



KART CROSS

4 in 1

Quick shifter

Blipper

Traction control

Engine brake control

Please read all pages of this manual carefully before using the GRIPONE system. The installation of this device requires attention. Remember that you are installing a device on a vehicle capable of reaching potentially high speeds. GRIPONE is a device not approved for road use. GUBELLINI di Gubellini Diego & C. s.a.s. is not responsible for the consequences of the proper and improper use of the vehicles on which is installed in GRIPONE device. We refer all responsibilities to the drivers and installers

INDEX

- 1.0 Included in the kit**
- 2.0 Security**
- 2.1 Good Installation Standards**
- 3.0 Introduction to GRIPONE**
- 3.1 How it works**
- 4.0. Software Installation**
- 4.1. Configuration and Programming Parameters**
- 5.0 Installation of Components**
- 5.1 Positioning the control unit**
- 5.2 Wiring**
- 5.3 Installing the accelerator pedal position sensor**
- 5.4 Resetting the pedal sensor**
- 5.5 Connecting the servo motor**
- 5.6 Servo Motor Reset**
- 5.7 Connecting the gearbox sensor**
- 5.8 Adjusting the Gear Sensor**
- 5.9 Speed sensors**
- 5.9 Configuring Speed Sensors**
- 6.0 Steering wheel buttons**
- 6.1 Enabling and Disabling Controls**
- 6.2 Changing the traction control level**
- 6.3 Changing the motor brake control level**
- 6.4 Variation between levels**

1.0 Included in the kit

- 1 x ECU
- 1 x wiring
- 1 x USB cable
- 1 x servo motor
- 1 x set of brackets for the servo motor
- 1 x gearbox sensor
- 3 x speed sensors
- 2 x stickers
- 1x online manual
- 1x online software

2.0 Security

When installing this product, it is recommended to position the vehicle in such a way that it cannot cause injury or damage by falling or moving backwards or sideways; the use of a stand and locking the wheels if necessary is recommended.

Ensure that the fuel injection is always switched off and the electrical system is not energized during the installation of this product (and in any case during all installation steps indicated in this manual). When removing or adding electrical cables or wiring to the vehicle system, always remove the positive terminal from the battery before the negative terminal. When reassembling, connect the negative terminal last to avoid shorting the electrical system.

2.1 Good Installation Standards

DO NOT RUSH! When installing GRIPONE ISIDE ensure that the unit is protected from excessive vibration, heat and the surrounding elements, and that it is securely fastened. When positioning the wiring make sure that it cannot be pinched or crushed and thus cause malfunctions, fix it with cable ties where necessary (without over-tightening the cables by cutting them).

WARNING!

The control unit must be positioned where the operating temperature does not exceed 65°C and must be protected from vibration. Locate a suitable surface on which to fix the control unit. Do not fix the control unit until installation of all other components and wiring is complete.

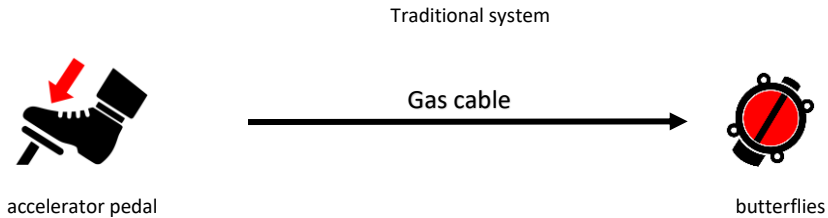
The use of a traction control system does not prevent a crash caused by inappropriate use of the throttle and/or vehicle control. For this reason it is advisable to experiment with the operation of the GRIPONE ISIDE system through repeated trials and small steps. Only after you have gained the right confidence and have clearly understood where and how the device intervenes on the engine and the chassis, try to modify the settings.

3.0 Introduction to GRIPONE

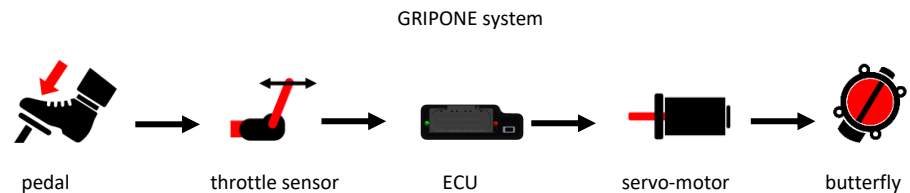
GRIPONE KartCross is an electronic control device designed and developed to be fitted in all four-wheel vehicles equipped with a motorcycle-derived engine (such as Kart Cross, covered-wheel prototypes or Formula cars). GRIPONE KartCross is capable of implementing traction control, engine brake control and rapid gear shifting control (both downshifting and upshifting). GRIPONE KartCross employs a "Ride By Wire" system to manage all control strategies, increasing performance and improving ride quality.

3.1 How it works

In conventional vehicles, the driver acts on the engine output via the accelerator pedal. The driver presses the pedal to accelerate, releases the pedal to slow down. For gear changes, the driver can use the clutch or can quickly close the throttle.



GRIPONE KartCross eliminates the throttle cables located between the accelerator pedal and the throttle body. Instead of cables, GRIPONE KartCross employs a position sensor (attached to the pedal) that detects the rider's action. The sensor signal is sent to the control unit. The control unit analyses the dynamic conditions of the vehicle (such as wheel spin under acceleration, wheel lock under braking, force exerted on the gear lever) and controls the servo motor connected to the throttle body.



In normal situations (those in which the vehicle is stable) the position of the accelerator pedal is applied to the throttle body in a 1:1 ratio. The driver acts directly on the power delivery and manages the vehicle completely.

In special situations (e.g. excessive wheel spin under acceleration) the control unit will manage the servo-motor to restore the correct balance of the vehicle.

- In the event of skidding (during acceleration) the servo motor will reduce the pilot's actual throttle opening.
- If the rear wheels lock (when braking), the servo motor will slightly increase the throttle opening.
- When downshifting, the servo motor will open the throttles for a very short time (thus allowing the gear to engage).
- In the event of a gear change (during acceleration), the servo motor will close the throttles for a very short time (thus allowing the next gear to be engaged).

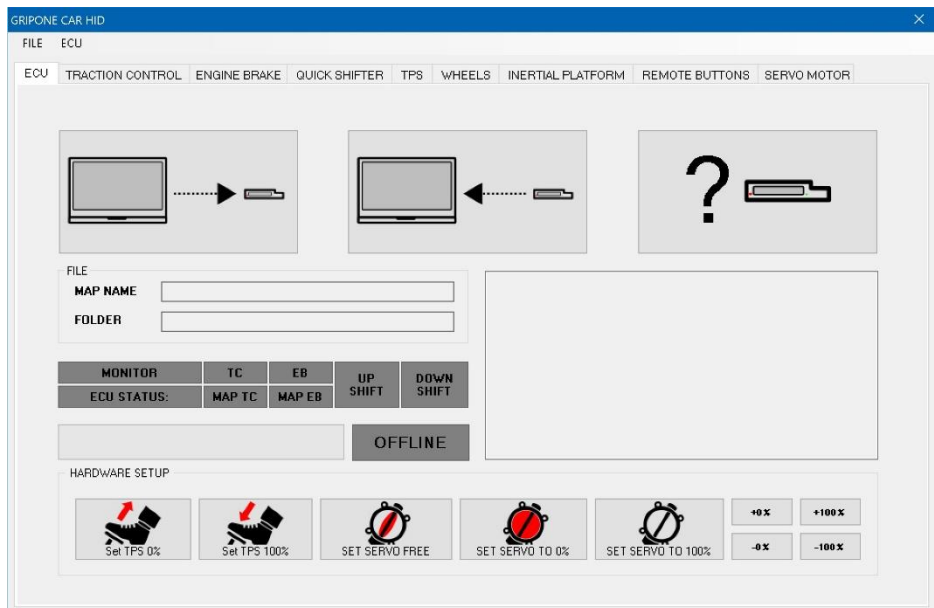
Each control strategy included in GRIPONE KartCross (traction control, engine brake control, quick gear change and downshift blip control) is separately adjustable to suit each driving style and vehicle type. To be able to adjust the different strategies, the management software and the computer's USB connection must be used.

