Hyper ECU Instruction manual

Product number	05-04-0203

Adaptation model	CRF110F (JE02-1000001～)

Thank you very much for purchasing our products.
Thank you so you will comply with the following matters at the time of use.Before installation, please check your always kit contents.
If there is a point of notice event, Please contact us the dealer of purchase.

◎ If the description, such as photos or Illustration different with this part.

☆ Please read carefully before use ☆

◎ The use of ignoring the instructions that are written in the instruction manual, if an accident or damage has occurred, we can not assume any responsibility for compensation.
◎ This product installation and use, when a problem occurs to after market goods, guarantee other than this product, also can not assume any in any such matters.
◎ If it was the case or mounting that has been processed like a product, it will not be covered under warranty.
◎ It is not possible to inquire of the combination of other manufacturers.
◎ Repair parts should apply in repair part number. Addition, any questions, please contact us to purchase.
◎ This products are made and checked for Japanese model only. We don't know the compatibility with other countries model and imported models.
◎ Product may have edges or protrusions. Be sure to wear working gloves.
(Please wear work gloves when working, even if a photo in this article show without work gloves.)
◎ During installation, it prepares the tool or the like, do the work with care in accordance with the mounting procedure.
In addition, this manual and Honda genuine service manual are intended for those who have a basic skills and knowledge.
If no experience of mounting, etc., who preparation of such a tool is insufficient, we recommend that it is your request to the shop with a technical credit.
◎ The injection amount is increased from the stock,if you run at full throttle while the engine is cold, the fuel inject amount reaches maximum. Please refrain from excessive throttling until the engine has fully warmed up.
◎ RPMs will be high immediately after engine start due to fast idle control. Do not put it in gear until the engine speed drops.
Depending on the modification conditions, the vehicles may moves in a gear. The engine speed will drop within a few seconds after starting.
◎ The idle speed will be low when the engine is cold. Avoid sudden throttle operation as it may cause the engine to stall.
◎ The Hyper ECU can be started by kick starting even when the battery is dead (same as genuine ECU,for emergency use only, do not use for long periods of time without battery). Using dead battery or without the battery, this may cause malfunction or breakdown the systems. When hard to start the engine, check and charge the battery or replace to new one.
◎ Do not turn the ignition key off and on while the engine is running. This may cause the engine to stall or malfunction.
◎ The engine will stop when the vehicle falls over. For safety reasons, the engine cannot be restarted after stopped in this condition.
Turn the ignition key off and on again before restarting the engine.

～ feature ～

○ Completely bolt-on, simple work, just replacing the ECU. No modification work necessarily.
○ The ECU completely controls fuel and ignition, allowing you to get the best performance result in any range.
○ Each mapping is preinstalled, you can use it right away without any settings.
○ The fuel adjustment control in all ranges -9% ～ +9% (Each 1% increments)
○ The stock rev limit of 9500rpm has been increased to 10500rpm, allowing use at high engine speed.

☆ Precautions on usepurchased dealer ☆

◎ For can not be combination parts.
This ECU Cannot be used with any fuel controllers products (even Takegawa's sub-controllers)
Since the HID kit or other company's LED headlight can cause failure by high voltage noise, please do not use simultaneously.
Ignition system of goods outside the company (ignition coil and plug cord) is associated with the up of the ignition voltage, please do not use it can cause malfunction or failure of the product due to the increase of radiation noise.
The power generator of goods outside the company due to differences in shortages and voltage waveform of the power generation amount, it will be the cause of failure, please do not use.
Do not use high-output radio equipment such as amateur radios near by,it may cause malfunctions.

◎ Product of the body is made of resin.
Use cover, etc. If in order to prevent deterioration long time to put the motorcycle on the field. When longterm left for under harsh conditions such as in a hot weather, it is considered the deterioration and deformation of the resin and rubber parts.
◎ Please do not disassemble.In addition, Please note if it is decomposed by the customer, we will not be able to accept the inspection and repair.
◎ Please do not give a heavy shock.
This product is a precision device,avoid strong impacts.
Unrepairable and failure due to fall off or disconnection of the internal parts by the impact, and there is a risk of the main body case damage.
◎ On cleaning.
Dissolve a small amount of neutral detergent in the water if there is tough dirt, please slowly carefully dirt. Please note, the use of volatile certain things (thinner, alcohol, etc.) and compounds, possibilities and alteration of the resin part, panel will cloudy.

