Installation to be carried out by a competent person. Pay attention to all safety advisories.
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EMPOWERING CONFIDENCE IN MOTORSPORTS

INSTALLATION INSTRUCTIONS

04/04/2023

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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
GasGas	MC 250 F	2020-2022	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
GasGas	MC 250 F	2020-2022	Universal	Universal	XACT PRO	RSH KGH-1	OBD KGH-1
GasGas	MC 350 F	2020-2022	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
GasGas	MC 350 F	2020-2022	Universal	Universal	XACT PRO	RSH KGH-1	OBD KGH-1
GasGas	MC 450 F	2020-2022	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
GasGas	MC 450 F	2020-2022	Universal	Universal	XACT PRO	RSH KGH-1	OBD KGH-1
Husqvarna	FC 250	2021-2022	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
Husqvarna	FC 250	2016-2020	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
Husqvarna	FC 250	2016-2022	Universal	Universal	XACT PRO	RSH KGH-1	OBD KGH-1
Husqvarna	FC 350	2021-2022	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
Husqvarna	FC 350	2016-2020	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
Husqvarna	FC 350	2016-2022	Universal	Universal	XACT PRO	RSH KGH-1	OBD KGH-1
Husqvarna	FC 450	2021-2022	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
Husqvarna	FC 450	2016-2020	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
Husqvarna	FC 450	2016-2022	Universal	Universal	XACT PRO	RSH KGH-1	OBD KGH-1
KTM	250 SX-F	2016-2022	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
KTM	250 SX-F	2016-2022	Universal	Universal	XACT PRO	RSH KGH-1	OBD KGH-1
KTM	350 SX-f	2016-2022	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
KTM	350 SX-f	2016-2022	Universal	Universal	XACT PRO	RSH KGH-1	OBD KGH-1
KTM	450 SX-F	2016-2022	Universal	Universal	XACT	RSH KGH-1	OBD KGH-1
KTM	450 SX-F	2016-2022	Universal	Universal	XACT PRO	RSH KGH-1	OBD KGH-1

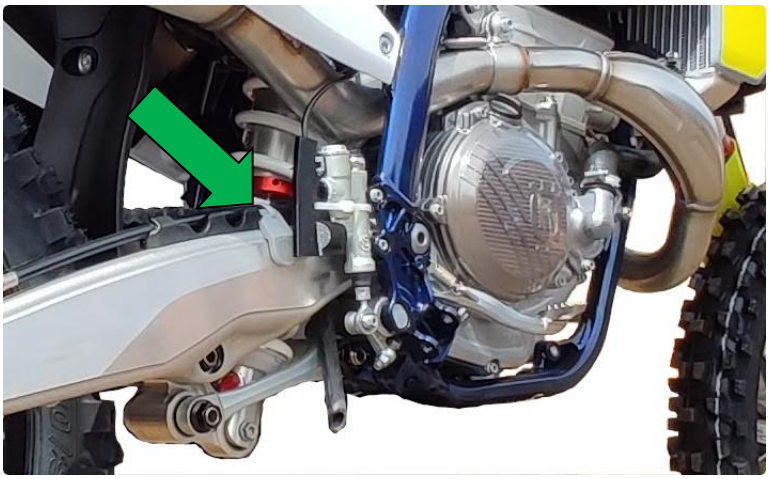
Make	Model	Year	Front Magnet Holder	Rear Magnet Holder	Wand Collar
GasGas	MC 250 F	2020-2022	*KG 74 - XACT	RMH KGH-1	XACT
GasGas	MC 250 F	2020-2022	KG 49 - XACT PRO	RMH KGH-1	XACT Pro
GasGas	MC 350 F	2020-2022	*KG 74 – XACT	RMH KGH-1	XACT
GasGas	MC 350 F	2020-2022	KG 49 - XACT PRO	RMH KGH-1	XACT Pro
GasGas	MC 450 F	2020-2022	*KG 74 – XACT	RMH KGH-1	XACT
GasGas	MC 450 F	2020-2022	KG 49 - XACT PRO	RMH KGH-1	XACT Pro
Husqvarna	FC 250	2021-2022	H 69 – XACT	RMH KGH-1	XACT
Husqvarna	FC 250	2016-2020	H 74 – XACT	RMH KGH-1	XACT
Husqvarna	FC 250	2016-2022	H 49 - XACT PRO	RMH KGH-1	XACT Pro
Husqvarna	FC 350	2021-2022	H 69 – XACT	RMH KGH-1	XACT
Husqvarna	FC 350	2016-2020	H 74 – XACT	RMH KGH-1	CV 48
Husqvarna	FC 350	2016-2022	H 49 - XACT PRO	RMH KGH-1	XACT Pro
Husqvarna	FC 450	2021-2022	H 69 – XACT	RMH KGH-1	XACT
Husqvarna	FC 450	2016-2020	H 74 – XACT	RMH KGH-1	XACT
Husqvarna	FC 450	2016-2022	H 49 - XACT PRO	RMH KGH-1	XACT Pro
KTM	250 SX-F	2016-2022	*KG 74 – XACT	RMH KGH-1	XACT

Make	Model	Year	Front Magnet Holder	Rear Magnet Holder	Wand Collar
KTM	250 SX-F	2016-2022	KG 49 - XACT PRO	RMH KGH-1	XACT PRO
KTM	350 SX-f	2016-2022	*KG 74 – XACT	RMH KGH-1	XACT
KTM	350 SX-f	2016-2022	KG 49 - XACT PRO	RMH KGH-1	XACT Pro
KTM	450 SX-F	2016-2022	*KG 74 – XACT	RMH KGH-1	XACT
KTM	450 SX-F	2016-2022	KG 49 - XACT PRO	RMH KGH-1	XACT Pro

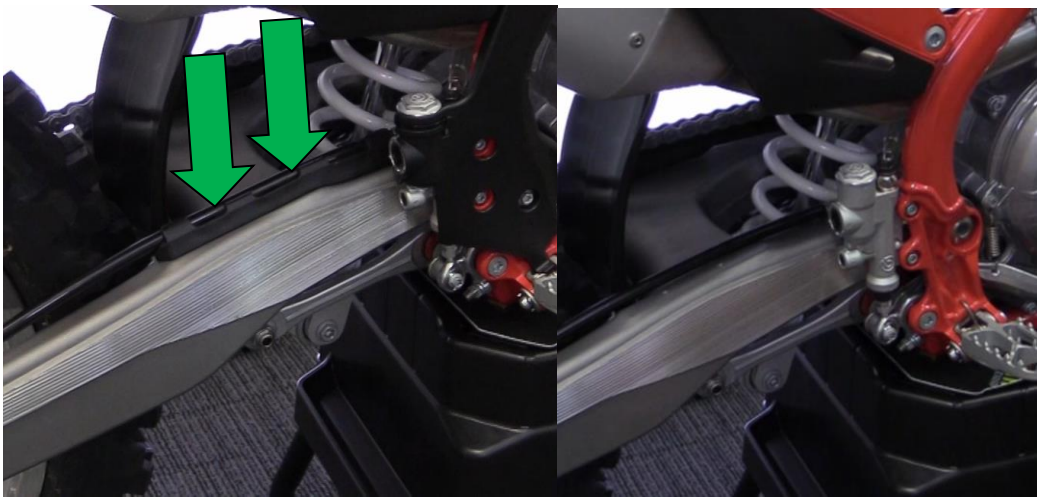
*Also identified with the part number: KG 66.45 – WPAER48

Installing the Rear Suspension Sensor and Power Supply Cable.