4.0. Software Installation

GRIPONE KartCross is a control system with several functionalities. Each of these is configurable via the dedicated software that can be downloaded from download.gripone.com/gripone_car_hid/.

The software connects to the control unit via a simple USB cable and is indispensable for configuring the control system. Follow the steps below to install the software:

- Open your Internet browser and go to download.gripone.com/gripone_car_hid/;
- Click on the 'install' button ; 
- Follow the installation procedure; confirm that you want to 'run anyway' if the Window system (or antivirus or firewall) tries to block the procedure;
- Once the installation procedure is complete, start the programme which you will find in the start menu under START > GUBELLINI > GRIPONE CAR HID;



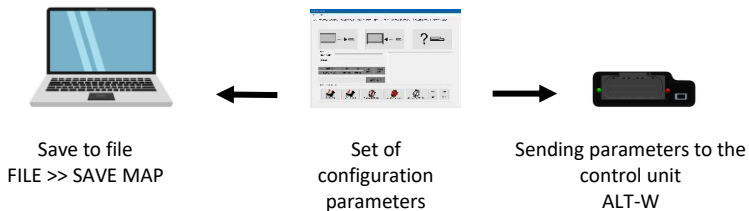
During the first installation, after installing the software on the PC, the following steps must be followed:

- Disconnect the control unit from the main wiring harness;
- Connect the control unit via the USB cable;
- Wait until the control unit is ONLINE;
- Press the 'WRITE MAP IN ECU' button or the ALT-W button combination;
- Wait for the end of the procedure;
- Disconnect the USB cable;
- Reconnect the control unit to the main connector;

4.1. Configuration and Programming Parameters

The management software allows you to modify various parameters that govern the operation of GRIPONE KartCross. Let us look at some details of the operating logic:

- All configuration parameters are divided into folders: ECU, TRACTION CONTROL, ENGINE BRAKE, QUICK SHIFTER, TPS, WHEELS, INERTIAL PLATFORM, REMOTE BUTTONS and SERVO MOTOR.
- If I close the software without saving, parameter changes will be lost. The next time the software is started, the parameters displayed will be the default ones.
- All parameters can be saved in a 'map' file so that they can be archived and called up at a later date.



- Within the software I can change the parameters several times, but I have to send the changes to the control unit to make the changes active. Until I send the parameters to the control unit, any changes made within the software will not be perceived by the control unit.
- To send configuration parameters to the ECU, I have to connect the USB cable and press the 'WRITE MAP IN ECU' button.

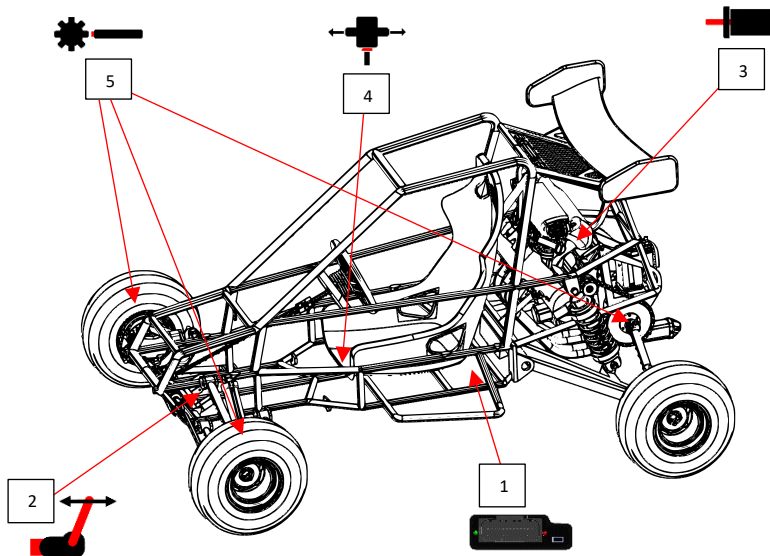


- When I press the "WRITE MAP IN ECU" button, I send all parameters to the ECU. Even if I only changed one parameter (within the software), the sending to the ECU will affect all parameters. Be careful if you change many parameters all at the same time.
- In the stages following 'first installation', whenever one or more parameters need to be changed, it is recommended to first press the 'READ MAP FROM ECU' button. This will read all ECU parameters and load them into the software. The user can edit them and can send them to the ECU by pressing the "WRITE MAP IN ECU" button.



Further details on how to use the software and how to programme the ECU will be explained in the following paragraphs.

5.0 Installation of Components



The GRIPONE kit includes the wiring harness and the various electronic/mechanical parts to be installed on the vehicle. No modifications to the standard electrical system are required. During installation you will need to connect the following components:

- ECU (1) - to be connected to main connector of harness
- Pedal position sensor (2) - to be connected to the wiring branch marked TPS
- Servo motor (3) - to be connected to the wiring branch marked PWM1
- Gearbox sensor (4) - to be connected to the wiring branch marked QS
- Speed sensor (5) (front left wheel) - to be connected to the wiring harness branch marked FL
- Speed sensor (5) (front right wheel) - to be connected to the wiring harness branch marked FR
- Speed sensor (5) (rear wheel) - to be connected to the wiring harness branch marked RR
- Eyelet red wire - connect to 12 volt
- Eyelet blue wire - connect to the ground (or negative pole of battery)
- Ignition coil module to be connected to all ignition coils

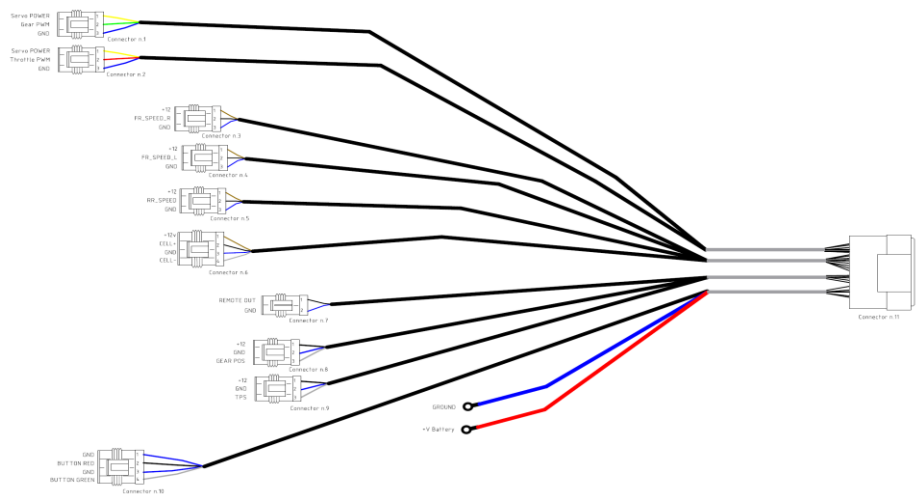
5.1 Positioning the control unit

The ECU must be fixed horizontally with the main connector pointing towards the rear of the vehicle. The ECU contains the inertial platform inside and therefore requires special orientation.

