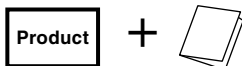


USER'S MANUAL (Product Number: 3DX)

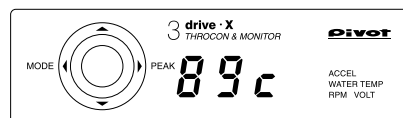
Thank you for purchasing this PIVOT product. Please read this manual carefully and keep it for future reference.

If this product is given to another user, make sure to include this User's Manual.



Throttle Controller with a Multi-Monitor

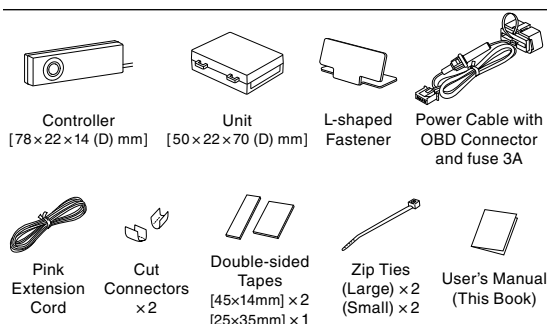
3 drive · X THROCON & MONITOR



Contents

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Part Names	2
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Procedure 1 Connecting The Wires	3 ~ 4
Procedure 2 Installing The Product	4
Procedure 3 Initial Settings (Degree of Acceleration Setting)	5
Operating The Multi-Monitor	6
Operating The Throttle Controller	7
Troubleshooting	8

Please check the contents of the package



After installation, make sure to carry out "Initial Settings".

After having installed this product, make sure to make settings for your car's special characteristics by carrying out the "Initial Settings" on page 5. If the "Initial Settings" are not carried out, a **Check Engine Light** may go on. Also, the unit will remain in **NORMAL Mode** even if the Mode is switched.

Worried about Installation?

If you are worried about carrying out wiring or other installation procedures please consult your dealer.

Only use 3-drive Specialized Harness.

Using another type of harness will cause troubles and failure; use only the 3-drive specialized harness.

Cannot be used in combination with other company's products that use Diagnostic Monitoring Connectors.

For details about using in combination with other PIVOT products that use Diagnostic Monitoring Connectors please see our Web Site at <http://pivotjp.com/obd-e/>.

Only use with Manufacturer's Original ECU.

Do not install this product if the ECU is not the original one or when a sub-ECU is being used.

Set to NORMAL Mode upon Removal of Product.

When uninstalling the product, make sure to return it to **nor** (NORMAL) Mode before carrying out any work. Reconnecting this product in a different mode may cause the Check Engine Light to come on.

Modifying this Product is Forbidden.

Under no circumstances should modifications or changes be made to this product. Doing so may cause damage not only to the product, but to the car and the operation of the car in which it is installed.

Before
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Features

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Shooting

The World's First Throttle Controller with a Multi-Monitor.

MULTI MONITOR



Get Multi-Monitoring by simply connecting to the diagnostic monitoring connector.

Display item Acceleration Monitor Water Temperature RPM Voltage.

Peak Hold Save and display peak reading. For Water Temperature and RPM the high will be shown and for Voltage the low will be displayed.

THROTTLE CONTROLLER



SPORTS & ECO Accelerator response can be adjusted to one of three modes (12 steps): SPORTS (7 steps), ECO (5 steps), and NORMAL.

