



Defi-Link VSD X Operation Manual DF05704




Defi-Link VSD X is a product to display vehicle information such as speed and engine speed on the Target Screen(the exclusive reflecting plate). When installing and operating this product, be sure to read the cautionary items of this operation manual as well as those given in the operation manual for the vehicle in which this display will be installed. Obtain a full understanding of the cautionary items and use the product accordingly.
In the event that this product (or the vehicle in which it is installed) is lent to or transferred to another person, please be sure this operation manual accompanies the product.

<http://www.defi-shop.com/>

'07.01-1

Before Installation(for installation personnel)

In this manual, the degree of hazard arising from actions such as improper operation is separated into the 3 levels "Danger," "Warning," and "Caution." In addition, instructions that must be followed for safe and proper use of this product as well as practices that must be maintained are marked with a "Confirmation" heading. Please read and become familiar with these sections.

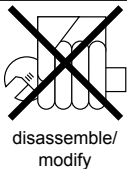
 Danger	Indicates the imminent dangerous situation of death or serious injury if the product is mishandled.
 Warning	Indicates the possibility of death or serious injury if the product is mishandled.
 Caution	Indicates a conceivable source of personal injury or damage to equipment if the product is improperly operated.
Confirmation	Indicates an instruction that must be performed or practice that must be maintained.

Warning

- Ensure that the vehicle will remain stationary and turn off the engine before installing this product. Failure to do so could result in a fire, and could make the vehicle move during installation.
- Remove the key from the ignition and disconnect the negative (-) battery terminal prior to installation of this product. Failure to do so could result in a fire caused by an electrical short circuit.
- Take care not to install this product in a way that interferes with safety equipment such as seat belts and air bag systems or vehicle operation equipment such as engine controls, steering wheel or brake systems. Interference with normal operation of the vehicle can result in an accident or fire.
- Solder or use a solderless connector for wiring connections and make sure connections are insulated. In areas where there could be tension or sudden impacts on the wiring, safeguard the wiring with corrugated tubing or other shock absorbent material. Accidental shorts can cause fires.

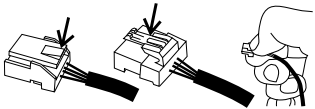
Warning

- Carefully consider the installation location and driver's operation of the product before installation. Do not install the product where it interrupts driving and the safety deices of vehicle. Be sure not to install the unit where it could fall. Improper installation or operation could cause the product to fall and damage the vehicle or cause serious danger by impeding driving.
- Do not disassemble or modify this product. Such actions can not only damage or destroy the product but will also void the warranty.
- Do not perform installation of this product immediately after the engine has been switched off. The engine and exhaust system are extremely hot at this time and can cause burns if touched.
- Ensure that the wiring of this product does not have an adverse impact on the other wiring of the vehicle. Any controlling devices or other electronic components of the vehicle could be damaged.
- Please keep children and infants away from the installation area. Children may swallow small parts or be injured in other ways.



Caution

- This product is designed for use on 12V vehicles. Do not install this product on vehicles with 24V systems.
- Insulate any unused wires. If any wires or connectors loosen during installation, please make sure they are correctly reattached.
- Dropping any of the components of this product will result in damage to the product.
- Excessive force on switches/terminals may result in damage to the product.
- Use only the wires provided. If additional wires are required, use the same of quality and gauge wire as is provided with the kit.
- Do not attach wires on the body of the vehicle or engine parts as this may result in damage to the product.
- Install sensors away from heat and moisture to avoid damage.
- Install sensors away from ignition and also radio signal frequency interference as this could cause the gauges to malfunction.
- Do not wire the sensor wires near the engine, exhaust pipe or turbine. It may result in damage or fusion of wires.
- Do not expose D.C.Unit to moisture, dust or direct sunlight. Do not place product directly in front of heat vents.
- Wear gloves to avoid burns when soldering and cuts when working with wiring.
- Make sure the waterproof processing is done when diverging wires in the engine compartment.
- Do not pull the wires out of connectors forcefully. The connectors may be broken and the wires may be cut. When pulling out the wires, press the lock firmly and unclip the locks of connectors.



Confirmation

- Be sure to follow all instructions in this manual to ensure safe installation and operation of the product.
- When the negative (-) battery terminal is disconnected, equipment such as clocks and audio components having internal memory may lose their memory data. Follow the operation manual of each component to reset data after installation of this product.
- After installation is complete, return this operation manual and the package to the customer along with the warranty.

About Installation and Operation(for customer and installation personnel)

Warning

- Please have this product installed by the retail store or dealer where it was purchased. Installation by the customer will void the warranty.
- Do not disassemble or modify this product. Such actions can not only damage or destroy the product but will also void the warranty. This product is high-voltage, and there is an possible to get an electric shock.
- In order to ensure safe driving, check the information on this display only for short periods of time. Looking at the display for long periods of time could distract adequate attention from the road and result in an accident.
- Discontinue use of this product if nothing is displayed, water gets into the unit, or smoke or a strange odor comes from the unit. If such a condition occurs, contact the sales outlet or installation personnel as soon as possible. Continued use while the condition exists could result in an accident or fire.
- Do not operate during driving.

Caution

- On no event will Nippon Seiki Co., Ltd. be liable to you for any damages arising out of the use or inability to use the product, even if Nippon Seiki Co., Ltd. has been advised of the possibility of such damage.
- Do not pull the wires out of connectors forcefully. The connectors may be broken and the wires may be cut. When pulling out the wires, press the lock firmly and unclip the locks of connectors.
- Do not take off the rubber covering round the target screen. The plate is sharp-edged.

Warranty

* Refer to Terms and Conditions

Product Name	DF05704	Lot. No.	
Customer: Name			
Address			
Warranty Period Date of purchase			
 NIPPON SEIKI CO.,LTD. Defi Business Division Ueno DK Bldg 8F, 15-4 Ueno 1-Chome, Taitou-ku, Tokyo 110-0005 JAPAN E-mail: defishop@nippon-seiki.co.jp URL: http://www.defi-shop.com/			

CUT HERE

Confirmation

- The vehicle information other than speed and engine speed is not displayed unless this product is connected to Defi-Link System.
- The speedometer and the tachometer of this product are for reference purposes only. Please drive according to the indication of vehicle's originally equipped instruments.
- When this product is linked to the Defi-Link System, connect the LINK connector of the D.C.Unit and the METER OUTPUT1 connector of the Defi-Link Control Unit II Version 2.0 or the Defi-Link Control Unit II (or the METER connector of the Defi-Link Control Unit) with the meter wire. Misconnection could damage the product.
- When this product is linked to the Defi-Link system, the tachometer signal must be input to the Defi-Link Control Unit II(or the Defi-Link Control Unit). Set the number of cylinders of the Defi-Link Control Unit II(or the Defi-Link Control Unit). Do not connect the Tacho Signal Wire(blue wire) from the D.C.Unit.
- This product can be used only on 1, 2, 3, 4, 5, 6, and 8 cylinder vehicles with 4 cycle engine. However, it cannot be used on 1 and 2 cylinder vehicles under some circumstances. Refer to the Product Specifications. Engine revolution signal of diesel vehicles cannot be displayed.
- Data on boost and intake manifold pressure cannot be displayed.
- When this product is linked to the Defi-Link System, be sure to follow the instructions for the Defi-Link Control Unit II(or the Defi-Link Control Unit).
- The switch illumination of the D.C.Unit is interlocked with turning on/off the ignition of the vehicle.

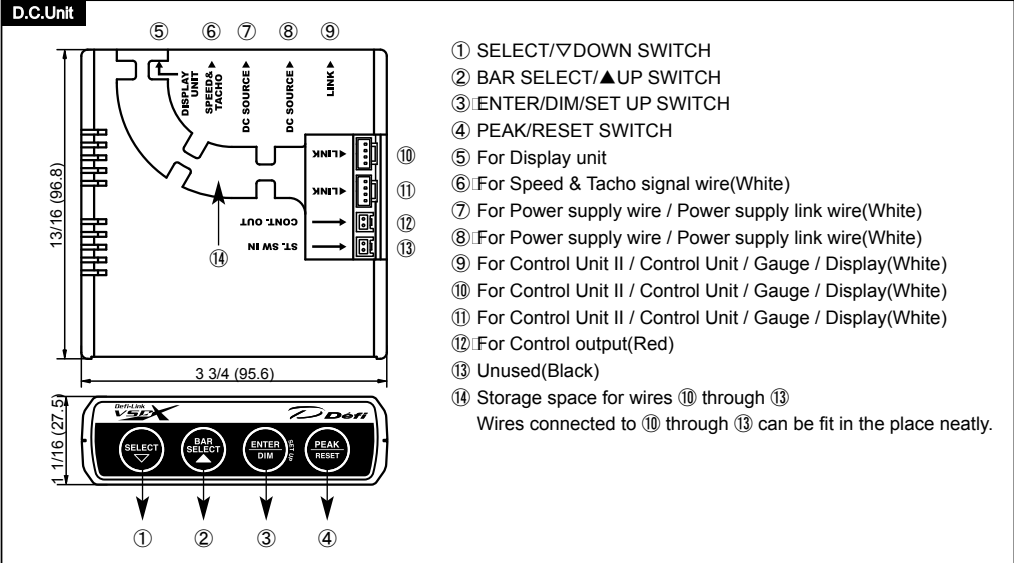
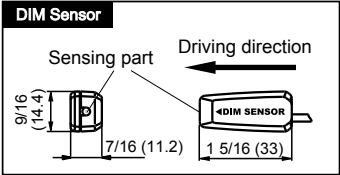
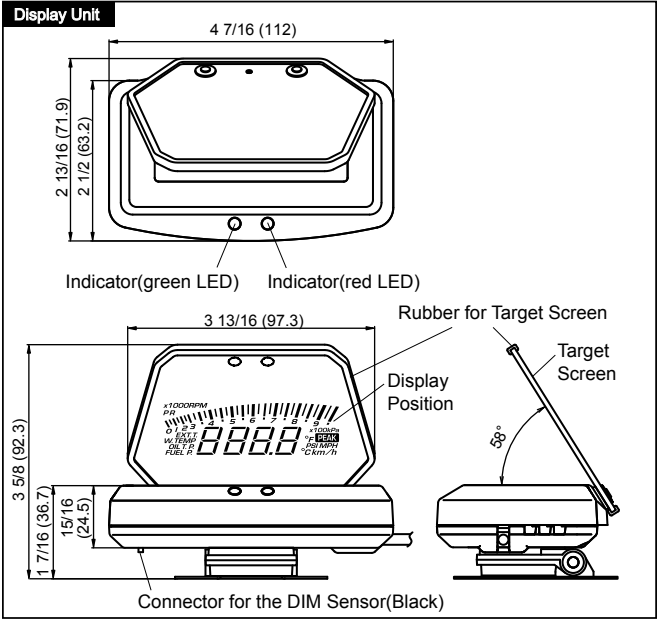
Main Features(for customer)

