

2021
FI MATCHING SYSTEM
Ver.2.13
MANUAL

GYTR[®]
GENUINE YAMAHA TECHNOLOGY RACING
PERFORMANCE PRODUCTS

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1 Introduction

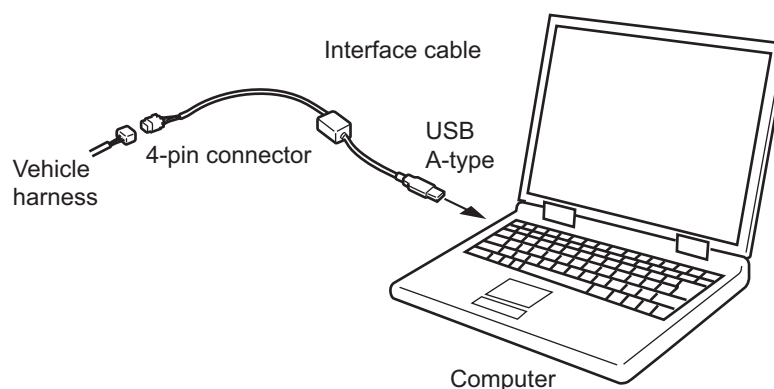
1-1 Objective

This is an instruction manual on the YEC FI Matching system (YMS)

1-2 Recommended operation environment for the personal computer

- OS : Windows 7 US edition (Japanese edition) 32bit or 64bit
 - CPU : Pentium 1 GHz equivalent or higher
 - Memory : 1GB (32bit) 2GB (64bit) or above
 - Recommended monitor resolution : 1024 x 768 or higher
- or
- OS : Windows 8.1 US edition (Japanese edition) 32bit or 64bit
: Windows 10 US edition (Japanese edition) 32bit or 64bit
 - CPU : Intel Core 1 GHz equivalent or higher
 - Memory : 1GB (32bit) 2GB (64bit) or above
 - Recommended monitor resolution : 1024 x 768 or higher

1-3 Example of connecting the personal computer



1-4 Precautions on using the interface cable

- Avoid directly touching the end of the connector or storing it in a place where static electricity is easily generated.
- Using this system in a place where static electricity or a strong magnetic field is generated or close to machinery that generates a lot of electrical noise can lead to malfunction. Avoid use in such places.

1-5 Installing method

1-5-1 File structure

As base data folder, prepare YMS_Data folder

1-5-2 Installing procedures

When YMS_SETUP.exe is executed, setup program starts and Fig. 1. Welcome screen is shown.

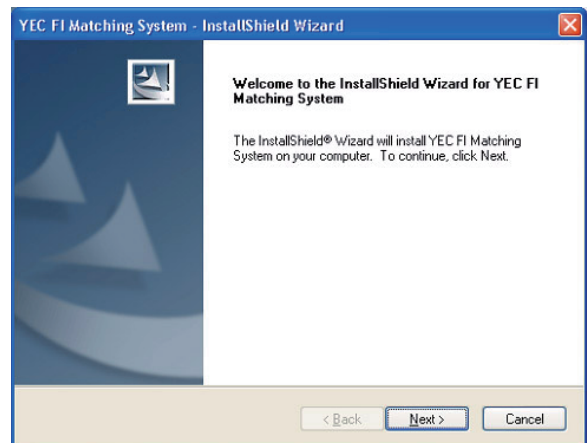


Fig. 1: Welcome

Select [Next] and Fig. 2., Product License Agreement screen is shown.

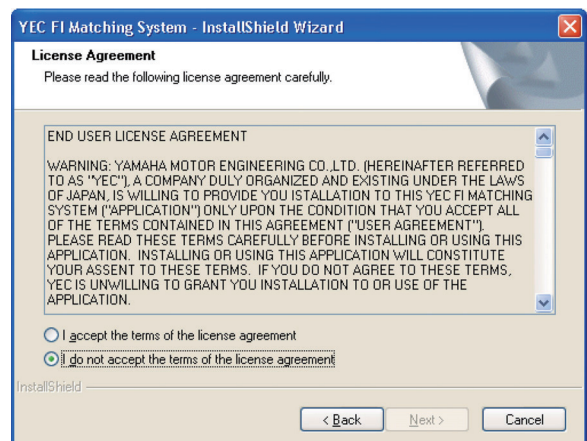


Fig. 2: Product License Agreement

Select [Next] and Fig. 3, Registering of customer's information and serial No. certification screen is shown.

For [User name] and [Company name] setting information is acquired by default from the OS while the [Serial Number.] given on the booklet in the CD-ROM package is inputted.

Neither item may be omitted. Upon inputting all items, gray-out of [Next] is released and selecting may be made.

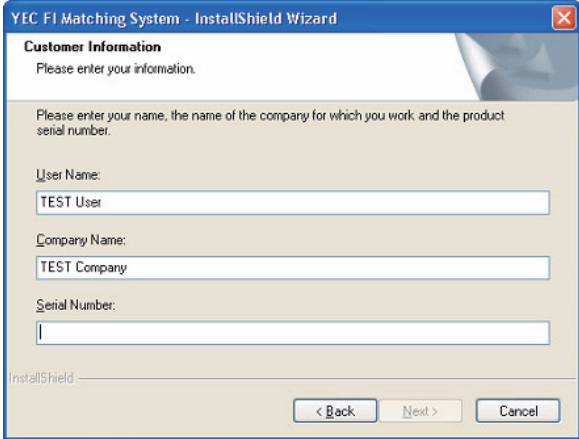
The screenshot shows a window titled "YEC FI Matching System - InstallShield Wizard". The main heading is "Customer Information" with the instruction "Please enter your information." Below this, there is a sub-instruction: "Please enter your name, the name of the company for which you work and the product serial number." There are three input fields: "User Name:" with the text "TEST User", "Company Name:" with the text "TEST Company", and "Serial Number:" which is empty. At the bottom, there are three buttons: "< Back", "Next >" (which is highlighted in blue), and "Cancel".

Fig. 3:
Registering of customer's information and serial
No. certification

Click [Next] and Fig. 4, Selecting of the installing folder screen is shown.

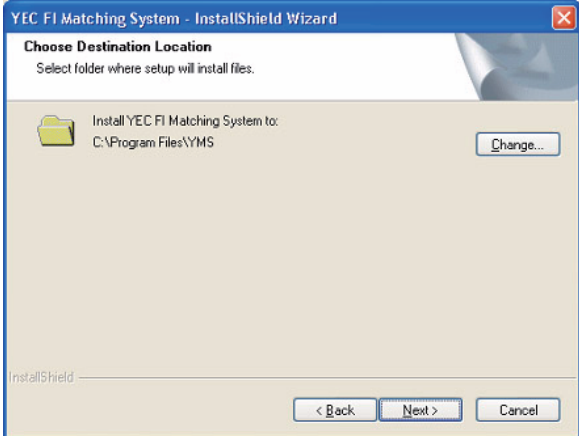
The screenshot shows a window titled "YEC FI Matching System - InstallShield Wizard". The main heading is "Choose Destination Location" with the instruction "Select folder where setup will install files." Below this, there is a folder icon and the text "Install YEC FI Matching System to: C:\Program Files\YMS". To the right of this text is a "Change..." button. At the bottom, there are three buttons: "< Back", "Next >" (which is highlighted in blue), and "Cancel".

Fig. 4: Selecting of the installing folder

Select the destination folder in which the system is to be installed. The default value is "\Program Files \YMS".

Select [NEXT] and Fig. 5, Selecting of base data folder screen is shown.

Specify folder Path optionally by [Path] or specify existing folder by [Directories].

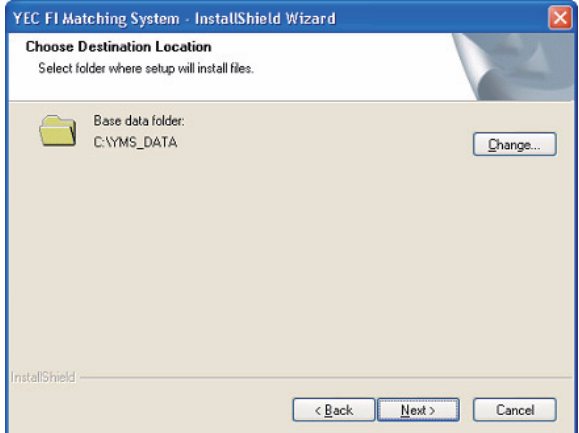
The screenshot shows a window titled "YEC FI Matching System - InstallShield Wizard". The main heading is "Choose Destination Location" with the instruction "Select folder where setup will install files." Below this, there is a folder icon and the text "Base data folder: C:\YMS_DATA". To the right of this text is a "Change..." button. At the bottom, there are three buttons: "< Back", "Next >" (which is highlighted in blue), and "Cancel".

Fig. 5: Selecting of base data folder

Select the base data folder. The default value is “\YMS_Data”.

When [Change] button is pressed, the Selecting of folder screen is shown.

Select [NEXT] and Fig. 6, Installation confirming screen is shown.

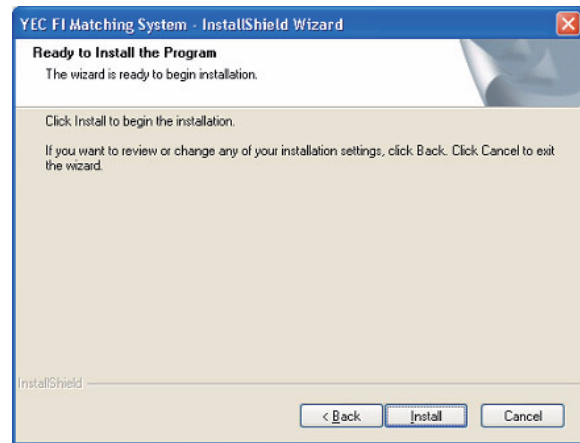


Fig. 6: Installation confirmation.

Select [Install] and installation starts. Upon finishing installation, Fig. 7 Setup completion screen is shown.

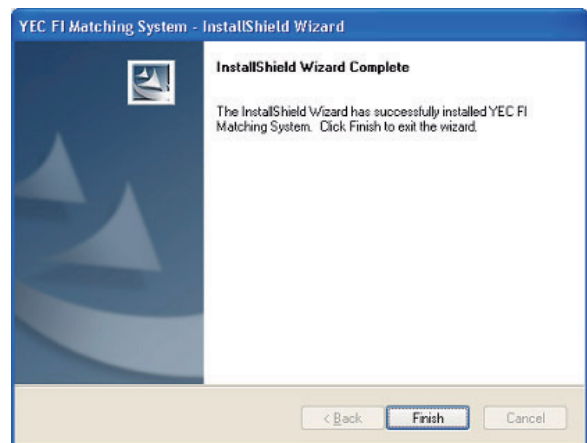


Fig. 7: Set up completion

When [Finish] is pressed, setup is completed. Upon finishing setup, “YEC FI Matching System” shortcut is displayed on desktop and on start menu. Program may be started from this shortcut.

1-6 Copy of base data

1-6-1 Copy procedures

Copy the base data stored in the installed CD to

“C:\YMS_DATA” manually.

Base data

MODEL	Model year	Name of base data	KIT ECU
YZF-R6	2006	R6-06_BaseData_00.ycz	2C0-8591A-70
	2007	R6-07_BaseData_00.ycz	2C0-8591A-71
	2008	R6-08_BaseData_00.ycz	2C0-8591A-80
	2009	R6-09_BaseData_00.ycz	2C0-8591A-90
	2010	R6-10_BaseData_00.ycz	2C0-8591A-91
	2011	R6-11_BaseData_00.ycz	2C0-8591A-92
	2012 - 2016	R6-16_BaseData_00.ycz	2C0-8591A-93 / 94
	2017 - 2018	R6-18_BaseData_00_SS.ycz	BN6-8591A-70 for SS (Following WSS rule)
	2017 - 2018	R6-18_BaseData_A0_STK.ycz	BN6-8591A-A0 for STK
	2019 - 2021	R6-19_BaseData_00_SS.ycz	BN6-8591A-71 for SS (Following WSS rule)
	2019 - 2021	R6-19_BaseData_A0_STK.ycz	BN6-8591A-A1 for STK
	2019 - 2021	R6-20_BaseData_B0_STK.ycz	BN6-8591A-B0 for STK(TCS/LIF off)
YZF-R1	2007	R1-07_BaseData_00.ycz	4C8-8591A-70
	2008	R1-08_BaseData_00.ycz	4C8-8591A-80
	2009	R1-09_BaseData_00.ycz	14B-8591A-70
	2010	R1-10_BaseData_00.ycz	14B-8591A-71
	2011	R1-11_BaseData_00.ycz	14B-8591A-72
	2012 / 2013	R1-13_BaseData_00.ycz	1KB-8591A-70
	2014	R1-14_BaseData_00.ycz	1KB-8591A-71
	2015	R1-15_BaseData_01.ycz	2CR-8591A-70
	2016	R1-16_BaseData_00.ycz	2CR-8591A-71
	2017	R1-17_BaseData_00.ycz	2CR-8591A-72
	2018	R1-18_BaseData_00_SBK.ycz	BX4-8591A-70
	2018	R1-18_BaseData_00_STK.ycz	BX4-8591A-70
	2019	R1-19_BaseData_00_SBK.ycz	BX4-8591A-71
	2019	R1-19_BaseData_00_STK.ycz	BX4-8591A-71
	2020	R1-20_BaseData_00_SBK.ycz	B3L-8591A-70
	2020	R1-20_BaseData_00_STK.ycz	B3L-8591A-70
	2021	R1-21_BaseData_00_SBK.ycz	B3L-8591A-71
	2021	R1-21_BaseData_00_STK.ycz	B3L-8591A-71

CAUTION:

Any combination of base data and ECU not shown above will generate an error.

Always use one of the above combinations.

1-7 Installing the USB driver

1-7-1 Before installation

Installation of the USB driver is required when connecting the interface cable to your computer for the first time. Connection to the ECU is not required when installing the driver.

* There are two installation methods.

- (1) Install from the CD.
- (2) If you cannot use the CD when you connect the interface cable for the first time, copy the driver files from the CD onto the computer and then specify the driver files to install them.
The driver file "CDM 21228_Setup.exe" is on the CD.

* The appearance of screens may differ depending the type of PC in use.

1-7-2 Installation Procedure

- (1) Connect the KIT I/F cable to the USB port of the computer.
- (2) When "CDM 21228_Setup.exe" is executed, setup program starts and Fig. 8. FTDI CDM Drivers screen is shown.

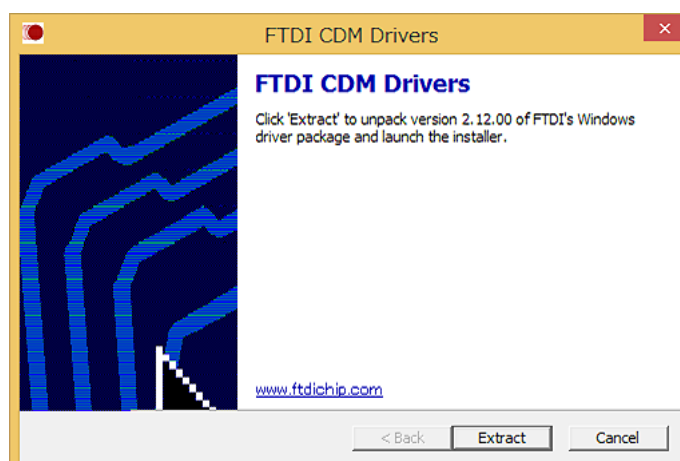


Fig. 8: FTDI CDM Drivers

- (3) Select [Extract] and Fig. 9. Install Wizard screen is shown.