Comparison of Fuel Consumption

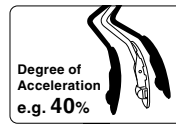
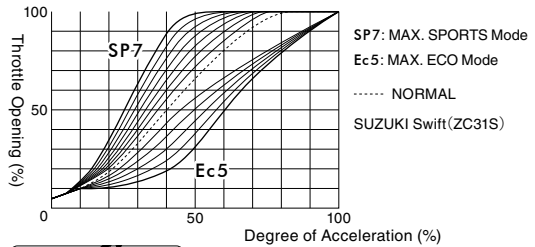


Comparison of Acceleration Time

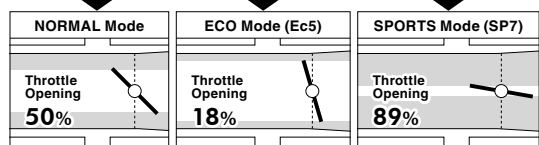


SP7: MAX. SPORTS Mode / Ec5: MAX. ECO Mode
HONDA STEP WGN (RG1) / Running distance: 0-400 m
Degree of acceleration: 30%

Examples of Changes in Throttle Opening

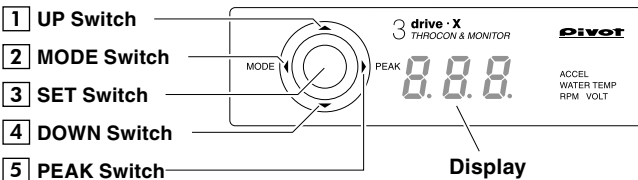


Air Intake
Throttle Valve



※ In some car models with a Valvematic engine, control is carried out by the intake valve rather than the throttle valve.

Part Names



Turning off the Display

This product is interlocked with the ECU (engine computer) power. Depending on the model of car, the display may remain on for up to 15 minutes even after the engine has been turned off; this is normal.

No.	Function
1	Adjust the change ratio for each mode, For Initial Settings
2	Switch between Throttle Controller Modes
3	Switch between Monitor Displays, For Initial Settings
4	Adjust the change ratio for each mode
5	Display and Reset The Peak Value

WARNING

Improper use or disregard of these warnings may result in the injury or death of people.

- When making initial settings make sure to stop the engine and place in Parking or Neutral. It is dangerous to carry out these settings while the engine is running.
- Do not work in areas where there is excessive exhaust. Due to vehicle exhaust emission poisoning or fire may result in a damage to humans.

- Do not crush the cable. Please be careful that the cable does not get crushed by the seat rail or car door steel plate, nor cut by any sharp steel plate as this may cause a poor connection or an electric short leading to fire or other danger.

- While driving DO NOT operate switches or pay prolonged attention to the display; it is extremely dangerous.
- Make sure that all wiring and fastening down of the product does not interfere with driving nor be done in such a way as to cause poor connections.

CAUTION

Improper use or disregard of these warnings may cause injury to persons, damage the product and/or other things.

- PIVOT Corporation accepts no responsibility, in any manner whatsoever, for damage and/or trouble to your vehicle or product, nor for any accidents that are the result of the misuse of this product.
- Please confirm that the type of vehicle you wish to install into is listed in the "Fitting List for 3-drive · X".

- If the device is improperly installed or settings have been improperly made a Check Engine Light may go on.
- Do not install the product in any place subject to high temperature or any place where water may be splashed.
- Make sure to replace all screws and parts to their original place.

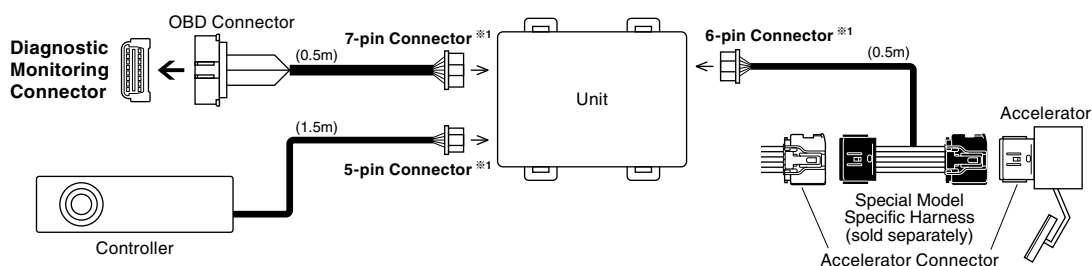
- Please wipe with a soft dry cloth (a lens cloth).
- Please do not use alcohol or benzene. This may cause damage to the painted surface or cracks in the plastic.
- Do not, in any manner, process, take apart, or make changes to this product.

