



Operating Manual for Hands-On-Cycle hand drive

Introduction

Dear customer,

thank you for purchasing a HP VELOTECHNIK recumbent! With this high-quality recumbent bike you will enjoy many years of exhilarating riding pleasure.

In this manual you will find information on the individual adjustment and handling of your recumbent with the Hands-On-Cycle manual drive application. The instructions are in addition to the original operating manual that you also received with your recumbent. Please take your time to familiarize yourself with your new bike, read and observe all associated instructions.

Enjoy yourselves and have a great ride!

Paul J.W. Hollants, Dipl.-Ing. Daniel Pulvermüller
and the HP VELOTECHNIK-Team

P.S. For users with visual impairments, this document is available as a PDF file for enlarged display on our website www.hpvelotechnik.com

Table of contents

Part designation	2
General safety instructions	3
Models with Hands-On-Cycle	3
Description	3
Intended use	3
Indications	4
Contraindications	4
Individualisation	4
Reuse	4
Regulation of the European Union	4
Safety instructions (Bike)	5
The first ride	5
All rides	6
Getting in and out	8
Parking brake	8
Open and close the mast	8
Individual Adjustment	10
Modification to the trike or equipment	10
Seat adjustment	10
Adjustment of the front boom	11
Positioning of legs and feet	13
Adjustment of the hand cranks	15
Adjusting the steering	15
Folding	16
Restricted foldability	16
Gekko fx 26	16
Scorpion fs 20	16
Scorpion plus 20	17
Scorpion plus 26	17
Labeling	18
Tightening torques	19
Technical data	20

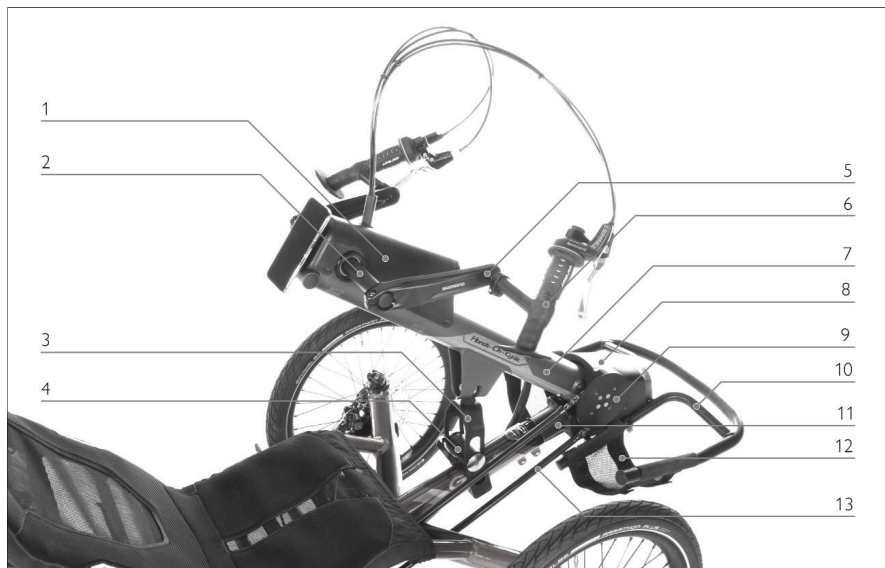
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For latest instructions and product
information, please visit:
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Part designation



- 1 - cover for input box
- 2 - input shaft
- 3 - support sheet
- 4 - support clamp
- 5 - crank
- 6 - hand pedal
- 7 - mast
- 8 - cover for output box
- 9 - chainring with chainring adapter
- 10 - leg rest
- 11 - front boom
- 12 - leg rest mesh
- 13 - chain with chain protection tube

General safety instructions

This manual explains the setup and use of the Hands-On-Cycle hand-drive mounted to a HP VELOTECHNIK trike.

Having received the product, check it for completeness. If the product is damaged, contact your retailer immediately and do not use the product.

This manual is a supplement to the original manual of your HP VELOTECHNIK trike and the manuals of the component manufacturers. These instructions explain in detail the operation and maintenance of the components.

Before riding your Trike, read this manual, the original operating instructions for your trike, and the component manufacturer's instructions.

Also pass the manual on to any other user of your trike.

Some of the maintenance and adjustment work to be performed on this recumbent require special tools and expertise. Only carry out work that you are confident you can do. If in doubt, contact your specialist dealer.

