

This product is an additional tachometer. 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.

URL <http://www.defi-shop.com/> '08.06-2

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.

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 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.
- 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 fuses(more than 30A) will not blowout even with an abnormal current flow and may cause fire.
- Use a fuse of regulated capacity when the fuse of the power wire is changed. Using a fuse that exceeds regulated capacity may cause fire.

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. 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 wires away from ignition and also radio signal frequency interference as this could cause the gauges to malfunction.
- Do not place wires near the engine, exhaust pipe or turbine. It may result in damage or fusion of wires.
- 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.
- Do not install gauges in dashboard on passenger's side in case an air bag is not equipped on the passenger's side. 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 and the package to the customer along with the warranty.
- 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 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.
- In order to ensure safe driving, check the information on the gauge 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.

Confirmation

- This product cannot be linked to the Defi-Link System.
- The RPM of 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.

Warranty

- Refer to Terms and Conditions
- Do not peel the labels stuck on the manual and the backside of the gauge.

Product No.	DF07	Lot. No.	
Customer: Name/Address			
Shop: Name/Address/Phone No.			
Warranty Period From the date of purchase			1 year
 NIPPON SEIKI CO.,LTD. Defi Business Division 190-1 Fujihashi 1-chome, Nagaoka-shi, Niigata 940-2141 JAPAN E-mail: defishop@nippon-seiki.co.jp URL: http://www.defi-shop.com/			

Main Features (for customer)

- Stepping motor "STS26A"**
Maximum angle of deflective 270° (full sweep) is controlled by the microcomputer up to 4600 division (0.057° each) to provide high precision in the accuracy of information generated. The stepping motor is sufficient for quick response of all sorts of professional motorsports.
- LED illumination**
The gauge dial is invisible while the ignition switch is off. Once the ignition switch is turned on, a clear display appears by colored LED illumination. The gauge dial illumination and the red emitting needle pointer provide high visibility.
- Opening and closing modes**
The gauge dial and the needle pointer performs opening and closing modes interlocked with turning ON/OFF of the ignition.
- Adjustable brightness**
There are 5 stages of brightness for the daytime and 6 stages for the nighttime. The brightness can be decreased/increased with the vehicle lights switched on/off.
- Dual warnings of light and buzzer**
Two customer-defined warning RPMs can be set. When the RPMs are exceeded, the warning LED blinks/lights up and the warning buzzer sounds.
- Exclusive large-sized indicator**
The exclusive large-sized indicator which lights in green and red enhances the visibility of warnings in addition to the warning LED in the gauge.
- Peak memory function**
The maximum RPM during driving can be stored and checked later.
- Detachable switch unit**
The large-sized switch unit with light is fixable on the gauge and is also detachable.
- Exclusive mounting band and back case**
The gauge is clinched by using the exclusive mounting band and back case. Wires can be stored in the back case neatly.
- Integrated rev adapter**
By having the Defi rev adapter built-in, the tachometer works on vehicles with DIS (Distributor-less Ignition System) which engine speed signals cannot be picked up due to connection vehicle control units with serial communication.

Lineup (for customer)

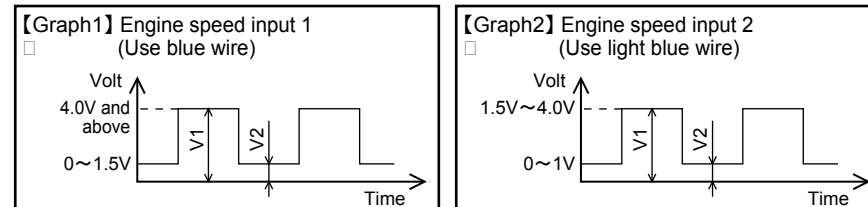
Part Number	Display Range	Illumination color (gauge dial & switch unit)
DF07401	0 - 9000RPM	White
DF07402	0 - 9000RPM	Amber Red
DF07403	0 - 9000RPM	BF Blue
DF07501	0 - 11000RPM	White
DF07502	0 - 11000RPM	Amber Red
DF07503	0 - 11000RPM	BF Blue

Part Number	Display Range	Illumination color (gauge dial & switch unit)
DF07101	0 - 9000RPM	Racer Gauge Blue
DF07201	0 - 11000RPM	Racer Gauge Blue

Product Specifications(for customer and installation personnel)

