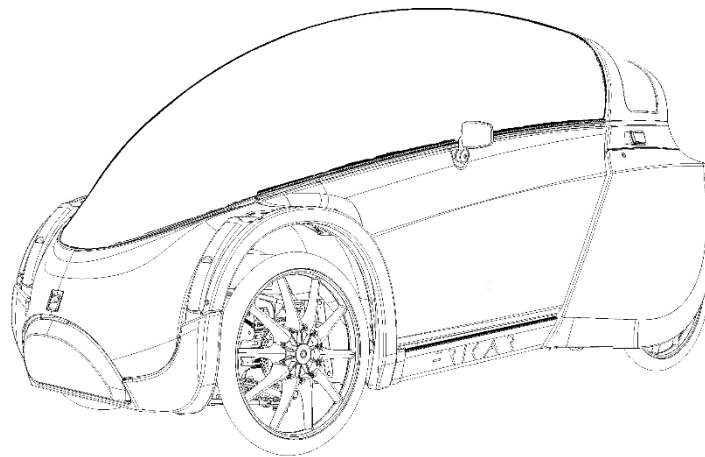



# FRIKAR Signature

User Manual Appendix  
rev. C



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# 1 INTRODUCTION

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These instructions are written to help locating and correcting issues on the four-wheel, fully weather protected e-bike Podbike® FRIKAR™.

Note that some of the described procedures should only be done by «trained persons». That mean someone who has sufficient experience and know-how to work on regular e-bikes and electronic systems capable of high currents.

This documentation does not replace the user manual. Knowing how you operate Podbike FRIKAR during normal use is a prerequisite for using this guide.

The potential issues are divided into following main groups:

- [Service work warnings](#)
- [Podbike App](#)
- [Electrical](#)
- [Mechanical](#)

However, some issues relate to more than one group so check other places if the issue is missing in a specific group.

This document contains hyper-links to various sections so it is best to read it electronically to have benefit of the links. And it will save paper as well.

# 2 SERVICE WORK WARNINGS AND RECOMMENDATIONS

---

When working under the velomobile, it is important to remember that most of the vehicle weight is at the rear end, and that opening the canopy moves centre of gravity further back. Make sure that the vehicle is stable when lifted and cannot fall of its support(s).

To eliminate any unintentional starting of motors and rotation of drive wheels, remove traction battery before carrying out any maintenance work. See battery information in chapter 5.3.

When changing wheels or maintaining brakes, it is recommended to lift the front – or the rear- of the velomobile and support with a suitable box or equivalent so that the wheels - in pairs - are lifted off the ground.

# 3 PODBIKE APP

---

Be aware that the first version of the Podbike app has several bugs, some are quite annoying. We are working on improving this.

## 3.1 INSTALLING APP

3.1.1 On iPhone  
Requires iOS 13.0 or later.

3.1.2 On Android  
May fail if used together with Garmin watch app. May fail on certain Android phones. Samsung seems to work fine.<sup>1</sup>

---

<sup>1</sup> We are currently investigating this issue

## 3.2 CONNECTING APP TO FRIKAR

### 3.2.1 On iPhone

Close the Podbike app when you turn off the bike, otherwise it is difficult to reconnect next time you use the bike.

If unable to connect, try to remove the pairing to FRIKAR in *Settings, Bluetooth*, then select the device ID for FRIKAR (example: “000007-F8-1-00-024”) and press ⓘ then *Forget this device*. Note that there may be several pairings so make sure all pairings are removed.

### 3.2.2 On Android

Close the Podbike app when you turn off the bike, otherwise it is difficult to reconnect next time you use the bike.

If unable to connect, try to remove the pairing to FRIKAR in *Settings, Bluetooth*. Note that there may be several pairings so make sure all pairings are removed.

## 4 ELECTRICAL

---

### 4.1 BATTERY

#### 4.1.1 All LEDs on battery are flashing

Battery LEDs flashing indicates overcurrent situation. This can be caused by battery not fully seated into the battery holder or that the battery is fully discharged.

If flashing still happens with fully charged battery and battery correctly installed, then check the battery contacts – especially the red and the black contact on the battery and on the bike are important – use a

flashlight and check for damage (broken or deformed plastic, bent or burnt metal).

Please contact Podbike if there are issues with battery contacts or the cause of flashing is not found.

#### 4.1.2 No regeneration/recouperation

The 877Wh battery of type 10INR19/66-7 are specially made for Podbike. It should have a label with the text: **Updated Config File New Art Nr.: 616930**

If there is no such label it indicates that the Podbike specific configuration of the battery is probably missing and that the battery may not function properly.

#### 4.1.3 Sudden disconnection

In rear cases the battery may become disconnected from battery contact in vehicle. In worst case this may cause dangerous situations by disabling the motor assist. It can also damage the battery contacts on the battery and on the vehicle.

To prevent sudden disconnection of battery it is important that the battery is fully seated into the battery slot. The hinged metal cover must always be lowered over the battery.

