FI MATCHING SYSTEM Ver.2.13 MANUAL

CONTENTS

1 Introduction

1–1 Objective

This in 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
- 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

Interface cable

Vehicle harness

4-pin connector

USB A-type

Computer
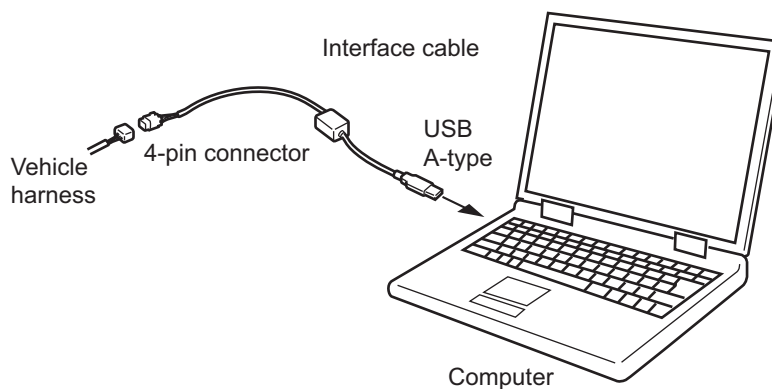
1–4   Precautions on using the interface cable

- 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.
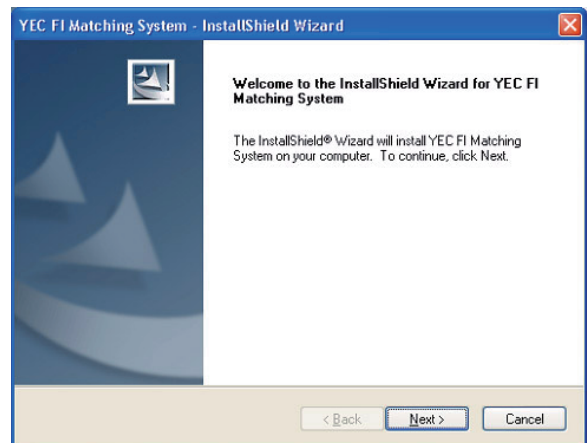
Fig. 1: Welcome

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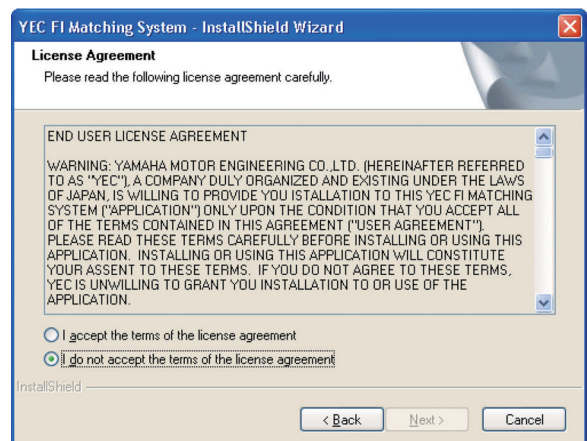
Fig. 2: Product License Agreement

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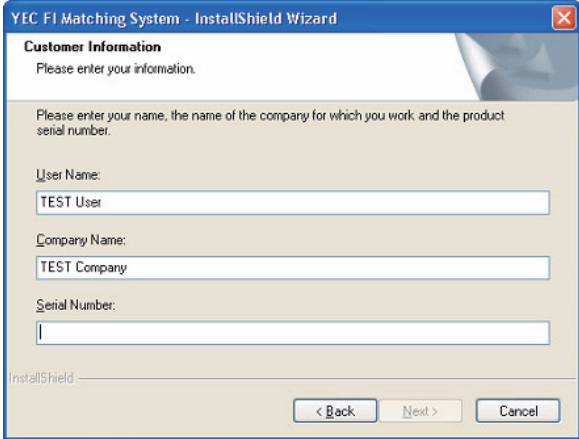
Fig. 3:
Registering of customer's information and serial No. certification

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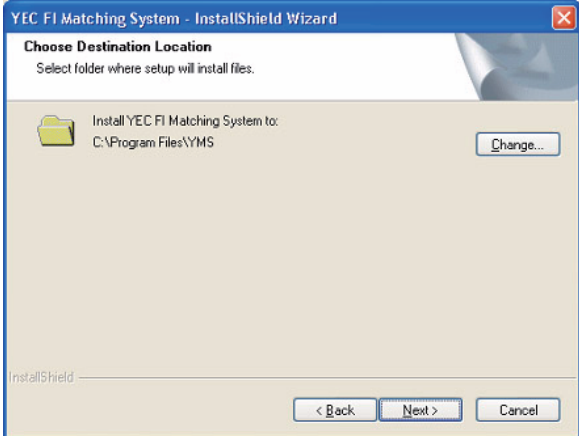
Fig. 4: Selecting of the installing folder

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].
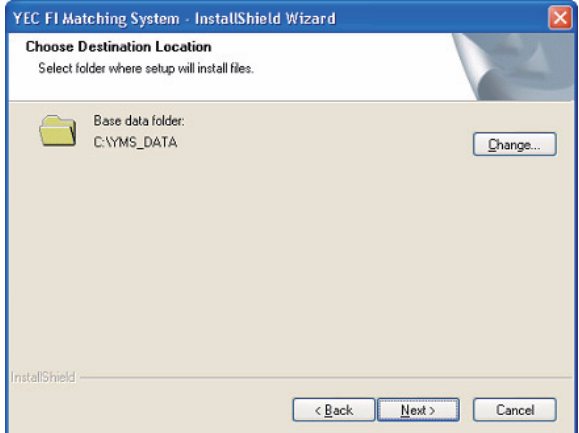
Fig. 5: Selecting of base data folder

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.
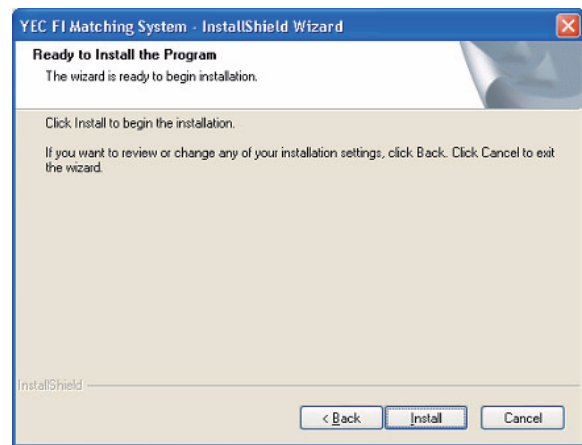
Fig. 6: Installation confirmation.

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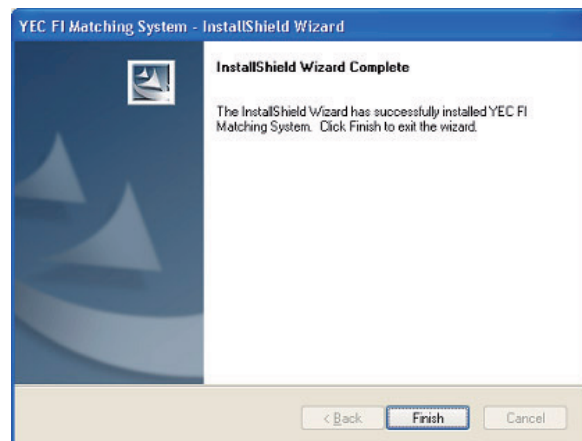
Fig. 7: Set up completion

When [Finish] is pressed, setup in completed. Upon finishing setup, "YEC FI Matching System" shortcut is displayed on desktop and on start menu. Program maybe 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	R6-19_BaseData_00_SS.ycz	BN6-8591A-71 for SS (Following WSS rule)
	2019	R6-19_BaseData_A0_STK.ycz	BN6-8591A-A1 for STK
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

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.

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* 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 files are in the "CDM v2.12.26 WHQL Certified" folder on the CD. Copy the whole folder onto the computer.

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* 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 v2.12.26 WHQL Certified" is executed, setup program starts and Fig. 8. FTDI CDM Drivers screen is shown.
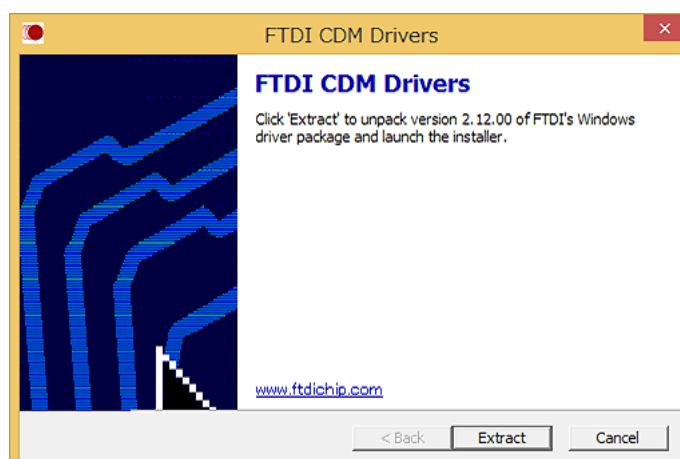
Fig. 8: FTDI CDM Drivers

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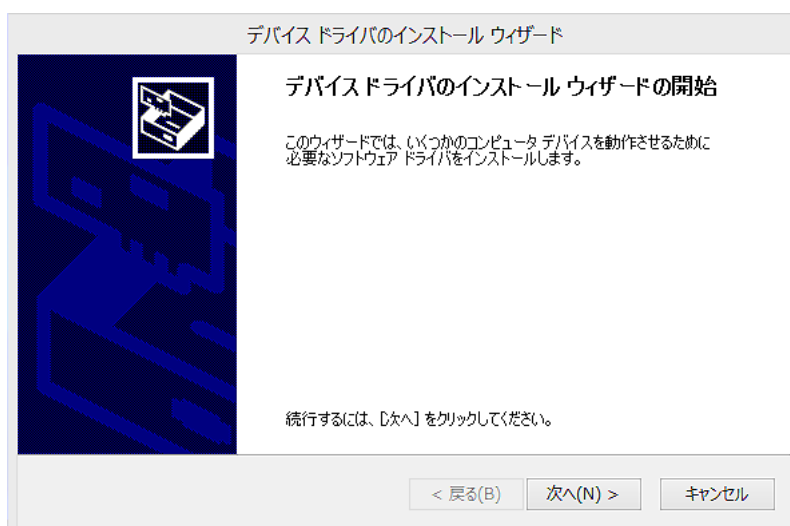
Fig. 9: Install Wizard

