EMPOWERING CONFIDENCE IN MOTORSPORTS

INSTALLATION INSTRUCTIONS

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The following details the installation of the Motoklik TW1.0 system. The instructions are subject to change throughout the design process. There are a number of warnings in the instructions, please adhere to them. If at any time during the installation process you have any doubt as to how to correctly work on your motorcycle, please review your owner's manual to ensure you are satisfied with the work you are carrying out, or seek professional help.

Contents

Motoklik TW1.0 Configuration List

Before installing the Motoklik TW1.0 system, please ensure that you have the correct parts for your motorcycle. The corresponding part number can be identified on each part.

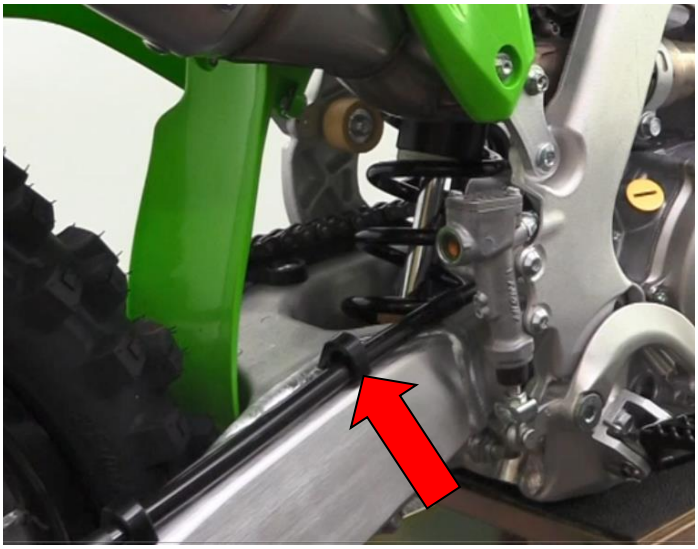
Make	Model	Year	Central Control Unit	Handlebar Controller	Front Sensor Wand	Rear Sensor Wand	OBD Cable
Kawasaki	KX 250	2021-2022	Universal	Universal	KYB 48	RSH KAW-1	OBD KAW-1
Kawasaki	KX 450	2020-2022	Universal	Universal	SHOWA	RSH KAW-1	OBD KAW-1

Make	Model	Year	Front Magnet Holder	Rear Magnet Holder	Wand Collar
Kawasaki	KX 250	2021-2022	KAW 52.5 - KYB 48	RMH KAW-1	KYB 48
Kawasaki	KX 450	2020-2022	KAW 49 - Showa	RMH KAW-1	*Showa 49

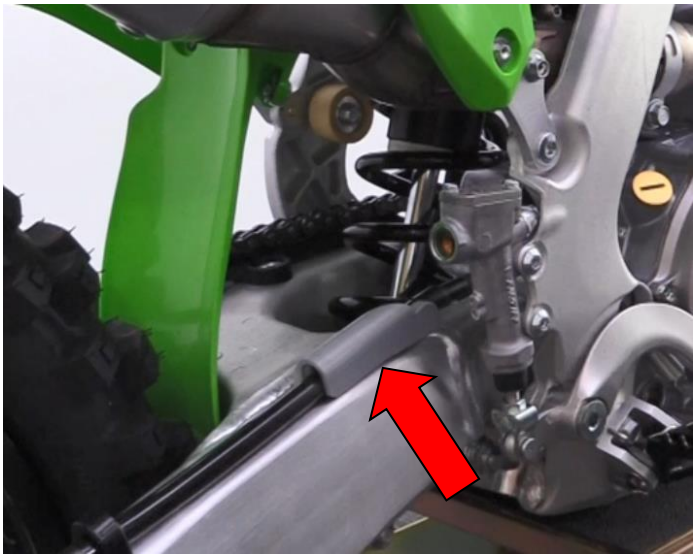
*Also identified with the part number: SHOWA NEW

Installing the Rear Suspension Sensor and Power Supply Cable.

The rear suspension sensor is used to measure the position of the rear wheel, relative to a designated sag point on the rear mudguard. The position is shown in mm values in the app.