Make sure that foreign objects like clothes and blankets does not obstruct the battery from fully entering the battery slot.

## 4.2 MOTORS

### 4.2.1 Too weak to climb

#### 4.2.1.1 *Adjust to maximum assistance*

Use right joystick and toggle towards right to get as many round green dots as possible

#### 4.2.1.2 *Adjust to maximum cadence*

Use right joystick and toggle towards rear to get as many green 'diamonds' as possible

#### 4.2.1.3 *Battery charge is low*

Please recharge the battery

### 4.2.2 One motor not working

If the motor belt is broken on one side, the bike will not move. An easy way to check if a rear belt is broken:

1. Put a sturdy box or similar under the rear end of the baseplate to lift both rear wheels from the ground
2. Make sure that the vehicle is stable then disengage parking brake and turn on the bike.
3. Verify that both rear wheels spin when moving the pedals by hand.

If one wheel is not spinning but can be moved freely, and the motor can be heard spinning, the belt is most likely broken.

### 4.2.3 Belt broken

The rear wheels use same belt transmission as the pedal generator. There is a description on how to replace belt in [Pedal generator](#).

### 4.2.4 Bad motor-controller wiring

Remove rear wheel cover on the side with failing motor.

Turn on power and Check if the LED on motor controller lights up, first red then green. If it does not light up, continue with fault finding as described in [Hardware fault diagnostic on motor controller](#)

### 4.2.5 Motor defect

Follow instructions under section [Noisy motor](#)

#### 4.2.5.1 *Motor-controller defect*

See [Motor controller faulty](#) section.

### 4.2.6 Noisy motor

#### 4.2.6.1 *Motor winding OR connection faulty*

Bad connections between motor and motor-controller may cause noisy motor.

Check wiring for visible damage

Check connectors on motor wires for damage.

**NOTE: Detaching the connectors on the motor-controllers should only be done by trained person.**

If you detach connectors, only do so after cleaning and drying the connectors outside housing as described in section [Cleaning for inspection of motor connectors](#)

#### 4.2.6.2 *Cleaning for inspection of motor connectors*

**The three motor phase connectors and the sensor connector are sealed against water ingress with silicone rubber seals, so they can be washed. this should only be done when the connectors are mated!**

Spray on mild detergent (Kitchen spray etc) and let it work for a couple of minutes

Flush the area with clean water. If using water hose, use slow flowing water. **Never use water under pressure, and absolutely no pressure washer!**

Dry the connector area carefully with compressed air and/or a clean cotton rag, making sure that you do not damage the wires or connectors.

**When mating sealed connectors, make sure the seals and sealing surfaces are dry, clean, and free of debris.**

#### 4.2.6.3 Motor controller faulty

A faulty motor controller is rare as they are well protected against moisture, corrosion, mechanical and electrical stress. However, if a faulty motor-controller is suspected, be aware that the following procedure, *Hardware fault diagnostic on motor controller*, should only be done by trained person.

Also be aware that Motor-Controller contain calibration data for the motor. **Swapping motor or motor controller will require a re-calibration with a special tool.**

#### 4.2.6.4 Hardware fault diagnostic on motor controller

**Be aware that the following procedure should only be done by trained person.**

If you suspect a faulty motor controller, first verify as good as possible the status of the motors:

- check that battery is fully charged and inserted correctly in the battery compartment. Then turn on the bike and check that

control handles and external lights turn on. Also check that bell, fan, and turn indicators works.

- Rotate pedals and verify if any of the motors are spinning.
- If one or both motors do not spin, remove the wheel cover(s) for failing motor.
- Check first if motor-controller has power. There is a LED on each motor-controller that should be red or green. If there is no light the 14-pin plug should be checked for power before suspecting motor-controller.

Note: Before detaching any plugs from motor-controller, follow the instructions on [Cleaning for inspection of motor connectors](#)

If power is supplied to the 14-pin connector there should be 0V on pin 1 and 3 and around 36V on pin 2 and 4, depending on SOC – *state of charge*. If this is not the case, check Automotive fuses and that the big 35 pin connector is firmly attached to the Power and body controller board.

#### 4.2.6.5 Check motor controller for shorted phase transistors

Note: Before detaching any plugs from motor-controller, follow the instructions on [Cleaning for inspection of motor connectors](#)

Take a picture or note the position and colour of each of the three phase wires.

Cut the plastic wire tie (zip-tie) that hold phase wires in place and disconnect the phase wires carefully. Remember contact orientation and how deep the contacts go into the connector.

If the wheel spins much easier after disconnecting the phase wires, there is a short in the motor-controller phase transistors.

**NOTE: When measuring on the sealed contacts make sure that the plastic sealing surfaces are not scratched. This will ruin the protection against**

water ingress. The same will happen if the rubber seals are damaged. Also make sure that the metal contacts are handled with care and not overstressed or scratched.