The Rear Magnet Holder for 2023 KTM and Husqvarna models is a new design. This design requires the rear magnet holder to be pushed in from the side, between the brake line, and the brake line holder. The brake line holder does not need to be removed to install the rear magnet holder. There is a cable tie slot in the new rear magnet holder that allows a cable tie to be pushed through the part, and wrapped around the brake line to secure the rear magnet holder in place.



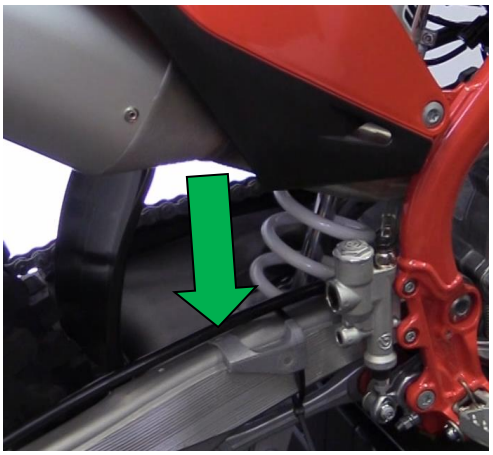
The rear suspension sensor is used to measure the position of the rear wheel, relative to a designated sag point on the rear mudguard. The position is shown in mm values in the app.



Remove the rear brake line from the rear brake line clamp.
Remove the two 8mm bolts securing the brake line clamp to the swingarm, and remove the brake line clamp from the swingarm.
Clean any dirt or material away from the swingarm so that it is clean and make sure the surface of the swingarm is not damaged or worn.
When this is done, the motorcycle should be as it is in the rightmost picture above.

Prepare the rear magnet holder by sliding a cable tie through the hole in the part to the right of the magnet.

The rear magnet holder should look as it does in the picture to the left.

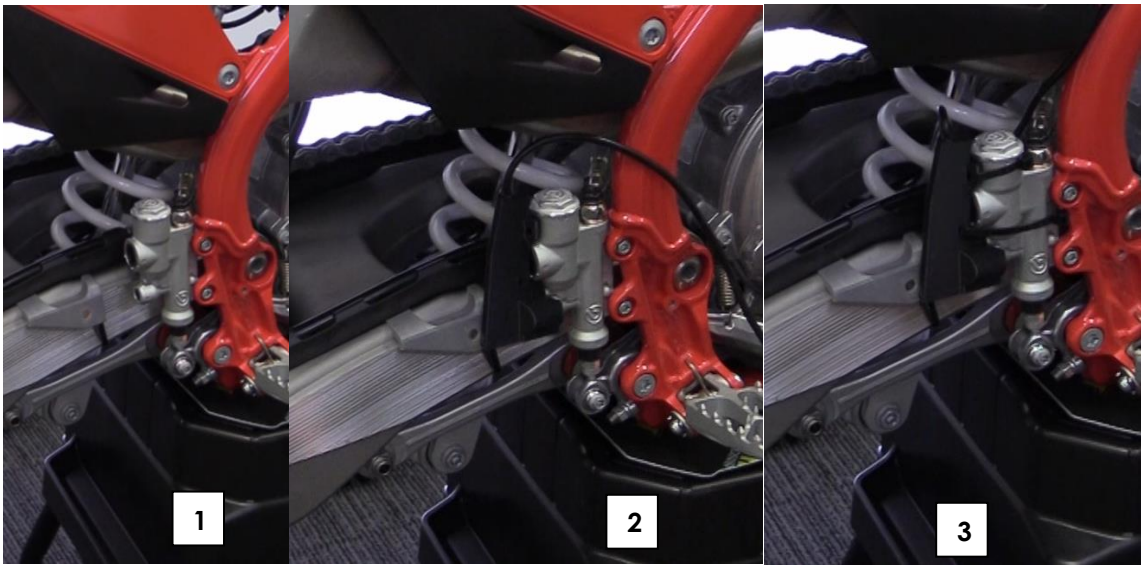


Position the rear magnet holder on the swingarm so that the hole in the rear magnet holder flange is concentric with the front hole in the swingarm which is used for the 8mm brake line clamp.

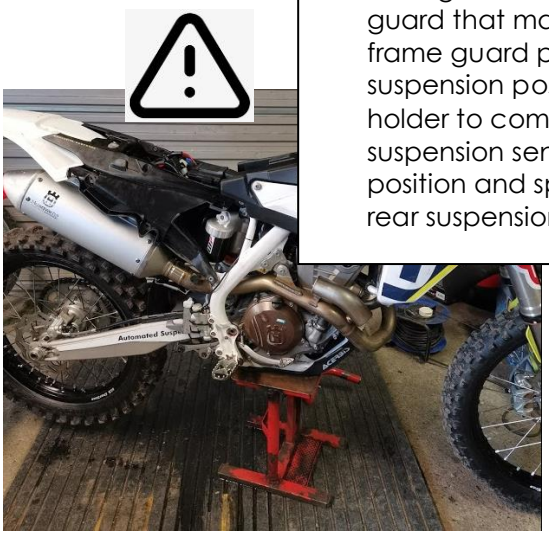
Reattach the rear brake line clamp using the two 8mm bolts, and ensure that the magnet holder is in position using the front 8mm bolt so that it is closer to the front of the swingarm.

Tighten the cable tie. Do not use excessive force when tightening the cable tie as this could damage the magnet holder.