Carefully get used to the unfamiliar handling of the recumbent trike on a paved area away from traffic.

Warnings

Two different types of warnings are used in these instructions. Read these warnings very carefully and follow the instructions.

Danger!

Notes with the signal word "Danger" indicate dangerous situations that can result in injuries, serious injuries or even death.

Attention!

Notes with the signal word "Attention" indicate dangerous situations which may result in minor injury or damage to property.

Models with Hands-On-Cycle

The Hands-On-Cycle hand-drive must only be mounted on the HP VELOTECHNIK models Gekko fx 26, Scorpion fs 20, Scorpion plus 20 and Scorpion plus 26.

Description

The trike is driven by arm muscles. The arm motion is transmitted via the crank to the drivetrain.

The legs are placed on the leg rest. The steering is done by a swiveling and rotating movement of the mast.

Intended use

Use your HP VELOTECHNIK trike only for its intended purpose: Your recumbent trike with Hands-On-Cycle is a trike for use on roads and paved paths. It is not designed for racing, off-road sports, jumping or riding over curbs, stairs, roots, etc.

The equipment of the Hands-On-Cycle

General safety instructions

enables people with certain limitations (see notes) to move independently. It supports physiotherapeutic treatment and trains movement coordination.

Your bike must only be used in road traffic in compliance with the road traffic regulations of the respective country and with the appropriate accessories.

In the event of damage resulting from improper use, assembly errors, intent, accidents or similar, neither warranty nor liability claims can be asserted against HP VELOTECHNIK. Intended use also includes compliance with the prescribed operating, maintenance and servicing instructions.

Indications

An HP VELOTECHNIK recumbent tricycle with Hands-On-Cycle manual drive can be used to restore mobility in cases of coordination disorders and restricted natural movement sequences. Depending on the therapist's recommendation, this can include balance problems / dizziness, joint mobilisation e.g. in osteoarthritis, neuromuscular diseases e.g. cerebral palsy or muscular dystrophy, paralysis e.g. stroke with partial paralysis of one or both legs, amputations, muscle development or back pain.

Contraindications

The trike must not be used by persons who are not fit to ride a trike safely and independently, e.g. in case of blindness, or inability to move necessary limbs in a controlled manner.

Individualisation

The recumbent trike with Hands-On-Cycle hand-drive can be adapted to individual requirements. For this purpose, HP VELOTECHNIK offers a wide range of optional accessories, e.g. electric assist system, pelvic support belt, foot plates and lower leg fixation.

Please contact your specialized dealer or HP VELOTECHNIK if you have any questions about adapting the trike or accessories to your needs.

Reuse

An HP VELOTECHNIK recumbent trike with Hands-On-Cycle hand-drive is suitable for reuse if used as intended and after inspection by a specialized dealer.

Regulation of the European Union

All suspected serious incidents occurring in connection with the trike and accessories should be reported to your physician or HP VELOTECHNIK. In addition, you can also contact the responsible authority directly. Suspected serious incidents are incidents resulting in death, worsening of health condition or serious danger to public health.

Safety instructions (Bike)

The first ride

Before the first ride, the trike must be adjusted to you (see page 10).

Danger!

If the legs slip off the leg rest, they can be rolled over. Your legs must rest securely on the leg rest and be secured against falling off. Check whether you need HP VELOTECHNIK accessories for this purpose (lower leg fixation, foot plate).

It is important that you sit securely in the seat. Use the HP VELOTECHNIK pelvic support belt if you need extra support.

If you are considering using an extra seat cushion, try it out on paved ground away from traffic: Do your arms have enough room to move? Are you sitting securely in the seat? Does the cushion not slip on the seat in any riding situation? Do your legs rest securely on the footrest? The seat cushion shifts the centre of gravity upwards, familiarise yourself with the change in driving behavior.

A trained assistant should be present on your first ride to make adjustments, provide assistance, and advise you.

Practice first on a paved area without traffic to get used to the still unfamiliar trike.

Familiarize yourself with all the elements of operation. These include gear shifting,

brakes, operation of the electric drive system, lights and bell.

Familiarize yourself with the crank arms: The crank arms, if not held or if the trike is moved backwards, can swing down towards the rear, that is towards the rider.

When the trike is moved forward, the freehub prevents the crank arms from moving on their own.

