

VSD BASIS OPERATION MANUAL

DF03206

VSD BASIS is a product to display information on the speed and the engine speed by reflecting on the windshield of vehicle. When installing 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 this manual, the degree of hazard arising from actions such as improper operation is separated into the 2 levels "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. 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.

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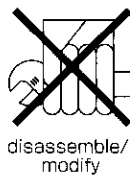
WARNING	Indicates a risk of death or serious injury.
CAUTION	Indicates a risk of personal injury or damage to equipment.
CONFIRMATION	Indicates the need to confirm that a particular step has been correctly completed.

03.09-1

Before Installation (for installation personnel)

WARNING

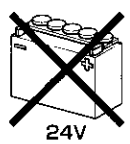
- Be sure to follow all instructions in this manual so ensure safe installation and operation of the product.
- Carefully consider the installation location and driver's operation of the product before installation. Be sure not to install the unit where it could fall. Improper installation or operation 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.
- 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.
- 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.
- Remove the key from the ignition and disconnected 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.
- 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.
- Use a solderless connector or similar device 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.
- Please keep children and infants away from the installation area. Children may swallow small parts or be injured in other ways.



disassemble/
modify

CAUTION

- This product is designed for use on 12V vehicles. Do not install this product on vehicles with 24V systems.
- Wear gloves to avoid burns when soldering and cuts when working with wiring.
- When the negative(-) battery terminal is disconnected, equipment such as clocks and audio components having internal memory may lose their memory data. Follow the operations manual of each component to reset data after installation of this product.



24V

CONFIRMATION

- After installation is complete, return this operations manual 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.
- 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

- This speedometer and tachometer display 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 3, 4, 5, 6, and 8 cylinder vehicles with 4 cycle engine. It cannot be used on diesel vehicles.

Main Product Features (for customer)

- Speedometer and Tachometer mode - Speedometer can display in either of MPH or km/h.
- Fluorescent digital display combined with analog LED display features unique four mode display.
- Flashing LED displays until meter reads over 1MPH or 1km/h.
- Analog LED shift point indicator can be adjusted to user's preference.
- Capable of storing the maximum speed.
- Brightness can be adjusted for day, dusk and night driving.

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. These parts are sold separately for part replacement. Contact your retailer for further information.

Part Name	Quantity	Part Name	Quantity
Display Unit (5ft., 1.5m wire)	1	Solderless Connectors	4
Control Unit	1	Signal Wire (6 1/2ft., 2m)	1
Stand for the display unit	1	Tie Wraps	3
Display Film	2	Operation Manual	1
Double-sided Tape (2 3/4 in. x 1 4/5 in., 70mm x 45mm)	1	Terms and Conditions	1

Optional Parts (for customer)

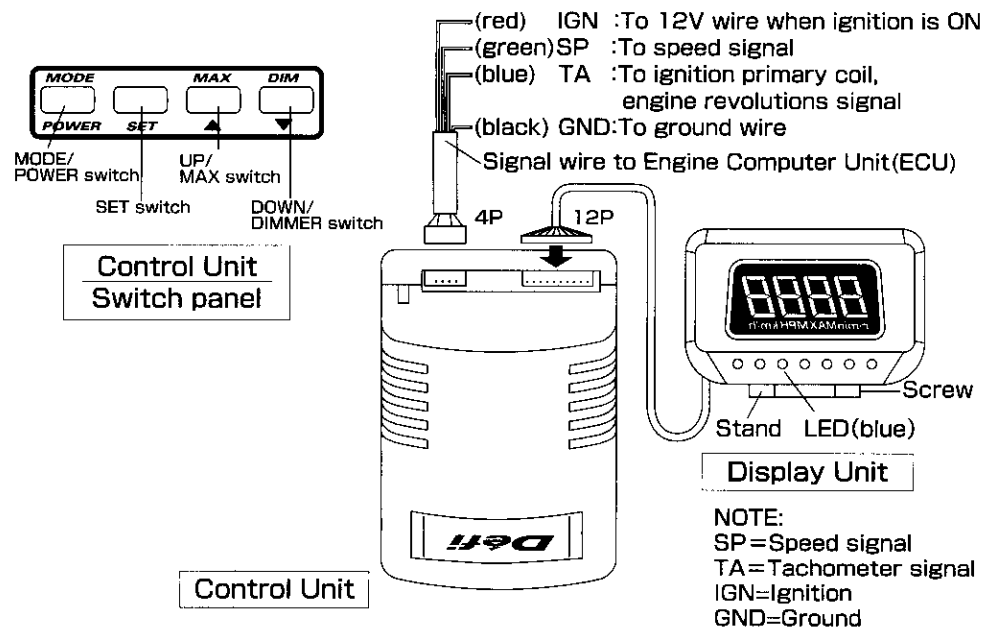
Part Name	Part Number
Display Film (4in x 4 3/4in, 100mm x 120mm)	DF05702

