



Defi-Link
ADVANCE
Control Unit

デフィーリンクアドバンスコントロールユニット取扱説明書
Defi-Link Advance Control Unit Operation Manual

DF07701

日本国内でご購入の場合は 1 ページから 36 ページをお読みください。

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英語の部分は国内では無効です。

【Web サイト】 <http://www.nippon-seiki.co.jp/defi/>

【電話番号】 (03)3835-3639

【受付時間】 9:30 ~ 12:00、13:00 ~ 17:00(土・日、祭日、当社休日を除く平日)

English section is from P.37 to P.75.

Thank you very much for purchasing our product. Before installing and using the product, please read this manual thoroughly. All sections are for customers and installation personnels. After installation, please keep this manual for future reference.

Defi will not be held responsible for accidents or damages related to installation of this product.

Japanese section is effective only in Japan.

【Web site】 <http://www.defi-shop.com/>

1 Safety Warning 【Please read carefully.】

This product is an additional product for providing information to automobile users about engine conditions and other important factors. 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 product will be installed. Please 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.

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.

Before handling (for installation personnel)

Danger

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 and 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.

During wiring power supply wire, to avoid the risk of electrical shock or fire, be sure to confirm that there is no disconnection or breakage of wire. Poor connection can result in short-circuit, electrical shock, fire, or other hazards. The ignition-switched +12V(IGN) line must be connected to the vehicle's ignition-switched wire with a fuse of 30A or less. High-capacity fuse (more than 30A) will not blowout even with an abnormal current flow and may cause fire.

Use the tube fuse of regulated capacity when the fuse of the power wire is changed. Using a fuse that exceeds regulated capacity may cause fire. Do not install the product in wet places. It may result in a fire caused by an electrical short circuit.

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 devices of vehicle such as airbags. 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 also will void the warranty.



Do not perform installation of this product immediately after the engine has been switched on. 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. Before tapping speed or engine rev signal from the ECU, please make sure that you have connected power cables inside power supply wire properly. Then confirm that the DC Source LED is lighted with ignition on. If it is functioning normally, remove negative terminal connector from battery and go ahead with wiring procedure. Incorrect wiring may destroy your ECU, ignition system and other engine management devices.

Discontinue use of this product if the product doesn't operate or operates improperly. Continued use while the condition exists could result in an accident or damage.

Please keep children and infants away from the installation area. Children may swallow small parts or be injured in other ways.

Take care not to install this product in the area where safety equipment such as airbags are mounted. This may cause more injuries in the event of accident.

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 wires away from ignition and also radio signal frequency interference as this could cause the gauges to malfunction.

Please set it up so that the equipment such as the wireless machines and cellular phones that emit electric waves should not touch the unit. It may result in incorrect operation.

Do not place wires near the engine, exhaust pipe or turbine. It may result in damage or fusion of wires.

Make sure the waterproof processing is done when diverging wires in the engine compartment.

Do not lay the gauge face down due to oil leakage. Angle "A" must be more than 90 degrees.



When installing the sensor, do not bend the wire near the sensor body.

Wear gloves to avoid burns when soldering and cuts when installing wires, sharp edges of parts.

Do not expose the unit to moisture, dust or direct sunlight, or place product directly in front of heat vents.

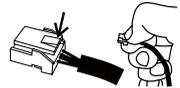
Install sensors away from hot or wet places.

When using sunshade, put sunshade between products and windshield to avoid direct sun exposure.

Use the dried soft cloth for cleanup. Do not use the cleaner except for the neutral detergent. It results in trouble.

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 to unclip the locks of connectors.



Do not install gauges, including this product, into the passenger side or center of the dashboard. It doesn't meet vehicle safety standards.

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, warranty card, and the package along with the warranty to the customer .

The gauge pointer may not be in the proper position when you purchase the product. Normal function will resume when power is connected.

Please confirm with the maintenance book that the car manufacturer issued when installing and detaching genuine parts.

Before tapping wires, check the voltage of the existing wire. After tapping the wire, check the voltage of the tapped wire again to confirm whether you have tapped into the proper place.

If car navigation system or car television is installed in vehicle, gauges and wires of this product need to be kept as far away as possible from the wiring and installing positions of car navigation system or car television. Failure to do so may result in interference of television display(VHF).

About Installation and Operation (for customer and installation personnel)

Warning

Please have this product installed by store professional 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 also will void the warranty.



In order to ensure safe driving, check the information on the gauge only for a short period of time. Looking at the display for a long period of time could distract attention from the road and result in an accident.

Discontinue use of this product if the gauge doesn't operate, water gets into the unit, or smoke or a strange odor comes from the unit. If such a condition occurs, contact the store 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.

Fix the switch unit and other parts tightly to the vehicle to avoid children's accidentally swallowing them.

Caution

On no event will Nippon Seiki Co., Ltd. be liable 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 to unclip the locks of connectors.

Confirmation

This product cannot be linked to the previous version of Defi-Link System. The information displayed on this product are for reference purposes only. Please drive according to the indication of vehicle's originally equipped instruments.

This product can be used only on 1, 2, 3, 4, 5, 6, and 8 cylinder vehicles with 4 cycle engine. Refer to the Product Specifications. Engine revolution signal of diesel vehicles cannot be displayed.

Do not connect more than one gauge of each particular gauge to this product. (ex. you can have one turbo for this product)

2 Product Features

Interactive communication advanced system is implemented.

Flat glass and precise graduation scale give more needle accuracy and high visibility.

Gauges can be controlled from distance with the included switch unit.

Opening and closing modes can be selected from 2 variations.

The installation of additional gauges is easy. Just connect it with the other two gauges and attach the wire to Advance Control Unit.

The illumination at night can be switched between 2 different colors. (White dial: amber red/blue; Black dial: white/amber red)

The outer edge of the gauge illuminates in red at night.

The needle pointer driven by original stepping motor has a smooth instantaneous response to rapid acceleration of high performance vehicles.

The microcontroller calibrates up to 270 degree angle in 3027 - 4600 segments (0.088 °- 0.059 °), and provides accurate vehicle information.

Self-diagnosis system turns the warning LED on to indicate any wire disconnection, short circuit and serial communication errors.

Warning by buzzer sound when the warning LED is on (buzzer sound can be turned on / off).

Peak value and warning value during driving are stored. Driving data can be stored and replayed up to 3 minutes.

A mounting bracket, meter cup, regular position bezel are provided with this product.