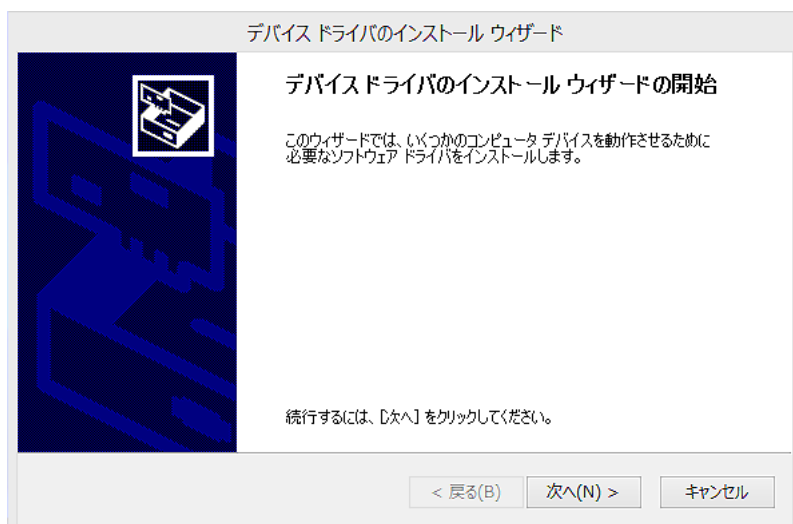


Fig. 9: Install Wizard

- (4) Select [Next] and Fig. 10. Product License Agreement screen is shown.

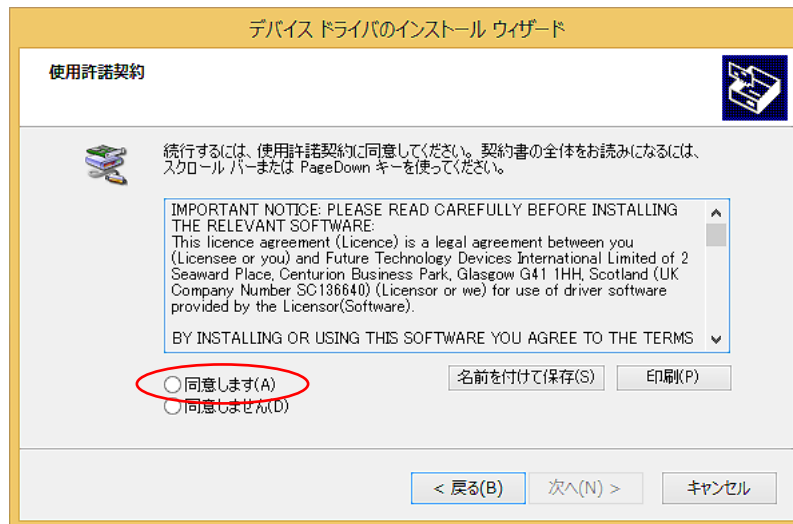


Fig. 10: Product License Agreement

- (5) Select [I agree] and [Next] to start the installation process.



Fig. 11

- (6) When the installation is complete, Fig. 12. Install Wizard completion screen is shown.

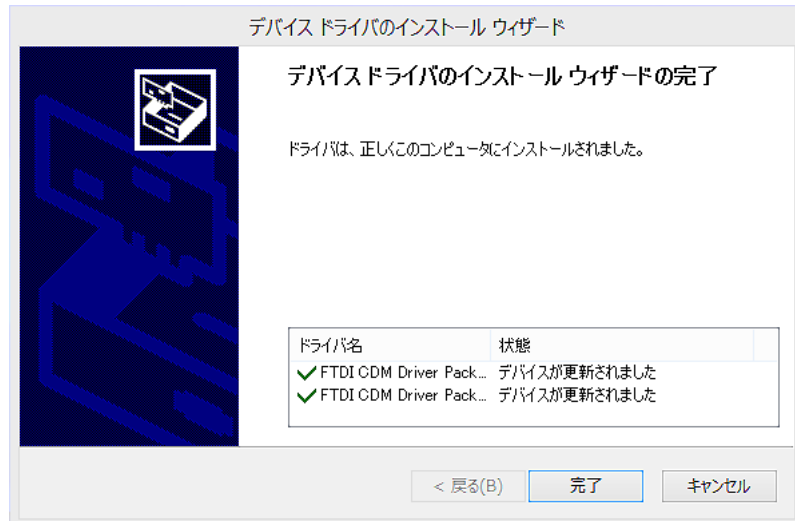


Fig. 12: Install Wizard completion

- (7) Select [Finish] to exit the Install Wizard.
- (8) Open the Device Manager. If “USB Serial Port (COM3)” is added to “Ports (COM & LPT)” and “USB Serial Converter” is added to “Universal Serial Bus controllers” as Fig. 13., all installation is complete.

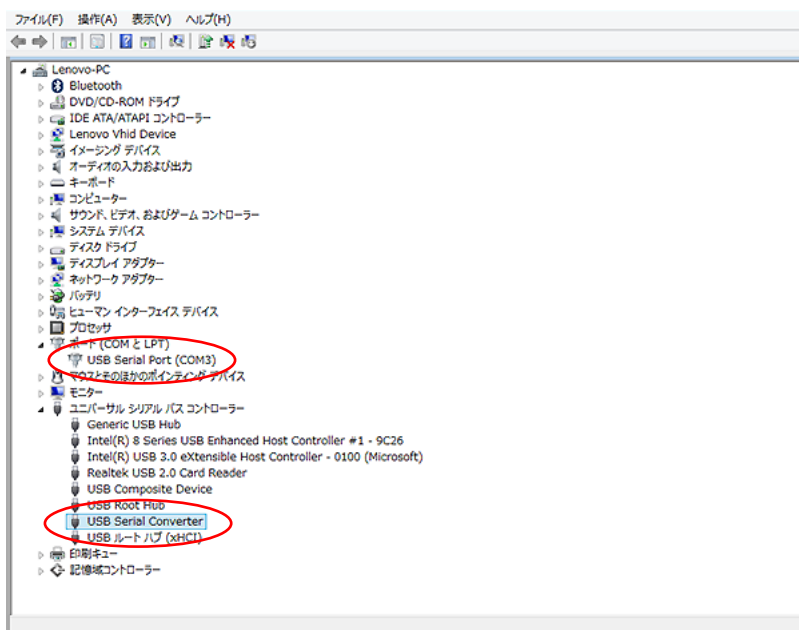


Fig. 13: Device Manager

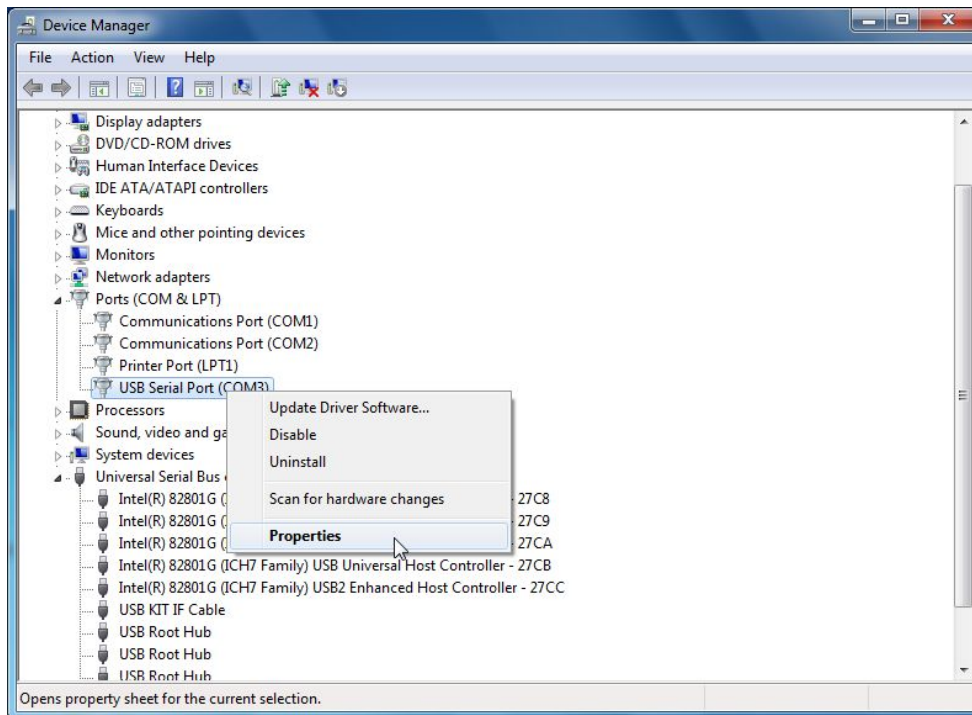
1-7-3 How to Change the COM Port

When two or more devices using serial ports are installed on a computer, the COM ports increase.

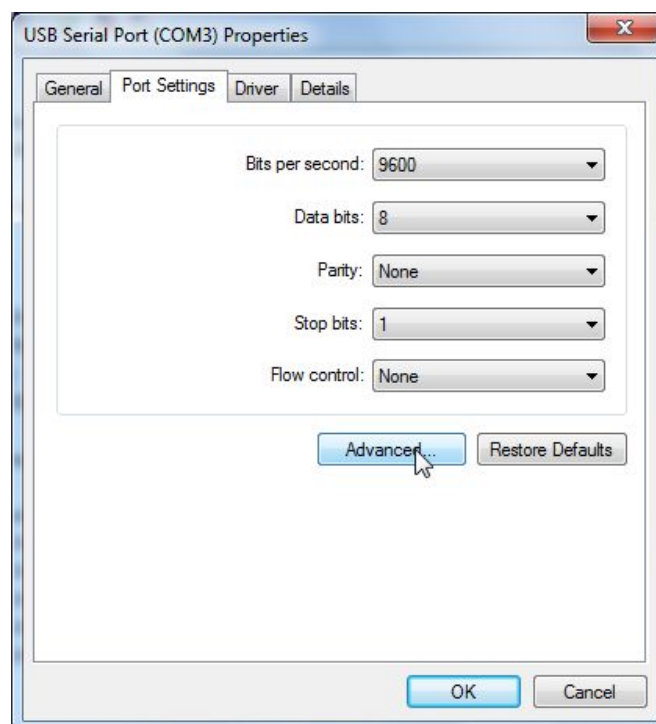
(COM4, 5, 6...)

In case you cannot select a COM number (such as COM6), change it with a device manager.

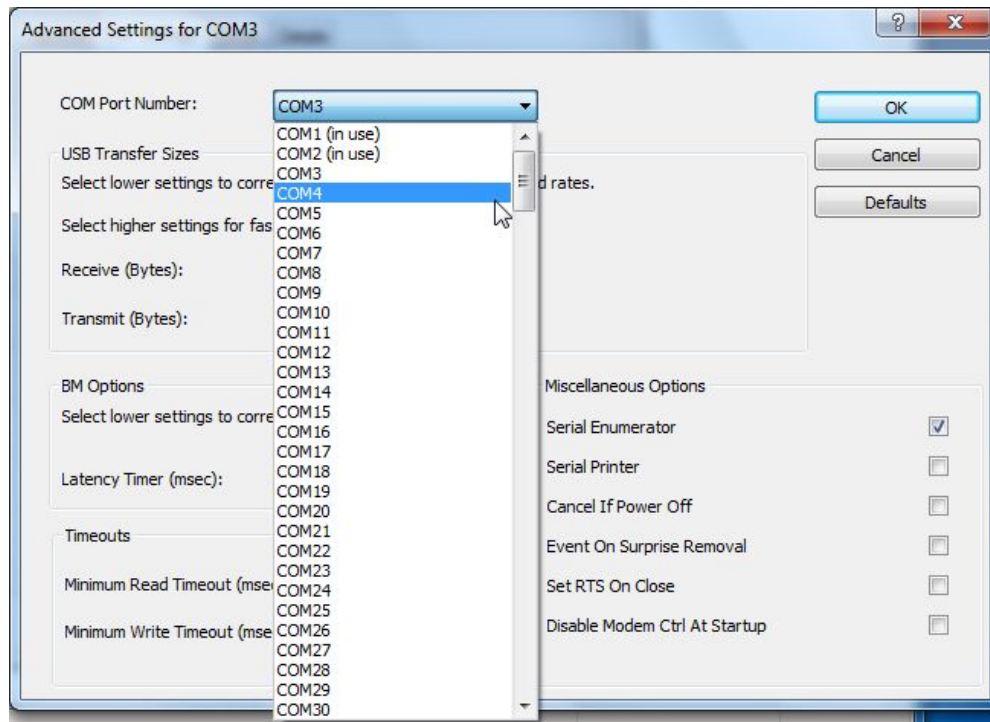
- (1) Select the desired serial port and right click to open "Properties".



- (2) Select "Port Settings" and click [Advanced].



(3) Select the desired COM port in [COM Port Number] and click [OK].



Close the Device Manager and reopen it. The COM number is now changed.

CAUTION:

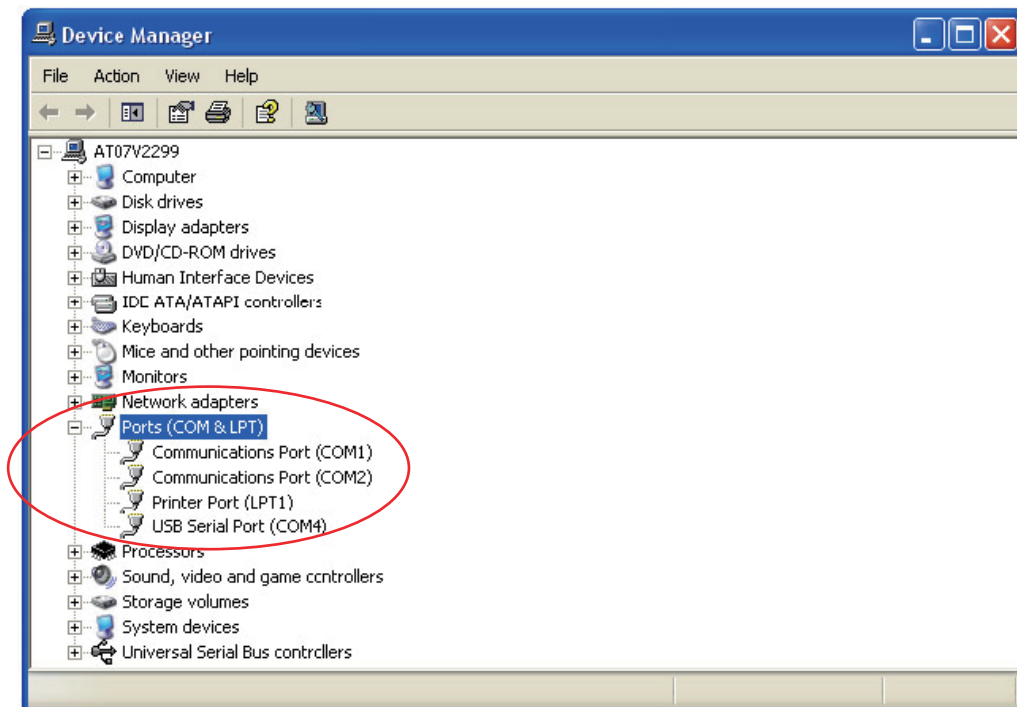
In the above screen, some COM numbers may be marked "in use".

