

FI CON TYPE-X Instruction manual

Product number	Adaptation model
05-04-0112	GROM (JC61-1000001 ~) (JC61-1300001 ~)
	MSX125 (Thailand model) (MLHJC618_D5000001 ~)
	MSX125SF (Thailand model)
05-04-0113	GROM (JC75-1000001 ~)

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.

■ feature

- Injection controller that can be installed on a genuine ECU with a simply connector on.
- Preset MAPs that have been set by our factory to match the our basic specifications, so simply select the MAP of your bore-up kit or throttle body with your cellphone or PC to complete the basic operation to get running.
In addition, ignition timing, acceleration pump, dwell time, invalid injection time, ignition timing temperature correction, engine temperature correction, vaporization time can be set.
Based on the preset MAP, that can be set according to your preference and creating a new MAP to enjoyed even expert customers.
- It can be connected to a PC or cellphone while the engine is running, allowing you to monitor the engine temperature in addition to the tachometer screen and cost safety graph screen that are very convenient for mapping.
- You can choose from two types of mode for PC software and cellphone application, from EASY mode or EXPERT mode respectively.
- EASY mode-The stock ECU ignition map can be used. Can be set advance or retard based on stock ignition timing.
You can select from 14 preset data.
- EXPERT mode
Ignition timing will be set without performing advance / retard (crank angle of BTDC) for the stock ignition MAP. In the EXPERT mode, there is an engine temperature ignition timing correction function] if the engine temperature becomes too high, that corrects that the vaporization time and combustion time change to avoid affects the ignition timing.
Preset data is available from 9 patterns.
- In addition, it is equipped 1) rev limit: convenient for engine protection and breaking-in, 2) Pit lane limiter: that is assumed to be used in a pit lane with a speed limit 3) On-time MAP change function : Switch between power mode and fuel consumption mode that can be used from beginners to expert rider.

● 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.
- ◎ Even if parts other than this product are defective or damaged after installing and using this product, we will not be responsible for the warranty of parts other than this product.
- ◎ 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.
- ◎ Only the Japanese specification and the Thai model have been checked for operation. We do not know about other parallel import vehicles.
- ◎ This product is the above-mentioned vehicle exclusive goods. Is not possible attached to the other vehicle. Please note.
- ◎ Repair parts should apply in repair part number. Addition, any questions, please contact us to purchase.
- ◎ 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 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.
- ◎ For cellphone applications is available from two types of ignition modes EASY mode or EXPERT mode.
Each mode can be operated the different engine specification MAP. Please note when purchasing the application.
- ◎ Please purchase the extra switch when using the pit lane limiter and on-time MAP change function.
- ◎ Various settings for experts users only.
- ◎ As a rule, settings should be made in a factory equipped with a chassis dynamometer O₂ sensor.
Never setting with your smartphone while you riding.
- ◎ The computer or smartphone require the following conditions.
- Windows (excludes RT/MOBILE) You must be connected to the Internet to install our software (free).
- Windows 11
It is possible to communicate with the Windows standard driver (stack) of Windows 11. (It can also be used with the built-in adapter.)
- ※ Be sure to use the Windows standard driver (stack). Connections with other stacks are not supported.
- Windows 10 (April 2018 Update (1803) or later)
" You can connect in the same way." ※ Limited to FI controllers compatible with Windows 11.
- Windows 7/8/10 (April 2018 Update (1803) or earlier)
Your computer must have built-in Bluetooth or a separate external Bluetooth adapter is required. Other than Windows standard Microsoft Bluetooth driver " Cannot connect."
- ※ Some of the previously sold FI Con TYPE-e and FI Con TYPE-X do not support Windows 11. Also, for Windows 10 (April 2018 Update (1803) or later) Communication cannot be performed with the Windows standard driver (stack), and a designated external Bluetooth adapter is required separately.
For details, please check our website.
- [Reference] Windows 11 compatible lot confirmation method
FI controller TYPE-e and FI controller TYPE-X are laser marked so that the lot can be identified.
DG, DH, DI, DJ, DK, DL and notations with the first letter after E (in alphabetical order) are compatible with Windows 11.
- iOS iPhone4s or later, iPad 3rd generation or later iOS9 or later.
Please get our application and purchase the data through AppStore.
You need to purchase various model data within the app.
- Android Android OS 4.2.2 or later. Bluetooth function built.
You need to connect to Google play to install our app and purchase model data.
You need to purchase various model data within the app.

● Precautions on use/purchased dealer

- ◎ Not compatible parts
Do NOT USE with External HID kit, LED headlights and Fog lamps made by other than Takegawa products, these parts often produce high-voltage noise from the ballast / inverter (voltage converter) that adversely affects the digital circuit, causing product failure or malfunction.
Do not use an performance ignition device (ignition coil or plug wire) as it may cause malfunction or product failure due to increased radiation noise associated with increased ignition voltage. It is possible to use it with Takagawa's hyper ignition coil. Do not use other performance generator or similar products, it may cause a malfunction due to insufficient power generation or voltage waveform.
You need to connect to Google play to install our paid application.

- ◎ This product is not waterproof / drip-proof. If rain or water is applied, water may enter the main unit and cause malfunctions.
Be careful when rain or washing. If water gets into the main unit, stop using it immediately.
- ◎ The outer case of this product is made of resin. To prevent deterioration, moto cover is ideal on the bike for a store or long time parking.
If left on under severe conditions such as in hot weather, deterioration or deformation of resin or rubber parts may be considered.
- ◎ Never disassemble or modify the products.
We will not accept inspections and repairs if you disassemble it.
- ◎ Please do not give a strong shock or transmit a strong impact. There is a risk of irreparable failure or damage to the main unit case due to internal parts falling off or breaking due to impact.
- ◎ If there is stubborn dirt, clean it slowly with a small amount of neutral detergent in water.
Do not use volatile substances (such as thinner or alcohol) or compounds may cause deterioration of the resin part or cloud the panel.

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.

- 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. Please go to protect your hands when you work. (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	FI CON TYPE-X	1	
2	Cushion 2	1	00-00-0299
3	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.

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

Introduction

This product is developed on the assumption that the genuine PGM-FI system is operating without any problems.
If there is a problem or malfunction in the PGM-FI system itself, it may not operate properly or perform properly even if this product is installed, and it may cause other parts to malfunction, including this product. Make sure that there is no problem with the PGM-FI system before installing and using it.
In addition, work by using a maintenance stand like a horizontal a safe place, start then fully stabilized to the vehicle.

NOTE: The contents of the exterior parts removal work in this manual are only an overview with details omitted. If you are unfamiliar with the exterior removal work, please take to motorcycle shop to do the work. Be sure to follow the instructions and procedure specified torque follow the manufacturer's genuine service manual. Also be careful to not damaged any parts when the exterior is removed.

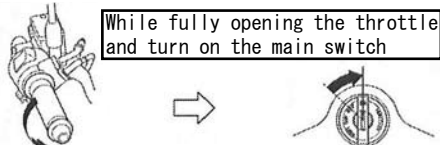
Engine control unit initialization

NOTE: Be sure to perform the work before installing this product. If you work with this product installed, it may not work as described, and it may adversely affect both the ECU and FI controller.

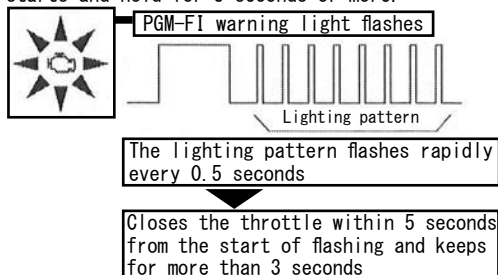
① Turn off the main switch and remove the seat.

② Remove the cover of the service check coupler and short-circuit the service check coupler terminal using a special tool.
When there is no dedicated tool, short-circuit the blue and green wire in the red coupler using the lead wires on hand.
SCS coupler: Honda genuine parts number 070PZ-ZY30100

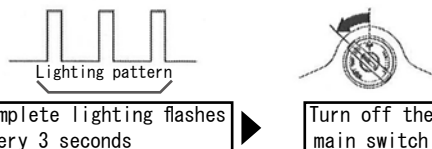
③ While fully opening the throttle and turn on the main switch.



④ PGM-FI warning light turns on and starts flashing rapidly.
Close the throttle grip within 5 seconds after the flashing starts and hold for 3 seconds or more.



⑤ When initialization of the engine control unit is complete, the PGM-FI warning light will flash every 3 seconds. When the completion is confirmed, turn off the main switch.



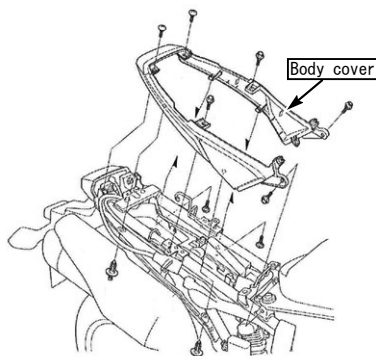
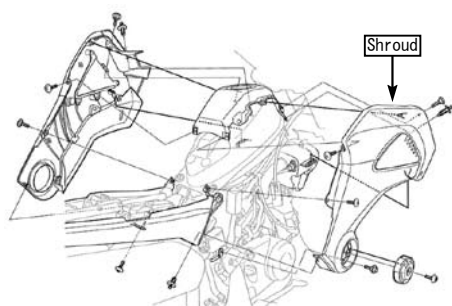
- ※ If the PGM-FI warning light does not start flashing rapidly, turn off the main switch and repeat the above procedure.
- ※ If you can't redo the procedure, double check that the DTC is not stored in the engine control unit.
- ※ If the DTC is not saved and you cannot repeat the procedure, It may failed of the control unit, replace the engine control unit with a good one and repeat the procedure.

⑥ Attach the dummy coupler to the service check coupler.

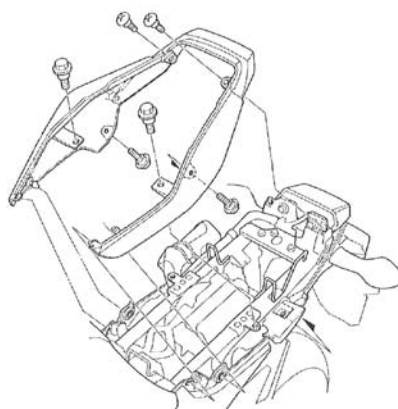
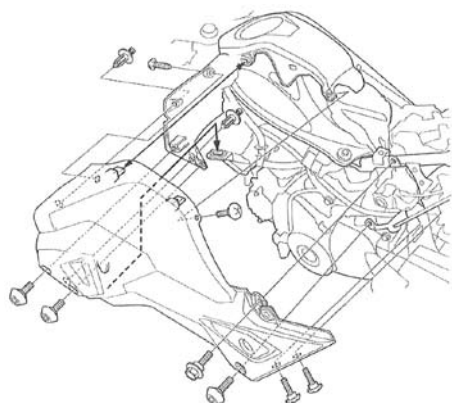
⑦ Rotate the idle air screw based on the standard method and adjust to the specified engine idling speed.

- Remove the body cover / tail cover and shroud referring to the genuine service manual.

For JC61-100/MSX125



For JC61-130/JC75 MSX125SF



- Remove the coupler of the PGM-FI unit and attach the FI CON type TYPE-X.
- Use the attached cushions and zip-ties as appropriate with reference to the image and place the FI-con TYPE-X body.
- ※ Caution: the case will be distorted if it interferes strongly with other parts when mounting the main body, as the inside will be damaged.



■ List of FI CON TYPE-X function

• Preset MAP

You can choose from 14 patterns in the EASY mode and 9 patterns in the EXPERT mode that have been pre-set according to the engine specifications.

You can easily change the settings using your PC or smartphone.

※ If you are using an engine that does not support preset maps, you need to create own a new map.

• Idling area adjustment

“FI con TYPE-X” uses the stock ECU start program for the idling area (where the engine speed is 2000rpm or less and the accelerator opening is 10% or less up to 4000rpm).

In this area, increase / decrease the stock injection amount as necessary.

• Fuel injection duration adjustment

Possible adjustment for every 5% of accelerator opening and every 250rpm of engine speed.

• Ignition timing adjustment

For EASY mode, advance and retard can be input for stock ignition timing.

For EXPERT mode, the entered value (crank angle before top dead center) will be the ignition timing.

For the EXPERT mode, the “engine temperature ignition timing correction function” that adjusts the effect of changing the vaporization time and combustion time and affecting the ignition timing when the engine temperature becomes too high can be adjusted.

• Invalid injection time correction

There is some time lag before the injector is energized and injects fuel. This is called the “invalid injection time”

The “invalid injection time” changes depending on the voltage, so if the supplied voltage changes due to battery or alternator condition, injection command to the actual injection changes, and the injection amount will also change. In order to prevent such a problem, it is possible to set the condition to be constant by applying correction.

• Engine temperature compensation

PGM-FI Injects more fuel than the value of the injection MAP when the engine temperature is lower than the appropriate temperature according to the input value from the oil temperature sensor, and warms up the engine faster. etc.