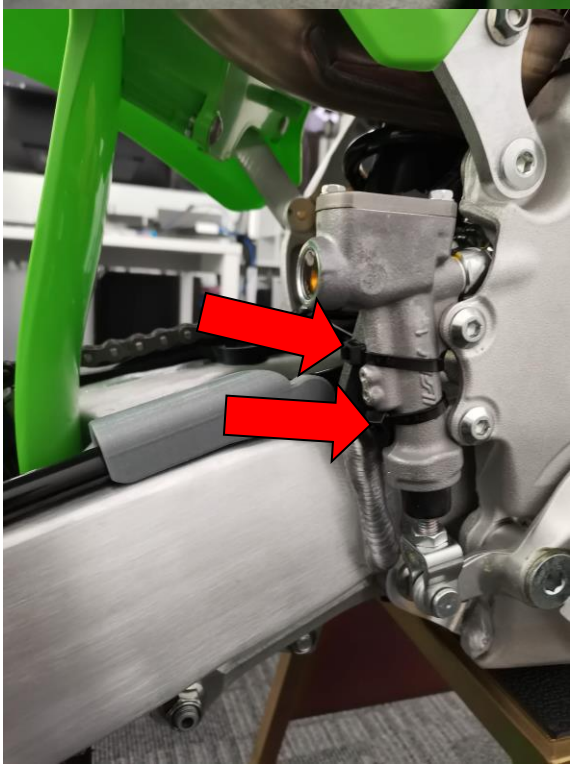


Begin by removing the rear brake line guide (red arrow) on the swingarm. The brake line guide is held in place with two Philips head machine screws. Undo these screws and remove the brake line guide.



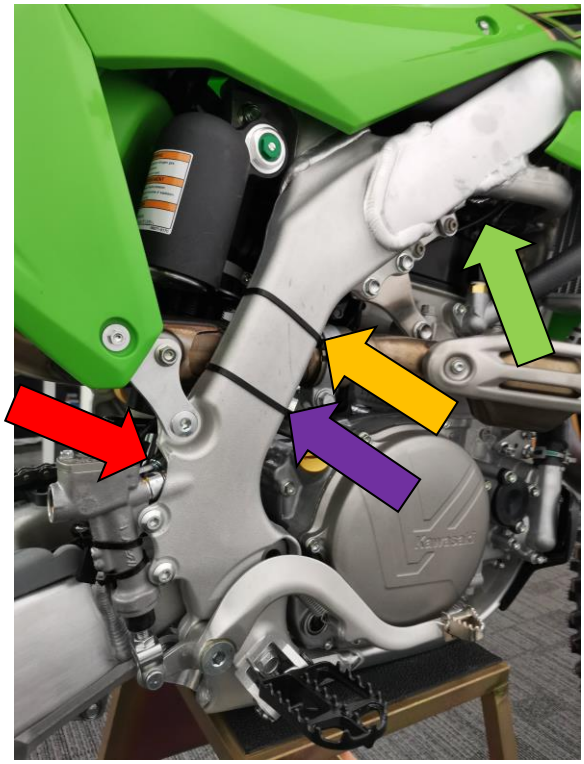
Place the machine screws through the designated holes on the Motoklik rear magnet holder. The rear magnet holder will be used as a replacement for the OEM brake line guide. Position the rear magnet holder in place and take care to tighten the machine screws fully. It can be easy to cross thread the screws, so take your time to make sure the screws are positioned correctly.

The next part of the process is to attach the rear suspension sensor pack.
On the rear sensor, you will see that one side has varying contours, and one side is a much smoother surface. In the image to the left, the smooth surface is facing towards you.
The countered surface is designed to exactly match the contours of the rear brake master cylinder. When putting the rear suspension sensor in place, you should feel that the sensor is almost locked in position, and can't be moved or rotated around the back of the master cylinder.



The rear suspension sensor is held in place by two medium length cable ties. There are channels within the sensor pack for the cable ties to fit through. Slide the cable ties through the channel and around the brake master cylinder, and secure them tightly.
Check the rear sensor again for any excessive movement. There may be a very small amount of play (less than 1mm) in the sensor pack, however, it is recommended to tighten the cable ties as much as possible without breaking them.

If the rear suspension sensor is not installed correctly, the rear suspension position and speed values will not be correct. Please check the rear suspension sensor regularly to ensure correct functionality.



Guide the rear suspension sensor cable (red arrow) along the inside of the right side frame truss.

Secure the rear suspension sensor cable with two medium length cable ties slightly below (purple arrow) and slightly above (yellow arrow) the exhaust, to ensure that the cable does not touch the exhaust during use. If the cable comes into contact with the exhaust when it is hot, it can melt the jacket of the cable and potentially stop the functioning of the rear suspension sensor.

Continue to guide the rear suspension sensor cable (green arrow) along the frame truss, and bring it up towards the right side radiator cap.