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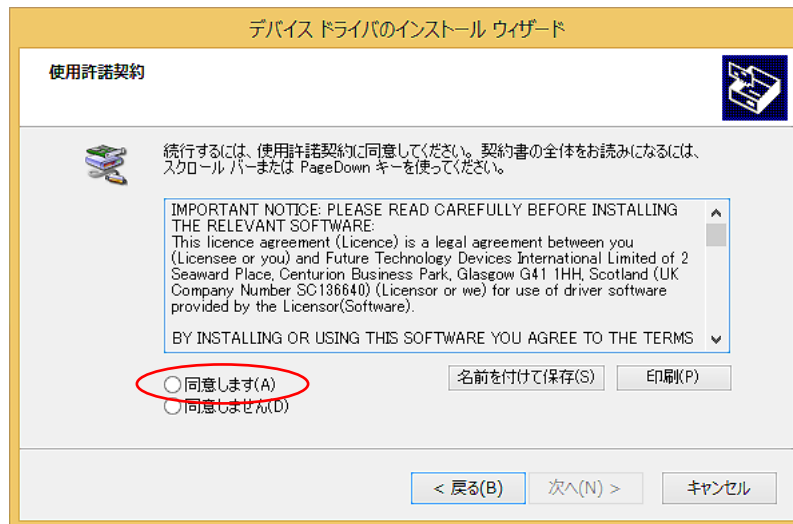
Fig. 10: Product License Agreement

(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.
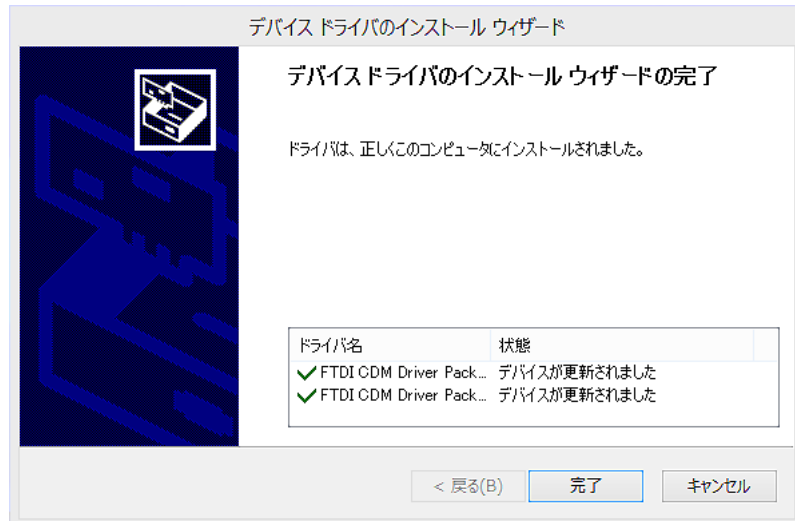
Fig. 12: Install Wizard completion

(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.
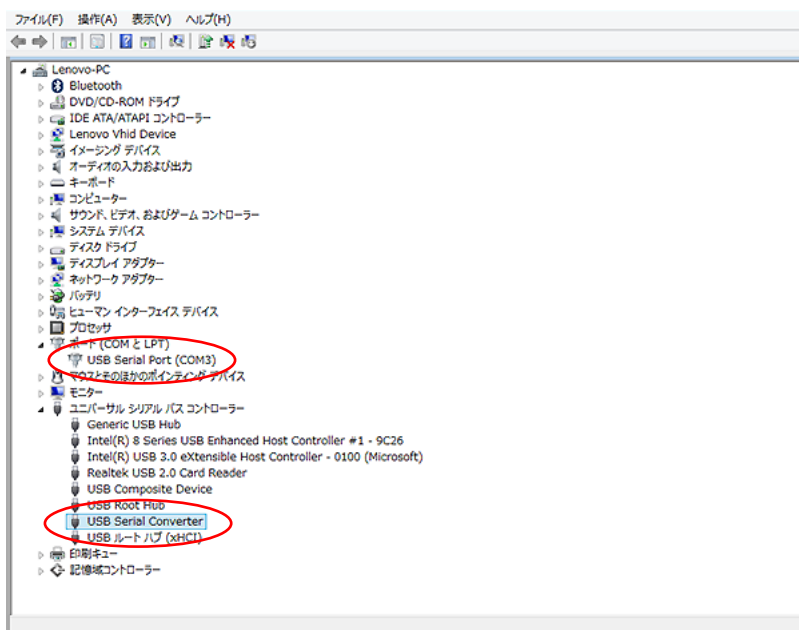
Fig. 13: Device Manager

− 8 −

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".
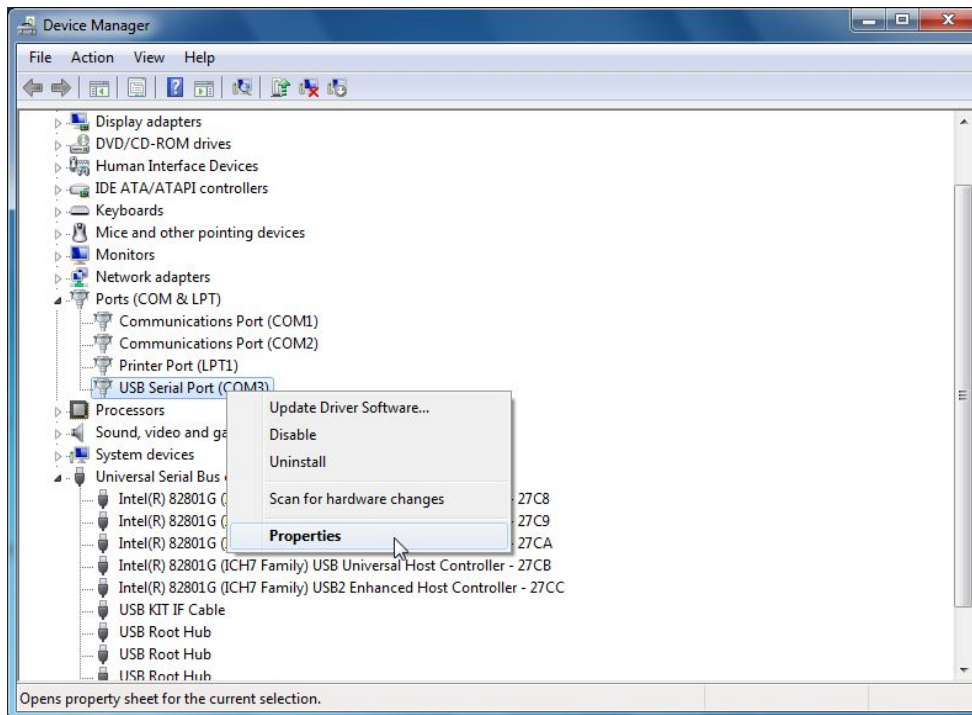
(2) Select "Port Settings" and click [Advanced].
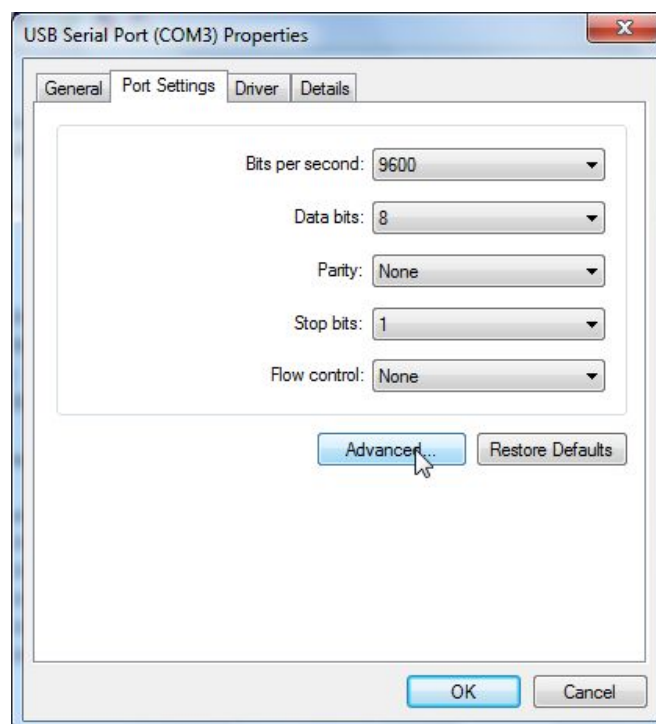
(3)   Select the desired COM port in [COM Port Number] and click [OK].
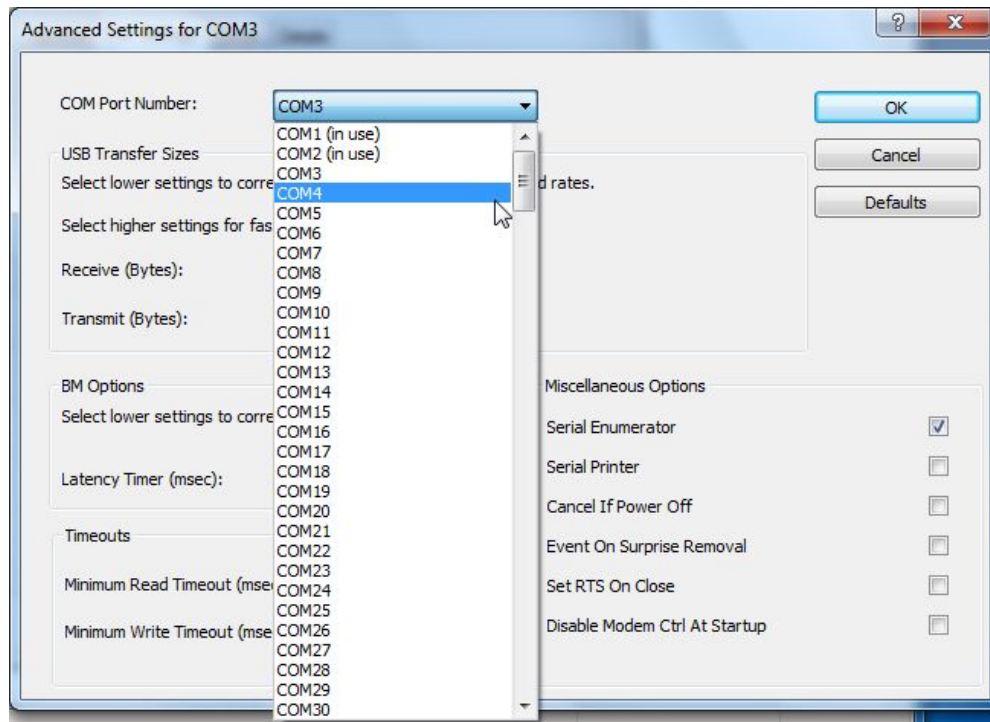
Close the Device Manager and reopen it. The COM number is now changed.

