Installation Instructions

Periscope - Version A.1

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Introduction

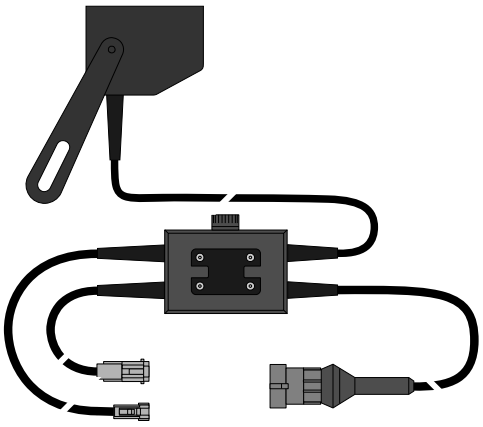
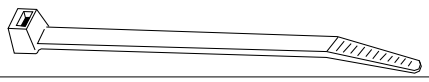
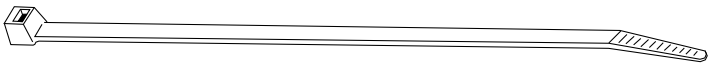
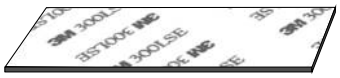
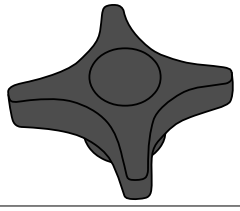
Before you start

Please take a look at the following paragraphs before you start mounting the device.

Tools you need

- Hex key M4
- 30-40 minutes of time!

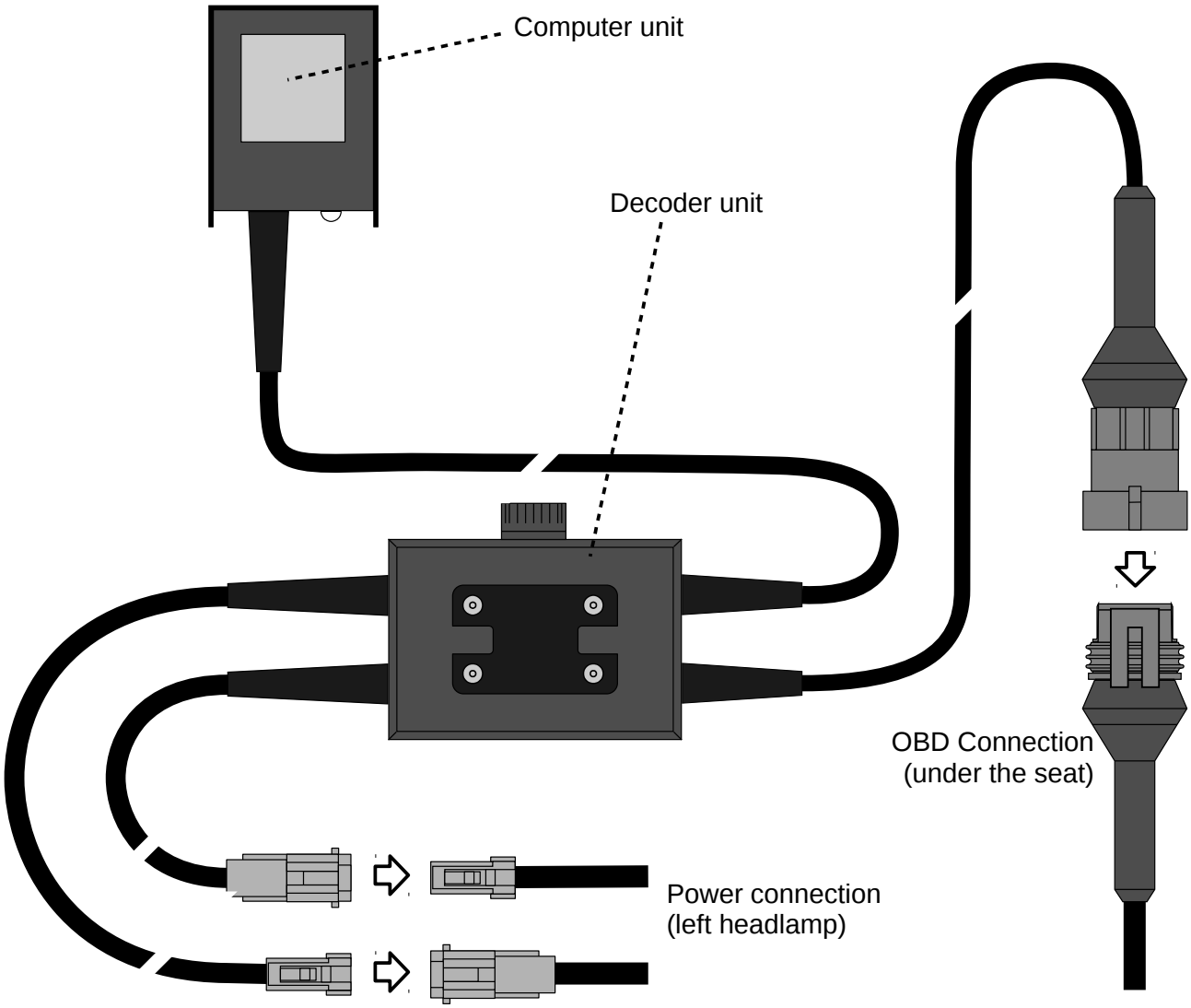
Parts you need

Item	#	Description
	1	Periscope
	2	Rubber washer
	1	Metal washer
	2	Short cable tie (6.8 x 180 mm)
	6	Long cable tie (2.6 x 260 mm)
	1	Adhesive rubber pad (around 12 x 33 mm)
	2	Knob nut (Note: this type of knob is easier to grab and tight than the original one due to his shape.)
	1	Knob spacer