Use additional cable ties if necessary to ensure the rear suspension sensor cable does not touch the exhaust. Make sure there is no slack in the cable around the exhaust.

Open the cable bundle securing clip (blue arrow) on the right side of the head stock, and place the rear suspension sensor cable into the securing clip, before closing the securing clip again.

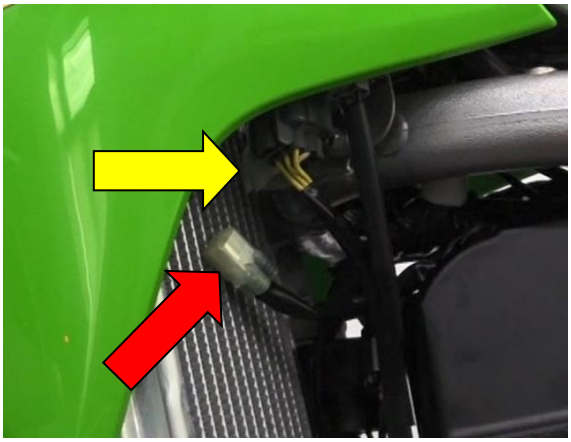
Bring the rear suspension sensor cable out between the fork and headstock, and between the triple clamps so that the cable protrudes out in the area behind the front number plate.

Make sure that the throttle cables continue to function properly and that the throttle has a smooth action and snaps shut. Make sure the handlebars can be turned filly from left to right and don not get caught up in any cables.

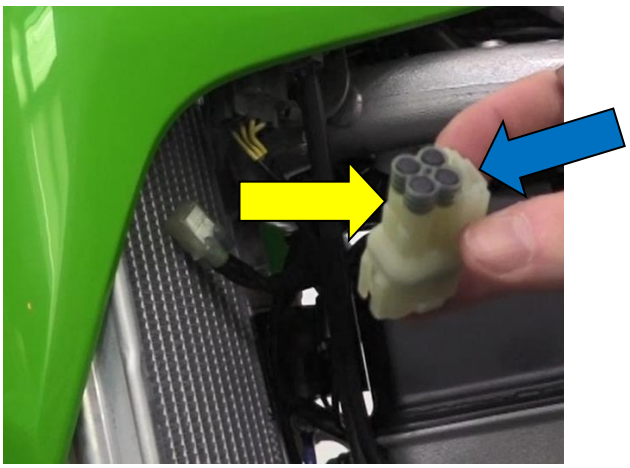
The power supply cable is used to transmit power from the motorcycle's power rail to the Motklik Central Control Unit. The power supply cable is equipped with a 1 Amp fuse to help protect the electronic circuitry of the motorcycle and the Motoklik system.

The OBD port will now be exposed so that the Motoklik power supply cable can be plugged in.

Unplug the OBD plug by pressing down the lever on the inside of the connector (red arrow), and pulling the connector down.

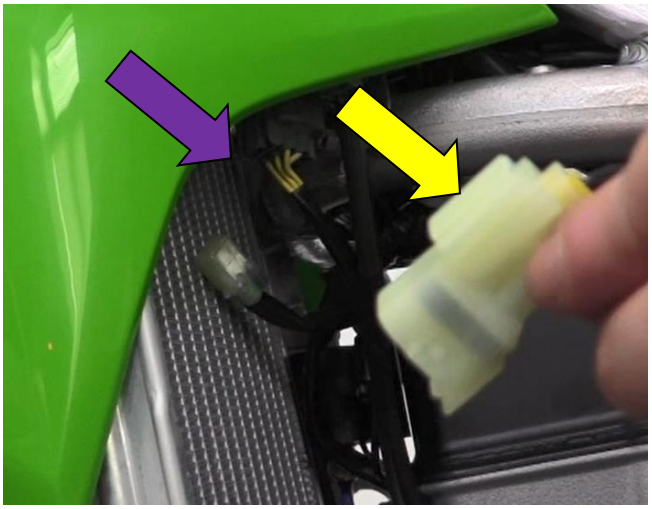


With the OBD plug (red arrow) disconnected, the OBD plug cap (yellow arrow) can now be removed from the frame of the motorcycle.