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 on 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)".
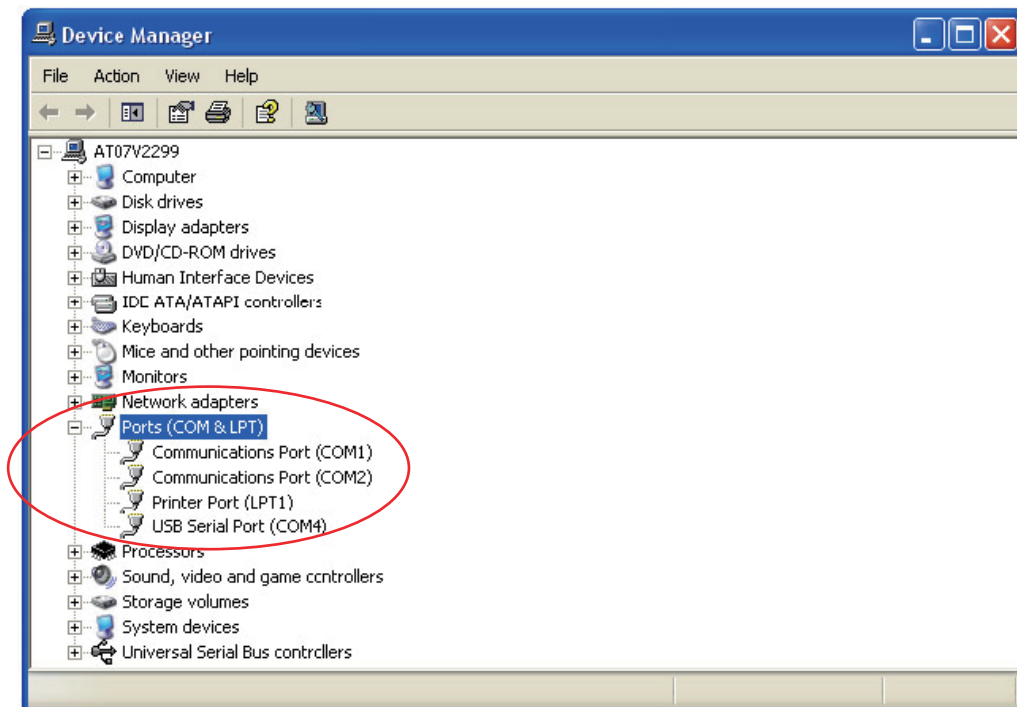
(4) Select the desired serial port and right click.

(5) Click [Uninstall].
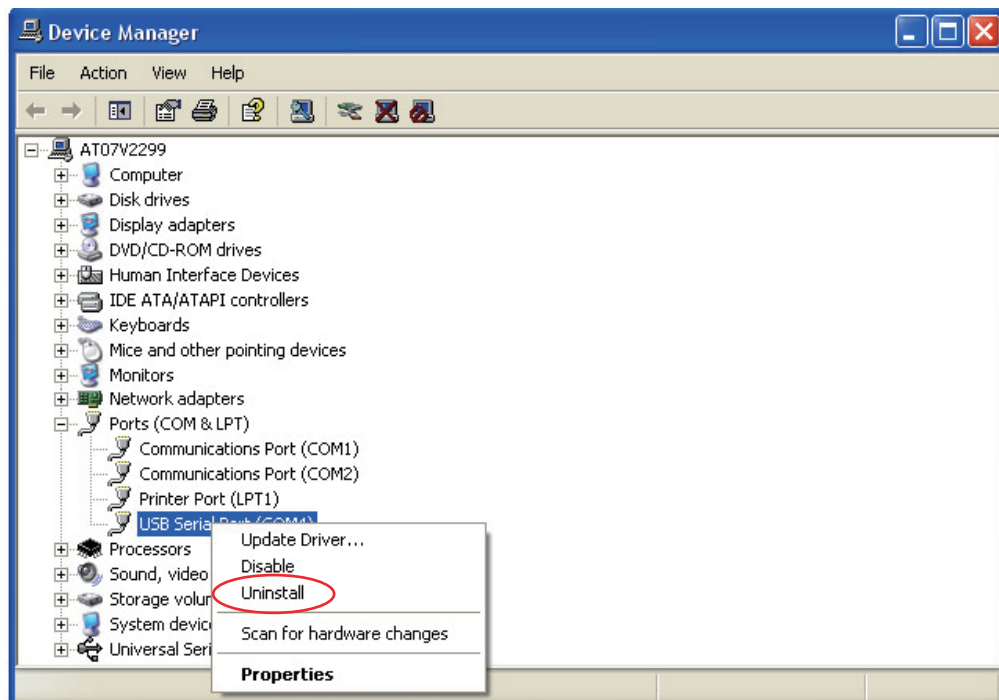
(6)   Open "Universal Serial Bus Controllers".
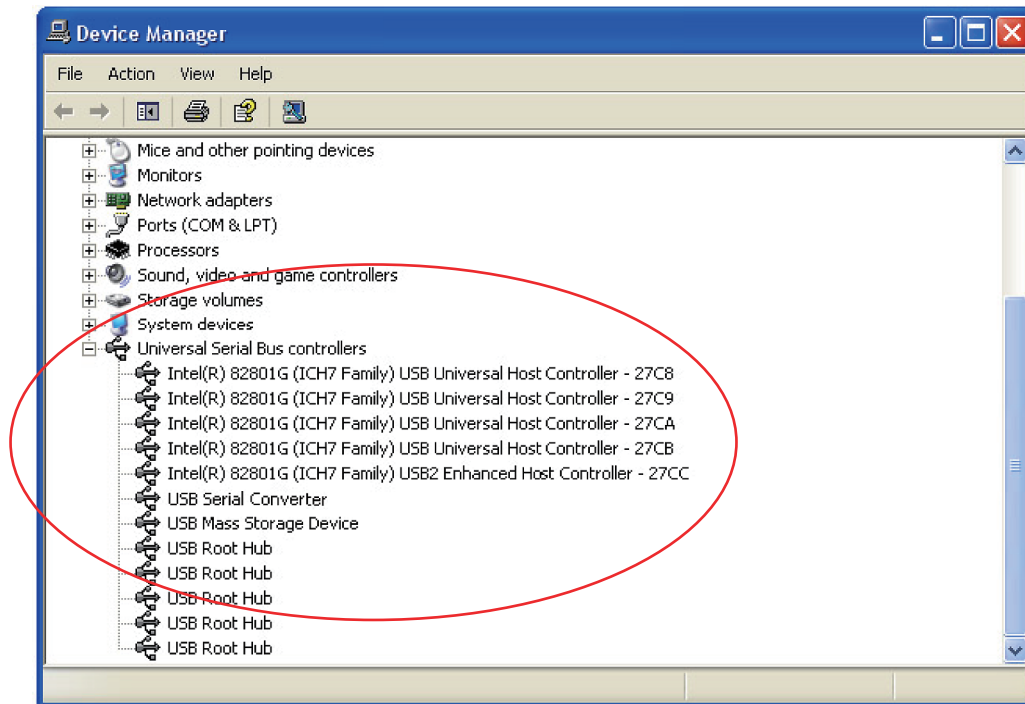
(7)   Select "USB Serial Converter" and right click.

(8)   Click [Uninstall].
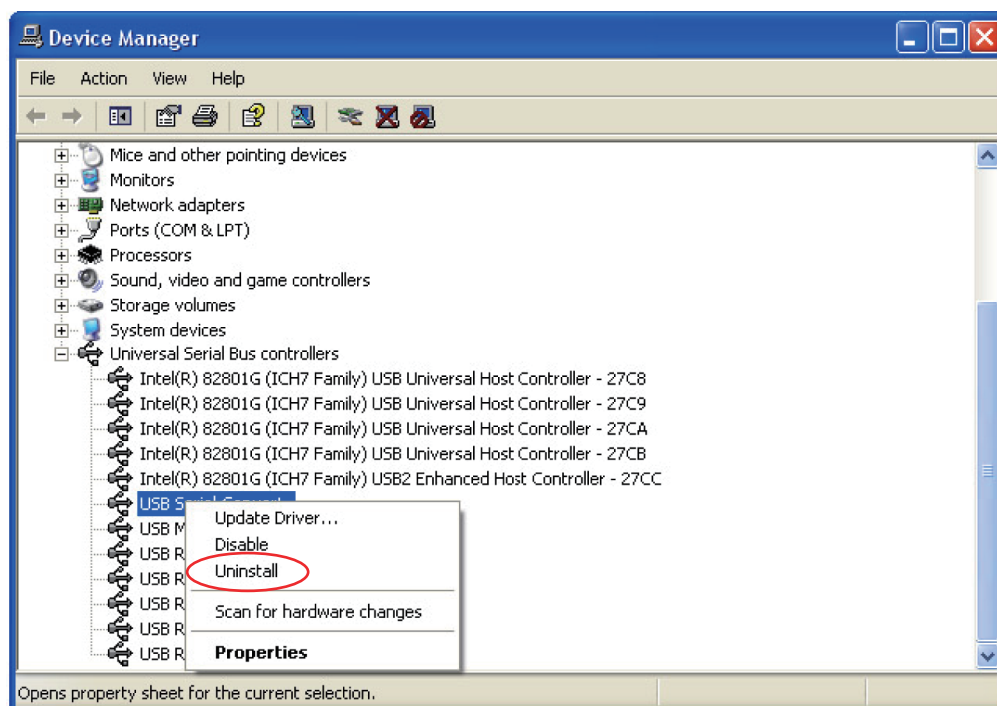
* If reinstalling the driver, you must first uninstall it.

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)
(2)	Comp. FUEL / Map 2		Map 1 or Map 2 can be selected with the map switch. (For details on switching, refer to the R6 Racing Kit Manual.)
(3)	Offset IGNITION Map 1	Corrects ignition timing	Corrects ignition timing within the range of -15°CA to 5°CA (crank angle).
(4)	Offset IGNITION Map 2		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.)

	Map items	Functions	Contents
(5)	Comp. ETV / Engine Brake	Corrects ETV opening (Engine brake correction)	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. (Recommended engine brake control MAP) 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. 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). 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.) * This MAP is given under the assumption of a secondary speed reduction ratio of 2.81. 　Increase each controlling value if the actual speed reduction ratio is higher than this, and decrease if lower. * 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).