Procedure **1**

Connecting The Wires

Basic Wiring

When installing make sure to use the correct Specialized Harness for your car model.

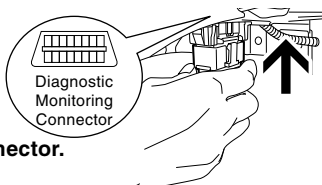


※1 After inserting the connector, pull lightly to make sure that it is securely locked.

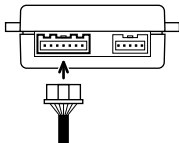
Power Cable

OBD Connector

Connect to the Diagnostic Monitoring Connector.

**7-pin Connector**

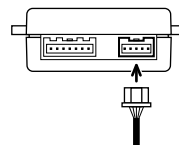
Connect to the side of the unit.



Controller

5-pin Connector

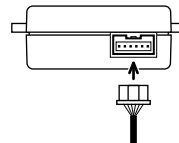
Connect to the side of the unit.



Special Model Specific Harness (sold separately)

6-pin Connector

Connect to the side of the unit.



[Data] Placement Diagram for Diagnostic Monitoring Connector



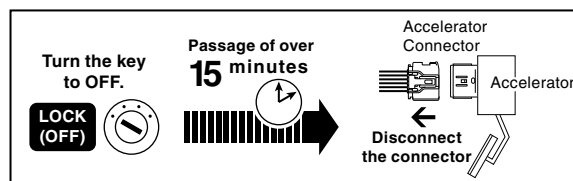
- ① By the accelerator pedal
- ② At the right foot of the driver seat (with lid)
- ③ At foot of driver seat in the center
- ④ At the left foot of the driver seat (with lid)
- ⑤ At the right side of the center console
- ⑥ At the right foot of the passenger seat
- ⑦ Behind the panel by the steering (with lid)
- ⑧ At the left foot of the passenger seat
- ⑨ At the left side of the center console
- ⑩ Panel to right of steering wheel (upper part of small storage box)

TOYOTA	①②③④⑦
NISSAN	①②③④⑤⑦
HONDA	②④⑤⑥⑧⑨
MITSUBISHI	②③④⑤
MAZDA	②④⑩
SUBARU	②③
SUZUKI	②④
DAIHATSU	②③④⑤



Only disconnect the accelerator connector after having waited at least 15 minutes from the time that the key was turned OFF.

Depending on the type of vehicle, if the connector is disconnected before the ECU power is switched OFF the Check Engine Light may go on. (If the Light comes on: Refer to page 8, "How to Turn Off the Check Engine Light")



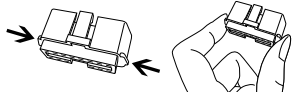
※For details about connecting the specialized harness, please refer to the user's manual that came with that harness.

[Reference 1] Notes about using the OBD Connector

**CAUTION**

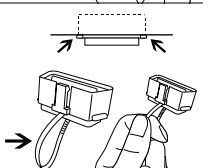
Do not pull on the wires when trying to remove the connector; the wires may become disconnected.

Make sure to grip the distended portions when pulling it out or inserting it.



If you unable to get a grip on the distended portions.

With some car models it may be difficult to get a good grip on the connector. In such case, pull out the connector by pulling on the end of the zip tie.



[Reference 2] How to use the Connectors

1	10mm	2	10mm	3	
Peel off of the vinyl cover at connection.		Peel off of the vinyl cover at the end of the product's wire.		Wrap around both wire coils.	
4		5		When crimping, please use crimpers or use pliers to bend and then solder together.	
Close tightly with cut connector.		Insulate with vinyl tape.			

About Wiring for Reverse

By wiring to reverse, it is possible when in **SPORTS Mode** to automatically switch to **NORMAL Mode** when the gear is put into **R (Reverse)**.