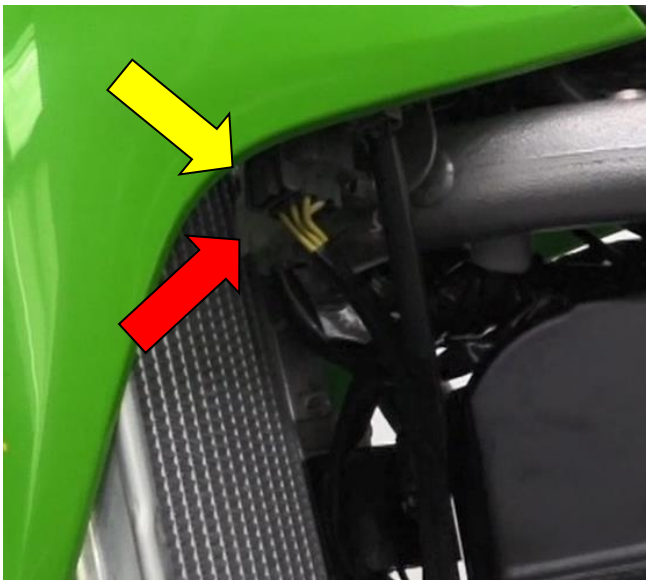


To removed the OBD plug cap (yellow arrow), press the small lever (blue arrow) back by using a flathead screwdriver from above. When the lever is pressed back, the OBD plug cap can be pulled up and away from the tab that is protruding from the frame.

Take your time with this step, and wear gloves, if possible, to protect your hands and radiator fins.

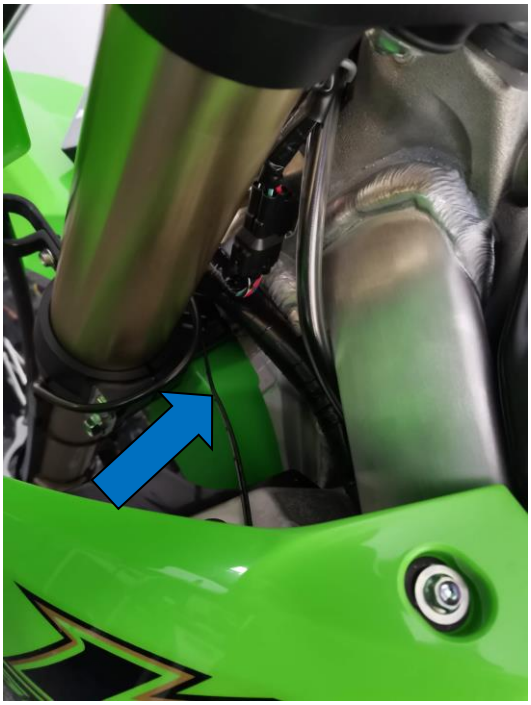


Take the Motoklik power supply cable (yellow arrow) and position it securely on the tab where the OBD plug cap was secured previously (purple arrow). The Motoklik power supply cable connector should click in securely on the tab on the frame.



The OBD plug connector (red arrow) can now be plugged into the Motoklik power supply cable connector (yellow arrow). Make sure that the OBD plug clicks into position so that it is secured correctly.

Take your time with this step, and wear gloves, if possible, to protect your hands and radiator fins.



The Motoklik power supply cable (blue arrow) can then be guided between the headstock and fork, so that the cable protrudes in the area behind the front number plate.

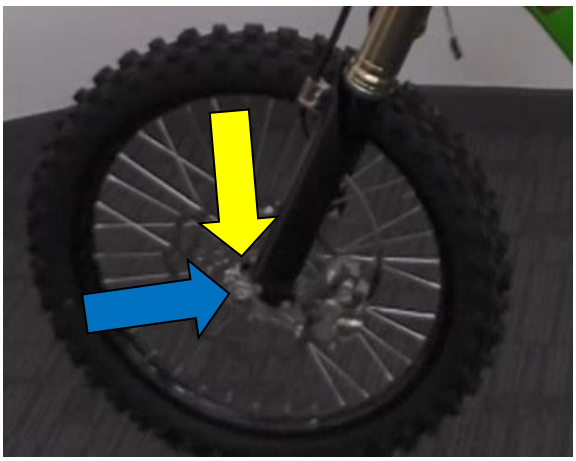
Installing the Front Suspension Sensor.

The front suspension sensor is used to measure the position of the front wheel, relative to the fork length. The position is shown in mm values in the app.

To fit the front sensor wand, the fork must first be removed so that the sensor alignment collar can be fitted on the fork.

Start by lessening the two bolts (red arrows) that hold the brake calliper in place on the fork lug.