Check for short between pin 1 on 14 pin plug and the three phase contacts.

Check for short between pin 3 on 14 pin plug and the three phase contacts.

If there are any shorts the motor controller must be replaced.

When reinstalling phase wires into the same positions as before measurement, be careful to not damage the contacts or the wire insulation. Also make sure that the contacts are oriented the same way and as deep as they were before disconnection.

#### 4.2.7 Something hitting the rotating parts of motor

First the bike must be raised in the rear so that rear wheels can spin freely.

##### 4.2.7.1 Raising the rear wheels

Raise the rear wheels of the ground by adding support under the rear end of baseplate while making sure to not cause any damage to bike or person.

##### 4.2.7.2 Check rotation of rear wheel and motor

Release parking brake and verify that both rear wheels can be rotated easily. If one side is hard to rotate, check for mechanical reasons why it is hard to rotate, it is usually caused by the brake caliper not fully disengaged. If not, it could indicate a motor-controller with shorted phase transistors. That can be checked as described in [Check motor controller for shorted phase transistors](#).

Spin rear wheel by hand and then by motor and listen for any sounds that may indicate an issue.

If it is hard to distinguish if it is motor or something else, the belt can be removed to help pinpoint the issue. Follow instructions in [Belt broken](#) section to remove belt.

#### 4.2.8 Motor bearing noise

Follow same procedure as in [Something hitting the rotating parts of motor](#)

#### 4.2.9 Belt noise

Due to use of synchronous belts with high speed and torque on the pulleys, there is always some noise from the belts.

In a car it is often 50 kg or more of sound dampening materials. FRIKAR use 1.5 kg of specially made sound dampening materials in strategic places to dampen the most annoying sound spectrum.

However, there might appear higher or different sounds that may indicate issues that should be fixed.

[Raising the rear wheels](#) and spinning them while applying some braking will often reveal issues that result in excessive belt noise.

## 4.3 GENERATOR

#### 4.3.1 No resistance on pedals

Check that battery is fully charged and connected and that the bike is powered on.

Verify that the external generator contact is plugged into the connector located next to the generator pedestal.



Check [Automotive fuses](#)

#### 4.3.2 Broken belt

Check if generator belt is broken. This is the same belt as used for rear motors. If it is broken follow the instructions on how to fix Pedal generator

### 4.4 LIGHTS

#### 4.4.1 Head light beam height adjustment

The front light height is adjusted by sliding the entire head light assembly m up/down on the black body panel they are attached to.

To adjust, loosen the two screws that hold each head light. The screws are accessible from inside the front wheel housing, just turn the wheels to the side.

Adjust the light pattern on a white wall while in the dark according to national requirements for the country where the bike is used. That may require someone sitting in the bike while a second person does the adjustment to get correctly adjusted lights.

#### 4.5 BELL

The electronic cycle bell speaker is in front of the bike, behind the nose cone. If there is no sound from the bell, try to swap the plugs for the HMI sound speaker and the bell speaker to see if it is the speaker/wiring that is at fault, or if the sound output is not functioning.

### 4.6 BLOWER

NOTE: Remove battery before working on the blower as it can cause harm if powered up during handling.

If the blower is not working, check [Automotive fuses](#).

Try to rotate blower blades carefully by hand by using a long screw driver. If the blower motor is damaged, it will be difficult to rotate the blower blades. Blades can be accessed after detaching the air filter holder.

### 4.7 WASHER

#### 4.7.1 Filling washer fluid

The washer fluid tank is located behind right rear wheel cover.

### 4.8 FUSES

#### 4.8.1 Automotive fuses

There are four automotive 58V fuses on the Power & Body Controller board located under the seat. These fuses are replaceable without soldering but only by qualified technician. If blown, replace them with same current rating. Please note that these fuses should normally not blow, so before replacing a blown fuse, check the wiring harness and electric components for any visible damages. If fuse blows again there is a short and this must be fixed before installing new fuse.

They automotive 58V fuses are marked F1 to F4 and distribute power as follows:

**F1 (30A): Motor, right**

**F2 (30A):** *Pedal generator, elevator (future option)*

**F3 (10A):** *Blower, heater, washer pump*

**F4 (30A):** *Motor, left*

#### 4.8.2 Soldered fuses

There are two soldered fuses on the circuit board under the seat. They are miniature surface mount parts and need special soldering equipment to be replaced. They should never blow unless there is a major fault on the Power & Body Controller board located under the seat. These fuses should not be replaced in the field.

F5 (2A) provide power from switched side of traction battery to 5V DC/DC regulator.

F6 (3A) provide power from unswitched side of traction battery to 12V DC/DC regulator and 3.3V DC/DC regulator.

#### 4.8.3 Electronic fuses

##### 4.8.3.1 *In battery*

There is an electronic fuse inside the battery. If this is triggered due to overcurrent, the five green LEDs on the battery will flash for several seconds. This electronic fuse will reset itself after a short time if the over current situation is no longer present.