Wiring (diagram)

Basically, in order to work, Periscope needs to be connected to

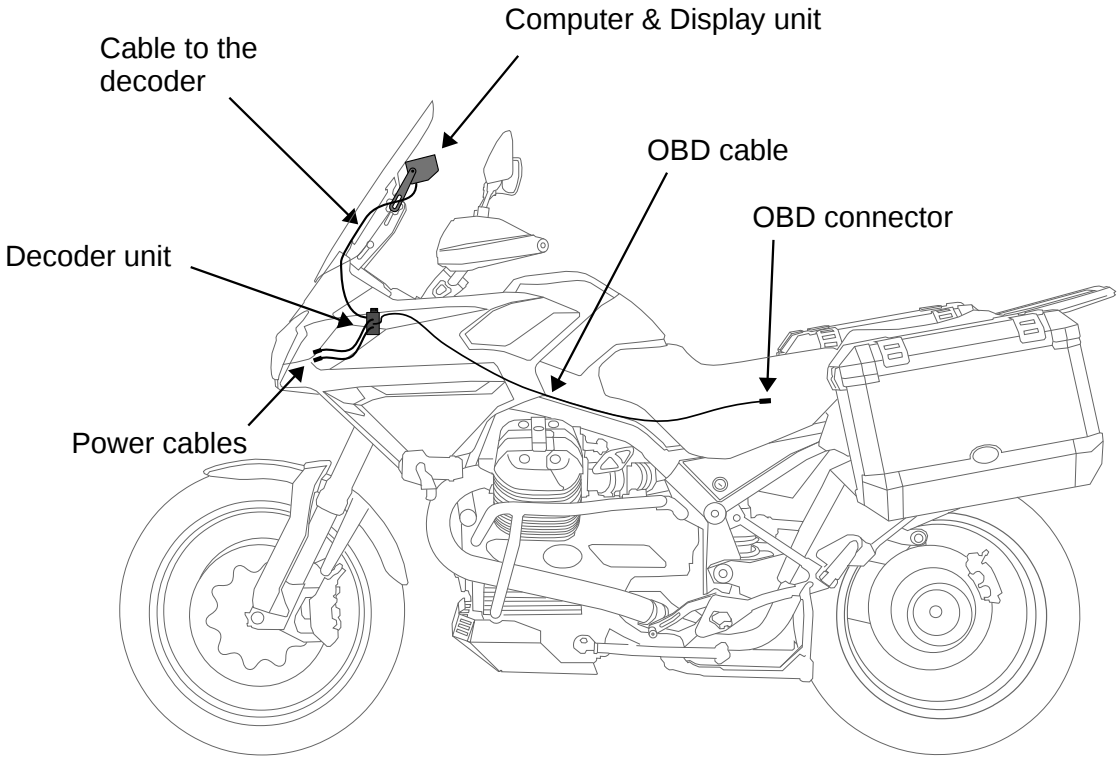
- a power source (+ 12V),
- the OBD interface of the motorcycle (ISO14230 / KWP2000).



Mounting diagram

For mounting you will have to access to the following areas/zones of the motorcycle:

- the windscreen bracket (to mount the computer unit),
- behind the dashboard (to route the cable going at the decoder unit),
- between the fork and the headlamps (to fasten the decoder unit),
- behind the headlamps (to plug the power connectors),
- below the seat (to plug the OBD connector).



Mounting

Step 1/10: mount the computer/display unit

To mount the computer/display unit you can use either the new knob-nut or the old ones.

a) Tighten the right knob-nut in order to hold the windscreen firmly in position.