- The display is high Visibility by adopting the exclusive target screen(the new VSD technology) and super high bright blue-green VFD
- The brightness is adjusted automatically. (The sensor is included in the product.)
- Two super high bright LED indicators
- The structure of the new mounting bracket allows angle adjustment freely.
- Displays speedometer and engine speed. By connecting to the Defi-Link System, various information is displayed.
- The tachometer can operate with hybrid vehicles and rev limited vehicles by cutting the ignition. (Only if the product is used without linking to the Defi-Link System or used with linking to the Defi-Link Control Unit II Version 2.0.)
- The switch illumination of the D.C.Unit is interlocked with turning on/off the ignition of the vehicle.

Product Specifications(for customer and installation personnel)

Power Supply Voltage	DC10V to 15V (For 12V vehicles)	
Current Consumption	+B line	MAX 1A only while the closing mode is displayed. (Dark current 0mA)
	IGN line	MAX 1A
	ILM line	MAX 0.1A
Operational Temperature Range	-20 to +60°C, -4 to +140°F (under 80% relative humidity)	
Storage Temperature Range	-40 to +80°C, -40 to +176°F (under 80% relative humidity)	
Display Range	Speedometer (SP)	0~400km/h (0~240MPH)
	Engine speed (TA)	0~9,500rpm
	Oil temperature (O.TEMP.)	51~150°C (123~302°F)
	Water temperature (W. TEMP.)	21~120°C (69~248°F)
	Oil pressure (OIL P.)	0~1,000kPa (0~145PSI)
	Fuel pressure (FUEL P.)	0~600kPa (0~87PSI)
	Exhaust temperature (EXT. T.)	210~1,100°C (400~2,010°F)
Applicable Speed Pulse	A) 2・4・8・16(mainly for Japanese vehicles)	
	B) Free pulse setting(1,274 pulse/km~16,562 pulse/km 2,051 pulse/mile~26,665 pulse/mile)	
Applicable Number of Cylinders	Without linking: 1・2・3・4・5・6・8 (Set up with D.C.Unit.) If connected to the Defi-Link Control Unit II Version 2.0(DF05002): 1・2・3・4・5・6・8[※] If connected to the Defi-Link Control Unit II(DF05001): 3・4・5・6・8[※] If connected to the Defi-Link Control Unit(DF01301): 3・4・5・6・8[※] [※ Set up with each control unit.]	
Dimensions	Refer to page 2.	
Gross Weight	820g, 1.8lb (including display unit, D.C.Unit, wires, package)	

Part Names and Dimensions in inches(mm)



Parts List(for customer and installation personnel)

The following parts are included with this product. Confirm that all parts are present before installing the product. In addition, these parts are sold separately for part replacement. Contact your retailer for further information.

NOTE: A Japanese operation manual, a wiring manual, and a questionnaire card are included other than the parts listed below. They are effective only in Japan.

Part Name	Quantity
Display unit(wire 8 1/3ft, 2.5m)	1
D.C.Unit(Exclusive Control Unit)	1
Speed & Tacho Signal Wire (Green SP, Blue TA) 6 2/3ft, 2m	1
Tachometer Signal Wire(Blue) 6 2/3ft, 2m [※1]	1
DIM Sensor(wire 6in, 0.15m)	1
Power Supply Wire 2 3/2ft, 0.8m	1
Meter Wire 10in, 0.25m [※1]	1
Power Supply Link Wire 10in, 0.25m [※1]	1
Control Out Wire(pink) 3 1/3ft, 1m [※1]	1

[※1 Use only when connected to the Defi-Link system]

Optional Parts(for customer)

Item	Part Number
Defi-Link Control Unit II Version 2.0	DF05002
Defi-Link Oil Pressure Sensor Set(Sensor thread size: 1/8PT)	PDF00713SS
Defi-Link Fuel Pressure Sensor Set(Sensor thread size: 1/8PT)	PDF00806SS
Defi-Link Oil Temperature Sensor Set(Sensor thread size: 1/8PT)	PDF00908SS
Defi-Link Water Temperature Sensor Set Sensor thread size: 1/8PT)	PDF01006SS
Defi-Link Exhaust Temperature Sensor Set(Sensor thread size: 1/8PT)	PDF01114SS
Oil/Water Temp. Sensor(Sensor thread size: 1/8NPT)	PDF03905S
1/8 NPT/PT Conversion Socket for pressure sensor	PDF00708G
1/8 NPT fitting for Exhaust Temp. Sensor	PDF01109G

Replacement Parts(for customer)

Item	Part Number
Fuse for Power Supply Wire(4A) 2pcs	PDF05005G
Rubber for Target Screen	PDF05711G
Mounting Bracket set [※2 Refer to the Parts List for the contents]	PDF05712G

Trouble Shooting(for customer and installation personnel)

Warning

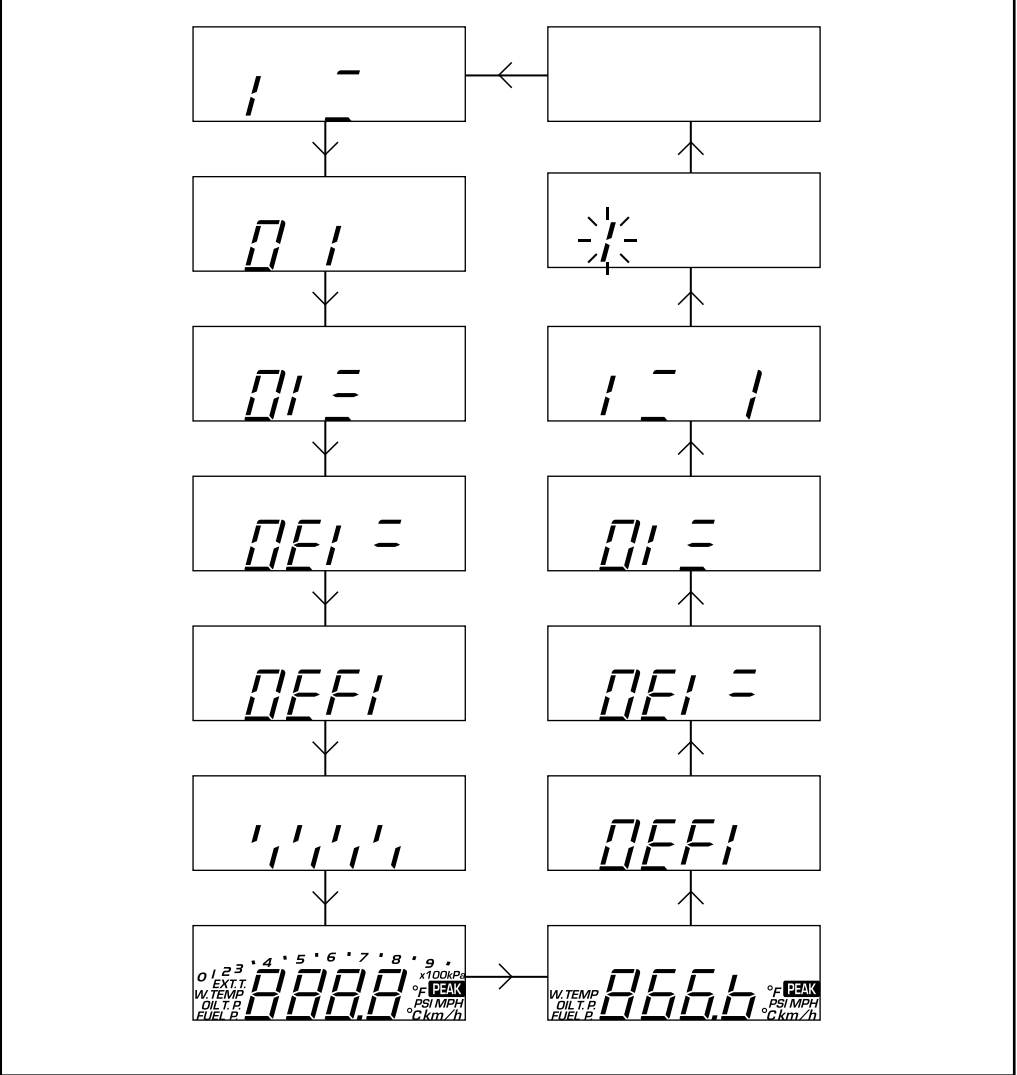
●If operation of the product seems unusual, inspect the product to confirm that there is no malfunction. If an operational problem has occurred, it could result in an accident.