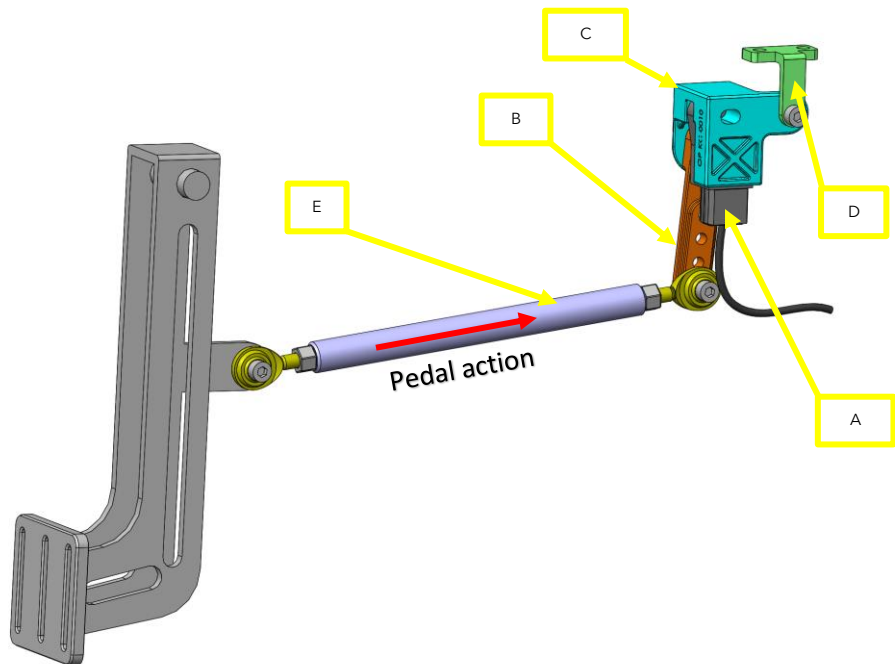
- The first requirement is to point the connector towards the rear of the vehicle
- The second requirement is to secure the ECU by means of rubber or sponge (so as to isolate it from vibration).

The ECU cannot be fixed obliquely, it must be (as far as possible) parallel to the ground. The ECU can be positioned centrally, to the right or to the left (as preferred).

5.2 Wiring harness



5.3 Installing the accelerator pedal position sensor



The orientation shown in the figure is indicative

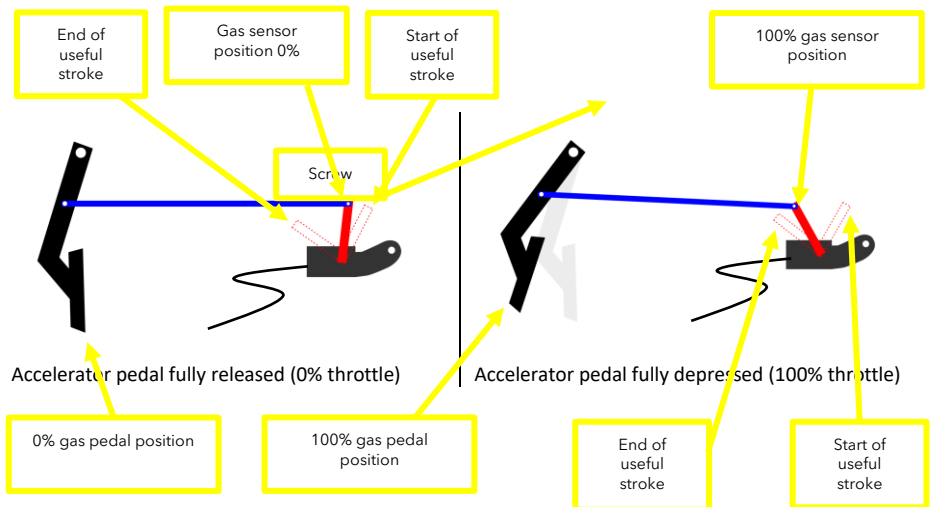
The first step of the installation involves removing the throttle cable from the throttle body and the accelerator pedal. The 'pedal position' sensor will be used to inform the control unit when the rider operates the pedal.

The pedal position sensor included in the kit is a rotary potentiometer. Installation must follow the following steps:

- Insert the rod (B) inside the sensor (A) as shown;
- Insert the rod (B) and the sensor (A) into the bracket (C)
- Attach the bracket (C) to the chassis or to a solid part of the vehicle, close to the accelerator pedal; the fixing bracket (D) is not included in the kit (this is the responsibility of the installer). Please take great care at this stage as the solidity of the fastening is crucial.
- Connect the rod (B) to the accelerator pedal via a deflection arm (E); The arm is not supplied.
- The mechanism should cause the rod (B) and the deflection arm (E) to move in the direction of the arrow as shown in the figure when the accelerator pedal is pressed;

ATTENTION

1. When installing the sensor, ensure that the total pedal travel is not greater than the total sensor travel. It is important to allow the sensor some free travel (both at 0% and 100% gas).

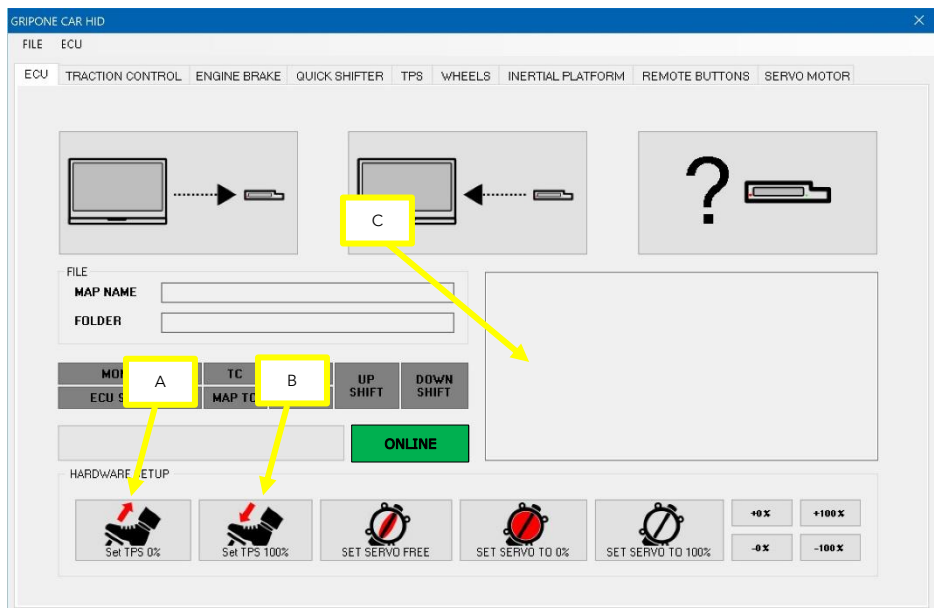


2. When attaching the linkage rod and linkage arm, use self-locking nuts and medium threadlocker (Loctite 243). Do not tighten the screw on the rod but leave some play so that the linkage can move and rotate correctly.
3. If the accelerator pedal is not equipped with a spring, the spring resistance of the pedal sensor may not be sufficient. In this case, the pedal will be too soft to squeeze. It is recommended to apply a (tension) spring in order to increase the foot's resistance to crushing.

5.4 Resetting the pedal sensor

Once the sensor is installed, it is necessary to proceed with zeroing in order to accurately establish the 0% gas position and the 100% gas position. Follow the following steps:

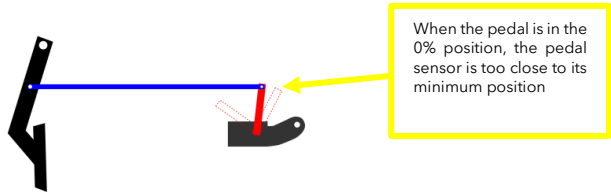
- Make sure the control unit is connected to the main connector (of harness);
- Connect the pedal sensor to the branch of the wiring harness marked TPS;
- Connect the blue cable via the 6mm eyelet to ground;
- Connect the red cable via the 6mm eyelet to a 12-volt source; it is recommended to connect this terminal at a point downstream from the main switch, otherwise the control unit would remain permanently powered;
- Power the control unit via the 12-volt voltage;
- Connect the USB cable and wait until the control unit is ONLINE in the GRIPONE CAR HID software



- Fully release the accelerator (0% position) and press button A;
- Fully press the accelerator (100% position) and press button B;

ATTENTION

- Press the CTRL-E key combination to activate the monitor function. A series of internal ECU parameters will be displayed (in real-time) in the side window (C). By acting on the accelerator pedal, check that the "**TPS POSITION**" value varies from 0 to 100% in line with the pedal stroke;
- The "**TPS POSITION**" value must not reach 100% before the accelerator pedal is at the end of its travel;
- The value '**TPS 0%**' must be non-zero (e.g. 40 or 108). If it is zero, the pedal sensor has not been positioned correctly:



