



Owner's manual

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HASE
SPEZIALRÄDER

KETTWIESEL

Dear Customer,

By purchasing a **KettWiesel** you have chosen the sporty type of recumbent trike riding.

To ensure prolonged enjoyment of the **KettWiesel**, 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 **KettWiesel** remains fun and safe to use over a long period of time.

The **KettWiesel** 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 **KettWiesel**.

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 **Kettwiesel** comes with very powerful brakes with excellent modulation. Beside of having excellent modulation it is still possible to block the wheels. Make yourself comfortable with the brake setting, before riding in traffic
- A Recumbent-trike allows you very fast cornering-speed due to its low centre of gravity. But riding to fast through corners will result in tipping the Kettwiesel or in skidding wheels. This might cause accidents. Hectic manoeuvres might also tip the bike. Avoid hectic manoeuvres.
- 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 **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 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 sure that you have enough hold on the pedal or use spd-style Pedals or our Spezial-pedals with hooks and straps.
- Always cycle with lights from dusk till dawn.
- In order that you can be seen by other road users, the flag supplied must be attached to the trike.
- The **Kettwiesel** must be checked by a professional workshop frequently.

If your **KettWiesel** 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 Waltripto the recipient. The parcel service is liable in case of damage.

Items supplied:

Please check the contents of the package.

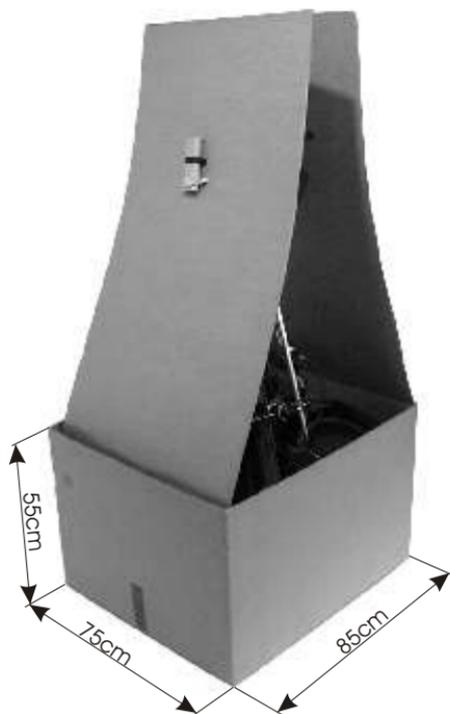
Apart from the parts fitted on the frame, you should find:

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

Assembly:

Once the **Kettwiesel** is out the box, you only have to put the pedals on (watch for left and right pedal) and to adjust the length like shown in chapter "Length".

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

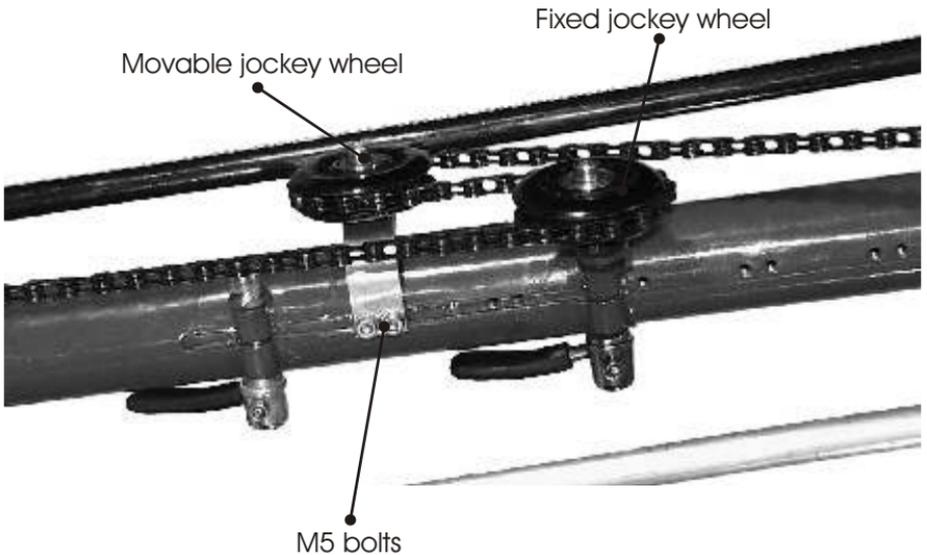


The best way to adjust:

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



Warning: Always close quick release firmly! Riding with loose quick releases will damage the frame.