Then move on to removing the front brake line clamp (purple arrow) completely. The front brake line clamp is held in place by two bolts. Loosen both bolts first before completely removing the bolts, and removing the two pieces of the clamp.



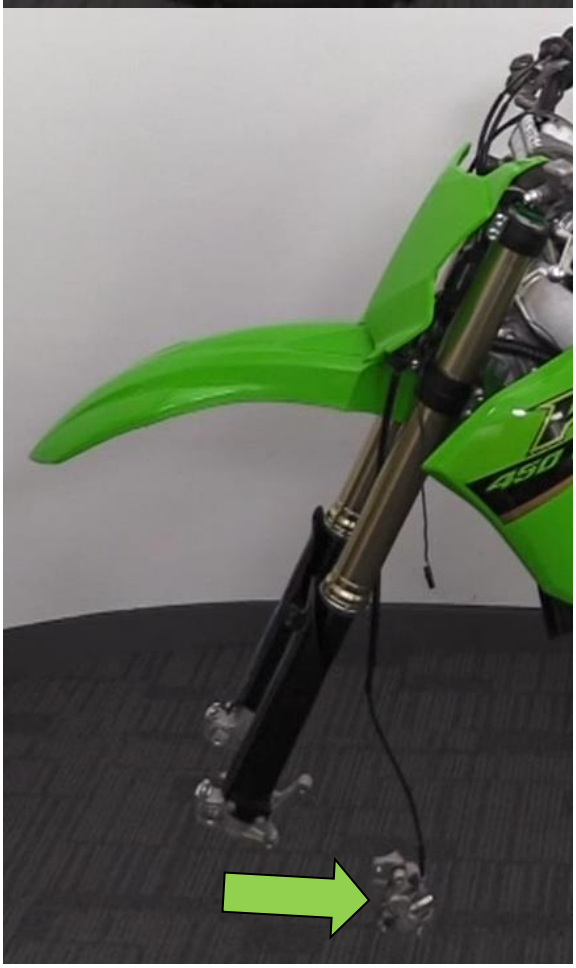
With the brake line clamp removed, and the bolts on the brake calliper loosened, now loosen the two bolts on the top side of the axle lug (yellow arrow).

With the two axle lug bolts loosened, now open the main axle nut (blue arrow) and remove it completely.

Now loosen the two bolts on the top side of the right-side axle lug (red arrow).

With the main axle nut removed, and both sets of bolts in the axle lugs loosened, the axle can now be pressed out and completely removed, so that the front wheel can be taken off the bike.

It should not take a lot of force to remove the front wheel axle. If you are finding that the axle can't be pressed out by hand, put the front axle nut back onto the threaded side of the axle by two or three turns, and then lightly tap on the nut with a plastic hammer to get the axle moving. Once the axle is removed, clean the front axle and lugs thoroughly with contact cleaner and a scouring pad, before drying the axle with some paper towels. You can then apply a light amount of grease to the cylindrical surface of the axle. Continue to do this regularly as part of your maintenance for hassle free care of your motorcycle.



Remove the two bolts from the brake calliper and allow the calliper to hang inside the fork leg.

Your motorcycle should now look like the left picture.

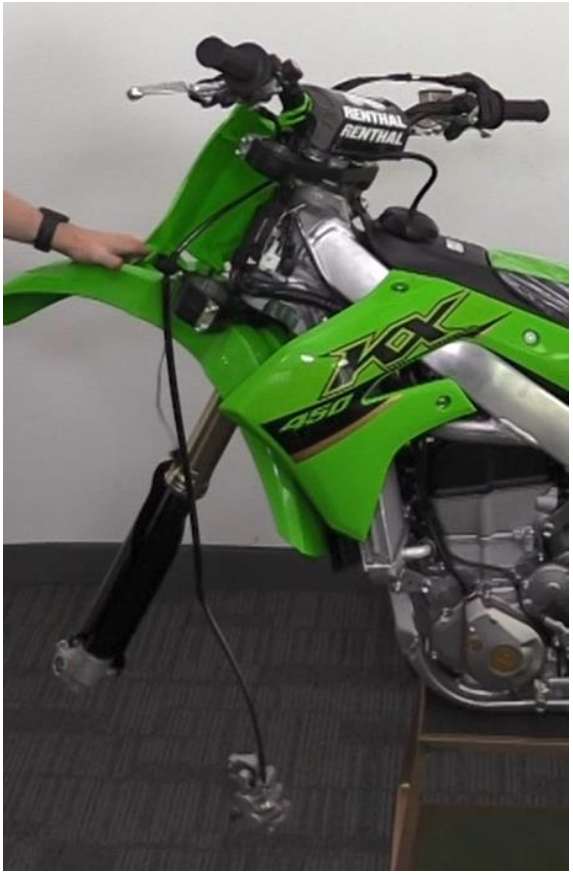
The next step is to remove the fork leg completely.