⚠ Usually there is no need to wire to reverse.

When put into reverse, the degree of acceleration is small and quick acceleration will not occur; it is not necessary to wire for reverse.

Wiring place: Reverse Signal

When key is ON (engine not running) and in

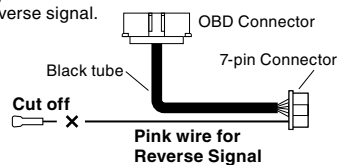
R (Reverse) = 12V, Other Positions = 0V

Check Wiring

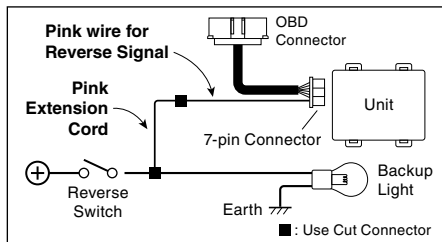
If in **SPORTS Mode** and the Multi-Monitor display at throttle controller, when the reverse signal is input the display will read "bRc".

(Wiring Method)

Pull out the pink cable wire from the black tube that holds the wires coming from the OBD connector and cut off the insulation tube from at the tip. Connect the supplied pink extension wire and wire it to the reverse signal.

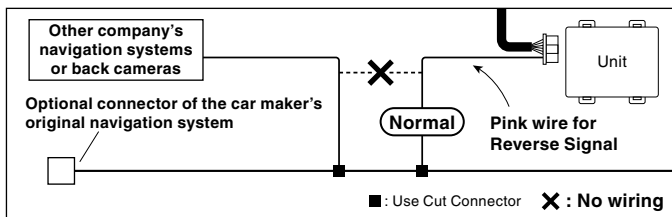


■ If wiring to the Reverse Signal



■ If wiring to the optional connector of the car maker's original navigation system

When using a different company's navigation system do not wire to the reverse cable.



Procedure 2

Installing The Product

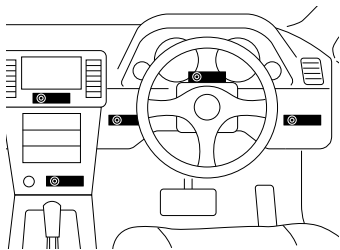
⚠ Please be sure to bundle away all wires with tape, etc...

While in use if wires become free they may interfere with driving and cause accidents. Also, wires which are smashed or crushed may result in a short and can be extremely dangerous.

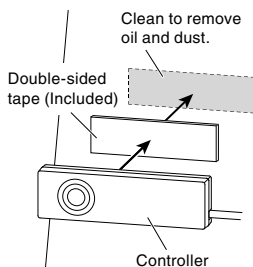
Installing The Controller

Install the Controller to a position which is easy to see and operate.

(Example of Installation)

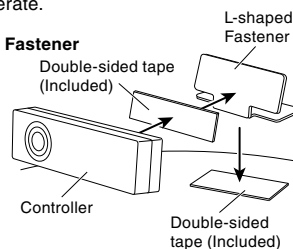


• Fastening to a Flat Place



• Using the L-shaped Fastener

By using the L-shaped Fastener that comes with this product, it is possible to install the unit on the dashboard even if it is curved or on an angle.



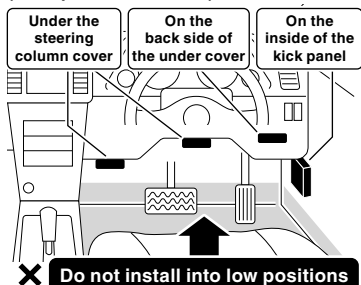
※ It is possible to install the L-shaped Fastener in the reverse direction.

Adjustable angle for easier viewing

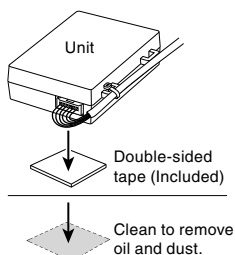
Installing The Unit

As shown in the diagram below, fasten the unit into positions not usually affected by water.