※In addition to a general inspection of the product, use the following table to confirm proper operation of the unit. If the operational problem does not appear in the following table, contact the installation personnel.

Phenomenon	Possible Cause	Corrective Action
○Does not display. ○The gauge doesn't perform the opening and the closing mode. Power is not supplied.	○Wiring of the power supply wire or the display wire is improper. ○The fuse is blown out. ○The locks of the solderless connectors are not locked tightly.	○Check wiring as per instructions in this manual. ○Make sure the wiring is not touched on the vehicle body and then change the fuse. ○Check the lock of the solderless connectors.
○The engine speed is not displayed correctly.	○Wiring of the tachometer signal wire is wrong. ○Setting of the number of cylinders is wrong(D.C.Unit/Defi-Link Control Unit II/Defi-Link Control Unit). ○LINK of D.C.Unit and METER OUTPUT2 of Defi-Link Control Unit II are connected. ○The tachometer signal wire is not connected to Defi-Link Control Unit II or Defi-Link Control Unit (in the case that the product is connected to the Defi-Link System).	○Check wiring as per instructions in this manual. ○Check the number of cylinders as per instructions in this manual and the manuals of the Defi-Link Control Unit II or the Defi-Link Control Unit. ○Connect the LINK connector of the D.C.Unit and the METER OUTPUT1 connector of the Defi-Link Control Unit II using the meter wire. ○Connect the tachometer signal wire to the Defi-Link Control Unit II(or the Defi-Link Control Unit).
○The speed is not displayed correctly.	○Wiring of the speed signal wire is wrong. ○Setting of the speed pulse is wrong.	○Check wiring as per instructions in this manual. ○Check the speed pulse as per instructions in this manual.
○The auto dimmer mode is on, but the display is dark or the brightness of the display doesn't change.	○The DIM sensor is not connected. ○The front of the DIM sensor is obstructed. ○The manual dimmer mode is selected in the setting of the illumination control. ○The direction of the DIM sensor is wrong.	○Connect the DIM sensor as per instructions in this manual. ○Attach the DIM sensor in a position without any obstruction which interrupts the front of the sensor. ○Reset the illumination control setting as per instructions in this manual.
○Does not carry out the closing mode.	○The wiring of the red line of the power supply wire is wrong.	○Check wiring as per instructions in this manual.
○The product is connected to the Defi-Link System, but the speed is not recorded.	○The REC button is pressed when the vehicle is stationary.	○Press the REC button when the vehicle is moving.
○Switching of the unit illumination is not interlocked with switching of the vehicle illumination.	○The condition is normal.	○Switching of D.C.Unit illumination is interlocked with turning on/off the ignition.
○The display is dark.	○The angle of the display unit is not proper.	○Adjust the angle of the display referring to How to install / Step3 / ②The angle of the display.
○The information on the display is not the same as that on the originally equipped gauges.	○The setting of the speed pulse or the number of cylinders is wrong.	○Recheck the setting and setup again. When the setting is not wrong, it depends on the margin of error. Drive according to the indication of originally equipped gauges.

Pop Demo of Special Display

When the Pop demo is selected for the special display, the following demo is played. Refer to Operation / ⑤Setting of Special Display.



■ The following contents are classified into 3 categories. Please read the necessary instructions and directions for use according to your situation as follows:

【When the Defi-Link VSD X is used WITHOUT linking it to the Defi-Link System (W/O Linking)】

W/O Linking ◀◀◀▶▶▶

【When the Defi-Link VSD X is used WITH linking it to the Defi-Link System (W/ Linking)】

▶▶▶ W/ Linking

【Instructions which should be read in each case (Common)】

W/O Linking ◀◀◀

Common

▶▶▶ W/ Linking

■ In the parts saying "Defi-Link Control Unit II," it applies to both the Defi-Link Control Unit II(DF05001) and the Defi-Link Control Unit II Version 2.0(DF05002) as long as any other special notes have not been described.

Installation (for installation personnel)

W/O Linking ◀◀◀

Common

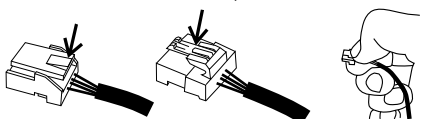
▶▶▶ W/ Linking

⚠ Warning

- Carefully read the "Before Installation" and "About Installation and Operation" sections of the manual concerning installation and operation. Then install the product properly and safely. Installation in an unsuitable location or improper installation can result in the product falling from its position or damage to the vehicle.

⚠ Caution

- When installing the display, be sure to follow the instructions of the Defi-Link Control Unit II(or the Defi-Link Control Unit).
- Do not pull the wires out of connectors forcefully. The connectors may be broken and the wires may be cut. When pulling out the wires, press the lock firmly and unclip the locks of connectors.



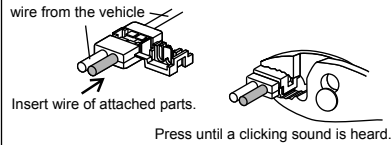
STEP1 Wiring power supply wire and signals

W/O Linking ◀◀◀

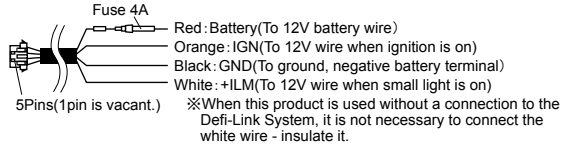
Common

▶▶▶ W/ Linking

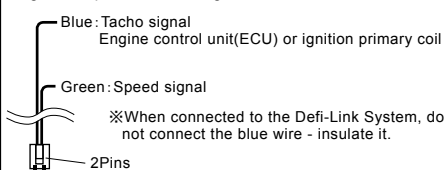
How to branch signal wire using solderless connector



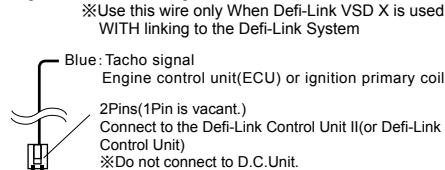
【Figure1】 Power supply wire (2 3/5ft, 80cm)



【Figure2】 Speed & tacho signal wire (6 3/5ft, 2m)

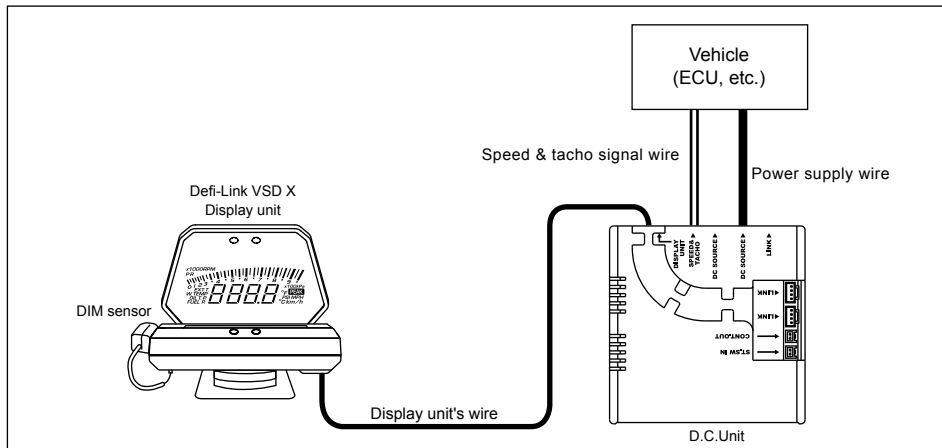


【Figure3】 Tachometer signal wire (4 3/5ft, 2m)



W/O Linking ◀◀◀

【Defi-Link VSD X wiring diagram
(When the Defi-Link VSD X is used WITHOUT linking it to the Defi-Link System)】

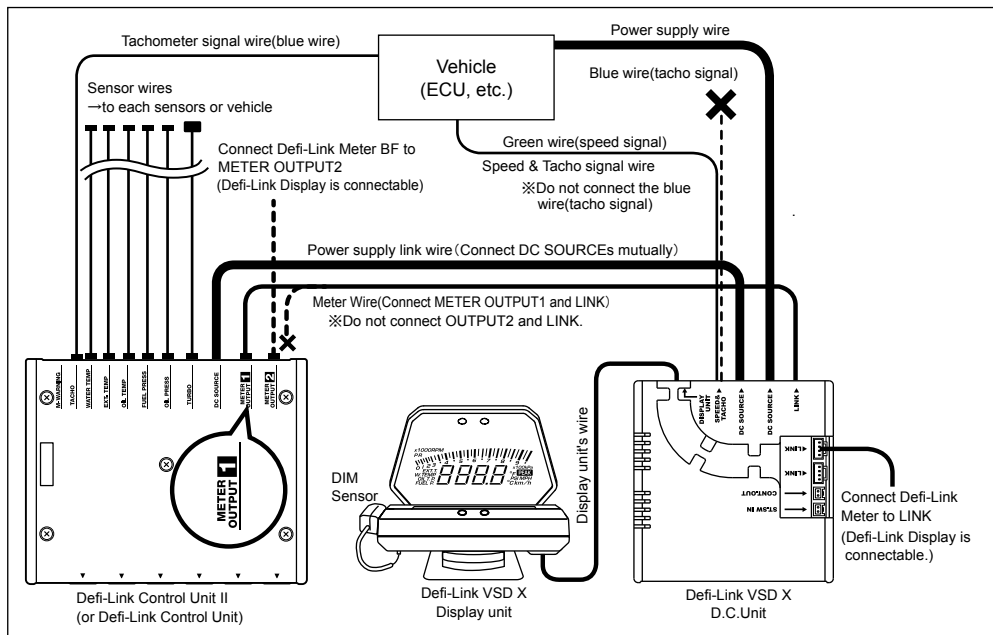


- 1) Connect the power supply wire to the vehicle with solderless connectors【Figure1】.
- 2) Connect the other side of the power supply wire to the DC SOURCE connector of the D.C.Unit.
※There are two DC SOURCE connectors. Both connectors are usable.
- 3) Connect the speed & tacho signal wire(green & blue wires) to the speed and tacho signal wire of the engine control unit(ECU) with solderless connectors【Figure2】.
- 4) Connect the other side of the speed & tacho signal wire to the SPEED&TACHO connector of the D.C.Unit.
※In the case where this product is linked to the Defi-Link System afterward, connect the white wire of the power supply wire to the illumination wire(12V wire when small lamp is on). Connect the tacho signal wire to the Defi-Link Control Unit II(or the Defi-Link Control Unit【Figure3】.