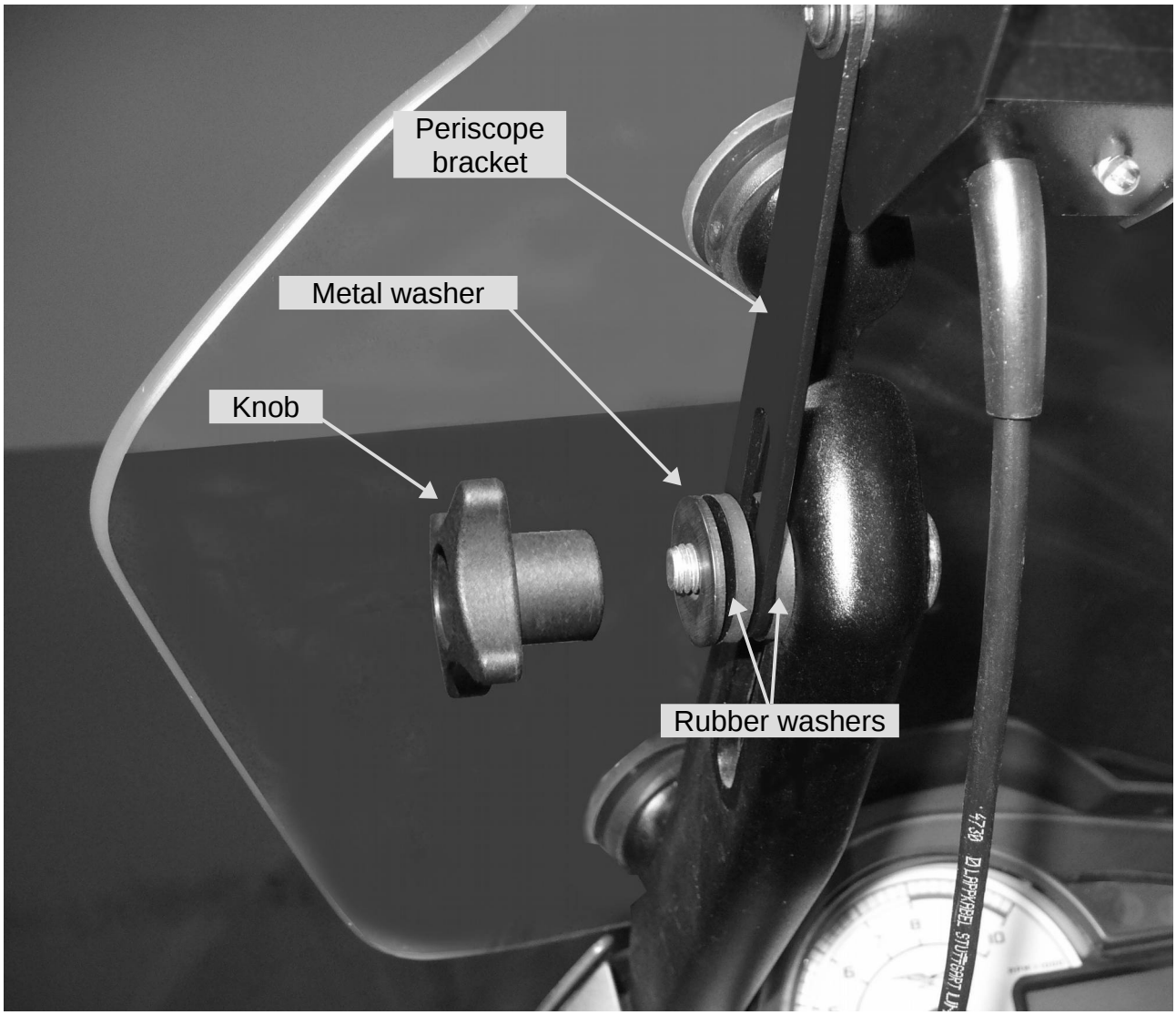
b) Remove completely the left knob-nut by unscrewing it.

c) Insert the Periscope bracket between the two gummy washers.

d) Insert the metal washer.

e) Remount the knob and tight it firmly.

f) Unscrew the original right-knob and replace it with the new one - use the provided spacer (Optional step)



Fix the computer/display unit to windscreen left bracket.

Step 2/10: unplug the left headlamp

(Please note that you can apply the following, symmetrical, procedure to the right headlamp if it is more comfortable/easy for you.)

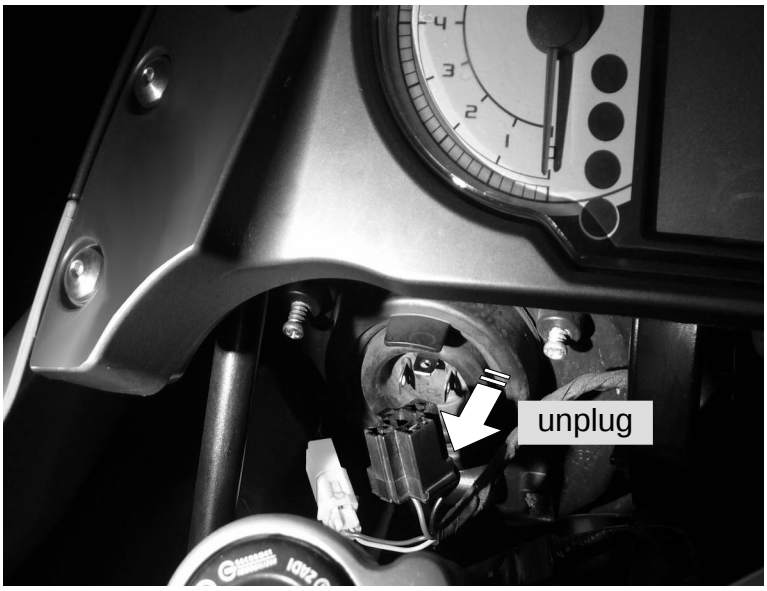
g) PUT YOUR IGNITION KEY ON THE ‘OFF’ POSITION

h) Turn the handlebar completely to the left to get more working space behind the lamps.