With both fuel pressure gauge and turbo installed, differential pressure can be monitored on the fuel pressure gauge screen.

3 List of Products call it the unit in the following pages of this operation manual

Product Name	Product No.
Advance Control Unit	DF07701

CR gauges 52 series

Product name	Display range	White Dial	Black Dial
Turbo2.0	-100kPa ~ +200kPa	DF07801	DF07802
Turbo1.2	-100kPa ~ +120kPa	DF07901	DF07902
In-Mani Press	-100kPa ~ +20kPa	DF08001	DF08002
Oil Press	0 ~ 1000kPa	DF08101	DF08102
Fuel Press	0 ~ 600kPa	DF08201	DF08202
Oil Temp	50 ~ 150	DF08301	DF08302
Water Temp	20 ~ 120	DF08401	DF08402
Exhaust Temp	200 ~ 1100	DF08501	DF08502

CR gauges 60 series

Product name	Display range	White Dial	Black Dial
Turbo2.0	-100kPa ~ +200kPa	DF08601	DF08602
Turbo1.2	-100kPa ~ +120kPa	DF08701	DF08702
In-Mani Press	-100kPa ~ +20kPa	DF08801	DF08802
Oil Press	0 ~ 1000kPa	DF08901	DF08902
Fuel Press	0 ~ 600kPa	DF09001	DF09002
Oil Temp	50 ~ 150	DF09101	DF09102
Water Temp	20 ~ 120	DF09201	DF09202
Exhaust Temp	200 ~ 1100	DF09301	DF09302
Tacho	0 ~ 9000rpm	DF09401	DF09402

This product is a required product for CR gauges. This product alone does not operate. Please use it with any gauges listed above. As for installation, please refer to the gauge manual as well.

In-Mani Press is an abbreviation of Intake Manifold Pressure.

4 Specification

Power supply voltage 10V ~ 16V DC(For 12V vehicle)

Current Consumption Maximum value in case 7 gauges are connected

+B line	2A(IGN ON)
	5mA(IGN OFF)
ILM line	800mA

Illumination color

CR meter white dial : Amber red/blue
 CR meter black dial : White/amber red
 The color can be switched between two colors.
 CR meter pointer, ring, and warning LED : red.
 CR meter peak LED : blue
 Unit DC Source LED : blue.
 Switch unit : white (while illumi. is on)
 Switch unit D mark for differential pressure : blue

Applicable number of cylinders 1•2•3•4•5•6•8 (4cycle)

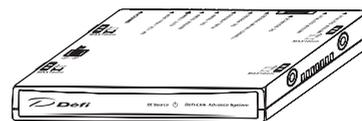
Temperature range(Under 80% relative humidity) Unit: (°F)

	Storage	Operational
CR meter	- 40(40) ~ + 80(176)	- 20(4) ~ + 60(140)
ADVANCE Control Unit	- 40(40) ~ + 80(176)	- 20(4) ~ + 60(140)
Switch Unit	- 40(40) ~ + 80(176)	- 20(4) ~ + 60(140)
Boost sensor	- 40(40) ~ + 100(212)	
Press. sensor	- 40(40) ~ + 130(266)	
Temp. sensor	- 40(40) ~ + 150(302)	
Exhaust Temp. sensor	- 40(40) ~ + 130(266)	

(Except the sensing part)

5 Parts List/Part Names/Dimensions

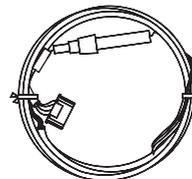
Parts List



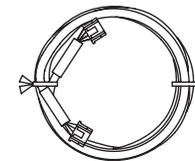
Advance Control unit 1pc



Switch unit
Wire 1.5m(5ft) 1pc



Power source wire
1m(3 1/3ft.) 1pc



Meter wire
2m(6 3/5ft.) 1pc

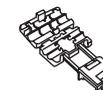
Accessories



Double sided tape
1pc



Tie wrap 2pcs



Solderless connector
4pcs



Clip 1pc



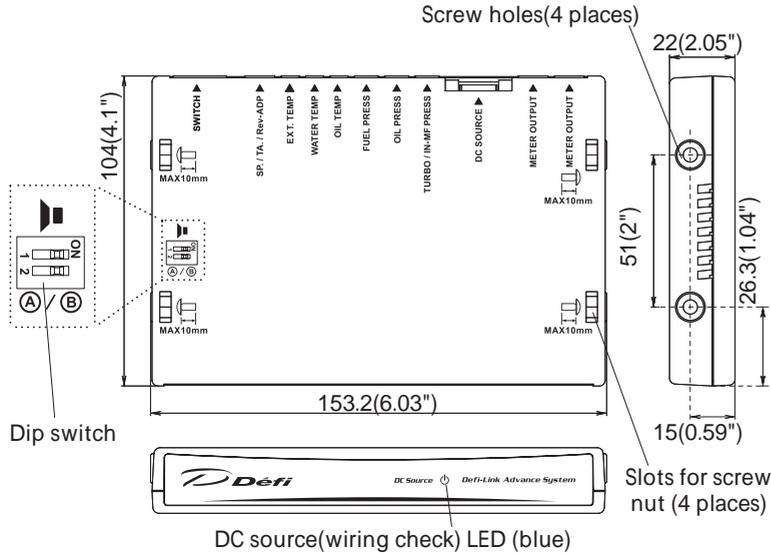
Nut 4pcs



Bolt 4pcs

Operation manual (this booklet), a questionnaire card, and warranty card are included with the parts listed above. The questionnaire card is effective only in Japan.

Part Names & Dimensions of Unit in mm(inches)



Connectors for wires

Switch unit(white)

Speed&Tachometer signal wire(blue)

Exhaust temp sensor wire(black)

Water temp sensor wire(pink)

Oil temp sensor wire(red)

Fuel press sensor wire(red)

Oil press sensor wire(white)

Turbo/In-Mani sensor wire(light blue)

Power source wire(beige)

Meter wire(white)

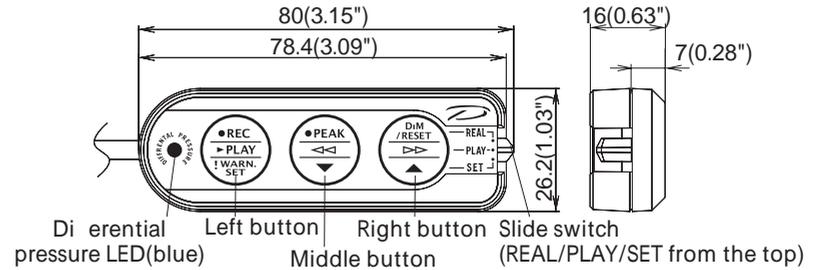
Meter wire(white)

Meter wires can be connected to both and . To protect against short-circuit between two terminals, the convex connector is inserted into the concave connector at the factory prior to shipment. When using , please pull out the convex connector by pressing the lock, and then connect the meter wire.