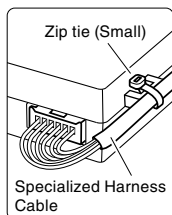
(Example of Installation)



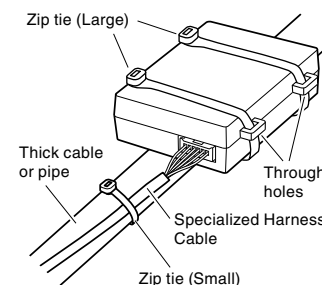
• Fastening to a Flat Place



Fasten down the cable without disconnecting the specialized harness connector.



• When Fastening to a Cable or Pipe



Procedure 3

Initial Settings (Degree of Acceleration Setting) Make sure to carry out these settings.

When installing for the first time



Initial Settings

When installing into a different car



Initial Settings

- This operation sets the car's accelerator characteristics into the controller unit.
- If the "Initial Settings" are not carried out, the unit will remain in NORMAL Mode even if the Mode is switched.
- If this settings have been improperly made a Check Engine Light may go on.

Before making the "Initial Settings"



1. Make settings only after having completed all wiring (connector installation).
2. Make settings with the **key in the ON position (engine not running)** and the gear in **P (Parking)** or **N (Neutral)**.
3. Carry out settings with the **Multi-Monitor at throttle controller (degree of acceleration)** [⇒Page 6] and the **Throttle Control Mode in NORMAL Mode** [⇒Page 7]. Even when the display shows "nor", if the Multi-Monitor display is at other than throttle controller the initial settings can not be carried out. (⇒See page 6 to 7 for details about switching the display)

[Making the Settings]

■ : Controller Display Area, () contains additional explanation

1

Key ON.

(Engine not running)

• "nor" will appear. ※1 (NORMAL Mode)



Without braking, press down twice

※1 If the display changes from "nor" to Water Temp - RPM - Voltage...press the SET switch until the display changes to the throttle control (degree of acceleration). (⇒Page 6 part 1)

If the display shows "SP" or "Ec" ...press the MODE switch until it changes to normal mode. (⇒Page 7 part 3)

2

Press the UP switch for 10 seconds or longer to change the display to "0".



Press until "0" appears

5 - 4 - ... - 0 -

(Count down from 5 to 0 after the "cAr" blink.)

3

When "0" appears release the UP switch.

0 -



Release

4

Accelerator pedal is not pressed down.

(Release the accelerator to 0%)

(e.g.) 1.5



0%

(Voltage Display: e.g., 1.5V. The values shown in the display will vary depending on the type of car.)

5

With the accelerator at 0%, press the SET switch.

• "Set" will appear.



Press

Set to 0%

6

Pedal is completely pressed down.

(Press in on the accelerator to 100%)

(e.g.) 4.5



100%

(Voltage Display: e.g., 4.5V. The values shown in the display will vary depending on the type of car.)

7

With the accelerator at 100%, press the SET switch.

• "Set" will appear.



Press

Set to 100%

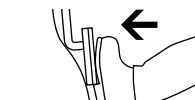
⚠ If Err is displayed

If after the Err is shown the display returns to as shown in 4 (1.5 or so on), it means that the degree of acceleration settings have not been confirmed properly. Re-do the settings from step 4.

8

Press down on the accelerator pedal until "100" appears.

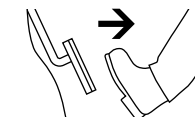
Set ⇒ nor ⇒ 100



9

Once the display changes to "100" release the accelerator.

100 ⇒ nor



10

Setting Completed

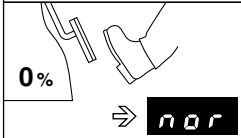
If the device is re-installed into a different vehicle, make sure to carry out these settings again.