##### 4.8.3.2 *On Power & Body Controller board*

There is an electronic fuse on the Power & Body Controller board located under the seat. If this is triggered, a blue LED will flash in the right Control Handle. This can be reset by pressing on the top of the right control handle joystick three times in fast succession. Turning power off and on will also reset this fault.

This fuse can also be triggered by overtemperature. Then Power & Body Controller board will need to cool down before the power can be restored.

## 5 MECHANICAL

---

### 5.1 WHEELS

Wheels are made of injection moulded glass fibre reinforced thermoplastic. Due to production method, they have more sideways irregularity than regular bike wheels, however, as the brakes acts on separate discs, this is not a cause of great concern, except maybe for the impression of “sloppiness.”

Due to use of thermoplastics, the wheel rims, when tires are pressurized, will deform at very high temperatures. Keep tire pressure at 4 bar max and keep the wheels in the shade when parked. This is especially important when ambient temperature goes above 30°C.

### 5.2 REAR WHEEL CARRIERS

If you suspect something wrong with the rear wheels or rear wheel carrier arms it is useful to lift the rear end sufficiently to let the rear wheels spin freely in the air for closer inspection.

#### 5.2.1 Raising the rear wheels

Raise the rear wheels of the ground by adding support under the rear end of baseplate while making sure to not cause any damage to bike or person.

### 5.2.2 Servicing rear suspension arm

Remove wheel cover on the side to be serviced. Loosen the centre wheel bolt.

If available, lift the bike on a suitable stand. Be aware that centre of gravity is far back, make sure there is no risk of tipping backwards.

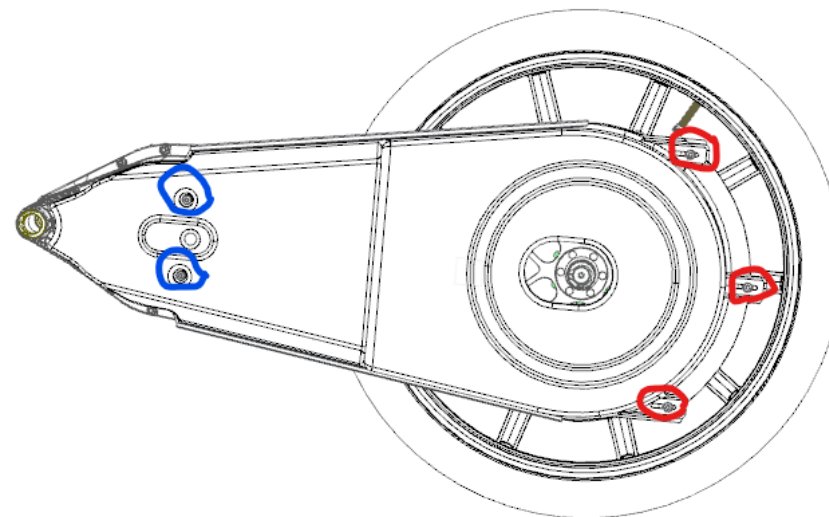
If no lift is available, it is possible to lay the vehicle on its side on even ground with soft grass. Before tilting on its side, fold in mirror and remove loose item in cabin to prevent damage. Be very careful with the canopy to avoid scratches. Also be aware that washing fluid may leak if tank is full. Tape over the breather opening on the washing fluid tank lid. Remember to remove the tape afterwards.

Remove the M8 bolt holding the damper/coil assembly to the wheel carrier.

The wheel carrier can now be tilted away from baseplate and the belt cover can be removed.

### 5.2.3 Removing belt cover on rear wheel carrier

Unbolt the three screws (screw driver PH2, marked with red in drawing) located at the rear edge, then two screws near the hinge point of the arm (screw driver TX20, marked with blue in drawing). Then the cover can be slid backwards and lifted away.



### 5.2.4 Broken belt on rear wheel carrier

To replace belt for rear wheel the rear wheel carrier must be tilted away from the baseplate, see instructions on how to do this in section 5.2.2

Instructions on how to proceed if there is a broken belt can be found in section 5.5.5 and 5.5.6 while tightening the belt is described in section 5.5.7 below.

## 5.3 BRAKES

### 5.3.1 Front brakes

The front brakes are hydraulic and self-balancing.

First verify that the brake pads are OK. Thickness of resin+metal should be at least 2.5 mm at thinnest, and the pads must be clean and free from oil and grease. If not, all four pads must be replaced on both sides to maintain good brake balance.

Also check the brake rotor (disc). It must be flat, clean of oil and grease, and at least 1.8 mm thick on wear surface.