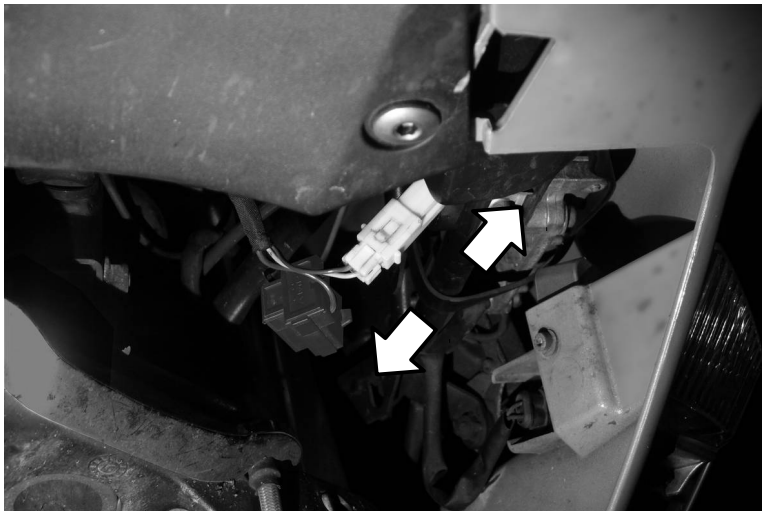
i) Unplug the connector with 3 poles powering the headlamp. In this way the power cables of the lamp will get more loose.

j) Move yourself to the front of the motorcycle and go down on your knees.
Gently drag down the white power connector until you can see it clearly below the fairing.

k) Unplug the power connector.



Detach the connector of the left headlamp



Unplug the power connector to the headlamp.

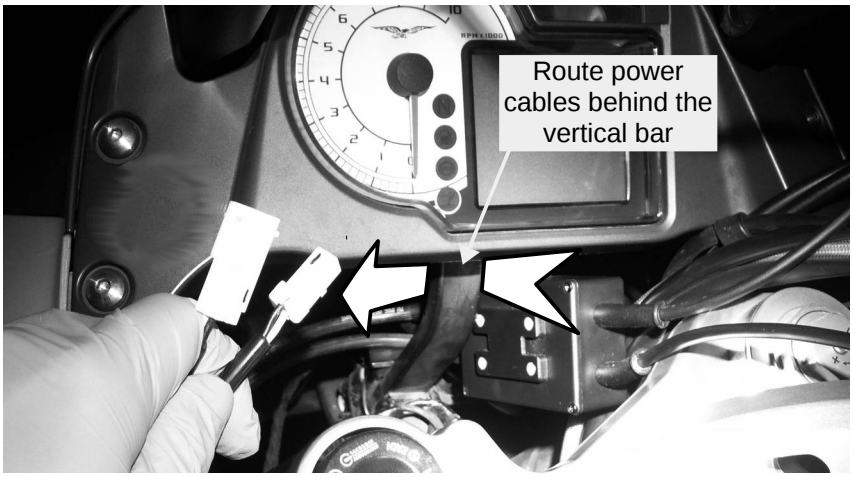
See the tip in appendix to unplug this connector easily.

Step 3/10: supplying the Periscope with power

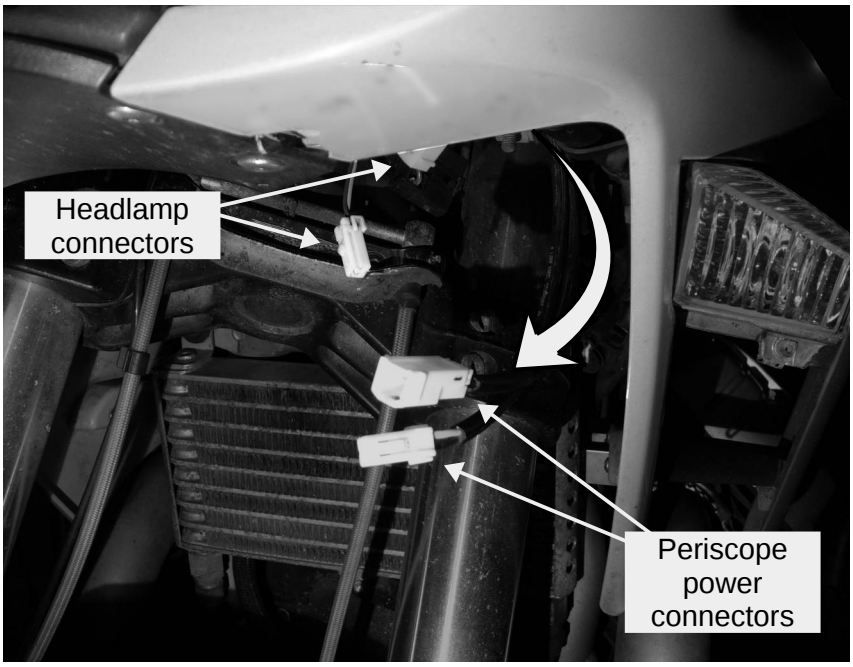
a) Route the two Periscope power cables behind the vertical metal bar of the front frame.

b) Move yourself again in front of the bike and drag down the two power cables dangling from the decoder unit.

c) Plug the connectors to the original ones (i.e. male to female and female to male)



Routing the power cables (cable tie not shown)



Drag down the power cables and plug them.