• Intake air temperature compensation setting

Since the density of air changes depending on the temperature, the air-fuel ratio change due to the intake temperature is compensated.

• Vaporization time setting (injection timing setting)

Set the vaporization time for the fuel injected from the injector to burn efficiently.

• Dwell time setting

Transistor ignition, energize the coil before ignite. This energization time is called dwell time.

• Simultaneous monitor with engine temperature display function

The dedicated software for PC or smartphone has a simultaneous monitor function In addition to the tachometer screen and throttle opening graph screen that are very convenient for setting, the fuel injection rate of the engine temperature injector is also digitally displayed.

• Real search function

Connect to a PC or smartphone with the engine started. Information of the running engine is reflected on the screen of the computer or smartphone at the same time. The reading speed / throttle opening is reflected in the mass of the fuel map graph, and that high-lighted to make the adjustment point clear and very convenient for setting.

• Rev limit function

You can set the Maximum engine speed. It's other than that limiter-cut, it can be set even at low speed. It can be used effectively when you don't want to increase the engine speed, such as tuning engine rev measures and break-in.

• Pit lane limiter function

In addition to the above rev limit function, if you do not want to increase the engine speed such as pit lane speed regulation etc., the limiter can be operated only when the “ON” by connecting the additional bottom switch (to the white lead in the spiral tube of the main unit and grounding the body) ※ Please provide extending wire to the switch.

• On-time MAP change function

MAP1 / MAP2, 2 sets of map can be written inside of FI CON TYPE-X. It is assumed that it will be operated by switching between racing mode, touring mode, fuel economy driving mode etc. ※ Required optional switch set.

• Tachometer output lead wire.

1 revolution, 1 pulse, 5 volts is output in purple lead wire in the spiral tube of the main unit.

※ When installing, the bracket harness needs to be modified.

• Digital acceleration pump

This product monitoring the speed of the accelerator opening by TPS signal. When the rider wants quick acceleration and the throttle is opened quickly, injection asynchronously the increase injection other than that set value. The similar function as the acceleration pump of the racing carburetor.

⚠ Warning

As a rule, settings should be made in a factory equipped with a chassis dynamometer O₂ sensor.

Never setting with your smartphone while you riding.

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

■ How to use FI CON TYPE-X

You can download the software for operating the FI CON TYPE-X on a PC and the application for operating on a cellphone from our web (<http://www.takegawa.co.jp>). (Cellphones application will be optional.) ※Application download site will be links to the external site. After installing the EASY mode application(free)or EXPERT mode application, it is necessary to purchase paid model data in the application.



Chose from two type of software “EASY mode” or “EXPERT mode” applications according to the method of creating the ignition map and the contents of the preset data.

■EASY mode

Can be used the ignition map of the normal ECU as it is.

When setting, advance / retard to stock ignition timing. If the value is 0, the ignition timing will be the same as the stock ECU MAP. In stock GROM ignition MAP, a limiter that is retard for over 9000 rpm , but FI CON TYPE-X is fixed for over 9000 rpm.

You can select from 14 preset data.

■EXPERT mode

The ignition timing is the entered value (crank angle BTDC) without performing advance / retardation for the stock ignition MAP.

You can select from 9 preset data.

※Refer the MAP selection table by engine specifications on P10/P11. For EASY mode and EXPERT mode.

This software and the application correspond to English display. Please set the language setting of your computer, Android, iOS terminal to English.

Information on the require operating system is available on our website.

http://www.takegawa.co.jp/user_data/fi_con.php#ficon_X



■Bluetooth settings on a PC

• Explains how to communicate with FI computer TYPE-X with Bluetooth.

※When using a PC without Bluetooth function, you need to purchase and add Bluetooth adapter, however some adapters cannot be connected to FI TYPE-X, please check before you buy it.

※The screen may vary depending on the type of OS. Fully open the throttle and turn on the main switch. (Be sure blue tooth is working condition.) The bike PGM-FI warning light will start flashing when the FI CON TYPE-X is installed correctly.

※Since FI CON TYPE-X exchanges data wireless, it comes with a safety device that can communicate by emitting radio waves only when 「turn on the key with the throttle fully open」 so that other people can not access it. When starting with normal key ON, no third party can access FI CON TYPE-X because it does not emit radio waves. (The motorcycle's PGM-FI warning light flashes only when emitting radio waves.)

In addition, during communication, you can only connect to 「one unit」, so you cannot connect from another PC or smartphone when communicating. If you change the data, you can use it with confidence because it will not emit radio waves once the key is turned off.

Select the Bluetooth device from the control panel.



Select to display the screen for the left photo.

※If there is already some Bluetooth registration, it will be displayed on the screen.



When the wizard screen opens, select 「Completion of setup and device can be found」 and press the Next button.

Continued on next page

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

■ Continuation of Bluetooth settings on a PC

When a new FI CON TYPE-X device is found, select it and press Next.
※ If you have multiple Bluetooth devices set up or there are them nearby, they will be searched together when searching, so multiple devices will be displayed on the screen. Be sure to select FI CON TYPE-X.



Add Bluetooth Device Wizard screen will open.

Select 「Use passkey specified in manual」.

An input space will appear on the right side of the screen.

Enter 「1234」 and press Next



When the device is added, the following screen will be displayed.

Note "Outgoing COM Port" on the screen.

Ex: 「COM11」 Press to Done.



When completed, the following screen appears.

Press 「COM Port」 on the upper tag button to check the outgoing COM port.

Note of it.



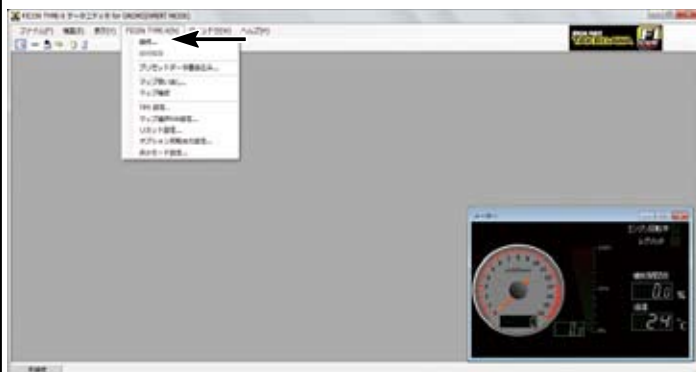
This completes the Bluetooth settings.

■ Check the software startup and Bluetooth function

Launch the software and select 「Connect」 from 「FI CON TYPE-X」 on the screen.

If the previous 「COM port」 is not selected, please select it again from the drop-down list.

When communication starts, the real search function works and the opening angle is displayed when the throttle is moved even the engine is not started.



※ Tachometer and other functions will start when the engine is started.

※ Once disconnected, you can connect from another PC or smartphone.

※ From the next time, if the engine is started with 「the key on and throttle is fully open」, its possible to connect even after starting engine.

※ If the connection is canceled unexpectedly due to radio interference, turn off the key once and start from the beginning. (Because the security function of FI CON TYPE-X may not be able to reconnect)

※ Please be careful at your own risk when connecting and rewriting data while the engine is running.

※ When using an external Bluetooth adapter attached to a USB connector on a PC with no built-in Bluetooth, it works only with the Windows standard Bluetooth driver.

Some bluetooth adaptor cannot be used, they operate with different drivers.

If you are using a USB Bluetooth adapter, please use the Bluetooth device and Bluetooth driver on the standard Windows control panel. Do not use driver software supplied from the manufacturer.

※ If you are using Windows VISTA, be sure to update to SP2 (Service Pack2).

※ There is no direct data link function between smartphone and PC. When exchange data, please go through FI CON TYPE-X.

※ There is a limit to the number of partners (Android devices or PCs) that can be paired in total due to the specifications of the Bluetooth adapter.

Bluetooth communication will not be connect if the number of pairing is exceeded.

The communication is not possible even pairing may appear to have been possible. When shipped from factory, it can be paired with 8-9 units. If you are unable to communicate via Bluetooth, please contact us for refresh the product. (apply fee)

■Bluetooth settings on an Android smartphone.

Install the operation app on your smartphone from GooglePlay.

Device settings for Android smartphones are performed in the following order:



NOTE

The display may vary depending on the device and version. Please refer with the instruction manual of your device. Requires Android version 2.3 or higher. Please purchase after confirming that your Android device is compatible. Android devices that do not have a built-in Bluetooth cannot be connected.

When connecting for the first time during pairing and after pairing, keep the distance from FI CON TYPE-X within 30 cm.

If many errors occur during device search, pairing or normal connection, turning WiFi off once or reinstalling the application may be solved.

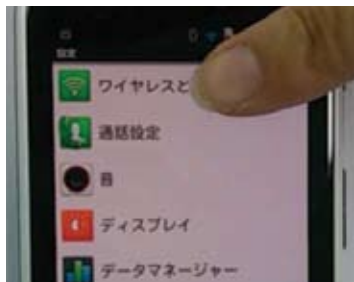
Information on the require operating system is available on our website.

http://www.takegawa.co.jp/user_data/fi_con.php#ficon_X



■Blue tooth pairing

With the throttle fully open, turn on the key and check that the PGM-FI warning light is flashing.



Select the settings on the main screen of the smartphone and chose 「Wireless & Network」.

※The title may differ depending on the model and manufacturer.
Example: Wireless and network



Select Bluetooth.



Enter Bluetooth settings.

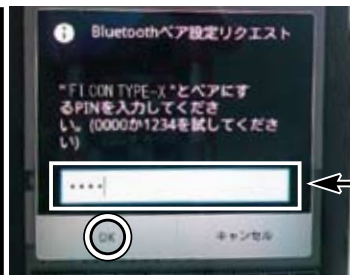


Select 「FI CON TYPE-X Pair this device」 as displayed.

※If the device is not displayed, please scan the device or check Bluetooth again.



Selecting a Bluetooth pair request and enter a 「PIN」.



Enter the number specified in (xxxx) and press OK.

Enter the number「0000」or「1234」



Press the 「FI CON TYPE-X」 icon on the main screen of the smartphone to launch the app.



The main page is displayed.

※When communication starts, the tachometer changed bright white and you can start engine.
※If you twist the throttle without starting the engine, the TPS monitor (next to the tachometer) will act and you can check the connection status.
※When connecting for the first time during pairing and after pairing, keep the distance from FI CON TYPE-X within 30 cm.
※Once disconnected, you can connect from another PC or other smartphone.
※If you are unable to connect to FI CON TYPE-X, exit the app once, cancel the pairing, restart the main unit and pair again to connect.
※There is no direct data link function between smartphone and PC. When exchanging data, please go through FI CON TYPE-X.
※There is a limit to the number of partners (Android devices or PCs) that can be paired in total due to the specifications of the Bluetooth adapter. Bluetooth communication is not possible when the number of pairing is exceeded.
The communication is not possible even pairing may appear to have been possible. When shipped from factory, it can be paired with 8-9 units. If you are unable to communicate via Bluetooth, please contact us for refresh the product. (apply fee)

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

■ Bluetooth settings on an iOS smartphone.

Install the operation app on your smartphone from App Store.



NOTE

The display may vary depending on the device and version. Please refer with the instruction manual of your device. Compatible with iOS 6.0.1 or higher.

iPhone 4s and earlier models, iPad 3rd generation and earlier models can NOT connect even if the OS is upgraded, because they don't support Bluetooth LE. Please purchase after confirming that your iPhone device is compatible.

When connecting for the first time during pairing and after pairing, keep the distance from FI CON TYPE-X within 30 cm.

If many errors occur during device search, pairing or normal connection, turning WiFi off once or reinstalling the application may be solved.

Information on the require operating system is available on our website.

http://www.takegawa.co.jp/user_data/fi_con.php#fiicon_X



■ Blue tooth pairing

With the throttle fully open, turn on the key and check that the PGM-FI warning light is flashing.



Turn on Bluetooth (If Bluetooth is already turned on, skip step).



Select Bluetooth.

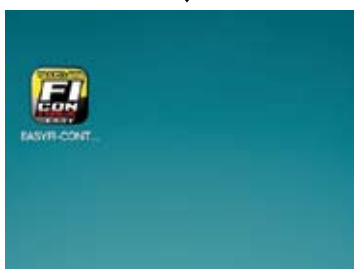


「ON」

Turn 「ON」 Bluetooth.



※If you turn 「ON」 Bluetooth, do not tap it even if it appears on the device at the bottom of the screen.



■ Connection with FI CON-TYPE-X
With the throttle fully open, turn on the main switch and check that the PGM-FI warning light is flashing.

Press the 「FI CON TYPE-X」 icon on the main screen of the smartphone to launch the app.



Select the center icon 「Operation status」 at the bottom of the main screen.



Tap.

Tap the above arrow next to 「Driving Status」.



Tap.

Tap to display the selection menu. Tap Connect to FI CON.



Tap to display the selection menu. Tap the detected FI CON TYPE-X.

Tap.



If nothing is displayed If you are not sure that the vehicle's PGM-FI warning light is flashing, turn off the main switch, fully open the throttle and turn on the main switch.