- The '**TPS 100%**' value must be at least 250 units away from the '**TPS 0%**' value. The greater the difference (more or less), the greater the accuracy of the system;

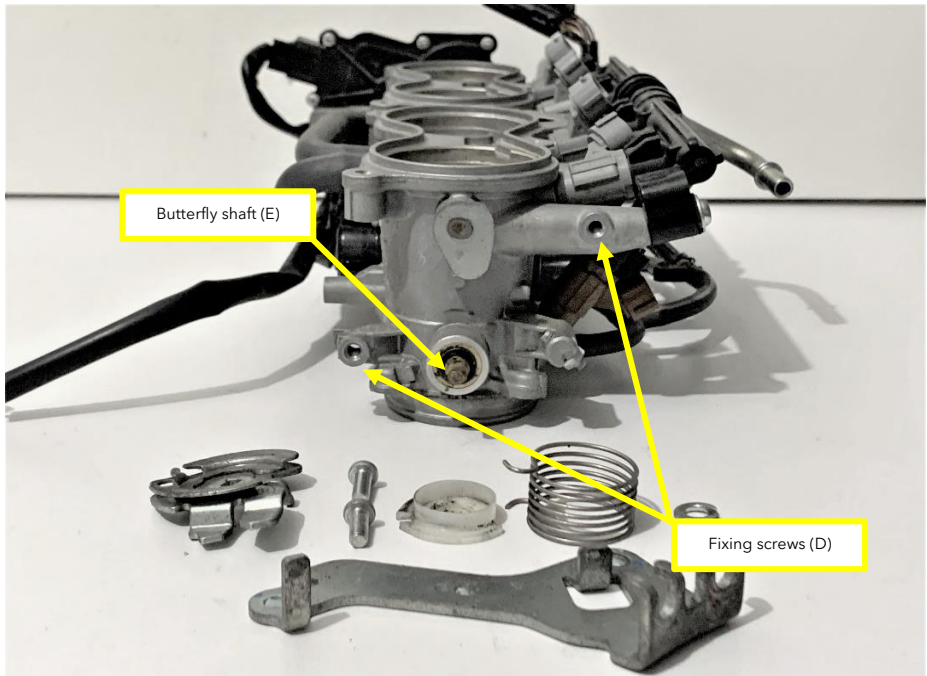
TO END

- Press the CTRL-D key combination and disconnect the USB cable;
- Switch off the 12-volt power supply;

5.5 Connecting the servo motor

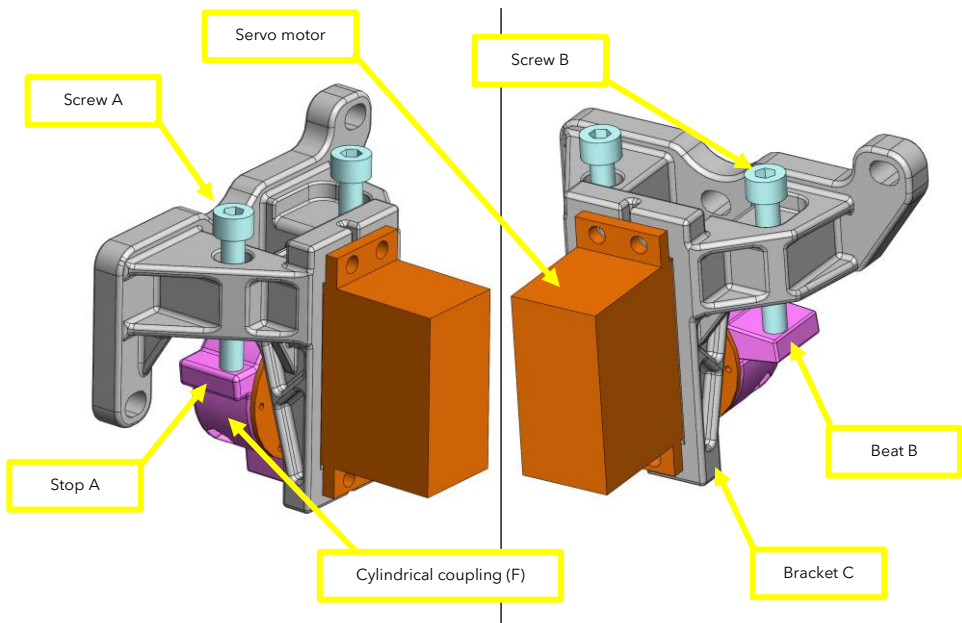
The second component to be connected is the servo-motor on the throttle body. The servo-motor comes pre-assembled with the mounting bracket and the insert to connect it to the throttle shaft. Do not modify this pre-assembly.

To install the throttle body, you must remove the airbox, the throttle wires and finally, remove the throttle body from the engine. The installation described here applies to all throttle bodies that have the throttle wires connected to the outer side of the throttle body. It is necessary to remove the bracket supporting the throttle wires, as shown in the figure below:



Follow the steps below to install the servo motor:

- Position the servo motor near the throttle shaft;
- Fit the cylindrical coupling (F) onto the butterfly shaft (E);
- Secure the bracket (C) holding the servo-motor by means of the screws (D) which held the sheet metal plate of the gas wires;
- Tighten the M3 Allen screw to secure the cylindrical coupling (F) on the butterfly shaft (E);
- Move the servo motor slightly, so that the natural centring is found. The throttle shaft (E) must be on axis with the cylindrical coupling (F).
- Gently tighten fixing screws;
- From the bottom of the throttle cover, try opening the throttles by finger pressure to check that there is no forcing (apart from the natural friction of the servo motor and the force of the throttle body's internal spring);
- Move the throttles to the closed position (gas closed) and hold that position with finger pressure;
- Turn the idle adjustment screw (Screw A) until it comes into contact with the end stop step (Stop A); Caution: do not tighten too much, otherwise complete closure will not be achieved at the end of the procedure. Screw A must come into contact with stop A;

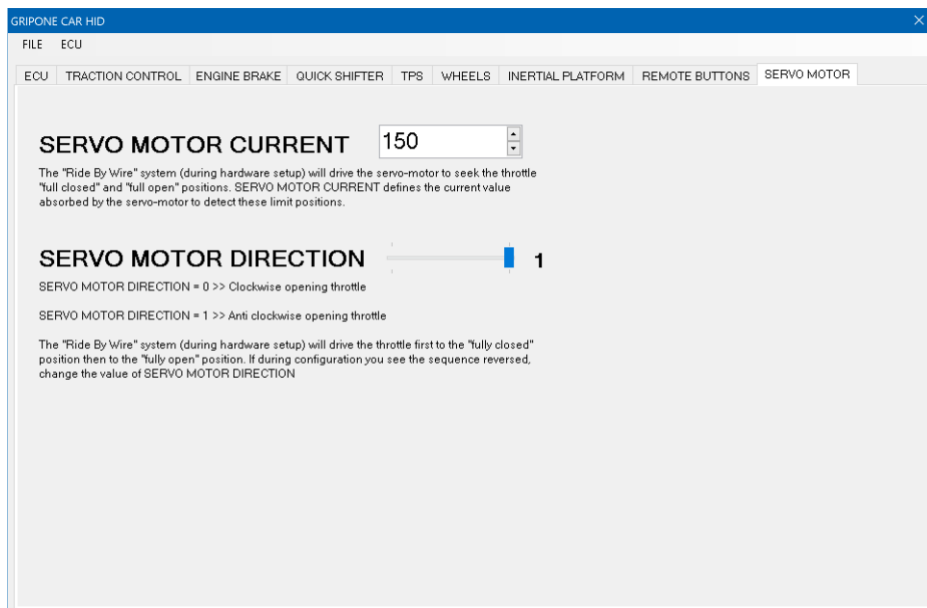


- From the bottom of the throttle body, open the butterflies 90° and hold the position with your fingers;
- Turn the maximum adjustment screw (Screw B) until it comes into contact with the end stop step (Stop B); Caution: do not over-tighten, otherwise a complete opening will not be achieved at the end of the procedure;
- Remove the fingers and release the butterflies;