Step 4/10: test Periscope

It is recommended to make a preliminary test before going further with the mounting.

a) Unmount the motorcycle seat.

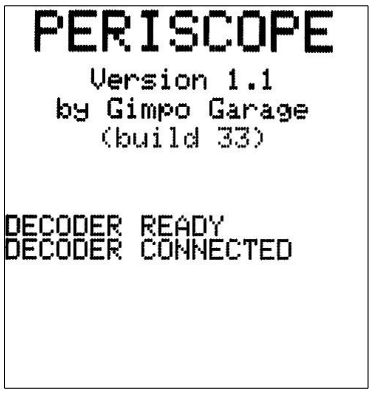
b) Locate the OBD connector of the motorcycle, then remove the little plastic cap on it.

c) Plug in the Periscope OBD connector.
Push the connector in place until you can hear a ‘click’ (it means that the retaining tab has snapped in correctly).

Plug the OBD connector

d) Switch the ignition key to the ‘ON’ position. The display of the computer unit should turn on immediately. It should show:

1. “Decoder ready” message.
2. “Decoder connected” message.
3. The main screen indicating ‘0’ as current gear (or ‘-’ if you parked the motorcycle with the gear engaged)



Periscope welcome screen

e) if the test is successful then switch the ignition key to the ‘OFF’ position.

f) Unplug the Periscope OBD connector (don’t remount the plastic cap).

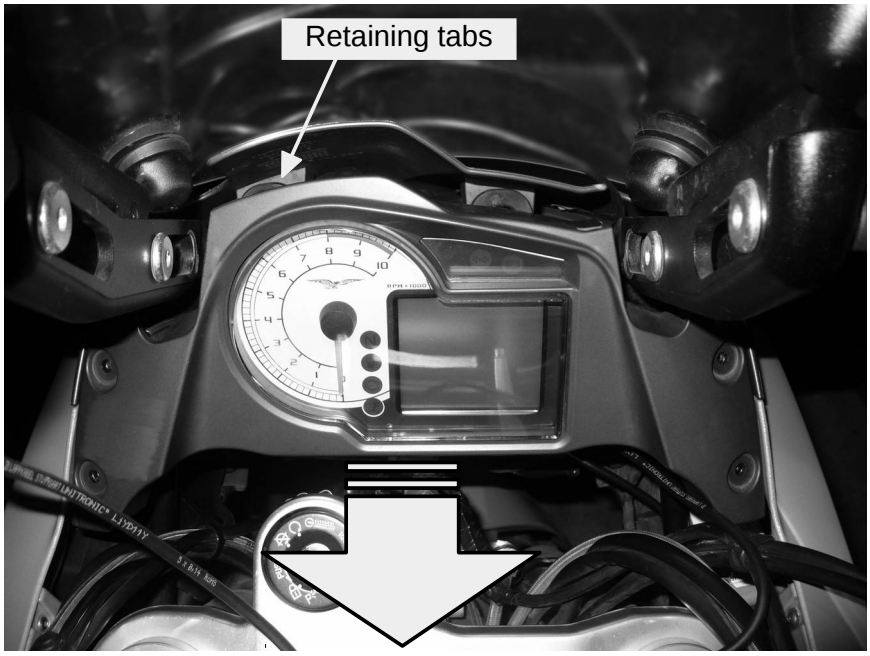
Step 5/10: unmount the dashboard

To keep the cable away from dashboard instruments is necessary to move it behind the dashboard itself.

a) Unscrew the four hexagonal-socket screws holding the dashboard

b) There are two plastic tabs in front of the dashboard used to join it with the fairing.
Gently pull the dashboard slightly upward and toward the tank to unsnap those tabs.

Unscrew the dashboard



Pull gently the dashboard upward and toward the tank

There is no need to remove the dashboard completely. Slide it until you have 2-3 centimeters of free space between it and the fairing (i.e. around 1 inch).

Do not pull the dashboard connector located on the bottom side! Also try to keep the rubber sleeve (protecting the dashboard connector from water) in correct position.

Step 6/10: fasten the decoder unit

The decoder should be placed in the frontal part of the fairing. This is a well ventilated area where the temperature rarely gets high.

a) Fit the cable tie in the holder attached on the side of the decoder unit (if you have not yet done this).

b) Pass the long OBD cable between the vertical metal bar and the headlamps.

c) slide the decoder unit behind the vertical bar with the fuse holder upward.

d) Tighten the cable tie to hold the unit firmly in position.

Fasten the decoder unit to the vertical bar

Step 7/10: route the OBD cable

It is strongly recommended to keep the OBD cable away from the fork head as far as possible. **Also keep it away from hot surfaces!**

a) Route the OBD cable in the space between the fairing and the pipes of the metal frame.

b) Locate a free path on the right inner side of the fairing to reach the the frame pipe located above the right cylinder.