When connection is completed, TPS (throttle opening) and oil temperature are displayed on the operation status screen. The engine speed is also displayed when the engine is started.

To disconnect FI CON TYPE-X, tap FI CON disconnection from the menu button on the operation status screen.

※Tachometer and other functions will activate when the engine is started.

※Please be careful at your own risk when connecting and rewriting data while the engine is running.

※There is no direct data link function between smartphone and PC. When migrating data, please go through FI CON TYPE-X.

※If you are unable to connect to FI CON, exit the application, turn off the power of the main unit, restart and reconnect.

How to correct the throttle position sensor (TPS) error and synchronize with FI controller.

※ The following FI CON represents “FI CON TYPE-e” and “FI CON TYPE-X”. ※ TPS = Throttle position sensor

FI CON reads engine speed / TPS values and signal speed from various sensors. However, the output signal from the TPS of vehicle is slightly different for each motorcycle. (There are individual differences in signals when fully closed or fully open.) In this case, even if you try to adjust the fuel in response to TPS, depending on the individual motorcycle, for example, it may be full open, but read a different point from the full open signal, etc.

Therefore, when connecting to a PC (or smartphone), correct the actual throttle position 0% to 100% so that the output voltage is synchronized with the throttle position data of the FI controller. With this function, the data created on the software is fully reflected in the actual bike. The TPS value to be corrected is stored in the FI CON main unit, so it can be done once with either a PC or smartphone. (Adjust the values when fully closed and fully open)

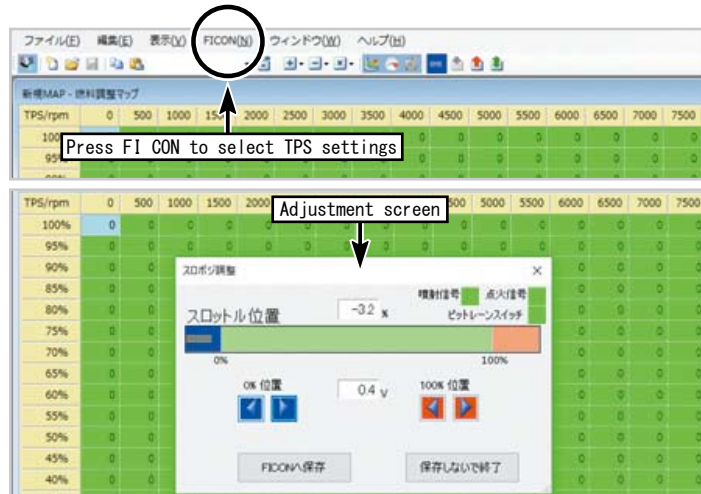
When there is a problem with the wiring connection, the check function of this software will give you warning. See below for details.



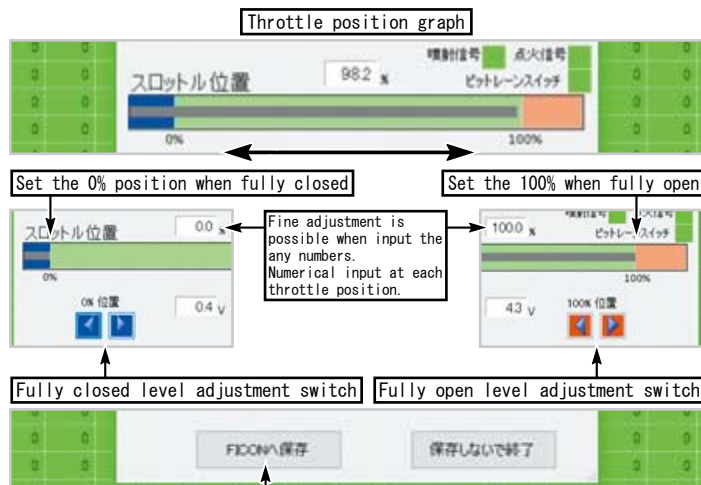
NOTE Do not start engine while in the TPS error correction, because throttle must be fully opened (only the key is on). It is dangerous to work with the engine started. Please note. (please refer the section for “how to connect via Bluetooth”)

Start the PC with the FI CON installed, start up the software, and connect the PC and FI CON.

Next, press FI CON at the top of the software and select 「TPS setting」 at the bottom of the displayed. The adjustment screen is displayed when the PC and FI computer are connected (picture below). If the computer and FI computer are not connected, the connection screen is displayed.



While looking at the throttle position graph on the screen, try to fully close to open the throttle. The gray highlight moves to the left and right in conjunction with opening and closing the slot. Adjust the level adjustment switch so that the values match at the 0% and 100% positions. Finally, be sure to press the “Save to FI CON” button. It will not be reflected unless saved.



NOTE After adjustment, be sure to click the “Save to FICON” button. It will not be reflected unless saved.



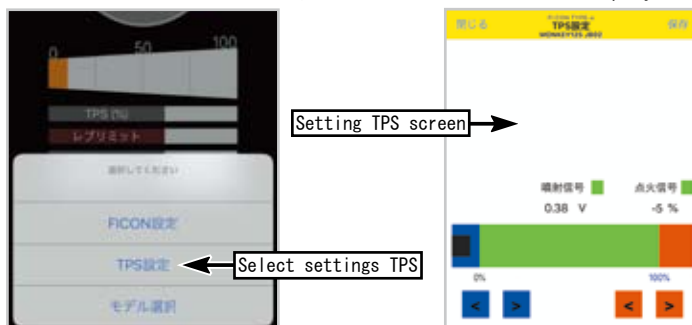
Important Note If the FI CON is not wired correctly, the following screen will appear and software will warn.



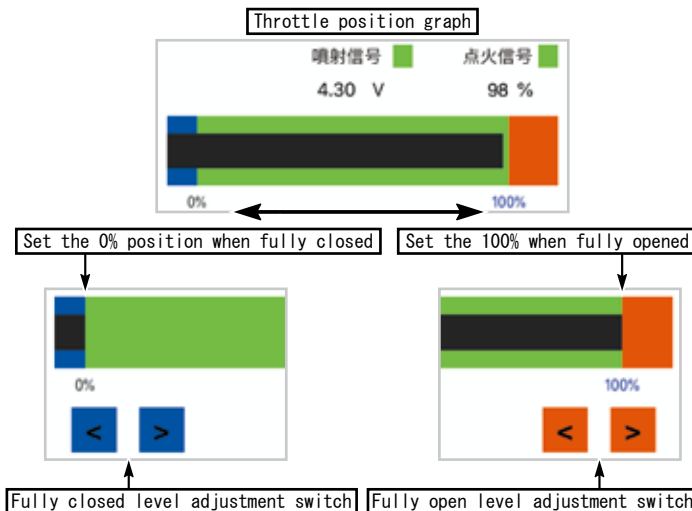
Open the app from a smartphone with the FI CON installed and connect the PC and FI CON.

Select 「Setting TPS」 (bottom right of the app.)

When the smartphone and FI CON are connected, the “TPS settings” screen will be displayed. (see bottom left photo) If the smartphone and FI CON are not connected, the connection screen is displayed.

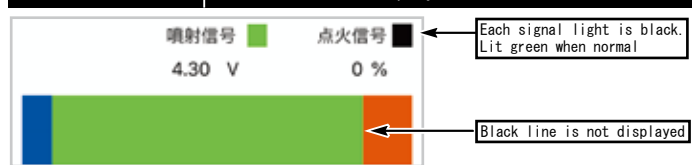


Try to fully close to fully open the throttle while watching the throttle position graph on the screen. The highlighted black moves from side to side in conjunction with opening and closing of the slot. Adjust each value with the level adjustment switch as match at the 0% and 100% positions. Please press “Save” when you done. It will not be reflected unless saved.



NOTE Please press the “Save” button (on the upper right.) when you done. It will not be reflected unless saved.

Important Note If FI CON is not wired correctly, app will warn you the screen below displayed.



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

■ How to upload preset MAP

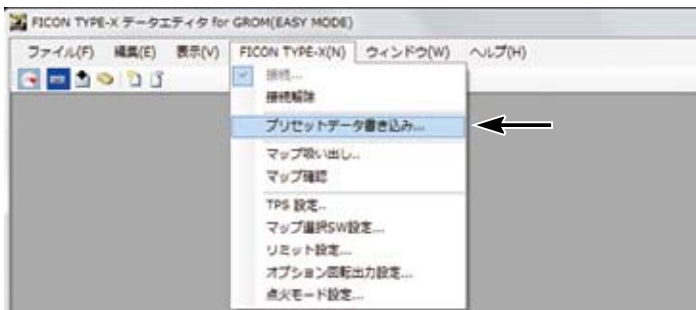
This product has

- ◎ Idling area ◎ Inactive injection time ◎ Main injection MAP ◎ Acceleration pump setting (Acceleration increase correction)
- ◎ Engine temperature correction ◎ Intake air temperature correction setting ◎ Evaporation time setting (Injection timing setting)
- ◎ Ignition timing MAP

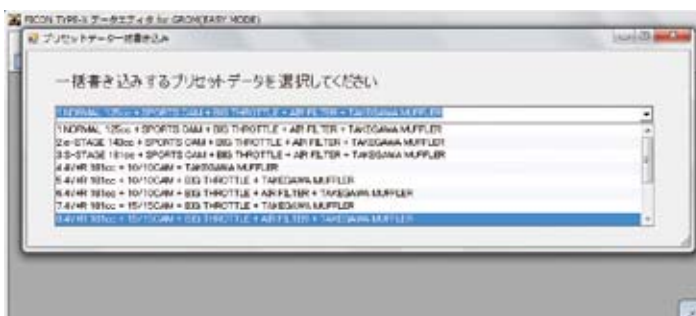
Preset data of the above 8 items are built-in and can be upload from PC or cellphone operation application.

■ Uploading with PC

Start PC software and connect with FI CON TYPE-X Click the upper menu 「FI CON TYPE-X」 → 「Upload preset data」.



Select the preset data that matches your engine specifications from the 「Preset Data Batch Write」 window.



This completes the mapping and you are ready to ride now.

■ Uploading with cellphone

Start cellphone launch the application and connect to FI CON TYPE-X. Tap "All preset writing" at the bottom menu, select the preset data that matches your engine specifications, and write it to the main unit.

Select preset data

Uploading

プリセットデータ一括書込	プリセットデータ一括書込
一括書込するプリセットデータを選択してく...	一括書込するプリセットデータを選択してく...
+ TAKEGAWA MUFFLER	+ TAKEGAWA MUFFLER
6.4V+R 181cc + 10/10CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	6.4V+R 181cc + 10/10CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER
7.4V+R 181cc + 15/15CAM + BIG THROTTLE + TAKEGAWA MUFFLER	7.4V+R 181cc + 15/15CAM + BIG THROTTLE + TAKEGAWA MUFFLER + AIR FILTER + TAKEGAWA MUFFLER
8.4V+R 181cc + 15/15CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	8.4V+R 181cc + 15/15CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER
9.4V+R 5AXIS 181cc + 10/10CAM + TAKEGAWA MUFFLER	9.4V+R 5AXIS 181cc + 10/10CAM + TAKEGAWA MUFFLER
10.4V+R 5AXIS 181cc + 10/10CAM + BIG THROTTLE + TAKEGAWA MUFFLER	10.4V+R 5AXIS 181cc + 10/10CAM + BIG THROTTLE + TAKEGAWA MUFFLER
11.4V+R 5AXIS 181cc + 10/10CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	11.4V+R 5AXIS 181cc + 10/10CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER
12.4V+R 5AXIS 181cc + 15/15CAM + BIG THROTTLE + TAKEGAWA MUFFLER	12.4V+R 5AXIS 181cc + 15/15CAM + BIG THROTTLE + TAKEGAWA MUFFLER
13.4V+R 5AXIS 181cc + 15/15CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	13.4V+R 5AXIS 181cc + 15/15CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER

Uploading may take several minutes depending on your model, please note that the uploading will be interrupted if it goes to sleep mode during uploading depending on the mappings of your PC or cellphone. This completes the mapping and you are ready to ride now.

⚠ Note Before riding, please check each part for any looseness in the screws, etc. If there is any looseness, make sure to retighten with the specified torque. (It may cause parts to fall off.)

⚠ Warning Make sure that the engine is started in a well-ventilated place. Do not start the engine in a closed place. (Avoid a risk of carbon monoxide poisoning.)

■ EASY mode by engine specification MAP

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.