### 5.3.2 Rear brakes

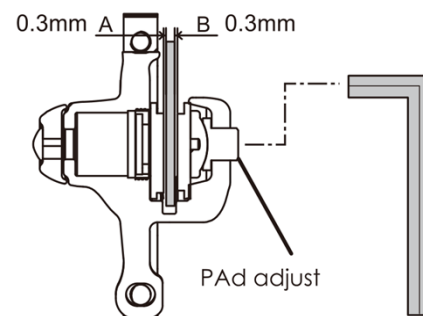
The rear brakes must be able to stop the vehicle alone and parking brake function must be strong enough to keep the vehicle at standstill on a hill.

First verify that the brake pads are OK. Thickness of resin+metal should be at least 2.5 mm at thinnest, and be clean and free from oil and grease. If not all four pads must be replaced on both sides to maintain brake balance.

Also check the brake rotor (disc). It must be flat, clean of oil and grease, and at least 1.5 mm thick on wear surface.

Remember to check that the three brake wires are OK. They should be rust free and show no signs of excessive wear, partly broken or split. Replace brake wires with original spares at any sign of performance degradation.

The rear brakes shall be adjusted to have 0.3 mm gap between pad and disc. If caliper is not centred then loosen the two Allen bolts holding the caliper and apply the parking brake. Then retighten the caliper bolts to 6-8Nm.



0.3mm clearance between pad & rotor

Make sure that the brake splitter under the seat is adjusted so that both rear brakes engage at the same time. The rear brakes must act evenly.

## 5.4 STEERING

**NOTE: The steering mechanism is very safety critical and work on these parts should only be performed by trained personnel.**

### 5.4.1 Excessive play or strange noises when handling

First check that wheels are OK and securely fastened on the hubs. Also check air pressure. Data for wheel bolt torque and tire pressure can be found in user manual, under *Specifications*.

Try to locate where the play or noise occurs and look for loose bolts, nuts, and rod ends. Also check for worn ball joints and bushings in the pitman arms, steering handle assembly and rear suspension arms. Unstable steering may be caused by slack in front or rear suspension. It can also be caused by worn or damaged steering parts.

Before performing any adjustments, always check for any signs of damage to, or worn or loose parts, in both front and rear suspensions,

## 5.4.2 Adjusting steering

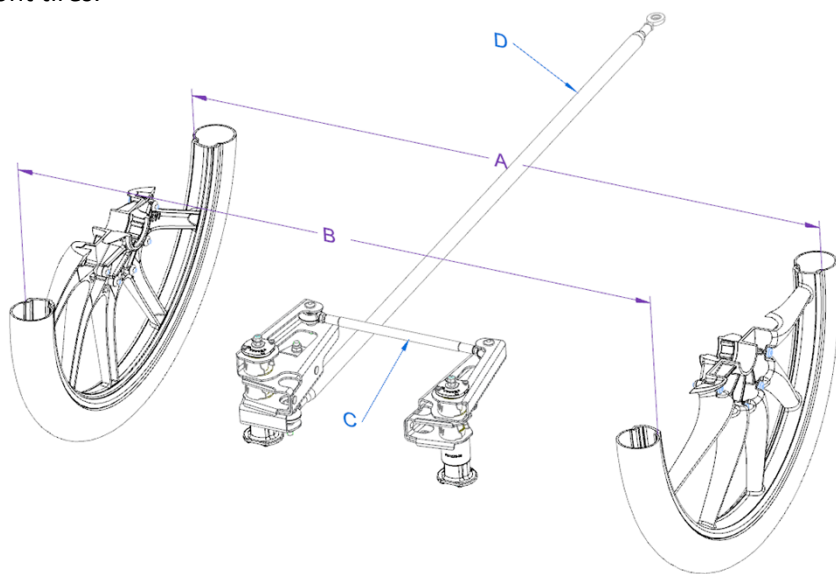
If the steering feels unstable, it may be due to incorrect front suspension alignment.

NOTE: Before doing any adjustments, make sure that any other steering issues have been solved by follow instructions in 5.4.1

Unless the chassis has been modified, only two of the links in the front suspension need adjustment. All other links have fixed length and should not be modified.

### 5.4.2.1 Toe-in measurement

Toe-in is important to have correct. Too little makes the vehicle unstable at speed. Too much cause more rolling friction and premature wear on front tires.



First find the existing toe-in by measuring distance between outside of rim of front wheels.

NOTE: When measuring toe-in, the vehicle must be on a flat, even surface with front wheels straight ahead.

Measurement must be done at wheel centre height, just where the wheels are cut in the picture above. Otherwise, the measurements will be incorrect.

A is the width between rims as measured behind the front axle, B is the width between rims in front of the front axle. A and B must be measured with a suitable measuring tool to an accuracy of +/- 1 mm or better.

The toe in should lie between 3 to 6 mm. If it is outside this range the toe-in must be adjusted by changing length of *Parallel link assembly (C)*. This may result in need of adjusting length of *Steering link (D)* to straighten the steering handle.