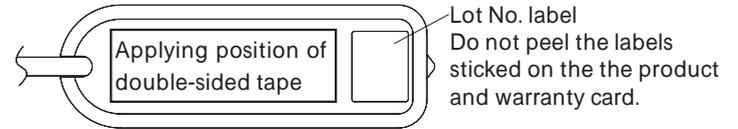
Dip switch 1&2

- 1: Warning buzzer sounds ON/OFF change
- 2: Opening • Closing modes selection(A/B)

Part Names & Dimensions of Switch unit in mm(inches)



Backside of switch unit



Buttons and slide switch

Operation of gauges is handled by 3 buttons and 1 slide switch. By sliding the switch position, the functions of buttons change.

Slide switch

In this manual, positions of the slide switch are illustrated as follows:

REAL(upper): for Real mode operation



PLAY(middle): for operation to replay recorded data



SET(lower): for operation to set up



Buttons

Each button has three marks(upper, middle, and lower position) in accordance with positions of slide switch. In this manual, each button is illustrated as follows:



Left button : **L** ● REC or **L** ► PLAY or **L** ! WARN.SET from the top

Middle button : **M** ● PEAK or **M** <<> or **R** >>> from the top

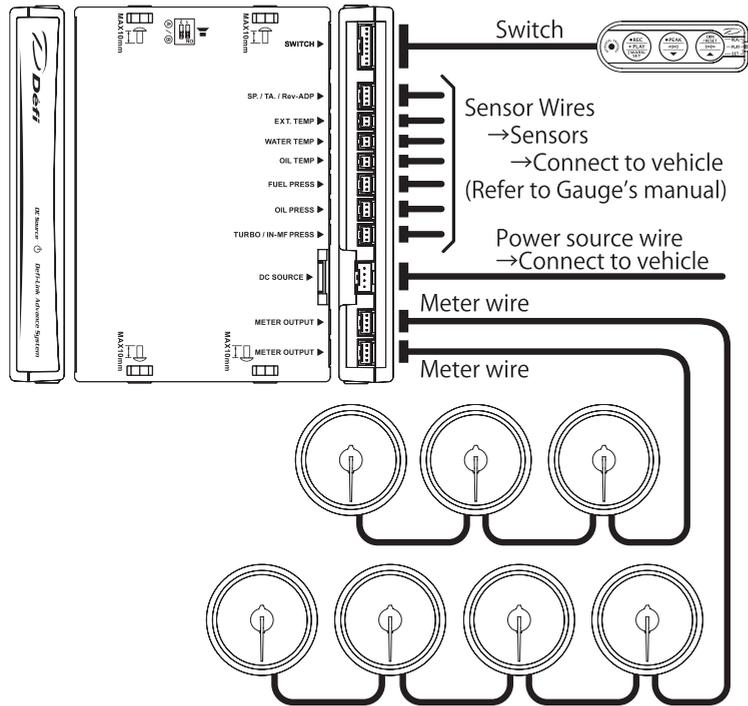
Right button : **R** DIM/RESET or **R** >>> or **R** ▲ from the top

6 Installation

Confirmation

Please refer to how to install gauges and sensors of each gauge's manual as well as this manual.

Installation diagram



The meter wire can be connected to both two connectors of METER OUTPUT. Up to 7 gauges can be connected to each unit. (ex. If 7 gauges are connected to one line, none is connected to the other line.)

Procedure

1. Confirm the content.
Please refer to operation manuals included with components and each gauge.
2. Confirm and prepare the necessary parts for installation.
Please refer to the operation manual included with each gauge. you will need to purchase commercially available attachment parts.
3. Confirm the location of the power source (Battery, GND, IGN, ILM) and the sensor installation.
4. Disconnect the negative (-) battery terminal.
5. Connect the power supply wire to vehicle.
Please refer to how to solder and use the electro tap.



⚠ Warning

Do not connect the IGN wire to the ACC wire. Failure to do so may lead to a malfunction or accident.

6. Connect the power supply wire to the unit. Connect the negative battery terminal and turn the ignition on. Then confirm DC SOURCE LED lights up, which is on the front of the unit.

Confirmation

If the power source wire is wired incorrectly, LED won't light. If LED doesn't light, please confirm wiring again.

7. Disconnect the negative battery terminal and install each sensor.
Please refer to the operation manual included with each gauge.

8. Connect the sensor and the sensor wire. Then connect to the unit.
9. To confirm the wiring and connection, connect the gauge and the unit temporarily by using meter wire. Do not fix the gauge at this stage.
10. Connect the negative battery terminal.
11. Confirm that the wiring confirmation mark is on when the ignition is on. If the power supply wire is wired correctly, the wiring confirmation mark of the unit lights in blue. And also check to see that the gauge's illumination lights when the illumination switch is on.

The wiring confirmation mark is not on: The power supply is not taken.
Turn the ignition on, then please confirm the wiring of the power supply wire.

The warning LED of gauge is blinking or the warning LED and peak LED are blinking at the same time: disconnection, short circuit, or communication error is occurred.

Refer to Error displays of wire disconnection, short circuit, and serial error of Operation (page 56).

Turn the ignition on, then please confirm the wiring of the sensor and the sensor wire.

Warning

If the wiring defects are not found, it is probable that there is a defect in the product. Please detach the product immediately and ask for inspection. It may damage the vehicle.

Refer to Maintenance & Check & Servicing (page 70)

12. Turn the ignition OFF.

13. Disconnect the meter wire from the gauge, and attach the gauge by using mounting bracket. Confirm it is installed firmly, then connect the meter wire again.

Refer to each gauge operation manual

14. Connect the switch unit to the unit and fix the switch unit with double sided tape. Before attaching it, make sure the surface is clean.

Refer to Part Names for how to attach with double sided tapes.