TABLE – Comp. Engine Brake   [0 ◇ 10(%)]

	4000	6000	8000	9000	10000	11000	12000	13000	14000	15000
1.0	0.0	0.0	0.0	0.7	1.6	2.6	3.5	4.3	5.4	6.6
2.0	0.0	0.0	0.0	0.0	1.0	2.2	3.1	3.8	4.9	6.2
3.0	0.0	0.0	0.0	0.0	0.0	0.2	1.0	2.6	3.9	5.5
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.5	4.3
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.4	3.3
6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3	3.0

Strong engine brake ← | → Weak engine brake

Base engine brake setting value

Negative torque

TPS opening (map value)

15000rpm

Torque curve of each engine

4000rpm

0

– 15 –

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

Torque map default settings

		Gear					
		1	2	3	4	5	6
	1:STD	12.0	12.0	12.0	12.0	12.0	12.0
SW No.	**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

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)

Torque Curve Image (7types)

With the change as T2 ⇨ T1 ⇨ T0 ⇨ T-1...T-4, the torque curve becomes smoother.
* C0: Without upper limit setting
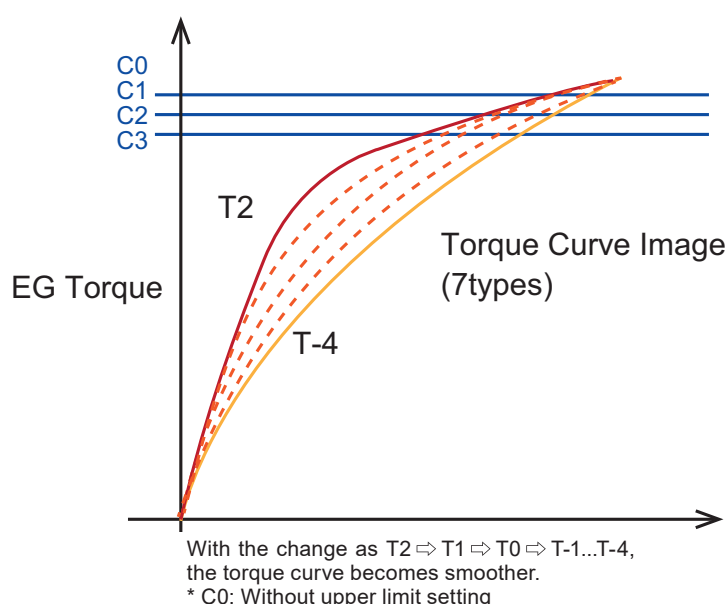
3 mode settings are available to control the peak power for each torque curve (C1 to C3).

(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.

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

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
(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

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
(11)	TCS ETV Gain 1	Sets the traction control coefficient from 0.0 to 15.0 at each accelerator opening and gearposition . 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.	Function to correct the outside diameter difference from tires installed on the commercially-available vehicle. Can be corrected within a range of -0.5 to 0.5. Setting to positive (0 to 0.5) makes it easier for TCS to be active, and negative (-0.5 to 0) makes it harder for TCS to be active. After the change of the tire's outside diameter, and if it becomes easier for TCS to be active, set to negative (-0.5 to 0). If it becomes harder, set to positive (0 to 0.5). TYRC becomes smaller with the positive setting. Appareat speed becomes higher.

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.

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

YZF-R6	Model	Gear ratio
Primary reduction gear ratio		2.07
1st 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

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
(2)	Comp. FUEL / Map 2		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.)
(3)	Offset IGNITION / Map1	Corrects ignition time	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).
(4)	Offset IGNITION / Map 2		The map switch lets you change between Map 1 and Map 2 (For details on switching, refer to the R1 Racing Kit Manual.)

	Map items	Functions	Contents
(5)	Comp. ETV / Engine Brake	Corrects ETV opening (Engine brake correction)	Adjusts the throttle valve to correct basic ETV opening between 0 and 12 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 12, it will not be reflected at 5000 rpm and lower. (Recommended engine brake control MAP) 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. 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). 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.) * This MAP is given under the assumption of a secondary speed reduction ratio of 2.86. Increase each controlling value if the actual speed reduction ratio is higher than this, and decrease if lower. * When entering controlling values on the MAP, be sure to enter 0 (zero) in the field at the intersection of 4500 rpm and 1.0 speed (top left).

TABLE - Comp. Engine Brake   [0 <> 12(%)]

	4000	5000	6000	7000	8000	9000	10000	12000	13000	14000
1.0	0.0	0.0	0.0	0.4	1.3	2.1	3.5	5.8	7.0	9.0
2.0	0.0	0.0	0.0	0.0	0.0	0.8	2.3	5.0	6.2	8.1
3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.2	5.5	7.0
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	4.3	6.2
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	3.1	4.8
6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	4.0
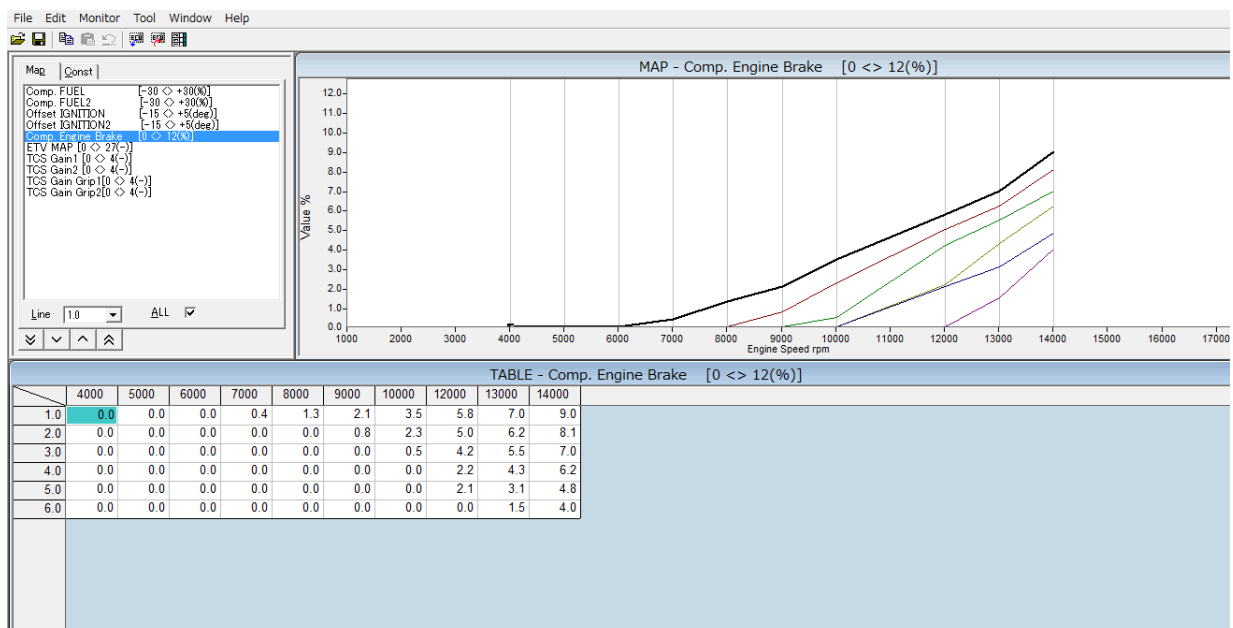
Conceptual diagram of engine brake torque

Strong engine brake   Weak engine brake

TPS opening
(map value)

13500rpm

Torque curve of each engine rotation speed

4000rpm

0

Negative torque

Base engine brake
setting value

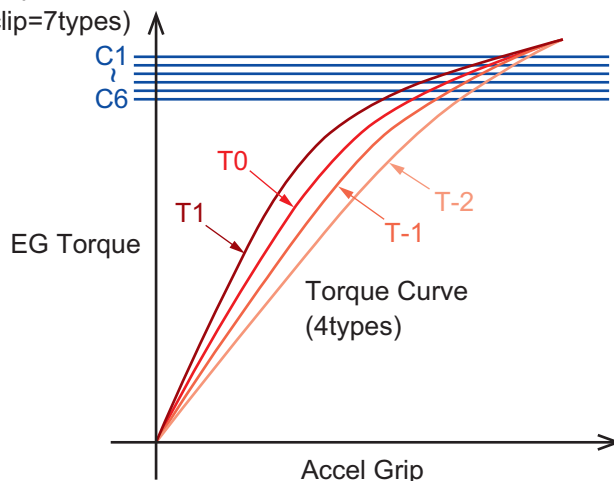|	Map items	Contents
(6)	ETVMAP	Sets the torque map (engine characteristics). Possible to configure the torque characteristic setting of each gear for No.1 to 4 individually. Select the torque characteristic from the 28 patterns (input value: 0 to 27) determined from 4 types of torque curves and torque 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						
		N	1	2	3	4	5	6
SW No.	1	→	9	8	7	7	7	7
	2	→	10	9	8	7	7	7
	3	→	17	16	15	14	14	14
	4	→	27	26	25	23	23	23

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)

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.

	Map items	Contents
(7)	TCS Gain 1 (for dry condition) TCS MODE 1~7	Sets the traction control coefficient by bank angle of each gear from 0.0 to 4.0. The base coefficient is 1.0. The bigger the coefficient the higher the traction control effect. If the bank angle is smaller than 25 degrees, the coefficient will be the same as that of 25-degree bank angle.
(8)	TCS Gain 2 (for wet condition) TCS MODE 8,9	If the bank angle is bigger than 55 degrees, the coefficient will be the same as that of 55-degree bank angle. TCS Gain 1 is for dry condition and TCS Gain 2 is for wet condition. TCS Gain 2 has a higher impact on the traction control effect by a change in the coefficient.