These are COM numbers that have been registered once to another device.

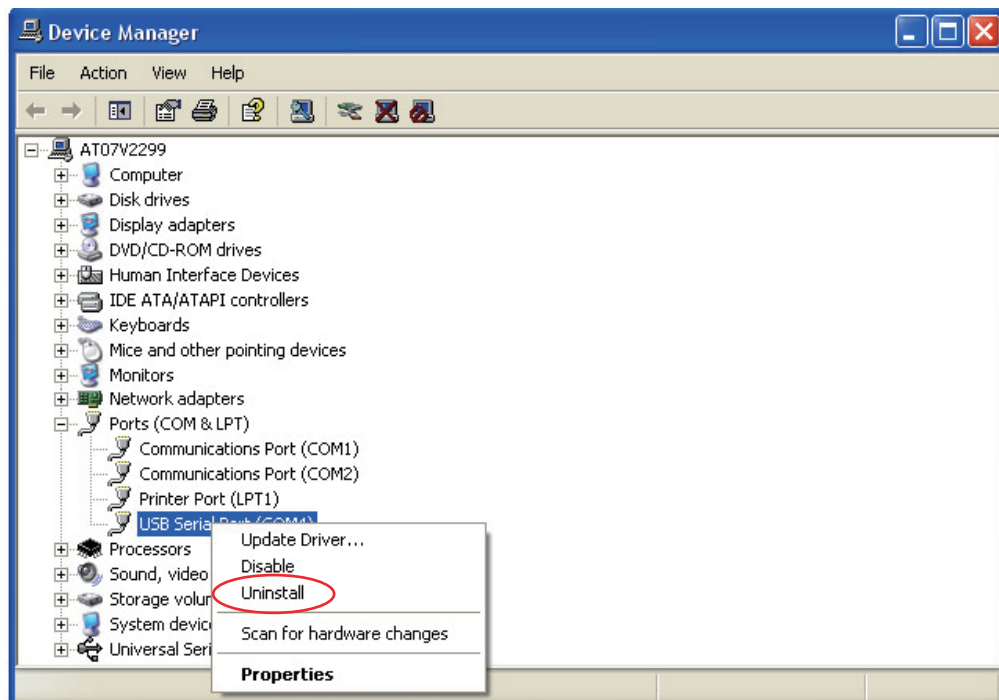
Selecting one of them now will write over the existing setting, so you may have to reset the original device when you next use it.

1-7-4 Uninstallation Procedure

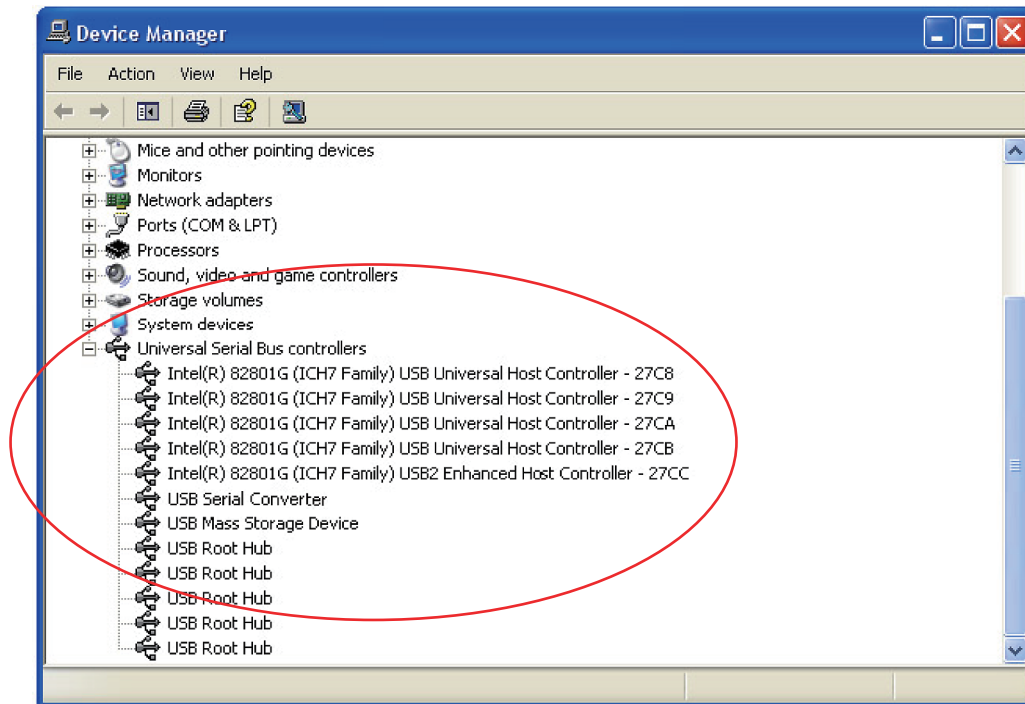
- (1) Connect the interface cable.
- (2) Open "Device Manager".
- (3) Open "Ports (COM & LPT)".



- (4) Select the desired serial port and right click.
- (5) Click [Uninstall].

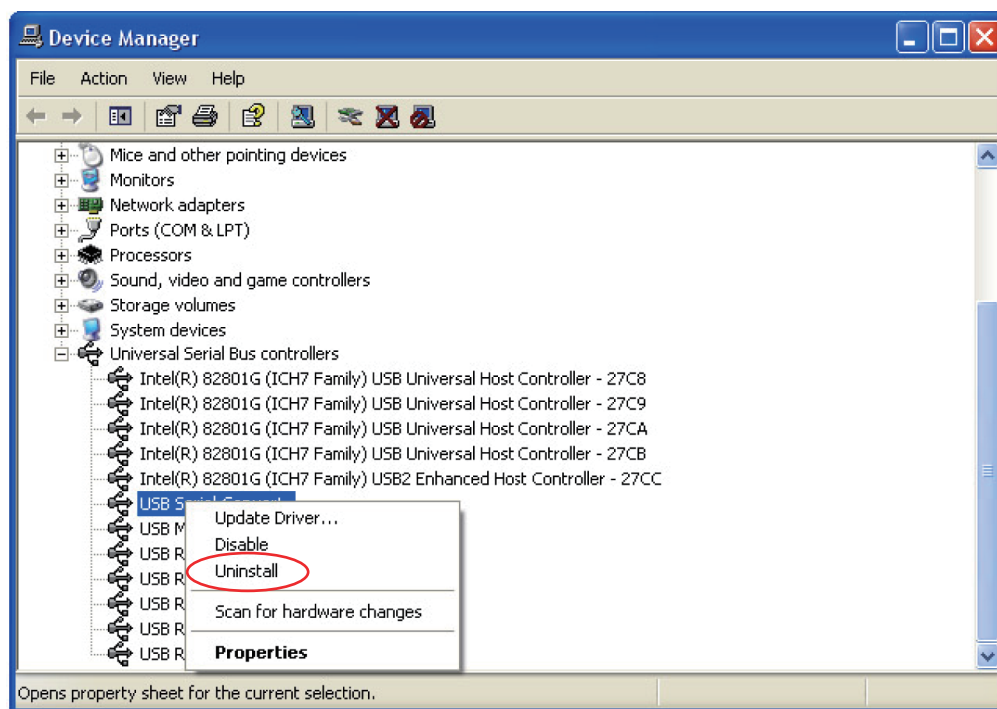


- (6) Open “Universal Serial Bus Controllers”.



- (7) Select “USB Serial Converter” and right click.

- (8) Click [Uninstall].



*** If reinstalling the driver, you must first uninstall it.**

2 Outline of functions

The following functions are seen in the YMS.

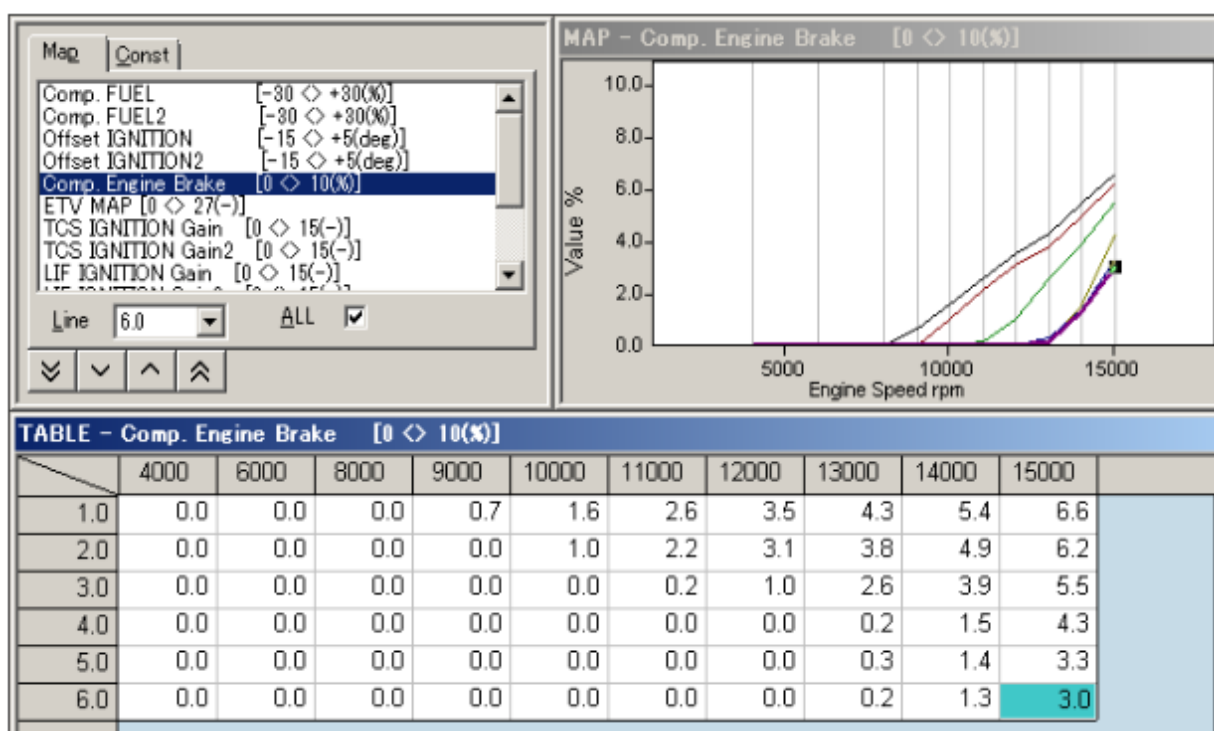
- To read data from ECU, edits fuel adjusting map and ignition map, and writes in ECU.
- To read saved data, and after confirming the contents and editing, writes in ECU.
- To read saved data, and compares with ECU data or other saved data.

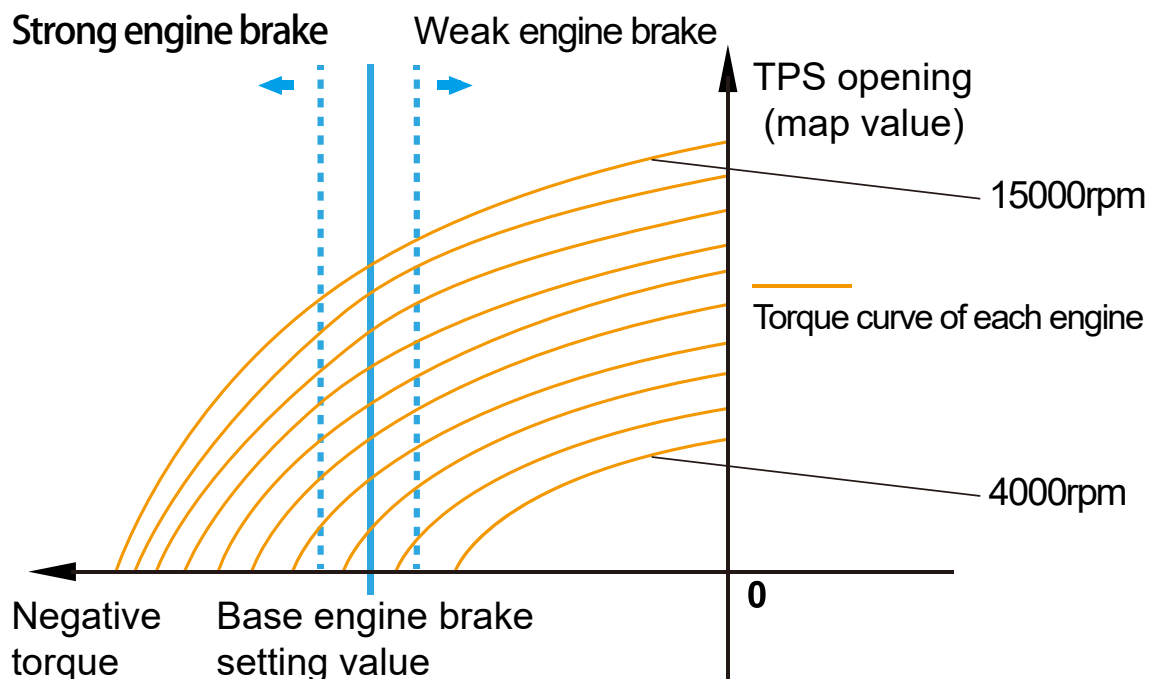
2-1 YZF-R6

2-1-1 Function outline of the YEC FI Matching System

	Map items	Functions	Contents
(1)	Comp. FUEL / Map 1	Adjusts A/F	Corrects fuel amount by increasing-decreasing within range of ± 30 As rough standard, change the value of ± 5 and check the A/F Effective at 1,000 rpm and higher (Not corrected at less than 1000 rpm) Map 1 or Map 2 can be selected with the map switch. (For details on switching, refer to the R6 Racing Kit Manual.)
(2)	Comp. FUEL / Map 2		
(3)	Offset IGNITION Map 1	Corrects ignition timing	Corrects ignition timing within the range of -15°CA to 5°CA (crank angle). Effective at 3000 rpm and above. (Does not make corrections at less than 3000 rpm.) Map 1 or Map 2 can be selected with the map switch. (For details on switching, refer to the R6 Racing Kit Manual.)
(4)	Offset IGNITION Map 2		

	Map items	Functions	Contents
(5)	Comp. ETV / Engine Brake	Corrects ETV opening (Engine brake correction)	<p>Adjusts the throttle valve to correct basic ETV opening between 0 and 10 levels during deceleration (when the throttle grip opening angle is zero) and controls excessive (unnecessary) engine brake at different engine speed for each gear. However, the maximum controlling value will be automatically limited within the ECU depending on the target controlling range (engine speed). For example, even if the maximum controlling value is set to 10, it will not be reflected at 5000 rpm and lower.</p> <p>(Recommended engine brake control MAP)</p> <p>The following is a basic "engine brake control MAP" based on the measuring result of "reversed driving force (back torque), which is generated when a running vehicle slows down.</p> <p>Please carry out a test run based on this MAP and change the setting for each gear if necessary (increase or decrease each setting in the same tendency).</p> <p>Also, check the effect each time you make an adjustment (0.2 to 0.3 at maximum). (Difference of 0.1 level still shows a pronounced effect.)</p> <p>* This MAP is given under the assumption of a secondary speed reduction ratio of 2.81.</p> <p>Increase each controlling value if the actual speed reduction ratio is higher than this, and decrease if lower.</p> <p>* When entering controlling values on the MAP, be sure to enter 0 (zero) in the field at the intersection of 4000 rpm and 1.0 speed (top left).</p>