▶▶▶ W/ Linking

【Defi-Link VSD X and Defi-Link System wiring diagram
(When the Defi-Link VSD X is used WITH linking it to the Defi-Link System)】

※These procedures are applicable on condition that Defi-Link Control Unit II(or Defi-Link Control Unit) and the power supply wire have been installed. If the Defi-Link VSD X and the Defi-Link System are installed at the same time, install the Defi-Link Control Unit II first by referring to the operation manual.



- 1) Disconnect the previously connected power supply wire from the Defi-Link Control Unit II(or the Defi-Link Control Unit).
- 2) Connect the disconnected power supply wire to the DC SOURCE connector of the D.C.Unit.
※There are two DC SOURCE connectors. Both connectors are usable.
- 3) Connect the DC SOURCE connectors of the Defi-Link Control Unit II(or the Defi-Link Control Unit) and the D.C.Unit using the attached power supply link wire.
- 4) In the case where a meter wire is already connected to the METER OUTPUT1 connector of the Defi-Link Control Unit II(or the METER connector of the Defi-Link Control Unit), disconnect the meter wire. (If the METER OUTPUT1 connector of the Defi-Link Control Unit II is not in use, skip the next procedure and go to 6.)
- 5) Connect the disconnected meter wire to the LINK connector of the D.C.Unit.
※There are three LINK connectors. All three connectors are usable.
- 6) Connect the METER OUTPUT1 connector of the Defi-Link Control Unit II and the LINK connector of the D.C.Unit using the attached meter wire. (Connect the METER connector of the Defi-Link Control Unit and the LINK connector of the D.C.Unit using the attached meter wire.)
※There are three LINK connectors. All three connectors are usable.
- 7) Connect the attached tachometer signal wire(blue) to the tacho signal wire of the engine control unit(ECU) using the attached solderless connector. In the case where a tachometer signal wire(blue) is already connected to the Defi-Link Control Unit II(or Defi-Link Control Unit), skip this procedure. Leave the tachometer signal wire(blue) and go to 9.
- 8) Connect the other side of the tachometer signal wire to the TACHO connector of the Defi-Link Control Unit II(or the Defi-Link Control Unit).
※Be sure to connect the tachometer signal wire(blue) to the TACHO connector of the Defi-Link Control Unit II(or the Defi-Link Control Unit). If the tachometer signal wire(blue) is connected to the D.C.Unit not to the Defi-Link Control Unit II(or the Defi-Link Control Unit), the engine speed will not be displayed.
- 9) Connect the green wire of speed & tacho signal wire(speed signal) to the speed signal wire of engine control unit(ECU) using the attached solderless connector.
※The blue wire of the speed & tacho signal wire does not need to be wired. Insulate and bind up the wire so as not to interfere with driving【Figure2】.
- 10) Connect the other side of the speed & tacho signal wire to the SPEED & TACHO connector of the D.C.Unit.

STEP2 Check Wiring

W/O Linking ◀◀◀

Common

▶▶▶ W/ Linking

- 1) Connect the display wire of the Defi-Link VSD X to the DISPLAY UNIT connector of the D.C.Unit.
- 2) Check that all the wires are properly connected.
- 3) Turn on the ignition of vehicle and make sure the display is lighted. (The display looks inverted on the display unit.)
- 4) If the display is lighted, go to the next step. If not, go back to STEP1 and rewire.

STEP3 Installation of Display Unit, DIM Sensor, and D.C.Unit

W/O Linking ◀◀◀ Common ▶▶▶ W/ Linking

Warning

- Improper installation could cause the product to fall and damage the vehicle or cause serious danger by impeding driving.
 - Attach the display unit in a location which will not hinder driving.
 - Make sure that both the display unit and the D.C.Unit are firmly attached by using screws and double-sided tape.
- When installing the display unit, confirm the installation position with the customer and install it in a location which will not hinder driving.

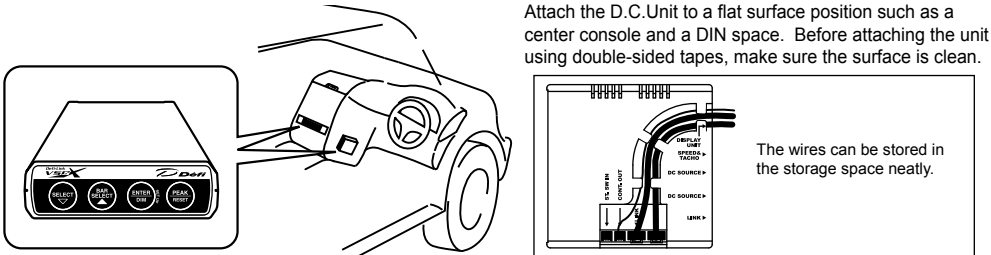
Caution

- Do not take off the rubber covering round the target screen. The plate is sharp-edged. Reapply the rubber when it comes off.

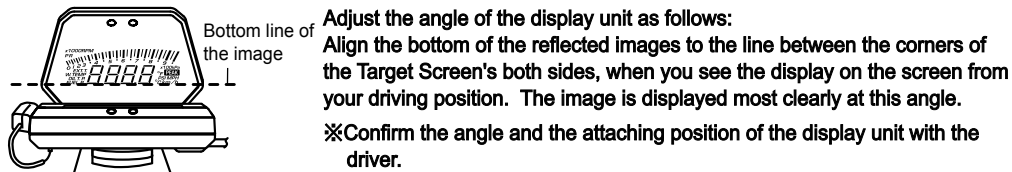
Confirmation

- When leaving the car under the direct sunlight, cover the display unit with a white cloth. It prevents the unit from deterioration.
- Before attaching units using double-sided tapes, make sure the surfaces are clean.
- Do not expose the D.C.Unit and the Defi-Link Control Unit II(or the Defi-Link Control Unit) to direct sunlight.
- Do not touch the Target Screen. When it is stained with dust and finger marks, remove dust from the screen with adhesive tape. And then wipe off with care by using a soft and dry cloth so as not to scratch it.

①Installation of D.C.Unit

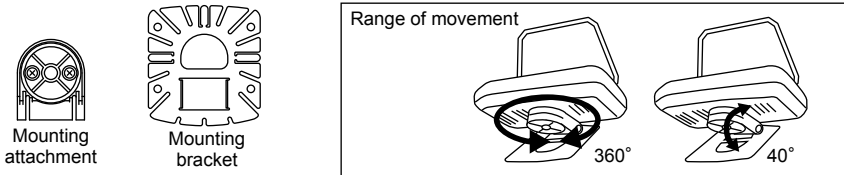


②Best angle of the display unit

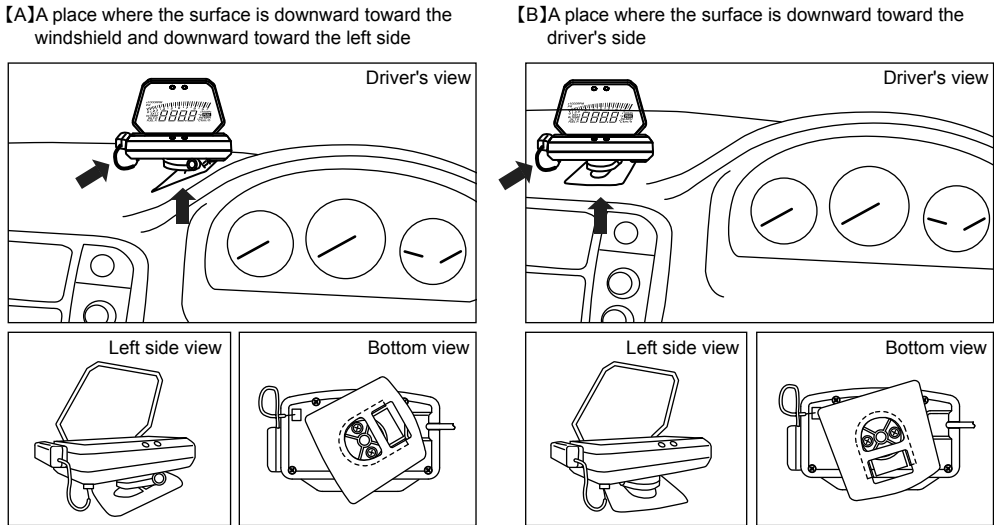


③How to use mounting attachment and mounting bracket

When attaching the display unit, the angle is adjusted and fixed by combining with the mounting attachment and the mounting bracket. Mounting attachment...parts which is fastened on to the bottom of the display unit. Mounting bracket...fitting which is included in Mounting Bracket Set. The mounting attachment rotates by 360 degrees. The mounting bracket has a 40-degree range of movement.