TCS Gain1/TCS Gain 2 map default settings

	Gear			
Bank angle	1	2	3	4 (*)
25.0	1.0	1.0	1.0	1.0
30.0	1.0	1.0	1.0	1.0
35.0	1.0	1.0	1.0	1.0
40.0	1.0	1.0	1.0	1.0
45.0	1.0	1.0	1.0	1.0
50.0	1.0	1.0	1.0	1.0
55.0	1.0	1.0	1.0	1.0

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

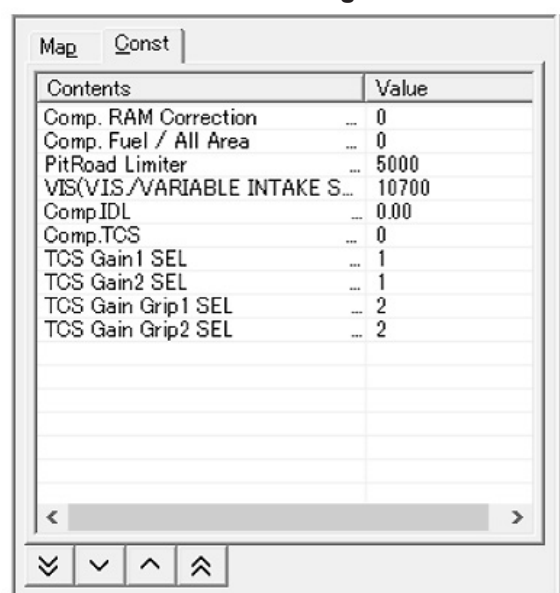|	Map items	Contents
(9)	TCS Gain Grip1 (for dry condition) TCS MODE 1~7	Sets the traction control coefficient by accelerator opening from 0.0 to 4.0. The base coefficient is 1.0. The bigger the coefficient the higher the traction control effect.
(10)	TCS Gain Grip2 (for wet condition) TCS MODE 8,9	TCS Gain 1 is for dry condition and TCS Gain 2 is for wet condition. TCS Gain 2 has a higher impact on the traction control effect by a change in the coefficient.

TCS Gain Grip1/TCS Gain Grip2 map default settings

Accelerator opening (%)	0	5	10	15	20	30	40	50	60	70	80	90	100
Setting value	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

	Const items	Functions	Contents
(11)	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.
(12)	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.
(13)	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.
(14)	VI (VARIABLE INTAKE)	VI starts operating. Determine the engine speed.	Set within range of EG revolution range between 5000 and revolution limit rpm.
(15)	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.
(16)	Comp. TCS	Settings related to traction control	Function to correct the outside diameter difference from tires installed on the commercially-available vehicle. Can be corrected within a range of -0.5 to 0.5. Setting to positive (0 to 0.5) makes it easier for TCS to be active, and negative (-0.5 to 0) makes it harder for TCS to be active. After the change of the tire's outside diameter, and if it becomes easier for TCS to be active, set to negative (-0.5 to 0). If it becomes harder, set to positive (0 to 0.5). TYRC becomes smaller with the positive setting. Appareat speed becomes higher.

	Const items	Contents
(17)	TCS Gain 1 SEL	Sets whether to reflect (7) TCS Gain1, (8) TCS Gain2, (9) TCS Gain Grip1 and (10) TCS Gain Grip2 on the formulas of the traction control "Ignition Retard" and "Torque Reduce by Throttle control (Gas)".
(18)	TCS Gain 2 SEL	Input value: 0 to 2 0: Reflected to both "Ignition Retard" and "Torque Reduce by Throttle control"
(19)	TCS Gain Grip 1 SEL	1: Reflected to "Ignition Retard" only
(20)	TCS Gain Grip 2 SEL	2: Reflected to "Torque Reduce by Throttle control" only Refer to the following for details about the formulas.

Initial recommended setting

Formulas of the traction control

Ignition Retard = Base Data×TCS Gain×TCS Gain Grip

Torque Reduce by Throttle control = Base Data×TCS Gain×TCS Gain Grip

Example 1)

If the CONST setting is as the following table

Since the "TCS Gain SEL" value is 1, the Map setting is reflected to "Ignition Retard" only.

Since the "TCS Gain Grip SEL" value is 2, the Map setting is reflected to "Torque Reduce by Throttle control" only.

If "TCS Gain:2" and "TCS Gain Grip:2" are applied in the Map setting,

TCS Gain

	1	2	3	4
25.0	2.0	2.0	2.0	2.0
30.0	2.0	2.0	2.0	2.0
35.0	2.0	2.0	2.0	2.0
40.0	2.0	2.0	2.0	2.0
45.0	2.0	2.0	2.0	2.0
50.0	2.0	2.0	2.0	2.0
55.0	2.0	2.0	2.0	2.0

TCS Gain Grip

	0	5	10	15	20	30	40	50	60	80	100
	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

The formulas of "Ignition Retard" and "Torque Reduce by Throttle control" become as follows.

Ignition Retard = Base Data × 2 (TCS Gain) × 1 (TCS Gain Grip)

Since the "TCS Gain SEL" value of the CONST setting is 1, the values of the Map setting are reflected to "TCS Gain" of "Ignition Retard" only.

Torque Reduce by Throttle control = Base Data × 1 (TCS Gain) × 2 (TCS Gain Grip)

Since the "TCS Gain Grip SEL" value of the CONST setting is 2, the values of the Map setting are reflected to "TCS Gain Grip" of "Torque Reduce by Throttle control" only.

Based on these formulas, "Ignition Retard" doubles and "Torque Reduce" doubles.

Example 2)

If the CONST setting is as the following table

Since both the "TCS Gain SEL" value and "TCS Gain Grip SEL" value are 0, the Map setting is reflected to "Ignition Retard" and "Torque Reduce by Throttle control".

Contents		Value
Comp. RAM Correction	...	0
Comp. Fuel / All Area	...	0
PitRoad Limiter	...	5000
VIS(VIS./VARIABLE INTAKE S...		10700
CompIDL	...	0.00
Comp.TCS	...	0
TCS Gain1 SEL	...	0
TCS Gain2 SEL	...	0
TCS Gain Grip1 SEL	...	0
TCS Gain Grip2 SEL	...	0

If "TCS Gain:2" and "TCS Gain Grip:2" are applied in the Map setting,

TCS Gain

	1	2	3	4
25.0	2.0	2.0	2.0	2.0
30.0	2.0	2.0	2.0	2.0
35.0	2.0	2.0	2.0	2.0
40.0	2.0	2.0	2.0	2.0
45.0	2.0	2.0	2.0	2.0
50.0	2.0	2.0	2.0	2.0
55.0	2.0	2.0	2.0	2.0

TCS Gain Grip

	0	5	10	15	20	30	40	50	60	80	100
	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

The formulas of "Ignition Retard" and "Torque Reduce by Throttle control" become as follows.

Ignition Retard = Base Data × 2 (TCS Gain) × 2 (TCS Gain Grip)

Since both the "TCS Gain SEL" value and "TCS Gain Grip SEL" value of the CONST setting are 0, the values of the Map setting are reflected to "TCS Gain" and "TCS Gain Grip" of "Ignition Retard".

Torque Reduce by Throttle control = Base Data × 2 (TCS Gain) × 2 (TCS Gain Grip)

Since both the "TCS Gain SEL" value and "TCS Gain Grip SEL" value of the CONST setting are 0, the values of the Map setting are reflected to "TCS Gain" and "TCS Gain Grip" of "Torque Reduce by Throttle control".

Based on these formulas, "Ignition Retard" quadruples and "Torque Reduce" quadruples.

CAUTION:

Adjustable range   **TCS Gain: 0.0 to 4.0**

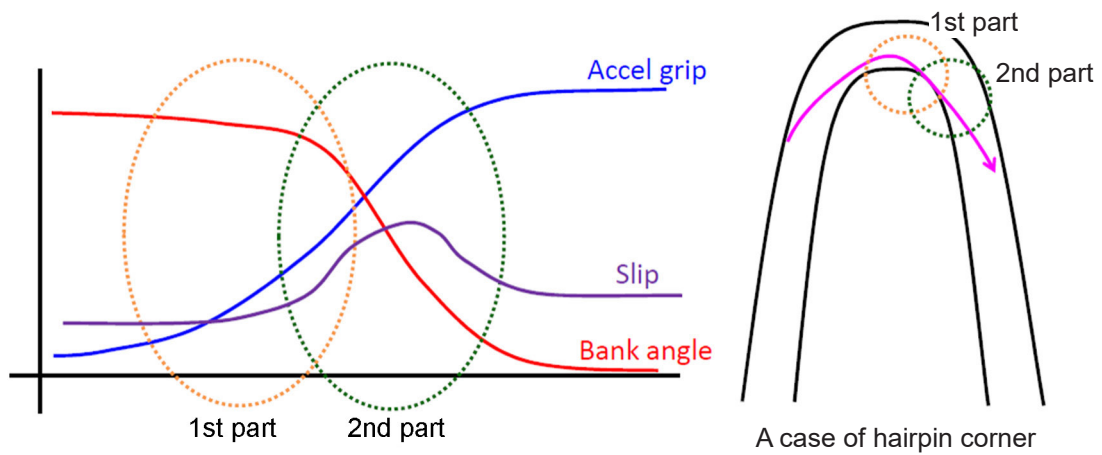   **TCS Gain Grip: 0.0 to 4.0**

                              Total upper limit: 4.0

You cannot set the value to be "TCS Gain × TCS Gain Grip > 4.0".

If the calculated value is over 4.0, "TCS Gain × TCS Gain Grip=4.0" is automatically applied.

Information relative to the traction control setting

A case of hairpin corner

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　　(6) 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)　　Offset IGNITION / Map 1　　(4) Offset IGNITION / Map 2

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.

(12)　　Comp. RAM Correction

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

(13)　　Pit Road Limiter

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

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

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

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 typing map, and writing in ECU.