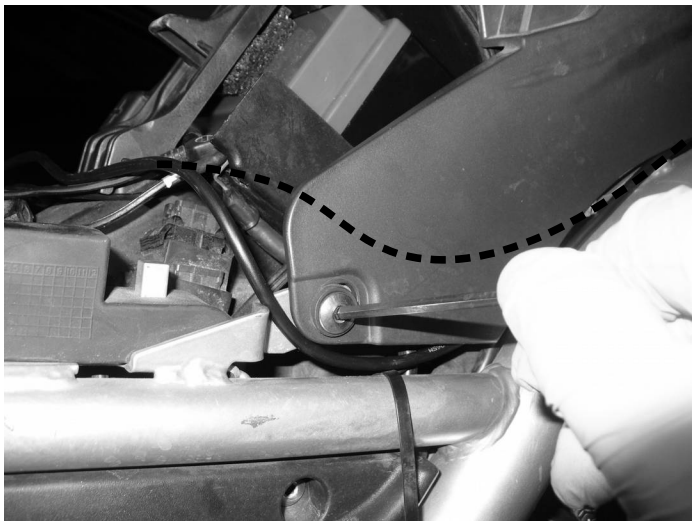
c) Plug the OBD connector to the female receptacle under the seat.

d) Accommodate the cable under the seat if it is too long.

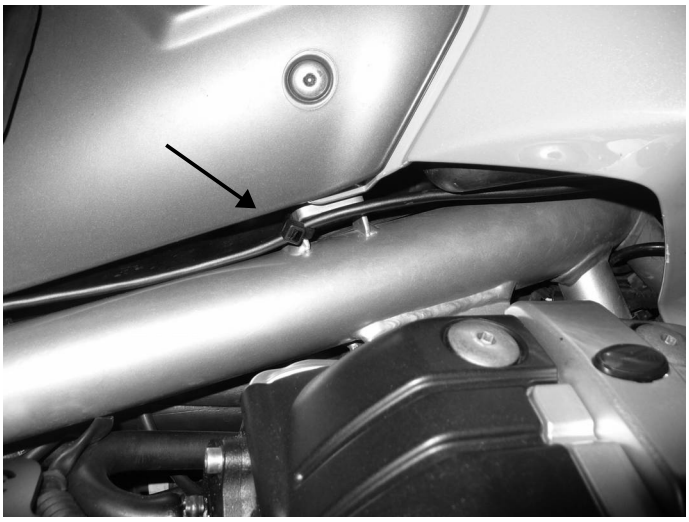
e) Fix the OBD cable in position by using one or more of the small cable tie.

Use the frame pipes to keep the OBD cable away from the fork.

Route the OBD cable through the fairing.



Exploit fairing parts to pass the cable through.



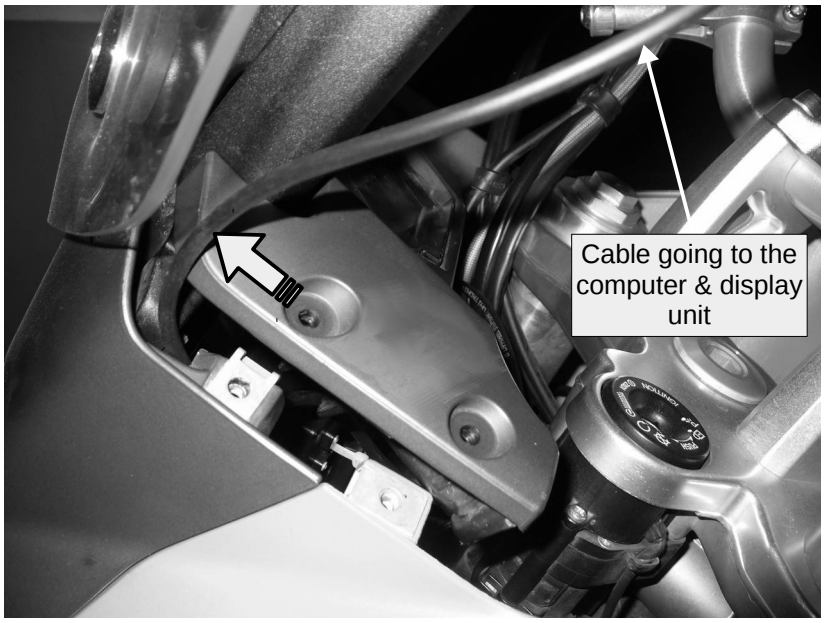
Keep the cable away from hot surfaces!