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.

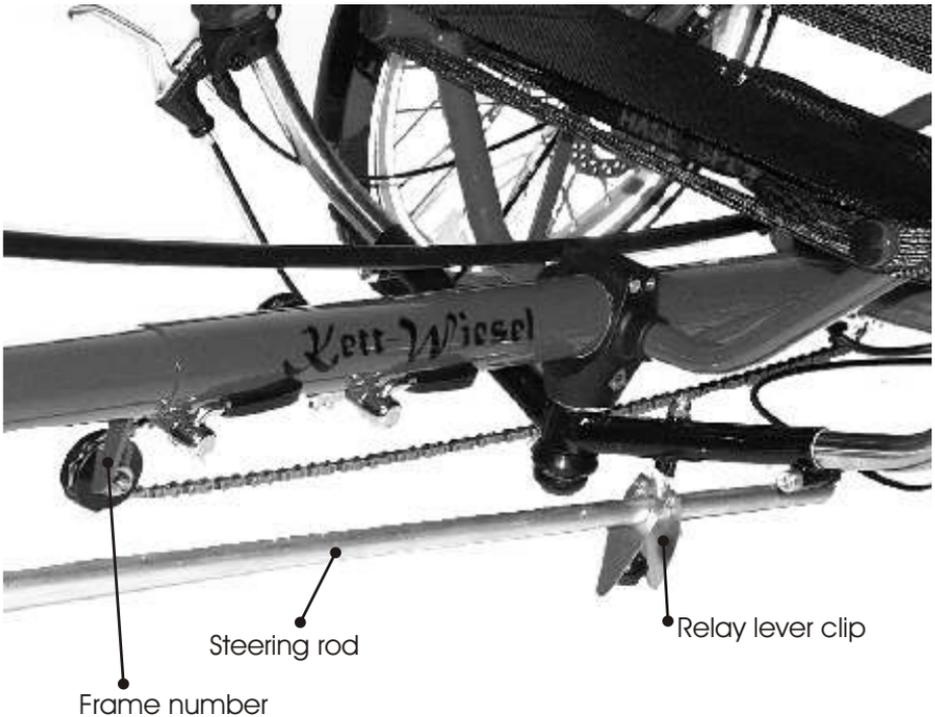
For extremely small riders, it may be necessary to completely remove the jockey wheels as they will otherwise come into contact with the crank. The Teflon tube (chain protector) may then need shortening.

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.**



Warning: 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:

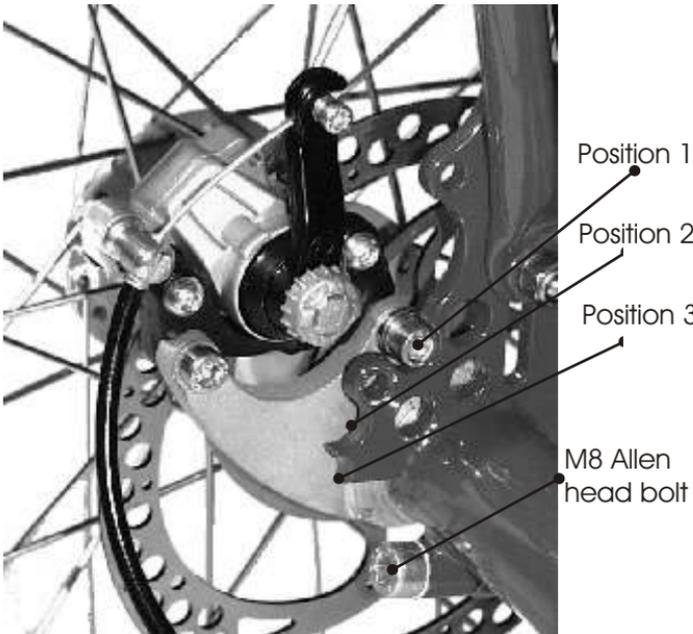
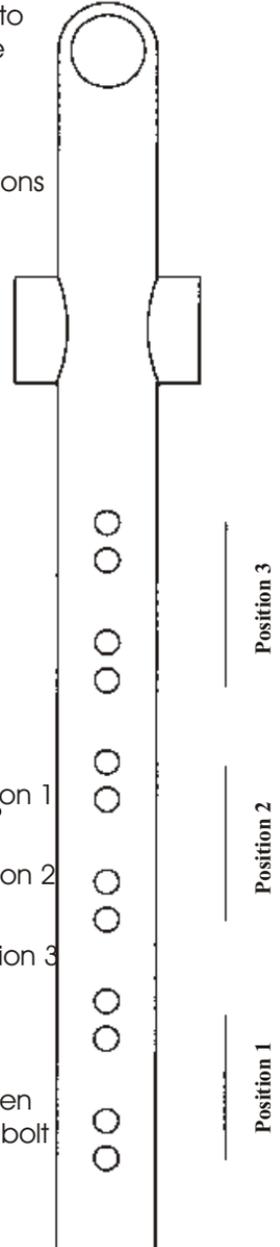
The frame number of your **Kettwiesel** is stamped on the front jockey wheel mounting. Make a note of the number and keep it somewhere safe.