(1)   Startup of YMS

Double click short-cut to YMS on desk top "YEC FI Matching System."
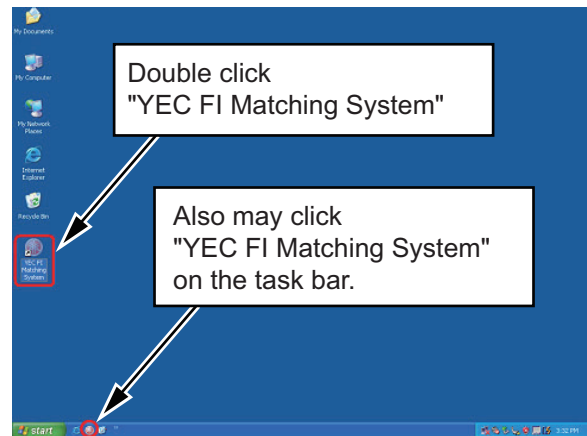
Fig. 14: startup of YMS

(2)   Reading in ycz File

File > open First, read in the ycz File of the applicable model in.
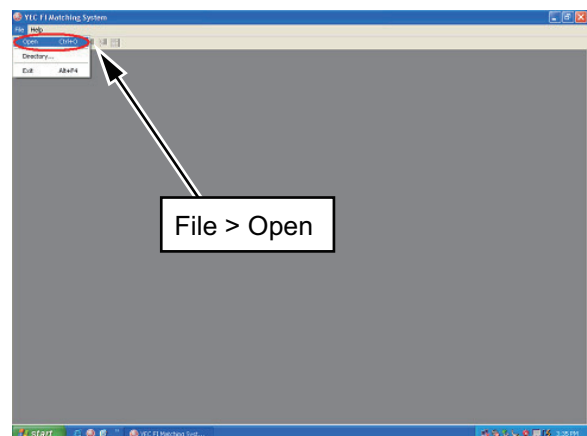
Fig. 15: Reading in of ycz File

(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."
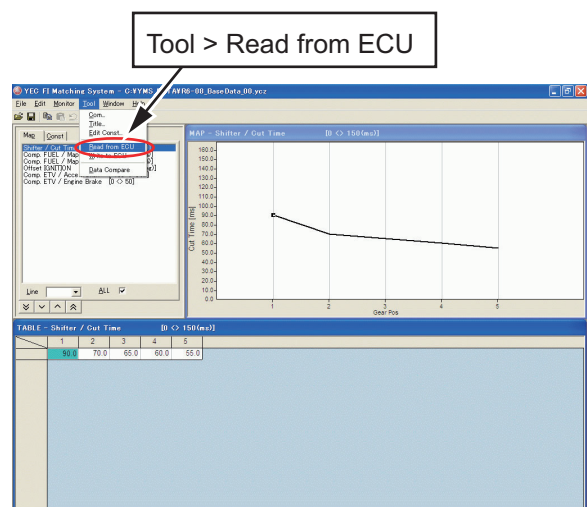
Fig. 16: Reading in data from ECU

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

Change to editing desired MAP

Edit data by direct input or Page Up/Down
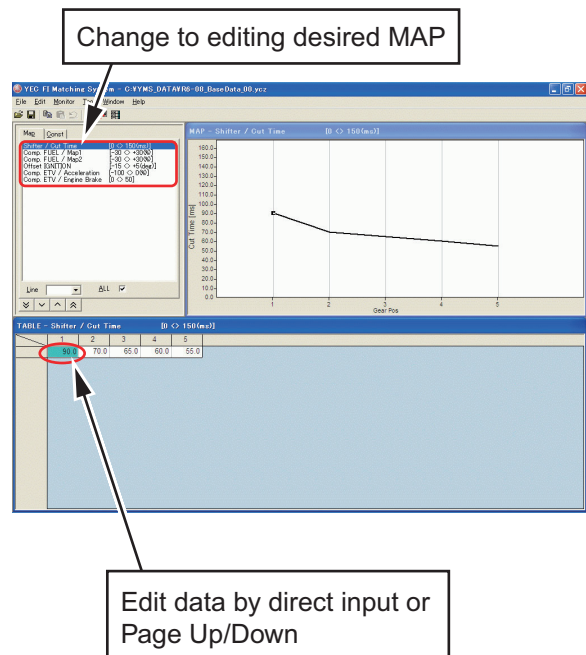
Fig. 17: Data editing (Map data editing)

Edit data by direct input or Page Up/Down

Edit Const dialog opens by changing Const tab and clicking operational items.
* Tool>Edit Const also OK.
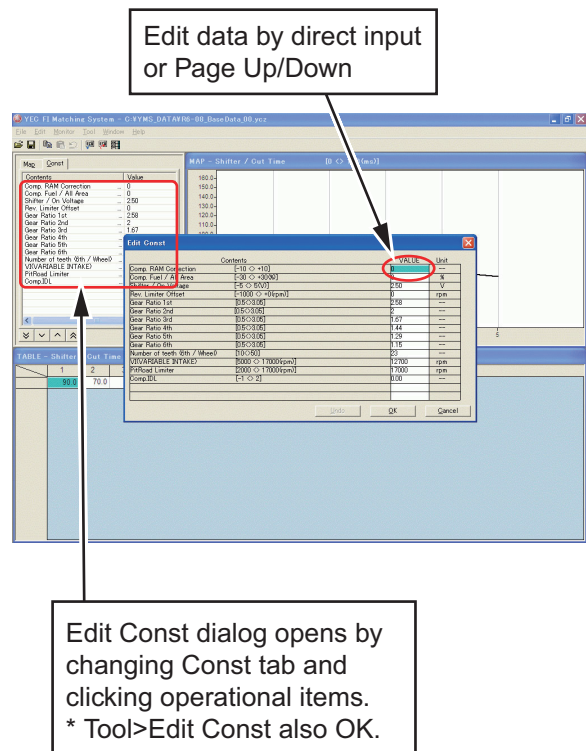
Fig. 18: Data editing (Const data editing)

(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."

Tool > Write to ECU
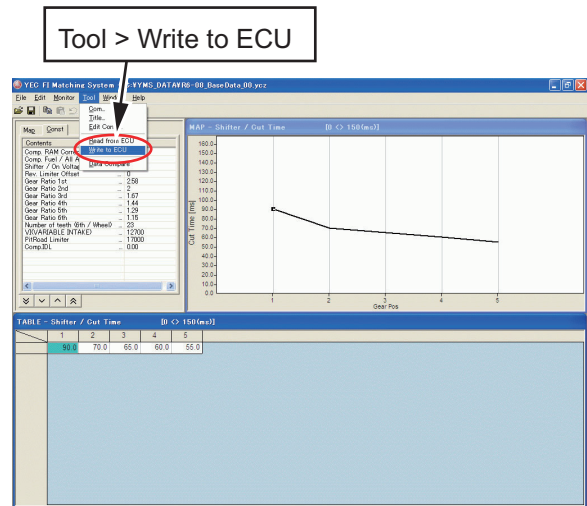
Fig. 19: Write in data to ECU

(6) Title information editing

* Title is edited as required.

Tool > Title

Tool > Title
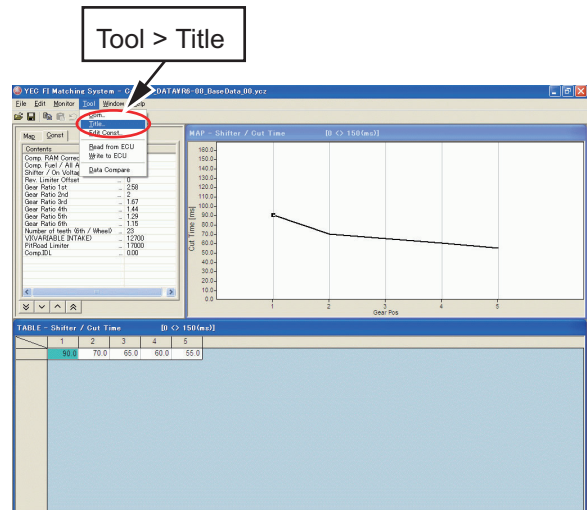
Fig. 20: Title Editor dialog startup

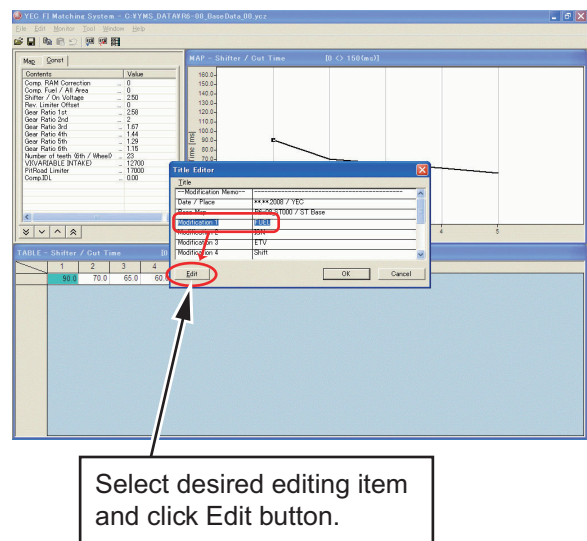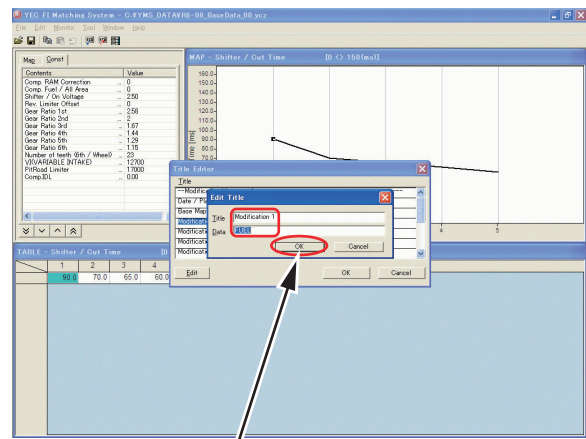Select item on which editing is desired and click edit button for dialog startup of the edit title.

Select desired editing item and click Edit button.

Fig. 21: Title Editor dialog

Edit optionally. Click OK to edit respective items

Edit optionally, and click OK button

Fig. 22: Edit Title dialog

(7) Saving of ycz File
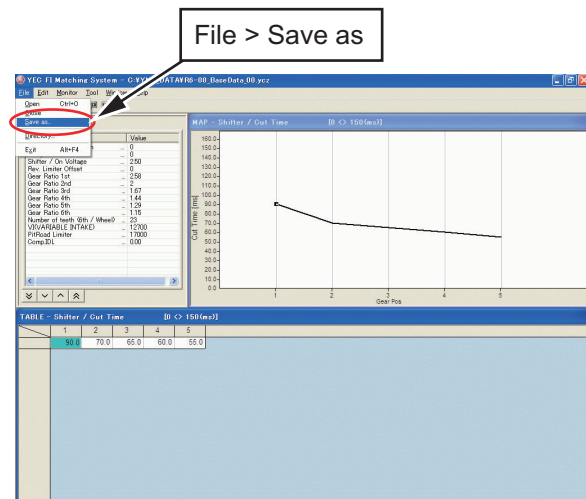   * Save files as required.
    File > Save as

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
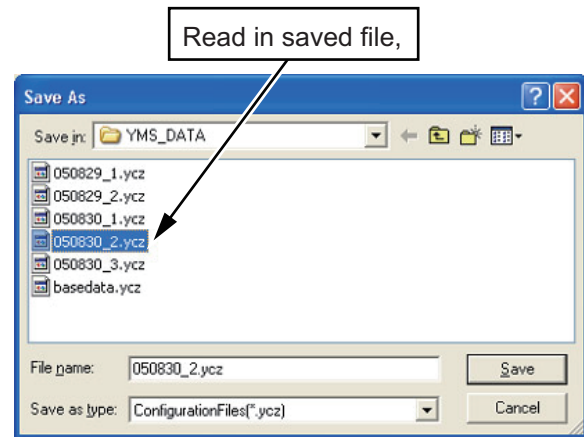
(2) Read in ycz File.