	MAP name	Engine specifications
1	NORMAL 125cc + SPORTS CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	Normal/HighComp 125cc + Sports Cam + ϕ 34 Throttle + Injector (G-1) + Air filter + TAKEGAWA Muffler
2	e-STAGE 143cc + SPORTS CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	e-STAGE 143cc + Sports Cam + ϕ 34 Throttle + Injector (G-1) + Air filter + TAKEGAWA Muffler
3	S-STAGE 181cc + SPORTS CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	S-STAGE 181cc + Sports Cam + ϕ 34 Throttle + Injector (G-1) + Air filter + TAKEGAWA Muffler
4	4V+R 181cc + 10-10CAM + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + 10-10 Cam + Injector (G-1) + TAKEGAWA Muffler
5	4V+R 181cc + 10-10CAM + AIR FILTER + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + Injector (G-1) + 10-10 Cam + Air filter + TAKEGAWA Muffler
6	4V+R 181cc + 10-10CAM + BIG THROTTLE + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + 10-10 Cam + ϕ 34 Throttle + Injector (G-2) + TAKEGAWA Muffler
7	4V+R 181cc + 10-10CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + 10-10 Cam + ϕ 34 Throttle + Injector (G-2) + Air filter + TAKEGAWA Muffler
8	4V+R 181cc + 15-15CAM + BIG THROTTLE + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + 15-15 Cam + ϕ 34 Throttle + Injector (G-2) + TAKEGAWA Muffler
9	4V+R 181cc + 15-15CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + 15-15 Cam + ϕ 34 Throttle + Injector (G-2) + Air filter + TAKEGAWA Muffler
10	4V+R 5AXIS 181cc + 10-10CAM + TAKEGAWA MUFFLER	SuperHead 4V+R(5-axis machining) 181cc + 10-10 Cam + Injector (G1) + TAKEGAWA Muffler
11	4V+R 5AXIS 181cc + 10-10CAM + BIG THROTTLE + TAKEGAWA MUFFLER	SuperHead 4V+R(5-axis machining) 181cc + 10-10 Cam + ϕ 34 Throttle + Injector (G2) + TAKEGAWA Muffler
12	4V+R 5AXIS 181cc + 10-10CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	SuperHead 4V+R(5-axis machining) 181cc + 10-10 Cam + ϕ 34 Throttle + Injector (G2) + Air filter + TAKEGAWA Muffler
13	4V+R 5AXIS 181cc + 15-15CAM + BIG THROTTLE + TAKEGAWA MUFFLER	SuperHead 4V+R(5-axis machining) 181cc + 15-15 Cam + ϕ 34 Throttle + Injector (G2) + TAKEGAWA Muffler
14	4V+R 5AXIS 181cc + 15-15CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	SuperHead 4V+R(5-axis machining) 181cc + 15-15 Cam + ϕ 34 Throttle + Injector (G2) + Air filter + TAKEGAWA Muffler

※ 「Air filter」 in the above figure is (03-01-0013) air filter kit to be used with the normal air cleaner box removed. Its different from Power filter kit (03-01-0001).

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

■ EXPERT mode by engine specification MAP

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.

	MAP name	Engine specifications
1	NORMAL 125cc + SPORTS CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	Normal/HighComp 125cc + Sports Cam + $\phi 34$ Throttle + Injector (G1) + Air filter + TAKEGAWA Muffler
2	4V+R 181cc + 10-10CAM + BIG THROTTLE + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + 10-10 Cam + $\phi 34$ Throttle + Injector (G2) + TAKEGAWA Muffler
3	4V+R 181cc + 10-10CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + 10-10 Cam + $\phi 34$ Throttle + Injector (G2) + Air filter + TAKEGAWA Muffler
4	4V+R 181cc + 15-15CAM + BIG THROTTLE + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + 15-15 Cam + $\phi 34$ Throttle + Injector (G2) + TAKEGAWA Muffler
5	4V+R 181cc + 15-15CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	SuperHead 4V+R 181cc + 15-15 Cam + $\phi 34$ Throttle + Injector (G2) + Air filter + TAKEGAWA Muffler
6	4V+R 5AXIS 181cc + 10-10CAM + BIG THROTTLE + TAKEGAWA MUFFLER	SuperHead 4V+R (5-axis machining) 181cc + 10-10 Cam + $\phi 34$ Throttle + Injector (G2) + TAKEGAWA Muffler
7	4V+R 5AXIS 181cc + 10-10CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	SuperHead 4V+R (5-axis machining) 181cc + 10-10 Cam + $\phi 34$ Throttle + Injector (G2) + Air filter + TAKEGAWA Muffler
8	4V+R 5AXIS 181cc + 15-15CAM + BIG THROTTLE + TAKEGAWA MUFFLER	SuperHead 4V+R (5-axis machining) 181cc + 15-15 Cam + $\phi 34$ Throttle + Injector (G2) + TAKEGAWA Muffler
9	4V+R 5AXIS 181cc + 15-15CAM + BIG THROTTLE + AIR FILTER + TAKEGAWA MUFFLER	SuperHead 4V+R (5-axis machining) 181cc + 15-15 Cam + $\phi 34$ Throttle + Injector (G2) + Air filter + TAKEGAWA Muffler

※ 「Air filter」 in the above figure is (03-01-0013) air filter kit to be used with the normal air cleaner box removed. Its different from Power filter kit (03-01-0001).

⚠ Note Be sure select the ignition mode corresponding to the operation software(or application) when switching between the EASY mode and the EXPERT mode.
It will not activate if you use the software(or application) different from the ignition mode of FI Con TYPE-X main body.

※The above MAP list is as of January 11, 2020. If updated, it may be different from the MAP list of software and application.
※Software and apps may be updated to support new engine parts. Our webpage FICON is shown in the update history at the bottom of the list page.

■ Adjustment of idling speed

- Start the engine and let it warm up for 20 minutes.
- Check engine idling speed.
- If the idling speed is not specified, turn the idle air screw (indicated by the arrow on the left side of the throttle body) to adjust it to the specified idling speed.
- Takegawa big throttle body, approx. 1500rpm ~ 1700rpm



⚠ Note
When turning the idle air screw, remember how much it was turned from the original position so that it can be back to the original position and adjust little by little. Never turn more than 1/4 turn (90 degrees) at a time. After adjusting the screw each time, let it idle for more than 10 seconds and check the engine speed again after the engine speed has stabilized.

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

■ Ignition mode setting procedure

Explains how to switch from EASY mode to EXPERT mode. The procedure is the same for backwards.

■ Mode switching on PC

Launch the EXPERT mode software and click 「Ignition mode setting」 from 「FICON TYPE-X」 on the screen



Connect to FI CON TYPE-X and click 「Switch Mode」



Turn off the main switch as instructed on the screen completes the switch to EXPERT mode.



From EASY mode software to connect the EXPERT mode software, once turn off the main switch of the vehicle and disconnect it, then connect with the EXPERT mode software.

■ Mode switching on cellphone

Launch the EXPERT mode application and click 「Ignition mode setting」 from 「Other」 at the bottom of the screen.



Connect to FI CON TYPE-X and make sure that the current ignition mode is EASY mode.

Click 「Switch」.

Turn off the main switch as instructed on the screen completes the switch to EXPERT mode.



EASYモード
FICONは現在EASYモードで動作しています。点火モードをEXPERTモードに変更するには、右上の切替ボタンをタッチするとFICONへ切替予約されます。予約完了のメッセージが表示されましたらバイクのイグニッションキーを一旦オフにし、再度オンにすると、FICONはEXPERTモードで動作します。

After connecting with the EASY mode application, when connecting with the EXPERT mode app, turn off the main switch once and release the connection, then connect with the EXPERT mode application.

Uploading may take several minutes depending on your model. please note that the transfer will be interrupted if it goes to sleep mode during transfer depending on the settings of your terminal. This completes the mapping and you are ready to ride now.

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

■ How to set the each function

- ① Idling area ② Inactive injection time ③ Main injection MAP ④ Acceleration pump setting (Acceleration increase correction)
⑤ Engine temperature correction ⑥ Intake air temperature correction setting ⑦ Evaporation time setting (Injection timing setting)
⑧ Ignition timing MAP

How to make the setting for the above 8 functions. Please read and operate correctly when changing the settings as necessary.

⚠ Warning Various settings needs higher knowledge, for expert use only. If you have any problem or question about the contents, please do not work on your own, consult a dealer with skilled mechanics.
Basically, setting should be done in a factory equipped with a chassis dyno-meter and O₂ sensor.
Never perform setting with your smartphone while driving. It is very dangerous.

■ For PC software

Introducing the necessary functions for setting. Please note that some items may not exist due to the MAP being created. Some menus will not appear if Edit MAP is not selected. The menu that appears depends on the type of MAP you are editing.



← Description of the functions.

■ File

Create new map

Select the MAP to be created, and select the one with preset data from the engine specification.
Inactive injection time / acceleration pump / acceleration increase / engine temperature correction / intake air temperature correction is set as Default only.

Quit

Quit the software save MAP and settings as needed.

Map initialization Set all input values to 0.

MAP information Show MAP file name and comment.

Save Save the created MAP and settings.

Save the map with file name Save the map with file name.

■ Edit

Undo Undo what you just edited (up to 10 processes).

Redo If you return too much, proceed one step forward.

Copy Copy selected cells.

Paste Paste the copied cell.

Value setting

Change the cell value in the selected range to the value entered in the specified value input area at the top of the edit map.
Use when a specific number is frequently used.

Increase

When selecting a number that appears on the right side, the cell number in the selected range will be added by that number.

Decrease

When select a number that appears on the right side, the cell number in the selected range is subtracted by that number.

Magnification

Select a number that appears on the right side, the cell number in the selected range will be increased or decreased according to the multiple of that number.

Advance angle

Select a number that appears on the right side, the cell number in the selected range is advanced by that number.

Retarded angle

When you select a number that appears on the right side at the time of selection, the cell number in the selected range is retarded by that number

■ View

Meter

Uncheck to hide the 3D tachometer / TPS meter at the bottom right.

You can select the temperature to be displayed from Celsius / Fahrenheit in the sub-menu on the right side.

3D Graph

Check this to display a 3D graph of the selected map.

Dwell time

Check to display the dwell time edit graph of the selected map.

■ FI CON TYPE-X

Connection

Fully open the throttle and connect to the FI-CON TYPE-X with the main switch turned ON.

If the ignition mode is different, a warning message will be displayed. Switch the ignition mode as instructions.

Disconnect Disconnect from FI CON TYPE-X.

Write preset data

Select the all preset data and write it to FI-CON TYPE-X.

Read the map Disconnect from FI CON TYPE-X.

Check the map List all MAP information in FI CON TYPE-X.

TPS (Throttle Position sensor) settings

Set different TPS output values of each moto to match FI CON TYPE-X.

Map selection SW setting

Select whether to activate the switching between MAP1 / MAP2.

Limit settings

Enter the rev limit speed to prevent further rotation.
Also set the limiter cut function.

Ignition spark mode setting

Check the ignition spark mode inside FI CON TYPE-X.
If is not in EASY mode, you can switch to EASY mode.

Optional rotation output setting

Set the tachometer according to the input pulse.
No setting is required when using Takegawa's tachometer.

○○○○MAP ○○○Write

The name varies depending on the type of MAP selected.
Transfer (upload/write) the selected MAP to FI CON TYPE-X.

○○○○MAP ○○○Check

The name varies depending on the type of MAP selected.
Check if the selected MAP and FI-con TYPE-X are matched.

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

■ How to set the each function

- ① Idling area ② Inactive injection time ③ Main injection MAP ④ Acceleration pump setting (Acceleration increase correction)
⑤ Engine temperature correction ⑥ Intake air temperature correction setting ⑦ Evaporation time setting (Injection timing setting)
⑧ Ignition timing MAP

How to make the setting for the above 8 functions. Please read and operate correctly when changing the settings as necessary.

⚠ Warning Various settings needs higher knowledge, for expert use only. If you have any problem or question about the contents, please do not work on your own, consult a dealer with skilled mechanics.
Basically, setting should be done in a factory equipped with a chassis dyno-meter and O₂ sensor.
Never perform setting with your smartphone while driving. It is very dangerous.

■ For PC software

Introducing the necessary functions for setting. Please note that some items may not exist due to the MAP being created.
Some menus will not appear if Edit MAP is not selected. The menu that appears depends on the type of MAP you are editing.



← Description of the functions.

■ Window

Screen layout initialization

If you changed the size or position of the MAP or meter on the screen, restore it.

Cascade display

Displays the MAPs and meters cascade.

Display upper and lower

Displays the MAPs and meters upper and lower.

Display side by side

Displays the MAPs and meters side by side.

It's shows the currently displayed MAP name.

■ Help

Product and version information

Product and version information.

■ Editing on MAP

Data Complement Automatically proportionally fills the selected cells inside the four corners containing the selected cells.
Fill number in only the four corners.

0	0	100	0	0	0	250	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	10	0	0	0	50	0
0	0	0	0	0	0	0	0

Select Completion in the right-click menu.

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	10	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

The complemented number is filled in automatically.

0	100	140	180	210	250		
0	80	110	140	170	200		
0	60	80	100	130	150		
0	30	50	70	80	100		
0	10	20	30	40	50		

or if you want to complete only an arbitrary part, use the keyboard's Ctrl key and select only the cells you want to fill.

0	100	0	0	0	250	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	10	0	0	0	50	0
0	0	0	0	0	0	0

If you perform completion in the same way as the above operation, the complement value will be entered only in the selected cell.

0	100	0	0	0	250	0
0	0	0	140	0	0	0
0	0	80	0	130	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	10	0	0	0	50	0
0	0	0	0	0	0	0

Useful for creating injection and ignition mapping.