Power Supply Voltage	DC10V to 15V (For 12V vehicles)
Current Consumption	+B (red) line MAX 0.4A (Dark current 0mA)
	IGN (orange) line MAX 0.4A
	ILM (white) line MAX 2mA
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)
Applicable Number of Cylinders	1-2-3-4-5-6-8
Applicable Engine Speed Pulse	Engine speed input 1(blue) <V1> 4.0V and above <V2> 0~1.5V [Graph1]
	Engine speed input 2(light blue) <V1> 1.5~4.0V <V2> 0~1.0V [Graph2]
Display Range	Refer to the Lineup section.
Dimensions	Refer to the Dimensions section.
Gross Weight	820g, 1.8lb (including gauge, switch unit, wires, package)

※1]The wave form of the engine speed signal should meet the requirements of Graph1 or Graph2.



Parts List (for customer and installation personnel)

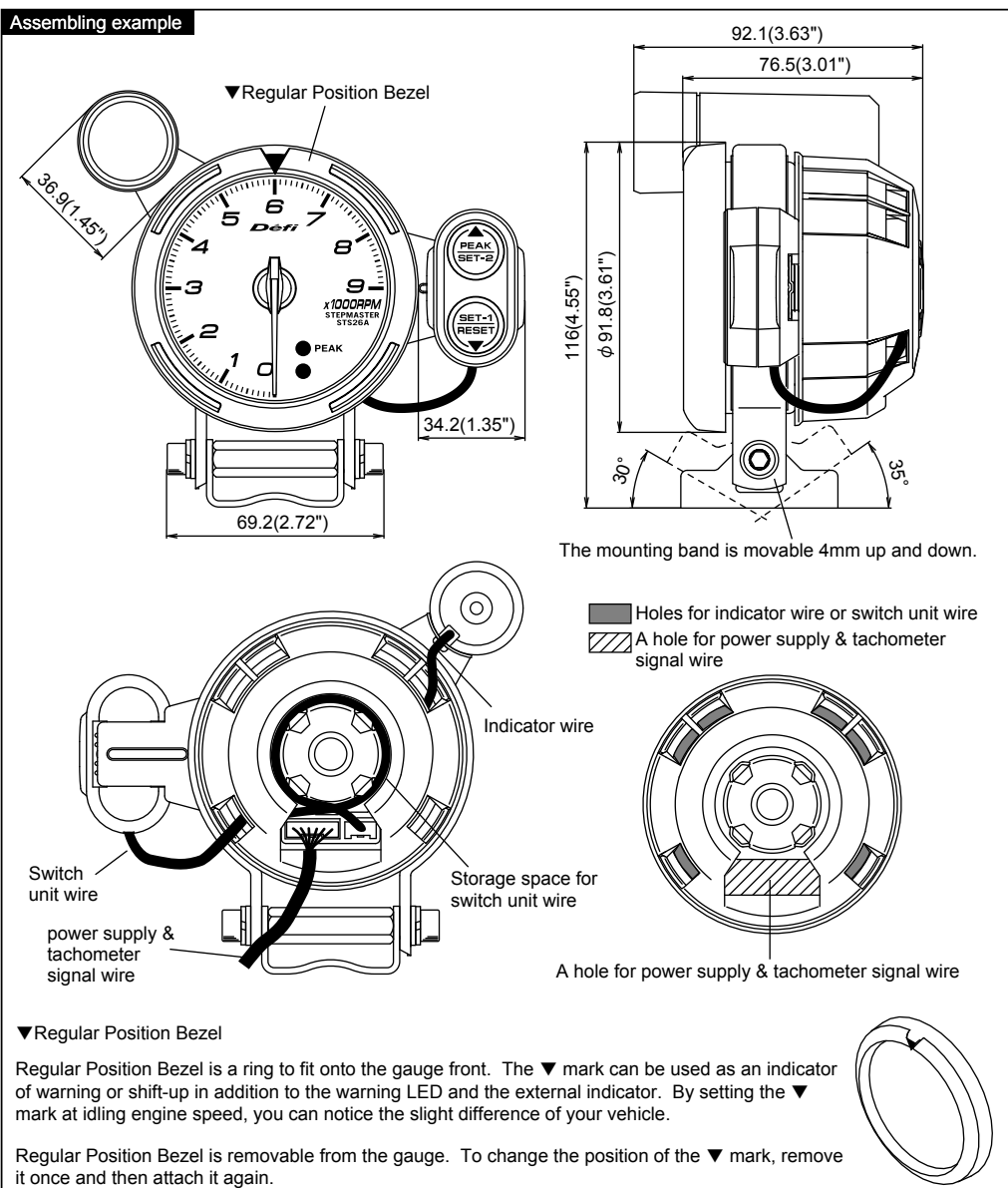
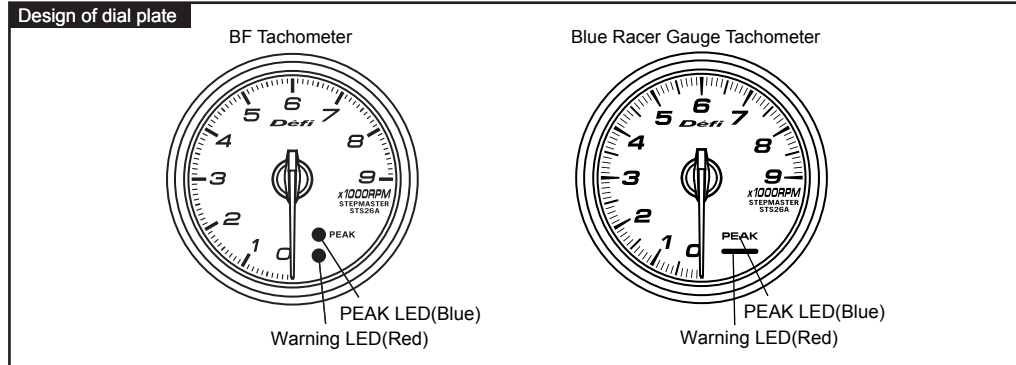
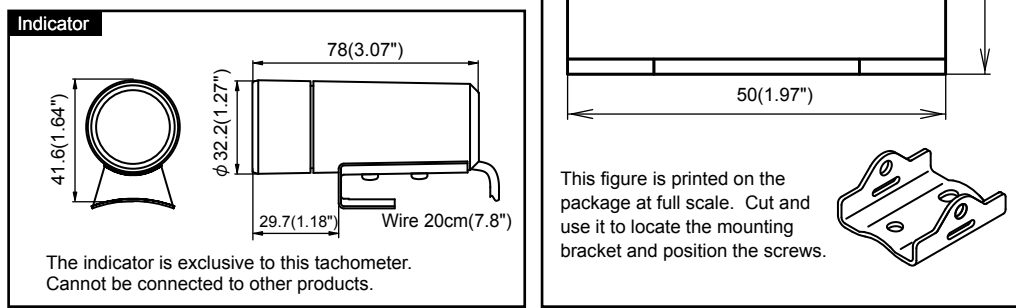
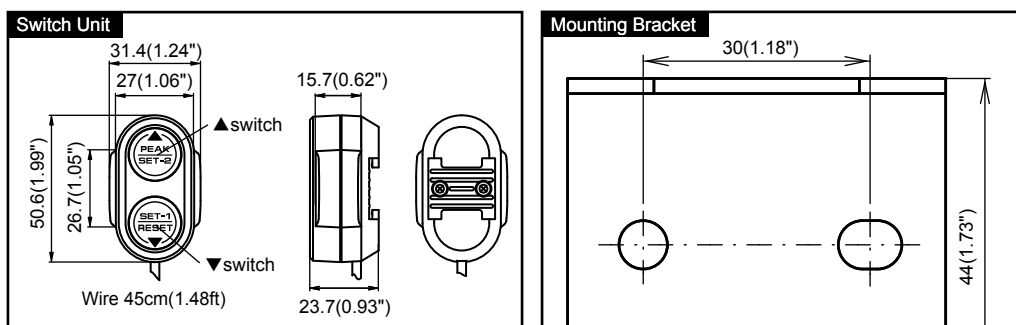
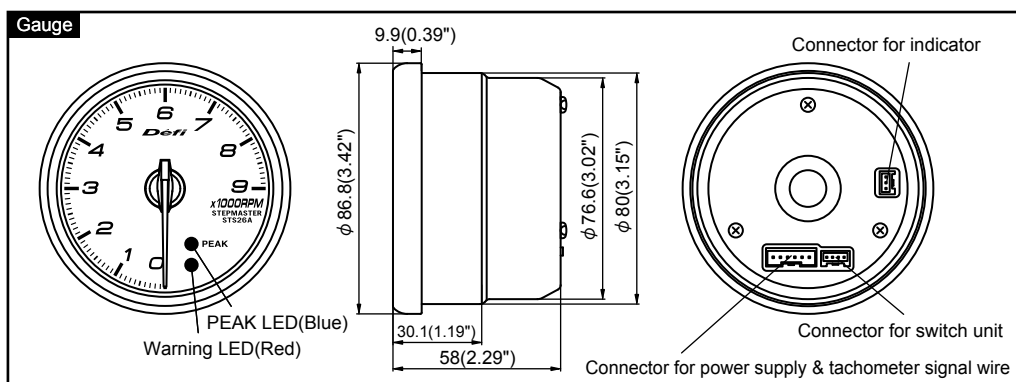
The following parts are included with this product. Confirm that all parts are present before installing the product. In addition, these parts are sold separately for part replacement. Contact your retailer for further information. NOTE: A Japanese operation manual, a wiring manual, and a questionnaire card are included other than the parts listed below. They are effective only in Japan.