Read in saved 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.
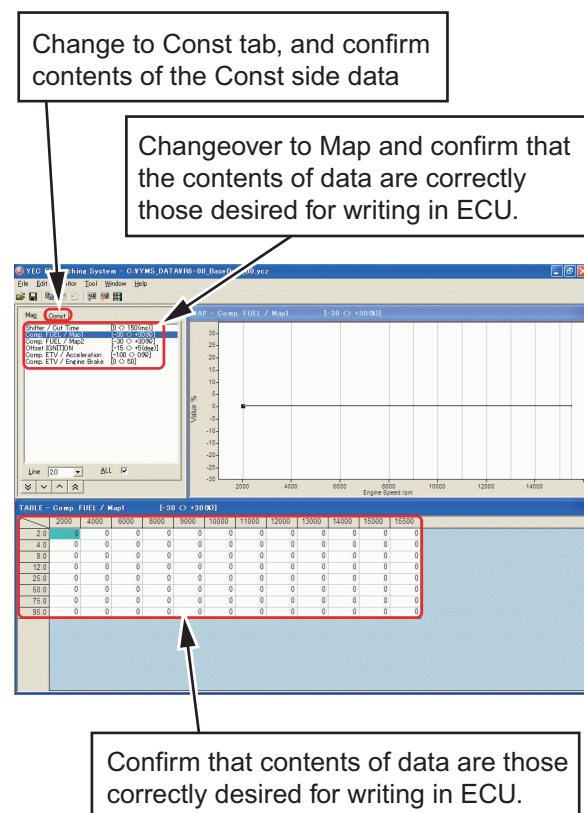
Change to Const tab, and confirm contents of the Const side data

Changeover to Map and confirm that the contents of data are correctly those desired for writing in ECU.

Confirm that contents of data are those correctly desired for writing in ECU.

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
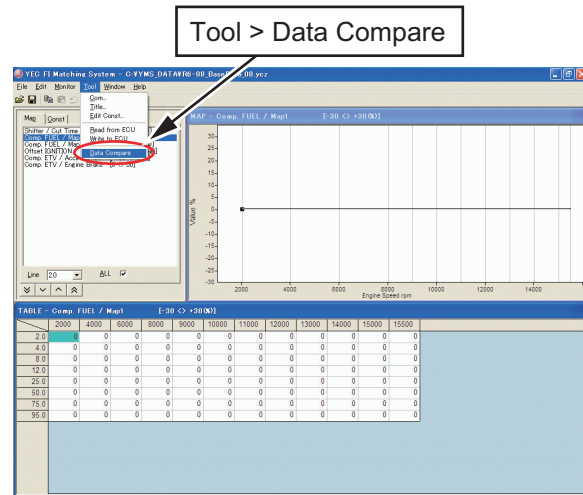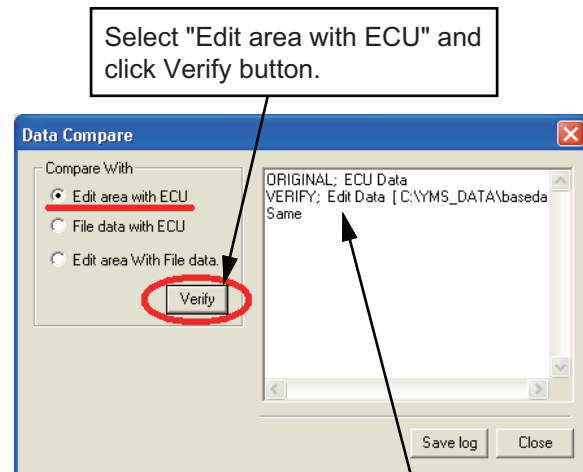Tool > Data Compare

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.

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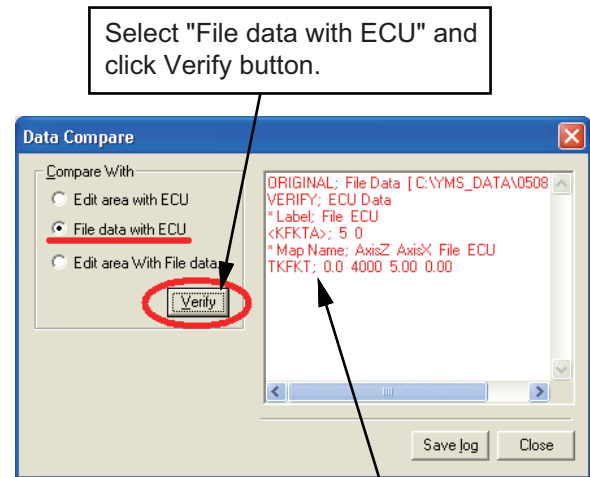
Select "File data with ECU" and click Verify button.

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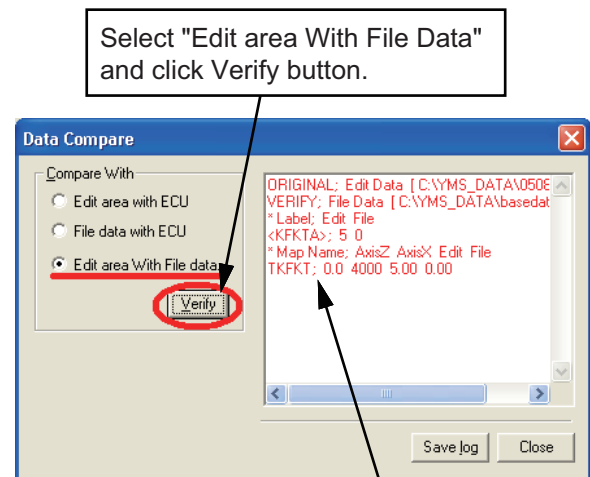
Select "Edit area With File Data" and click Verify button.

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

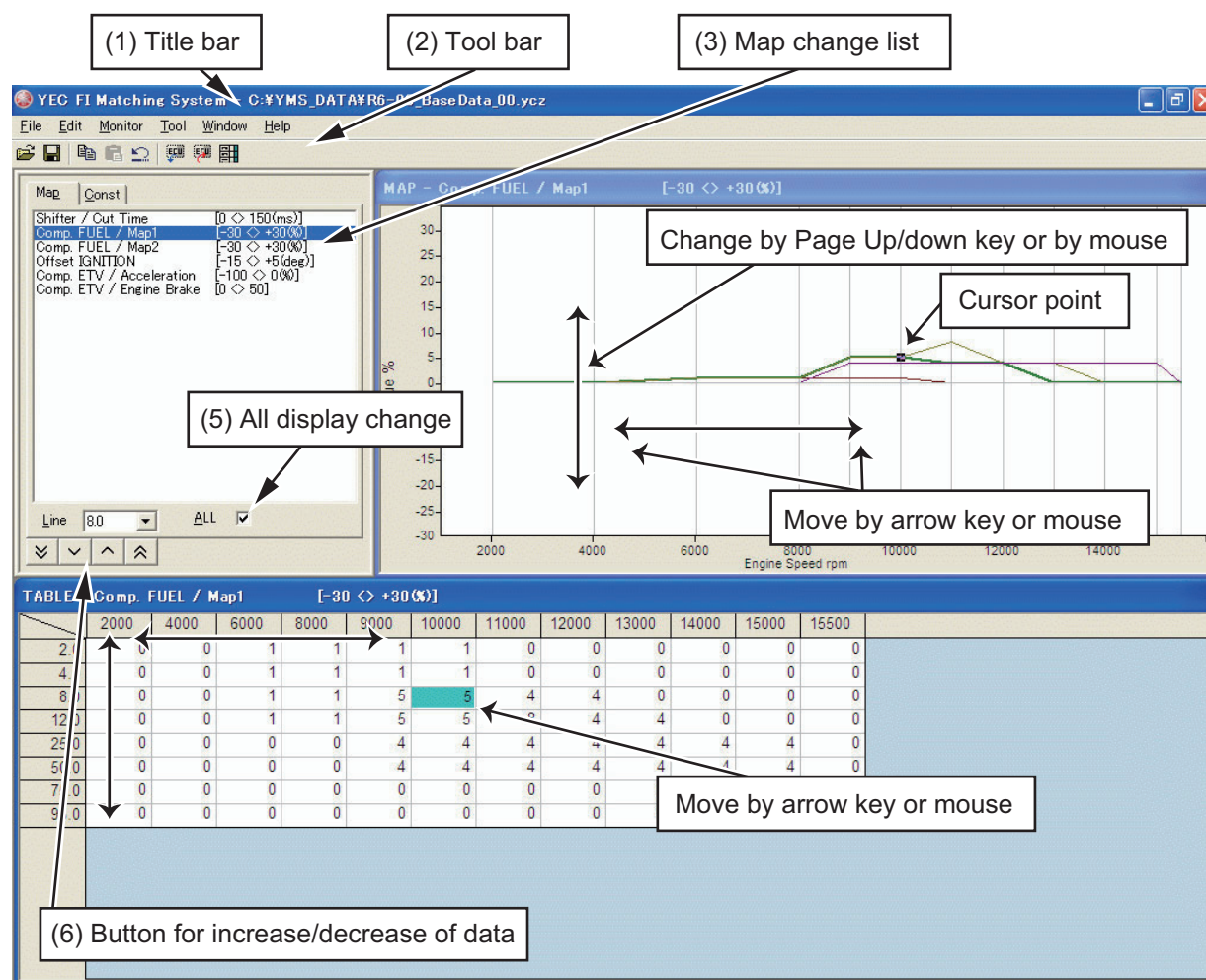## 4–1 Editing screen

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 imputed, 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. FUEL / Map1   [–30 <> +30(%)]

	2000	4000	6000	8000	9000	10000	11000	12000	13000	14000	15000	15500
2.0	0	0	1	1	1	1	0	0	0	0	0	0
4.0	0	0	1	1	1	1	0	0	0	0	0	0
8.0	0	0	1	1	5	5	4	4	0	0	0	0
12.0	0	0	1	1	5	5	8	4	4	0	0	0
25.0	0	0	0	0	4	4	4	4	4	4	4	0
50.0	0	0	0	0	4	4	4	4	4	4	4	0
75.0	0	0	0	0	0	0	0	0	0	0	0	0
95.0	0	0	0	0	0	0	0	0	0	0	0	0