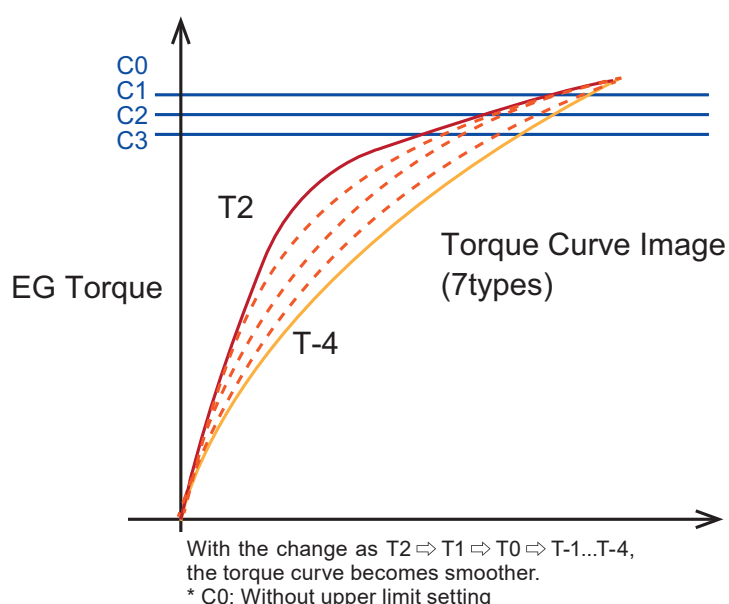




	Const items	Contents
(6)	ETVMAP	<p>Sets the torque map (engine characteristics).</p> <p>Possible to configure the torque characteristic setting of each gear for SW No.1 to 3 (1:STD, 2:A, 3:B) individually.</p> <p>Select the torque characteristic from the 28 patterns (input value: 0 to 27) determined from 7 types of torque curves and torque clips (Max).</p> <p>Refer to the following table for the default values.</p>

Torque map default settings

		Gear					
		1	2	3	4	5	6
SW No.	1:STD	12.0	12.0	12.0	12.0	12.0	12.0
	2:A	13.0	13.0	12.0	12.0	12.0	12.0
	3:B	22.0	22.0	20.0	20.0	20.0	20.0



3 mode settings are available to control the peak power for each torque curve (C1 to C3).

(C0) outputs the maximum power when the accelerator is fully opened.

The effect of the output power control (or the torque clipping) when the accelerator is fully opened, is in order of C1 > C2 > C3.

Example: case of T2

The control of the maximum output value when the accelerator is fully opened is; T2(C0) > T2(C1) > T2(C2) > T2(C3).
Refer to the graph above.

The list of input values

ETV Map	
0	T2(C0)
1	T2(C1)
2	T2(C2)
3	T2(C3)
4	T1(C0)
5	T1(C1)
6	T1(C2)
7	T1(C3)
8	T0(C0)
9	T0(C1)
10	T0(C2)
11	T0(C3)
12	T-1(C0)
13	T-1(C1)
14	T-1(C2)
15	T-1(C3)
16	T-2(C0)
17	T-2(C1)
18	T-2(C2)
19	T-2(C3)
20	T-3(C0)
21	T-3(C1)
22	T-3(C2)
23	T-3(C3)
24	T-4(C0)
25	T-4(C1)
26	T-4(C2)
27	T-4(C3)

By clipping the torque, especially when the first or the second gear is used, you can avoid improper vehicle behavior caused by rough accelerator operations.

For example, this function is effective to avoid wheelie.

	Map items	Contents
(7)	TCS IGNITION Gain 1	Sets the traction control coefficient opening from 0.0 to 15.0 at each accelerator and gear position. The base coefficient is 1.0. The bigger the coefficient the higher the traction control effect at ignition timing.
(8)	TCS IGNITION Gain 2	Possible to switch Gain1 and Gain2 with the map select switch. For details on switching, refer to the YZF-R6 Racing Kit Manual.

Default setting of the map

Accelerator opening

	1	5	10	15	20	30	40	50	60	80	100
Gear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

* Higher than fourth will be the same as the fourth gear

	Map items	Contents
(9)	LIF IGNITION Gain1	Sets the wheelie control (front lift control) coefficient from 0.0 to 15.0 at each accelerator opening and gear position . The bigger the coefficient the higher the wheelie control effect at ignition timing.
(10)	LIF IGNITION Gain 2	Possible to switch Gain1 and Gain2 with the map select switch. For details on switching, refer to the YZF-R6 Racing Kit Manual.

Default setting of the map

Accelerator opening

	1	5	10	15	20	30	40	50	60	80	100
Gear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

* Higher than fourth will be the same as the fourth gear

	Map items	Contents
(11)	TCS ETV Gain 1	Sets the traction control coefficient from 0.0 to 15.0 at each accelerator opening and gear position . The base coefficient is 1.0. The bigger the coefficient the higher the effect of the traction control by the electronic throttle.
(12)	TCS ETV Gain 2	Possible to switch Gain1 and Gain2 with the map select switch. (For details on switching, refer to the YZF-R6 Racing Kit Manual.)

Default setting of the map

Accelerator opening												
Gear		1	5	10	15	20	30	40	50	60	80	100
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

* Higher than fourth will be the same as the fourth gear

	Map items	Contents
(13)	LIF ETV Gain 1	Sets the wheelie control (front lift control) coefficient from 0.0 to 15.0 at each accelerator opening and gear position . The bigger the coefficient the higher the effect of the wheelie control by the electronic throttle.
(14)	LIF ETV Gain 2	Possible to switch Gain1 and Gain2 with the map select switch. (For details on switching, refer to the YZF-R6 Racing Kit Manual.)

Default setting of the map

Accelerator opening												
Gear		1	5	10	15	20	30	40	50	60	80	100
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

* Higher than fourth will be the same as the fourth gear

	Const items	Functions	Contents
(15)	Comp. FUEL / All Area	Adjusts A/F	Has same function as (2) Comp. Fuel and makes uniform correction of operation areas. Corrects increase-decrease of fuel amount within a scope of ± 30 .
(16)	Comp. RAM Correction	Adjusts A/F relating to Ram pressure	Entered if there is discrepancy of A/F compared with the vehicle speed. Can be adjusted within the range of ± 10 .
(17)	Rev. Limiter Offset	Corrects revolution limiter	Can be corrected within a range of -1000 rpm to 0 rpm to existing value of revolution limiter.
(18)	Pit Road Limiter	For pit load control Setting of engine revolution limiter	Set within range of EG revolution range between 2000 and revolution limit rpm. Only effective in first and second gear.
(19)	VI (VARIABLE INTAKE)	VI starts operating. Determine the engine speed.	Set within range of EG revolution range between 5000 and revolution limit rpm.
(20)	Comp. IDL	Idling correction	Corrects idling. (Adjustable within a range of -1 to 2) Since the value specified in here will affect the entirety of engine speed (engine brake), use this operation only for maintaining appropriate idling engine speed.
(21)	Comp TCS	Settings related to the traction control.	Cannot be used. For other settings related to the traction control, refer to TCS IGNITION/TCS ETV to (7), (8), (11), (12).

2-1-2 Targets for setting of the YEC FI Matching System and precautions

- (1) Comp. FUEL / Map 1 (2) Comp. FUEL / Map 2 (15) Comp. FUEL / All Area

Change at one time should be changes of 5 as rough standard and especially for changes on the reduction side, (in case of becoming thinner), pay attention to the A/F value while changing.

Aim for A/F 12 to 13.

CAUTION:

If A/F is too thin, may relate to damage of the engine.

- (3)(4) Offset IGNITION

Adjust to the spark advancing side if too excessive, may possibly damage the engine. Sufficient care is needed when making adjustment. In case no change is seen when spark advancing is selected, or when at a loss to which side adjustment should made, it is recommended that adjustment be made to the spark retarding side.

CAUTION:

Adjusting to the spark advancing side may possibly damage the engine if too extreme.

- (5) Comp. ETV / Engine Brake

CAUTION:

If open setting of the throttle is made to reduce engine braking, the engine revolution may not drop enough at corners and over-speeding may risk causing of serious accidents. Especially, a change in gear ratio, or the running on a course for the first time, will require paying of sufficient attention.

- (16) Comp. RAM Correction

Use only when the A/F diverges with increased vehicle speed.

- (18) Pit Road Limiter

For control of engine revolution, obtain the necessary engine revolution from the following formula and input the obtained value.

$$\text{Engine revolution} = \frac{\text{Target speed (km/h)} \times (\text{Primary speed reduction ratio} \times 1^{\text{st}} \text{ gear ratio} \times \text{secondary speed reduction ratio}) \times 1000000}{60 \times \text{Perimeter outside length of the rear tire (mm)}}$$

YZF-R6	Model	Gear ratio
Primary speed reduction ratio		2.07
1 st gear ratio	STD	2.58
	'06KIT	2.16
	'06KIT-OP	2.31
	'07, '08, '09 A KIT	2.31
	B	2.47
	C	2.58

Secondary speed reduction ratio		Drive sprocket number of teeth		
		14	15	16
Rear Sprocket number of teeth	41	2.93	2.73	2.56
	42	3.00	2.80	2.63
	43	3.07	2.87	2.69
	44	3.14	2.93	2.75
	45	3.21	3.00	2.81
	46	3.29	3.07	2.88
	47	3.36	3.13	2.94
	48	3.43	3.20	3.00
	49	3.50	3.27	3.06
	50	3.57	3.33	3.13
	51	3.64	3.40	3.19
	52	3.71	3.47	3.25

2-2 YZF-R1

2-2-1 Function outline of the YEC FI Matching System

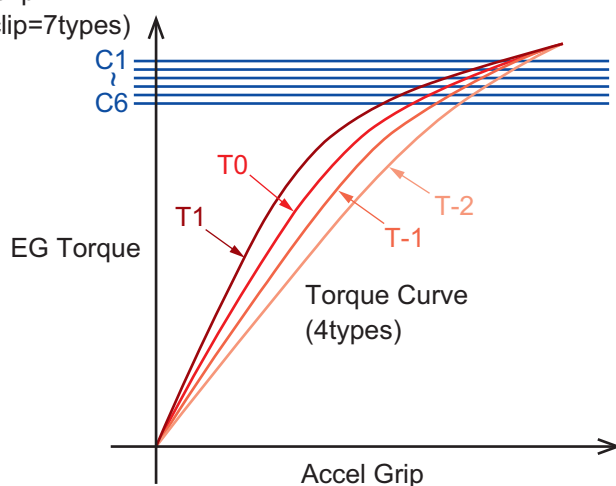
	Map items	Functions	Contents
(1)	Comp. FUEL / Map 1	Adjusts A/F	Corrects fuel amount by increasing-decreasing within range of ± 30 As rough standard, change the value of ± 5 and check the A/F Effective at 1,000 rpm and higher (Not corrected at less than 1000 rpm) Map 1 or Map 2 can be selected with the map switch. (For details on switching, refer to the R1 Racing Kit Manual.)
(2)	Comp. FUEL / Map 2		
(3)	ETVMAP	Sets the torque map	Sets the torque map (engine characteristics). Possible to configure the torque characteristic setting of each gear for No.1 to 4 individually. Select the torque characteristic from the 28 patterns (input value: 0 to 27) determined from 4 types of torque curves and torque clips (Max). Refer to the following table for the default values. Also, the torque clip values differ between the STK and SBK modes.

Torque map default settings

		Gear					
		1	2	3	4	5	6
Power mode SW No.	1	10	9	7	7	7	7
	2	11	10	9	7	7	7
	3	17	16	15	14	14	14
	4	27	26	25	22	22	22

Torque Clip

(Max+6clip=7types)



With the change as T1 ⇒ T0 ⇒ T-1 ⇒ T-2, the torque curve becomes smoother.

* C0: Without upper limit setting

6 mode settings are available to control the peak power for each torque curve (C1 to C6).

(C0) outputs the maximum power when the accelerator is fully opened.

The effect of the output power control (or the torque clipping) when the accelerator is fully opened, is in order of C1>C2>C3~C6.

Example: case of T1

The control of the maximum output value when the accelerator is fully opened is; T1(C0)>T1(C1)>T1(C2) to T1(C6). Refer to the graph above.

By clipping the torque, especially when the first or the second gear is used, you can avoid improper vehicle behavior caused by rough accelerator operations.

For example, this function is effective to avoid wheelie.

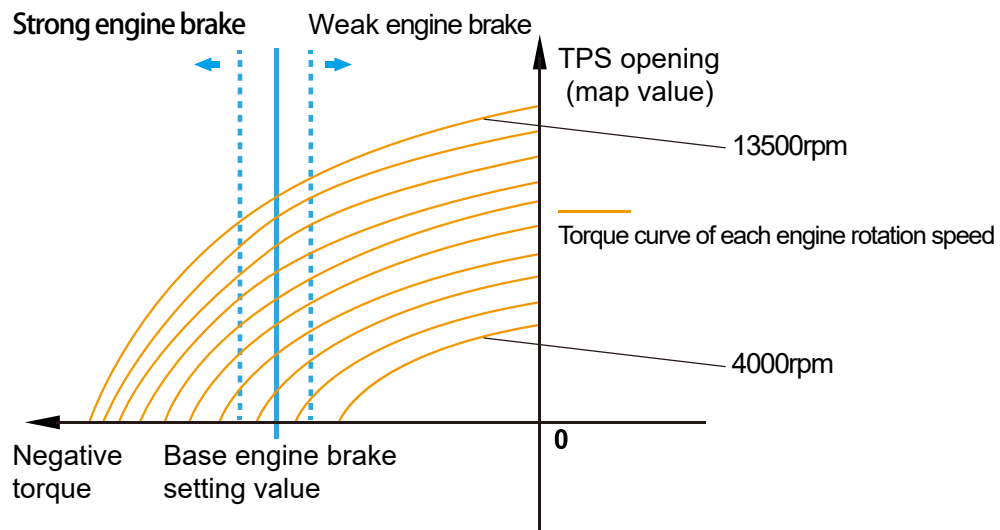
The list of input values

Mode			
STK (Normal map)		SBK (A-map)	
0	T1 (C0)	0	T1 (C0)
1	T1 (C1)	1	T1 (C1)
2	T1 (C2)	2	T1 (C2)
3	T1 (C3)	3	T1 (C3)
4	T1 (C4)	4	T1 (C4)
5	T1 (C5)	5	T1 (C5)
6	T1 (C6)	6	T1 (C6)
7	T0 (C0)	7	T0 (C0)
8	T0 (C1)	8	T0 (C1)
9	T0 (C2)	9	T0 (C2)
10	T0 (C3)	10	T0 (C3)
11	T0 (C4)	11	T0 (C4)
12	T0 (C5)	12	T0 (C5)
13	T0 (C6)	13	T0 (C6)
14	T-1 (C0)	14	T-1 (C0)
15	T-1 (C1)	15	T-1 (C1)
16	T-1 (C2)	16	T-1 (C2)
17	T-1 (C3)	17	T-1 (C3)
18	T-1 (C4)	18	T-1 (C4)
19	T-1 (C5)	19	T-1 (C5)
20	T-1 (C6)	20	T-1 (C6)
21	T-2 (C0)	21	T-2 (C0)
22	T-2 (C1)	22	T-2 (C1)
23	T-2 (C2)	23	T-2 (C2)
24	T-2 (C3)	24	T-2 (C3)
25	T-2 (C4)	25	T-2 (C4)
26	T-2 (C5)	26	T-2 (C5)
27	T-2 (C6)	27	T-2 (C6)