Familiarize yourself with the following feature of the Hands-On-Cycle: steering requires less force when the cranks are up, steering requires more force when the cranks are down.

Practice making hand signals or using the turn signal (optional part) to indicate a turn.

Try out how you can turn or maneuver if there is little space available for this. Get help if necessary. Note that the crank arms rotate backwards when you move the trike backwards. The crank arms, if not held, can swing backwards downwards, that is in your direction.

Danger!

Moving parts on the trike can squeeze your fingers or other body parts.

When maneuvering, do not reach into the spokes, onto the inside of the wheels or underneath a mudguard.

Note that the crank arms can move and turn backwards.

Safety instructions (Bike)

If you have to push yourself off the floor or the wall with your hands or pull yourself towards it when maneuvering, check beforehand whether there is any possibility of injury there.

Move yourself and the trike carefully.

If you need to move the wheels with your hands, carefully grasp the tire and rim from the outside only, move yourself and the trike carefully.

At high speeds, the steering response may change. Practice driving at different speeds.

Do not participate in road traffic until you can ride your bike safely and handle all operating elements safely.

All rides

Handling

The trike is equipped with moving parts and adjustments. There is a risk of squeezing your fingers or other parts of your body. Be careful when handling, adjusting and maintaining the trike and while riding.

Parking

When parking your trike, always secure it with the parking brake to prevent it from rolling away.

Ways and weather conditions

When planning your route, keep in mind that your tricycle is wider than a wheelchair.

Be aware of the influence of the weather

and a wet or even icy road on riding safety. HP VELOTECHNIK recommends not to ride in icy conditions.

Ride on paved roads only.

There is a risk of tipping over if the trike is inclined sideways, e.g. on slopes.

Therefore, avoid driving on routes with a significant lateral inclination.

Only drive over low obstacles.

Always drive over obstacles forward and at low speed. For example, only use lowered curbs to enter or cross a sidewalk.

Please note that trike parts can heat up considerably in strong sunlight.

Riding

Ride at an appropriate speed.

HP VELOTECHNIK recommends always riding with your lights on.

Always be ready to brake.

The parking brake is not a service brake. It must not be used for braking while riding.

Several users

Before being used by other persons, your trike must be adapted to them. Check whether the adjustments must be carried out by specialized dealer, see page 10.

Hand out the manuals to each user before the first ride. Each user must familiarize

Safety instructions (Bike)

themselves with the trike as described above.

Carrying the recumbent

The recumbent must not be lifted when a person is on the seat.

Breakdown

Before each ride, plan how to handle a breakdown. A breakdown can be caused, for example, by a flat tire or the chain coming off, making it impossible to continue without repair. If you cannot move without the trike, ride with an accompanying person. If you want to rely on the ability to call for assistance on your cell phone, ride only in areas with cell phone coverage.

Lighting system and turn signal

If equipped with an electric drive system, the lighting system and the optional turn signal only function when the drive system is switched on.

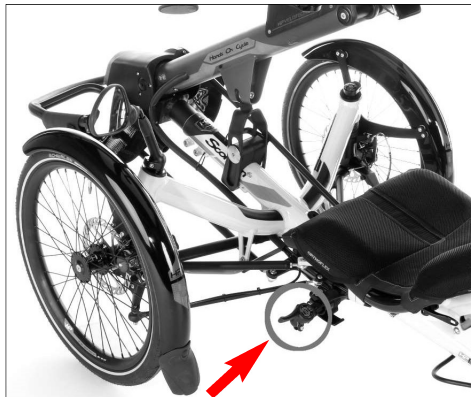
Period of use

Taking into account the operating instructions, the frequency of use, regular and correct maintenance and correct use, the expected service life is 8 years.

Getting in and out

Parking Brake

Block the trike with the parking brake. The lever for locking the parking brake is located on the left under the seat. Move the lever forwards to lock the parking brake. Move the lever back to release the parking brake.



Open and close the mast

The mast can be raised to a higher position for easier entry and exit. To do this, support the mast with one hand, release the quick-release lever on the bracket and push it upwards. When the mast is in the optimum position, close the quick-release lever.

The mast automatically locks in its highest position. Nevertheless, always close the quick-release lever to secure the mast.

After getting on the trike, support the mast with one hand, open the quick-release lever and push in the quick-release from the left side. Slowly lower the mast in your riding position. Close the quick release.