Fig. 31: Table

5 Pull down menu

5–1   File

Open	Ctrl+O	••Open data file
Close		••Close file to which read in made
Save as...		••Attach name and save.
Directory...		••Display directory setting dialog
Exit	Alt+F4	••End YMS

* Close, Save, as...care not displayed in the pull down menu until read in of data file is made.
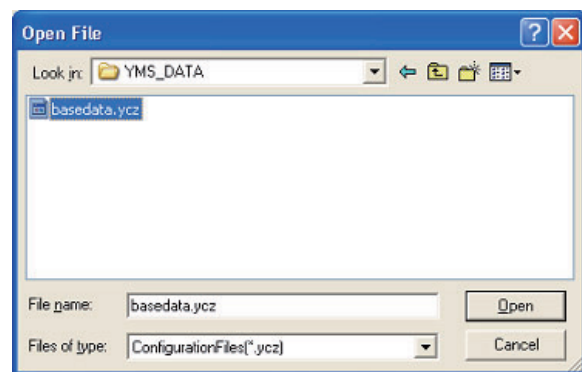
5–1–1 Open

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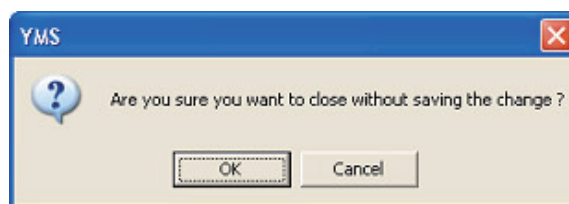
Fig. 33:
Close confirming message
(With difference to file)

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 EUC of data being edited.
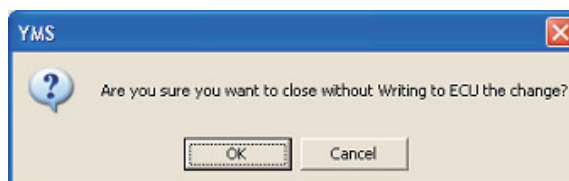

Fig. 34:
Close confirming message
(With difference to ECU)

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.
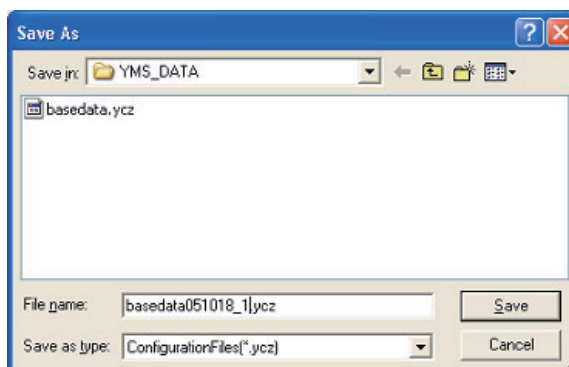
[Save as dialog]

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.
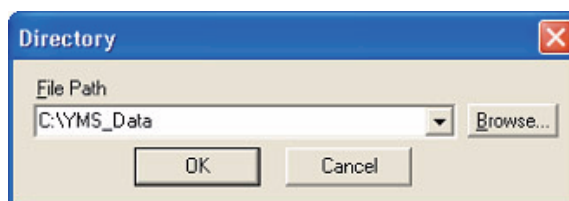
[Directory setting dialog]

Fig. 36: Directory setting dialog

5–1–5 Exit

Application is ended.

5–2　Edit

Undo	Ctrl+Z	••Return
Copy	Ctrl+C	••Copy
Paste	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	••Monitor dialog is displayed
Item set...		••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.
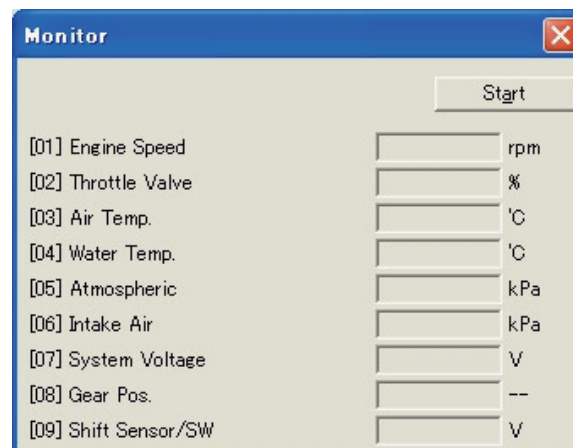

Fig. 37: Monitor dialog

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.

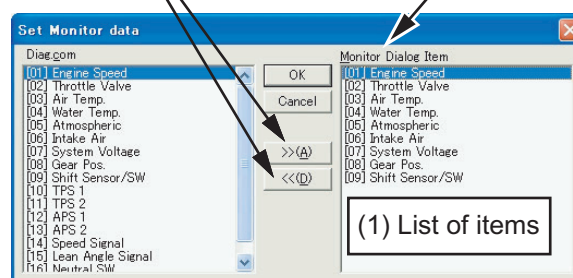Items to be outputted to monitor screen

(1) List of items

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 (13S-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

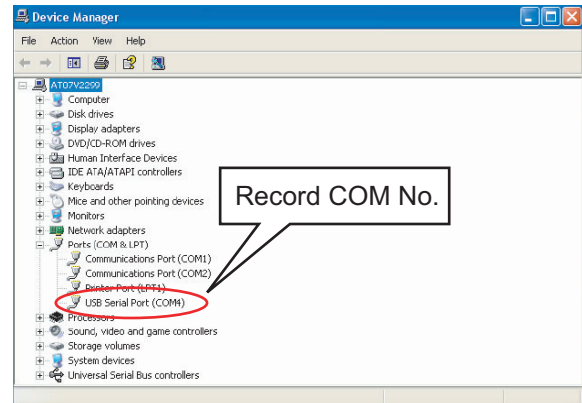(1) Check "Auto Select" in the Com Port setting dialog of the YMS.

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.
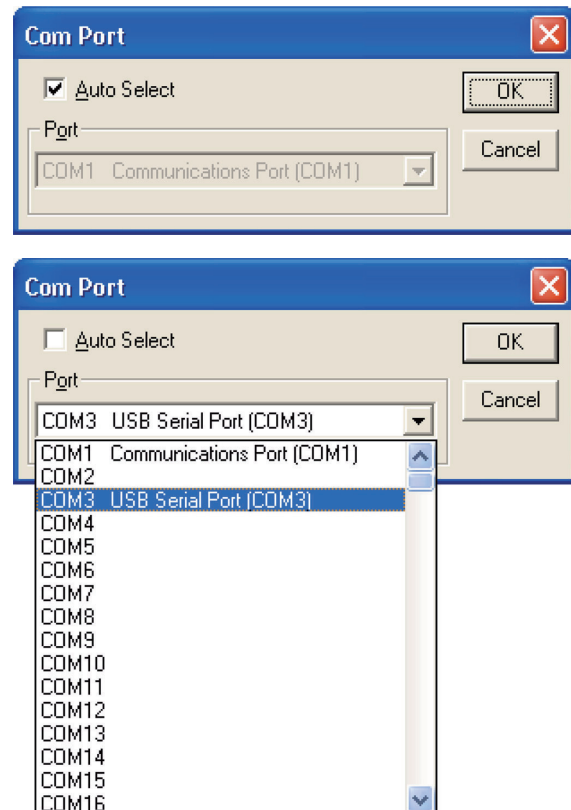

Fig. 39

[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.
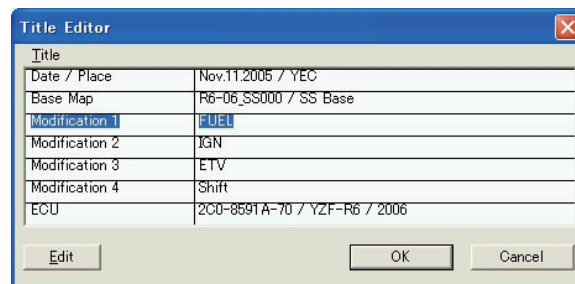
[Title setting dialog]

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.
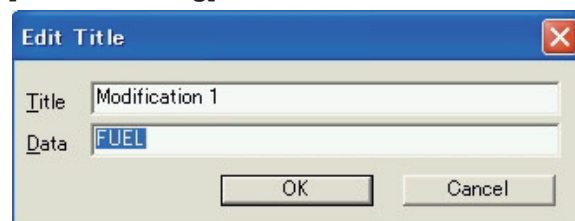
[Edit title dialog]

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 in 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.
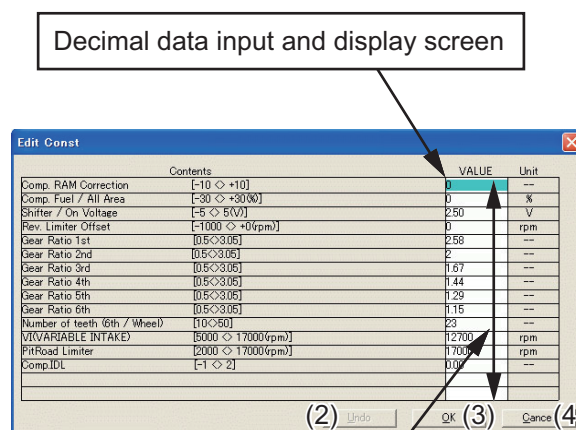
[Edit Const dialog]

Decimal data input and display screen

Move by arrow key.

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.

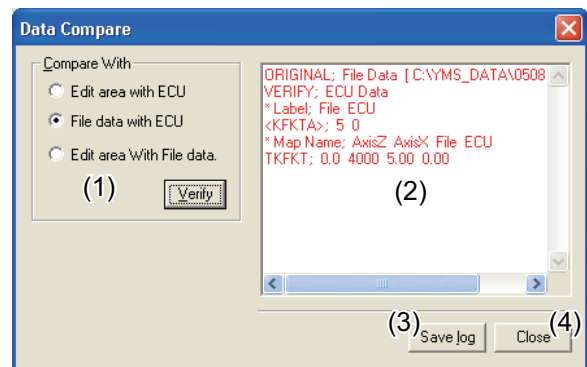(4) Close button

Close dialog.

[Data Compare Dialog]

Fig. 44: Data Compare Dialog

5–5   Window

<u>A</u>ll	Alt+A
<u>M</u>onitor Dialog	

•• Change All displays and Single displays of graph displayed on Map screen.

•• 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.

Fig. 45: Version dialog