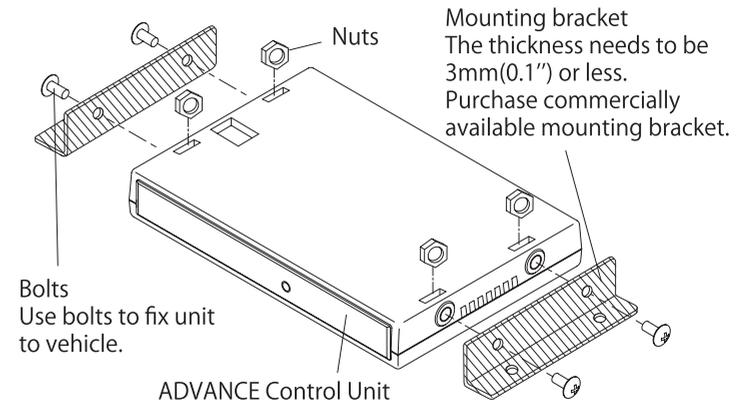
15. Setting 2 dip switches of the unit.

Dip switch 1: Setting the buzzer sound ON/OFF.

Dip switch 2: Select the opening/ending mode from A or B when the ignition is on/off.

Refer to Part Names of Installation (page 49)

16. After setting is done, fix the unit with attached nuts and bolts and commercial mounting bracket.



Confirmation

Gauges, including this product, are not waterproof. Please do not install gauges near the vehicle floor or in wet areas.

Use mounting brackets with thickness of 3mm(0.1") and under.

Please use the supplied bolts. Use of other bolts may damage the inside of the unit. (If you have to use commercial bolts, please use the bolt of 10mm(0.4") and under in length.

The unit contains buzzer. So it may difficult to hear the sounds if the unit is installed inside the dashboard or far from driver's seat.

It is possible to change the setting later. In order to change later, please fix the unit so as to operate the dip switch.

17. Final confirmation of install completion.

Warning

Please be sure to check the following items; otherwise, there is a possibility that a serious accident may occur.

Ensure that all hoses and tubing are permanently attached. Also ensure that there is no liquid or exhaust leakage.

Check that the sensor and wires are not interfering with the engine operation.

Ensure that the gauge and wires are tightly attached, so they don't come loose and hinder driving.

Check that all wires disconnected from the vehicle during installation have been properly reattached.

Warning

After installation, check that no materials or tools remain in the driver's seat or the engine compartment. If there are tools left at the feet of the driver's seat, this may cause a driver to lose control of brake because of tools or materials caught under the brake pedal. If there are tools in the engine compartment, the engine may break.

If there are tools left at the feet of the driver's seat, this may cause a driver to lose control of brake because of tools or materials caught under the brake pedal. If there are tools in the engine compartment, the engine may break.

Ensure that the negative battery terminal is tightly attached. Close the hood properly.

This concludes the installation process.

Confirmation

The protection film is attached to Advance Control Unit switch unit. Please peel off before use.

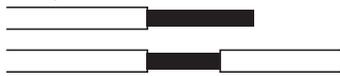
How to solder • How to use the solderless connectors

⚠ Caution

Wear protective gloves to avoid getting burned during soldering. Soldering is a better choice for wiring. Make sure no loose connection is found.

How to solder

(1) Strip off the outer insulated wire



(2) Wind to fasten the peeled wire



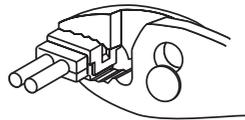
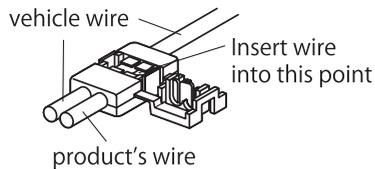
(3) Solder this part
(Apply an appropriate amount of solder)



(4) Wrap tightly with insulating tape



How to use the solderless connectors



Make sure both left hook and right hook are locked firmly.
※Use of needle nose plier may lead to poor contact. Use plier.

7 Operation

In this instruction, there are two kinds of ways to press the button, "press" and "press long". For "press", press the button for less than 1 second. For "press long", press the button for more than 1 second.

Setting and operation check

1. Turn the ignition on and check if the DC Source LED on the unit is lighted up.
Refer to Installation
2. Confirm that the opening ceremony is done.
Refer to Opening mode
3. Confirm that there is no error message of wire disconnection/short circuit on the gauge.
Refer to Real mode
4. If the tachometer is installed, please set the number of cylinders and the response. If it's not installed, go to next step.
Refer to Setting number of cylinders and tachometer response mode
5. Set the warning value and the illumination color.
Refer to Setup mode
6. Confirm the gauge operates normally. When it's confirmed, setting is finished.

⚠ Warning

Please set while the vehicle is stopped.

Opening mode / Ending mode

When the ignition is on, the gauge dial and the needle pointer enter opening mode. Under all situations, when the ignition is off, the gauge dial and the needle pointer go to ending mode and the power of the unit and gauge are shut off.

Confirmation

Depending on vehicles, the ignition is not off immediately after the key is

turned o . In this case, ending mode doesn't start until the ignition is o .

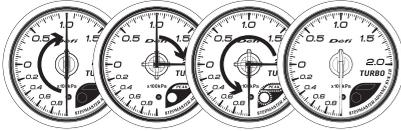
If the ignition is turned o during setting, the setting data will not be saved.
 If the power wire is wired correctly, the DC Source LED lights in blue from the beginning of opening mode. If it stays o or is blinking, turn the ignition o and check the wiring.
 Refer to Installation

Change of Opening mode / Ending mode

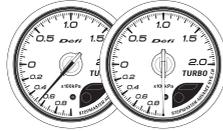
Opening and ending mode can be selected from A or B by sliding the dip switch 2 on the unit. Please select the mode when the ignition is o .

A type: Two-color lighting type

Opening

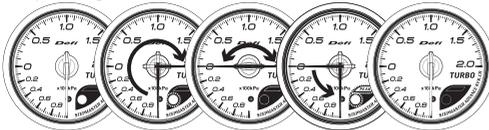


Closing



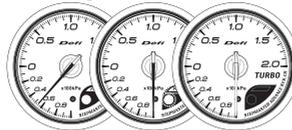
B type: Flashing type

Opening



Illumination blinks

Closing



Illumination blinks

Both types of A and B include features of peak&warning LED, the dialing illumination and also lighting/blinking color control of dial illumination besides indicator movement. By switching, please confirm the actual display. It might be hard to see whether the illumination is on, depending on outside light level.