	Map items	Functions	Contents
(4)	Engine Brake TRQ1	Adjusts the engine brake torque	<p>Adjusts the engine brake torque during deceleration (when the throttle grip opening angle is zero) within a range of -100 to +25.</p> <p>As rough standard, change the value of ± 2.</p> <p>By linkage between the gear and engine speed, you can adjust the engine brake of the target range.</p> <p>To strengthen the engine brake (EMB1-3), enter a negative value.</p> <p>It will strengthen the engine brake for the entire range (EMB1-3).</p> <p>To weaken the engine brake (EMB1-3), enter a positive value.</p> <p>It will weaken the engine brake for the entire range (EMB1-3).</p> <p>Possible to switch Map1 and Map2 with the map select switch.</p>
(5)	Engine Brake TRQ2		<p>When the gear ratio or rear tire size has been changed, adjust Primary Gear Ratio, 1ST-6TH Gear Ratio, and Secondary Gear Ratio Rear Tire Radius in Const so that the ECU automatically control the engine brake torque to keep its equivalent.</p> <p>Possible to enter a value within a range of -100 to +25, but the maximum and minimum controlling value will be automatically limited within the ECU. Even if you enter -100, the setting will not be applied if it exceeds the maximum controlling value of your engine.</p>

TABLE - Engine Brake TRQ1 [-100 <> +25]											
	1000	1500	2000	3000	4000	5000	6000	8000	10000	12000	14000
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Conceptual diagram of engine brake torque



	Map items	Functions	Contents
(6)	TCS IGNITION Gain 1	Adjusts the ignition control of the traction control system.	<p>Adjusts the ignition control (0- 4 times) of the traction control system depending on linkage between the bank angle and throttle grip opening angle (0 to 85 deg). As rough standard, change the value of ± 0.2.</p> <p>The base coefficient is 1.0.</p> <p>The bigger the coefficient the higher the traction control effect. If the coefficient is less than 1.0, the traction control effect becomes lower.</p> <p>The coefficient will be applied to all of TCS1-9 in the target region.</p> <p>Possible to switch Map1 and Map2 with the map select switch.</p>
(7)	TCS IGNITION Gain 2		

TABLE - TCS IGNITION Gain1 [0.0 <> 4.0]										
	0	5	10	15	20	30	40	50	70	85
20.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
25.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
30.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
35.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
40.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
45.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
50.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

	Map items	Functions	Contents
(8)	TCS IGNITION Gear Gain 1	Adjusts the ignition control of the traction control system.	<p>Adjusts the ignition control (0- 4 times) of the traction control system depending on gear position (1st to 4th). As rough standard, change the value of ± 0.2.</p> <p>The base coefficient is 1.0.</p> <p>The bigger the coefficient the higher the traction control effect. If the coefficient is less than 1.0, the traction control effect becomes lower.</p> <p>The coefficient will be applied to all of TCS1-9 in the target gear position.</p> <p>Possible to switch Map1 and Map2 with the map select switch.</p>
(9)	TCS IGNITION Gear Gain 2		

TABLE - TCS IGNITION Gear Gain1 [0.0 <> 4.0]				
	1	2	3	4
	1.0	1.0	1.0	1.0

	Map items	Functions	Contents
(10)	TCS TRQ Gain 1	Adjusts the ETV control of the traction control system	<p>Adjusts the ETV control (0- 4 times) of the traction control system depending on linkage between the bank angle and throttle grip opening angle (0 to 85 deg). As rough standard, change the value of ± 0.2.</p> <p>The base coefficient is 1.0.</p> <p>The bigger the coefficient the higher the traction control effect. If the coefficient is less than 1.0, the traction control effect becomes lower.</p> <p>The coefficient will be applied to all of TCS1-9 in the target region.</p> <p>Possible to switch Map1 and Map2 with the map select switch.</p>
(11)	TCS TRQ Gain 2		

TABLE - TCS TRQ Gain1 [0.0 <> 4.0]										
	0	5	10	15	20	30	40	50	70	85
20.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
25.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
30.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
35.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
40.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
45.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
50.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

	Map items	Functions	Contents
(12)	TCS TRQ Gear Gain 1	Adjusts the ETV control of the traction control system	<p>Adjusts the ETV control (0- 4 times) of the traction control system depending on gear position (1st to 4th). As rough standard, change the value of ± 0.2.</p> <p>The base coefficient is 1.0.</p> <p>The bigger the coefficient the higher the traction control effect. If the coefficient is less than 1.0, the traction control effect becomes lower.</p> <p>The coefficient will be applied to all of TCS1-9 in the target gear position.</p> <p>Possible to switch Map1 and Map2 with the map select switch.</p>
(13)	TCS TRQ Gear Gain 2		

TABLE - TCS TRQ Gear Gain1 [0.0 <> 4.0]				
	1	2	3	4
	1.0	1.0	1.0	1.0

	Const items	Functions	Contents
(14)	Accel Grip Select	Switches between normal and high throttle	<p>0: Normal throttle grip 1: High throttle grip</p> <p>* Be sure to use a high throttle grip set as the Kit part. Electric character will be converted in the ECU. If another high throttle grip is used, the ETV will not function correctly.</p>
(15)	Comp. RAM Correction	Adjusts A/F relating to Ram pressure	<p>Entered if there is discrepancy of A/F compared with the vehicle speed. Can be adjusted within the range of ± 10.</p>
(16)	Comp. FUEL / All Area	Adjusts A/F	<p>Has same function as (2) Comp. Fuel and makes uniform correction of operation areas. Corrects increase-decrease of fuel amount within a scope of ± 30.</p>
(17)	Pit Road Limiter	For pit load control Setting of engine revolution limiter	<p>Set within range of EG revolution range between 2000 and revolution limit rpm. Only effective in first and second gear.</p>
(18)	VI (VARIABLEINTAKE)	VI starts operating. Determine the engine speed.	<p>Set within range of EG revolution range between 5000 and revolution limit rpm.</p>
(19)	Comp. IDL	Idling correction	<p>Corrects idling. (Adjustable within a range of -1 to 2(deg)) As rough standard, change the value of 0.1. Since the value specified in here will affect the entirety of engine speed (engine brake), use this operation only for maintaining appropriate idling engine speed.</p>
(20)	Comp. TCS	Settings related to traction control	<p>The value is fixed at 0 (unchangeable). For other settings related to the traction control, refer to TCS IGNITION to (13) TCS TRQ.</p>

	Const items	Functions	Contents
(21)	Primary Gear Ratio	Primary gear ratio (Primary speed reduction ratio)	Sets the value to approach the engine brake torque set in (4) and (5) , even the primary speed reduction ratio is changed. Example) Input "67/41=1.63".
(22)	1ST Gear Ratio	1st gear ratio	Sets the value to approach the engine brake torque set in (4) and (5) , even the 1st gear ratio is changed. Example) Input "39/15=2.6".
(23)	2ND Gear Ratio	2nd gear ratio	Sets the value to approach the engine brake torque set in (4) and (5) , even the 2nd gear ratio is changed. Example) Input "37/17=2.18".
(24)	3RD Gear Ratio	3rd gear ratio	Sets the value to approach the engine brake torque set in (4) and (5) , even the 3rd gear ratio is changed. Example) Input "35/19=1.84".
(25)	4TH Gear Ratio	4th gear ratio	Sets the value to approach the engine brake torque set in (4) and (5) , even the 4th gear ratio is changed. Example) Input "30/19=1.58".
(26)	5TH Gear Ratio	5th gear ratio	Sets the value to approach the engine brake torque set in (4) and (5) , even the 5th gear ratio is changed. Example) Input "29/21=1.38".
(27)	6TH Gear Ratio	6th gear ratio	Sets the value to approach the engine brake torque set in (4) and (5) , even the 6th gear ratio is changed. Example) Input "30/24=1.25".
(28)	Secondary Gear Ratio	Secondary gear ratio (Secondary speed reduction ratio)	Sets the value to approach the engine brake torque set in (4) and (5) , even the secondary speed reduction ratio is changed. Example) Input "44/15=2.93". Refer to "Secondary speed reduction ratio" on page 31.
(29)	Rear Tire Radius	Rear tire radius	Sets the value to approach the engine brake torque set in (4) and (5) , even the rear tire size is changed. Input the radius of the rear tire. Example) Input "0.33 [m]".
(30)	USS IGNITION Gain	Adjusts the ignition retarding amount of QSS upshift	Adjusts the ignition retarding amount (0.5-2 times) of QSS upshift. As rough standard, change the value of ± 0.2 . The base coefficient is 1.0. If the input value is less than 1.0, the ignition retarding amount becomes lower. It may be effective when you feel speed reduction during upshift. If the input value is more than 1.0, the ignition retarding amount becomes higher. It may be effective when you frequently make a shift mistake during upshift.

	Const items	Functions	Contents
(31)	USS Time Gain	Adjusts the ignition retarding time of QSS upshift	Adjusts the ignition retarding time (0.5-2 times) of QSS upshift. As rough standard, change the value of ± 0.2 . The base coefficient is 1.0. If the input value is less than 1.0, the ignition retarding time becomes shorter. It may be effective when you feel speed reduction during upshift. If the input value is more than 1.0, the ignition retarding time becomes longer. It may be effective when you frequently make a shift mistake during upshift.
(32)	DSS TRQ Gain	Adjusts the ETV blipping of QSS downshift	Adjusts the ETV blipping opening (0.5-2 times) of QSS downshift. As rough standard, change the value of ± 0.2 . The base coefficient is 1.0. If the input value is less than 1.0, the ETV blipping opening becomes lower. It may be effective when you feel push during downshift. If the input value is more than 1.0, the ETV blipping opening becomes higher. It may be effective when you frequently make a shift mistake during downshift.
(33)	DSS Time Gain	Adjusts the ETV blipping time of QSS downshift	Adjusts the ETV blipping time (0.5-2 times) of QSS downshift. As rough standard, change the value of ± 0.2 . The base coefficient is 1.0. If the input value is less than 1.0, the ETV blipping time becomes shorter. It may be effective when you feel push during downshift. If the input value is more than 1.0, the ETV blipping time becomes longer. It may be effective when you frequently make a shift mistake during downshift.
(34)	LIF IGNITION Gain	Adjusts the ignition retarding amount of wheelie control	Adjusts the LIF ignition control (0-2 times). As rough standard, change the value of ± 0.2 . The base coefficient is 1.0. If the input value is less than 1.0, the LIF ignition control becomes lower. If the input value is more than 1.0, the LIF ignition control becomes higher. If 0 is input, the LIF ignition control is disabled. This setting will be applied to all of LIF1-3.

	Const items	Functions	Contents
(35)	LIF ETV Gain	Adjusts the ETV of wheelie control	Adjusts the LIF ETV control (0-2 times). As rough standard, change the value of ± 0.2 . The base coefficient is 1.0. If the input value is less than 1.0, the LIF ETV control becomes lower. If the input value is more than 1.0, the LIF ETV control becomes higher. If 0 is input, the LIF ETV control is disabled. This setting will be applied to all of LIF1-3.

Formulas of the traction control

Ignition Retard = Base Data \times TCS IGNITION Gain \times TCS IGNITION Gear Gain

Torque Reduce by Throttle control = Base Data \times TCS TRQ Gain \times TCS TRQ Gear Gain

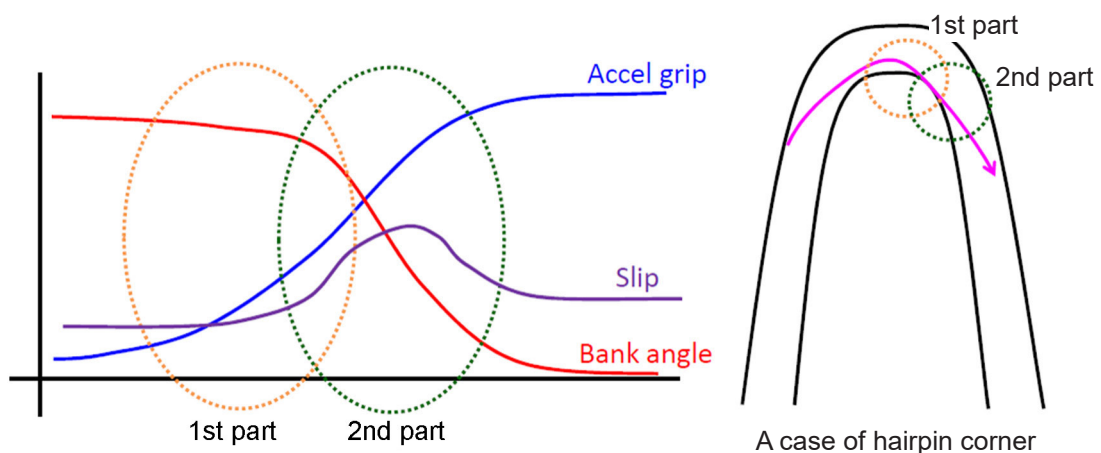
CAUTION:

Adjustable range TCS IGNITION Gain : 0 to 4.0
 TCS IGNITION Gear Gain : 0 to 4.0
 TCS TRQ Gain : 0 to 4.0
 TCS TRQ Gear Gain : 0 to 4.0
 Total upper limit : 4.0

You cannot set the value to be "TCS IGNITION Gain \times TCS IGNITION Gear Gain > 4.0 "

You cannot set the value to be "TCS TRQ Gain \times TCS TRQ Gear Gain > 4.0 "

Information relative to the traction control setting



Reference information on the traction control setting for a corner

1st part : slip characteristic is low but subtle control is required.

Controls slip by "Ignition Retard".

2nd part : slip characteristic is high but subtle control is not required.

Controls slip by "Torque Reduce by Throttle control".

2-2-2 Targets for setting of the YEC FI Matching System and precautions

- (1) Comp. FUEL / Map 1 (2) Comp. FUEL / Map 2 (16) Comp. FUEL / All Area

Change at one time should be changes of 5 as rough standard and especially for changes on the reduction side, (in case of becoming thinner), pay attention to the A/F value while changing.

Aim for A/F 12 to 13.

CAUTION:

If A/F is too thin, may relate to damage of the engine.

- (15) Comp. RAM Correction

Use only when the A/F diverges with increased vehicle speed.

+ : The higher the vehicle speed, the rich.

- : The higher the vehicle speed, the lean.

- (17) Pit Road Limiter

For control of engine revolution, obtain the necessary engine revolution from the following formula and input the obtained value.

$$\text{Engine revolution} = \frac{\text{Target speed (km/h)} \times (\text{Primary speed reduction ratio} \times 1^{\text{st}} \text{ gear ratio} \times \text{secondary speed reduction ratio}) \times 1000000}{60 \times \text{Perimeter outside length of the rear tire (mm)}}$$

YZF-R1	Model	Gear ratio
Primary speed reduction ratio		1.634
1 st gear ratio	STD	2.600
	KIT	2.440

Secondary speed reduction ratio		Drive sprocket number of teeth		
		14	15	16
Rear Sprocket number of teeth	38	2.71	2.53	2.38
	39	2.79	2.60	2.44
	40	2.86	2.67	2.50
	41	2.93	2.73	2.56
	42	3.00	2.80	2.63
	43	3.07	2.87	2.69
	44	3.14	2.93	2.75
	45	3.21	3.00	2.81
	46	3.29	3.07	2.88
	47	3.36	3.13	2.94
	48	3.43	3.20	3.00
	49	3.50	3.27	3.06

3 Quick -manual

3-1 List of operations

3-1-1 Editing and writing in of ECU data

This is the operation procedure for reading in data from ECU, editing the fuel adjusting map and ignition timing map, and writing in ECU.