### 5.4.2.2 Adjusting toe-in

The following steps describes how to adjust toe-in:

- Place the vehicle on a flat, even surface
- Remove traction battery
- Remove front service panel and disconnect blower
- Loosen the lock nuts on *Parallel link assembly (item C above)*
- Adjust toe-in by twisting the *parallel link tube* until correct
- Make sure there is minimum 9mm thread engagement on the rod ends
- Measure toe-in as described in section 5.4.2.1
- Tighten lock nuts to 7 Nm and verify that toe-in is still correct
- Take a test ride and verify that stability and traction is good
- If steering handle is not centred it must be adjusted, see 5.4.2.3

### 5.4.2.3 Aligning steering handle with front wheels

If steering handle is no longer centred when cycling straight ahead, adjust length of *Steering link* as follows:

- Loosen the lock nuts on *Steering link* (item D above)
- Make sure the steering wheel are in straight-ahead position
- Twist the Steering link tube to align the steering handle without moving the front wheels
- Make sure there is minimum 9mm thread engagement on the rod ends
- Tighten lock nuts to 7 Nm and verify that steering handle is still centred

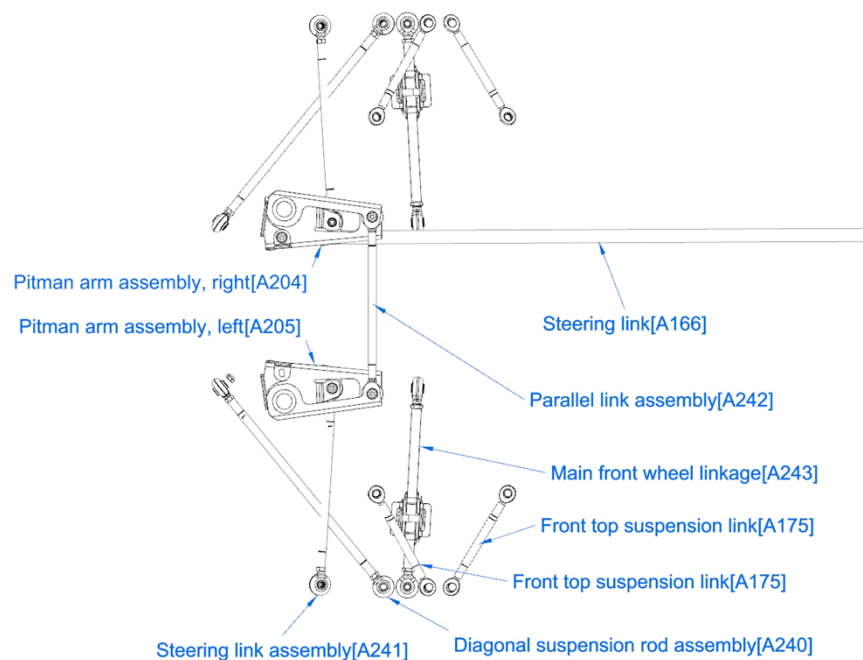
Remember to connect blower when finally reinstalling the service panel.

### 5.4.3 Front suspension links

To maximize space for pedal generator while having acceptable steering radius and sufficient suspension travel, the front suspension uses many link arms.

Left and right sides link arms are identical so only one side is named. Also, all link arms have both a left-hand threaded rod end, and a right-hand (normal) threaded rod end.

NOTE: As general rule the left-hand threaded rod end is always installed nearest the right pitman arm. This way the most exposed rod ends are the ones with normal threads.



Length of links are given as distance between the centres of the rod ends.  
Maximum total play between centres of ball joints is +/- 0.12 mm.

Two of the links are adjustable:

- Steering link [A166] – initial length 935 +/- 1 mm
- Parallel link assembly [A242] – initial length 224 +/-1 mm

Following links should not be adjusted:

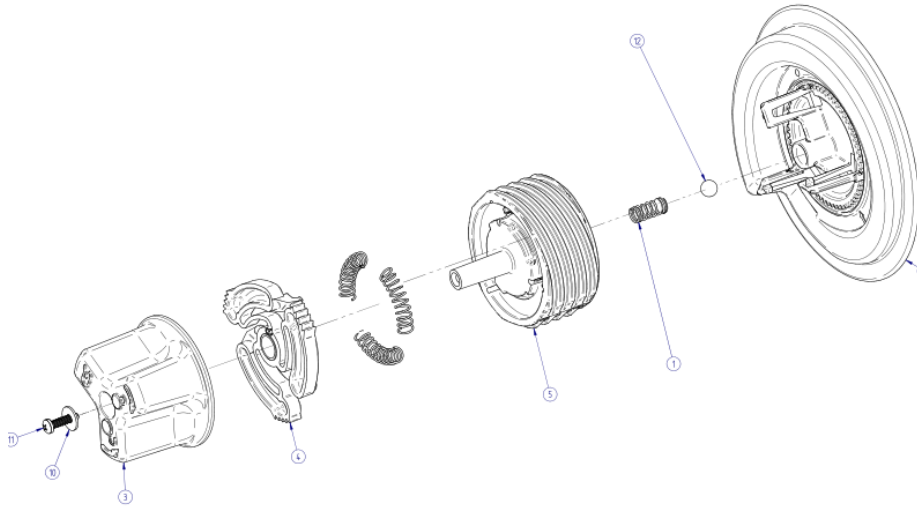
- Front top suspension link [A175] length 140 +/-1 mm
- Diagonal suspension rod assembly [A240] length 325 +/- 0.2 mm
- Steering link assembly [A241] length 248.8 +/- 0.2 mm
- Main front linkage [A243] length 252 +/- 1 mm

## 5.5 PEDAL GENERATOR

### 5.5.1 Pedal generator lock

The pedal generator lock can be difficult to unlock. Adding a little bit of plastic compatible lubrication may help.