Warranty

※Refer to Terms and Conditions

Product Name	DF03206	Lot. No.	
Customer Name			
Address			
Warranty Period	From Shopping date ~ 1 year		
NIPPON SEIKI CO.,LTD. Defi Business Division, 190-1 Fujihashi 1-chome, Nagaoka, Niigata. 940-2141, Japan e-mail : defishop@nippon-seiki.co.jp URL : http://www.defi-shop.com			

Names of Parts and Wiring (for customer and installation personnel)



Product Specifications (for customer and installation personnel)

- Power Supply Voltage: DC10V to 15V (for use 12V Vehicles Only)
- Current Consumption: Max. 0.5A
- Operating Temperature: -4 to +140°F, -20 to +60°C (humidity below 80%)
- Storage Temperature: -40 to +176°F, -40 to +80°C (humidity below 80%)
- Display Range: Speedometer and Tachometer : Digital and LED
 Speed (SP) Mode : Range 0 to 240 MPH (1 MPH increments)
 0 to 400 km/h (1km/h increments)
 Tachometer (TA) Mode :
 Range 0 to 9900 r/min (100 r/min increments)
 LED Flash Setting :
 Speedometer Step (10 MPH or 10 km/h increments)
 Tachometer Step (200 r/min increments)
 Max. Tachometer Value (100 r/min increments)
 Speedometer Unit Setting : MPH or km/h
 Brightness Setting : 100%, 5% or 1%
- Applicable No. of cylinders: 3, 4, 5, 6 and 8 cylinders (4 cycle gasoline vehicles)
- Applicable speed pulse: 20~275 pulse/second at 40MPH or 60km/h
 1,274 pulse/km to 16,562 pulse/km
 2,051 pulse/mile to 26,665 pulse/mile
- Dimensions: Display Unit (including stand for the display unit) :
 3"(W) x 2"(D) x 4 5/8"(H), 75mm(W) x 49mm(D) x 24mm(H)
 Control Unit :
 4"(W) x 2 3/5"(D) x 1"(H), 100mm(W) x 65mm(D) x 27mm(H)
- Gross Weight: 2/3 lb, 250g (including display unit, control unit and wires)

Trouble Shooting (for customer and installation personnel)

CAUTION

If you believe that the product is not working correctly, please check to see if it has been installed correctly before contacting us.

- Is the fuse burned out ?
- Does the battery supply 12V to ignition when the ignition is on ?
- Are the engine revolution speed and vehicle speed displayed correctly ?
- Are the control unit and the display unit connected correctly ?
- Are there any loose connections ?
- Has the unit been set correctly for the speedometer pulse and for the number of cylinders ?
- Does your engine have an after-market or non-OEM computer ?
- Does your vehicle have a limiter-cut equipment ?
- Restart the vehicle and check the operation of the product.

TROUBLE SHOOTING

PROBLEM	CHECK THE FOLLOWING
There is no display.	<ul style="list-style-type: none"> • Are all the wires connected properly ? • Are the connections tight ? • Is the GND wire properly connected ?
Strange values are displayed.	<ul style="list-style-type: none"> • Are all the wires connected properly ? • Is the tire size standard to the vehicle ? • Is your vehicle model compatible with the product ?
Strange values are displayed and the instrument function properly.	<ul style="list-style-type: none"> • It is possible that the computer inside the product may be malfunctioning due to a radio frequency interference in your vehicle. Restart the vehicle and check its operation again.

How to Operate (for customer)

1. Set-Up Mode

CONFIRMATION

- Be sure to make proper settings. The unit will not operate properly without proper settings.
- Set up while the engine is on and the vehicle is stopped.

SPEEDOMETER AND TACHOMETER SETTING

To modify the factory settings of the following items, press and hold the SET switch for more than 2 seconds while in the normal mode. "Set-Up Mode" will be activated.

ITEM	DISPLAY	SETTING RANGE	UNIT OF DISPLAY	FACTORY SETTING
① Speedometer Unit	km/h	MPH, km/h	MPH, km/h	km/h
② Speed Pulse Number	67P	20~275pulse/second at 60km/h or 40MPH	—	67pulse/second
③ Number of Cylinders	E-4	3, 4, 5, 6, 8 (Cylinders)	—	4(Cylinders)
④ LED Display	LED	LED ON, OFF	—	ON
⑤ Special Display	SPEC	Special Display ON, OFF	—	ON
⑥ LED Speedometer Step Value	5-20	10,20(MPH) 10,20,30,40(km/h)	MPH or km/h	20(km/h)
⑦ LED Tachometer Step Value	1000	200~1000(r/min)(in units of 200)	r/min	1000(r/min)
⑧ LED MAX. Tachometer Value	7000	1000~9900(r/min)(in units of 100)	r/min MAX	7000(r/min)

NOTE: The factory settings change each time the SET switch is pressed less than 2 seconds.

