FI CON TYPE-X Instruction manual
Product number05-04-0118Monkey125(JB02-1000001 ~ )Adaptation modelMonkey125Thailand model(MLHJB02)
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.
<ul> <li>feature</li> <li>Injection controller that can be installed on a genuine ECU with a simply connector on.</li> <li>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.</li> <li>Based on the preset MAP, that can be set according to your preference and creating a new MAP to enjoyed even expert customers.</li> <li>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.</li> <li>You can choose from two types of mode for PC software and cellphone application, from EASY mode or EXPERT mode respectively.</li> <li>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 10 preset data.</li> <li>EXPERT mode</li> <li>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 Fengine 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.</li> <li>Preset data is available from 5 patterns.</li> <li>In addition, it is equipped 1) rev limiticonvenient 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)0n-time MAP change function :Switch between power mode and fuel consumption mode that can be used from beginners to expert rider.</li> </ul>
<ul> <li>Please read carefully before use</li> <li>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 componention.</li> <li>Even if parts other than this product are defective or damaged after installing and using this product, we will not be responsible for the writery of parts other than this product. The defective or damaged after installing and using this product, we will not be responsible for the writery of parts other than this product.</li> <li>If it was the case or mounting that has been processed like a product, it will not be covered under warranty.</li> <li>If it was the case or mounting that has been processed like a product, it will not be overed under warranty.</li> <li>If it was the case or mounting that has been processed like a product.</li> <li>If it was the case or mounting that has been processed like a product.</li> <li>If it was the case or mounting that has been processed like a product.</li> <li>If it was the case or mounting that has been processed like a product.</li> <li>If no experiment of a work allows when working, worn if a photo in this article show without work glows.</li> <li>Please work glows when working, worn if a photo in this article show without work glows.</li> <li>If no experime of mounting, etc. , who are preparation of such a tool is insufficient, we recommend that it is your request to the shop with a tachnical break with any that accordance with the mounting procedure.</li> <li>If no experiment and the different engine specification MDP. Please note when purchasing the application.</li> <li>If the computer or sarathone require the following conditions.</li> <li>O stanged of Thai model.</li> <li>If a sociable to communicate with the vour riding.</li> <li>O has a rule, estings should be made in a factory equiped with a chassis dynamometer 0: sensor.</li> <li>Nevra esting with your amarthone white your riding.</li> <li>O hindows (oxcludes RT/MOBILE) You must b</li></ul>
SPECIAL PARTS 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)

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## Precautions on usepurchased 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.

In 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.
- $\odot$  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.

## \Lambda 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. When working, please wear work gloves to protect your hands. (It may cause injury.)
- Be sure to each part inspection before operation, check the loosening of the threaded portion, be sure to securely tighten the specified torque if there is loose. (It may cause detachment of the parts.)

# Marning 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 FI CON TYPE-X 2 00-00-0299 Cushion 2 1 00-00-0135 (10 pcs) Cable tie, 150mm 3 3 \* Please order in the repair parts are always repair part number. If it is not the part number order, you may not be able to order Please be forewarned It should be noted. In the case of parts that can not be separately shipment, please order a set part number. ※Repair parts may differ slightly from the kit contents in terms of shape, etc. There is no problem to use it. Please be forewarned.

(1)



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





O Remove the seat and remove the battery terminal.



O Remove the battery bracket and battery, and remove the engine control unit.



 $\circledcirc$  You can see this instruction manual on our website as PDF data . If this document hard to read, please download it from our website.

O Place and connect the FI CON TYPE-X between engine control unit and the main harness.



O Assemble the removed parts in reverse order and install FI CON TYPE-X with reference to the image. For standard specifications



#### For ABS specifications





# ■ List of FI CON TYPE-X function • Preset MAP You can choose from 10 patterns in the EASY mode and 5 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. X 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) $\otimes$ 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. X 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 facceleration pump) of the racing carburetor. \Lambda Warning As a rule, settings should be made in a factory equipped with a chassis dynamometer O $_2$ sensor. Never setting with your smartphone while you riding.

Functionality of FI Contype X

## ■ 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.) XApplication 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 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 10 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 5 preset data.

\*Refer the MAP selection table by engine specifications on P11/P12. 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 cehck 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.