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

The illustration shows the relevant adjustment positions for the movable jockey wheel.

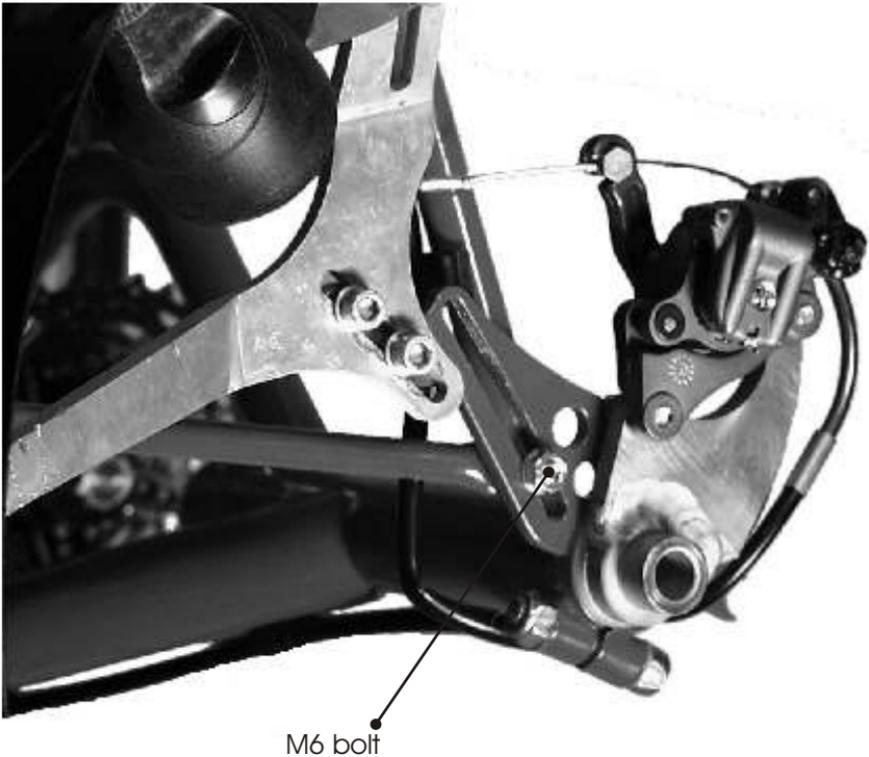
Note:

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.



Seat angle adjustment

The seat angle is adjustable. Unscrew the M6 bolts on both sides and tilt the seat into the desired position.