No.	Objective	Operation of YMS	Remarks
(1)	Startup of YMS	Double click for shortcut to YMS	
(2)	ycz File reading in	File > Open	Only YMS exclusive file
(3)	Reading in data from ECU	Tool > Read from ECU	Keep power to ECU ON.
(4)	Data content confirming, editing	Editing optional data of Map/Const.	At this point, not reflected on ECU
(5)	Writing in data in ECU	Tool > Write to ECU	Keep power to ECU ON.
(6)	Title information editing	Tool > Title	Edit Title information as required
(7)	ycz File saving	File > Save as	Store file as required

3-1-2 Editing of saved data in files and writing in ECU

This is the procedure for reading in saved data (ycz File), checking contents, editing, and writing in ECU.

No.	Objective	Operation of YMS	Remarks
(1)	Startup of YMS	Double click for shortcut to YMS	
(2)	ycz File reading in	File > Open	Only YMS exclusive file
(4)	Data content confirming, editing	Editing optional data of Map/Const.	At this point, not reflected on ECU
(5)	Writing in data in ECU	Tool > Write to ECU	Keep power to ECU ON.
(6)	Title information editing	Tool > Title	Edit Title information as required
(7)	ycz File saving	File > Save as	Store file as required

3-1-3 Comparison of data saved in files and ECU data

This is the operation for reading in saved data (ycz File) and comparing with ECU data or other saved data (ycz File).

No.	Objective	Operation of YMS	Remarks
(1)	Startup of YMS	Double click for shortcut to YMS	
(2)	ycz File reading in	File > Open	Only YMS exclusive file
(8)	Data comparison	Tool > Data Compare	
(9)	Comparison of edited data and ECU data.	Edit area with ECU > Verify	Keep power to ECU ON.
(10)	Comparison of other ycz File and ECU data.	File data with ECU > Verify	Keep power to ECU ON.
(11)	Comparison of editing data and other ycz File.	Edit area with File data > Verify	Only exclusive file for YMS

3-2 Explanation of operations

3-2-1 Editing and writing in of ECU data

This is the operation procedure for reading in data from ECU, editing fuel adjusting Map and ignition timing map, and writing in ECU.

(1) Startup of YMS

Double click short-cut to YMS on desk top
“YEC FI Matching System.”

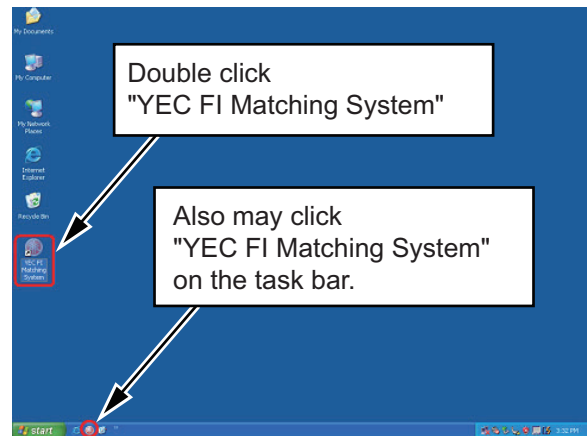


Fig. 14: startup of YMS

(2) Reading in ycz File

File > open First, read in the ycz File of the applicable model in.

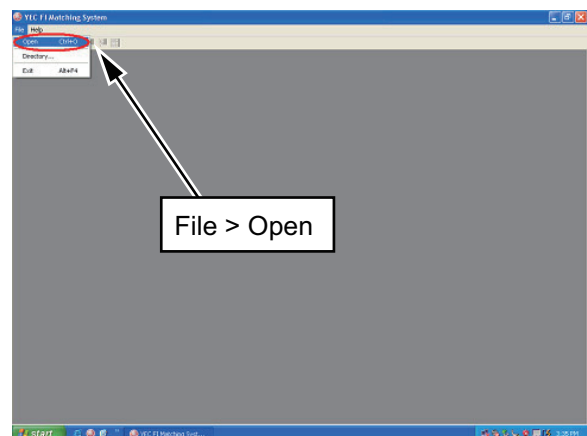


Fig. 15: Reading in of ycz File

(3) Reading in data from ECU.

Tool>Read from ECU

* At this time, keep power to ECU ON.

Read in is completed when “Complete” is displayed. Click “OK.”

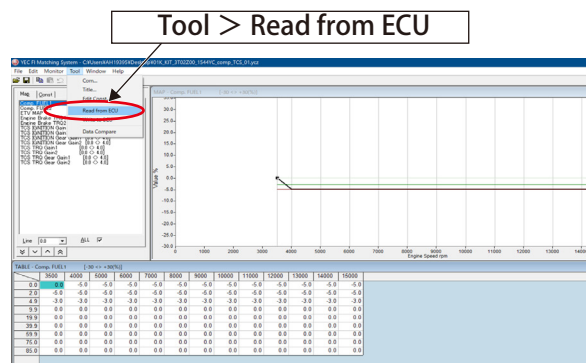


Fig. 16: Reading in data from ECU

- (4) Confirming, editing contents of data
 Edit optional data of Map/ Const.
 * At this point, not reflected in ECU.

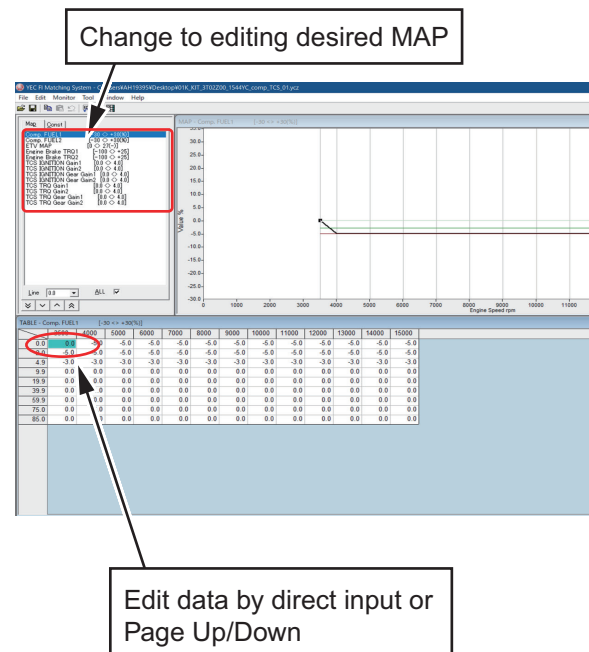


Fig. 17: Data editing (Map data editing)

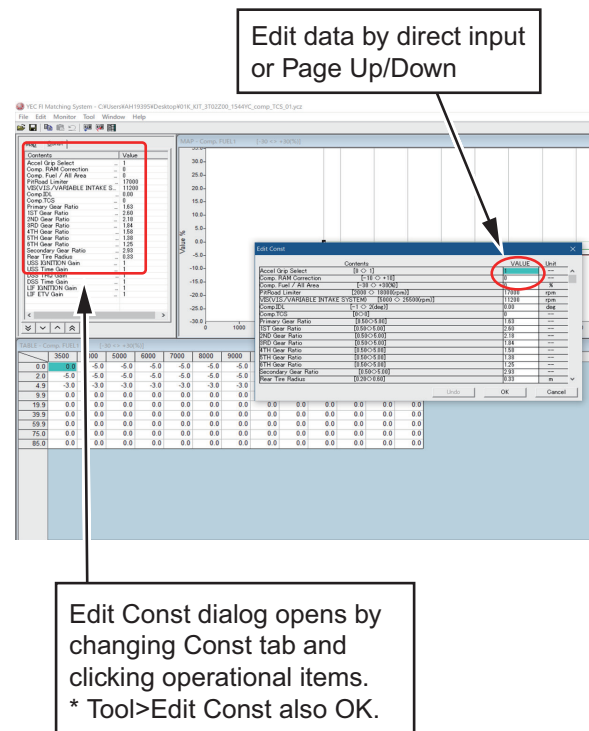


Fig. 18: Data editing (Const data editing)

(5) Writing in data to ECU

Tool>Write to ECU

* Keep power to ECU ON.

When “Data Write Complete Finished OK!!” is displayed, writing in is completed. Click “OK.”

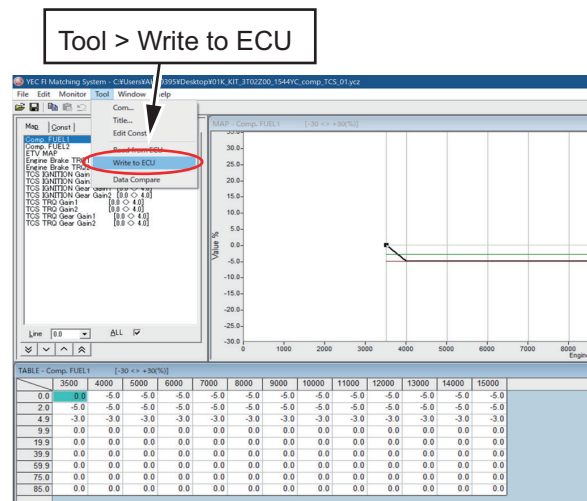


Fig. 19: Write in data to ECU

(6) Title information editing

* Title is edited as required.

Tool > Title

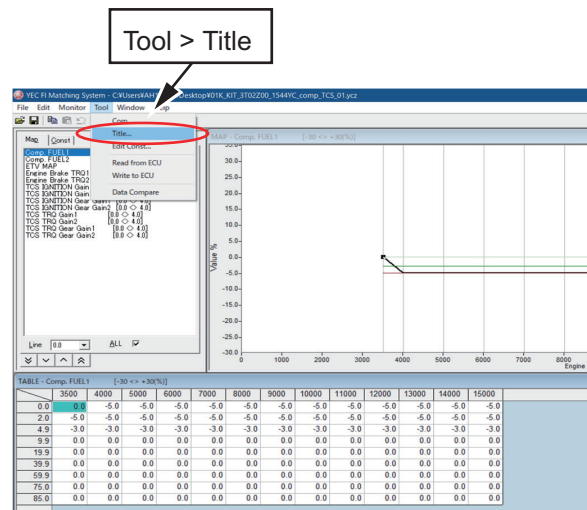


Fig. 20: Title Editor dialog startup

Select item on which editing is desired and click edit button for dialog startup of the edit title.

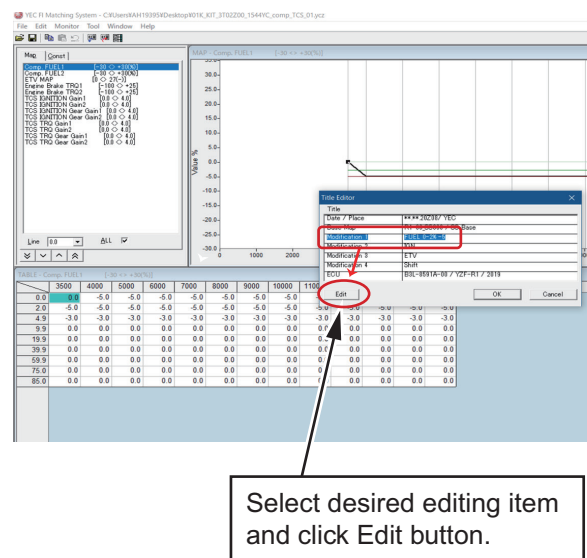


Fig. 21: Title Editor dialog

Edit optionally. Click OK to edit respective items

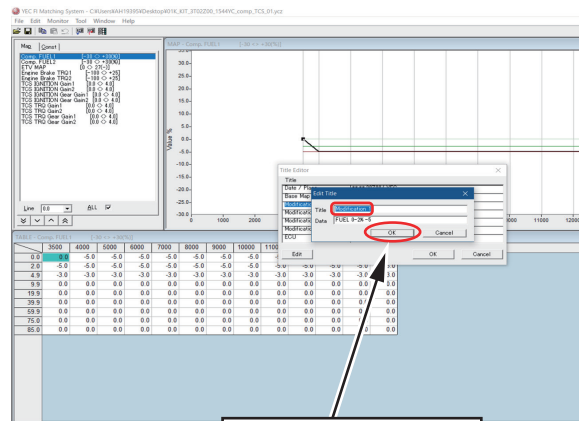


Fig. 22: Edit Title dialog

(7) Saving of ycz File

* Save files as required.

File > Save as

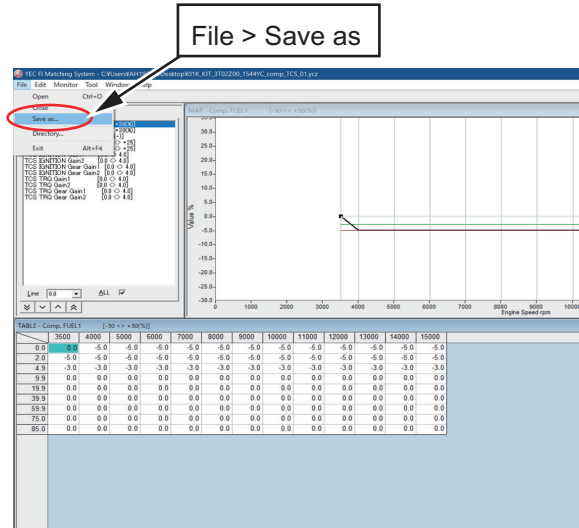


Fig. 23: Saving of ycz File

3-2-2 Editing of data saved in files as well as writing in ECU

This is the operation procedure when reading in saved data (ycz File), confirming of contents, then after editing, writing in the ECU.

- (1) Startup of YMS is in accordance with 3-2-1, same as editing and writing in ECU data
- (2) Read in ycz File.

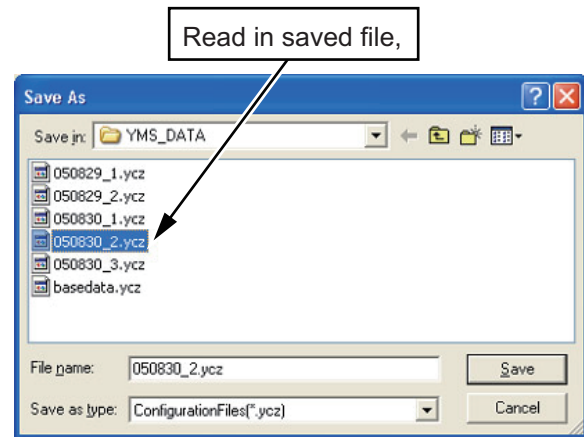


Fig. 24: Read in of ycz File

- (3) Read in of data from ECU is not required when editing data saved in file.
- (4) Data content confirming editing
Confirm that contents of data of Map/Const is the data desired for writing in ECU and edit if necessary.

* At this point, not reflected in ECU.

Conduct (5) Writing in data to ECU, (6) Title information editing (7) Saving of ycz File after data editing by the same procedure with that of 3-2-1. Editing and writing of ECU data.