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

① Idling area

“FI con TYPE-X” uses the stock ECU start program for the idling area (where the engine speed is 2000rpm or less and the accelerator opening is 10% or less up to 4000rpm). There is no need to set the start up like a standard full computer management system. In this area, increase / decrease the stock injection amount as necessary.

■ EX

The idling area is not usually required to have excessive power A / F even for high-tuning engine. Even if you do not forcibly set it to a richer value, there is no problem in most cases with a slightly richer than ideal air-fuel ratio of 14.7. Also, if you are using a larger injector, it will be richer, so please set the decreased as necessary and set it so that it does not become richer than necessary. This area is set as the same as the standard sub-computer management system.

Setting with a PC

■ When setting based on the currently used map

Launch PC software and connect to FI CON TYPE-X.

Select 「FICON TYPE-X」 → 「Read the map」 → 「Import map selection」 → 「Idling area fuel correction map」 (in the upper menu) display the idling area map.

Modify the map if necessary. Upload to FI CON when you are done.

Select 「FICON TYPE-X」 → 「Write idling area fuel control」 in the upper menu to up load.

※ If you do not write to FI CON TYPE-X, the number will not be reflected.

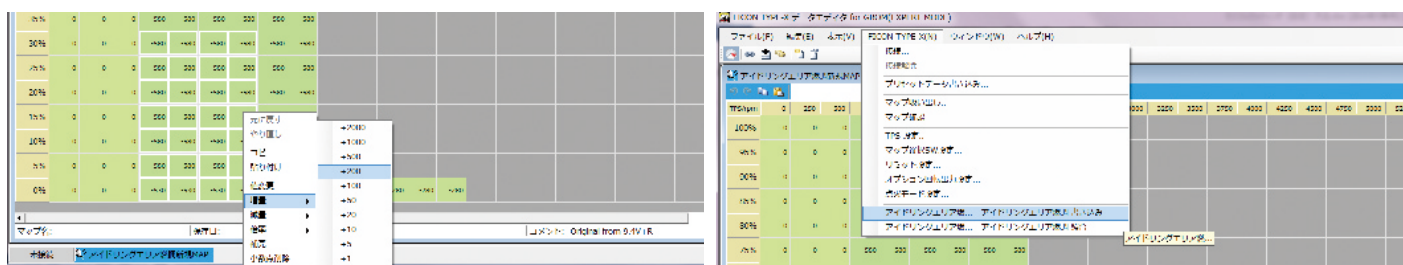
■ When mapping on the preset idle area adjustment map

Upper menu Select 「File」 → 「New」 → 「Write idling area fuel control」.

Select the base MAP and modify it if necessary.

When setting is completed, select 「FICON TYPE-X」 → 「Write idling area fuel control」 in the upper menu and write.

※ If you do not write to FI CON TYPE-X, the number will not be reflected.



How to set with a smartphone

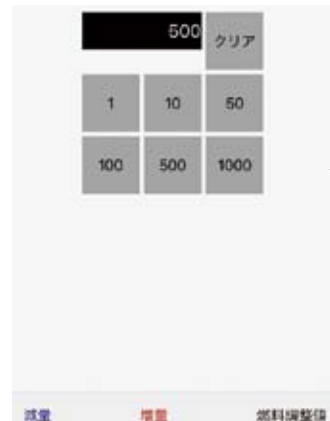
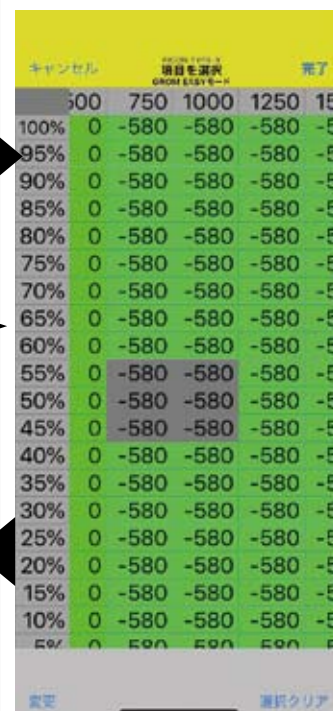
■ When start to setting based on the currently used map data

Select 「Idle area fuel correction map」 from 「Map selection」 at the bottom of the screen.

Click the menu button at the top right of the screen and click 「Read Idle Area Correction Map from FICON」.

Connect to FI Con TYPE-X and edit MAP as needed after uploading is completed.

Open the MAP, click 「Edit」 on the upper right and click the part on the MAP that needs to be edited. Click 「Clear selection」 or click an area that does not require editing to deselect. Click 「Change」 if OK.



Enter increase/decrease value.

Enter a number and tap one of 「decrease」, 「increase」 or 「Fuel adjustment value」 at the bottom of the screen.

The value entered on the 「decrease」 map value is subtracted.

The value entered on the 「increase」 map will be added.

The number entered in 「Fuel adjustment value」 is entered directly on the map.

① Idling area

“FI con TYPE-X” uses the stock ECU start program for the idling area (where the engine speed is 2000rpm or less and the accelerator opening is 10% or less up to 4000rpm). There is no need to set the start up like a standard full computer management system. In this area, increase / decrease the stock injection amount as necessary.

■ EX

The idling area is not usually required to have excessive power A / F even for high-tuning engine. Even if you do not forcibly set it to a richer value, there is no problem in most cases with a slightly richer than ideal air-fuel ratio of 14.7. Also, if you are using a larger injector, it will be richer, so please set the decreased as necessary and set it so that it does not become richer than necessary. This area is set as the same as the standard sub-computer management system.

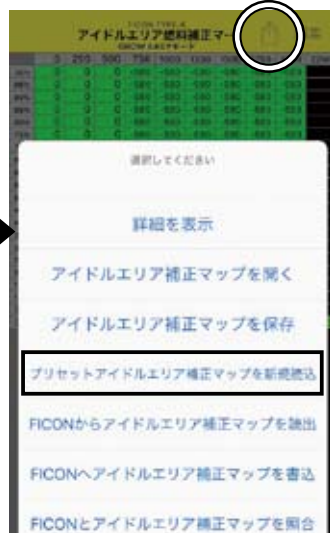
How to set with a smartphone

When mapping on the preset idle area adjustment map

Select 「Idle area fuel correction map」 from 「Map selection」 at the bottom of the screen.

Tap the menu button on the upper right of the screen and tap 「Read new preset idle area correction map」.

Select the base MAP and modify as needed.



Please refer to the editing method on the previous page.

② Invalid injection time correction

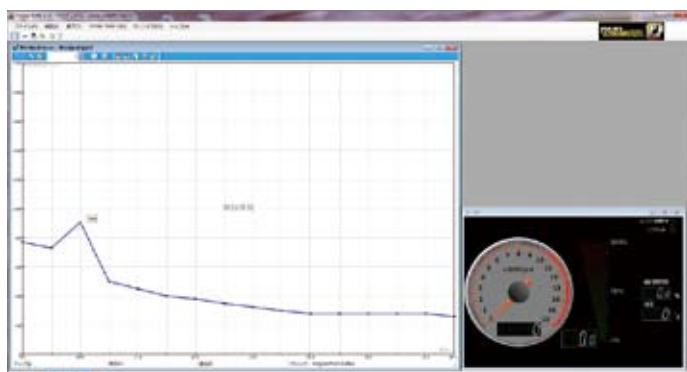
There is some delay before the injector is energized and injects fuel. This is called the “invalid injection time” and exists in every injector. Since the invalid injection time changes affect by the voltage, if the supplied voltage changes due to battery condition or the deterioration of the power generation, the delay will make from injection command to the actual injection changes, and the fuel The injection amount will also change.

In order to prevent such a situation, to stable the condition by applying correction. Input value is “ μs ”.

■ PC operation screen

Change the value by moving up and down while directly clicking the point you want to change.

When the corrections are completed, select 「FICON TYPE-X」 → 「Write invalid injection time correction」 in the upper menu. Select and write.

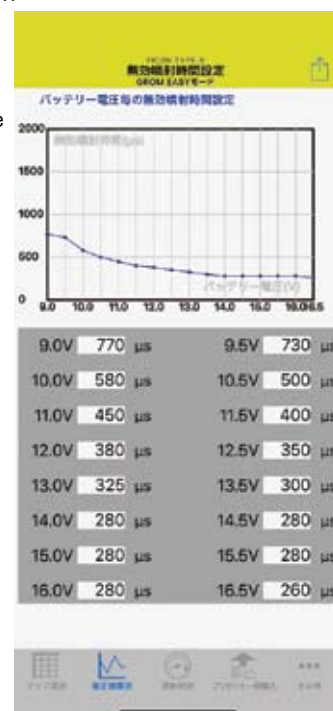


■ cellphone operation screen

From the menu screen(upper right), select 「Read new preset invalid injection time」 and select 「Default」.

If you want to change it, click the number to enter the value input screen.

※Since this MAP is available only Default, there is no MAP for each engine specification.



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

③ Main injection MAP

Injection map for the area excluding the idling area.

In this area, enter by the direct injection time (μ s). Maximum input value is 24000 μ s.

Do not exceed 95% [injection opening / closing ratio] (displayed on the meter of the operation software or operation application) at even high rpm. (Please refer ⑦ Evaporation time setting described below.)

Please stop various corrections when mapping.

The acceleration pump does not work, so the air-fuel ratio becomes thinner when the throttle is turned on rapidly.

Please operate the throttle slowly.

In this area, the fuel injection mapping is required even when the throttle is fully closed (0%) * Injection amount of stock ECU is entered amount directly (instead of increasing / decreasing) .

If the engine temperature becomes too high, the air-fuel ratio will change (due to changes in vaporization time and charging efficiency).

Be sure to keep the engine temperature as constant as possible (while stably cooling).

※ Engine temperature compensation will be described later in ⑤.

Setting with a PC

■ When setting based on the currently used map

Launch PC software and connect to FI CON TYPE-X.

Select 「FICON TYPE-X」 → 「Read the map」 → 「Import map selection」 → 「main injection map」 (in the upper menu) display the current main injection map.

Modify the map if necessary. Upload to FI CON when you are done.

Select 「FICON TYPE-X」 → 「Write idling area fuel control」 in the upper menu to up load.

※ If you do not write to FI CON TYPE-X, the number will not be reflected.

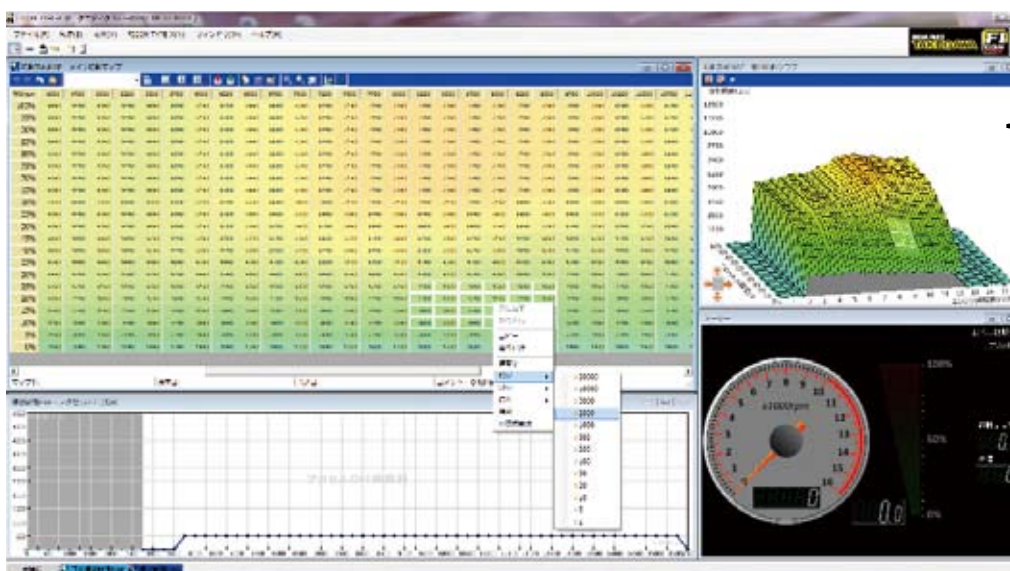
■ How to start setting based on the main injection MAP of preset data

Upper menu Select 「File」 → 「New」 → 「Main injection map」 .

Select the base MAP and modify it if necessary.

When setting is completed, select 「FICON TYPE-X」 → 「Main injection upload」 in the upper menu and write.

※ If you do not write to FI CON TYPE-X, the number will not be reflected.



3D fuel map

You can change the size by grabbing the window frame. Drag the graph to move it in three dimensions.

Engine tachometer

Throttle opening position meter
Injector open / close rate display
Engine temperature (oil temperature gauge)

Specify the range you want to change, right button → increase / decrease → select the value you want to change.

You can also input directly by double-clicking the map.

③Main injection MAP

Injection map for the area excluding the idling area.

In this area, enter by the direct injection time (μ s). Maximum input value is 24000 μ s.