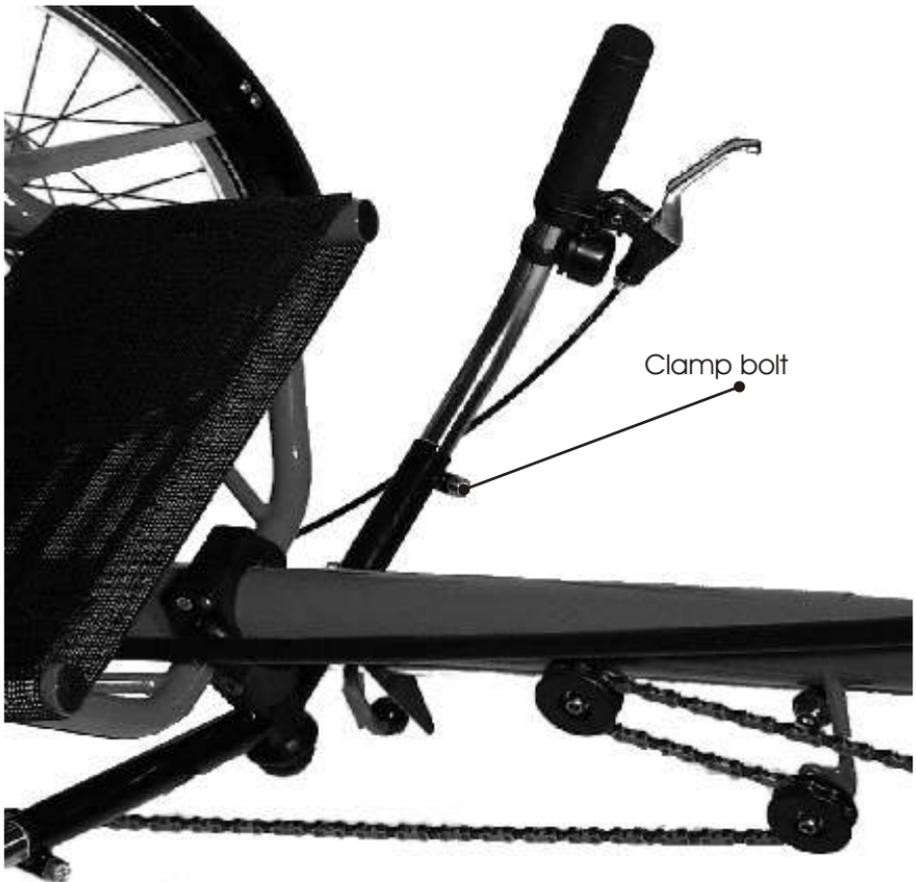


The bolts should be tightened carefully following adjustment as the seat could otherwise adjust itself while the trike is in motion.

The position of the handlebar grips can be adjusted on the **Kettwiesel**. 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.



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



Carrying luggage

If you're planning a long journey with the Kettwiesel 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 Kettwiesel have a permitted maximum pressure rating of 5 bar.



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Parking
Parking-brake

Parking:

For minimum parking-space just park the **Kettwiesel** upright. Simply lift the front end of the bike by holding the front wheel. It stands safe when the small black knob (bike-stand) at the rear light touches the ground. This small black knob prevents the rear light from scratches



Parking-brake:

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



Helmet:

We recommend that you wear a helmet for your own safety when travelling on any cycle.

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 jackets or a scarf.

Danger of injury:

Do not reach into the spokes with hands, fingers or other body parts while the trike is in motion. This also applies for the drive train.

Cycling at night:

Always cycle with lights from dusk til dawn.

Flag:

In order that you can be seen by other road users, the flag supplied must be secured to the trike.