After having finished settings and the battery or wires have been disconnected it is not necessary to carry out "Initial Settings".

Check the Settings

(If the display is incorrect start again from step 2 above.)

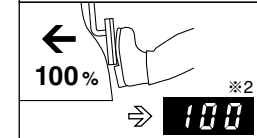
Do not press in on pedal



0%

⇒ nor

Press down on pedal



100%

※2 ⇒ 100

※2 Depending on characteristics of the accelerator or on how the accelerator is stepped on the display may read "95" (95%).

Before Using

Features

Connecting The Wires

Installing The Product

Initial Settings
Make sure to carry out this operation.

How to Operate

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Operating The Multi-Monitor

Note that only after installation the unit must communicate the car and hence it may take approximately **1 minute** for the display to come on (Except Throttle Controller display). From the second time, the display will take approximately 5 seconds to appear. *Same for reconnecting the OBD Connector.

Switching The Display

Press the SET switch to change the Multi-Monitor display.



Press

Throttle Controller (Acceleration Monitor)

(15~100%, 5% unit)

A25

e.g. 25%

Water Temperature

(-40~150°C, 1°C unit)

89c

e.g. 89°C

RPM

(0~9900rpm, 100rpm unit)

56r

e.g. 5600rpm

Voltage ^{※1}

(8~18V, 0.1V unit)

12.5

e.g. 12.5V

Reading the Display

Acceleration Monitor
The first place on the left shows "A".

A00

Water Temperature

-35 ~ -1°C

The first place on the left shows "-" (minus).

-00

0 ~ 99°C

The third place from the left shows "c" (Celsius).

00c

100 ~ 150°C
Numerical Value Only.

100

RPM

The third place from the left shows "r" (rpm).

00r

Voltage

The third place from the left shows the "." (decimal point).

00.0

※1 For some car models the voltage cannot be displayed but, "---" will appear. For details, see the Fitting List.



Saving Settings

All settings are saved even after the engine has been turned off. However, if the engine is turned off in 3 seconds or less after the last setting operation was carried out, the settings will not be saved.

Display and Reset The Peak Value

Press the PEAK switch while displaying Water Temperature, RPM, or Voltage and the peak for that item will be displayed for 5 seconds. (blinking display)



PEAK

Real-time Display

89c

(Lighting)

Press PEAK
With no operation
3 seconds

Peak Value Display

92c

(Blinking)

Press PEAK
for 3 Seconds

Reset the Peak Value

Only the peak value on display will be reset.

※Peak readings are reset when the key is turned OFF. ※For Water Temperature and RPM the high will be shown and for Voltage the low will be displayed.
※To check the loss of voltage upon operation of the starter, turn the key to the ON position and after the monitor display comes on, operate the starter.

Degree of Acceleration Monitor

Displays the amount of pressure placed on the accelerator pedal. (output signal) [15 - 100%, 5% unit]

Degree of Acceleration Monitor shows the rate of acceleration output to the ECU where 0 represents the pedal not being pressed in and 100 equals when the pedal is fully pressed down.

※When in ECO Mode, even if the accelerator is stepped on a full 100% the output signal will only be 80%.

※Depending on characteristics of the accelerator or on how the accelerator is stepped on the display may read up to 95%. (When in SPORTS Mode and NORMAL Mode only)

A20

Degree of Acceleration
(output) 20%

USE 1 Check acceleration during ECO driving

To ensure reduced fuel consumption during acceleration the degree of acceleration should be between 15% and 25%. To further improve results use ECO Mode when wishing to save fuel.



USE 2 Check acceleration during regular driving

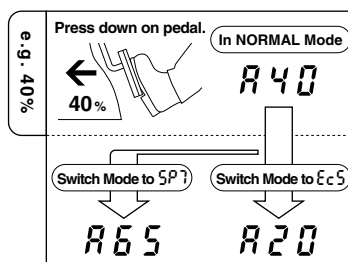
Please use to check the degree of acceleration for any type of driving, not just ECO Mode.