Do not exceed 95% 「injection opening / closing ratio」 (displayed on the meter of the operation software or operation application) at even high rpm. (Please refer ⑦Evaporation time setting described below.)

Please stop various corrections when mapping.

The acceleration pump does not work, so the air-fuel ratio becomes thinner when the throttle is turned on rapidly.

Please operate the throttle slowly.

In this area, the fuel injection mapping is required even when the throttle is fully closed (0%) * Injection amount of stock ECU is entered amount directly (instead of increasing / decreasing) .

If the engine temperature becomes too high, the air-fuel ratio will change (due to changes in vaporization time and charging efficiency).

Be sure to keep the engine temperature as constant as possible (while stably cooling).

※Engine temperature compensation will be described later in ⑤.

How to set with a smartphone

■When setting based on the currently used map

Select 「Main injection map」 from 「Map selection」 at the bottom of the screen.

Click the menu button (at the top right of the screen) and click 「Suction main injection map from FICON」 .

Connect to FICON TYPE-X and select MAP1 / MAP2.

Edit the MAP as necessary after loading from FICON TYPE-X.



Enter increase/decrease value.

Enter a number and tap one of “decrease”, “increase” or “Fuel adjustment value” at the bottom of the screen.

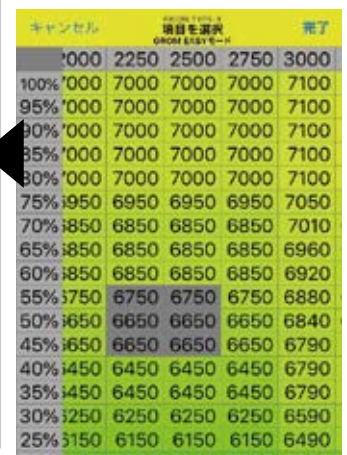
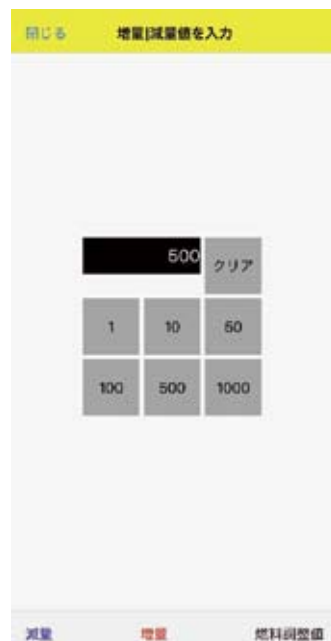
The value entered on the “decrease” map value is subtracted.

The value entered on the “increase” map will be added.

The number entered in “Fuel adjustment value” is entered directly on the map.

Click 「Clear selection」 or click an area that does not require editing to deselect. Click 「Change」 if OK.

Open the MAP, click 「Edit」 on the upper right and tap the part on the MAP that needs to be edited.



③Main injection MAP

Injection map for the area excluding the idling area.

In this area, enter by the direct injection time (μ s). Maximum input value is 24000 μ s.

Do not exceed 95% 「injection opening / closing ratio」 (displayed on the meter of the operation software or operation application) at even high rpm. (Please refer ⑦Evaporation time setting described below.)

Please stop various corrections when mapping.

The acceleration pump does not work, so the air-fuel ratio becomes thinner when the throttle is turned on rapidly.

Please operate the throttle slowly.

In this area, the fuel injection mapping is required even when the throttle is fully closed (0%) * Injection amount of stock ECU is entered amount directly (instead of increasing / decreasing) .

If the engine temperature becomes too high, the air-fuel ratio will change (due to changes in vaporization time and charging efficiency).

Be sure to keep the engine temperature as constant as possible (while stably cooling).

※Engine temperature compensation will be described later in ⑤.

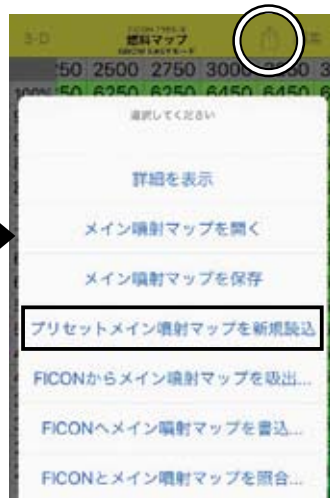
How to set with a smartphone

■How to start setting based on the main injection MAP of preset data

Select 「Main injection map」 from 「Map selection」 at the bottom of the screen.

Tap the menu button on the upper right of the screen and tap 「Read new preset main injection map」 .

Open the MAP, click 「Edit」 on the upper right and tap the part on the MAP that needs to be edited.



Please refer to the editing method on the previous page.

「Off throttle Main injection fuel adjustment map screen」 tap 「Menu」 → 「Off throttle fuel」 .

④Acceleration pump setting / Acceleration increase correction

■Acceleration pump setting

When the throttle is turned on suddenly, in order to avoid a temporary decrease in fuel adjustment, a single boost injection is performed asynchronously. Increase value is up to 2000 μ s with acceleration pump. The setting is determined by the throttle opening speed(time) and the change rate of opening. The time can be set in the range of 0.1 to 0.9 seconds in increments of 0.1 seconds. ※When set to 0.9 seconds, the acceleration pump will operate even if the throttle is operated very slowly. Set the injection amount.

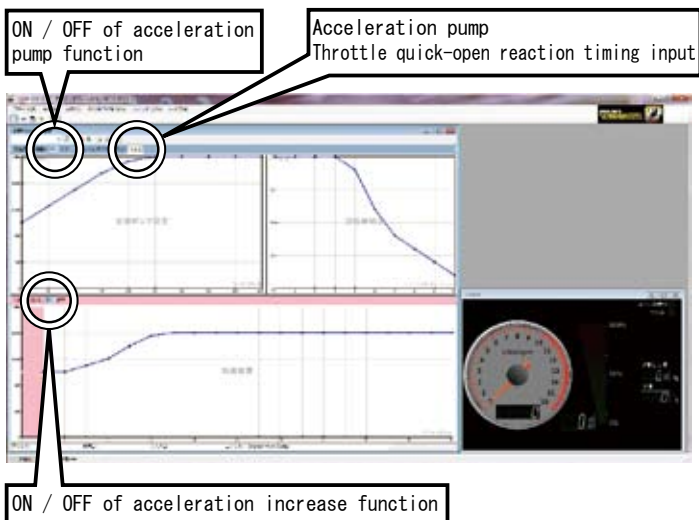
Sets the influence rate due to the speed of the acceleration pump. Usually, the higher the rotation speed, the lower the influence rate. If necessary, change the value by clicking directly on the part you want to change.

■Acceleration increase

"Acceleration increase" means that a extra amount of fuel is injected depending on how much the throttle opening changes during one engine revolution.

Normally, increase the amount of fuel from 1000 μ s to 1500 μ s per a rate of change of 0 to 20% and inject. Can be increased up to 2000 μ s.

■PC operation screen

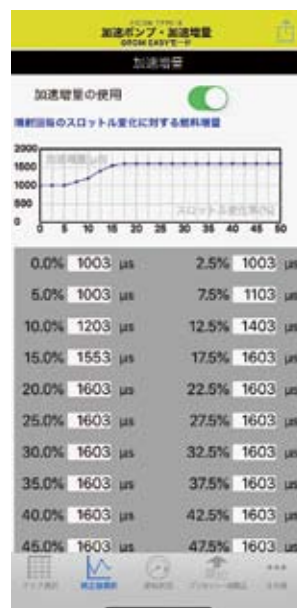
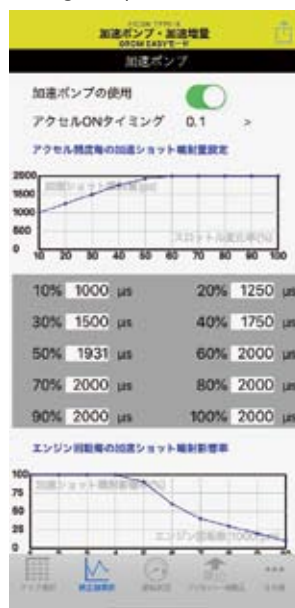


■Cellphone operation screen

Select 「Preset acceleration pump / acceleration increase newly read」 from the menu screen at the upper right of the screen and select 「Default」.

If you want to change it, tap the number to enter the value input screen. If 「Default」 is selected when setting the acceleration pump, 「Default」 data will be automatically selected for the acceleration increase.

If you want to change it, tap the number to enter the value input screen. ※Since this MAP is available only Default, there is no MAP for each engine specification.



⑤Engine temperature compensation

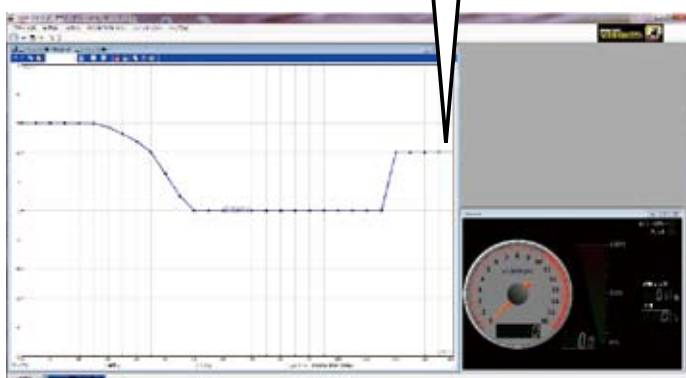
PGM-FI Injects more fuel than the value of the injection MAP when the engine temperature is lower than the appropriate temperature according to the input value from the oil temperature sensor, and warms up the engine faster. etc.

■PC operation screen

Change the value by moving up and down while directly clicking the point you want to change.

When the corrections are completed, select 「FICON TYPE-X」 → 「Write engine temperature compensation」 in the upper menu. Select and write.

Ex: In the case of this map, when the engine temperature reaches 120°C the fuel is set to increase by 20% to protect the engine.

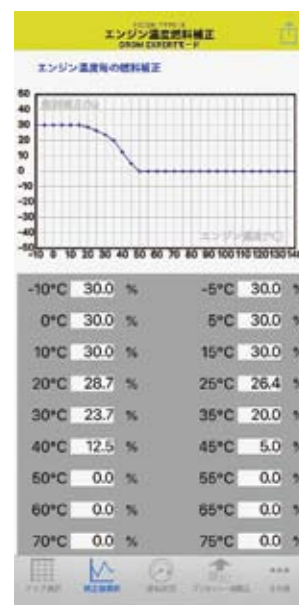


■Cellphone operation screen

From the menu screen(upper right), select 「Read new preset engine temperature compensation」 and select 「Default」.

If you want to change it, click the number to enter the value input screen.

※Since this MAP is available only Default, there is no MAP for each engine specification.



⑥ Intake air temperature compensation setting

Since air varies in density with temperature, it compensates for changes in air-fuel ratio due to intake temperature. In this MAP, the correction is 0 based on the temperature of 20 °C.

When the air temperature lower, the air density increases and the air-fuel ratio decreases.

When the air temperature higher, the air density decreases and the air-fuel ratio increases.

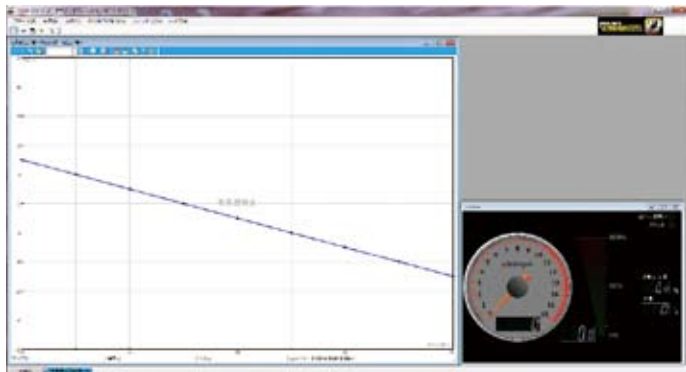
※ This setting is basically unnecessary to reset from the default data.

■ PC operation screen

Click and drag the graph to operate.

Normally it does not need to change, but you can change the value by moving up and down while directly clicking the place if you want.

When the corrections are completed, select 「FICON TYPE-X」 → 「Write intake air temperature compensation」 in the upper menu. Select and write.

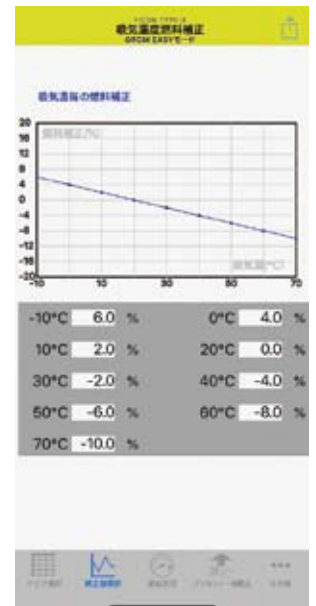


■ Cellphone operation screen

From the menu screen (upper right), select 「Read new preset Intake temperature fuel correction」 and select 「Default」.

If you want to change it, click the number to enter the value input screen.