If the pedal generator lock becomes too hard to unlock by hand, remove the centre screw in the big green plastic handle and pull up the three-armed ratchet to disengage the lock, it is item 4 in the illustration, while being careful of not losing any of the three springs:



Then unscrew item 5 as far as it goes.

Assembly: First insert the three springs in the three grooves in item 5, make sure the springs are seated fully clockwise. Then install item 4 (ratchet) so it can push at the free end of the springs. Finally reinstall the handle,

making sure it fits into the grooves on top of item 4 before installing washer and screw. If you have issues assembling this mechanism in place, it becomes easier to assemble if the pedal generator is removed from the bike.

### 5.5.2 Remove pedal generator

Make sure the bike is powered off.

Unlock the pedal generator lock by unscrewing the large green handle fully anti-clockwise.

Unlock the upper quick release handle on the generator pedestal.

Unlock the lower quick release and lift out the pedestal from it thru the open slot.

Slide the connector lock sideways to disengage the generator cable contact and unplug it.

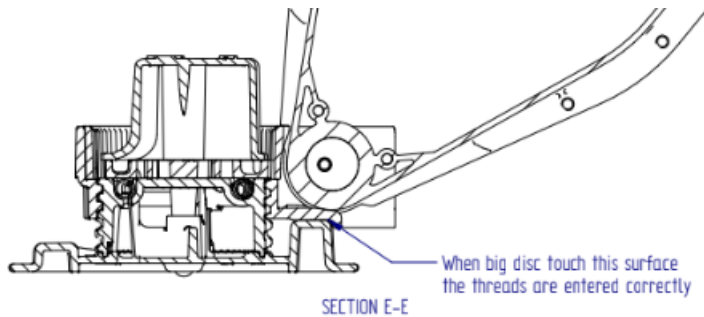
Slide the twister mechanism towards the front and tilt it sideways to lift it out of the bike.

### 5.5.3 Remove and assemble twister mechanism

Unscrew the twister mechanism fully and take it out from the bottom of the generator lock sledge.

Assemble the twister mechanism as shown in [Pedal generator lock](#)

Screw the twister mechanism back into the generator lock sledge. Note that there are three parallel threads and only one entry is correct. That is when the slanted surface on the large disc (PB0623) touches the slanted surfaces on PB1469 and PB1470 as shown in illustration below:



#### 5.5.4 Removing pedal generator covers

If the generator belt needs to be tightened or replaced, the generator covers must be removed.

First the pedal generator must be removed from the bike. This is described here: [Remove pedal generator](#)

Then remove the phone holder and the screws holding the two cover halves in place.

#### 5.5.5 Broken belt

A broken belt must be replaced, they cannot be spliced.

If belt is broken before it is worn out, the cause of failure should be fixed before new belt is installed, otherwise the new belt will also fail.

#### 5.5.6 Replacing belt

To replace belt on Motor (or generator) must be shifted towards the big pulley to allow new belt to be fitted. There are oblong holes in motor bracket to allow for this. Loosen the six Allen screws fixing the motor to motor-bracket to be able to slide the motor. The belt must be handled carefully when being installed, do not overstretch the belt when pushing it over the pully flanges.

#### 5.5.7 Tightening belt tension

Tension the belt by pushing the motor away from the big pulley, tensioning the belt.

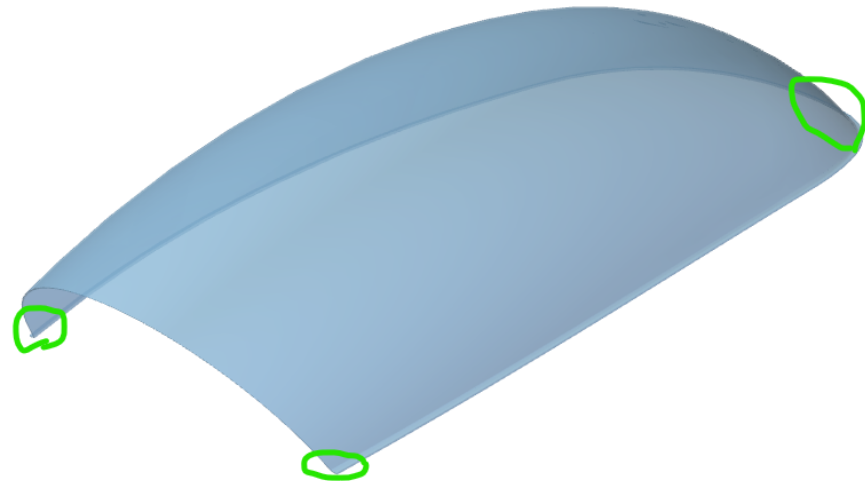
The belt tension should be 20 to 25 Newton (N).

