Connect it to: COILS INJECTORS

TRACTION CONTROL SYSTEM

GRIPONE CHRONO TC – installation manual - (ENG)



TC TRACTION CONTROL | AW ANTI WHEELIE | LC LAUNCH CONTROL | LT GPS LAPTIMER

Note

Before using the system GRIPONE read every page of this manual. The installation of this device requires attention and accuracy. The configuration of the device requires several non-trivial reflections, referred to only within this manual. Please note that you are installing a device on a vehicle can reach high speeds. The system GRIPONE is a professional traction control system for racing use only.

1.0 Included into the kit



ECU



Harness



Kit of bracket



Speed sensor

2.0 Security

During the installation of this product, it is recommended to position the motorbike in such a way that is cannot cause any injury or damage by falling down or moving forward or backward; it is recommended to use the rear stand or, if necessary, the wheel lock. Make sure that the injection system is always turned off and that the electrical equipment is not being powered during the installation of this product (and, as well as, during all assembly phases indicated in this manual). When adding or removing electrical cables or wiring to/from the motorcycle's equipment, always be sure to remove the negative battery terminal before the positive battery terminal. During reassembly phases, connect the negative terminal last in order to avoid short circuiting the electrical equipment.

2.1 Recommandation

DO NOT RUSH! When installing the GRIPONE control unit, make sure that the unit is protected from excessive vibrations and surrounding elements and that it is clamped firmly. When you use the adhesive parts (for setting up the control unit or cables), make sure that the mounting surfaces are clean and free of dust or grease by cleaning them with degreasing solution. When positioning the wiring, make sure that the wires cannot be pinched or crushed which may cause subsequent malfunctions, clamp them as necessary. For safe and professional assembly, it is recommended that you solder the connections when possible and use thermo-tightening bands to isolate the various conductors. Place the hot part of the welder on the ends of the wires before putting them in contact with each other. Do not hesitate to contact the vendor/supplier for assistance if you encounter any difficulties with the installation of this device. WARNING! The GRIPONE control unit must be placed where the operating temperature does not exceed 65°C and should be installed where it will be protected from vibrations and surrounding elements. Locate a flat surface on which to secure the control unit. Do not secure the unit until the installation of all other components has been completed and the wiring has been secured.

Attention

The use of a traction control system does not prevent the fall caused by improper use of the throttle of vehicle. For this reason it is advisable to test the functioning of the system GRIPONE through repeated trials and through small steps. Only after you had the right confidence and you understood clearly where and how the device operates on the engine and chassis, try changing the settings.



3.0 Introduction to GRIPONE CHRONO TC

GRIPONE CHRONO TC is a programmable system "stand-alone" that operate as traction control, anti wheelie, launch control, shift-up flash and GPS laptimer (GPS module is optional). All the functions can work together or switched off separately.
In addition the unit can be connected to the IMU (Inertial Motion Unit) to benefit of 3D-INTELLIGENCE strategy's. The IMU, thanks to three accelerometers is able to understand the position of the motorcycle, if it is accelerating or braking, the radius of curvature that the

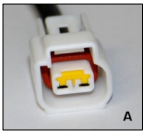
vehicle is making and more. The control unit processes all information and defines a level of "**safe**" slip beyond which intervenes limiting the power.

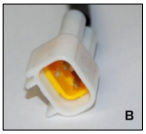
4.0 Electric connection

The electrical installation of the system is done by connecting the plug&play harness to the main harness of the bike. No modification are required on the bike.

4.1 Connection of the plug & play harness

The GRIPONE CHRONO TC must be connected to the injectors (or coils) of your bike. GRIPONE support up to 2 injectors: 1 lower and 1 upper (or up to 2 coils).
The connection is made using original connectors so it is not required any changes on the original loom. The installation is possible on all vehicles with electronic fuel injection (or transistorized ignition coils). **Check the first page of this manual to know if the connection must be made on injectors or coils.**





The shape of the connectors of injectors or coils may vary according to the bike. The connector A is an example of female type. The connector B is an example of male type.