The mast automatically locks into the top position.



To release the mast from the top position, open the quick release lever and push in the direction of the arrow.

Getting in and out

Danger!

If the quick-release is opened, the mast can fall. This can cause injury. Always support the mast with one hand, bring it into the desired position and close the quick-release lever securely.

Never release the quick-release lever while driving.

Always close the quick-release lever to secure the mast.

Discuss the best way of getting in and out with your dealer.

You should first practise getting into and out of the trike in peace and quiet. A trained assistant should be present at the start to provide help and advice.

Only use solid components to support your body. These are, for example, frame parts such as the crossbars, seat and crankshaft. Do not hold on to moving parts such as the hand cranks. These parts are not designed for this purpose and may give way or rotate under load.

Individual Adjustment

Danger!

Loose bolts and open quick-release levers result in inadequately fastened bicycle parts. This could result in an accident, personal injury or death.

Always make adjustments to your trike while it is stationary. Ride only when all bolts and quick-release levers are properly tightened. Observe the specified tightening torques on page 19.

Modification to the trike or equipment

Your trike is equipped with an HP VELOTECHNIK ErgoMesh seat.

The HP VELOTECHNIK BodyLink seat must not be used together with the Hands-On-Cycle hand-drive.

The order list for Hands-On-Cycle includes some additional parts. From the HP VELOTECHNIK range, only these add-on parts are suitable for your trike.

Electrical devices from other producers, e.g. auxiliary drives, must not be mounted on the trike.

Attachments that change the intended use of the trike with Hands-On-Cycle hand-drive must not be mounted.

No modifications must be made to load-bearing components.

The seating position is essential for riding comfort, your well-being and efficient performance on the recumbent trike.

Therefore, adjust the seat, frame and suspension exactly to your needs. You will find detailed information on the adjustment options in the original trike manual.

The adjustment of the manual drive is described in the following.

The adjustment of the front boom must be carried out by a specialized dealer. The adjustment of the seat, the leg rest, the foot plates and the lower leg fixation as well as the height adjustment of the mast can be done by end users.

Danger!

Moving the front boom in or out has an effect on the steering and on safety. Errors in adjustment can lead to accidents. Modifications must only be carried out by a specialized dealer.

Seat adjustment

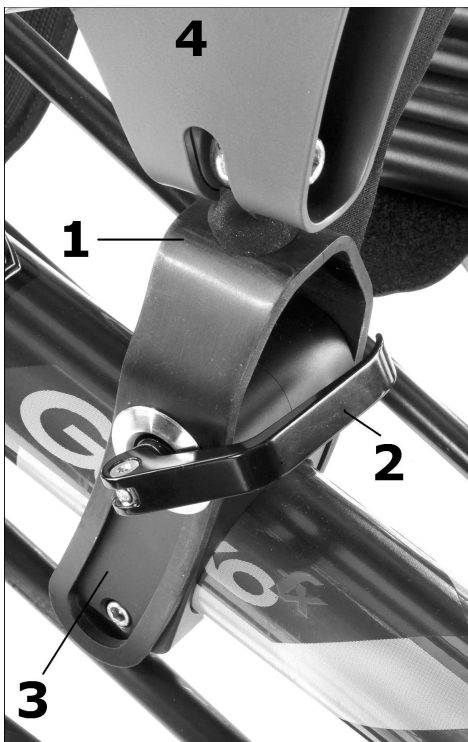
Seat adjustment is described in the original owner's manual. The position of the seat should allow enough room for the arms to turn the crank, be comfortable and allow good visibility.

Individual Adjustment

For specialized dealer only:

Adjustment of the front boom

Part designation:



- 1 - support sheet
- 2 - quick-release lever
- 3 - support clamp
- 4 - rod end mount

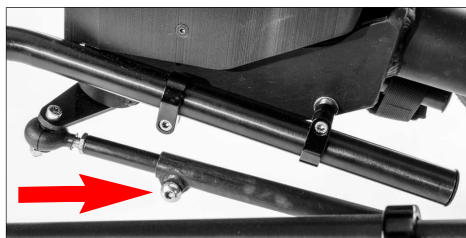
Together with the rider first adjust the seat as described on page 10.

Then check the boom length. The boom is well adjusted when the rider is leaning against the seat and can grip the cranks with slightly bent arms in the foremost (furthest out) position.