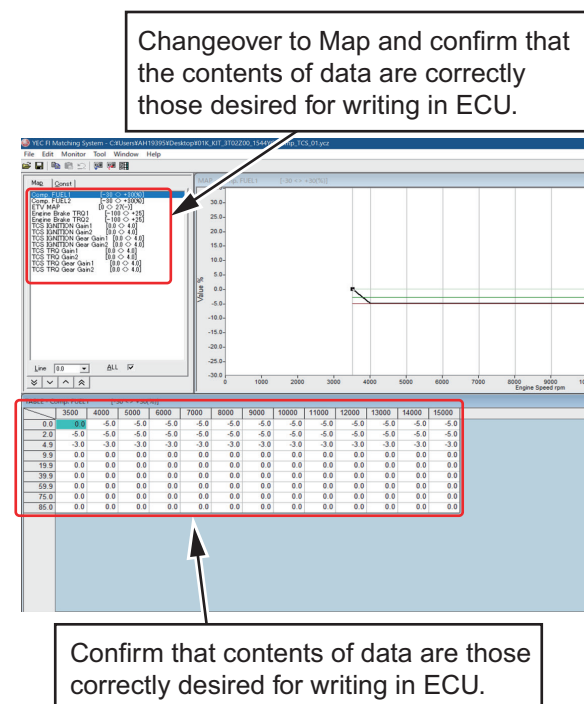


Fig. 25: Data content confirming editing.

3-2-3 Comparison of data saved in files and ECU data

This is the operation for reading in saved data (ycz File) and comparing with ECU data or other saved data (ycz File).

(8) Data comparison

Tool > Data Compare

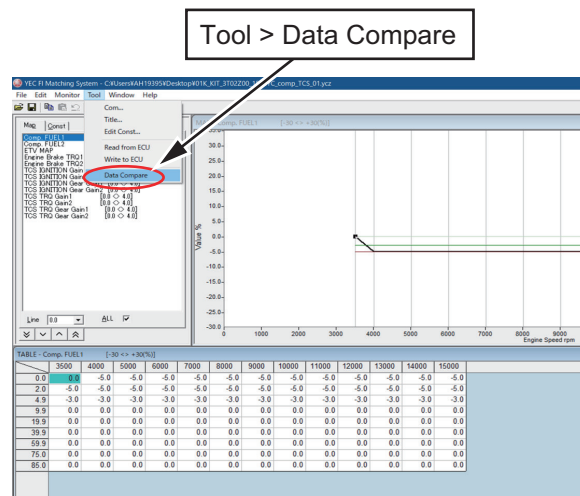
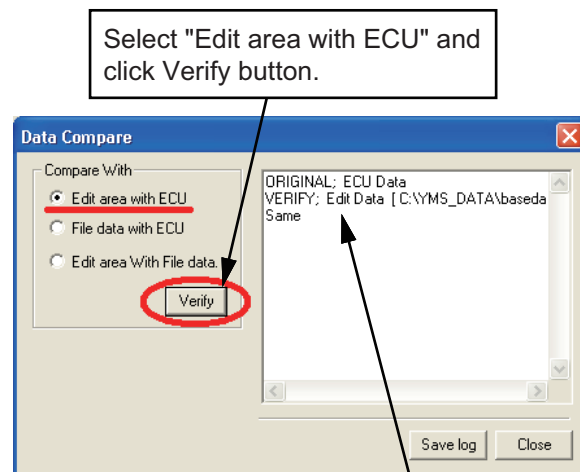


Fig. 26: Data comparison dialog startup

(9) Comparison of edit data and ECU data

In case it is desired to compare data presently being edited with ECU data, select "Edit area with ECU" and click Verify button.

* At this time, keep power to ECU ON.



If compared data matches, "Same" is indicated in the status display but if data does not match, then "Difference label" is displayed.

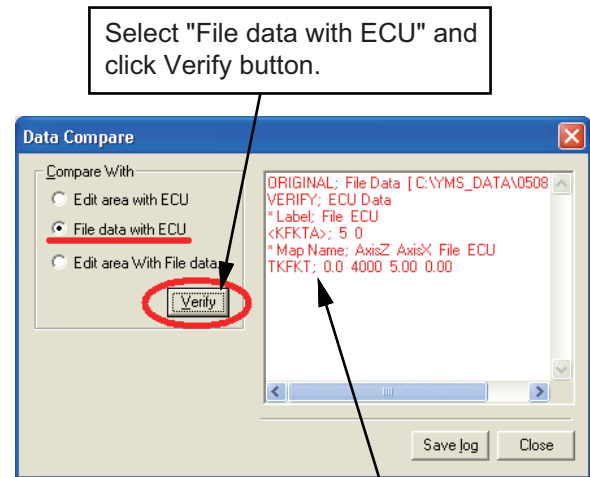
Fig. 27:
Data compare dialog (Edit area with ECU)

(10) Comparison of other ycz File and ECU data

In case it is desired to compare other ycz File and ECU data while leaving data presently being edited as it is, select "File data with ECU" and click Verify button.

Open the open file dialog and specify the other ycz Files desired for comparison with ECU members.

* At this time, keep power to ECU ON.



Select "File data with ECU" and click Verify button.

If compared data matches, "Same" is indicated in the status display but if data does not match, then "Difference label" is displayed.

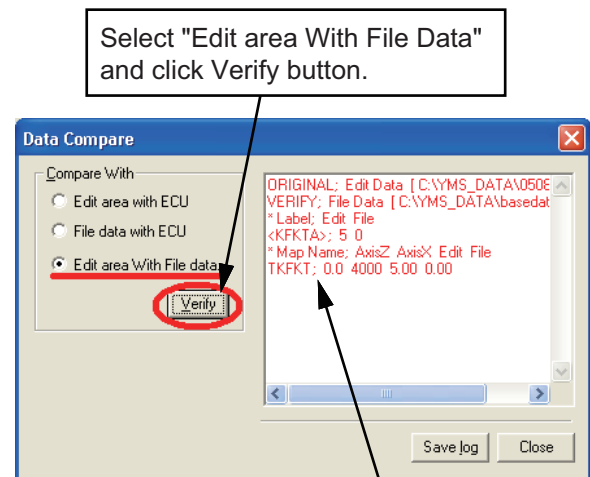
Fig. 28:
Data compare dialog (File data with ECU)

(11) Comparison of Edit data with other ycz File

In case it is desired to compare data presently being edited with other ycz File, select "Edit area with File data" and click Verify button.

The Open File dialog opens. Specify the other ycz File which you desire to compare with data presently being edited.

* "Edit area With File Data" does not conduct ECU communication because of comparison between the data presently being edited and the ycz File.



Select "Edit area With File Data" and click Verify button.

If compared data matches, "Same" is indicated in the status display but if data does not match, then "Difference label" is displayed.

Fig. 29:
Data Compare dialog (Edit area with File data)

4 Explanations of screens

4-1 Editing screen

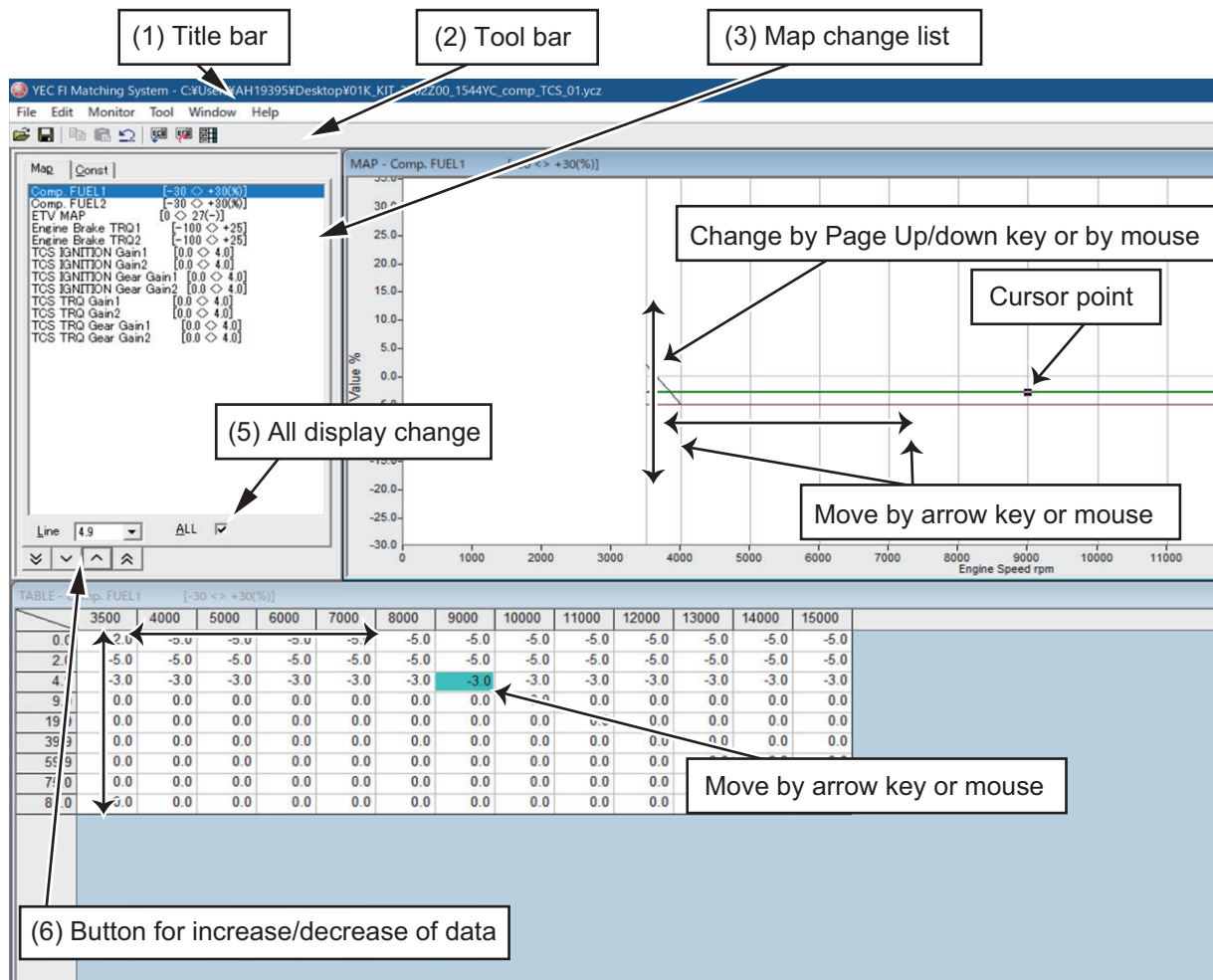


Fig. 30: Editing screen

(1) Title bar

Opened file names are shown by directory name on title bar.

(2) Tool bar

From the left

- Open :File-Open
- Save :File-Save
- Copy :Edit-Copy
- Paste :Edit-Paste
- Undo :Edit-Undo
- Read from ECU :Tool-Read data from ECU
- Write to ECU :Tool - Write data to ECU
- Edit Const :Tool-Open Edit Const dialog

(3) Map change list

Map tab: Displays a list of labels of MAPs to be edited, and when the cursor is pointed to a Label, the Map of the Label is displayed on the MAP window and on the Label MAP.

Const tab: Displays Const. List which may be edited. When list is clicked. Edit Const. dialog is opened.

(5) ALL display change

When checked, all lines of the MAP graph are displayed and when the check is removed, only the selected lines are displayed.

(6) Button for increase/decrease of data



Button: Data of selected cell are reduced by tenfold of minimum increments



Button: Data of selected cell are reduced by minimum increments



Button: Data of selected cell are increased by tenfold of minimum increment



Button: Data of selected cell are increased by minimum increments

4-2 Function explanation

4-2-1 Graph editing function on MAP screen

- Data editing function on graph point

Clicking on graph: Graph is selected and also the editing point of the revolution nearest to the clicked point is selected.

Drag and drop of graph data: Edit point is selected with left button down. By moving up and down, changed to the editing point nearest to the release point. (Direction of revolution is not changed)

4-2-2 MAP editing function on TABLE screen

Editing by key inputting is possible. When a value outside the data settable range is inputted, a warning message dialog is displayed and a value for which data settable value is automatically set.

- * When a figure key or minus key is inputted, becomes in a cell editing status and key inputting status. Also becomes in a cell editing status by double clicking of the mouse.

- Editing of axis cell

Revolution axis, throttle opening axis may both be numerically inputted or may be changed by [Page Up]/[Page Down] keys. The input value is limited by the maximum input range or by the value of the adjacent cell value.

CAUTION:

The Comp. FUEL / Map 1 axis and Comp. FUEL / Map 2 axis (engine rotation and throttle opening) are common. When either one is changed, the same value is reflected on the other.

4-2-3 Selecting of plural cells, editing, copy function on the TABLE screen

When in a status with cursor at an optional cell, drag by mouse and a plural cell selecting status is seen.

- * When a numerical key or minus key is inputted, becomes in a cell editing status with key inputting status. Double clicking of the mouse releases multiple cell selection and becomes in cell editing status.

4-2-4 Pasting function of plural cell data on TABLE screen

Data array copied in a plural cell selecting status may be pasted by {Ctrl} + {V} key on any optional cell other than the revolution increment and throttle opening increment axis cells. Also, plural cell data copied from Excel, etc. may be pasted via the clip board.

* However, when plural cell data is copied on the clip board, posting cannot be made in a plural cell selecting status.

In case pasting of data array exceeding the cell range in which pasting on the Table is attempted, the data exceeding the pasting possible range is ignored, The pasted data is consistently rounded to a minimum increment figure. In case of values outside the data settable range, the limit value within the settable range is automatically set.

TABLE - Comp. FUEL1 [-30 <> +30(%)]													
	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	14000	15000
0.0	0.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0
2.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0
4.9	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
9.9	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
19.9	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
39.9	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
59.9	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
75.0	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
85.0	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

Fig. 31: Table

5 Pull down menu

5-1 File

<u>O</u> pen	Ctrl+O	••Open data file
<u>C</u> lose		••Close file to which read in made
<u>S</u> ave as...		••Attach name and save.
<u>D</u> irectory...		••Display directory setting dialog
<u>E</u> xit	Alt+F4	••End YMS

* Close, Save, as...care not displayed in the pull down menu until read in of data file is made.

5-1-1 Open

Open ycz File.

[Open dialog]

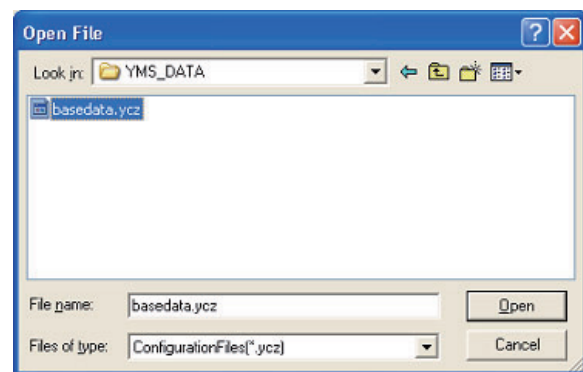


Fig. 32: Open dialog

5-1-2 Close

Close the ycz File being edited.

In case data editing was made from the file opened time or the file save time, a message to check whether data being edited may be closed without file saving is shown.