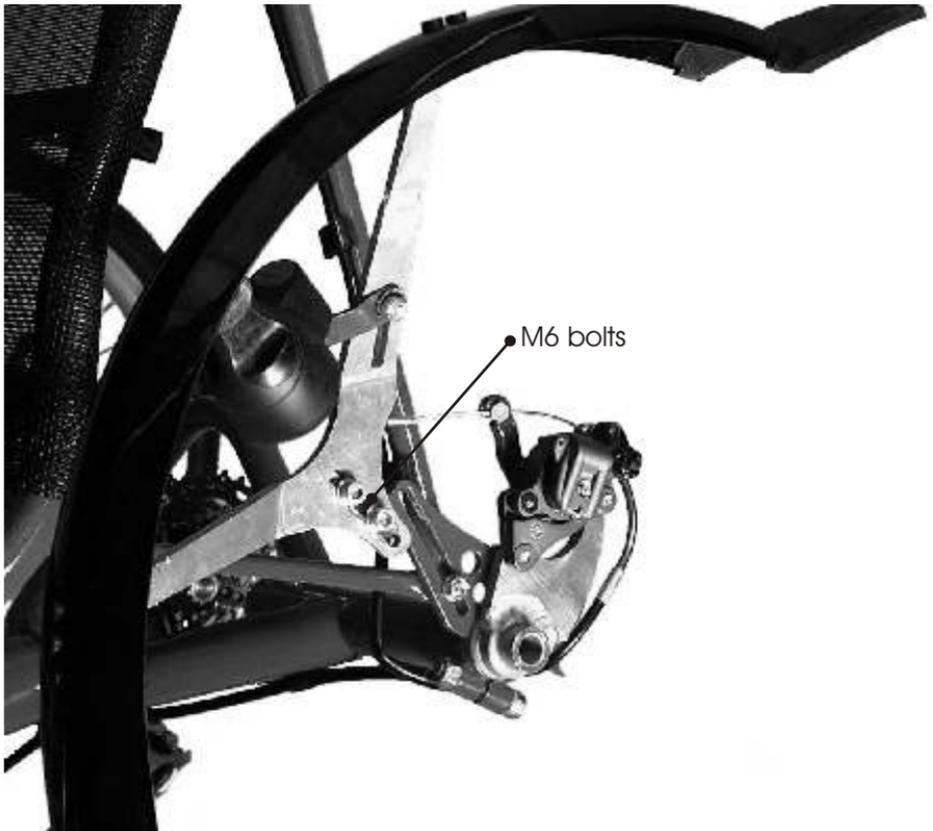
Health:

When you ride the **Kettwiesel**, 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.

Mudguard adjustment

The rear mudguards -left-hand side with dynamo- are secured using the M6 Allen head bolts.

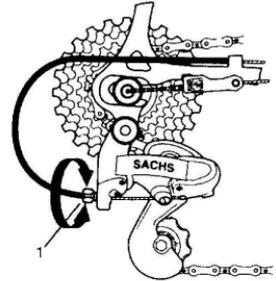
The clearance from the tyre is adjusted on the elongated hole. It is wise to readjust the mudguards if different sized tyres are fitted.



Following adjustment of the left-hand mudguard retainer, the dynamo must be repositioned so that it runs on the correct part of the tyre.

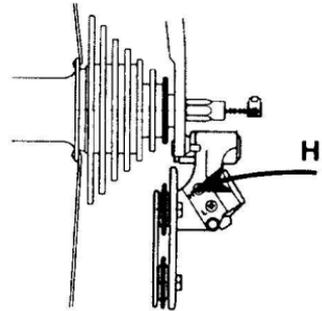
Adjusting lowest gear

- 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.

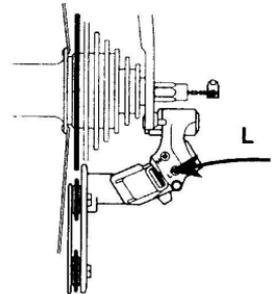
- Slowly guide the derailleur by hand back under the smallest sprocket.
- The derailleur features an adjusting screw with which the clearance between the jockey wheel and the sprockets can be adjusted.
- Adjustment with chain fitted and upper jockey wheel under largest sprocket - adjust the clearance 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 trike 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 **Kettwiesel** 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 **Kettwiesel** is approx. 3200 mm. The chain must be shortened or lengthened 100 mm (4 pair of links) for every hole the movable jockey wheel is moved.

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 drive shaft
Only by specialist dealer

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.