Before removing the fork leg, take a measurement of the height between the top surface of the top triple clamp (blue line) and the bottom of the fork cap (red line). It is imperative that this height remains the same after reinstalling the fork, and that the fork height is the same on both sides of the motorcycle.

Loosen the two bolts on the bottom triple clamp (red arrow). The bolts do not need to be removed completely, but there should be a 1mm - 2mm gap between the head of the bolt and the triple clamp.

Now loosen the bolts on the top triple clamp. Again, the bolts do not need to be removed completely, but there should be a 1mm - 2mm gap between the head of the bolt and the triple clamp.

Keep one hand on the fork after loosening the bolts so that it does not slide out and hit the ground. Gently start to turn the fork so that it begins to slide out of the clamps. If the fork feels like it needs a lot of force to move, try splaying open the clamps slightly using a flat screwdriver at the gap openings where the bolts are. Take care not to apply too much force to the screwdriver so that the clamps are not damaged.



When removing the fork leg, also be careful that the motorcycle does not lose balance and fall from the stand.

It may now also be a good time to clean the contact surface between the triple clamps and for. Use some contact cleaner to spray down the contact area on the fork, and the inside of the triple clamps, before drying with some paper towels.

The motorcycle should now look like the picture to the left, with the left fork leg completely removed.

Slide the front sensor alignment collar (red arrow) down over the fork leg that has been removed.

To help with installation of the front sensor wand, ensure that the slot for the sensor (yellow arrow) is approximately 90° to the direction of the compression clicker adjuster on the top of the fork. This will save a lot of adjustment once of the positioning of the collar once the fork is installed.

Continue to slide the alignment collar (red arrow) down over the wear circlip (purple arrow above). The sensor alignment collar should pop into position and fit snugly on the fork leg.

After fitting the front sensor wand alignment collar, the left side fork leg can be reinstalled on the motorcycle.

Slide the fork up into the triple clamps and reposition at the same height as measured previously.

Ensure that the fork height is the same on both sides of the triple clamp, i.e. the left and right fork legs have the same height measurement value.

Pinch the top (yellow arrow) and bottom (red arrow) triple clamp bolts lightly to hold the fork leg in place. Using a torque wrench, tighten the bolts fully to the correct torques specification. Review the owner's manual for the correct torque values. Over tightening of the bolts can cause the piston and bushings in the inner fork tube, to bind with the outer fork tube, giving a harsh feeling and adversely impact the performance of the suspension.

In the next step, it is very important to follow the instructions on how to reinstall the front wheel carefully. A specific procedure is used to ensure that when everything is back in place, and all the bolts are tightened, that the forks are parallel (red lines). If the forks are splayed inward or outward, it can cause the forks to bind in the stroke, adversely impacting the performance of the suspension.

Start by trying to align the fork lugs (red arrows) forward as much as possible. Do this when the handlebars are straight, and not turning to the left or the right.

Lift the front wheel into position, and slide the front axle into the right-side fork lug and through the wheel.

Tip: Keep the front wheel at the right height by using your foot to lever the wheel up and down as you try to fit the axle.

When reinserting the main axle, don't try to hammer it into position! If you have some resistance, check and make sure the wider diameter of the axle on the right side of the motorcycle is sitting properly inside the right-side axle lug. If that's OK, check to make sure that the left-side axle lug isn't rotated outwards and is facing forwards parallel with the right axle lug. If that's OK, try gently tapping the left lug with the palm of your hand as you try to insert the axle. If you are still feeling resistance, take the axle out and make sure everything is clean, and that there is a light coating of grease on the axle shaft.

Align the axle with the left side fork lug (yellow arrow) and slide the axle all the way through. When the axle is fully seated, twist on the main axle nut (blue arrow) so that it sits against the axle lug.

When reattaching the front brake calliper, make sure that the brake pads are sitting either side of the brake disc, and that the meat of the pads is in contact with the disc.

Thread the two bolts back into place with the brake calliper in position, and tighten the bolts fully to the correct torques specification using a torque wrench. Review the owner's manual for the correct torque values.