Follow these steps to connect the plug&play harness to the bike:

1. Take out the fuel tank (and if necessary the aribox) to have access to the fuel injectors (or coils);

2. Disconnect the connector of injector (or coil) of one cylinder (avoid cylinder 1 if possible);

3. Connect the female connector of plug&play harness to the injector (or coil);

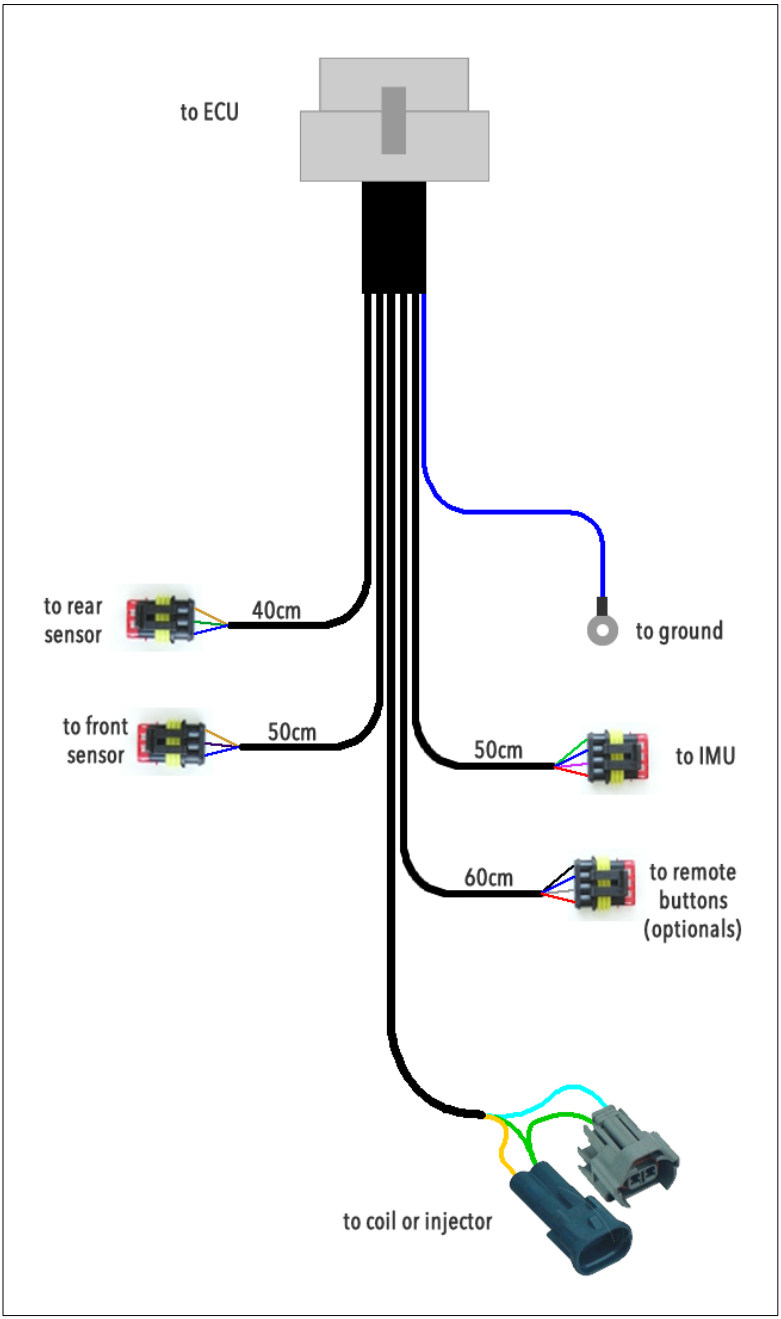
4. Connect the male connector of plug&play harness to the connector of main harness;

5. Repeat from point 2 to 4 in case the bike has two injectors (or coils) for cylinder;

6. Connect the blue long wire of plug&play harness to the negative pole of battery (or to the chassis);

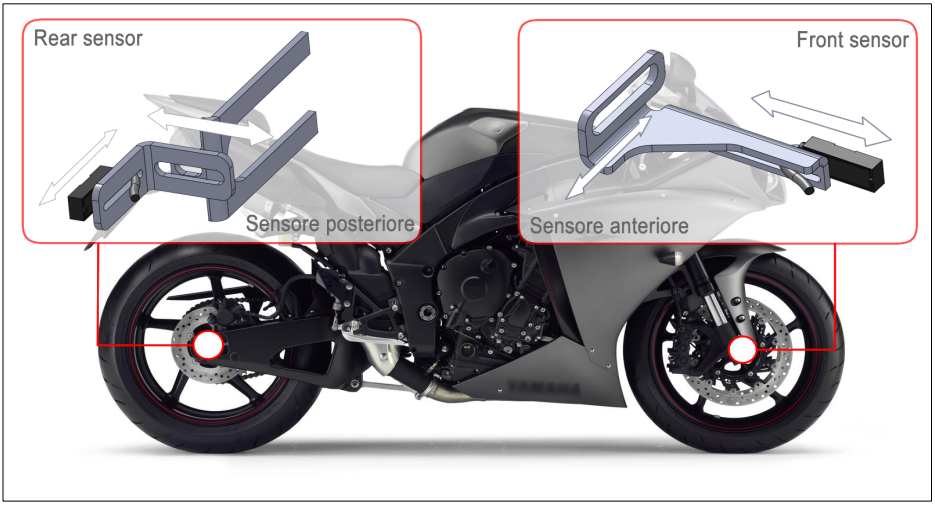
7. Reassemble the airbox and the tank;