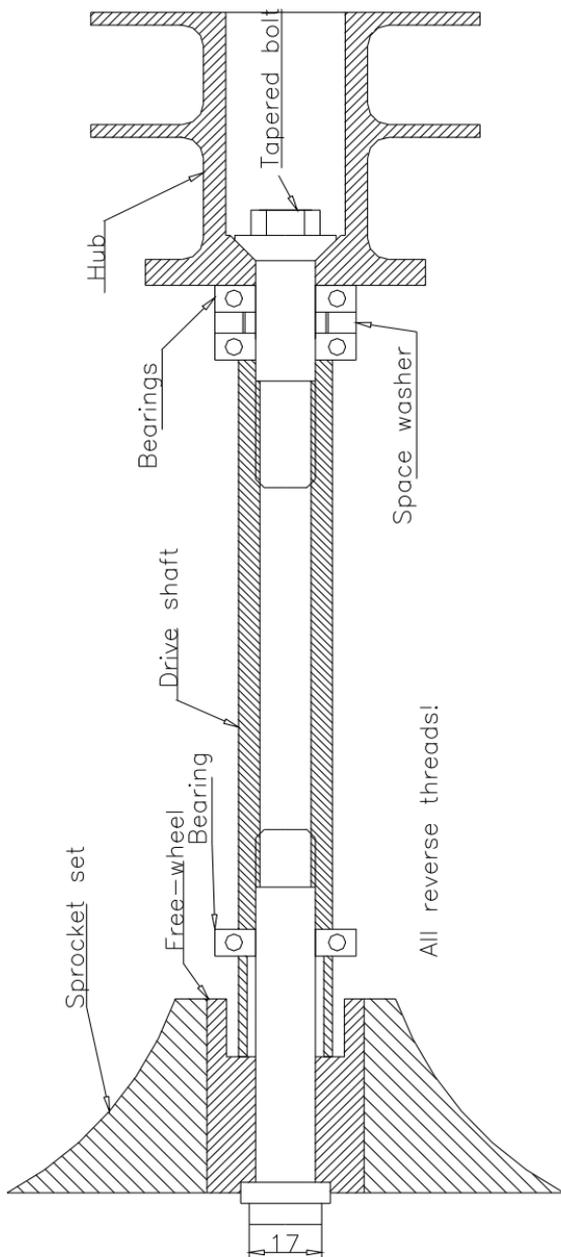
For removal of the drive shaft, the calliper must first be dismantled. This is done by unscrewing the two M6 bolts. Then counter-hold the nut (on multi-point) on the sprocket end of the shaft using a 17 mm open-end spanner. The driven wheel must be turned clockwise (loosening direction of left-hand thread).

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

Cross section of drive shaft



Centering the brake pads:

The calliper brake pads can be adjusted to the centre by turning the adjusting screw (by hand). This way the brake disc will always run free.



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.

To renew the brake pads, it is easier to remove the caliper instead of the wheels.

The pressure point can be adjusted in the same way as on normal cable operated brakes via the thumb screw on the brake lever.

Further details can be found in the manufacturer's operating instructions included.

Seat-clamp torque-setting

Caution: when working on the seat-clamp it is necessary to tighten the screws in order.

- first loosen all screws until the clamp can be turned in the right position.
- Tighten the 8mm counter sunk bolt (5mm Allen key) with 20Nm.
- Then tighten both M6x50 screws (5mm Allen key) with 10Nm.



Caution: Always use a torque-wrench for tightening the screws.

M6x50 screws with washer and medium locktite.
Torque setting: 10Nm



M8x20 counter sunk bolt with strong locktite
Torque setting: 20Nm

Dimensions:

Total length:	165-200cm
Total width:	85cm
Total height:	71cm

Bottom bracket height:	85cm
Weight:	17kg
Suspension:	seat suspension.

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

Equipment:

Wheels:	20 inch
Front spokes:	2 x 179 mm stainless steel (Qty. 32)
Rear spokes:	2 x 172 mm stainless steel (Qty. 32)
Rims:	Aluminium 32 hole with reflector strip
Tyres:	37-406 (max. 5 bar pressure)
Front hub:	Alloz racing hub
Rear hubs:	Hase special aluminium hubs

Brake system:	Mechanical disc brake
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Gears:	9-speed grip shifter, Shimano
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Lighting:	AXA right-hand side dynam
Front light:	Lumotec halogen light
Rear light:	B&M Toplight+ with safe stop function

Headset:	Primax, needle bearing, light weight
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We reserve the right to make alterations

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 6 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 **Kettwiesel** (rider and luggage) must not exceed 120kg.
- If the Kettwiesel 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 Kettwiesel, 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.
- The **Kettwiesel** may only be ridden by children under parental supervision.

Infotasche:

Auf vielfachen Wunsch unserer Kunden ist Sie endlich da: Die Infotasche mit Postkarten für interessierte "noch Fußgänger". So kann man sich mühsame Erklärungen sparen...



Infobag:

Many customers asked for this:
As an owner of a special bike you're often the centre of attention....
If you don't want to spend many words: just hand a postcard to people who are interested.