

UNIVERSAL BLIPPER

by



The MGC i.e. Mechanic Gear Control is our latest high performance design for both up and downshifting.

It's an universal product especially indicated for those bikes with throttle grip via cable.

Tested in automotive, if properly installed it's a valid support on engaging gears in both up and downshifting.



WARNING: Install it only through expert installators.

We have put an enormous amount of energy in the form of time, technology and knowledge to create a reliable and innovative product. It is a "Strain Gauge" sensor style that ensures long lasting performance. To bring this product into reality we have used all the manufacturing tricks, electronic formulae and rendered a keen eye on software support to make this happen. This product is encouraged to use in a on a closed circuit only. It is not homologated for road use. The manufacturer of this product is not liable for any injury or damage to the operator, vehicle, or third parties from the use of this product.

MADE IN ITALY



DISCLAIMERS



- System setup must always be done when bike is at complete halt and is parked on stands.
- A wrong setting could affect, partially or fully, the system's effectiveness, ultimately damaging the gearbox.
- System setting is the responsibility of the user and not of the manufacturer. While fixing sensors, take extra caution to not damage while screwing and unscrewing the bike. It is a delicate product.
- The use of this product is at the total discretion of the private parties.
- Each system modification, both of hardware and software, as well as harness or single components, could affect the system functionality. It can do potential damage or cause injury to the user, vehicle, or to third parts and this will negate the product warranty.
- Installation must be done carefully It is mandatory that you follow instructions provided in the manual book. After installation it is highly recommended that you do proper test of the product before riding on.

- Installation is an extremely crucial setup for system efficiency. Be sure it is done by competent and specialized mechanic.

This manual is issued on April 04th 2019 in Rev. 1.0. It is the end user's responsibility to periodically visit the website www.irccomponents.it in order to check for revised and updated manual guides.

1. DISPLAY

After switching on the system, the ECU makes a general check and, if passed, the display will show the firmware version.



WARNING: Do not start any process, setting or action on sensor until the above routine is completed.

When the pre load threshold has passed (par. 2.4 and 2.7), the display will show "--".

In case of failure, the display will show an "E" followed by a number. Give this code to the assistant.

2. INITIAL SET UP

To set up initial program press both the buttons to enter into the system.

Push lower button to scroll the menus forward.

Push the upper one to scroll the menus backwards.

Press and maintain the lower button to enter into the various menus. However, to exit from the menu and undermenus press upper or both buttons. System will go out of programming session if no button is pushed except the "r" menu. Also during programming, the quickshifter is disabled.



WARNING: Act only on the following setup options.

2.1 Signal time programming "t"

Set at the maximum allowed value. Upshift timing will be regulated by the original APRILIA ECU and not by the SGRACE_BLIPPER.

2.2 Downshift rpm "rL"

The "Blip" will not work below 3,000rpm. Above this limit the timing of the blipper is automatically set in function of customer's choice. "rL" are the lower rpm limit level.

2.3 Downshift timing "SL"

To set the downshift timing; adjust the preferred timing of the "blip" at "rL" rpm (see par. 2.2).

2.4 Upshift Pre Load adjustment "L"

The default value is fixed at "16" however it's possible to change the load necessary to apply on the sensor for having the upshift signal. Shift lever should move through the spring load in gearbox until gear resistance can be sensed. If rpm is above the set value at par. 2.8, The panel LED should show "--" for a while. If this happen too early or too late; then change the preload setting.

2.5 Actual Load displaying "S"

Entering in this menu it's possible to read the actual load value. Useful feature for preload adjustment and for gearbox check and maintenance.

2.5.1 Max Load displaying "--"

Pressing and holding the lower button, the display will show blinking "--" for about 10s. Afterwards it will show the max load value registered in this period.

2.6 Downshift Timing "tS"

Set the "Blip" timing within 20÷98ms at 8,000 rpm. Default timing is set at 63ms. Consider that the blip timing at 12,500rpm will be 70ms higher. In the between the CPU will interpolate the value. A too long timing allows gear in but then you'll feel the bike pushing a while. A too short timing doesn't allow a proper downshift. We recommend to initiate the process with high value and reduce it during the tests on the road.

2.7 Downshift Pre Load adjustment "LS"

The default value is fixed at "16" however, it's possible to change the load necessary to apply on the sensor for having the downshift signal. Try to select the lower gear by switching off the engine and keeping the ignition on. Shift lever should move through the spring load in gearbox until gear resistance can be sensed. felt. If rpm is above the set value at par. 2.8, The panel LED should show "--" for a while. If this happen too early or too late; then change the preload setting.

2.8 Normally Open/Closed circuit "OC"

"C": commonly closed circuit, for direct cut of coils (UPKIT).