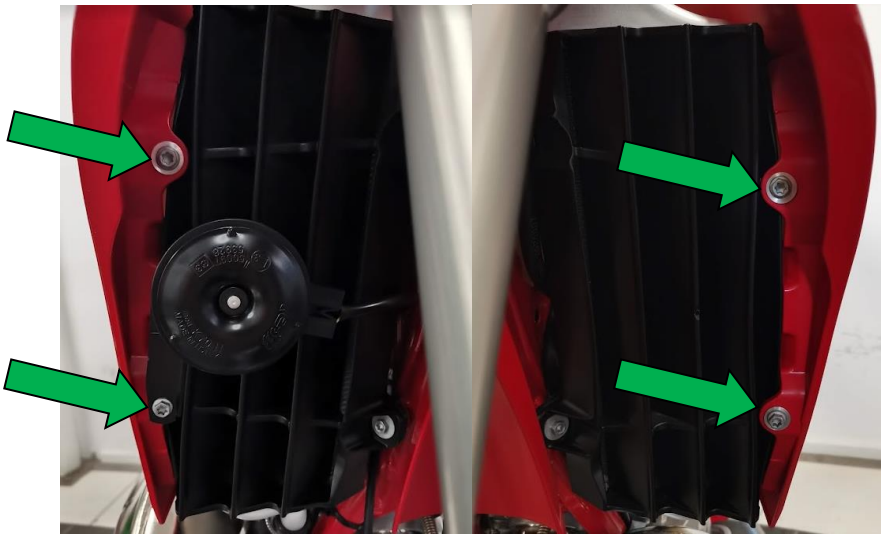
Insert the brake line back into the brake line clamp.



1. The rear sensor will now be attached to the rear brake master cylinder. Make sure the master cylinder is clean and in good condition without wear or any defects.
2. Press the rear sensor enclosure into position so that it fights tightly onto the master cylinder. Insert the two cable ties into the allocated holes on the rear sensor enclosure.
3. Guide the lower cable tie between the master cylinder and frame, and tighten it before removing any excess tie. Loop the rear sensor cable under the top cable tie and join the cable tie together so that the cable is held against the master cylinder by the cable tie. Tighten the cable tie and remove any excess tie. The rear sensor should appear as it does in picture 3. The rear sensor cable is looped under the top cable tie so that if the sensor cable is pulled during use, there is less likelihood of the electronics in the sensor being damaged.

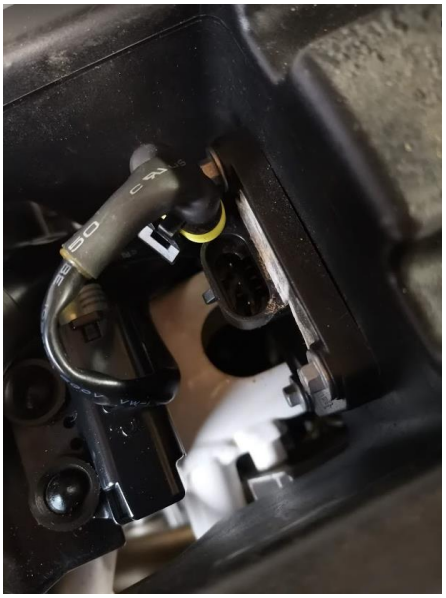


If using a frame guard, trim away any material on the frame guard that may come into contact with the rear sensor. If the frame guard presses the sensor, it could cause inaccurate suspension position readings and/or cause the rear magnet holder to come into contact with the rear sensor. If the rear suspension 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.

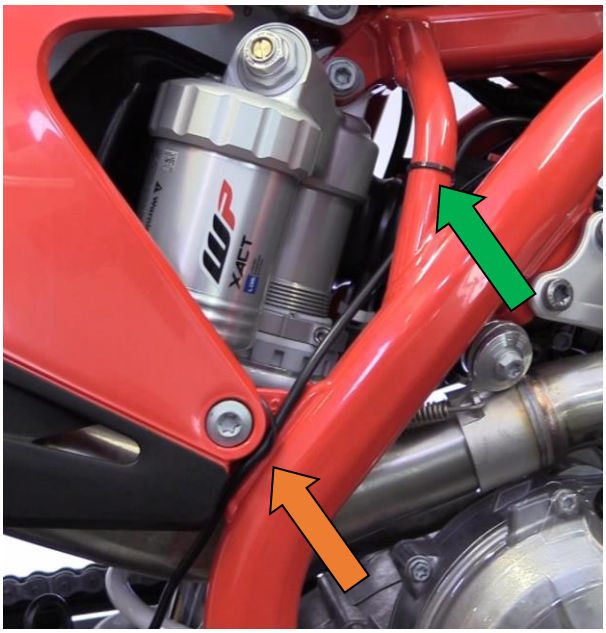


Remove the left and ride side shroud bolts.

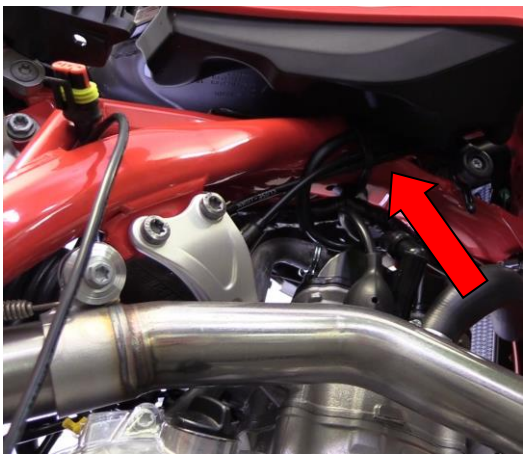
Remove the tank bolt that is located down in the recess where the arrow is pointing. It is surrounded by a rubber grommet and may be easier to remove with a T30 torx.



Remove the fuel pump connector and leave it to the side. The fuel pump connector is located at the base of the tank, close to above the rear top suspension mount.

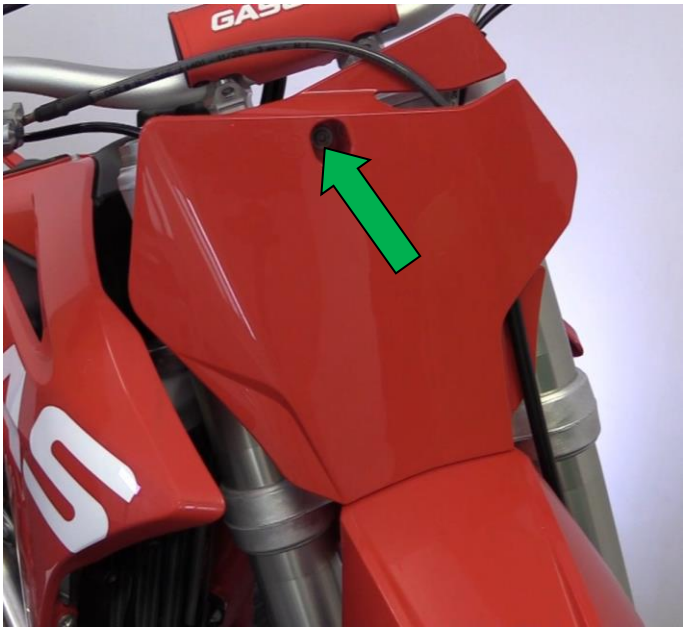


Secure the rear sensor cable to the frame with a small cable tie (green arrow). It is also important to make sure that the cable is not too close to the exhaust. In this image the cable is on the outside of the frame (orange arrow), and is secured with another small cable tie.