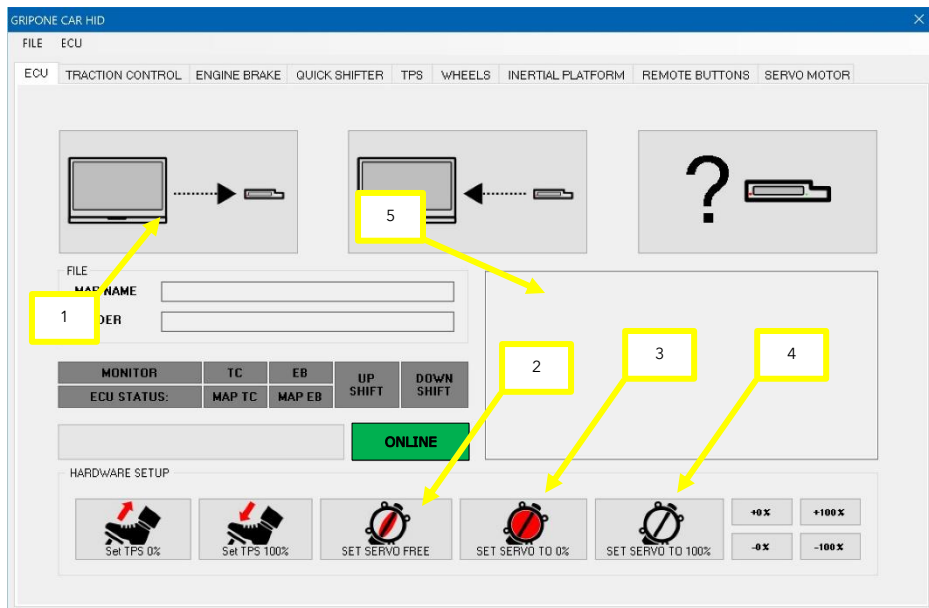
5.6 Servo Motor Reset

Resetting the servo motor allows the position of the fully closed throttles and the position of the fully open throttles to be stored in the control unit. Follow the following steps:

- Loosen the M3 Allen screw of the cylindrical plug (F) and remove the fixing screws (D);
- Remove the bracket (C), servo-motor and cylindrical coupling (F) en bloc from throttle body;
- Connect the servo-motor connector to the wiring branch marked PWM1;
- Supply the control unit with 12Volt voltage and connect the USB cable;
- In the GRIPONE CAR HID software, select the "SERVO MOTOR" folder;
- Set SERVO MOTOR CURRENT = 150;
- Check the direction of rotation of the servo-motor. By setting "SERVO MOTOR DIRECTION" = 1, the servo motor will open the throttle by rotating counterclockwise. Setting "SERVO MOTOR DIRECTION" = 0 will have the opposite effect;



- Hold the servo-motor block from the square side with the cylindrical coupling (F) facing upwards. In the next step the cylindrical coupling (F) will rotate, so it is important to leave it free;
- Select the 'ECU' folder and press the 'WRITE MAP IN ECU' button (1) or the ALT-W key combination;
- Press the 'SET SERVO FREE' button (2). The servo motor will position itself at mid-travel;
- Press the 'SET SERVO 0%' button (3). The servo motor will approach the zero (0%) position until the idle screw is reached;
- Press the 'SET SERVO 100%' button (4). The servo motor will first go to mid-stroke and then slowly rotate until it reaches the maximum screw;
- At this stage it is necessary to check that the values have been set correctly: Press the key combination CTRL-E to activate monitor mode;
- Window (5) will display a number of internal controller parameters. Check that the value of "TPS STATUS" is 4;



- Press the 'WRITE MAP IN ECU' button (1) or the ALT-W button combination;
- At this point, acting on the accelerator pedal, the servo-motor should move consistently following the position of the pedal;

ATTENTION

After resetting the servo-motor, the servo-motor block, bracket and cylindrical coupling must be reassembled on the throttle body. Follow the steps below:

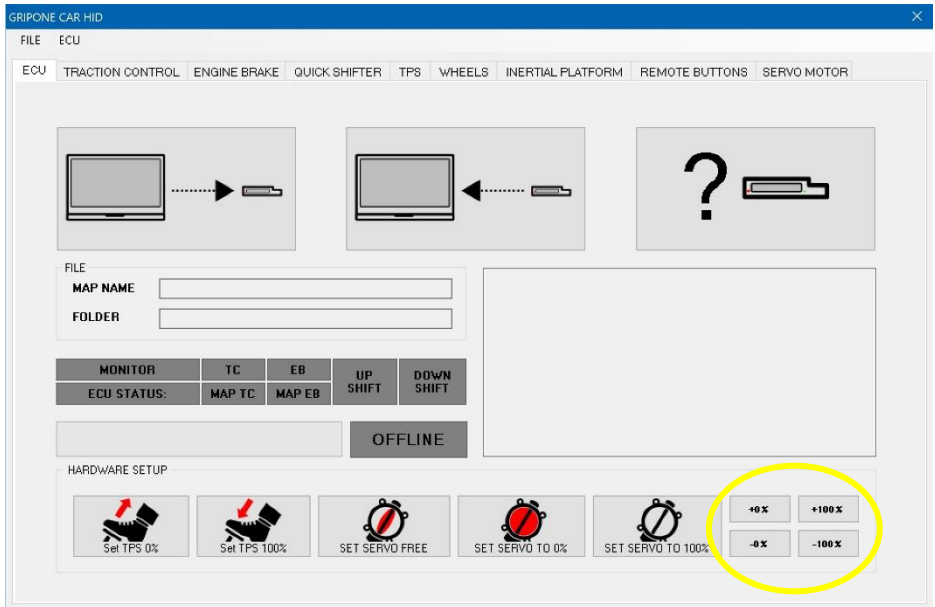
- Switch off the 12-volt power supply and disconnect the USB cable;
- Position the cylindrical coupling (F) on the butterfly shaft (E);
- Fasten the servo bracket (C) by means of the fastening screws (D) to the throttle body. This time it is necessary to apply threadlocker (Loctite 243) in the screws;
- Loosen the idle screw (screw A) and the maximum screw (screw B) by $\frac{1}{4}$ turn;
- Slightly tighten the M3 Allen screw of the cylindrical plug (F);

LAST CHECK

After the servo motor has been reset, the position of closed throttles (0%) and open throttles (100%) can be adjusted noticeably via the software if necessary. Follow the following steps:

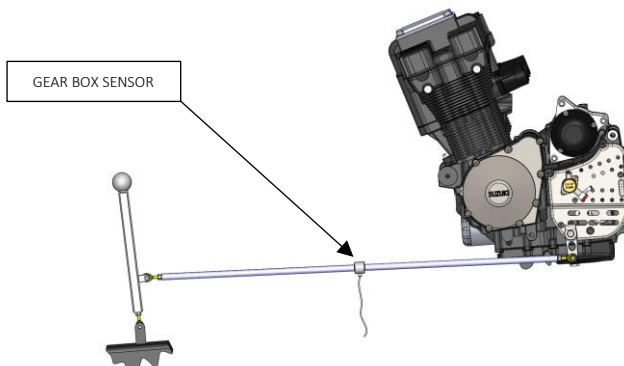
- Supply the control unit with 12Volt power and depress the accelerator pedal. The throttle butterflies should move in a manner consistent with the position of the pedal.
- Release the accelerator pedal and check that the throttles close perfectly. If (in a quiet environment) you hear the servo motor emit a fairly loud hum, you can manually adjust the 0% position until the hum disappears (almost) completely.