USE 3 Check control status

With the key in the ON position and under NORMAL Mode press in the pedal until it reaches 40% (A40), if the Mode is changed to SP the display should read 65% (A65) and if placed in EcS the display should change to 20% (A20).

[⇒See the above Graph of "Basic Control Features"]

※The actual display may differ slightly.



Operating The Throttle Controller

It is possible to change the throttle controller mode and response even while displaying Water Temperature, RPM or Voltage.

- 1 Press the MODE switch or the UP / DOWN switch to show the current throttle controller mode.



Press

or



Press

SP0

(e.g. SPORTS Mode)

2 Switch The Mode

The Mode will change with each pressing of the MODE switch.



Press

SPORTS Mode

SP0

Higher Response

NORMAL Mode

nor

Normal Conditions

ECO Mode

Ec0

Lower Response

※ For safety, when changing modes always go through **nor** (NORMAL) one time.

About the Relay sound

When switching to **nor** for safety reasons the relay will go into operation and you will hear a clicking sound.

Adjust the Change Ratio for each Mode

The ratios will change with each pressing of the UP / DOWN switch

● Switching the Change Ratio for SPORTS Mode

SP0 is displayed, the ratio will change with each pressing of the UP / DOWN switch.



Greatest Change Ratio (SP ↑ side)

Lowest Change Ratio (SP ↓ side)

Smallest Change Ratio

SP1

SP2

SP3

...

SP6

SP7

(+10%)

(+20%)

(+30%)

...

(+60%)

(+70%)

Greatest Change Ratio

● Switching the Change Ratio for ECO Mode

Ec0 is displayed, the ratio will change with each pressing of the UP / DOWN switch.



Lowest Change Ratio (Ec ↓ side)

Greatest Change Ratio (Ec ↑ side)

Greatest Change Ratio

Ec5

Ec4

Ec3

Ec2

Ec1

(-50%)

(-40%)

(-30%)

(-20%)

(-10%)

Smallest Change Ratio

- 3 If no operation is carried out for 3 seconds, the display returns to monitor mode.

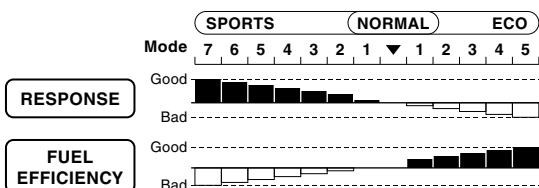
89c

(e.g. Water Temp 89 °C)



- All settings are saved even after the engine has been turned off. However, if the engine is turned off in 3 seconds or less after the last setting operation was carried out, the settings will not be saved.
- When making adjustments to the change ratios, begin at the lowest setting and slowly make changes while continually checking acceleration.

[Reference 1] Examples of changes in fuel consumption and response depending on change ratios



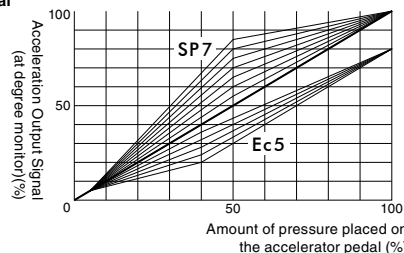
※ In ECO Mode, because response is less than the standard fuel efficiency can be improved. However, if rapid acceleration is purposefully carried out fuel efficiency will be reduced.

※ The changes in response will be greater as the vehicle's power is greater.

[Reference 2] Basic Control Features

The changes throughout each Mode will be controlled smoothly without perceptible steps.

Acceleration output signal based on amount of pressure placed on accelerator pedal



Basic Operation

Basic operation from engine start to stopping.