※ Since this MAP is available only Default, there is no MAP for each engine specification.



⑦ Vaporization time setting (injection timing setting)

Set the vaporization time for the fuel injected from the injector to burn efficiently.

FICON TYPE-X automatically sets the injection start timing by calculating the target vaporization time only by inputting the target vaporization time for each rotation.

※ Camshaft angle is required for calculation.

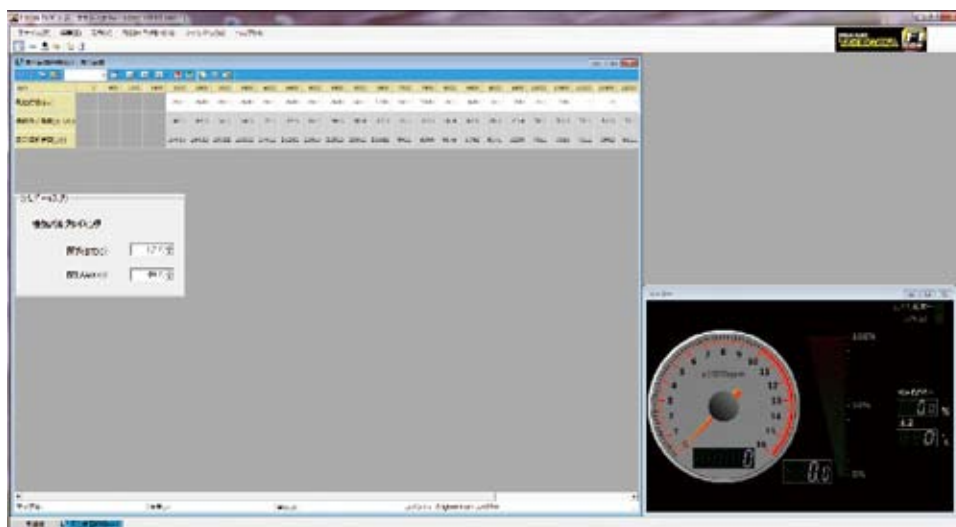
■ EX:

As the engine speed increases, the 「time」 for one revolution of the crank decreases (faster), so the time required for one cycle of a 4-cycle engine decreases as the engine speed increases.

「Injection time」 and 「evaporation time」 are links within this one process time, but from the above, it is not possible to set all setting (large numerical value).

When the high rotation speed and injection is sometime impossible.

FICON TYPE-X inputs the target vaporization time, and the camshaft angle, it calculates automatically the valve opening / closing timing from the cam data and calculates the maximum injection time for each rotation = injection amount. Displayed below the input field for each rotation.



① Set and enter the target vaporization time you want.

② Automatic calculation shows the crank angle (BTDC) at which injection ends.

③ Automatically calculates and displays the maximum injection time for the entered vaporization time.

Compare the set value of the main injection map with this.

If the value of the main injection map is larger than this, the target vaporization time is not enough and some injection will be performed when the valve is still open.

④ Enter camshaft data to calculate to find valve timing (open/close).

Ex: GROM Open (BTDC) 2.0 degrees Close (ABDC) 25.0 degrees From service manual

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

⑧ Ignition timing MAP

FI CON TYPE-X has two mode EASY and EXPERT.

■EASY mode

Can be used the ignition map of the stock ECU too. Performed setting, advance / retard by stock ignition timing. In stock ignition MAP, a limiter that is retard for over 9000 rpm, but FI CON TYPE-X is fixed for over 9000 rpm. You can chose and select from 14 preset data.

Setting with a PC

■When setting based on the currently used map

Launch PC software and connect to FI CON TYPE-X.

Select 「FICON TYPE-X」 → 「Read the map」 → 「Import map selection」 → 「Easy mode ignition adjustment map」 (in the upper menu) display the ignition map.

Modify the map if necessary. Upload to FI CON when you are done.

Select 「FICON TYPE-X」 → 「EASY ignition adjustment EASY ignition adjustment upload」 in the upper menu to up load.

※If you do not write to FI CON TYPE-X, the number will not be reflected.

■When mapping on the preset idle area adjustment map

Upper menu Select 「File」 → 「New」 → 「Import map selection」 → 「Easy mode ignition adjustment map」.

Select the base MAP and modify it if necessary.

When setting is completed, select 「FICON TYPE-X」 → in the upper menu and write.

※If you do not write to FI CON TYPE-X, the number will not be reflected.

■Easy mode ignition adjustment map

Specify the range you want to change, right button → select advance / retard to stock ignition timing → select the value you want to change.

You can also input value directly by double-clicking the map.

When setting is completed, select 「FICON TYPE-X」 → 「EASY ignition adjustment upload」 in the upper menu and write.



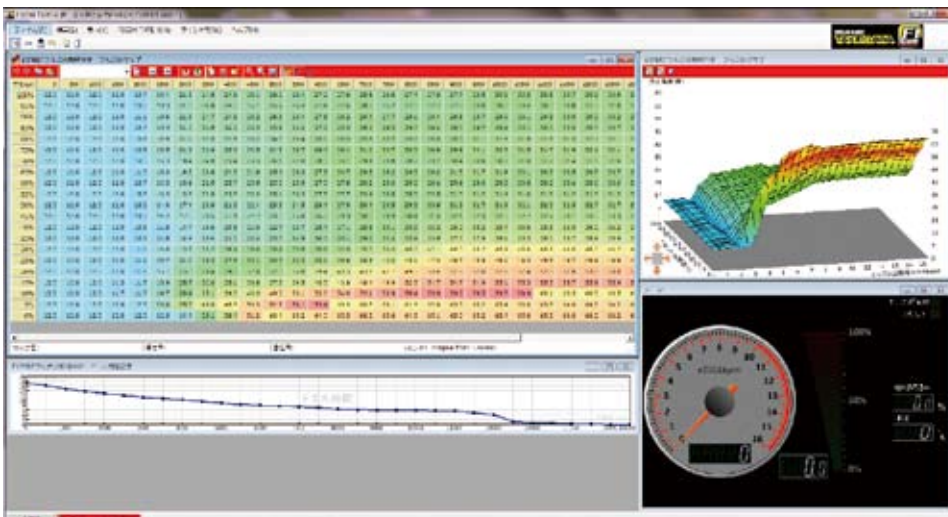
■Expert mode full ignition map

Enter the ignition crank angle of BTDC.

Specify the range you want to set, right button → select advance / retard → select number.

You can also input value directly by double-clicking the map.

When setting is completed, select 「FICON TYPE-X」 → 「EXPERT full ignition upload」 in the upper menu and write.



⑧ Ignition timing MAP FI CON TYPE-X has two mode EASY and EXPERT.

■ EASY mode

Can be used the ignition map of the stock ECU too. Performed setting, advance / retard by stock ignition timing.
In stock ignition MAP, a limiter that is retard for over 9000 rpm, but FI CON TYPE-X is fixed for over 9000 rpm.
You can chose and select from 14 preset data.

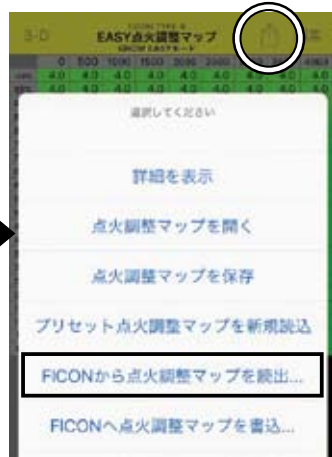
How to set with a smartphone

■ When setting based on the currently used map

Select 「EASY mode ignition adjustment map」 from 「Map selection」 at the bottom of the screen.



Click the menu button at the top right of the screen and click 「Read ignition adjustment map from FICON」.



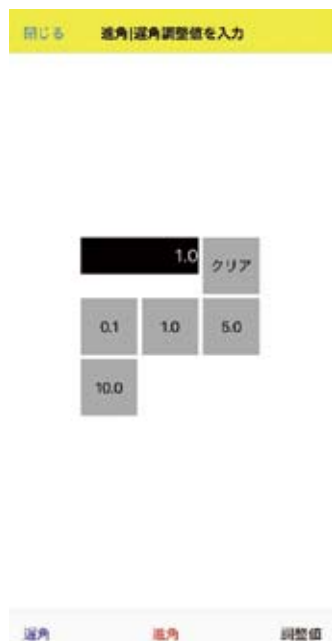
Connect to FICON TYPE-X and select MAP1 / MAP2.



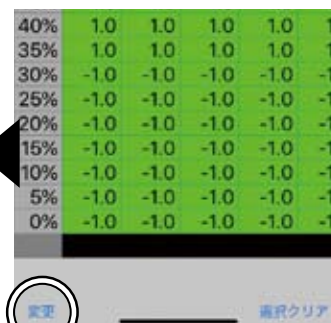
Edit the MAP as necessary after loading from FICON TYPE-X.



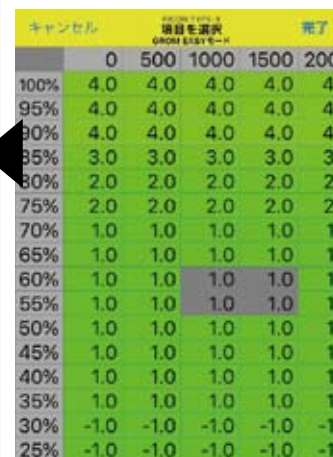
Enter the advance /retard value.
Fill in the numbers and click one of the following: 「Advance」, 「Retard」, 「Adjustment」.
The value entered on the 「decrease」 map value is subtracted.
The value entered on the 「increase」 map will be added.
The number entered in 「Fuel adjustment value」 is entered directly on the map.



Click 「Clear selection」 or click an area that does not require editing to deselect.
Click 「Change」 if OK.



Open the MAP, click 「Edit」 on the upper right and tap the part on the MAP that needs to be edited.



⑧ Ignition timing MAP

FI CON TYPE-X has two mode EASY and EXPERT.

■ EASY mode

Can be used the ignition map of the stock ECU too. Performed setting, advance / retard by stock ignition timing. In stock ignition MAP, a limiter that is retard for over 9000 rpm, but FI CON TYPE-X is fixed for over 9000 rpm. You can chose and select from 14 preset data.

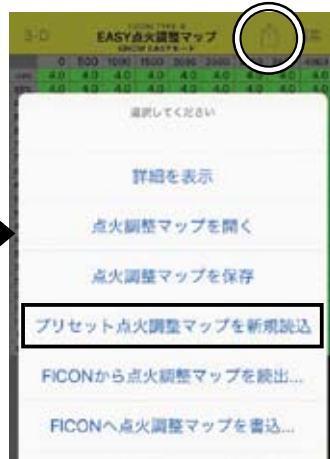
How to set with a smartphone

■ How to start setting based on the main injection MAP of preset data

Select 「EASY mode ignition adjustment map」 from “Map selection” at the bottom of the screen.



Tap the menu button on the upper right of the screen and tap 「Read new preset ignition adjustment map」.



Open the MAP, click 「Edit」 on the upper right and click the part on the MAP that needs to be edited.



Please refer to the editing method on the previous page.

■ EXPERT mode

The ignition timing is based on the entered value (crank angle BTDC) without performing advance / retardation for the stock ignition MAP.

You can select from 9 preset data.

Setting and editing methods is same as ■ EASY mode, Please refer to the above.

※Refer the MAP selection table by ■ engine specifications on P10/P11. For EASY mode and EXPERT mode.

※Be sure to select to switch the ignition mode of the FI-CON TYPE-X body when using the software or application of EASY mode and EXPERT mode properly.

If you use other software or application from the ignition mode of the main unit, it will not work properly.

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

About Dwell Time

In the case of transistor ignition, energize the coil before ignition. This energization time is called dwell time. If the dwell time is longer, the spark will be strong, but the coil generates heat and it may cause a failure, so we do not recommend changing from the default data.

■ EASY mode

It possible adjustable within $\pm 50\%$ of normal dwell time.

■ EXPERT mode

Enter dwell time directly for each revolution. Maximum: 20 ms.

■ Easy mode dwell time adjustment

If you want to change , change the value by moving up and down while directly clicking the place you want to change.

When setting is completed, select 「FICON TYPE-X」 → 「EASY ignition adjustment upload」 in the upper menu and write.



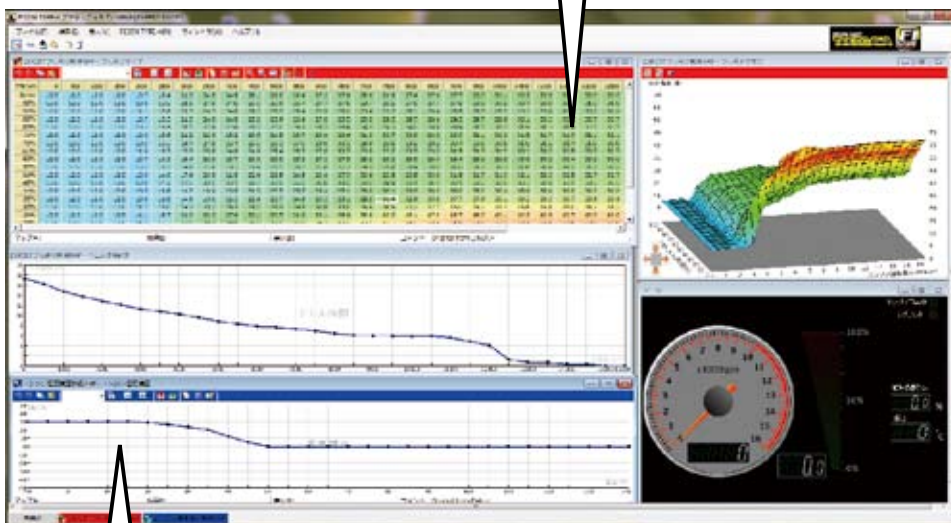
Drag and change the dwell time graph directly.