Slide the front magnet holder (red arrow) into position over the tab on the fork guard. Using the original inner brake line clamping part, thread the two bolts through the magnet holder and into the inner brake line clamp.

The inside surface of the front magnet holder has the same contours as the original outer brake line clamping part, and as such, the brake line can be clamped in the exact same position as standard.

Don't use excessive force when tightening the bolts, as this could crack the front magnet holder. Make sure that when the bolts are tightened, the brake line cannot slide up and down in the clamp.

Tighten the main axle nut fully to the correct torque specification using a torque wrench. Review the owner's manual for the correct torque values.

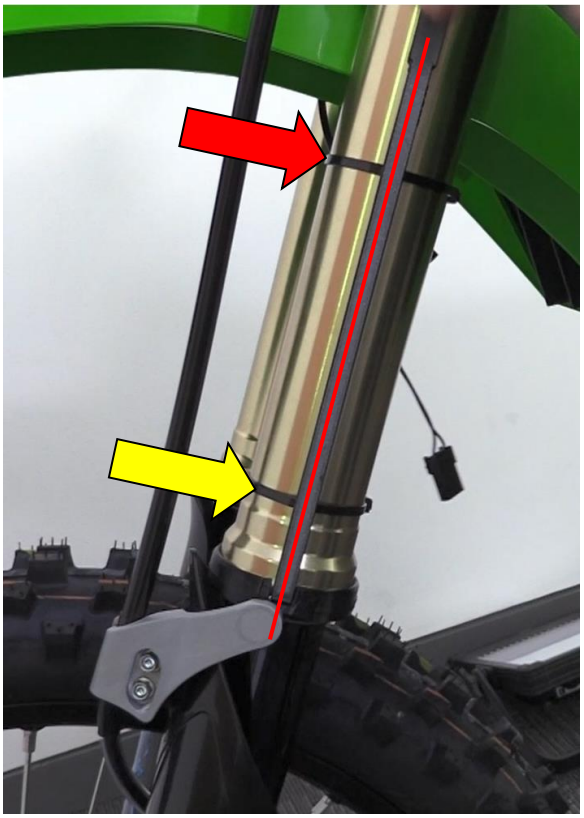
Tighten the two left-side axle lug bolts (blue arrow) fully to the correct torque specification using a torque wrench. Review the owner's manual for the correct torque values.

Hold the handlebar and front brake lever using your left hand. With the wheel facing straight ahead, spin the wheel using your right hand, and grab the front brake sharply with your left hand so that the wheel comes to a sudden and abrupt stop. Repeat this 5-6 times. This will align the forks correctly provided that the right-side axle lug can "float" on the wider diameter of the axle. The objective with this procedure is to align the forks so that they are parallel.

Don't put your fingers or hand into the wheel when it is spinning!

Tighten the two right-side axle lug bolts (red arrow) fully to the correct torque specification using a torque wrench. Review the owner's manual for the correct torque values.

Check the left-side axle lug bolts (yellow arrow) and the main axle nut (green arrow) again for tightness.



The front suspension sensor wand can now be attached to the fork leg.

Two medium length cable ties can be passed through the suspension wand at the red arrow, and at the yellow arrow.

When positioning the front suspension sensor wand, ensure that the contours at the bottom of the wand are in full contact with the contours of the fork leg near the alignment collar to ensure the most accurate suspension position measurement. If the front suspension sensor is not installed correctly, the front suspension position and speed values will not be correct. Please check the front suspension sensor regularly to ensure correct functionality.

Make sure that the front suspension sensor wand is parallel with the direction of the fork leg (red line).

The magnet does not sit centrally over the wand, it must be slightly in front of the wand! (Red line compared to blue line) There is a small tab that protrudes from the front magnet holder beside the magnet, this must be located directly over the centre of the suspension sensor wand.

This concludes the installation of the front magnet holder, and front suspension sensor wand.

Fitting the Handlebar Controller.

The handlebar controller contains a satellite position antenna, status indicator light, and push button to start and stop recording data.

- A pulsing indicator light shows that the Motoklik system is powered by the internal battery.
- A flashing indicator light indicates the Motoklik system is being powered by the motorcycles power rail through the power supply cable.
- A pulsing or flashing red light indicates that the system is trying to get a satellite fix.
- A pulsing or flashing green light indicates that the system has a satellite fix.
- With the engine running, and a flashing green light, the button can be pressed to start recording data. When the button is pressed, the flashing green light will change to a solid green light. Press the button again before turning off the engine to stop recording data. The light will return to a flashing green light, and the engine can now be turned off.