- Connect the USB cable and wait for the software to come online;
- Press the '+0%' button once or twice and check the buzz;
- Depress the accelerator pedal fully and check that the throttles are open 90°;
- If necessary, press the '+100%' button or the '-100%' button to correct the position;
- Once the ideal position has been found, the throttle body can be mounted on the engine and the other parts (airbox, etc.) fitted;



5.7 Connecting the gearbox sensor

The third component to be installed is the gearbox sensor. The gearbox sensor is a load cell sensor, capable of detecting the pressure exerted by the rider on the gearstick lever.



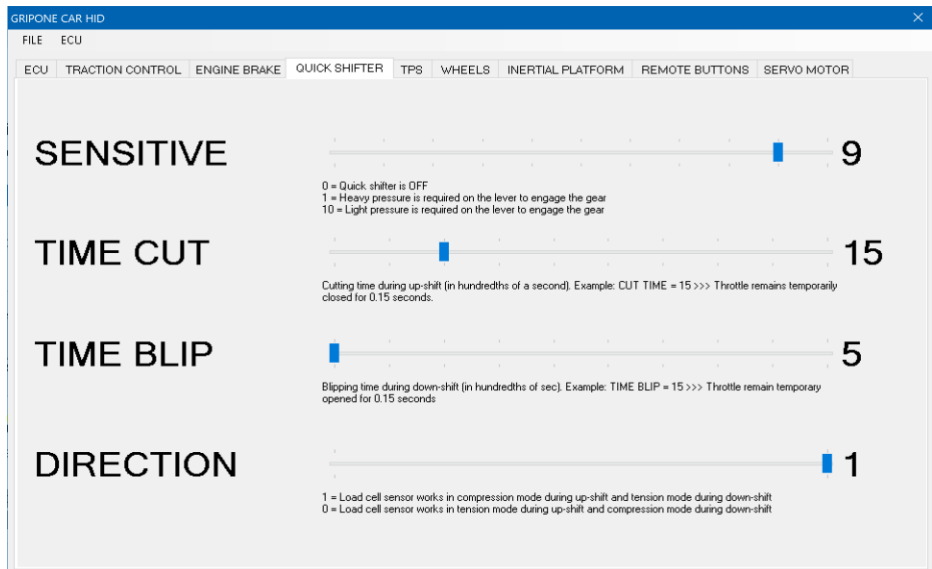
The sensor detects the force exerted in both compression and traction. In this way, the system will be able to activate the shift function both upshifting and downshifting.

The gearbox sensor is attached to the gear lever's return shaft. The sensor has two M6 threads through which it can be attached to the return rod. Connect the sensor to the wiring branch marked QS.

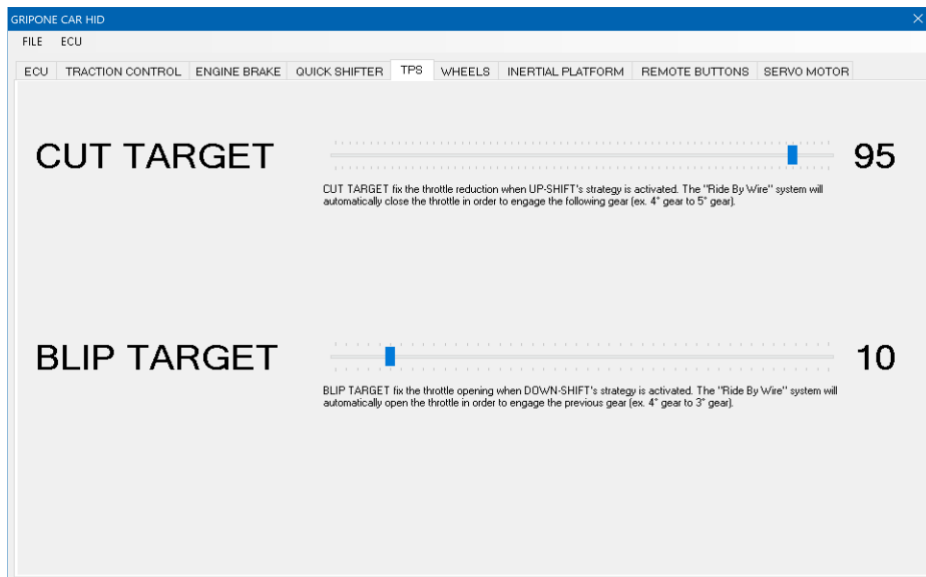
5.8 Adjusting the Gear Sensor

Once the sensor has been installed, it is necessary to proceed with adjusting the parameters that define its behaviour. Follow the steps below:

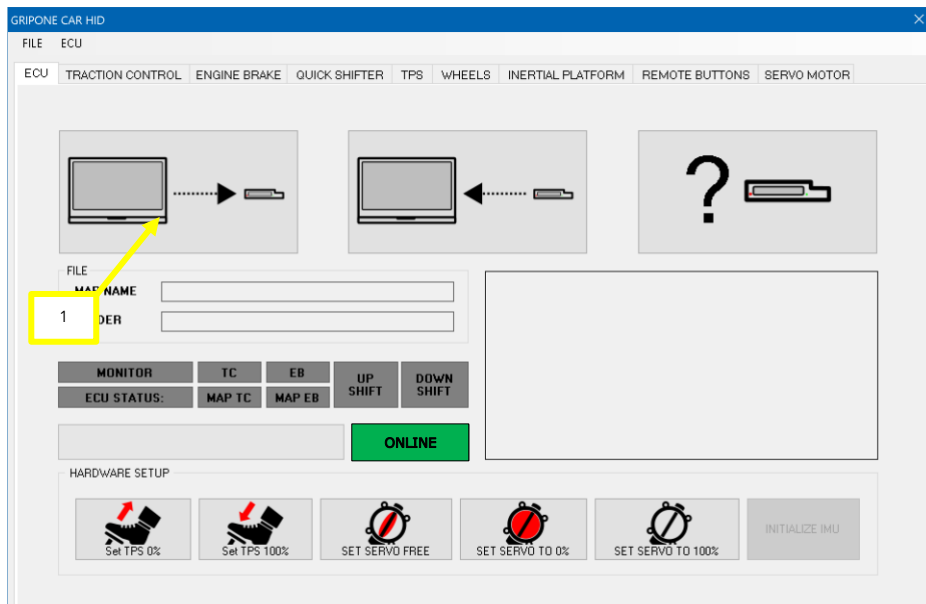
- Make sure the control unit is connected to the main connector;
- Power the control unit via the 12-volt voltage;
- Connect the USB cable and wait until the control unit is ONLINE in the GRIPONE CAR HID software
- Select the QUICK SHIFTER folder and configure the parameters as shown in the figure below;



- The parameter SENSITIVE = 9 may be too sensitive. In this case, reduce the value so that more force must be exerted on the lever to activate shifting.
- The DIRECTION parameter must be set so that the direction of actuation corresponds to as described: If engaging the next gear, the sensor is actuated in compression, I must set DIRECTION=1. If, when engaging the next gear, the sensor is actuated in traction, I must set DIRECTION=0;
- Select the TPS folder and configure the parameters as shown in the figure below;
- CUT TARGET defines the percentage of throttle that is removed (automatically) to engage the next gear during the shift phase. Setting 95 means that during each gear change (upshift) the servo motor will close the throttle 95% (relative to the position at that time). For example, if I shift with the throttle fully open (100%), the servo motor will close the throttles down to 5% and allow the next gear to engage. After a few moments the throttle will be returned to the previous position;
- BLIP TARGET defines the percentage of throttle opening you want to achieve (automatically) when downshifting. Setting 10 means that during each gear change (downshifting) the servo motor will open the throttles by 10%. The downshift blip only works if the driver is not acting on the gas pedal (throttle = 0%).



- Power the control unit via the 12-volt voltage;
- Select the ECU folder and press WRITE MAP TO ECU (or use the ALT-W key combination) to programme the ECU with the parameters just set;



5.9 Speed sensors



GRIPONE uses three speed sensors to activate the 'traction control' and 'anti-lock' strategies. The speed sensors (included) are inductive proximity sensors (with 'open collector' output, NPN type). The sensors are able to detect the proximity of an object (tooth or screw) made of ferro-magnetic material. The sensors do not work with stainless steel, aluminium or titanium.