Step 8/10: remount the dashboard

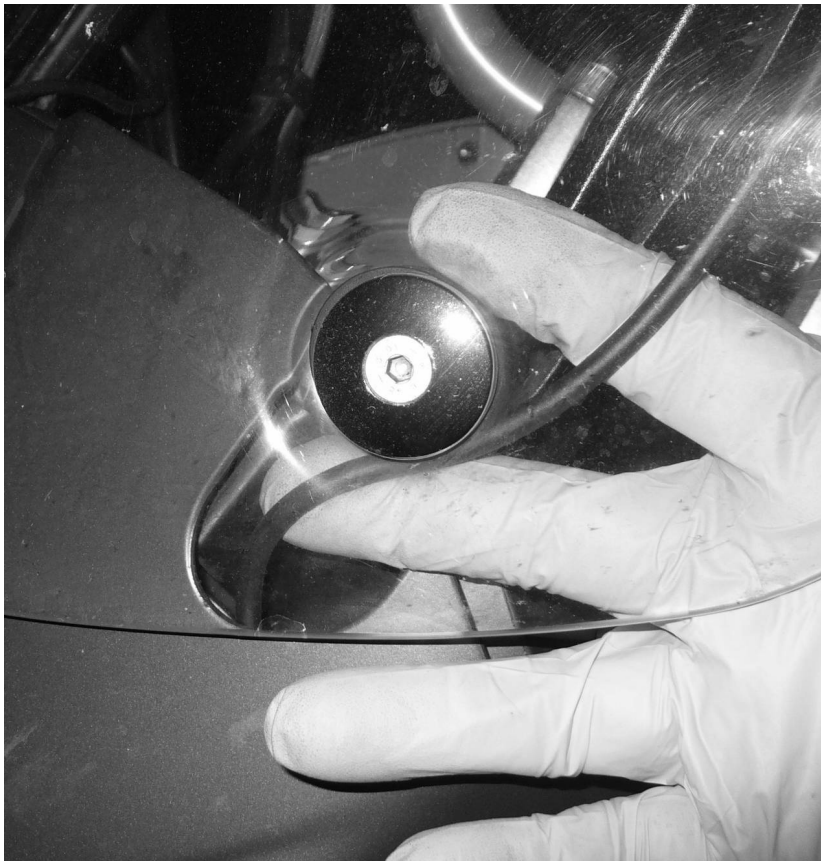
a) Gently slide the cable leading to the computer unit between the dashboard and the fairing until it reaches the base of the windscreen bracket.
   In that position there should be enough space to holding it after the dashboard is remounted.

b) Slide back the dashboard until the two frontal tabs snaps in the fairing.

c) Remount the four screws to keep the dashboard firmly in place.



Insert the cable between the fairing and the dashboard border.



Route the cable through the cavity at the base of the windscreen bracket.

Step 8/10: plug back the headlamp

a) Gently drag up the Periscope power cables.

b) Plug the 3-poles connector back to his original position.

Step 9/10: check cables!

All Periscope cables must not disturb the free movement of the handlebar and/or of the fork, so check them carefully!

a) Group together too long cable sections by using one or more zip-ties.

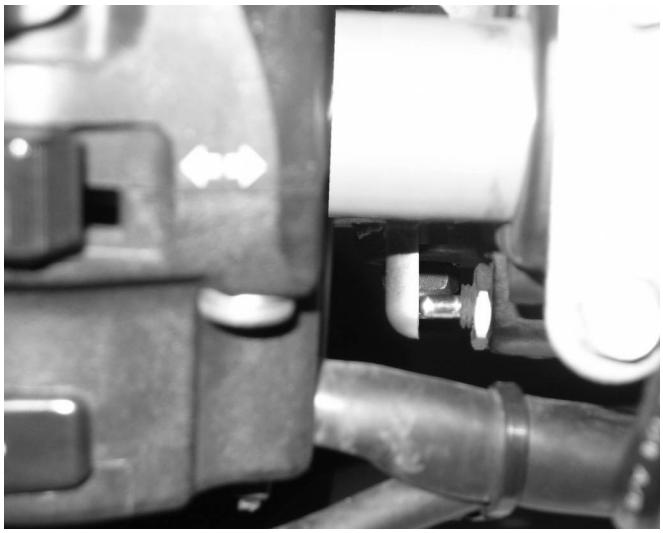
b) Use the pipes of the metal frame to hold cables in their position.

c) Check if the handlebar can rotate freely from left to right and vice versa.

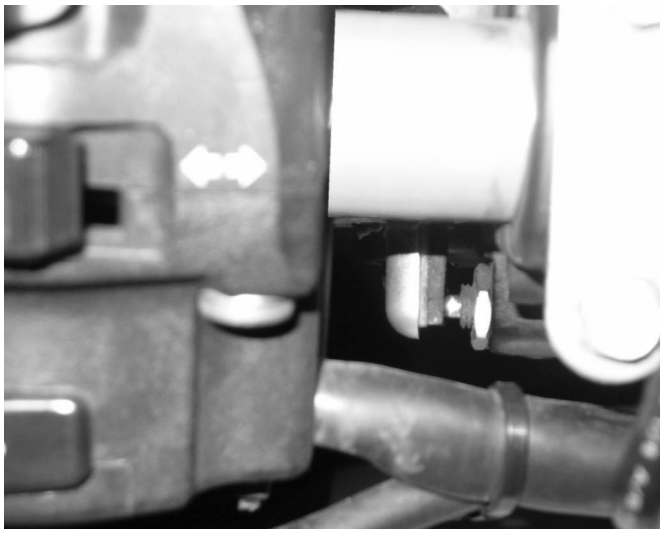
Example: the power cables constrained between the fairing and the metal frame

Step 10/10: apply a rubber pad on the pin of the clutch lever

The micro-switch used to detect the clutch position switches only when the lever is almost completely pulled. This results in a noticeable delay of the Periscope feedback.



The pin of the clutch lever barely touch the micro-switch, even when the lever is fully pulled.