SPECIAL PARTS TAKEGAWA
CONTACT Address : 3-5-16 Nishikiorihigashi Tondabayashi Osaka JAPAN
TEL: +81-721-25-1357 FAX:+81-721-24-5059 e-mail:english@takegawa.co.jp URL http://www.takegawa.co.jp
Please contact with your name and country name provided. (Only English please)

⚠ Caution When the handling of ignoring this display, property damage and human shows the assumption of what injury.

■ In the public roads, please try to law-abiding operation protect the legal speed.
■ When performing the work, etc., be sure during the cold (when the engine and the muffler is cold). (It may cause burns.)
■ When performing the work, it should be made to prepare the tools for the job. (Breakage of parts, it may cause injury.)
■ Do the work must always specified torque using a torque wrench. (Damage of bolts and nuts, and cause of dropout.)
■ The product and the frame, might have edges or protrusions. When working, please wear work gloves to protect your hands. (It may cause injury.)
■ Be sure to each part inspection before operation, check the loosening of the threaded portion, be sure to securely tighten the specified torque if there is loose. (It may cause detachment of the parts.)

⚠ Warning When the handling of ignoring this display people died, shows the contents of the serious injury possibility is assumed.

■ During operation, when an abnormality occurs, immediately stop the vehicle in a safe place, please stop running. (It may lead to an accident.)
■ When performing the work, do the work safely stabilize the vehicle in a horizontal location. (There is a risk of injury vehicle collapsed while working.)
■ Inspection, maintenance, the instruction manual or, inspection methods such as service manuals, to protect the way, should be done correctly.(unsuitable inspection and maintenance, there is a risk that result to an accident.)
■ When carrying out the inspection and maintenance, etc., if found damaged parts, replace the damaged parts to avoid possible to reuse the parts. (There is a risk that lead to accidents Continued use.)
■ Plastic bags of product packaging, you can either be stored in a place that is out of reach of children, it should be discarded. (When the children or wearing, there is a risk of suffocation.)

◎ Please note. Performance up, the design change, the product and the price in the cost up, etc. are subject to change without notice.
◎ Please be informed that we shall be held harmless against any claim against us whatsoever arising out of use of the products in racing and the like.
◎ Keep this manual stored until this product is discarded.

Product content

Number	Product content	Quantity	Item Number
1	Hyper ECU main unit	1	――――――
2	Setting switch harness	1	――――――
3	Setting switch	1	00-05-0367
4	Setting switch (+ mark)	1	00-05-0425
5	Cable tie, 150mm	3	00-00-0135 (10 pcs)

※ Please order in the repair parts are always repair part number.
If it is not the part number order, you may not be able to order.
Please be forewarned.
It should be noted, In the case of parts that can not be separately shipment, please order a set part number.
※ Repair parts may differ slightly from the kit contents in terms of shape, etc.
There is no problem to use it. Please be forewarned.

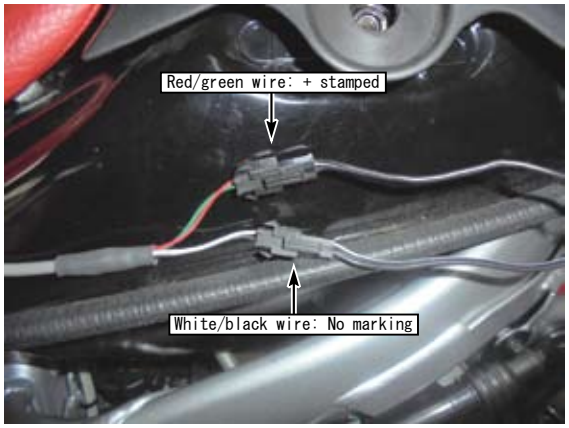
■ Mounting procedure ※Please refer to the Genuine Service Manual for detailed mounting methods and specified torques that are not specifically described.

● Installing the setting switch

○ Remove the seat, remove fixing bolts and the seat.
○ Remove the shroud R.

○ Wipe off any oil(and any dust away) from the tank cover and attach the setting switch.

○ Connect the switch wiring.
Connect the switch with the + mark stamped on it to the red/green wire. and the no- marking to the white/black wire.



○ Black connector (of the setting switch harness) place to under the tank cover and connect it to the setting switch.

● ECU replacement

○ Remove the original ECU and replace (with the rubber band)to the Hyper ECU.
○ Connect the 33-pin connector to the Hyper ECU and install it in the place (where the original ECU was).