1. Open the quick-release lever of the support and bring the mast to a middle position. Close the support's quick-release lever.
2. Open the clamping screws of the front boom and of the push rod.



Front boom adjusting clamp



Clamping screw for adjusting the push rod length

3. If the front boom is adjusted in a range of 1 cm, the support clamp on the main frame can remain in position. If it is necessary to move the front boom in or out more than 1 cm, the support clamp on the main frame must be moved as well.

Individual Adjustment

3a. Secure the mast so that you can work on the the support.

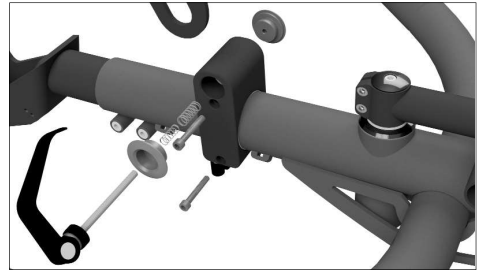
3b. To move the support clamp, remove the quick-release, quick-release mount, springs and quick-release nut. When pulling out the quick-release, be carefu not to lose the springs. Then loosen the 2 fastening screws of the support clamp.

3c. Adjust the support clamp, so that:

- the support clamp is located under the support sheet.
- the rod end does not touch the rod end mount in any position ot the mast.

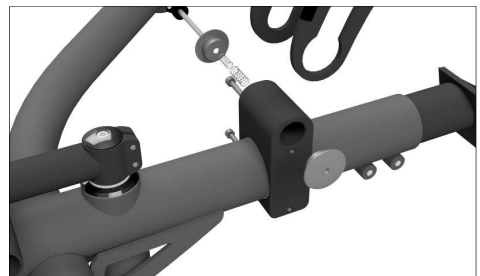
3d. When tightening the support clamp, first tighten the upper screw to the stop with 7 – 9 Nm, then tighten the lower screw with 7 – 9 Nm.

Ensure that the support clamp is still level after adjustment.

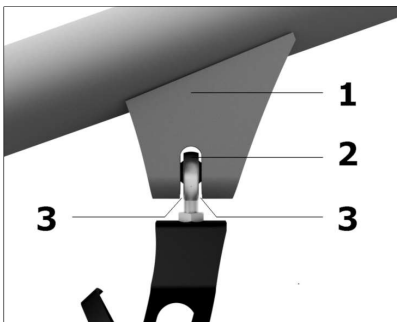


The support clamp consists of a left and a right part. It is clamped to the frame with 2 screws. Also in the picture: quick release, the quick-release mount, the springs (left) and quick release nut (right) as seen from the left side.

3e. Mount the quick release, quick-release mount, the springs and quick-release nut



Support clamp with quick-release nut (right), quick-release mount, springs and quick-release (left) as seen from the right side.



*The rod end must not touch the rod end mount
1 - Rod end mount, 2 - Rod end, 3 - Clearance between rod end and rod end mount*

4. Tighten the front boom clamping screws with 11 – 12 Nm.

5. Set the front wheels of the trike and the mast in a straight position and tighten the screw of the push rod with 7 – 8 Nm.

Individual Adjustment

Danger!

If the rod end collides with the rod end mount, the steering system is not free. This can lead to serious accidents. Install the support clamp as described above. The rod end must not touch the rod end mount.

Positioning of legs and feet

Setting of the leg rest



Leg rest: setting the inclination



*1 - Leg rest :adjustment of the longitudinal position
2 - push rod: setting of length.*

The angle and position of the leg rest can be adjusted.

Adjusting the inclination: the screws of the two rear clamps can be screwed either into the upper or lower thread. Tighten with 4 – 5 Nm.

Adjusting the longitudinal position: Loosen the screws on all the 4 clamps that secure the leg rest to the front boom. Adjust the leg rest to your leg length. Tighten the fastening screws again with 4 – 5 Nm.

Adjustment of the leg rest mesh

Danger!

If the legs slip off the leg rest, they can be rolled over. Your legs must rest securely on the leg rest and be secured against falling off. Check whether you need HP VELOTECHNIK accessories for this purpose (lower leg fixation, foot plate).

The leg rest mesh can be attached in 2 positions.



Option 1: The leg rest mesh is fixed in front of the clamps.