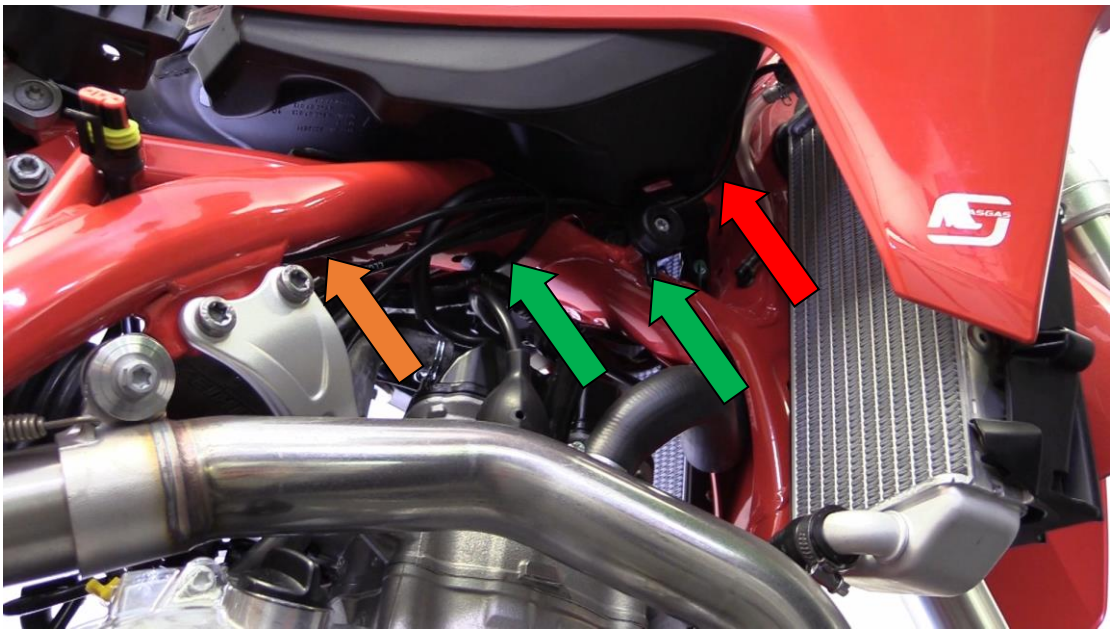


Lift the tank and leave it slightly ajar so that the wiring loom under the central truss of the frame is visible (red arrow). When lifting the tank, make sure the side shrouds aren't caught up in the radiators and the tank can be moved somewhat easily to get it up and out of the way.

The objective now is to route the rear sensor cable along with the wiring loom under the central truss of the frame, and have the connector protrude between the fork and headstock at the front of the bike. The rear sensor cable can be secured using the rubber straps that hold the OEM wiring harness in place.

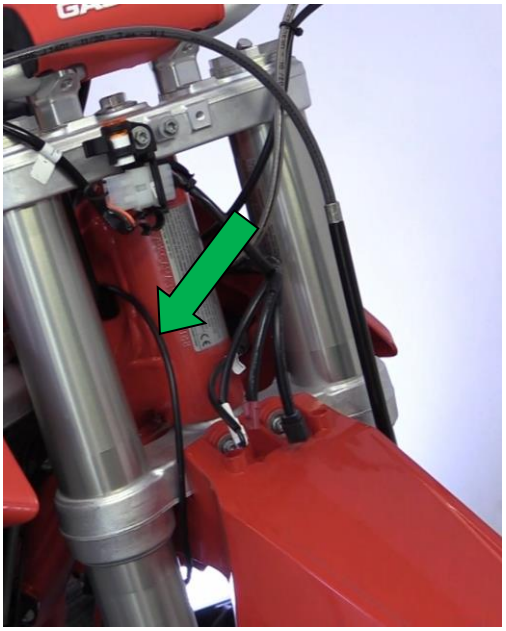


Remove the front number plate by removing the bolt, and lifting it up from the slots in the front mudguard.



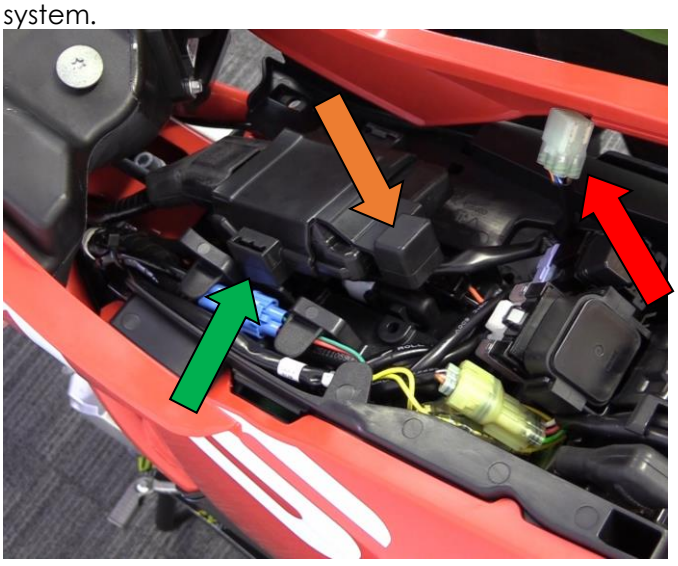
Route the rear suspension sensor cable inside the frame and join it in with the wiring loom (orange arrow). There are two rubber retainers (green arrows) that hold the wiring loom, pass the rear sensor cable inside the rubber retainers alongside the wiring loom so that the rear sensor cable protrudes from at the top of the frame near the radiator (red arrow).

Route the rear suspension sensor cable between the tank breather pipe and frame.