■ EXPERT mode dwell time adjustment

If you want to change , change the value by moving up and down while directly clicking the place you want to change

When setting is completed, select 「FICON TYPE-X」 → 「PRO full ignition upload」 in the upper menu and write.

Drag the window frame to increase its size.
Drag and change the dwell time graph directly.



Engine temperature ignition timing correction graph

Engine temperature ignition timing correction (EXPERT mode only)

In the EXPERT mode, when the engine temperature becomes too high, use 「engine temperature ignition timing correction function」 that corrects the vaporization time and combustion time which affects the ignition timing. When the temperature exceeds the assumed temperature, it is possible to apply plus / minus correction to the set ignition timing.

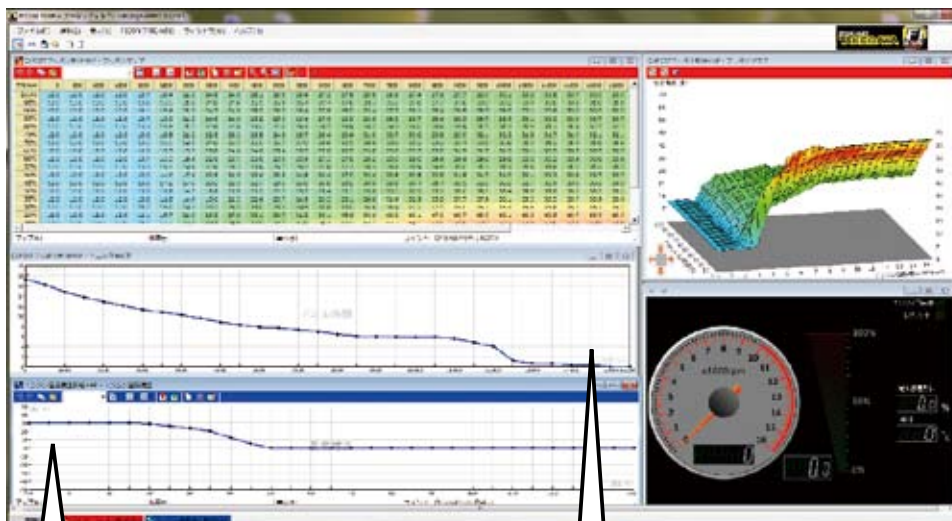
To change the value, move it up and down while directly clicking the point you want to change on the correction map.

■ PC operation screen

■ Expert mode engine temperature correction

If you want to change , change the value by moving up and down while directly clicking the place you want to change.

When setting is completed, select 「FICON TYPE-X」 → 「PRO full ignition upload」 in the upper menu to up load.



Drag and change engine temperature ignition timing correction graph.

Drag the window frame to increase its size.

cellphone operation screen

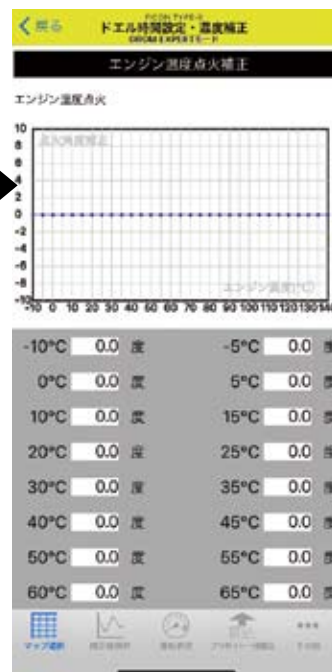
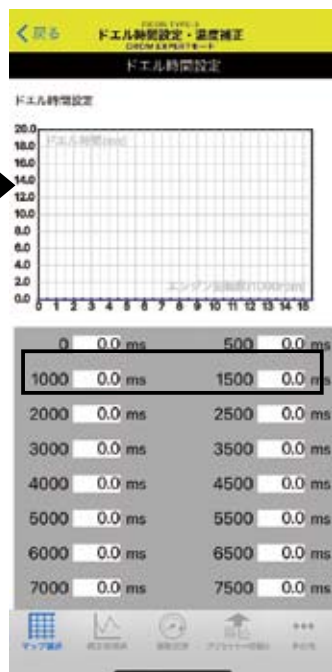
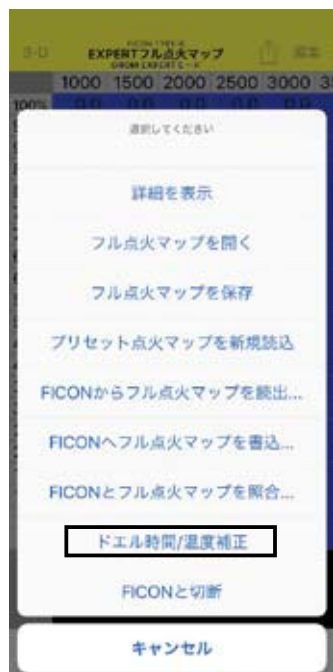
Click the menu button at the top right of the ignition map adjustment screen and click 「Dwell time / temperature correction」.

Editing is possible in currently using MAP or preset MAP and ignition MAP.

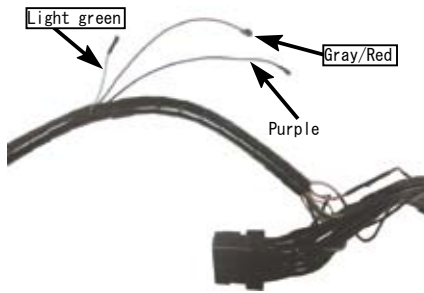
The upper part of the screen is the dwell time, and the lower part is the adjustment screen for temperature correction.

To edit, click inside the white frame and enter the value.

Each MAP can be saved . After saving, recall as 「Open XXX (type of MAP)」 on the menu screen to open the MAP.



Other functions



■Body harness

You can use more convenient functions by using the light green, purple and gray/red wire inside the spiral tube.

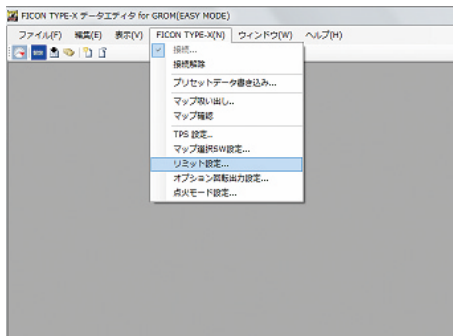
Pit lane limiter function (light green)

This function is mainly used for speed limit in the pit lane of the raceway.

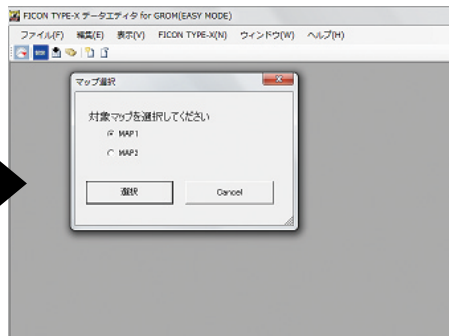
The pit lane limiter can be used the light green wiring (by removing the shrink tube) and connecting it to a switch (separately prepared) and connecting it from the switch to the body ground.※Please prepare the wiring for extending the switch separately.

Setting with a PC

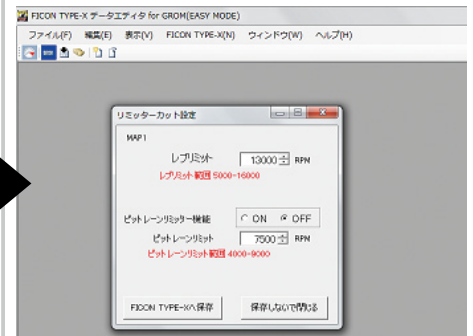
Select 「Rev limit setting」 from the upper 「FI CON TYPE-X」



Select the target MAP.



Select the pit lane limiter function ON / OFF and enter the pit lane limit speed.
※The rev limit can also be adjusted.
The pit lane limiter and rev limit, each are separate functions.



How to set with a smartphone

■When setting based on the currently used map

Click 「Menu」 at the bottom right of the screen and click 「Limiter etc」.

Select MAP1 / MAP2.



Select the pit lane limiter function ON / OFF and enter the pit lane limit speed.

※You can also adjust the rev limit.

The pit lane limiter and rev limit, each are separate functions.

■Reference

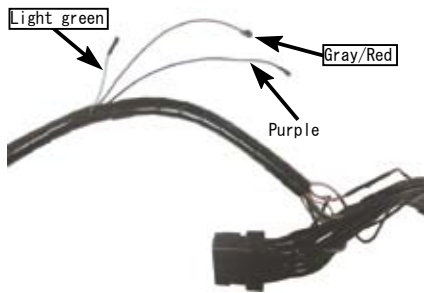
In the case of GROM with stock transmission, it will be 40km / h @ 7500rpm (approx).

Please check before actual use.



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

Other functions



■ Body harness

You can use more convenient functions by using the light green, purple and gray/red wire inside the spiral tube.

Tachometer output service wire (Purple)

A purple wire and connect it to the tachometer. (by removing the shrink tube) Table below for compatible products that have been confirmed as of May 2021.

05-05-3210 Medium DN Tachometer T2 (White LED)
05-05-0078 φ48 Small DN Tacho & Thermometer
05-05-0035 φ48 Small DN Tachometer

05-05-0053 Medium LCD Speed & Tachometer (MLCD ST1)
05-05-0004 Blue LED electrical Tachometer
05-05-0014 Black & Green electrical Tachometer
05-05-0062 Super Multi TFT Meter

※ Information and specifications as of May 2021. Subject to change without notice.

※ Please check the tachometer instruction manual when installing. Need separate bracket harness.

On-time MAP change function (Gray/Red)

2 sets of MAP can be written inside FI CON TYPE-X (MAP1 / MAP2).

MAP contents: MAP1 / MAP2 are main fuel MAP / ignition MAP / acceleration pump / acceleration increase / engine temperature injection correction / vaporization time setting / rev limit setting.

Optional switch (with body grounds): default MAP1 could change to followings: main fuel MAP / ignition MAP / acceleration pump / acceleration increase / engine temperature Injection correction / vaporization time setting / rev limit setting switches to MAP2. It is assumed that it will be operated by switching between racing mode, touring mode, fuel economy driving mode etc.

When MAP2 is selected at the time of writing each MAP, writing to MAP2 is performed.

⚠ Note Need to be wiring and connection correctly. Incorrect wire connection possibly damage the FI-con TYPE-X unit.

It is possible to change the two type of MAPs while riding with this switch.

Transfer and upload two sets of MAPs (power mode, fuel consumption mode, etc.) made in advance to FI CON TYPE-X.

※ Hand switch is optional.

MAP switches instantly make change the engine characteristics.

You can switch between two sets of maps while riding, compare them, and use them in various situation such as racing or touring, depending on your ideas.

You need to install the optional switch.

Connect the 「gray / red wire」 from FI CON TYPE-X to the switch and body ground one of them.

Setting with a PC

Select 「FICON TYPE-X」 menu at the top of the screen →

「Map selection SW setting」.

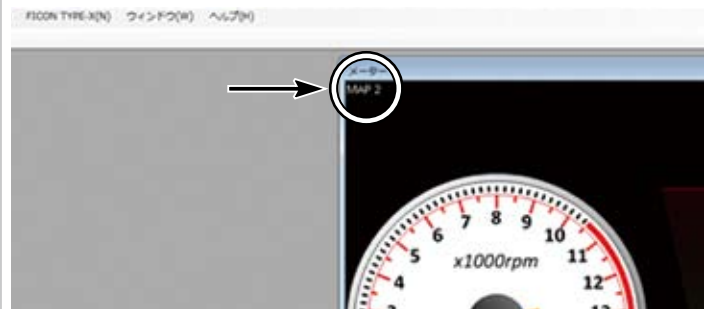
When the screen on the left appears, select 「Use map selection switch」 and click Save to FICON TYPE-X.



After setting, be sure to click Save to FICON TYPE-X

Install the external switch correctly and make settings with software / app.

When you switch the external switch while communicating with a PC or cellphone, you can confirm (in the round part of the screen) that 「MAP1」 is switched to 「MAP2」.



How to set with a smartphone

Click 「Other」 (at the bottom of the screen) → 「FICON settings」 and select 「Use map switching by external switch」.