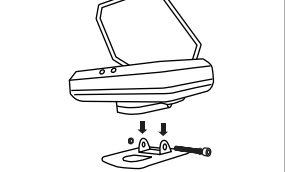
④Installation examples of the display unit



⑤Installation of the display unit and the DIM sensor

- 1) Tighten temporarily the mounting bracket to the mounting attachment with the bolt, nut, and washer[Figure4]. Use a hexagonal Allen wrench to tighten the bolt. Then unfasten screws of the mounting attachment until it rotates[Figure5].
- 2) Turn on the ignition of the vehicle. Locate the display unit on the instrument panel while looking at the reflecting image on the target screen. Adjust the angle and fix it by combining with the mounting attachment and the mounting bracket. After the position is located, mark it with adhesive tape. Turn off the ignition. (Refer to ③How to use the mounting attachment and the mounting bracket and ④Installation examples of the display unit.)
- 3) Fully tighten the screws of the mounting attachment[Figure5].
- 4) Dismount the mounting bracket from the display unit, and then attach the double-sided tapes on its undersurface. Bend it along the form of the instrument panel and fix it on the panel with the tapping screws[Figure5].
 - ※Before attaching the unit using double-sided tapes, make sure the position is clean.
- 5) Connect the DIM sensor to the connector on the backside of the display unit.
- 6) Fit the display unit into the mounting bracket and tighten it fully with a hexagonal Allen wrench.
- 7) Attach the DIM sensor to the side of display unit towards the direction of movement using double-sided tape[Figure7-1][Figure7-2].
 - ※Give attention to the attaching direction of the DIM sensor.
 - ※Please fix the DIM sensor to the position in which the horizontal and forward direction of the sensor is not interrupted with the wiper, and so on.

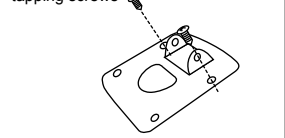
【Figure4】Attach mounting bracket with bolt



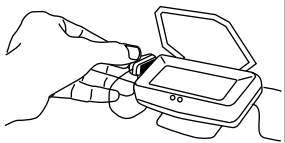
【Figure5】Loosen or tighten the screw of mounting attachment



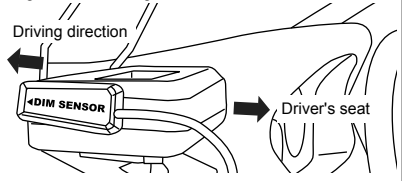
【Figure6】Fix mounting bracket with tapping screws



【Figure7-1】Fix DIM sensor

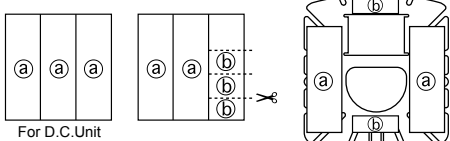


【Figure7-2】Installing direction of DIM sensor



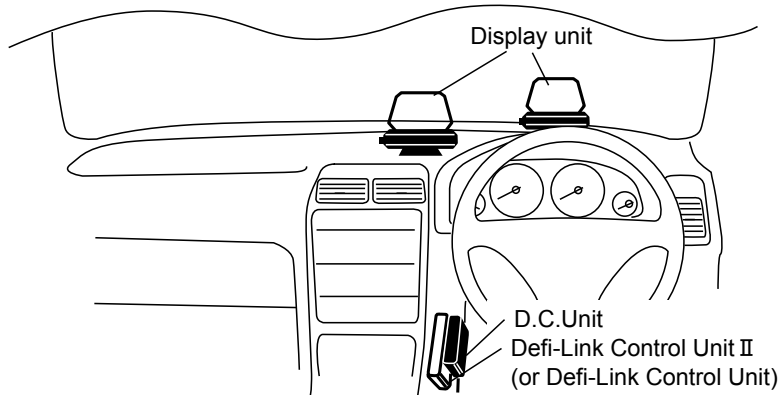
How to use double-sided tapes

- ① ...3 for the D.C.Unit, 2 for the mounting bracket
- ② ...2 for the mounting bracket, 1 for the DIM sensor



W/O Linking ◀◀◀ Common ▶▶▶ W/ Linking

⑥Example of installation



After the installation is done, the next step is set-up the functions. Please refer to the backside of this manual. The quick reference chart for the set-up is printed on the inside of the package.

Operation(for customer)

1.Set-Up Mode(Screen for setting units and display data parameters)

W/O Linking ◀◀◀ Common ▶▶▶ W/ Linking

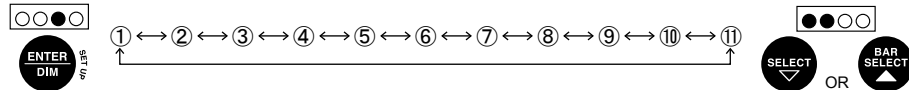
Confirmation

- Be sure to make preparatory settings. The unit will not operate properly without the settings being made.
- Set up while the vehicle is stationary.

○○○○ This illustration indicates positions of buttons for the D.C.Unit

○○○○○○ This illustration indicates positions of buttons for the Defi-Link Control Unit II

When changing the factory settings shown below, pressing the SET UP(ENTER) button for more than 1 second after the opening mode has completed will bring up the setting mode for units. In the set-up mode, the item to be set changes each time SELECT▽ or BAR SELECT▲ buttons are pressed. When adjustment of a particular setting is needed, press the ENTER button. To quit the the set-up mode, press the SET UP(ENTER) button for more than 1 second.

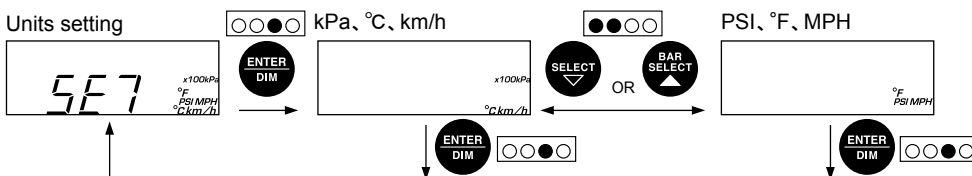


Item	Factory Default	Item	Factory Default
①Units	kPa, °C, km/h	⑦Bar Display	ON
②Speed Pulse	4	⑧Warning Buzzer	ON
③Number of Cylinders	4	⑨Auto Warning	ON
④Warm-Up	Water Temp. 40°C(104°F)/ Oil Temp. 60°C(140°F)	⑩Illumination Control	Manual M-5(the brightest)
⑤Special Display	ON	⑪Control Out	Water Temp. 80°C(176°F)/ Oil Temp. 100°C(212°F)
⑥Tachometer Warning	1→7000, 2→8000		

①Setting of Units

W/O Linking ◀◀◀ Common ▶▶▶ W/ Linking

Press the ENTER button when the following figure is displayed. Use the SELECT/BAR SELECT button to select units (kPa, °C, km/h or PSI, °F, MPH), then press the ENTER button to set the desired units.

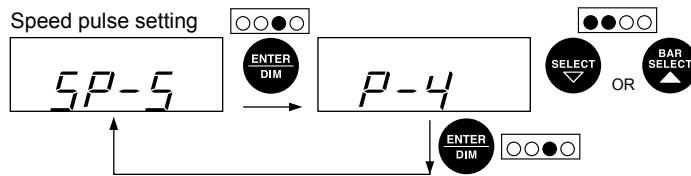


②Setting of Speed Pulse

W/O Linking ◀◀◀ Common ▶▶▶ W/ Linking

Press the ENTER button when the following figure is displayed. Use the SELECT/BAR SELECT button to select the speed pulse number, then press the ENTER button to set the selection.

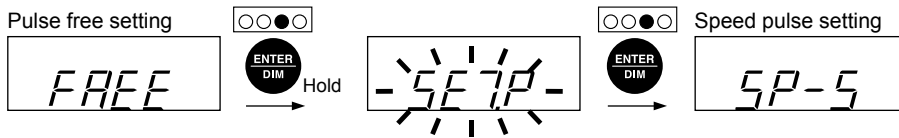
2 ↔ 4 ↔ 8 ↔ 16 ↔ FREE(Free pulse setting)



<Speed pulse number>The speed pulse numbers differ by models of vehicles. Consult your local car dealer if you are not certain of the speed pulse number for your vehicle.

<Free pulse setting>For vehicles having a speed pulse other than 2, 4, 8, or 16 pulse, the speed pulse can be set by switching to the "FREE" screen by pressing and holding the ENTER button for more than 2 seconds. After the screen changes to the pulse set screen(SET.P blinks), press the ENTER button while the vehicle is moving at 60km/h or 40MPH.