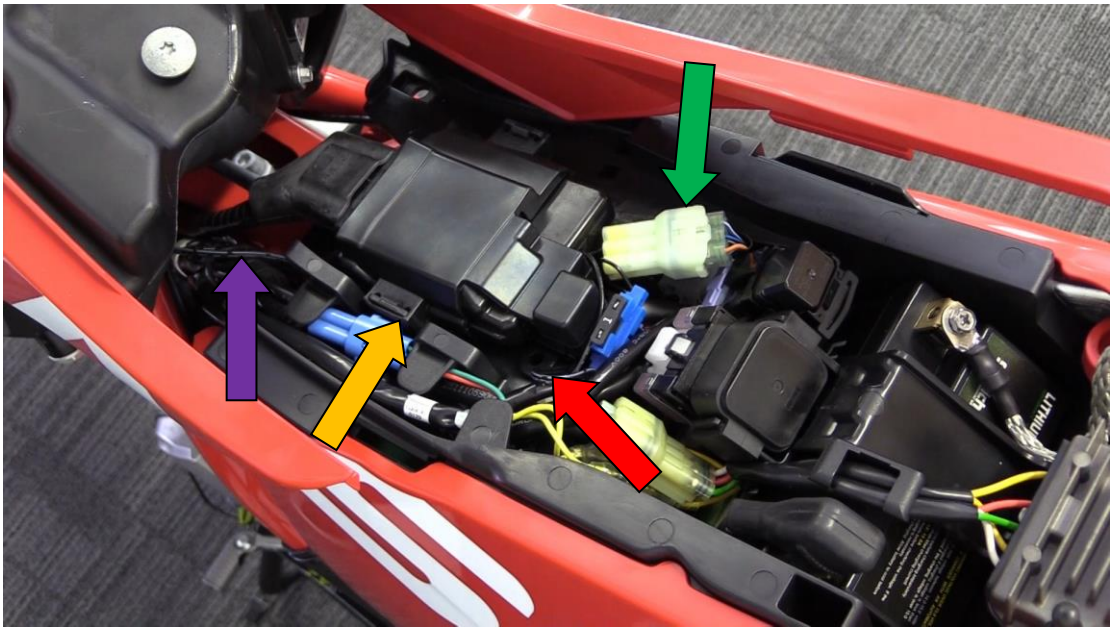


Route the rear suspension sensor cable between the fork and headstock, between the triple clamps, and leave the cable hanging to the side.

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.



Lift the ECU on one side from its securing post (green arrow) by removing the rubber retainer from the post. Remove the OBD connector (red arrow) from the rubber securing point at the end of the ecu (orange arrow).

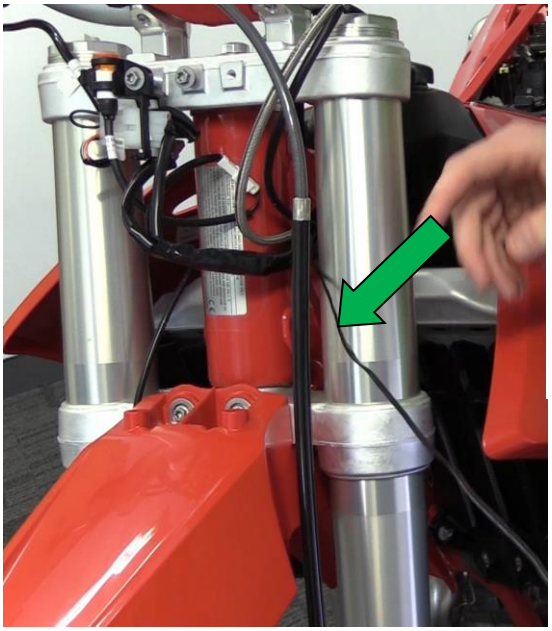


Connect the Motoklik power supply cable to the OBD connector (green arrow).

Route the power supply cable underneath the ECU (red arrow), and slide the ECU rubber enclosure back down over the securing post (orange arrow).

Continue to route the power supply cable underneath the tank (purple arrow), and join it in with the rest of the wiring loom.

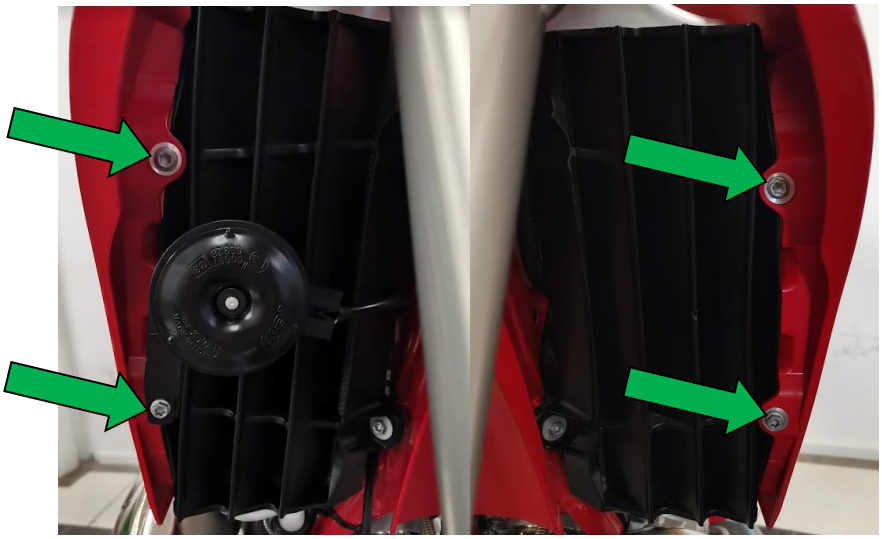
Route the power supply cable under the central truss of the frame alongside the wiring loom (similar to how the rear suspension cable was routed inside the rubber retainers, and guide the power supply cable up the clutch lever side of the headstock. Secure the power supply cable in the wiring harness securing clip (green arrow).



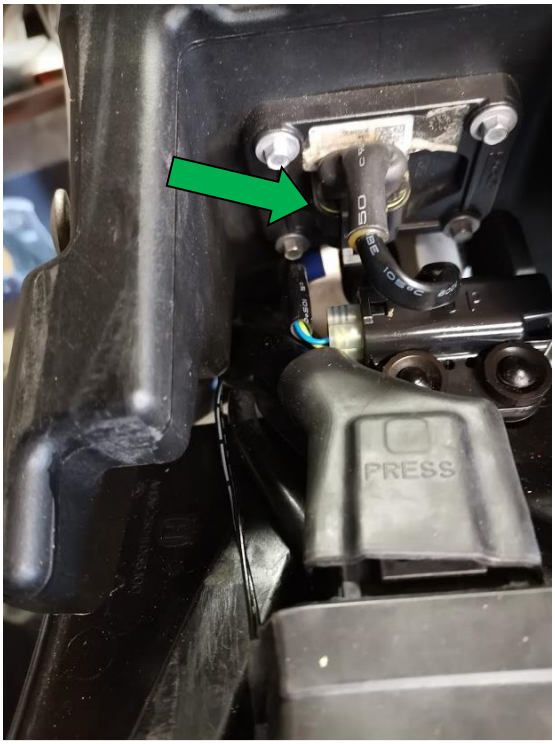
Leave the power supply cable (green arrow) hanging out between the triple clamps, and between the fork and headstock.

Slide the tank back down into position, and retighten the tank securing bolt (green arrow). Make sure you have included the rubber grommet when tightening the tank bolt.

It is very important to make sure that when the tank is back in position, that none of the cables are pinched or binding between the frame and the tank. Take a good look around all the cables, and make sure it is all routed correctly. Twist the throttle open and make sure it snaps shut. There should be no delay in the throttle shutting. If there is, make sure the throttle cables aren't caught anywhere and are in good condition. If the throttle is still slow to close, it may be that the throttle tube is dirty or broken. Clean and/or replace the throttle tube if necessary, and check again after reassembly that the throttle snaps shut.