○ Connect the Hyper ECU and setting switch harness.

○ Install the shroud R and seat.

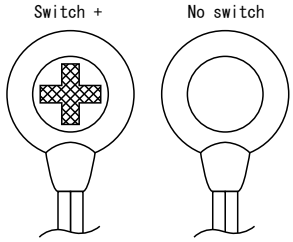
● When using the big throttle, the negative pressure sensor is not used, remove it and fix the connector with waterproof and dust resist tape.

Check operation and how to use

◎ The first time you install the Hyper ECU on a vehicle, you need to adjust the throttle position sensor and set the MAP.
When replace or change the throttle body after adjustment, you need to adjust the throttle position sensor again.

⚠ Caution : Be sure to perform the adjustment and setting before running. use it without setting, it will not work as described and may have a negative effect on the engine.
⚠ Caution : Throttle position sensor adjustment and MAP setting can only perform when the engine is stopped. Cannot be done while the engine is running.

◎ Setting switch
The switch with the + mark is the plus switch, and the switch without the mark is the minus switch.



◎ While setting, check that the engine check lamp is on.

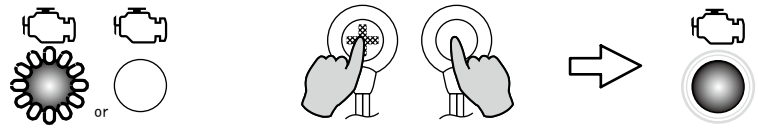
■ How to adjust the throttle position sensor

1. Turn the ignition key to ON. Do not start the engine. ※Cannot be set while the engine is running.
The engine check lamp will turn on for 2 seconds and blink(or go off). (If the throttle has never been adjusted, it will blink, if it has been adjusted, it will go off.)

Ignition key ON | Engine check lamp Lights up | After 2 seconds | Engine check lamp Blinks(or goes off)

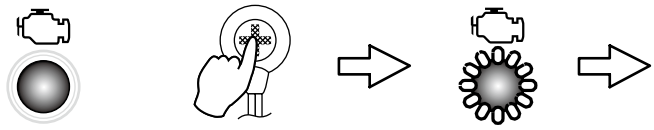
※ If the engine check lamp does not light up, check the installation of the Hyper ECU and whether the fuse is blown.

2. Press and hold the plus and minus switches at the same time for 3 seconds. After a while, the engine check light will come on.



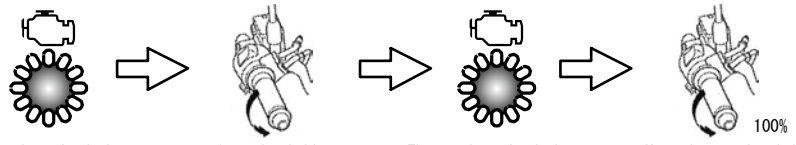
The engine check light will flash or turn off | Press and hold the plus and minus switches at the same time for about 3 seconds | Engine check lamp light will come on

3. While the engine check lamp on, press the plus switch once. The FI indicator lamp flashes once per second.



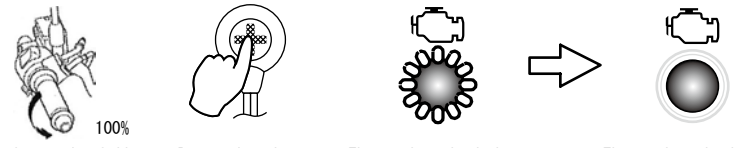
The engine check lamp is on | Press the plus switch once | The engine check lamp flashes every second | Go to throttle position sensor settings

4. Slowly open the throttle full, the engine check lamp will flash every 0.1 seconds.
Turn the throttle fully open and stop it and keep at the fully open position.



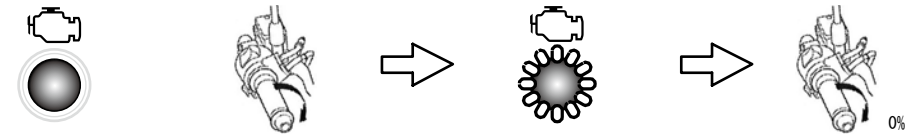
The engine check lamp flashes every second | Open it fully | The engine check lamp flashes every 0.1 second | Keep it at the fully open position

5. With the throttle fully open, press switch 1 once. The engine check lamp will turn on.



Keep it at the fully open position | Press the plus switch once | The engine check lamp flashes every 0.1 second | The engine check lamp will turn on

6. Now slowly return the throttle to fully closed position. As you return it, the engine check light will flash every 0.4 seconds. Keep and hold at the fully closed throttle position.