8. Connect the ECU to the plug&play harness. Secure the ECU in a location not too hot and immune to vibration. We suggest to put the ECU on the dashboard or on the triple clamp so you can see led bar for "up-shifting" and GPS lap time.



www.gripone.com

4.2 Installation of sensors



To calculate the speed of the motorcycle, GRIPONE CHRONO TC uses two speed sensors.

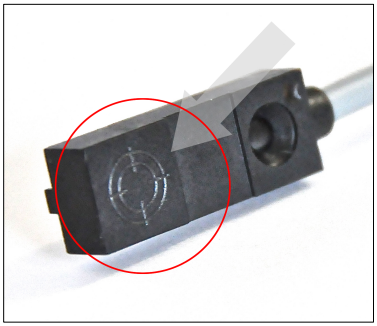
1) Sensors must be placed where they can detect the passage of the bolts of the front and rear brake disk. It is provided a kit of universal brackets for mounting sensors.

2) The front bracket must be placed using the screws of the fork leg that tighten the wheel axle's.

3) The rear brackets must be fixed under the rear axle nut. The L-type bracket must be fixed to the Y-type bracket to position the rear sensor in front of rear disk bolts.

4) On the sensors is designed a viewfinder. It must be facing to the bolts of brake.

5) Once set the sensors (by the M3 bolts) check the distance between the bolt head and the sensor: it must be equal to (approximately) 2mm (between 1mm and 3mm). If the distance is too big, the sensor can not detect the bolt. If the distance is too small, you risk damaging the sensor.

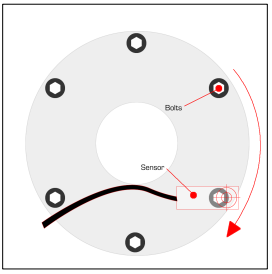


Please note:

When connecting sensors to the control unit, it is important to do not confuse the front and rear sensor. Connect the front sensor to the long arm of harness. Connect the rear sensor to the short arm of harness. Reffer to the picture of harness.

Important

If the fixing screws of the brake disc are hollow head (as allen screws), replace them with flat head screws. If you can not replace the screws, place the sensor to detect only the outer edge of the screw (like it is shown in the side picture).
Each screw detected by the sensor must be equidistant from the others. The screws may be of iron or steel. If these conditions are not met the sensors may not work properly.
After completing the installation of the sensors, turn on the controller and turn the wheels. As the wheel turns in the sensors verify that the led to the passage of each screw.



5.0 Configuration of unit

GRIPONE has 2 buttons (OPTION and MENU) through which you can configure the unit. When the unit is turned on (**and bike is stop**), you can access the menu by pressing the MENU button. Press MENU button to scroll through all the configuration parameters, up to return to the main screen. For each parameter you can change its value by pressing the OPTION button. Every time you press OPTION button, the value of selected parameter will change from its minimum to its maximum (and back to minimum like a loop). After few seconds that you don't press any button, the ECU goes back automatically on the main screen.

5.1 Menu

Pressing MENU button you can scroll each configuration parameter.

MAIN SCREEN – when the unit is on and ready , you can read on the LCD the following text:

MAP TC: 00001
Controls: ON

The first row show the selected traction control map (00001, 00002 or 00003). The second row show the status of control system (ON or OFF). In the main screen you can press OPTION button to change the map (1, 2 or 3). Keep pressed both buttons for 4 second to switch ON or OFF the system

TC SENSITIVE – it change the sensitivity of traction control. Bigger is the number of TC SENSITIVE and more the system will be fast to react to the sliding. Set 15 to start

TC CONTROL – it control the progression of traction control. If you want to stop quickly the spinning (strong effect of traction control) use high values (12 to 20). If you want a soft effect of traction control use a small values (1 to 8). Set 10 to start

AW SENSITIVE – This parameter fix the sensitivity of anti wheelie control. Increase this value if you want to reduce the power as soon the tyre lift from the ground. Reduce this value if you want to permit a bit of wheelie after the tyre is lifted from the ground. Set 15 to start

AW CONTROL - This parameter fix the amount of power reduction during the wheelie. Increase this value if the wheelie control does not stop the wheelie. **Set 10 to start**

LC SENSITIVE – it change the sensitivity of launch control. Bigger is the number of **LC SENSITIVE** and more the system will reduce power during the launch**. Set 15 to start**

FRONT PULSES – it fix the number of bolts detected from the front sensor.