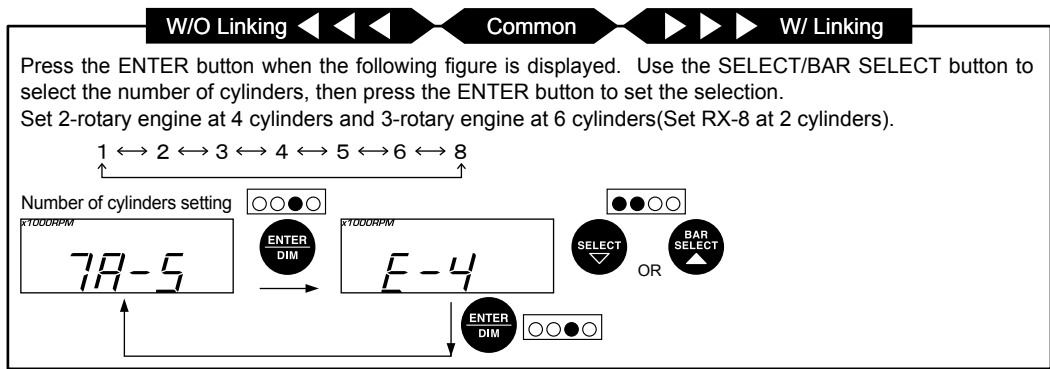
- ※Ask fellow passengers to set up. Do not set up at the wheel.
- ※It may be unable to be adapted for some models of vehicles.



Press the ENTER button while the vehicle is moving at 60km/h or 40MPH.

NOTE: The pulse free setting needs to be done again if unit systems are changed. When any of numbers of speed pulse other than FREE is set after the pulse free setting is done, the pulse free setting information is cleared.

③Setting of Number of Cylinders



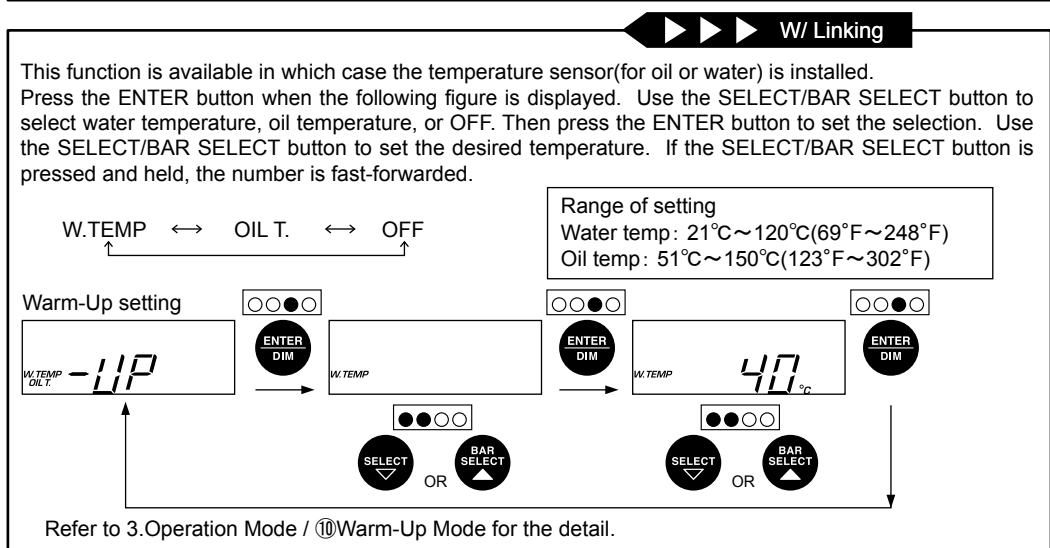
When the Defi-Link VSD X is used with linking it to the Defi-Link System, there is no need to set the number of cylinders with the Defi-Link VSD X. The setting of the Defi-Link Control Unit II is applicable. Refer to the operation manual of the Defi-Link Control Unit II for the detail.

※The Defi-Link VSD X is not applicable to 1 and 2 cylinders vehicles if it is connected the Defi-Link Control Unit II(DF05001) or the Defi-Link Control Unit(DF01301). This product is applicable to 1 and 2 cylinders vehicles if it is connected to the Defi-Link Control Unit II Version 2.0(DF05002).

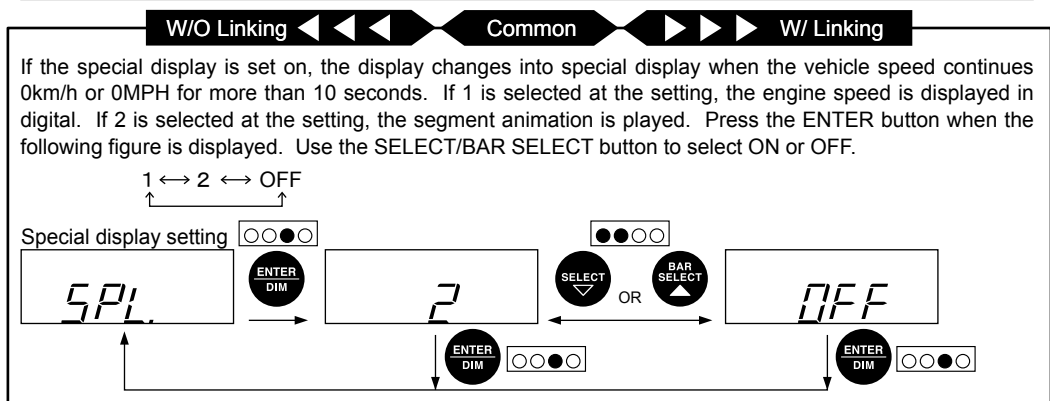
④Setting of Warm-Up

W/O Linking ◀◀◀

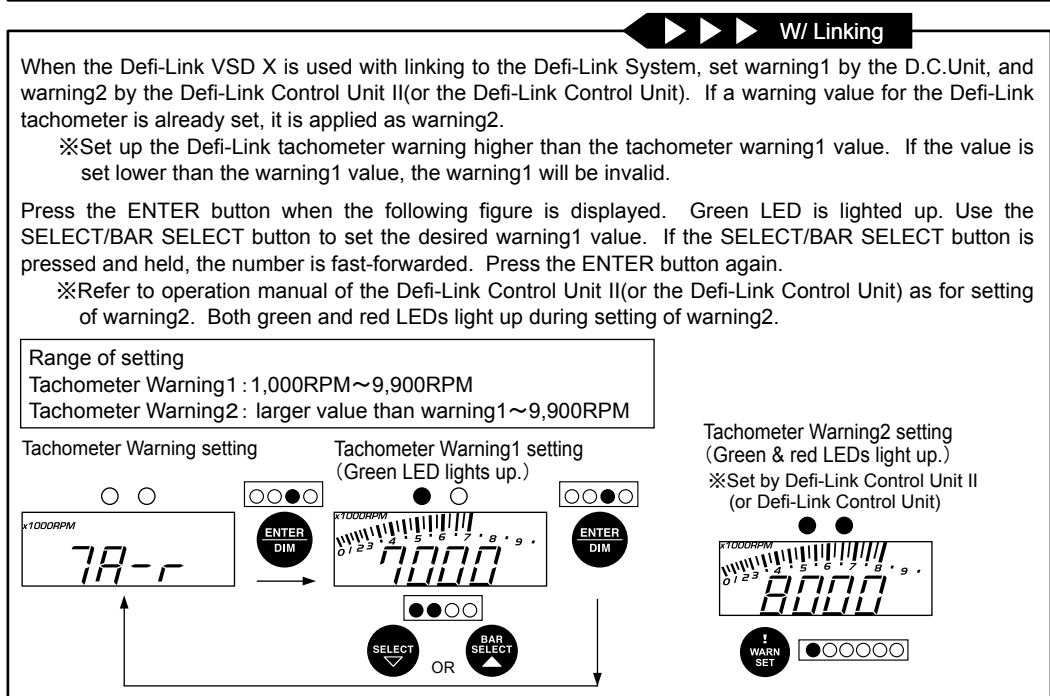
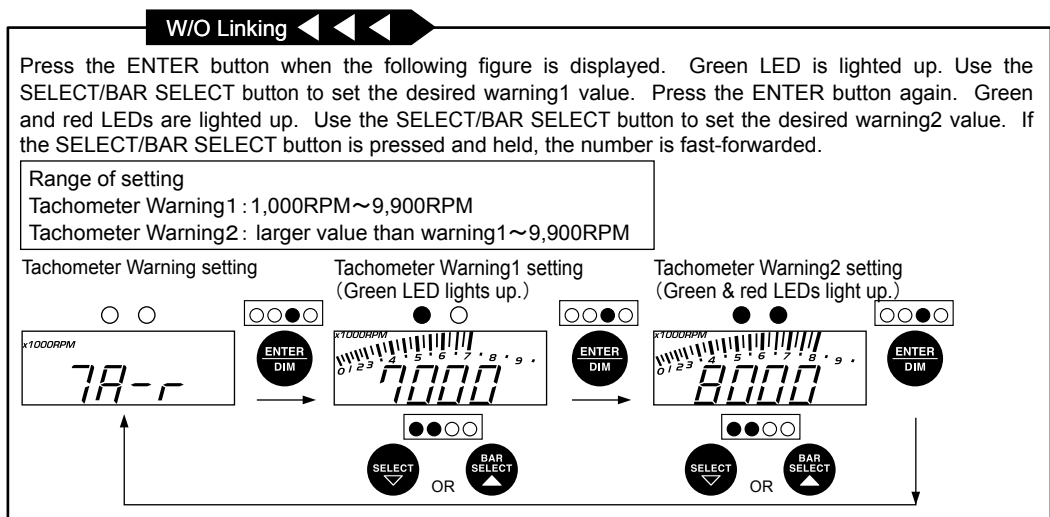
Warm-Up function is not available when the Defi-Link VSD X is used WITHOUT linking it to the the Defi-Link System.