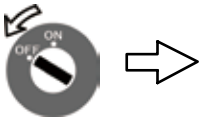
The engine check lamp is on | Return the throttle to fully closed position | The engine check lamp will flash every 0.4 seconds during the process | Keep it in the fully closed position

7. With the throttle fully closed, press switch 1 once. The FI indicator lamp will turn off.

Keep it in the fully closed position | Press the plus switch once | The engine check lamp flashes every 0.4 second | The engine check lamp will turn off

Turn the ignition key to OFF and the throttle adjustment is complete.

※ If you want to stop setting, turn the ignition key to OFF and start again from the beginning.



Complete throttle position sensor adjustment

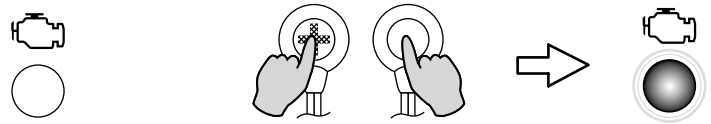
■ MAP settings

1. Turn the ignition key to ON. Do not start the engine. **※ Cannot be set while the engine is running.**
The engine check lamp will turn on for 2 seconds and blink(or go off). (Adjust the throttle first. If the throttle has not been adjusted, the light will flash.)

Ignition key ON | Engine check lamp Lights up | After 2 seconds | Engine check lamp turn off

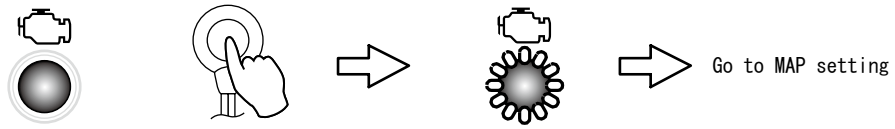
※ If the engine check lamp does not light up, check the installation of the Hyper ECU and whether the fuse is blown.

2. Press and hold the plus and minus switches at the same time for 3 seconds. After a while, the engine check light will come on.



The engine check lamp will turn off | Press and hold the plus and minus switches at the same time for about 3 seconds | Engine check lamp light will come on

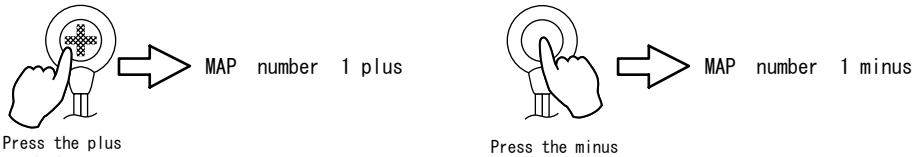
3. While the engine check lamp on, press the minusswitch once. The engine check lamp will flash in a pattern that corresponds to the MAP number. See the diagram below for the flashing pattern.



The engine check lamp is on | Press the minus switch once | The engine check lamp will flash in a pattern that corresponds to the MAP number | Go to MAP setting

4. The default value for MAP is “1”. Use the plus switch to the next map, and the minus switch to the previous map, and the blinking will also change.
See the diagram below for the flashing pattern.

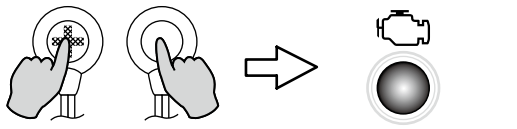
※ MAP can be up to 1-16, but stores map data in 1-14. Do not select MAP15 or 16 (as data is not stored in these numbers).



Press the plus switch once | MAP number 1 plus

Press the minus switch once | MAP number 1 minus

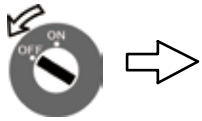
6.When you have set the desired map number, press the plus and minus switches(at the same time). When pressed, the blinking will stop and the selected map will be confirmed.



Press the plus and minus switches(at the same time)　　The engine check lamp will light up

Turn the ignition key OFF and the MAP setting is complete.

※If you want to stop setting, turn the ignition key to OFF and start again from the beginning.