Each sensor must be installed on the wheels of the vehicle in such a way that at least three pulses are detected for each complete wheel revolution. The sensors can be mounted to detect both wheel and axle rotation. There are three sensors to be connected: front right wheel, front left wheel and rear wheel.

For vehicles without a differential on the rear axle: the rear speed sensor can be installed on one of the wheels (indifferently).

For vehicles with a differential on the rear axle: the rear speed sensor must be installed upstream of the differential.

BE CAREFUL DURING INSTALLATION

- The sensor consists of a threaded cylindrical body (M8x1). The sensor includes a nut and counter nut so that it can be attached to a drilled bracket;
- The bracket to which it is attached must not vibrate or move, otherwise the sensor may detect false impulses;
- In the part where the cable comes out (the back) there is an LED that lights up when the sensor detects a metal object;
- The front must be facing away from a phonic wheel or towards the brake disc flange (so that metal teeth or screws can be detected);
- The distance required for tooth detection is approximately 1 mm. Once fixed, check that the speed sensor detects all teeth on the phonic wheel;
- The metal teeth (or screws) must be equidistant from each other. They cannot, for example, be six teeth paired in groups of two closely spaced teeth;

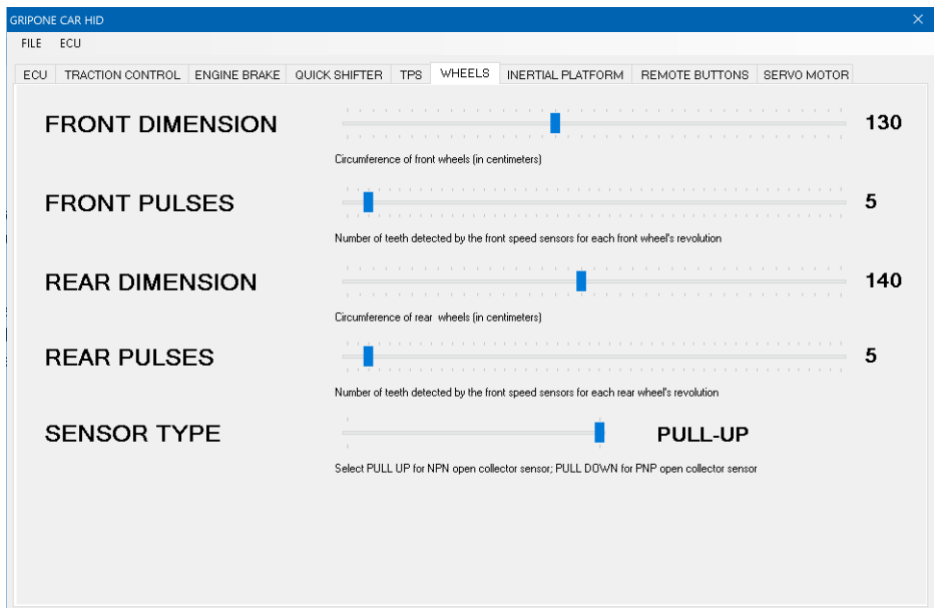
Connect the sensors as follows:

- The front left sensor to the wiring harness branch marked FL;
- The front left sensor at the branch of the wiring harness marked FR;
- The rear sensor at the wiring harness branch marked RR;

5.10 Configuring Speed Sensors

Once the three sensors are installed and connected to the wiring harness, it is important to set the wheel parameters, through which the control unit is able to calculate the vehicle speed. Follow the following steps:

- Make sure the control unit is connected to the main connector;
- Power the control unit via the 12-volt voltage;
- Connect the USB cable and wait until the control unit is ONLINE in the GRIPONE CAR HID software
- Select the WHEELS folder and configure the parameters according to your wheels. Measure the development of the wheels (front and rear) with a measuring tape. The wheel development is the distance (in centimetres) the wheel covers in one complete turn;



- Set the wheel development value (in centimetres) for the front and rear wheels;
- Set the number of pulses detected by the front and rear sensors (for each complete wheel revolution);
- Set SENSOR TYPE to PULL-UP;
- Select the ECU folder and press the "WRITE MAP IN ECU" button (or use the ALT-W key combination) to programme the ECU with the parameters just set;

5.11 Connection of ignition coil module

The quick shifter cut the ignition coil signal to stop the firing over all cylinder. Connect the ignition coil module to the branch of wiring loom marked PWM2. Then connect all the branch of the module to all ignition coils. For each cylinder you must unplug the connector from the coil and interpose the female-male couple connectors.

6.0 Steering Wheel Buttons

The GRIPONE kit does not include remote buttons to be placed on the steering wheel. However, there is a connector (four-pin) marked 'BT' in the wiring harness that can be connected to two (momentary, normally open) buttons. These buttons enable you to activate or deactivate the system, change the traction control level, change the engine brake control level and activate the launch control.

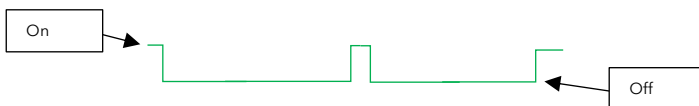
If it is decided to connect the two pushbuttons, the wiring branch to the pushbuttons is the responsibility of the installer. The buttons must be of the 'momentary' and 'normally open' type.

6.1 Enabling and Disabling Controls

Press and hold either button for 4 seconds to deactivate all control systems (traction control, engine brake control and gear shift control). When the system is deactivated, the green LED on the control unit will flash slowly (0.4Hz).



Press and hold either button for 4 seconds to reactivate the controls. With the system activated, the green LED on the control unit will flash normally (1Hz).



6.2 Changing the Traction Control Level

Using the management software, it is possible to adjust the operation of the traction control. By connecting the USB cable to the control unit and changing the SENSITIVE and INTENSITY parameters (in the TRACTION CONTROL folder), you can increase or decrease the control by the system.

By installing the buttons, however, the driver will be able to significantly change the traction control on 3 levels.



Level 1 corresponds to the traction control achieved by setting the SENSITIVE and INTENSITY parameters. Level 2 will increase the control. Level 3 will increase from level 2.

Pressing the green button will switch from level 1 to level 2 to level 3. A further press of the green button will return the control to level 1.

6.3 Changing the motor brake control level

Using the management software, it is possible to adjust the operation of the engine brake control. By connecting the USB cable to the control unit and changing the SENSITIVE and INTENSITY parameters (in the ENGINE BRAKE folder), it is possible to increase or decrease control by the system.

By installing the buttons, however, the pilot will be able to significantly change the control on 3 levels.



Level 1 corresponds to the traction control achieved by setting the SENSITIVE and INTENSITY parameters. Level 2 will increase the control. Level 3 will increase from level 2.

Pressing the red button will switch from level 1 to level 2 to level 3. A further press of the red button will return the control to level 1.

6.4 Variation between levels

The control level can be changed between three levels using the buttons. Among the control unit configuration parameters is the "STEP" parameter (in the REMOTE BUTTONS folder), which influences the change between the 3 levels selectable with the buttons. The suggested value for the STEP parameter is 5. If, when changing traction control level, the variation is not perceptible, the value of 'STEP' can be increased. This will increase the variation between one level and the next.

Conversely, if changing traction control level causes too much variation, the value of 'STEP' can be decreased. In this case the variation between one level and the next will be smaller.

6.5 Activating Launch Control

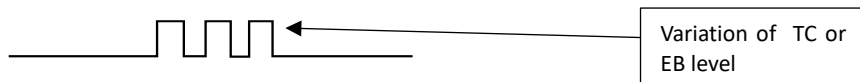
By pressing both buttons simultaneously, the launch control function can be activated or deactivated. Launch control is a control strategy that helps the rider to start while keeping the throttle fully open. In the event of rear tyre skidding, the controller will reduce power in order to optimise acceleration.