Real Mode (slide switch position : **U REAL**)

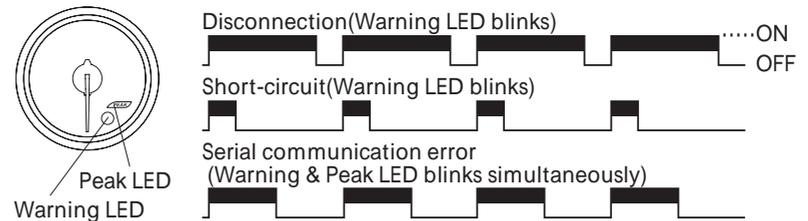
After the opening mode ends, the gauge shifts to Real mode. During Real mode, the needle pointer displays the actual vehicle condition in real time.

Warning

If the gauge reaches or exceeds the value set for warning, the Warning LED goes on. In case of oil pressure and fuel pressure, when the gauge reaches or falls below the value set for warning, the Warning LED goes on. If the buzzer sound setting is set on, the buzzer sounds at the same time as well.

Error displays of wire disconnection, short circuit, and serial error

If there are disconnection of wire and/or sensor, or short circuits of wire and/or sensor, the Warning LED blinks. Once the error message is displayed, the Warning LED keeps blinking until the ignition is o . Please turn o the ignition immediately and check the wiring of sensors and wires. If the communication between gauges and the unit is failed, Serial Error message is displayed and Warning and Peak LEDs blink at the same time .

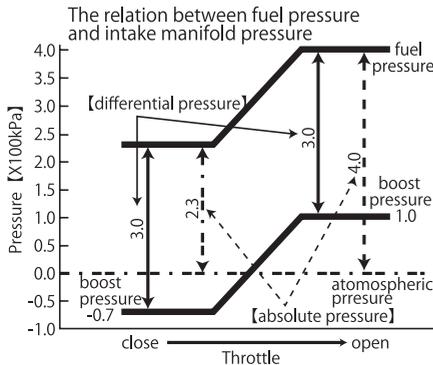


Illumination cancel

Pressing **R D:M/RESET** several times during Real mode, Rec mode or Play mode turns the gauge illumination o , even if the vehicle illumination is on.

Differential Pressure Display

If both of the turbo gauge and the fuel pressure gauge are installed, the fuel pressure gauge can read the differential pressure value between fuel pressure and intake manifold pressure. During Real mode, the indicator of DIFFERENTIAL PRESSURE on the switch unit is lighted up in blue. The differential pressure can be displayed in Record Mode as well.



About differential pressure display of fuel pressure; Generally, fuel pressure of electric controlled engine car is controlled to keep in same ratio to intake manifold pressure by fuel pressure regulator. As shown in the graph, fuel pressure meter displaying absolute pressure value indicates 400kPa when boost pressure is 100kPa in case that differential pressure is set at 300kPa. Fuel pressure meter displaying the differential pressure value indicates 300kPa.

1. Set the slide switch to **U REAL**.
2. If the **M PEAK** button and **R DIM/RESET** button are pressed at the same time, the fuel pressure gauge displays the differential pressure and the indicator of DIFFERENTIAL PRESSURE on the switch unit is lighted up. To cancel, press **M PEAK** button and **R DIM/RESET** button together again.

Setting number of cylinders mode (slide switch position : **L SET**)

When the tachometer is installed, please set the number of cylinders.
factory default setting: 4 cylinder

1. Set the slide switch to **L SET**

2. When the **L !WARN.SET** button is pressed long, the gauge shifts to Setting number of cylinders mode, and Warning and Peak LEDs on the gauge blink alternately. When the tachometer is not installed, the gauge doesn't shift to Setting number of cylinders mode.

3. When the **R ▲** button is pressed, the number of cylinders changes into 1 2 3 4 5 6 8. When the **M ▼** button is pressed, the number of cylinders changes into 8 6 5 4 3 2 1. For example, when the number of cylinders 1 is selected, the needle pointer points to 1000rpm when the number of cylinders 4 is selected, the needle pointer points to 4000rpm. Please set the number according to your vehicle.

4. After completion of setting, return the slide switch to **U REAL** or **M PLAY**

Setting Tachometer response mode (slide switch : **L SET**)

If tachometer has been installed, please set the response of Tachometer.

You have 3 types to choose from.

factory default setting: Position 1

By checking needle pointer movement, adjust the response speed of needle pointer.

Position 1	faster	1000rpm
Position 2	middle	2000rpm
Position 3	slower	3000rpm

1. Set the slide switch to **L SET**.
2. If the **L !WARN.SET** button is pressed long, the gauge shifts to Setting the number of cylinders mode. The peak and warning LEDs on tachometer blink alternately.
3. If the **L !WARN.SET** button is pressed long during Setting the number of cylinders mode, the gauge shifts to Setting Tachometer response mode. The peak and warning LEDs in the gauge are lighted up. When the tachometer

isn't installed, it does not shift to Setting numbers of cylinders mode or Setting Tachometer response mode.

- If the **R ▲** button is pressed, the position changes into 1 2 3. If the **M ▼** button is pressed, the position changes into 3 2 1. 1000rpm, 2000rpm and 3000rpm indicate Position 1, Position2 and position3 respectively.
- Return the slide switch to **U REAL** or **M PLAY**

Setup mode (slide switch position : **L SET**)

By setting the optional warning value, when the gauge reaches or exceeds the value set for warning, the Warning LED on the gauge goes on (in case of oil pressure and fuel pressure, when the gauge reaches or falls below the value set for warning, the Warning LED goes on). It is possible to change the illumination color of each gauge.

Warning factory default settings

Gauge	default setting	Unit	Setting range		Lighting condition
			Minimum	Maximum	
Turbo2.0	100	kPa	-100	200	set value and above
Turbo1.2	100	kPa	-100	120	set value and above
In-Mani Press	10	kPa	-100	20	set value and above
Tachometer	7000	rpm	300	9000	set value and above
Oil Press	120	kPa	0	1000	set value and below
Fuel Press	150	kPa	0	600	set value and below
Oil Temp	125		50	150	set value and above
Water Temp	105		20	120	set value and above
Exhaust Temp	850		200	1100	set value and above

Depending on vehicle type and/or condition, vehicle may be damaged even if the value is under the warning factory default setting value (over the warning factory default setting value in case of oil pressure and fuel pressure). Be sure to consult store professional to set warning values.