After attaching the pad the micro-switch is activated more promptly and securely.

To eliminate this delay is highly recommended to stick a rubber pad on the pin surface.

a) Eliminate any trace of grease or dirt from the flat pin surface.
   Use alcohol or any alcohol-based cleaning product

b) Cut a rectangular shape from the gummy pad (approximately 9x12mm) by using a scissor.

c) Remove the protective film on the shape using your finger nail.

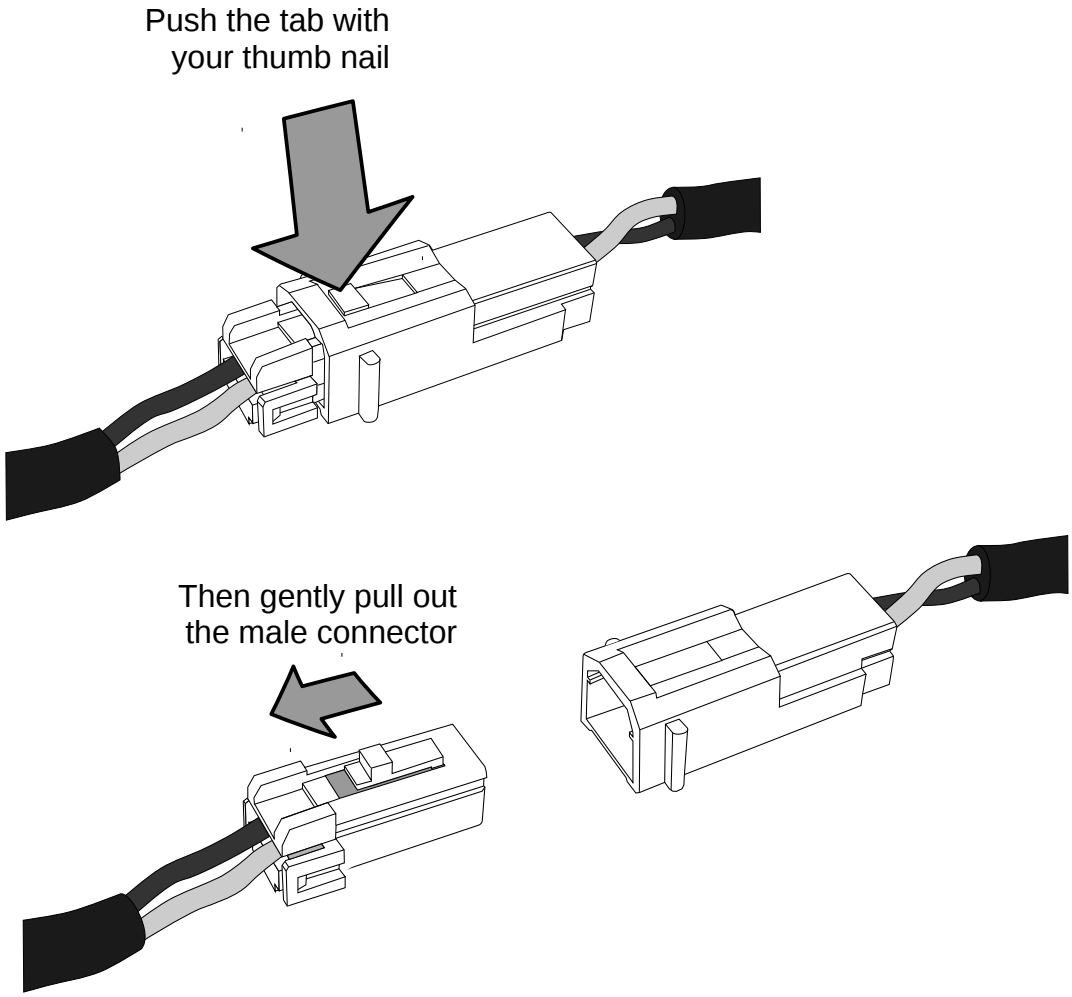
d) Firmly press it on the lever pin surface.

Appendix

How to unplug the headlamp power connector

Unplugging the power connector is quite difficult the first time. You don’t need to apply brutal force but to develop the right sensitivity to understand when the retaining tab is disengaged.

You have to use the nail of your thumb to push the tab perpendicularly to the female connector surface, then simply pull away the male part.



I strongly suggest that you do some practice before trying to unplug the power connector. Use the male/female connectors coming out from the decoder unit for this purpose. Snap and unsnap them several times until you became confident about the retaining mechanism.

Mount the display on the right side

You can mount the display unit on the right by simply switching the position of the bracket. All you need is an M4 hex-key.

a) Unscrew completely the screw holding the display case.
   Note: don’t loose the little rubber washer placed between the bracket and the metal suncover.

b) Unscrew the screw on the right (the suncover will get loose).
   Note: the screw on the right is shorter than the one on the left.

c) By using the longer screw, reassemble the display unit, the cover and the bracket (now on the right side).
   Note: is not necessary to tighten the longer screw too much. One should be able to move/regulate the inclination of the display by applying a small force. The rubber washer will prevent the screw to get loose by vibrations.

d) Tighten the shorter screw on the left side to firmly fix the cover.