- 1 Engine start



START

- 2 Display of Current Throttle Control Mode (2 seconds)

Ec3

(e.g. Ec3)

- 3 Automatically changes to Multi-Monitor Display

20c

(e.g. Water Temp 20 °C)

- 4 Engine stop



OFF

- 5 Display OFF

Before Using

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Using

Features



Connecting
The Wires

Installing
The Product

Initial
Settings

How to
Operate

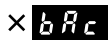
Trouble-
Shooting

Trouble	Possible Causes	Possible Solutions
The key switch is set to ON but the display of the Main Unit will not light up. OR the display goes OFF while in use.	Poor connection of OBD Connector . Poor connection of 5-pin Connector , 6-pin Connector and 7-pin Connector . Poor connection of Specialized Harness . Specialized Harness being used is incorrect.	Please reconfirm whether wiring and connections are correct or not.
A Check Engine Light has gone on. 	The accelerator connector or Specialized Harness was disconnected with the key switch in the ON position or within 15 minutes after having turned the key to OFF. The "Initial Settings" have not been properly carried out. The product was in a mode other than NORMAL Mode when removed from a car and installed into a different car.	Re-connect the disconnected connector and turn off the Light (⇒Page 8 of this manual). Make the "Initial Settings" (⇒Page 5 of this manual) and turn off the Check Engine Light (⇒Page 8). After returning it to NORMAL Mode, carry out the "Initial Settings" (⇒Page 5 of this manual) and turn off the Check Engine Light (⇒Page 8).
While making "Initial Settings" an Err appears in the display. 	The "Initial Settings" have not been properly carried out.	Make the "Initial Settings" (⇒Page 5 of this manual).
Even with the engine OFF, the display stays ON.	This product is linked to the car's ECU power. Because of this, in some car models, it may take up to 15 minutes for the display to go off after turning off the engine; it is not a malfunction.	
The engine seems to stall easily.	The change ratio under ECO Mode is too great.	Set the change ratio under ECO Mode to a smaller value.

Concerning the Multi-Monitor

The Water Temperature, RPM and Voltage displays do not change from - - - .	The unit has been installed into an incompatible car model.	Please check the "Fitting List" .
The Voltage display shows - - - .	Voltage cannot be displayed for some model cars.	Please check the "Fitting List" .
The displayed values are different from the standard meter.	Due to the ECU information received, the displayed values on this product may differ from those of standard or other meters.	
The display item settings are not saved.	Because after changing modes, if the car's engine is turned off within 3 seconds, the new setting will not be stored, make sure to wait at least 3 seconds before turning the engine off.	

Concerning the Throttle Controller

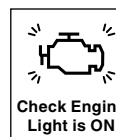
Even if the Mode is changed, the changes cannot be felt.	The "Initial Settings" have not been properly carried out.	Make the "Initial Settings" (⇒Page 5 of this manual).
The Mode and/or the setting of change ratios can not be saved.	The key was has been turned OFF immediately after having finished the setting of change ratios or changing the Mode.	After having made settings of change ratios or changing the Mode, wait for at least 3 seconds before turning the key OFF.
While in SPORTS Mode, when put into reverse the display does not show bRc . 	The Pink wire may have been improperly wired or there is a poor connection. The unit is connected to the reverse wire of a navigation system from another company. The backup lights have been changed to LED lamps.	Please reconfirm whether wiring and connections are correct or not. Carry out Wiring to Reverse (⇒Page 4 of this manual). • Replace the backup lights with the car maker's original lights. • Do not carry out wiring for Reverse Gear.

Note

How to Turn Off the Check Engine Light

If the Check Engine Light comes on due to some operational mistake, please follow the directions below to turn it off.

- Under normal conditions, start and stop the engine several times.
- If that does not turn off the lamp, disconnect the cable from minus terminal of the battery for about 10 minutes.
- If that does not turn off the lamp, please consult your local car dealer and have them turn it off.



※Our products have already been recognized as our Industrial Property or are in the process of receiving Industrial Property status.
 ※We plan in the near future to take all possible legal measures to protect against unfair competition from look-alike products using similar designs, regulating characteristics, circuitry and circuitry layout.
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