Set the warning value

- Set the slide switch to **L SET**
- If the **L !WARN.SET** button is pressed, the gauge shifts to Setup mode.
- Select the gauge by pressing **L !WARN.SET** button. The warning LED on the selected gauge blinks and dial plate lights up (while illumination is on). The other gauge's dial plates look darker than the selected gauge's (while illumination is on), and the warning LED remains off. The only selected gauges will be displayed in the following order.

Turbo · In-Mani Press Tachometer Oil Press

Exhaust temp Water Temp Oil Temp Fuel Press

- When the **M ▼** button is pressed, the warning value becomes lower, and when the **R ▲** button is pressed, the warning value becomes higher for the selected gauge. If each button is pressed long, the setting value changes quickly.

If both turbo2.0 (turbo1.2) and intake manifold gauge are installed, the setting value of turbo2.0 (turbo1.2) becomes the setting value of intake manifold. You cannot set a value separately for each gauge. (When both turbo2.0 and turbo1.2 are connected, turbo2.0 will be chosen over turbo1.2).

- Return the slide switch to **U REAL** or **L ▶PLAY** .

Set the warning buzzer ON/OFF

Sliding the dip switch1 : the warning buzzer sound ON/OFF switch changes the warning buzzer sound ON/OFF. Please set while the ignition is o .

The switch operation sound cannot be canceled.

Change the illumination color

1. Set the slide switch to **L SET** .
2. If the **L !WARN.SET** button is pressed, the gauge shifts to Setup mode.
3. Select the gauge by pressing **L !WARN.SET** button.
4. When the **M ▼** button and the **R ▲** button are pressed at the same time, the illumination color changes.
white dial: blue amber red
black dial: white amber red
factory default setting: white dial: blue, black dial: white
5. Return the slide switch to **U REAL** or **M PLAY** .

Oil set adjustment of Turbo 2.0 (turbo1.2) and In-Mani Press

The needle pointer of turbo should indicate 0kPa when the ignition is on. But in rare cases the needle pointer is not indicating exactly 0kPa. If this happens, it is possible to oil set and adjust the needle pointer.

1. Set the slide switch to **L SET** .
2. If the **L !WARN.SET** button is pressed, the gauge shifts to Setup mode.
3. Select the gauge by pressing **L !WARN.SET** button.
4. Press long **L !WARN.SET** to adjust the gauge. The adjustment is confirmed by a short beep sound (bip).
5. Return the slide switch to **U REAL** or **M PLAY** .

Real Peak mode (slide switch : **U REAL**)

During Real mode, the needle pointer displays the peak value at driving and idling data. The needle pointer displays minimum value as for oil pressure and fuel pressure. The peak value can be reset to start measuring again. It is impossible to display the differential pressure.

1. Set the slide switch to **U REAL** .
2. If the **M ●PEAK** button is pressed, the gauge shifts to Real Peak mode. The LED is lighted up during Real Peak mode.
3. If the **M ●PEAK** button is pressed, the gauge shifts to Real mode.

Real Peak Reset mode (slide switch : **U REAL**)

It resets the peak value of driving and idling.

1. Set the slide switch to **U REAL** .
2. If the **M ●PEAK** button is pressed, the gauge shifts to Real Peak mode. The LED is lighted up during Real Peak mode.
3. If the **R DIM/RESET** button is pressed during Real Peak mode, the LED starts blinking and the peak value is reset. After a reset, the gauge returns to Real mode.

Record mode (slide switch position: **U REAL**)

Driving data of each gauge is recorded up to 3 minutes.

1. Set the slide switch to **U REAL** .
2. If the **L ●REC** button is pressed, the gauge shifts to Rec mode and start recording. The LED is blinking during Rec mode.
3. If the **L ●REC** button is pressed, the gauge finishes recording and returns to Real mode. Also after 3 minutes have passed from recording, the gauge returns to Real mode.

It is possible to turn off the illumination of gauges and to display the differential pressure during Rec mode. (Refer to Real mode.)

Rec Peak mode (slide switch : **U REAL**)

During Rec mode, it displays the recorded peak value. The needle pointer displays minimum value as for oil pressure and fuel pressure.

1. If the **M ●PEAK** button is pressed during Rec mode, the gauge shifts to Rec Peak mode. The LED is lighted up during Rec Peak mode.
2. If the **M ●PEAK** button is pressed again, the gauge returns to Rec mode.

And if the **L ● REC** button is pressed, the gauge returns to Real mode.
 After 3 minutes have passed from recording, the mode returns to Real mode.
 It is impossible to display the differential pressure.

Playback mode (slide switch : **M ▶ PLAY**)

Recorded data is played. Pause, single frame step, fast forward and rewind can be possible.

1. Set the slide switch to **M ▶ PLAY**.
2. If the **L ▶ PLAY** button is pressed, the gauge shifts to Playback mode and play the recorded data. The LED is blinking during Playback mode.
3. When playback finishes or the **L ▶ PLAY** button is pressed during playback, the gauge returns to Real mode.

Operation during playback

- Playback is paused if the **M ◀◀** button or the **R ▶▶** button is pressed during playback.
 - If the **R ▶▶** button is pressed during pause, playback goes frame by frame. If the **R ▶▶** button is pressed long during pause, it fastforwards playback.
 - If the **M ◀◀** button is pressed during pause, playback is rewinded frame by frame. If the **M ◀◀** button is pressed long, during pause, playback is rewinded.
 - If the **L ▶ PLAY** button is pressed during pause, playback restarts.
- playback pause single frame step/single frame rewinding/ fast forward/ rewind

The illumination of gauges can be turned off during Play mode. (Refer to Real mode.)

Play Peak mode (slide switch : **M ▶ PLAY**)

During Playback, the peak value of recorded data is displayed. The needle pointer displays minimum value as for oil pressure and fuel pressure.

1. Set the slide switch to **M ▶ PLAY**.
2. If the **L ▶ PLAY** button is pressed, the gauge shifts to Playback mode and plays the data. The LED is blinking during Playback mode.
3. Set the slide switch to **U REAL** during playback (or pause).
4. If the **M ● PEAK** button is pressed during playback (or pause), the gauge displays the peak value of recorded data.
5. If the **M ● PEAK** button is pressed again, the gauge returns to playback the data. To return to Real mode, set the slide switch to **M ▶ PLAY** and press long the **L ▶ PLAY** button.

Data playback is ongoing during Play Peak mode.