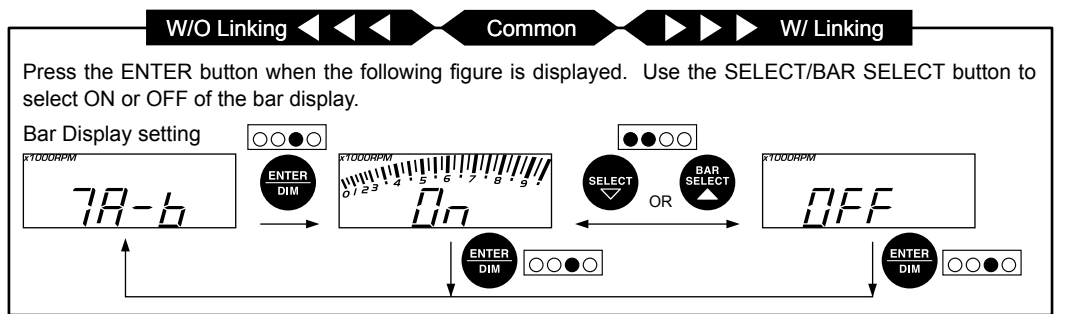
⑤Setting of Special Display



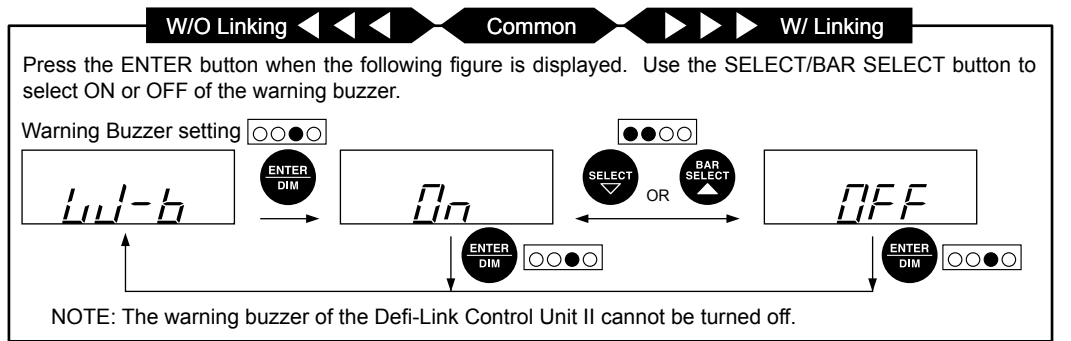
⑥Setting of Tachometer Warning



⑦Setting of bar display



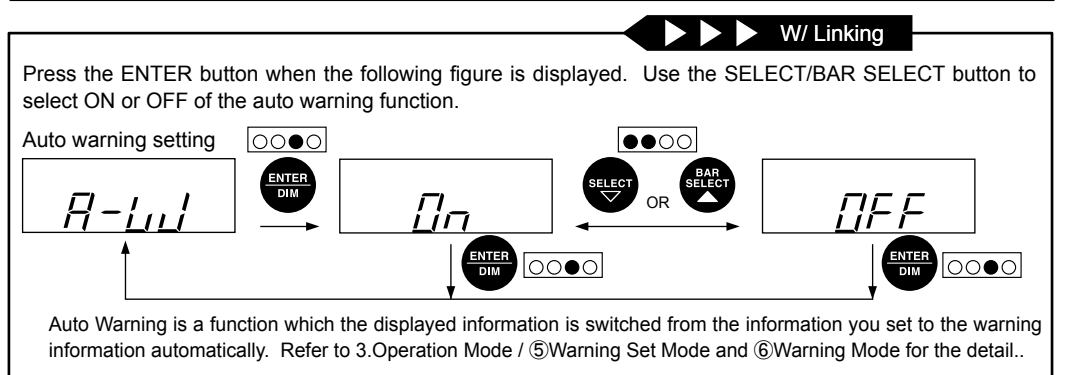
⑧Setting of Warning Buzzer



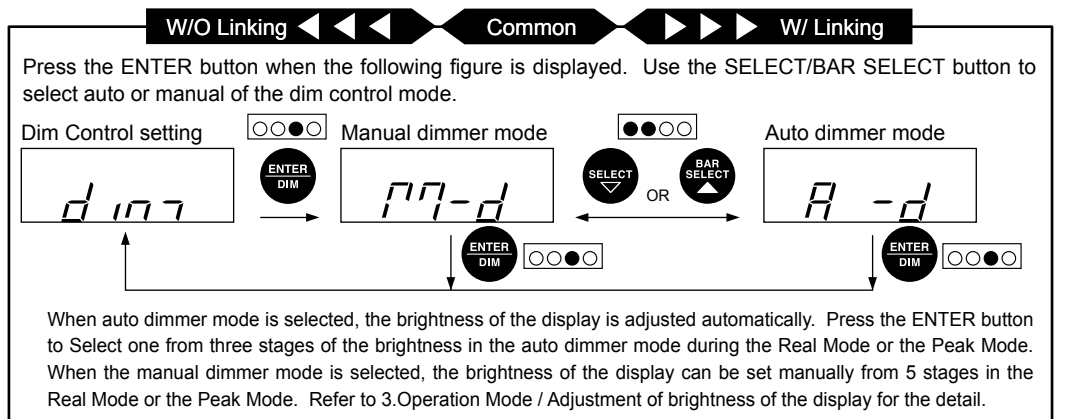
⑨Setting of Auto Warning

W/O Linking ◀◀◀

Auto Warning function is not available when the Defi-Link VSD X is used WITHOUT linking it to the Defi-Link System.



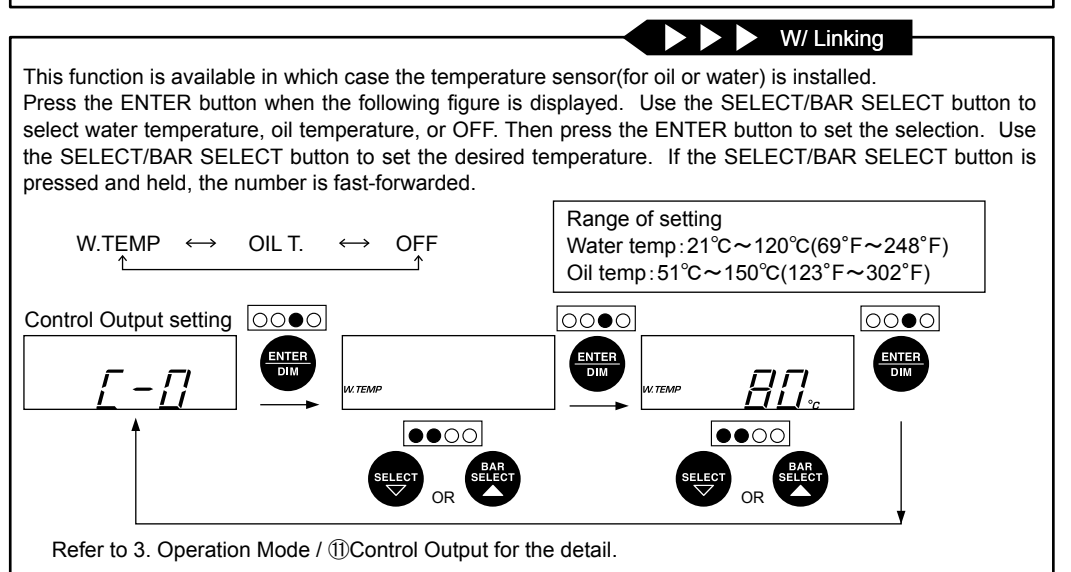
⑩Setting of Illumination Control



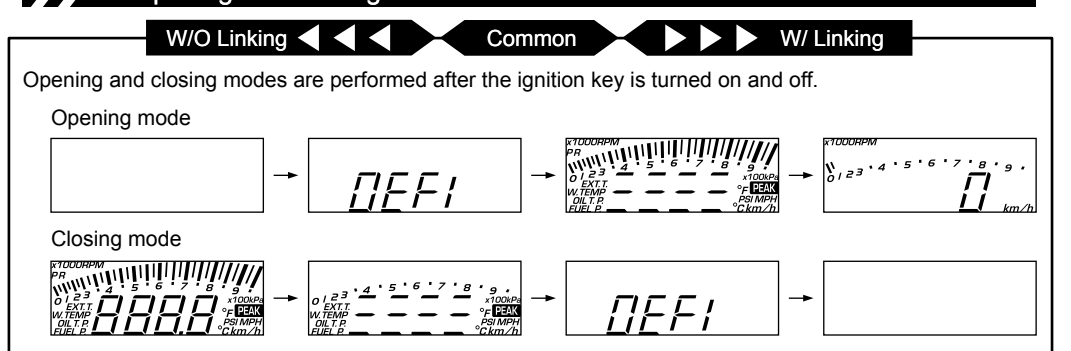
⑪Setting of Control Output

W/O Linking ◀◀◀

Control Output function is not available when the Defi-Link VSD X is used WITHOUT linking it to the Defi-Link System.



2. Opening and Closing Mode



▶▶▶▶ 3.Operation Mode

W/O Linking◀◀◀Common▶▶▶▶W/ Linking

Adjustment of brightness of the display

When the auto dimmer mode is selected in the setting of the illumination control, the brightness of the display is adjusted automatically depending on the outside light. The brightness levels can be selected from three stages by pressing the DIM(ENTER) button in the Real Mode or the Peak Mode. When the manual dimmer mode is selected, the brightness of the display is fixed. The brightness can be selected from five stages by pressing the DIM(ENTER) button.