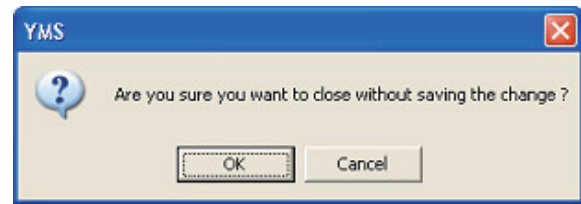


Fig. 33:
Close confirming message
(With difference to file)

Also when data editing was made from the time "Tool>Read from ECU" or "Tool>Write to ECU" was conducted, a close confirming message is shown to check whether closing may be made without writing to ECU of data being edited.

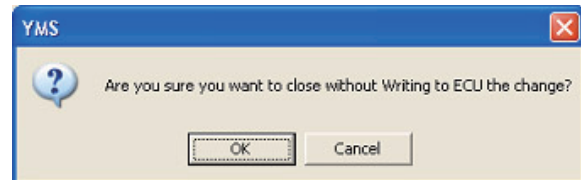


Fig. 34:
Close confirming message
(With difference to ECU)

5-1-3 Save as...

A name is attached to the ycz File being edited and saved.

A Windows standard Save As dialog opens for saving with a name attached to the file.

File being edited may be given an optional name and saved. It is also possible to overwrite an existing file and save.

[Save as dialog]

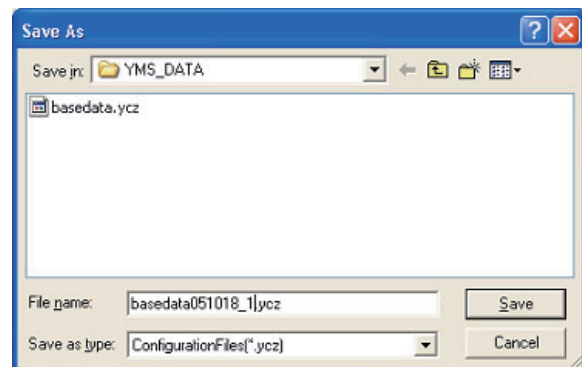


Fig. 35: Save As dialog

5-1-4 Directory...

A Default directory is set.

A folder to be opened by default when conducting File>Open, File>Save as, may be set. The set contents are registered and opened by default at the next startup time.

[Directory setting dialog]

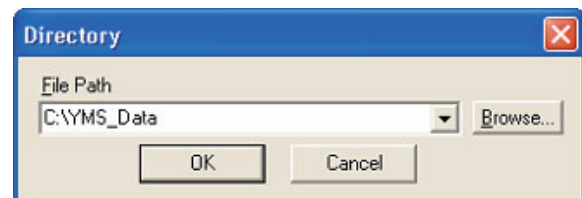


Fig. 36: Directory setting dialog

5-1-5 Exit

Application is ended.

5-2 Edit

U <u>ndo</u>	Ctrl+Z	••Return
C <u>opy</u>	Ctrl+C	••Copy
P <u>aste</u>	Ctrl+V	••Paste

5-2-1 Undo

When data is changed or revised with the data editing screen, the changes are cancelled.

The data change information for Undo is kept by each Map.

5-2-2 Copy

Cell data selected on the Table Display screen is stored in the clip board.

With plural cell selected status, the selected plural cell data is saved in the clipboard.

5-2-3 Paste

Pastes data in the clip board by the Table Display screen.

In case there is a copied data array of plural cell selected status in the clip board, array data is pasted in plural in the right downward direction from the cell with the cursor. Data which is crowded out from the Table display screen become invalid.

5-3 Monitor

Monitor...	Ctrl+M
Item set...	

- Monitor dialog is displayed
- Item setting dialog of the monitor is displayed.

5-3-1 Monitor

Processed value inside ECU is displayed simplified. Functions at less than 4000 rpm by a simplified monitor for function confirming (diagnosis) such as input sensor, etc. Since it is not a real time display, transient changes cannot be confirmed.

(1) Start button

Starts communications. When communication is started, the inscription changes to "Stop." When pressed during communications, communication is ended and the inscription returns to "Start." Also, communication ends when the dialog is closed.

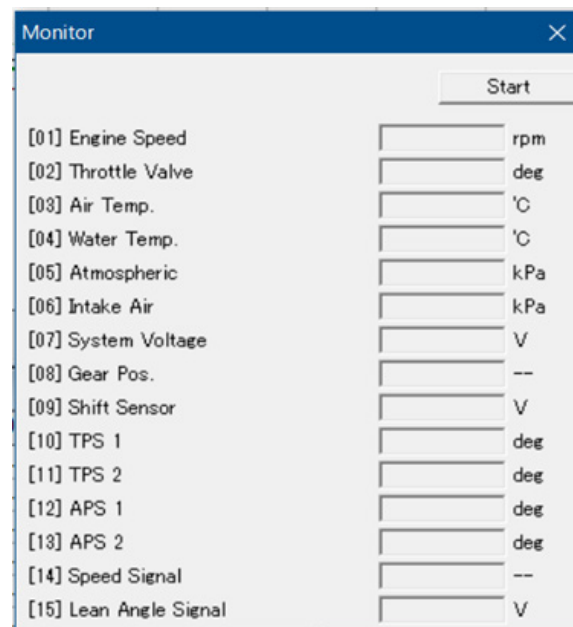


Fig. 37: Monitor dialog

5-3-2 Item set

Open set monitor data dialog and set Items.

(1) List of items

(2) List of monitor dialog items

>>[A] Addition of items

<<[D] Deletion of items

Items selected as monitor dialog items are automatically stored when YMS.exe is ended.

[Set monitor data dialog]

(2) Addition/deletion of items to be inputted on monitor screen.

Items to be outputted to monitor screen

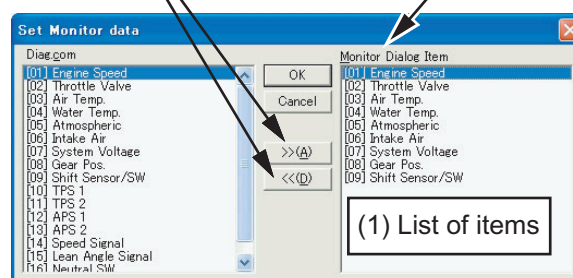


Fig. 38: Set monitor data dialog

5-4 Tool

Com...	•Com port selecting dialog is displayed
Title...	•Title setting dialog is displayed
Edit Const...	•Edit Const dialog is displayed
Read from ECU	•ECU data is read in as editing data.
Write to ECU	•Data being edited is written in ECU
Data Compare...	•Data compare dialog is displayed

5-4-1 Com

Selection of Communications port

A KIT interface cable (2CR-8533A-70) is required for communication with a KIT-ECU. Select the Com port by the setting procedure as follows:

Setting procedure

Automatic setting function

- (1) Check "Auto Select" in the Com Port setting dialog of the YMS.

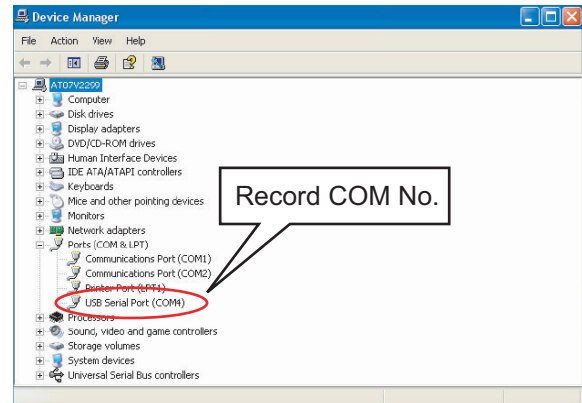


Fig. 39

Manual setting

(If normal communication is not achieved with the automatic setting function, Com Port can be set manually.)

- (1) Connect the interface cable to the computer.
- (2) Right-click on "My Computer" and open "Properties".
- (3) From "Property", open "Hardware" and then "Device manager".
- (4) Record the USB Serial Port COM number.
- (5) Uncheck "Auto Select" in the Com Port setting dialog of the YMS.
- (6) Designate the Communications port number recorded in the YMS Communications port dialog box and click on OK. That concludes the setting.

[Com Port setting dialog]

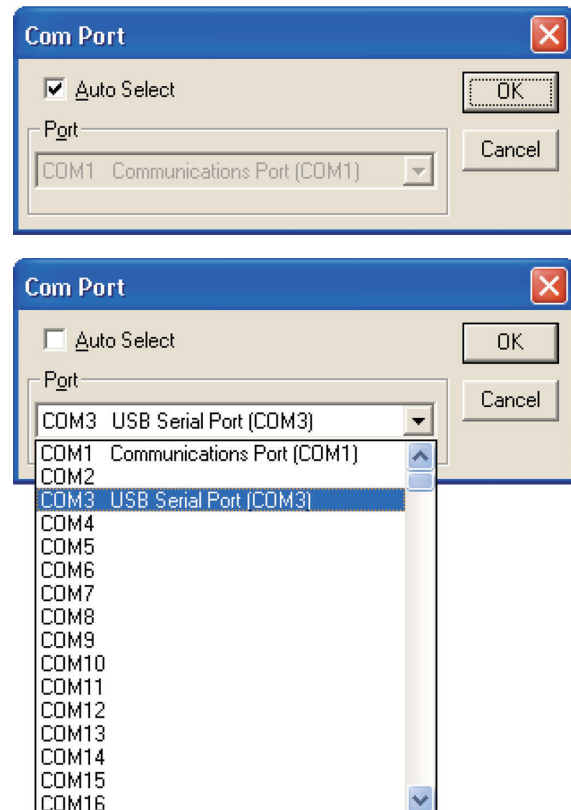


Fig. 40: Com Port setting dialog

5-4-2 Title

Items of [Title] of set file (*.ycz) are displayed and edited.

[Title setting dialog]

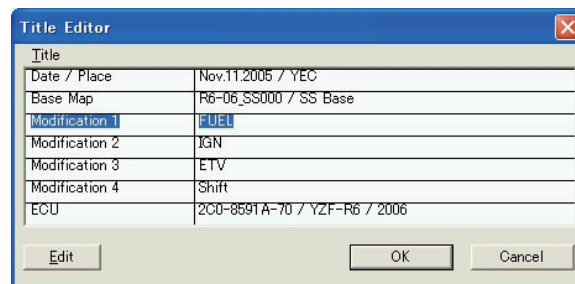


Fig. 41: Title setting dialog

Data items being edited by title setting dialog are selected and when the Edit button is pressed, Edit Title dialog is opened.

[Edit title dialog]

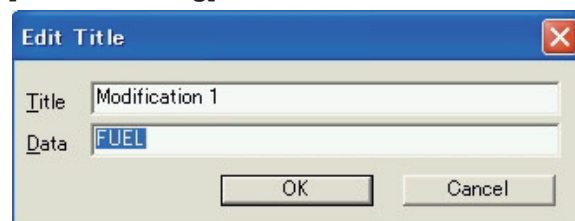


Fig. 42: Edit Title dialog

5-4-3 Edit Const

Display [Calib] items and display and edit the physical quantity (value) of the item.

When a value outside the data settable range is inputted in data editing, warning message dialog is displayed and a limit value within the settable range is automatically set.

- (2) Undo button
Undoes the editing contents
- (3) OK button
Finalizes the editing contents and closes the dialog.
- (4) Cancel button (X button)
Scraps the editing contents without finalizing and closes the dialog.

[Edit Const dialog]

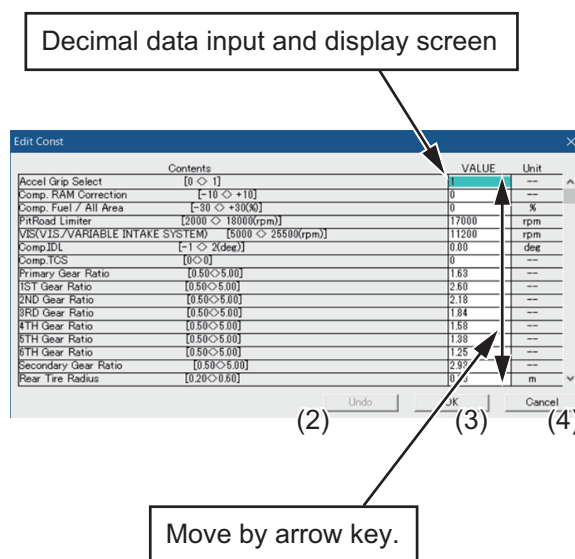


Fig. 43: Edit Const Dialog

5-4-4 Read from ECU

Reads data from ECU and writes in editing area as edit data.

When executed, progress is displayed and when data reading is completed, "Complete" is indicated.

If reading in fails, a message reading "Failed to correspond with ECU, Read Error Address :XXXX " is displayed.

In case communication with other ECU is attempted, a message reading "ECU type is different" is displayed by model distinguishing check.

Each message closes by pressing OK button.

* When the monitor dialog is opened, this function cannot be executed.

5-4-5 Write to ECU

Write in editing area data to ECU.

When executed, progress is displayed and when data reading in I completed, message reading "Data Write Compete Finished OK!!" is displayed.

If reading in fails, a message reading "Failed to correspond with ECU, Write Error Address: XXXX" is displayed.

When communication with other ECU is attempted, a message reading "ECU type is different" is displayed by model distinguishing check.

The respective messages are closed by the OK button.

* This function cannot be executed while the dialog is opened.

* After transferring of data, shut off the ECU power supply once. When switched on again, the transfer data become effective.

5-4-6 Data Compare

Open the Data Compare dialog.

(1) Compare With

Edit area with ECU: Making setting to compare edit area data and ECU data.

File data with ECU: Making setting to compare data of ycz File with data of ECU.

Edit area with File data: Making setting to compare data being edited with data of ycz File.

Verify button; Read in data in accordance with the setting and compare data.

(2) Status display

Press verify button to display executed results.

Display format

1st line, comparison origin data name

2nd line, comparison destination data name display

3rd line and subsequent, Label names with data differences. Displayed in the order of "comparison origin data," "comparison destination data,"

In case there are differences in Map data.

"Map name,"; "Number of data differences" are displayed.

(3) Save log button

Verify results are saved in text file.

(4) Close button

Close dialog.

[Data Compare Dialog]

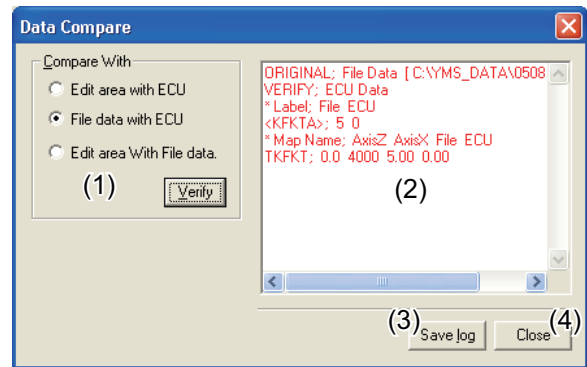


Fig. 44: Data Compare Dialog

5-5 Window

<u>A</u> ll	Alt+A	•• Change All displays and Single displays of graph displayed on Map screen.
<u>M</u> onitor Dialog		•• Shift cursor to Monitor screen when Monitor screen is being displayed.

5-5-1 All

Change Graph displayed on the Map screen to All and Single. In the All status, menu checking is made. The same action is taken with F4 also.

5-5-2 Monitor Dialog

Shift cursor to Monitor screen when the Monitor screen is being displayed.

5-6 Help

Open Version dialog to display version information.

[Version dialog]



Fig. 45: Version dialog