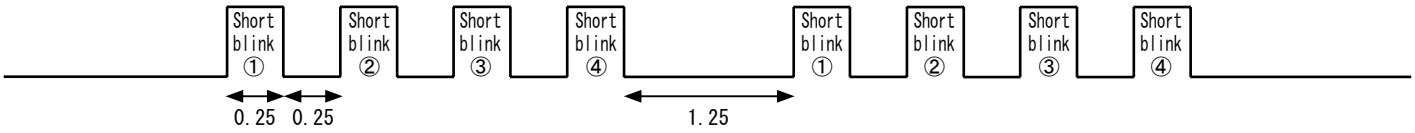


Complete MAP adjustment

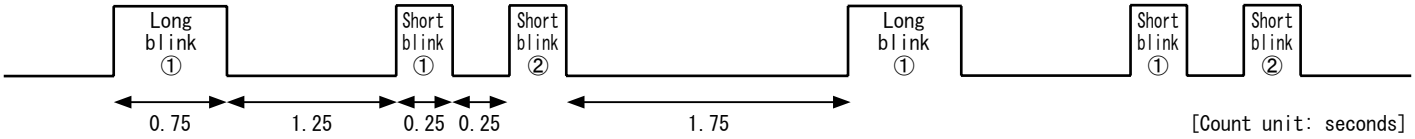
Blinking example　　Repeat until MAP is confirmed.

Blinking pattern

○ MAP number:4 selected　　Four short blinks. (Blinking pattern/blinking time below)



○ MAP number:12 selected　　One long blink, two short blinks. (Blinking pattern/blinking time below)



[Count unit: seconds]

■ MAP selection table by engine specification

The following setting table is when all our parts are installed.Please note that this is a setting that has been tested at our company, so it may not always be the best setting due to external factors such as individual vehicle, outside air temperature,altitude, rider weight.

Hyper ECU MAP

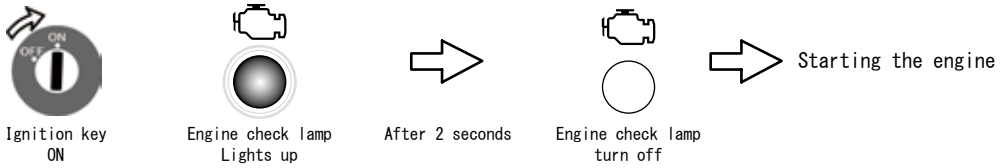
MAP number	MAP name	Engine specifications
1	Normal 110cc	Normal 110cc
2	Normal 110cc + CUSTOM MUFFLER	Normal 110cc + CUSTOM MUFFLER
3	Normal 110cc + BIG THROTTLE	Normal 110cc + φ 28 THROTTLE
4	Normal 110cc + BIG THROTTLE + CUSTOM MUFFLER	Normal 110cc + φ 28 THROTTLE + CUSTOM MUFFLER
5	Normal 110cc + SPORTS CAM	Normal 110cc + SPORTS CAM
6	Normal 110cc + SPORTS CAM + CUSTOM MUFFLER	Normal 110cc + SPORTS CAM + CUSTOM MUFFLER
7	Normal 110cc + SPORTS CAM + BIG THROTTLE	Normal 110cc + SPORTS CAM + φ 28 THROTTLE
8	Normal 110cc + SPORTS CAM + BIG THROTTLE + CUSTOM MUFFLER	Normal 110cc + SPORTS CAM + φ 28 THROTTLE + CUSTOM MUFFLER
9	S-Stage 125cc + SPORTS CAM	S-Stage 125cc + SPORTS CAM
10	S-Stage 125cc + SPORTS CAM + CUSTOM MUFFLER	S-Stage 125cc + SPORTS CAM + CUSTOM MUFFLER
11	S-Stage 125cc + SPORTS CAM + BIG THROTTLE	S-Stage 125cc + SPORTS CAM + φ 28 THROTTLE
12	S-Stage 125cc + SPORTS CAM + BIG THROTTLE + CUSTOM MUFFLER	S-Stage 125cc + SPORTS CAM + φ 28 THROTTLE + CUSTOM MUFFLER
13	No MAP data	Setting prohibited
14	No MAP data	Setting prohibited
15	No MAP data	Setting prohibited
16	No MAP data	Setting prohibited

※Do not set "No MAP data". The engine check lamp will flash and the engine will not start because there is no MAP data stored.
※For S-Stage 125cc MAP assumes that the Hyper Camshaft(included in the kit) is installed.
※The rev limit is 10,500 rpm for each of MAP1 to 12. Cannot be changed.