"O": commonly open circuit, default value for OEM quickshifter and for most all additional quickshifter module

2.9 Pushing/Pulling "CE"

Referring to the upshift, "C" to set pushing, "E" to set pulling.

2.10 Smoothness "rr"

"0" means hard cut. Higher values mean increase in smoothness. Visualization: /1000.

2.11 Model Bike "tt"

Type of firmware. Don't change it. If accidentally changed, set: 02

2.12 Increase of blipping timing in 3rd-2nd and 2nd-1st gears downshifting "1A"

Sometimes the lower gears needs a higher blipping timing to be properly engaged. 1A is the Increasing timing in 10 milliseconds. 01 means 10milliseconds. Default is 00.

3. INSTALLATION



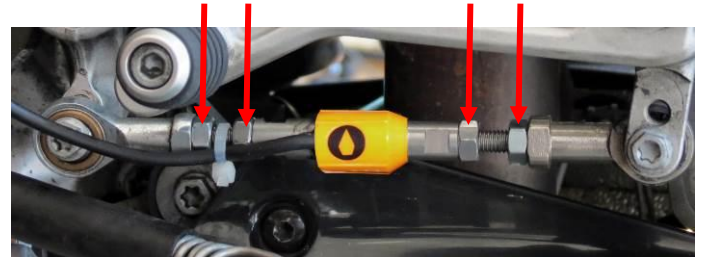
VERY IMPORTANT: throttle twistgrip command with mechanical stop must be used. If your bike doesn't have it, replace the command or create a mechanical stop.

Some examples are DOMINO- Cod.51760, EURORACING- cod. EVO3, ACCOSSATO-ANY.

The important is that the tiwstgrip has the half moon:



3.1 Sensor has "magic threads" i.e. both right and left. Connect the sensor (Labeled SENSOR) to the provided shiftrod. Cut it if necessary. Tight the nuts and the eventual grubs to avoid disconnections and loss of functionality due to vibrations.



Install sensor and rod with uniball links on both ends, most bikes have uniballs stock, check that the shiftrod does not rub or touch anything. Put sensor far from very

hot parts. Make sure wire has a slight bend/loop so it does not tighten up and pull at the sensor during up or down shift. Warranty doesn't cover ripped out wires.



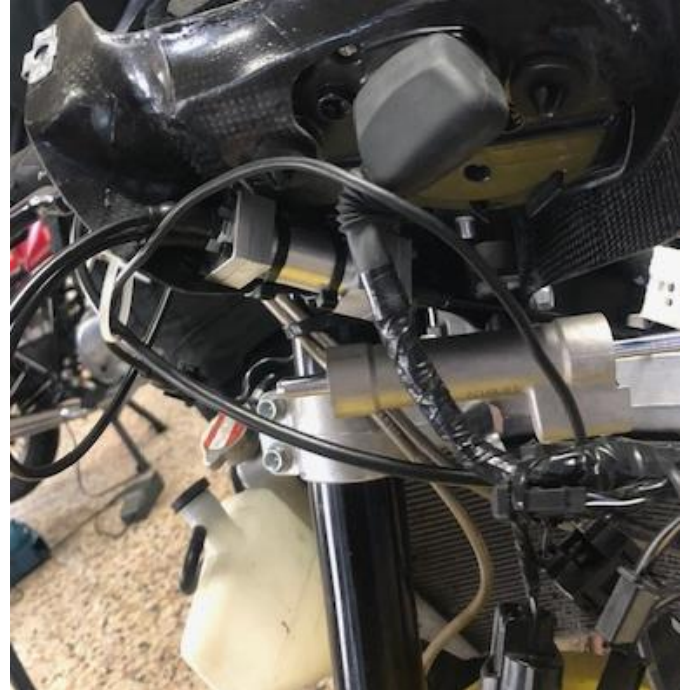
WARNING: To adjust sensor positioning, act on the proper planes on it. Sensor failure could occur if acting on the cover.

3.2 Now it's time to install the Blipper cylinder body. Refer to the following picture to understand how it must be positioned and how it's working.:



Cable from twistgrip to throttle, pass through freely while the actuator is connected to it and acts only on demand.

The Blipper Cylinder body must be installed with its holder, in a proper position. Check it's properly fixed and far from moveable parts of the motorcycle. The blipper cylinder body must be fixed straight towards the throttle body pulley. Suggestions are on air box (Honda CBR600rr) or under front frame (Suzuki) or under seat, according to the easier installation



Wire movement inside its sheath must freely move. Connect the cable from twistgrip to throttle pulley, adjust the free play as in std bikes. Adjust the eventual return cable too. Anything must work as in std bike.

3.3 Now open the Blipper Cylinder body



Put the piston against the cylinder cover on throttle side. Fix the locking pin against the piston, close the covers and fix the blipper cylinder body in position.