REAR PULSES – it fix the number of bolts detected from the rear sensor.

FRONT TYRE (cm) – it fix the development of front tyre. It is the distance (in cm) covered by a complete turn of wheel. Measure it by turning a meter around the tyre.

REAR TYRE (cm) – it fix the development of rear tyre. It is the distance (in cm) covered by a complete turn of wheel. Measure it by turning a meter around the tyre.

CYLINDERS NUMBER – it fix the number of cylinders of engine of your bike. Fix it as 2 if you have a twin-engine. Fix it as 4 if you have a 4-in-line engine.

FLASH LIMITER – it fix the RPM at which the led bar will switch on (for up shifting). When the RPM arrive close to the fixed revolution, the red led bar switch on. You can up shift every time at correct revolution. Fix it to 9000 to switch off the led indicator.

MEMORY – GRIPONE CHRONO TC works as GPS lap timer (GPS module is optional). Before use GRIPONE as lap timer, you have to clear the internal memory. GRIPONE is able to keep in memory up to 200 laps. When memory is full a message will shown every time you switch on the system. To clear memory press one time OPTION button.

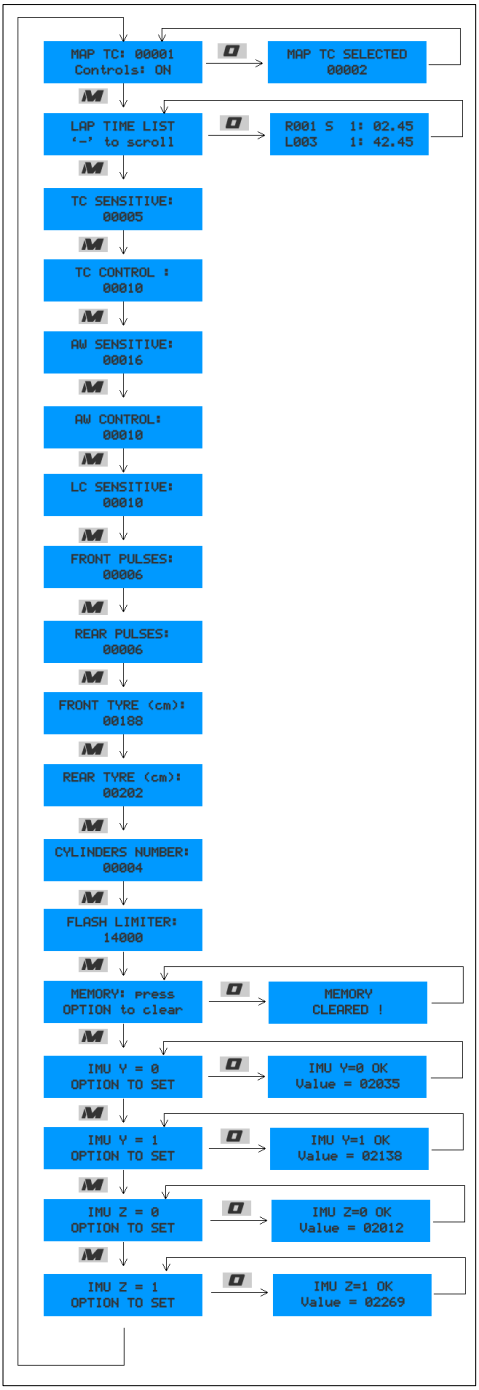
IMU Y=0 – First time you connect the IMU to the ECU, you must initialize it. Point the "Y" arrow of the IMU forward (parallel to the ground) and press OPTION button. The initialization include **IMU Y=0**, **IMU Y=1**, **IMU Z=0**, and **IMU Z=1**.

IMU Y=1 – First time you connect the IMU to the ECU, you must initialize it. Point the "Y" arrow of the IMU upward (perpendicular to the ground) and press OPTION button. The initialization include **IMU Y=0**, **IMU Y=1**, **IMU Z=0**, and **IMU Z=1**.

IMU Z=0 – First time you connect the IMU to the ECU, you must initialize it. Point the "Z" arrow of the IMU forward (parallel to the ground) and press OPTION button. The initialization include **IMU Y=0**, **IMU Y=1**, **IMU Z=0**, and **IMU Z=1**.