Difference between Real peak, Rec peak, and Play peak

	Real peak	Rec peak	Play peak
Displayed in	Real mode	Record mode	Playback mode
Displayed value	Peak value in all modes	Peak value recorded in Record mode	
Update of peak value	In all modes	During Record mode	
Peak reset	Operatable in Real peak mode	Reset automatically when recording is started	

8 Troubleshooting

Warning

If any indication of the problem is found in the product, check to make sure the product will operate as expected. Failure to do so can lead to serious accidents.

If any problem is found during using, setting or operating this product, use the following table to confirm proper operation of the unit. If the operational problem is not found in the following table, contact the installation personnel at the store where this product was purchased.

Condition	Possible Cause	Corrective Action
Does not operate. Power is not supplied. DC Source LED of the unit doesn't light.	Wiring of the power supply wire is improper. The fuse of the power supply wire is blown out. The locks of the solderless connectors are not locked tightly.	Check wirings of +B, IGN, GND as per instructions in this manual. Check wiring and replace the fuse. Check the lock of the solderless connectors.
DC Source LED of the unit is blinking.	There is a wire short circuit or disconnected wire somewhere. Maybe there is something wrong on gauge.	Please reconfirm the wiring and the gauge according to operation manual. If any defects are not found, please ask the shop for inspection.
Warning LED on gauge is blinking	There is a wire short circuit or disconnected wire somewhere on sensor or sensor wire. Maybe there is something wrong between gauge and unit.	Please reconfirm the sensor and sensor wire according to operation manual. If any defects are not found, please ask the shop for inspection.
The illumination of gauge does not turn on.	The ILM wiring is improper. The locks of the solderless connectors are not locked tightly. The illumination of gauge is set to 0 (illumination cancel).	Check wirings of ILM as per instructions in this manual. Check the lock of the solderless connectors. Release illumination cancel function as per instructions in this manual.

Condition	Possible Cause	Corrective Action
Does not carry out the closing mode.	The battery wiring is improper.	Check wiring of +B as per instructions in this manual. Check the solderless connector of battery wiring. Please ask the store for inspection.
The needle pointer is not around right under 0 before starting installation with power o	The needle pointer moved in transit.	It is the unique feature of stepping motor that the needle pointer may move when a slight impact is made to the gauge with electricity o . Check if the needle pointer goes back to around 0 when the ignition is turned from on to o . If it does not, please contact the store or our customer service center.
The RPM is not displayed correctly.	Wiring of the tachometer signal or the rev adapter is wrong. Setting of the number of cylinders is wrong.	Check wiring as per instructions in this manual. Please follow tachometer operation manual and wiring instruction for Speed & Tachometer signal wire to confirm the wiring. Check the number of cylinders as per instructions in this manual.
This tachometer is reading slightly lower than the original tachometer.	Generally tachometer readings are about up to 10 %higher than actual RPM.	Check if the di erence is up to 10%. This product is designed for high accuracy and should have little error margin. If the di erence is much more than 10%, check setting of the number of cylinders.

9 Repair parts/Optional parts AD:For vehicle with advance system

Parts Number	Repair Parts Name
PDF07702H	AD Power supply wire (1m, 3 1/3ft)
PDF07707H	AD Meter wire(0.25m, 10in)
PDF07710H	AD Meter wire (2m, 6 3/5ft)
PDF07807G	CR meter cup (52mm, 2 1/16in)
PDF08606G	CR meter cup (60mm, 2 3/8in)
PDF07808G	CR Bu er
PDF07809G	CR Installation parts for meter
PDF07812G	CR Regular Position Bezel (52mm, 2 1/16in)
PDF08607 G	CR Regular Position Bezel (60mm, 2 3/8in)
PDF06503S	Turbo Sensor
PDF00703S	Pressure Sensor
PDF00903S	Temperature Sensor
PDF01103S	Exhaust Temp. Sensor
PDF01105G	Fitting for Exhaust Temp. Sensor
PDF06505H	Turbo Sensor wire (2.5m, 8 1/5ft)
PDF08105H	AD Oil Press. Sensor wire(3m, 10ft)
PDF06603H	Fuel Press. Sensor wire (2.5m, 8 1/5ft)
PDF05602H	Oil Temp. Sensor wire(3m, 10ft)
PDF05603H	Water Temp. Sensor wire(3m, 10ft)
PDF06803H	Exhaust Temp. Sensor wire (2.5m, 8 1/5ft)
PDF09405H	AD Speed & Tachometer signal wire (2m, 6 3/5ft)
PDF05005G	Tube fuse (4A)2pcs

Parts Number	Optional Parts Name
PDF07708H	AD Meter wire (0.5m, 1 3/5ft)
PDF07709H	AD Meter wire (1m, 3 1/3ft)
PDF06002H	Turbo Sensor extension wire (1m, 3 1/3ft)
PDF06013H	Pressure Sensor extension wire (1m, 3 1/3ft)
PDF00707H	Pressure Sensor extension wire (2m, 6 3/5ft)
PDF06014H	Temperature Sensor extension wire (1m, 3 1/3ft)
PDF00906H	Temperature Sensor extension wire (2m, 6 3/5ft)
PDF01107H	Exhaust Temp. Sensor extension wire (2m, 6 3/5ft)

For more information, contact our customer service center, or visit our website.

座 Maintenance & Check/Warranty & Servicing

Warranty card • Terms and conditions

This product is delivered with this operation manual and a warranty card. Please read terms and conditions in this manual thoroughly and keep the warranty card in a safe place. Failure to show this warranty will void the warranty.

Warranty period

Limited one year warranty. The warranty period starts at the date of retail purchase by the original end-user purchase. Please confirm the warranty card is provided with the information of retail store where purchased. Please refer to Limited Warranty for details.

Warning

Except in the case of defetcts, we shall not be liable for any trouble including violation, accident or improper wiring resulting from using this product.

The warranty does not cover any unauthorized repair performed or caused to be performed by the end user. Such action can destroy or damage this product.

Inspection

If you feel that you have a problem, report it to the retail store where you purchased this product, and ask for inspection. To carry out a full service of installation/wiring, we accept repair inspection service only through Defi retail stores.

If for any reason you are unable to contact the store where you purchased, ask your nearest Defi store or contact our customer service center.

For a repair/inspection service, bring the warranty card and customer contact information with you.

Customer contact information

Please provide the following information to a store representative when you ask for an inspection.