Part Name	Quantity	Part Name	Quantity
① Gauge	1	⑪ Mounting bracket	1
② Switch unit (wire 45cm, 1.48ft)	1	⑫ Attachment for switch unit	1
③ Regular Position Bezel	1	⑬ M6 bolt	2
④ Back case	1	⑭ Spring lock washer	2
⑤ Mounting band	1	⑮ Washer	2
⑥ Mounting rubber	1	⑯ Spacer	1
⑦ Power supply & tachometer signal wire 2.2m, 7.2ft	1	⑰ Buffer	1
⑧ Indicator (wire 20cm, 7.8in)	1	⑱ Double sided tape	1
⑨ Operation manual	1	⑲ Tapping screw	2
⑩ Terms and Conditions	1	⑳ Solderless connector	5

Optional Parts (for customer)

Part Name	Part Number
Φ80(3 1/8") Back case set (Back case x1, Buffer x1)	PDF07101G
Power supply & tachometer signal wire	PDF07102H
Φ80(3 1/8") Mounting band set (Mounting band x1, Mounting rubber x1)	PDF07103G
Φ80(3 1/8") Mounting bracket set (Mounting bracket x1, M6 bolt x2, Spring lock washer x2, Washer x2, Spacer x1, Tapping screw x2)	PDF07104G
Φ80(3 1/8") Regular Position Bezel	PDF07105G
Fuse for Power supply wire(1A) 2pcs	PDF07113G

Dimensions in mm(inches) and part names



Installation (for customer and installation personnel)

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

- Take care not to scratch the gauge or vehicle by hitting or gliding the parts.
- 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 & tachometer signal wire

- Disconnect negative (-) battery cable of the vehicle.
 - Wire the power supply & tachometer signal wire as shown in the following figure.
 - Power supply & tachometer signal wire (2.2m, 7.2ft)
 - Fuse 1A
 - Red: Battery (To 12V battery wire)
 - Black: GND (To ground, negative battery terminal)
 - Orange: IGN (To 12V wire when ignition is on)
 - White: +ILM (To 12V wire when small light is on)
 - Blue: Engine speed input 1 (Connect if the wave form of the engine speed signal is conformed with the graph1 of specification.)
 - Light blue: Engine speed input 2 (Connect if the wave form of the engine speed signal is conformed with the graph2 of specification.)
- ※Connect either blue wire or light blue wire referring to the specification of this manual and the service manual for your vehicle.
 ※Insulate the unconnected wire(either blue wire or light blue wire).
 ※In case any other Defi-Link products are already installed in the vehicle, supply power from the same source as the Defi-Link products to perform the opening and closing mode at the same time. If the power is supplied from the different source from the others, gauges may not perform the opening and closing mode at the same time.

- Reconnect negative (-) battery cable of the vehicle.

STEP2 Wiring check

- Connect the power supply & tachometer signal wire to the back side of the gauge.
- Turn the key in the ignition. Then check the gauge illumination is lighted and the gauge pointer moves. (Refer to the opening mode of Operation section.)
 ※The gauge is assembled and clamped down in the next step. During assembling, the gauge illumination is not lighted. Check the zero point at this stage. The gauge pointer may not be in the proper position when you purchase. Once the power is turned on, it points back to the zero point.
- Turn on the vehicle lights and make sure the gauge illumination is dimmed.
- Turn the ignition key off. Then check the gauge pointer points back to the zero point and the gauge illumination is turned off. (Refer to the ending mode of Operation section.)
- To fix the gauge on a vehicle in the next step, disconnect the power supply & tachometer signal wire.

See reverse side: Fix the gauge on a vehicle in the STEP3.⇒