Realign and tighten the tank side shroud bolts.



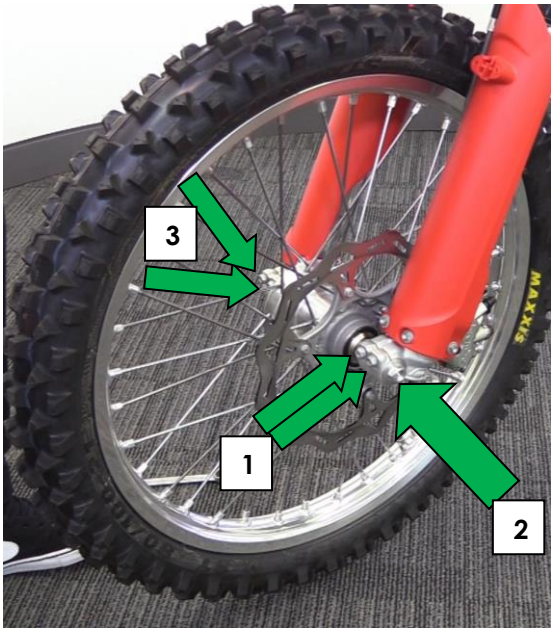
Reconnect the fuel pump connector.

Reattach the saddle and side panels.

Use extra cable ties to secure the cabling so that it does not move or touch the exhaust pipe.
If you are using frame guards, you may need to trim material from the area of the guard that covers the master cylinder so that it does not push the rear sensor out of alignment.

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.

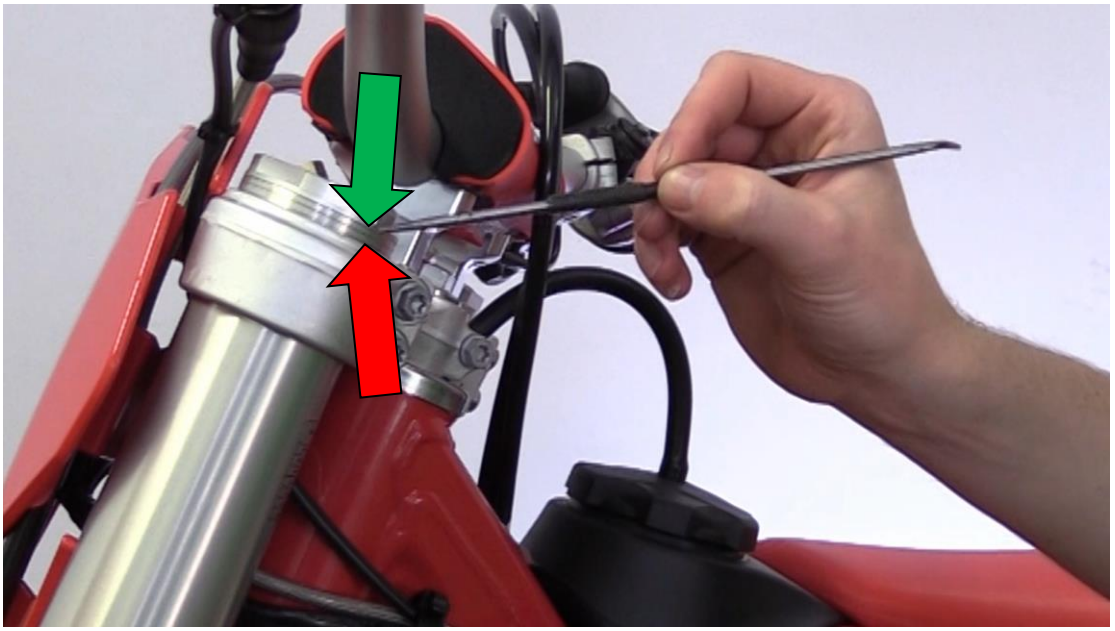


1. Undo the two pinch bolts on the brake calliper side of the motorcycle.
2. Undo the main axle nut.
3. Undo the pinch bolts on the opposite side of the motorcycle.

Remove the front brake line clamp by undoing the 8mm screws on either side of the brake line.

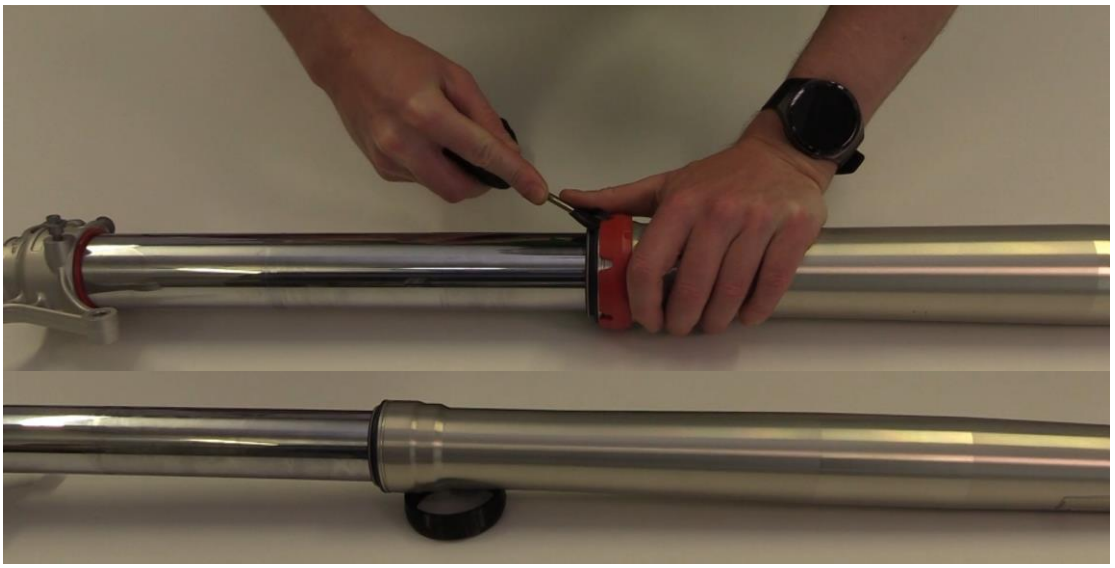
Remove the two bolts securing the brake caliper, and remove the brake caliper.

Remove the brake side fork guard by unthreading the three retaining bolts at the bottom of the fork guard.