1. Your contact information		
address, zip code :		
name :		
phone number :		
email address :		
2. Name and address of the store where purchased and installed.		
3. Information about your vehicle		
manufacture and car model :		
model year :		
vehicle type :		
engine type :		
engine displacement :		
transmission (MT/AT) :		
speed limit canceller	with	without
genuine tachometer	with	without
engine swap	with	without
changing ignition device	with	without
changing ECU	with	without
the way to install the sensor :		
other specification :		
4 . Your Defi products (including the products that do not need inspection this time)		
5 . Describe your experience (when? do what?, what product? what happened? then what?)		

The products are controlled under the link system. Therefore in some cases, the gauge or sensor maybe the reason for the unit/switch failure. Please contact our customer service center.

Repairing

When a repair is necessary, we will return the inspection result report through the store to you. After receiving a repair service request, we start repairing. Ask the store how much it costs and how long it takes to repair.

Discarding the products

Please dispose products in accordance with disposal laws, state laws and local government. A recycle lable on the package indicates that the package is recyclable.

Terms and Conditions

LIMITED PRODUCT WARRANTY AND LIMITED PRODUCT LIABILITY

A. Limited Warranty

- a. Our sole obligation to you after the sale of a product is to replace, without charge, the product or any component thereof discovered to be defective within a period of one (1) year from the purchasing date (the "Warranty Period"). You accept sole responsibility for the proper assembly operation and regular maintenance of the product. This limited warranty is void if any product is damaged by accident, misuse, improper installation, or abuse, including tampering or damage in transit. Further, this limited warranty is void if you sell or otherwise transfer a product to a third party, regardless of whether the transfer takes place within the Warranty Period.
- b. Out liability to you resulting from the sale of any product, including liability for any latent defects found within the Warranty Period, shall not exceed the total purchase price paid for the product by you.
- c. YOU UNDERSTAND AND AGREE THAT WE MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED AS TO ANY MATTER WHATSOEVER, INCLUDING THE CONDITION OF THE PRODUCT OR ANY COMPONENT PARTS THEREOF, ITS MERCHANTABILITY OR ITS FITNESS FOR ANY PARTICULAR PURPOSE AND YOU ACCEPT IT, "AS IS," "WHERE IS."
- d. You also understand that we are not granting any express warranties, other than those stated herein. These include only those warranties enumerated in paragraph A. a. There are no other express warranties granted anywhere in these terms and conditions of sale, and you understand and agree to this fact as part of the bargained for exchange of this sale. Nowhere else, except as stated in this paragraph, in this contract is there intended, by either party, for there to be any express warranties granted to you.
- e. EXCEPT AS OTHERWISE PROVIDED HEREIN, WE SHALL NOT BE LIABLE FOR DAMAGES, INCLUDING SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES WHETHER IN CONTRACT OR IN TORT ARISING OUT OF OR IN CONNECTION WITH THE PERFORMANCE OF ANY PRODUCT OR ANY COMPONENT PART THEREOF OR ITS USE BY YOU, AND WE SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES

ARISING OUT OF OR IN CONNECTION WITH YOUR USE OF THE PRODUCT.

- f. The warranty on this product is void if the product is modified, changed, adjusted or damaged. This product is to be used only in the ways for which it is designed and marketed for, any deviations from the intended uses will void the warranty and will excuse any possible liability of ours.
- g. You accept sole responsibility for the proper assembly, operation and regular maintenance of the product. This limited warranty is void if the product is damaged, changed, altered, or modified by accident, misuse, improper installation, or abuse, including tampering or damage in transit or while in use. YOU HAVE MADE AN INDEPENDENT INVESTIGATION OF THE PURCHASED COMPONENTS AND HAVE RELIED SOLELY ON YOUR OWN INVESTIGATION, BARGAINING AND JUDGMENT IN REFERENCE THERETO. YOU ACKNOWLEDGE THAT YOU ARE NOT RELYING ON OUR SKILL OR JUDGMENT TO SELECT OR FURNISH GOODS SUITABLE FOR ANY PARTICULAR PURPOSE IN PURCHASING OUR PRODUCTS, YOU HAVE NOT RELIED OR ACTED UPON ANY REPRESENTATIONS OR WARRANTIES ON OUR PART NOT SPECIFICALLY SET FORTH HEREIN.
- h. This limited warranty gives you specific legal rights. You may also have other rights which vary from state to state. Some states do not enforce contractual limitations on how long an implied warranty lasts, when an action may be brought, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

B. Modification Strictly Prohibited

You understand and agree that any modification whatsoever, of the product, is strictly prohibited. You also agree not to modify the product in any manner regardless of whether such modification is material or immaterial. You also acknowledge that any modification of the product will void your limited warranty and bar you from any recovery or any remedy in a court of law or equity. Modification is strictly forbidden unless expressly authorized by our prior written approval. You agree not to make any modifications to the product and agree not to use any parts, components, or accessories in connection with the installation and use of the product that are not authorized and approved by us.

C. Indemnity and Release

- a. You understand and agree that many factors beyond our control affect the operational safety of the product, including but not limited to the installation of the product according to the instructions provided with the product.
- b. You also understand and agree that the installation of the product may involve the use of tools, equipment and construction methods which may present safety hazards which are beyond our control. You also understand and agree that the use of some of our products may create hazards and lower your ability to control your vehicle.
- c. You agree, as part of the bargained for exchange, to protect, indemnify, save harmless and release us, our authorized agents, employees, officers, directors and shareholders from and against all liabilities, obligations, claims, damages, penalties, causes of action, costs and expenses, imposed upon or incurred by or asserted against us or any assignees of ours, by you or any third party by reason of the occurrence or existence (or alleged occurrence or existence) of any use, installation, assembly, possession or operation of the product, any loss, damage or destruction of the product as of and after delivery (a "casualty occurrence"), and any other act or event relating to or caused by the product, including but not limited to, consequential or of the terms and conditions hereof, or any and all liability for property loss or damage, or any and all damage resulting from death or personal injuries, including loss of services which any person may sustain on account of, arising out of, or in connection with any use, maintenance, possession or operation of the product. In the event that any action, suit or proceeding is brought against us or any of our authorized agents, employees, officers, directors or shareholders by reason of any such occurrence, you will, upon our request and at your expense, resist and defend such action, suit or proceeding or cause the same to be resisted and defended by counsel designated and approved by us.



デフィーリンクアドバンス コントロールユニット取扱説明書

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Defi-Link Advance Control Unit Operation Manual

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