### 5.6 CANOPY

**When handling canopy (the clear item) always be two persons!**

#### 5.6.1 Storing canopy when detached from vehicle

The canopy must be handled with care as it is easy to scratch or crack if handled rough. When storing it, put it carefully down, resting on green marked areas on soft surface/padding:



We recommend using clean cotton gloves when handling canopy for best protection. Protect it from wind and severe weather. Also keep it away

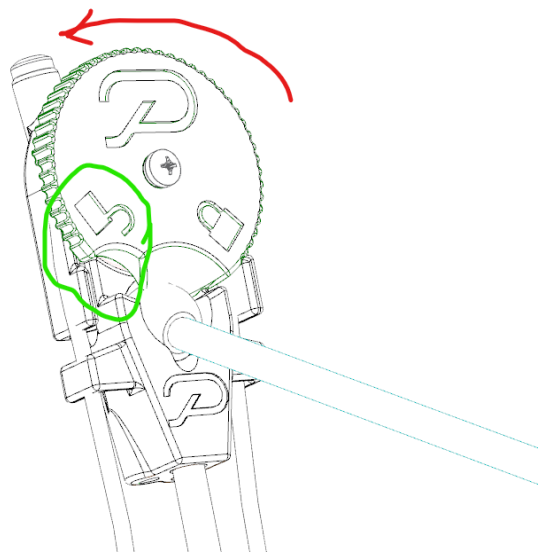


from anything that may cause damages including sharp edges, small children, and animals.

### 5.6.2 Removing canopy

**Two persons are needed to remove canopy.** Here are the steps on how to remove canopy:

1. Start with the parking brake on and canopy open, parked at an area with no wind, and with available space to store the canopy safely.
2. Disconnect the wiper arm from the gas spring mechanism by twisting the green/black locking lid in direction as shown with red arrow in drawing below, to open position, indicated in green on drawing, and pull out the metal ball at the end of the threaded rod from the gas spring head assembly:



3. Disconnect the washer hose from the outside of canopy from the non-return valve.
4. Remember to detach the strap for door lock rope from the canopy if still attached to the Velcro strip on the outside.
5. Make a mark on the green clamping gasket to indicate the centre position and which side of the gasket is up. Use a felt pen or a piece of tape if you do not want a permanent mark.
6. When reinstalling, it is very important to start with installing the gasket in the centre front area, and with same orientation as previously, as the gasket has different shape towards canopy than towards doors and front arch.
7. Detach the gasket from each side, starting in the rear. Bend it forward to spread it for easier detachment. Make sure to not push the canopy off the door lips or the rear arch.
8. Carry the canopy to safe storage as described in section 5.6.1 above.
9. Attach the loose end of the wiper gas spring to the opposite hole on the front arch with a long rubber band.

### 5.6.3 Installing canopy

**Two persons are needed to install the canopy.**

Start with the parking brake on and doors open, parked at an open area with no wind.

Installation of canopy is done basically with same steps as removal of canopy, see section 5.6.2, but in the reverse order:

1. Clean the black rubber gasket where the canopy is attached with a cloth soaked with soap and water.
2. Lift the canopy, having one person on each side of the canopy, and put it onto the vehicle.

3. Put the front lip of canopy just inside the lip on the front arch, make sure that the canopy rear ends are at the same position on each door.
4. Start attaching the green clamping gasket in the front. The marking you put on the gasket indicates where to start. Also remember to have correct side of gasket up. The centre of front arch is where the drain hole in the arch is located.
5. Bend the gasket backwards while pushing it fully onto the canopy and the front arch, clamping them together.
6. Work backwards installing clamping gasket from both sides – this is one of the reasons why two persons are needed!
7. Continue with attaching canopy to the doors, making sure that the clamping profile ends at same position on both sides.
8. If the clamping profile ends up at different positions at each door, then check if it is detached from canopy, front arch, or door lip some places. If that is the case, detach the profile from the rear and up to the position where it is not attached and reattach properly.
9. Reattach washing fluid hose to the valve.
10. Reattach the wiper arm ball to the wiper gas spring head and twist the wiper head lock to closed position.

## 5.7 WIPER

The windshield wiper gas spring may detach from the ball at the end of the threaded rod due to ball and socket not being compatible. If this happens, please contact Podbike AS to get replacement part.

\*\*\*\*\* END OF DOCUMENT \*\*\*\*\*