For vehicles equipped Honda genuine immobilizer alarm, hold the accelerator fully open and turn the key  $ON \rightarrow OFF \rightarrow ON$  within 3 seconds and check that the PGM-FI warning light is flashing.

\*\*Since FI CON TYPE-X exchanges data wireless, it comes with a safety device that can communicate by emitting radio waves only when fturn 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.









2025. 5. 29

SPECIAL PARTS

Mounting procedure ※Please refer to the Genuine Service Manual for detailed mounting methods and specified torques that are not specifically described. How to correct the throttle position sensor (TPS) error and synchronize with FI controller.  $\therefore$  The following FI CON represents "FI CON TYPE-e" and "FI CON TYPE-X".  $\Rightarrow$  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. 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") NOTE Start the PC with the FI CON installed, start up the software, and Open the app from a smartphone with the FI CON installed and connect the PC and FI CON connect the PC and FI CON. Next, press FI CON at the top of the software and select 「TPS Select [Setting TPS] (bottom right of the app.) setting at the bottom of the displayed. The adjustment screen is When the smartphone and FI CON are connected, the "TPS settings" screen will be displayed. (see bottom left photo) If the smartphone displayed when the PC and FI computer are connected (picture below). If the computer and FI computer are not connected, the connection and FI CON are not connected, the connection screen is displayed. screen is displayed. ファイル(E) 編集(E) 表示(V) FICON(N) ウィンドウ(W) ヘルプ(H) 1 H. -. H. 🗷 🖓 🖬 🕯 🕯 N 61 13 16 17 18 新規MAP-認料調整マップ Setting TPS screen 0 500 1000 15 2000 2500 3000 3500 4000 4500 5000 5500 TPS/rpm Press FI CON to select TPS settings 噴射信号 📕 点火信号 📕 0.38 V -5 % PS/rpm 500 1000 1500 2000 Adjustment screen 500 5000 5500 100% Select settings TPS TPSID: 95% 90% スロボジ調整 モデル原用 85% 理制信号 直火信号 80% -32 スロットル位置 ピットレーンスイッチ Try to fully close to fully open the throttle while waching the 75% throttle position graph on the screen. The highlighted black moves from 70% side to side in conjunction with opening and closing of the slot. 65% ox 位置 100% 位置 Adjust each value with the level adjustment switch as match at the 0.4 v 60% 4 1 **(**) 55% 0% and 100% positions. Please press "Save" when you done. 50% It will not be reflected unless saved. 45% FICON/J.GP 保存しないで終了 Throttle position graph 噴射信号 🔤 点火信号 While looking at the throttle position graph on the screen, try to 4.30 V 98 % 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. 100% 0% -Throttle position graph Set the 0% position when fully closed Set the 100% when fully opened 噴動信号 成火信号 982 . ピットレーンスイッチ ロットル位置 \_ 1009 Set the 0% position when fully closed Set the 100% when fully open 100% 0% 101117 ALE: 2495 Fine adjustment is スロットル位置 00 100.0 > possible when input the any numbers. Numerical input at each throttle position. Fully closed level adjustment switch Fully open level adjustment switch xx 位置 0.4 100% 位置 43 v < 1 4 1 閉じる TPS設定 保右 Fully closed level adjustment switch Fully open level adjustment switch FICONA保存 保存しないで終了 Please press the "Save" button (on the upper right.) when you NOTE NOTE After adjustment, be sure to click the "Save to FICON" button. It will not be reflected unless saved. It will not be reflected unless saved. If FI CON is not wired correctly, app will warn you Important Note Important Note If the FI CON is not wired correctly, the following screen will appear and software will warn. the screen below displayed. Each signal light is black. 噴射信号 📕 点火信号 📕 理教信号 美人信号 Lit green when normal Each signal light is 982 . lack 4.30 V 0 % スロットル位置 ピットレーンスイッチ High lighted green when normal Black line is not displayed 100% Gray highlight is not displayed