Individual Adjustment



Option 2: The leg rest mesh is fixed behind the clamps

Adjustment of the foot plates



Leg rest with foot plate and lower leg fixation

1 - Fixation and adjustment of foot plates

2 - Fixation and adjustment of the lower leg fixation

You can move the foot plates sideways and adjust the inclination. To do this, loosen the fastening screws and tighten them with 6 Nm after the adjustment.

Use of the retaining strap:

Open the retaining strap on the foot plate by pulling the blue flag and undoing the Velcro fastener. The integrated spring sheet lifts the belt. If you are able to pass your foot through, you do not need to pull the strap out of the strap bracket.

Tighten the retaining strap(s) and place the Velcro partners on top of each other.

Retaining options of the retaining straps

You can adjust the position of the retaining strap using the various holes in the sidesheets of the footplate.

Remove the lock nuts and remove the retaining strap and strap bracket. Use a light hammer blow on the press-fit threaded bolts to loosen them from the holes.

Mount the strap bracket on the inside of the footplate and the retaining strap on the side part in the position that suits you. To do this, insert the bolt into the hole and prevent it from falling out again by applying light pressure with one finger while you put on and tighten the strap bracket/ retaining strap, washer and self-locking nut. In doing so, the threaded bolt secures itself against twisting. Make sure that the end of the threaded bolt is not pulled below the surface of the side part.

If the threaded bolt is carried by the self-locking nut and turns, you can first use an M5 nut without threadlocker to pull the threaded bolt into the hole until it is secured against turning and replace it by a self-locking nut afterwards.

Adjusting and using the lower leg fixation

The holding rod of the lower leg fixation is placed into the outer tube end of the leg rest, turned into the appropriate position and fixed with the clamp. Tightening torque 7 – 9 Nm.

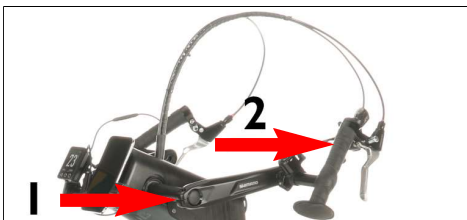
Individual Adjustment

Open the Velcro strap on the calf pad, place it around the leg and reattach it to the calf support.

Adjustment of the hand cranks

Grab the hand cranks and test that the brake levers, shift levers, and bell are within easy reach and that the distance between right and left hand cranks is comfortable.

A qualified person can make the following adjustments:



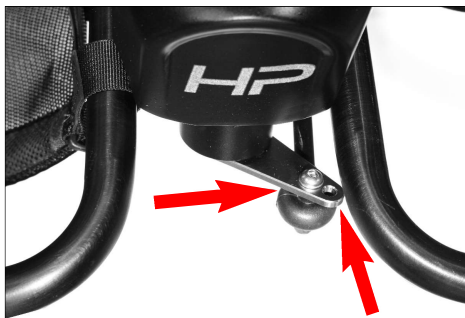
Adjustments cranks and hand pedal
1 - Adjust the distance between the cranks
2 - Shorten the hand pedal

To reduce the distance between the hand cranks, the cranks can be moved side-wards on the input shaft. The input shaft can also be shortened.

The hand pedal tube can be shortened if necessary, but only on the open end side.

The grip width of the brake lever can be adjusted. The bell can be moved (also by user).

Adjusting the steering



For the attachment of the push rod and adjustment of the steering there are 2 holes on the steering lever to choose from.

The force required for steering can be adjusted:

If the push rod is fastened in the inner position, the force required for steering is reduced. At the same time, the full steering range cannot be used.

If the push rod is fastened in the outer position, the force required for steering increases. The full steering angle can be used. This means that somewhat tighter turns can be made than when using the inner thread.

The adjustment must be carried out by a qualified person.

Tightening torque: 9 – 10 Nm.

Folding

Restricted foldability

Various attachments such as mast, electric drive systems and racks limit the folding function of the recumbent.

Proceed as described in the folding instructions of the trike manual and fold the trike as far as possible.

Example: fold the rear wheel up to the cranks and attach the rack there with the enclosed Velcro strap.

Gekko fx 26

Detailed folding instructions can be found in the original manual of the trike.



Folded Gekko fx 26 with Hands-On-Cycle hand-drive.

Scorpion fs 20

Detailed folding instructions can be found in the original manual of the trike.