Push two medium length cable ties through the openings at either side of the handlebar controller (red arrows).

Place the handlebar controller on the handlebar, and wrap the cable ties around the handlebar.

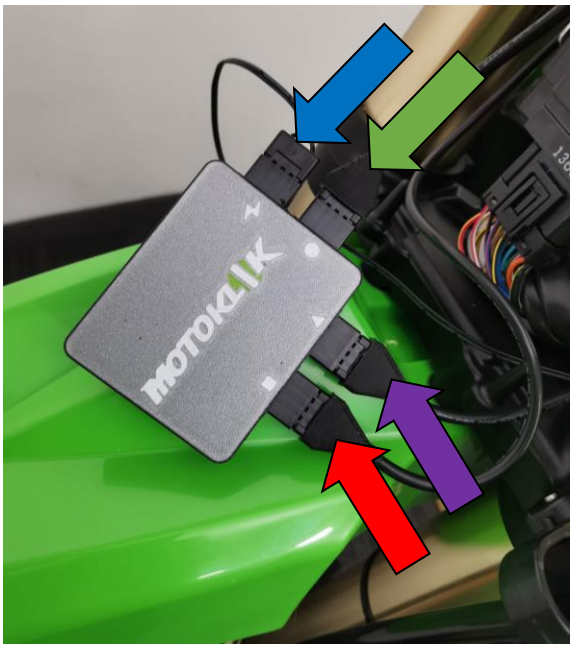
Secure the cable ties tightly so that the handlebar remains in position.

Pass the cable from the handlebar controller underneath the handlebar and out into the area behind the front number plate.

If the regulations in your area do not permit you to position items on the bar-pad, an alternative position for the handlebar controller can be used. It is important to find a place that has as clear a view of the sky as possible to ensure accurate satellite positioning.

Connecting the Motoklik Central Control Unit.

The central control unit is used to power the external sensor and handlebar controller, record the data, and communicate with the smart device via Bluetooth. The Central Control unit can be secured to the back of the front number plate using the hook and loop pads provided.



The Motoklik Central Control Unit has four connection points. Connect the cables to the following locations.

Lightning Bolt: Power Supply
Circle: Handlebar Controller
Triangle: Front Suspension Sensor Wand
Square: Rear Suspension Sensor

With the cables plugged into the correct locations, stick the central control unit to the back of the front number plate, and secure the front number plate back in place on the motorcycle.

The front brake line should be **in front** of the number plate, not behind as shown in the picture.

The installation of the Motoklik system is now complete.

Final Checks.

The following checks should be carried out before using this product, and when the bike is not running i.e. the engine is turned off.

1. Turn the handlebar fully to the right. Check that the handlebar turns all the way so that the bottom triple clamp hits the stop on the frame, and that none of the cables are becoming bound up, kinked or pinched.

2. Turn the handlebar fully to the right, twist the throttle wide open and ensure it snaps shut quickly.

3. Turn the handlebar fully to the left. Check that the handlebar turns all the way so that the bottom triple clamp hits the stop on the frame, and that none of the cables are becoming bound up, kinked or pinched.

4. Turn the handlebar fully to the left, twist the throttle wide open and ensure it snaps shut quickly.

5. Pull the front brake lever and try to push the bike forward and back. The front wheel should not turn, and the front brake calliper should not move.

6. Push the rear brake lever down and try to push the bike forward and back. The rear wheel should not turn.

7. Check all the bolts for tightness that have been worked on throughout this installation instruction.

8. Check that all of the Motoklik parts are secured properly in position and are not loose.

9. Check the alignment of the front suspension wand so that it is parallel to the fork, perpendicular to the collar, and that contours on the bottom of the wand are fully in contact with the contours of the fork leg.

10. Check the position of the front magnet so that the tab beside the magnet is aligned centrally over the front sensor wand.

11. Press the start button for a brief moment so that the power rail of the bike turns on, but the engine does not start. The light in the button of the handlebar controller should start to flash red. It will flash red so long as it is looking for a satellite fix. Once it starts to flash green, the satellite position is fixed, and if the engine is running, the Motoklik can start to record data. If the light is flashing red for a period longer than 5 minutes, make sure that the handlebar controller has a clear view of the sky i.e. it is not inside a building, beside a high building, surrounded by very dense trees, or surrounded by a lot of metal structures. If a satellite fix is not secured after 10 minutes, and you have ensured a clear view of the sky for the handlebar controller, contact customer support via the website or info@motoklik.com