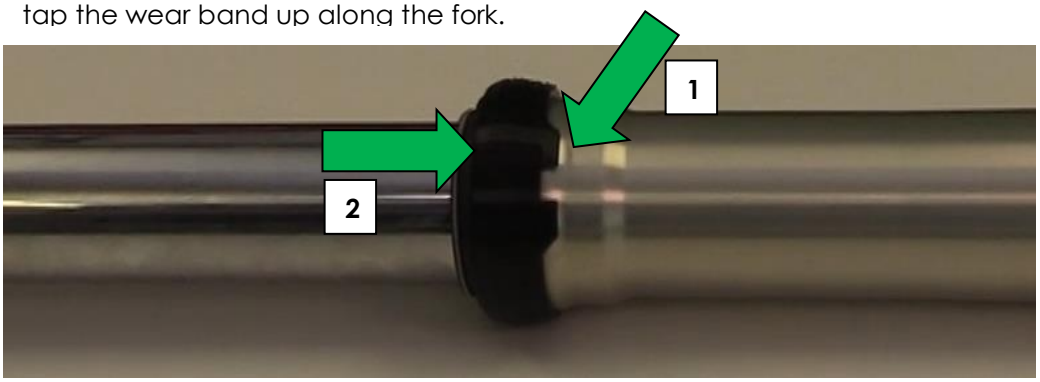


Record the fork height. This is the distance from the top of the top triple clamp (red arrow) to the bottom of the fork cap (green arrow). It is important to reinstall the fork leg at the same height so that the front wheel axle is properly aligned.

Loosen the top and bottom triple clamp bolts (green arrows) on the brake calliper side and completely remove the fork leg.

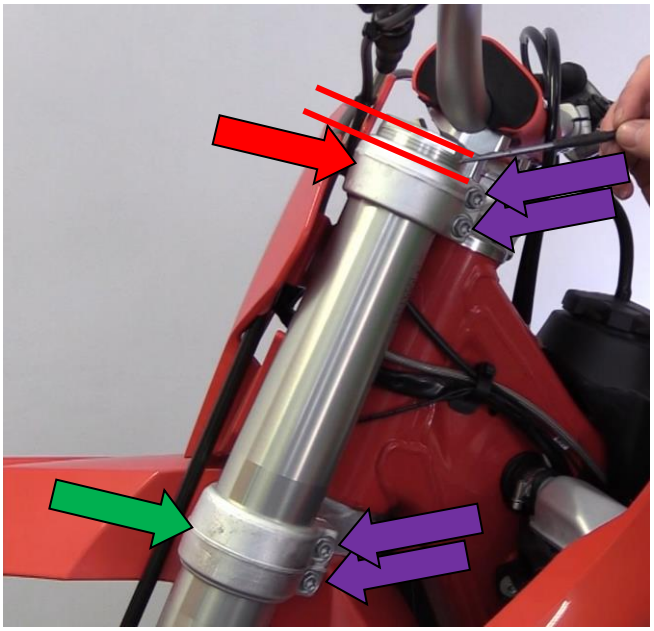


Remove the original fork collar from the outer fork tube. Start by wrapping some insulation tape around a flat screwdriver, or use a plastic pry bar, and begin to lever the tangs of the original wear band up and away from the for leg. Work around the full diameter of the fork. When all the tangs have been removed from the recess, point the screwdriver at the bottom of the wear band, and begin to tap the wear band up along the fork.



Slide the Motoklik fork collar down the outer fork tube from the top of the fork. The Motoklik fork collar will slide down so that it seats in the circular cut-out in the fork leg just above the dust seal.

1. Ensure the cut-out is facing upwards towards the fork cap.
2. The vertical line is used to align the front magnet holder with the front sensor wand.



Reinsert the fork leg into the triple clamps by sliding it up from below through the bottom triple (green arrow) clamp and then through the top triple clamp (red arrow).

It is critically important that the height between the top of the fork leg, to the top of the top triple clamp is the same on both sides of the bike (red lines). Measure this gap using a steel rule on the throttle side of the bike, and make sure the same height is achieved on the fork that is being reinstalled.

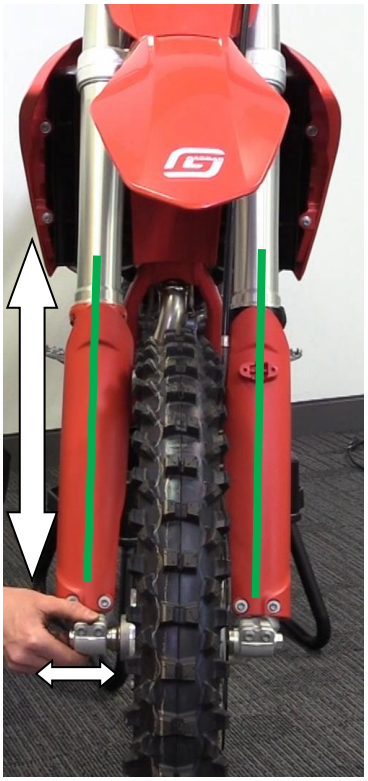
Tighten the four triple clamp bolts (purple arrows) to the correct torque specification as per the owner's manual. Again, it is critically important not too over tighten theses bolts as it can cause the internal piston inside the fork leg to rub and bind in the fork.

Put the front wheel back on by pushing the axle back through the fork lugs and wheel hub, don't tighten the bolts yet, a procedure for tightening the front wheel bolts correctly is to follow.

Reattach the front brake master cylinder and tighten the two brake master cylinder bolts (green arrows).

It is very important that the brake disc is located properly between the two brake pads, and not that the outside of a brake pad is pressing on the disc. Inspect the brake pads and disc thoroughly after reinstalling the front brake master cylinder. Use the correct torque specification as stated in the owner manual to secure the brake master cylinder bolts.

1. Tighten the main axle nut. You may need to hold the other side of the axle using a spanner in order to tighten the axle.
2. Tighten the brake side pinch bolts.



Drop the bike from the stand so that it is fully weight bearing on its wheels. Hold in the front brake and push the front up and down by the handlebars so that the forks are moving about ¼ to 1/3 of the way through their stroke. Do this 5-10 times. This is to ensure that the forks are parallel and won't bind up as they compress during use.

Put the bike back on the stand being careful not to put any side pressure on the front wheel as this could put the forks out of alignment. When the bike is back on the stand, and front wheel is off the ground, spin the front wheel as fast as you can by hand and grab the front brake so that it comes to a sudden stop. Do this 5-6 times. Again, this will help with ensuring that the forks are parallel.

Make sure that the front wheel axle has been fully cleaned and a light coating of grease is applied. The axle should move freely in and out of the axle lugs and wheel hub. With the axle being clean, it will allow the axle lug to "float" easily on the axle so that the fork can move and align parallel with the second fork. Don't put your fingers or hand in the spokes of the wheel when it is spinning.

3. Tighten the axle pinch bolts.
4. Re-tighten the axle nut.

Check all of the wheel assembly bolts and main axle nut again for tightness. Consult the owners annual for the correct torque specifications for the axle, fork lug bolts, and brake caliper bolts.

Ensure the centre of the magnet is lined up with the vertical indicator line on the Motoklik wear band collar. The centre of the magnet will not be directly above the front sensor wand (purple line) but slightly in front of the sensor wand (red line).