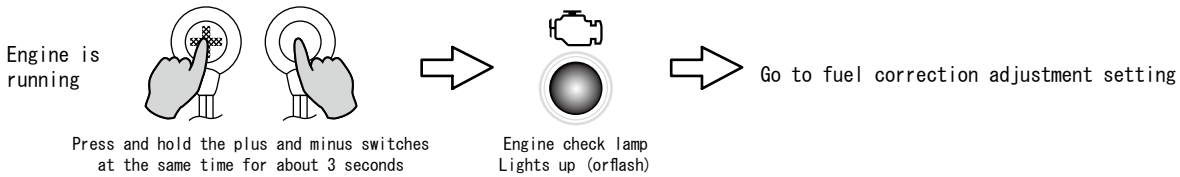
■ How to set fuel correction adjustment

※Fuel correction adjustment can only be set while the engine is running.

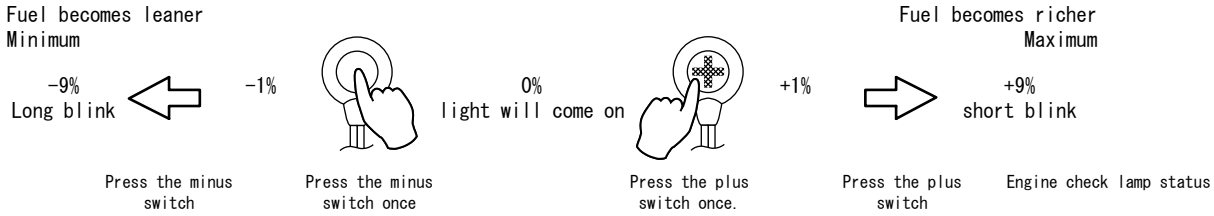
1. Turn the ignition key to ON and start the engine after the engine check lamp goes out. Can only be set while the engine is running.



2. Press and hold the plus and minus switches at the same time for 3 seconds. After a while, the fuel adjustment correction setting will be applied and the engine check lamp will be lit (or flashing).

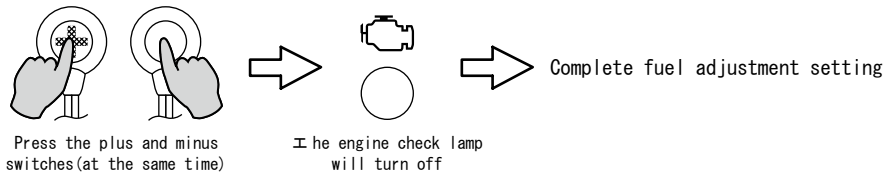


3. Each time you press the plus switch, it will increase by 1% in the rich direction, and each time you press the minus switch, it will decrease by 1% in the lean direction.
The increase or decrease can vary up to a maximum of -9% to +9%. See below for the flashing of each increase or decrease.



※The set value will be reflected in the injector output during setting. Adjust to obtain the proper air-fuel ratio.

4. To complete the fuel adjustment setting, press the plus switch and minus switch at the same time. When pressed, the flashing/lighting will stop and the setting will be completed.

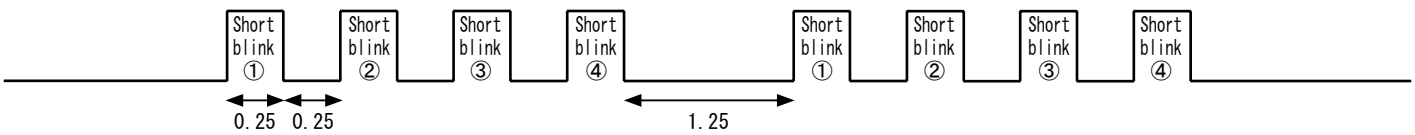


※Do not stop the engine until the FI indicator lamp goes out. Settings will not be recorded.

※Settings on the negative side may cause trouble depending on the engine specifications, please use A/F meter with caution.
Settings on the negative side should not be performed by those who do not have knowledge about engine settings.
Do not riding while settings, may cause accidents.