Additional note for your trike with Hands-On-Cycle: Loosen the folding joint as described. Steer to the right. Swing the rear of the frame up and guide the rear wheel past the mast on the left.



Folded Scorpion fs 20 with Hands-On-Cycle hand-drive. The seat was taken off.

⚠ Attention!

If the restricted folded Scorpion fs 20 is tilted onto the rear wheel and folding hinge, the folding hinge may be damaged. Place the folded Scorpion fs 20 securely on the front wheels and leg rest.

Folding

Scorpion plus 20 and plus 26

Detailed folding instructions can be found in the original manual of the trike.








Additional note for your trike with Hands-On-Cycle: Loosen the folding joint as described. Steer to the right. Swing the rear of the frame up and guide the rear wheel beside the mast on the left.

Attention!

If the restricted folded Scorpion plus is tilted onto the folding joint, the folding hinge may be damaged. Place the folded Scorpion plus securely on the front wheels and leg rest.

Labeling

- Medizinische Hilfsmittel sind gekennzeichnet mit Symbolen entsprechend der DIN EN ISO 15223-1.
- Medical aids are marked with symbols according to DIN EN ISO 15223-1.
- Les aides médicales sont identifiées par des symboles conformes à la norme DIN EN ISO 15223-1.

	<ul style="list-style-type: none"> • kennzeichnet Produkte, die die Anforderungen der Verordnung 2017/745/EU über Medizinprodukte erfüllen • identifies products that comply with the requirements of Regulation 2017/745/EU on medical devices • identifie les produits conformes aux exigences du Règlement (UE) 2017/745 relatif aux dispositifs médicaux
	<ul style="list-style-type: none"> • zeigt dass es sich um ein Medizinprodukt handelt • indicates that it is a medical device • indique qu'il s'agit d'un dispositif médical
	<ul style="list-style-type: none"> • zeigt den Hersteller des Medizinproduktes • shows the manufacturer of the medical device • identifie le fabricant du dispositif médical
	<ul style="list-style-type: none"> • zeigt das Datum an dem das Medizinprodukt hergestellt wurde • shows the date when the medical device was made • indique la date à laquelle le dispositif médical a été fabriqué
	<ul style="list-style-type: none"> • zeigt die Seriennummer an • shows the serial number • indique le numéro de série
	<ul style="list-style-type: none"> • zeigt die Artikelnummer an • shows the item number • indique la référence de l'article
	<ul style="list-style-type: none"> • Gebrauchsanweisung beachten • observe operating instructions • se conformer au mode d'emploi

Tightening torques

The values indicated are meant for a friction value $\mu=0,125$ (greased threads and screw heads). They only refer to the indicated parts. Please do always follow the values given in the manuals of the parts manufacturers since the following values may not be up to date due to changes in the product line!

part	connection	Bolt	Tightening torques
Support clamp	right part / left part	M6 SW5	7-9 Nm
frame	front boom clamping	M8 SW6	11-12 Nm
leg rest	leg rest / cover for output box	M6 SW5	7-9 Nm
foot plate	foot plate / leg rest	M5 SW3	6 Nm
crank	crank / input-shaft	SW5	12-14 Nm
hand pedal	hand pedal / crank	SW8	35-40 Nm
steering rod	length adjustment	M6 SW5	7-8 Nm
steering rod	steering rod / steering lever	M6 SW5	9-10 Nm
steering rod	steering rod / stem adapter	M8 SW5 / 13	13-15 Nm
lower leg fixation	lower leg fixation / leg rest	SW5	7-9 Nm

Also observe the torque specifications in the original operating manual of your trike.

Technical data

Folding dimensions:

Note that depending on the attachments, your bike may have restricted folding capabilities.

Modell	Lenght	Width	Height
Gekko fx 26 Hands-on-Cycle	1200 mm 48 inch	830 mm 33 inch	1000 mm 40 inch
Scorpion fs 20 Hands-on-Cycle	1050 mm 42 inch	830 mm 33 inch	980 mm 39 inch
Scorpion plus 20 Hands-on-Cycle	950 mm 38 inch	910 mm 36 inch	1210 mm 48 inch
Scorpion plus 26 Hands-on-Cycle	950 mm 38 inch	910 mm 36 inch	1370 mm 54 inch

Weight of the Hands-On-Cycle hand-drive approx. 8,5 kg | 16,5 lbs.

