirosta (Qty. 32)
Rim:	Aluminium 32 hole with reflector strip
Tyre:	37-406 max. 5 bar
Hub:	Sram racing hub
Rear wheels:	20 inch
Spokes:	2 x 177 mm Nirosta (Qty. 32)
Rim:	Aluminium 32 hole with reflector strip
Tyres:	37-406 max. 5 bar
Hubs:	Hase special aluminium hubs
Brake system:	Magura hydraulic brake at front 2 Magura disc brakes at rear
Gears:	27-speed Shimano, grip shifters
Lighting:	AXA right-hand side runner
Front light:	Lumotec halogen light
Rear light:	B&M D Toplight+ with safe stop function

Conditions of warranty and liability

The terms and conditions are based on the statutory warranty. This excludes parts that wear such as the chain, tyres, brakes etc. The warranty period (statutory) of 24 months commences from the date of purchase.

In addition, Hase offers a 3 year warranty -from date of purchase- against breakage of the frame in accordance with the following conditions:

- Hase will only be held liable for defects caused from the production procedure and faults caused during assembly. For other assembly parts, the relevant manufacturer is liable.
- This additional warranty is only valid for the first buyer and as long as he/she follows the instructions in the owner's manual.
- Within the warranty period of three years, a broken frame part will be repaired free of charge. If this is not possible it will be renewed. Exchanged parts become our property.
- Further demands will not be made beyond this warranty. In particular, any costs incurred for dismantling or assembly work (e.g. by a specialist dealer) and delivery will not be recompensed by us. Packages sent to us must always have the correct postage or we cannot accept them.
- The weight on the **Lepus** (rider and luggage) must not exceed 120kg.
- If the **Lepus** is used in competition, on rough terrain or placed under similar stress, the statutory and additional warranty become void.
- Damage caused by accidents is not covered by the warranty.
- The warranty becomes void if unsuitable accessories are fitted to the **Lepus**, or if accessories are fitted incorrectly. Therefore always have parts renewed and assembled by a specialist dealer.
- The warranty becomes void if modifications are made to the frame involving grinding, drilling, bending or similar.
- It is not possible to extend the warranty or commence a new warranty period.
- A warranty can only be put into effect by the specialist dealer from whom the trike was purchased or by one of our distribution partners.

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