Mounting procedure	I for detailed mounting methods and specified torques that are not
■How to set the each function ①Idling area ②Inactive injection time ③Main injection MAP ④Acc ⑤Engine temperature correction ⑥Intake air temperature correctio ⑧Ignition timing MAP How to make the setting for the above 8 functions. Please read and	eleration pump setting (Acceleration increase correction) n setting ⑦Evaporation time setting (Injection timing setting) operate correctly when changing the settings as necessary.
▲ Warning Various settings needs higher knowledge, for expert us please do not work on your own, consult a dealer with Basically, setting should be done in a factory equippo Never perform setting with your smartphone while driv	se only. If you have any problem or question about the contents, skilled mechanics. ed with a chassis dyno-meter and O2 sensor. ing. It is very dangerous.
■For PC software Introducing the necessary functions for setting. Please note that s Some menus will not appear if Edit MAP is not selected. The menu th FICON TYPE-X アークエアイク for GROM(EASY MODE) ファイル(F) 編集(E) 数示(V) FICON TYPE-X(N) ウィンドウ(W) ヘルプ(H) マークエアイン(執動マップ マートーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーー	ome items may not exist due to the MAP being created. at appears depends on the type of MAP you are editing. Description of the functions.
100%       95%	<ul> <li>■ View</li> <li>Meter</li> <li>Uncheck to hide the 3D tachometer / TPS meter at the bottom right.</li> <li>You can select the temperature to be displayed from Celsius / Fahrenheit in the sub-menu on the right side.</li> <li>3D Graph</li> <li>Check this to display a 3D graph of the selected map.</li> <li>Dwell time</li> <li>Check to display the dwell time edit graph of the selected map.</li> </ul>
QuitQuit the software save MAP and settings as needed.Map initializationSet all input values to 0.MAP informationSaveSaveSave the created MAP and settings.Save the map with file nameSave the map with file name	■ 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.
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.	Write preset dataSelect the all preset dataSelect the all preset dataand write it to FI-CON TYPE-X.Read the mapDisconnect from FI CON TYPE-X.Check the mapList all MAP information in FI CON TYPE-X.TPS (Throttle Position sensor) settingsSet different TPS output values of each moto to match FI CON TYPE-X.Map selection SW settingSelect whether to activate the switching between MAP1 / MAP2.Limit settingsEnter the rev limit speed to prevent further rotation.
DecreaseWhen select a number that appears on the right side, the cell number in the selected range is subtracted by that number.MagnificationSelect 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 angleSelect a number that appears on the right side, the cell number in the selected range is advanced by that number.Advance angleSelect a number that appears on the right side, the cell number in the selected range is advanced by that number.Retarded angleWhen 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	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. OOOMAP OOOWrite The name varies depending on the type of MAP selected. Transfer (upload/write) the selected MAP to FI CON TYPE-X. OOOMAP OOOCheck The name varies depending on the type of MAP selected. Check if the selected MAP and FI-con TYPE-X are matched.







# ②Invalid 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.

■cellphone operation screen

In order to prevent such a situation, to stable the condition by applying correction. Input value is " $\mu$ s".

# ■PC operation screen

Change the value by moving up and down while directly clicking the From the menu screen(upper right), point you want to change. select 「Read new preset invalid When the corrections are completed, select [FICON TYPE-X]  $\rightarrow$ injection time, and select **制力能利用型投资** [Write invalid injection time correction] in the upper menu. 「Default」 パッテリー電圧毎の無効機能時間設定 If you want to change it, click the 🊃 Select and write. number to enter the value input screen N. 19 XSince this MAP is available only Default, there is no MAP for 1000 each engine specification. 600 10 110 100 140 160 10.0 9.0V 770 µs 9.5V 730 us 10.0V 580 µs 10.5V 500 us 11.0V 450 us 11.5V 400 us 12.0V 380 µs 12.5V 350 LIS 13.0V 325 us 13.5V 300 us 14.0V 280 us 14.5V 280 us 15.0V 280 µs 15.5V 280 µs 16.0V 280 µs 16.5V 260 µs

#### 2025. 5. 29

# SPECIAL PARTS









SPECIAL PARTS



⑦Vaporization time setting (injection timing setting)

Set the vaporization time for the fuel injected from the injector to burn efficiently. FI Con 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. ■FX:

As the engine speed increases, the <code>ftime\_f</code> 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.

FI CON 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.

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①Set and enter the target vaporization time you want.

O 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.

④Enter 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

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.







# ■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 5 preset data.

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

※Refer the MAP selection table by ■engine specifications on P11/P12. 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.