	BRIGHT←→DARK
Auto dimmer mode	A-L3 → A-L2 → A-L1
Manual dimmer mode	M-5 → M-4 → M-3 → M-2 → M-1

ENTER DIM ○○○○

W/O Linking◀◀◀▶▶▶▶W/ Linking

①Real Mode

The actual vehicle speed is displayed digitally and the engine speed is displayed in the bar section. When the engine speed exceeds the warning value set as the tachometer warning1 in the setting of tachometer warning, the green LED lights up. When the engine speed exceeds the tachometer warning2, the green and red LEDs blink.

②Peak Mode

Pressing the PEAK button during the Real Mode will bring up the Peak Mode. Recorded peak values for the speed and the engine speed will be displayed. Pressing the PEAK button again during the Peak Mode will return to the Real Mode.

PEAK RESET ○○○○

③Peak Reset Mode

During either the Real Mode or the Peak Mode, the peak values will be reset by pressing and holding the PEAK button for more than two seconds.

PEAK RESET Hold ○○○○

④Special Display Mode

If Special Display Mode is set at 1 or 2, the special display will start when the vehicle speed continues 0km/h or 0MPH for more than 10 seconds in the Real Mode. In this mode, the engine speed or the segment animation is played. When the speed gets to more than 0km/h or 0MPH or when any button of the D.C.Unit is pressed, the display will return to the Real Mode.

▶▶▶▶W/ Linking

※For operations ① through ⑨ shown below, refer to the operation manual of the Defi-Link Control Unit II (or the Defi-Link Control Unit), too.

①Real Mode

The actual data on current speed, engine speed, oil pressure, fuel pressure, oil temperature, water temperature, and exhaust temperature is displayed in this mode. Each time the SELECT/BAR SELECT button is pressed, the displays of the digital and bar section will change in the following order. Data which sensors are not connected cannot be selected.

Digital Display Section SELECT ●○○○ Speed → Water temp. → Oil temp. → Oil press. → Fuel press. → Exhaust temp. →

Bar Display Section BAR SELECT ●○○○ Engine speed → Oil press. → Fuel press. →

NOTE: If "MPH, °F, PSI" is selected in the setting of units, data other than the engine speed is not displayed.

When the engine speed exceeds the warning value set as the tachometer warning1 in the setting of tachometer warning, the green LED lights up. When the engine speed exceeds the tachometer warning2, the green and red LEDs blink. The tachometer warning2 cannot be set in the setting of tachometer warning.

②Peak Mode

By pressing the PEAK button of the Defi-Link Control Unit II(or the Defi-Link Control Unit) during the Real Mode, the Peak values are displayed. The displayed data will be changed by pressing the SELECT/BAR SELECT button. Pressing the PEAK button again during the Peak Mode will return to the Real Mode.

Digital Display Section SELECT ●○○○ Speed Maximum → Speed Minimum → Engine speed → Water temp. → Fuel press. → Exhaust temp. → Oil press. → Oil temp. →

Note: When displaying the speed minimum value, the unit(km/h or MPH) blinks and the minimum value recorded in Rec Mode is displayed.

Bar Display Section BAR SELECT ●○○○ Engine speed → Oil press. → Fuel press. →

NOTE: If "MPH, °F, PSI" is selected in the setting of units, data other than the engine speed is not displayed.

NOTE: When connected to the Defi-Link System, the PEAK button of the the D.C.Unit is unavailable.

③Peak Reset Mode

When the UP button of the Defi-Link Control Unit II is pressed in the Peak Mode(or when the PEAK button of the Defi-Link Control Unit is pressed and held for more than two seconds in any of Real Mode, Peak Mode or Warning Mode), the peak values will be reset.

△ UP ○○○○

NOTE: When connected to the Defi-Link System, the PEAK button of the D.C.Unit is unavailable.

④Special Display Mode

If Special Display Mode is set at 1 or 2, the special display will start when the vehicle speed continues 0km/h or 0MPH for more than 10 seconds in the Real Mode. In this mode, the engine speed or the segment animation is played. When the speed gets to more than 0km/h or 0MPH or when any button of the D.C.Unit is pressed, the display will return to the Real Mode.

⑤Warning Set Mode

Engine Speed(tacho warning2) Oil Temp. Boost

※Examples of display

WARN SET ●○○○○

Pressing the WARN SET button of the Defi-Link Control Unit II(or pressing the SELECT button of the Defi-Link Control Unit) will bring up the Warning Set Mode. To set the warning value, please refer to the operations manual of the Defi-Link Control Unit II(or the Defi-Link Control Unit).

NOTE: The boost and intake manifold pressure are not displayed in the Real Mode.

▶▶▶▶W/ Linking

⑥Warning Mode

When current values exceed the values set as warnings by using the Defi-Link Control Unit II(or the Defi-Link Control Unit) and when disconnection or short circuit of sensor wires or sensors are detected, the screen indicates the warning.

- ※Priority is given to the tachometer warnings over other warnings.
- ※Warnings on the boost and intake manifold pressure are not indicated.
- ※The warning on the oil pressure is not indicated while the vehicle speed is under 10km/h(6MPH).
- ※A buzzer of the Defi-Link Control Unit II sounds irrespective of the setting of the D.C.Unit.

[A]If the auto warning mode is turned ON in the setting of auto warning

When a current value exceeds the set value, the red LED and the name of the data blink. A buzzer sounds at the same time if warning buzzer is turned on. One minute later, the red LED and the name of the data stop blinking and start lighting and the current warning value is displayed. When several values exceed the warning set values, the latest warning is indicated. Pressing the ENTER button will return to the last display before the indication of warnings. If the value still exceeds the set value, the name of the data will continue to blink.

[B]If the auto warning mode is turned OFF in the setting of auto warning

When a current value exceeds the set value, the red LED and the name of the data blink. A buzzer sounds at the same time if warning buzzer is turned on. One minute later, the red LED goes out, the buzzer is stopped, and the name of the data blinks faster. The red LED lights up and a buzzer sounds again if the warning data is selected to display in the digital display section by using the SELECT button. When several values exceed the warning set values, the name of data which is being displayed in the digital display section light up and other names blink.

⑦Self-Diagnosis Function

Disconnection(open)
This display means that a wire disruption, a disconnection or an improper wiring connection has occurred at the sensor or in the sensor wire.

Short circuit
This display means that a short circuit has occurred somewhere at the sensor or in the sensor wire.

Serial error
This display means that communications between the Defi-Link VSD X and the Defi-Link system have been interrupted.

Setting Error of the number of cylinders
"x1000RPM" blinks if the number of cylinders of the Defi-Link Control Unit II(or the Defi-Link Control Unit) is not set or if the METER OUTPUT2 connector of the Defi-Link Control Unit II and the LINK connector of the D.C.Unit are connected by error.

⑧Rec Mode

When the vehicle is moving at the speed of 1km/h(1MPH) or more, connected sensor data and the speed data are recorded for a maximum of 3 minutes by pressing the REC button of the Defi-Link Control Unit II(or the Defi-Link Control Unit). "R" is displayed during recording. Data displayed in the digital and bar display section can be changed by pressing the SELECT/BAR SELECT button.

During driving REC ○○○○○○ During Rec Mode SELECT OR BAR SELECT ●○○○

Note: The Real Mode will turn to the Rec Mode only when the speed is more than 1km/h (1MPH). The speed is not recorded if the REC button is pressed When the speed is 0km/h(0MPH) and Real Mode will turn to the Play Mode.

⑨Play Mode

When the vehicle speed is 0km/h(0MPH), recorded data are displayed by pressing the PLAY button of the Defi-Link Control Unit II(or by pressing the PLAY/REC button of the Defi-Link Control Unit during Peak Mode). "P" is displayed during playing of data. Data displayed in the digital and bar display section can be changed by pressing the SELECT/BAR SELECT button.

During driving PLAY ○○○○○○ During Play Mode SELECT OR BAR SELECT ●○○○

Note: Once pause, fast-forward or rewind is performed with the Defi-Link control Unit II(or the Defi-Link Control Unit), the recorded data cannot be played back. To play back the speed data, the Play Mode needs to e started over again.

Note: Operation needs to be performed while the vehicle is stationary. If the PLAY button is pressed in vehicle's running condition, speed data will not be played back but the Play Mode will turn to the Rec Mode and the speed data is overwritten.

⑩Warm-Up Mode

This Warm-Up Mode is available when either a water temperature sensor or an oil temperature sensor is connected to the Defi-Link Control Unit II(or the Defi-Link Control Unit) and the setting of Warm-Up is completed. After the Opening Mode, the Warm-Up Mode starts if the sensor data is below the set value. During this mode, leftmost digital segments are lighted in order. If the displayed data is changed by pressing the SELECT button during this mode, the unit of temperature blinks(°C/°F). When the temperature reaches the set value, the Warm-Up Mode is completed and returns to the Real Mode.

⑪Control Output

This Control Output function is available when either a water temperature sensor or an oil temperature sensor is connected to the Defi-Link Control Unit II(or the Defi-Link Control Unit) and the setting of the Control Output is completed. When the temperature reaches the set value, the Control Output signal is read out to the terminal of CONT. OUT of the D.C.Unit.

⚠ Caution

- Do not connect anything to the CONT. OUT connector unless this function is used.
- Load current of the Control Output is less than 300mA.
- Any damages to other products connected to the CONT. OUT connector is not covered by the warranty.

[A]Example on direct hookup of a warning lamp

[B]Example of how to connect an electric motor by using a relay and how to load a LED indicator

Note: Connect IGN(12V) to 12V line on ignition switch for sure. Power of a connected product is not turned off if IGN(12V) is connected to battery(+) line.