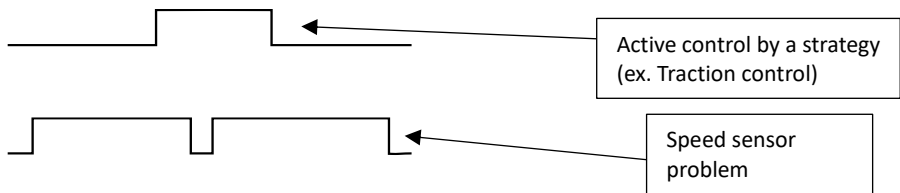
7.0 Remote led

GRIPONE is designed to drive a remote LED (not included in the kit). The led is a warning light that indicates the following activities of the system to the driver:

- Variation of the traction control level, by flashing a number of times equal to the selected level.
- Variation of the engine brake control level, by flashing a number of times equal to the selected level.
- Activation of traction control, by continuous illumination of the indicator light.
- Activation of engine brake control by continuous illumination of the indicator light.
- Activation of gear shift control by continuous illumination of the indicator light.
- Activation of downshift control by continuous illumination of the indicator light.

You can connect the branch of the wiring harness marked 'RE' to an LED or the vehicle dashboard. Please refer to the wiring diagram for the 'pin out'. The remote indicator lamp may flash as described below:



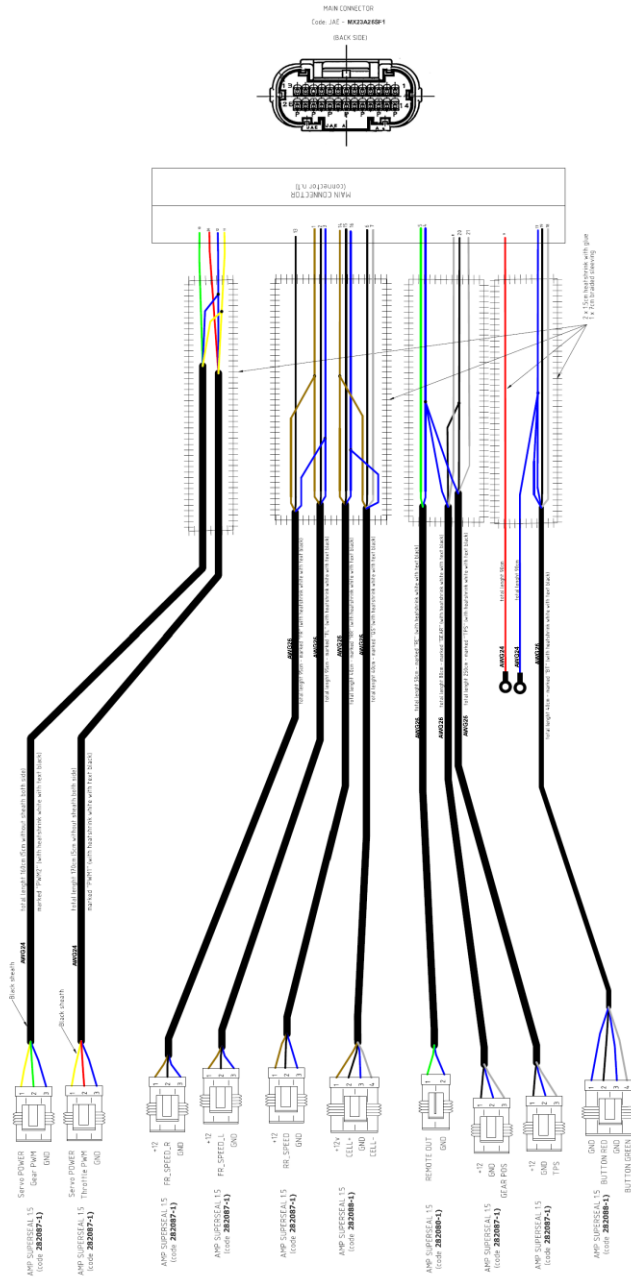


8.0 Starting GRIPONE

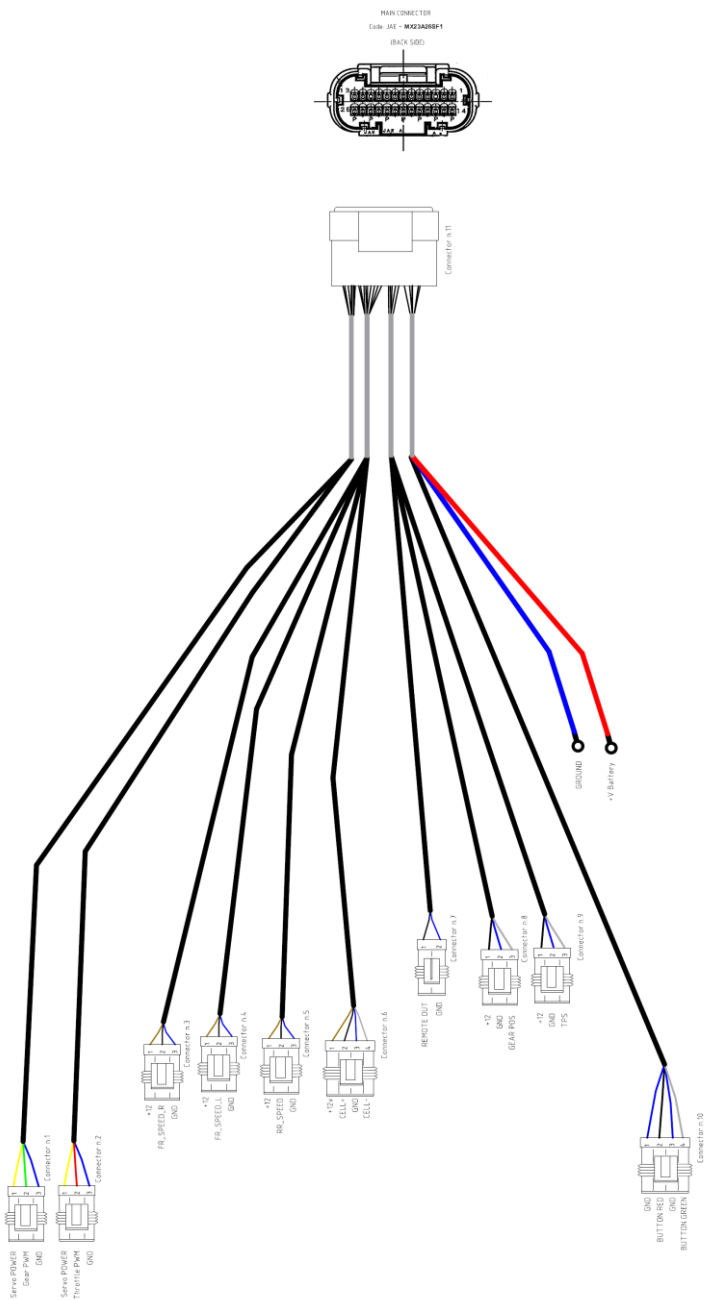
GRIPONE is a Drive By Wire system and therefore it is essential to start it before the engine is started. In this way the electronic system has the opportunity to set all internal values and prepare for engine management. To start the vehicle, follow this procedure:

- Supply the system with battery voltage (12V)
- Wait until the remote control light stops flashing (wait approx. 3-4 seconds)
- Start the engine

LOOM ELECTRICAL SCHEME



LOOM'S LAYOUT



Download the software from:



download.gripone.com/gripone_car_hid/

This device is developed for demonstration purposes. GUBELLINI di Gubellini Diego & C. s.a.s. is not responsible for the consequences deriving from the proper and improper use of the vehicles on which is installed in GRIPONE device. We refer all responsibilities to the drivers and installers.

GRIPONE

designed, owned and made by

GUBELLINI

GUBELLINI di Gubellini Diego & C. s.a.s.

Via Euridia Bergianti 10/B

40059 Medicina (BO) Italy

VAT IT03466001207

www.gripone.com - info@gripone.com