Check the part description on the side of the front suspension wand, and ensure it is the correct type for your motorcycle.

Position the front sensor wand in the locator in the front suspension wand collar (purple arrow).

Secure the suspension wand in position using two cable ties (green arrows). There is a hole available in the plastic front suspension wand enclosure for the cable ties to fit through.

Ensure that the wand is perpendicular to the collar and is positioned straight up towards the bottom triple clamp (purple line). The wand should appear parallel with the outer fork tube when it is viewed from the side like in the picture.

Secure the sensor cable in place above the bottom triple clamp using a cable tie (orange arrow).

Check again that the centre line of the magnet is positioned over the indicator line on the collar.

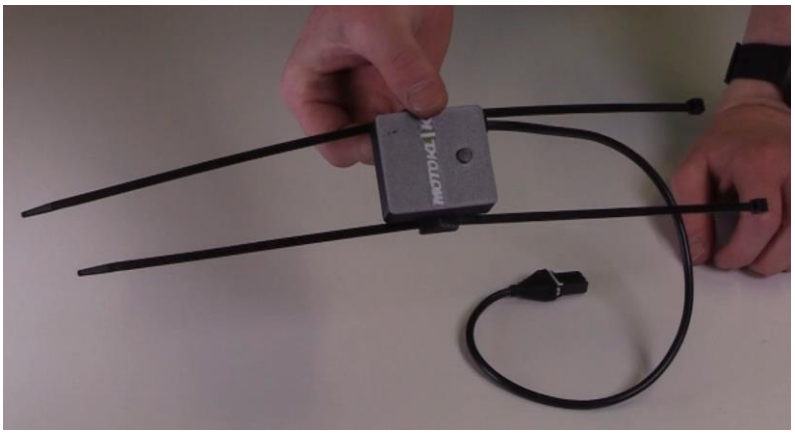
When positioning the front suspension sensor wand, ensure that the contours at the bottom of the wand are in full contact with the contours of the fork leg near the alignment collar to ensure the most accurate suspension position measurement. If the front suspension sensor is not installed correctly,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

Leave the front suspension wand cable (green arrow) hanging out between the triple clamps, and between the fork and headstock.

Fitting the Handlebar Controller.

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

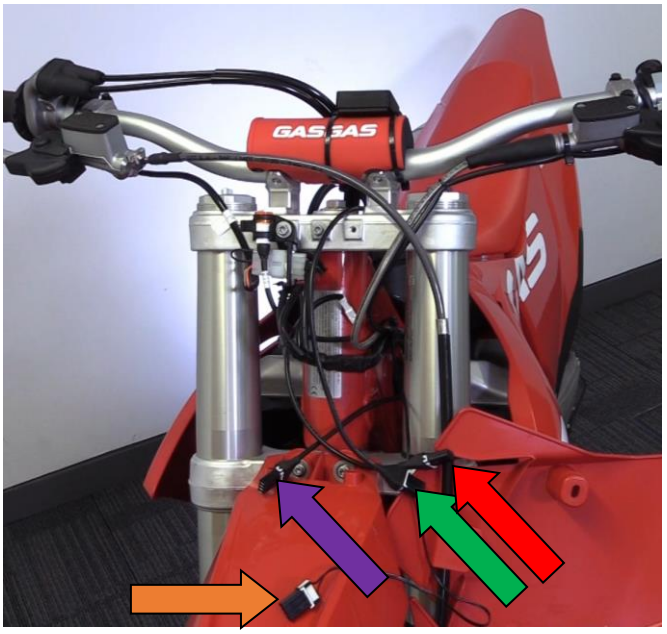
- A pulsing indicator light shows that the Motoklik system is powered by the internal battery.
- A flashing indicator light indicates the Motoklik system is being powered by the motorcycles power rail through the power supply cable.
- A pulsing or flashing red light indicates that the system is trying 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.



Fit two longest cable ties through the channels on each side of the handlebar controller.

Secure the handlebar controller to the bar pad using the two cable ties. Route the handlebar controller cable underneath the handlebar and above the top triple clamp so that it hangs down in front of the headstock.

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.



There should now be four Motoklik cable hanging in front of the headstock.

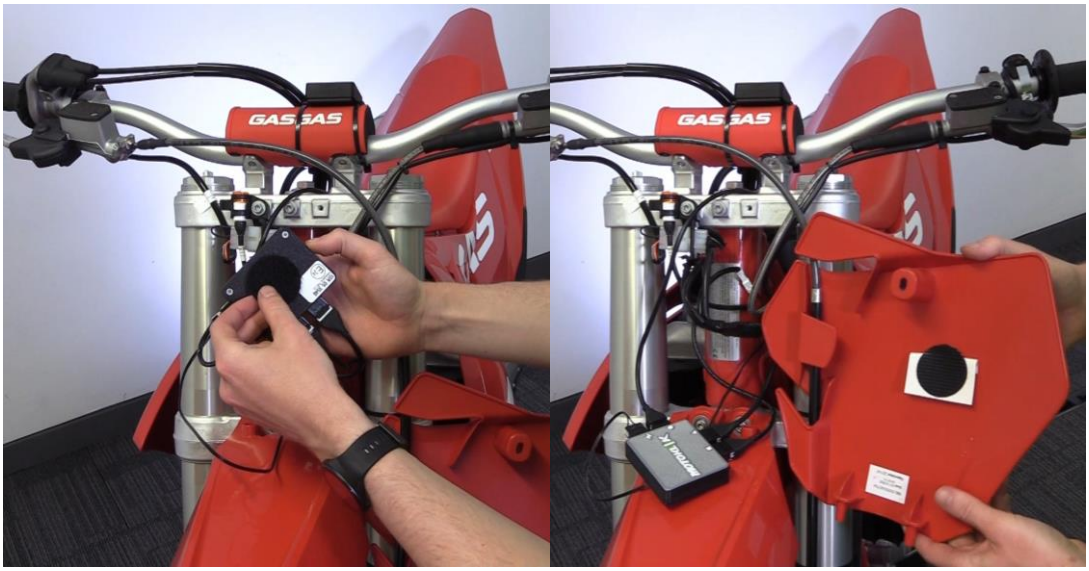
Green Arrow: Handlebar Controller Cable
Purple Arrow: Front Suspension Wand Cable
Orange Arrow: Power Supply Cable
Red Arrow: Rear Suspension Sensor Cable

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



Adhere the Velcro/sticky pad to the back of the Motoklik Central Control Unit, and position the system behind the front number plate. Find a location where the system fits well, and when the handlebar is turned from full lock left to full lock right, that the cables don't get bound up or pulled to full stretch.

Adhere the Velcro/sticky pad to the back of the front number plate, in a position that allows the Motoklik Central Control Unit to be secured in position that satisfies the conditions set out above.

Secure the front number plate back in position using the bolt.

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 at info@motoklik.com