IMU Z=1 – First time you connect the IMU to the ECU, you must initialize it. Point the "Z" arrow of the IMU downward (perpendicular to the ground) and press OPTION button. The initialization include **IMU Y=0**, **IMU Y=1**, **IMU Z=0**, and **IMU Z=1**.

If you do not have the IMU connected you don't need to initialize the IMU. After initialization of IMU place the IMU with the "Y" arrow forward and "Z" arrow downward.



www.gripone.com

5.2 How use the buttons

In addition to being used to scroll through the configuration parameters, the buttons are used for other functions, based on which condition the bike is.

If the bike is stop (speed = 0 km/h)

Button	Press type	Action
MENU	short press	to scroll the parameters of menu
OPTION	short press	to change the value of configuration parameter
MENU	long press (4 sec.)	to save GPS position of finish line
OPTION	long press (4 sec.)	to save GPS position of split (intermedium time)
Both	long press (4 sec.)	to switch ON or OFF the system
OPTION	short press	If you are on the **main screen**, pressing the OPTION button you can change the traction control map (1 > 2 > 3 > 1 > …)

If the bike is in motion (speed > 10 km/h)

Button	Press type	Action
MENU	short press	to switch to next traction control map (ex. map 2 to map 3)
OPTION	short press	to switch to previous traction control map (ex. map 2 to map 1)
MENU	long press (4 sec.)	to save GPS position of finish line
OPTION	long press (4 sec.)	to save GPS position of split (intermedium time)
Both	long press (4 sec.)	to switch ON or OFF the system

5.3 LED on ECU

GRIPONE CHRONO TC has a 5 red led (led bar) used for show how the control strategies are working and 2 yellow led to show when the bike pass through the intermediate point of the track and the finish line of the track (if GPS module is connected). How they work:

Description	Function	Light scheme
Red led bar	It switch on (as alarm) to know when is the correct moment to change gear (up-shift).	
Red led bar	It flash when traction control, anti wheelie or launch control are working.	
1° yellow led	It switch on when bike pass through the intermediate point of the track (it need GPS module connected)	
2° yellow led	It switch on when bike pass through the finish line of the track (it need GPS module connected)	

6.0 Remote buttons (optional)



The plug&play harness does not include the 2 remote buttons. You can add the optional buttons to fix at handle bar. By these buttons you can switch ON and OFF all the controls of ECU and change the map of traction control.
The system can change between 3 maps of traction control. Map 1 is the most sensitive. Map 3 is the less sensitive

How it works:

Action on buttons	Description
Short press of GREEN	Change to the next MAP (ex. change from MAP1 to MAP2)
Short press of RED	Change to the previous MAP (ex. change from MAP3 to MAP2)
Long press of GREEN (>3sec)	Change status ON – OFF
Long press of RED (>3sec)	Change status ON – OFF

6.0 GPS reciever module (optional)

If you ride your bike on race track, you can use GRIPONE as laptimer and save your lap times and intermediate times into its memory. GRIPONE can record up to 200 laps. To activate this option you have to connect the GPS reciever to the ECU by the 3.5 jack. Follow those steps:

1) Connect the GPS receiver to the unit, by the 3.5 jack;
2) Place the GPS receiver on the seat or on the triple clamp. The receiver must be placed where it can see the sky without anything in the between;
3) The first time you switch on the ECU after a long period (for example the first time in the morning) the GPS receiver will take 1-2 minutes to get the signal. After the first time, the GPS will take few seconds to get the signal;
4) When the GPS signal is available, the message "GPS READY !" will be shown on the LCD of ECU;
5) Go with the bike close to the finish line;
6) Fix the position of finish line keep pressed the MENU button for 4 seconds. The GPS position will be saved (as soon you release the button) and the message "GPS finish line SAVED". Every time you will pass through this point the laptimer will fix the time of lap and the 2° yellow led will switch on;
7) If you want to have a intermediate time, go with the bike close to the intermediate point;
8) Fix the position of intermediate point keep pressed the OPTION button for 4 seconds. The GPS position will be saved (as soon you release the button) and the message "GPS finish line SAVED". Every time you will pass through this point the laptimer will fix the time of intermediate sector and the 1° yellow led will switch on.

To see your lap times, your bike must be stopped. Press MENU button one time to access to the "LAP TIME LIST" menu. Press OPTION button to scroll all the lap times. The list of lap times are shown from last lap saved to the first lap saved.



designed, owned and made by

GUBELLINI

GUBELLINI s.a.s. di Diego Gubellini & C.
Via Fiorentina 3508/H
40059 Medicina (BO) Italy
P.I. IT03466001207

www.gripone.com - info@gripone.com