3.4 Now fix the Actuator that must be installed with its plate, in a proper position. Check it's properly fixed and far from moveable parts of the motorcycle. Wire movement inside its shield must be freely.



VA universal cable is provided in the kit. Cut it according to your needs with registers in the middle in order to have enough adjustment travel

3.5 Now connect the cable from Blipper cylinder body to the actuator, letting about 1mm free play.



WARNING: lock the wire clamps with soldering

Handly pull the actuator. Wire must move freely inside the sheath.

3.6 Check that the throttlegrip moves freely too. Find the TPS sensor wire from ECU output or from the sensor (It's a 3 wires connector). 1 wire is ground, 1 is +5V and 1 is signal that varies in function of the throttle opening. With a voltmeter check values at 0 and 100% throttle. Now calculate the value with throttle at around 15÷18%. For instance: 0 throttle: 0.5V, 100% throttle 4,5V, so:

$$4,5 - 0,5 = 4,0 \text{ volt}$$

$$4,0 : 100 \times 15 = 0,6$$

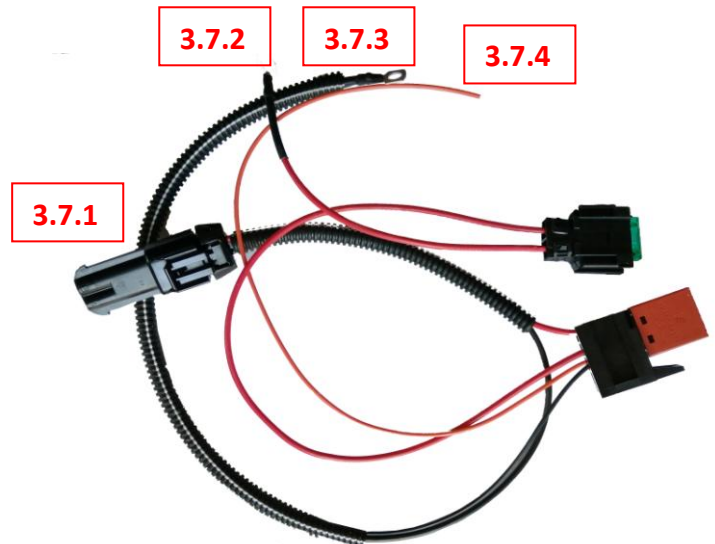
$$0,5 + 0,6 = 1,1 \text{ volt}$$

This value is the value we want when actuator is fully opened. So pull it by hand and adjust the cable stroke till you reach the desired value.

Check that when actuator moves, the twistgrip doesn't rotate. If it does, act on adjustments of the return cable in order to adjust the free play. A little rotation if twistgrip is not kept by hand, is normal due to cables.

Put your hand on and you mustn't feel any force from the actuator.

3.7: Electrical Connections:

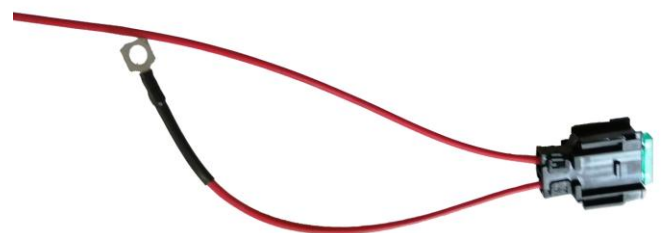


3.7.1 Take the actuator and insert the 2 **Red** wires (no matter the order) into the Male Superseal connector provided.

Now plug it to the Relay group Female superseal connector.



3.7.2 Take the Relay. Connect **Red** to battery +12V.



3.7.3 Connect the 2 black eyed wires to battery ground.



3.7.4 Connect the orange wire to the orange of the quickshifter orange box:



3.8 Final checks: Acting on sensor, do blipping several times to check anything is fine. Then check again the value of the %Throttle opening.

3.9 Now Locate the bike coils and connectors:



Unplug connectors and put in the between the IRC harness with the bypasses labelled with a number (1, 2, 3 and 4). Looking the engine from backwards, disconnect the leftwards coil connector and put the upkit bypass number "1" between it and the coil.

Repeat this operation for the other cylinders' coils using bypasses 2, 3 and 4.

5. TROUBLESHOOTING

6.1 System continuously cut or blipping even if the foot isn't acting on the pedal: check the sensor. Tight the nuts and the eventual grubs to avoid disconnections and loss of functionality due to vibrations as per Par.1.

6.2 System works in reverse manner: check and properly set "CE".

6. WORKING CONDITIONS

10÷17.5V; -20°C÷+95°C

We value your business with us.

For any questions or troubleshooting queries, please contact us at:

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Enjoy your choice.