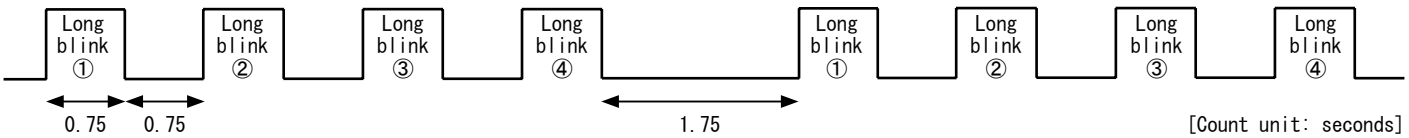
Example of flashing　　Repeat until fuel adjustment is confirmed.
※Only lights up when set to 0%

○ +4% setting (Increase)



○ 0% setting　Lights up

○ -4% setting (Decrease)



■ Mounting procedure ※Please refer to the Genuine Service Manual for detailed mounting methods and specified torques that are not specifically described.

● Idle adjustment

○ Turn the ignition key ON, start the engine and warm it up sufficiently.
○ Adjust the idle screw on the throttle body so that the idle speed is 1550 ± 100 rpm.
Start the engine when it is cold and check that it does not stall. If the engine stalls, adjust the setting higher.

● Troubleshooting

If the FI indicator lamp flashes (other than during setting) there may be an abnormality, so please check the flashing table.
The flashing pattern is the same as the map setting.

Number of flashes	Table of contents	Possible causes	Checking method
1	Open injector ※	Broken injector or poor connection	Check injector, wiring and connector
2	Open ignition coil ※	Broken ignition coil or poor contact in connector	Check ignition coil, wiring and connector
3	Open oil temperature sensor	Oil temperature sensor disconnected or poor connection	Check oil temperature sensor, wiring and connector
4	Oil temperature sensor failure or wiring short to the body	Oil temperature sensor failure or wiring short to the vehicle body	Check oil temperature sensor, wiring and connector
5	Open throttle sensor	Throttle sensor failure or poor connection	Check throttle sensor, wiring and connector
6	Throttle sensor failure or wiring short to the body	Throttle sensor failure or wiring short to the vehicle body	Check throttle sensor, wiring and connector
7	Open intake air temperature sensor	Intake air temperature sensor disconnected or poor connection	Check intake air temperature sensor, wiring and connector
8	Intake air temperature sensor failure or wiring short to the body	Intake air temperature sensor disconnected or wiring short to the vehicle body	Check intake air temperature sensor, wiring and connector
11	Open bank angle sensor	Bank angle sensor disconnected or poor connection	Check bank angle sensor, wiring and connector
12	Bank angle sensor failure or wiring short to the body	Bank angle sensor disconnected or wiring short to the vehicle body	Check bank angle sensor, wiring and connector
13	Open ISV solenoid	Fast idle solenoid disconnected or poor connection	Check fast idle solenoid, wiring and connector
15	Low battery voltage	When the voltage after starting the engine falls below 9V	Check the regulator, charge or replace the battery
16	High battery voltage	When the voltage after starting the engine exceeds 16.5V	Check the regulator or battery replace
17	Throttle opening not set	Throttle not set	Set the throttle
18	Internal communication error ※		Please contact your dealer
19	EEPROM abnormality		Please contact your dealer
22	Injection volume exceeded the specified value	Sudden throttle, full throttle operation, etc. during heating	Do not operate the throttle excessively during heating
23	No MAP data ※	Undefined map selected	Re-select map
	Not lit when key is turned on	Out of power ※, FI indicator, fuel warning lamp wiring broken	Check battery and fuse Check wiring and connection for FI indicator lamp, etc.

※ In these abnormal cases, the engine will not start.

Check other than blinking

Engine will not start	Engine assembly is incorrect, fuel is insufficient, etc.	Check engine assembly, Check fuel
	Ignition failure	Replace spark plugs, Check the heat range
	Plug fouling, ECU malfunction	Confirm that engine check lamp is on for 2 seconds when ignition key is turned on
	ISV valve malfunction/sticking	Clean and check ISV valve
Idle speed is high Engine speed does not drop or is too low	Improper throttle adjustment	Adjust throttle
	Improper idle screw adjustment	Adjust idle screw
	ISV malfunction, stuck, etc.	Clean and check ISV valve
	Map does not match	Please check the map
Slow engine speed and breathing	Improper throttle adjustment	Adjust the throttle
	Map does not match	Check the map
	Improper fuel adjustment correction value	Perform fuel adjustment correction
The value on the external tachometer doubles	Restarting the engine by turning the ignition key on while the engine is running	Turn off the engine and restart it after it has stopped completely

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