①Speedometer Unit → ②Speed Pulse Number → ③Number of Cylinders → ④LED Display → ⑤Special Display
 ↑
 ⑥LED Tachometer MAX. Value ← ⑦LED Tachometer Step Value ← ⑧LED Speedometer Step Value

① Setting the Speedometer Unit

Press the SET switch once, and use the UP or DOWN switch to set the desired unit of measurements.
 km/h ↔ MPH

② Setting the Speed Pulse

-1. Press the SET switch once. "67P" appears on the display. And then press and hold the UP switch for more than 2 seconds. "P" blinks.

-2. Press the UP switch once while the vehicle is moving at 40MPH or 60km/h. If the setting is failed, the correct speed is not displayed. If the display of VSD BASIS and the vehicle's equipped speedometer are different, press and hold the UP switch for more than 2 seconds. The speed pulse can be reset.

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

③ Setting the Number of Cylinders

Press the SET switch once, and use the UP or DOWN switch to set the number of cylinders.

3 ↔ 4 ↔ 5 ↔ 6 ↔ 8 (cylinders) → Δ (UP)
 ← ∇ (DOWN)

④ Setting the LED Display

Press the SET switch once, and use the UP or DOWN switch to set the LED Display ON or OFF.
 LED ON ↔ LED OFF

⑤ Setting the Special Display

Press the SET switch once, and use the UP or DOWN switch to set the Special Display ON or OFF.
 LED ON ↔ LED OFF

⑥ Setting the LED Speedometer Step Value

Press the SET switch once, and use the UP or DOWN switch to set the Speedometer Step Value.

10 ↔ 20 ↔ 30 ↔ 40 (km/h) 10 ↔ 20 (MPH)

⑦ Setting the LED Tachometer Step Value

Press the SET switch once, and use the UP or DOWN switch to set the LED Tachometer Step Value.

200 ↔ 400 ↔ 600 ↔ 800 ↔ 1000 (r/min)

⑧ Setting the LED Tachometer Maximum Value

Press the SET switch once, and use the UP or DOWN switch to set the Tachometer Max. Value.

1000 ↔ 1100 ↔ ... ↔ 9800 ↔ 9900 (r/min)

If the SET switch is pressed once, the system will return to Speedometer Unit setting. The system will return to Normal Mode if the SET switch is pressed for more than 2 seconds.

If the engine speed exceed the set Tachometer MAX. Value, all the LED lamps will flash. If the engine speed drop below the set Tachometer MAX. Value, the LED lamps will go out gradually, counting backward to the set Tachometer MAX. Value

< EXAMPLE >

If the Tachometer MAX Value is set to 7400 r/min and Tachometer Step Value is set to 400 r/min, the LED lamps will appear as indicated below at the specified engine speed rates noted.

(● : LED ON ○ : LED OFF)

Engine speed(r/min)	LED State	Engine speed(r/min)	LED State
0~4900	○ ○ ○ ○ ○ ○ ○ ○	6200~6500	● ● ● ● ○ ○ ○ ○
5000~5300	● ○ ○ ○ ○ ○ ○ ○	6600~6900	● ● ● ● ● ○ ○ ○
5400~5700	● ● ○ ○ ○ ○ ○ ○	7000~7300	● ● ● ● ● ● ○ ○
5800~6100	● ● ● ○ ○ ○ ○ ○	7400~9900	● ● ● ● ● ● ● ●

2. Normal Mode

SPEEDOMETER, TACHOMETER (SP, TA) MODE

When the MODE/POWER switch is pressed once, the display mode will be changed after mode indicator (F-No.) is displayed for one second.

F-1 → F-2 → F-3 → F-4

MODE	DIGITAL DISPLAY	LED BAR DISPLAY	EXAMPLE DISPLAY
F-1 MODE	Speedometer : 0~240 MPH (1 MPH increments) 0~400 km/h (1 km/h increments)	Speedometer : LED lamps switch on as each step value is reached. All lights are OFF at zero speed.	100 ● ● ● ● ● ● ● ●
F-2 MODE	Speedometer : 0~240 MPH (1 MPH increments) 0~400 km/h (1 km/h increments)	Tachometer : LED lamps switch on as each step value is reached. Seven lights are ON at MAX. value.	100 ● ● ● ● ● ● ● ●
F-3 MODE	Tachometer : 0~9900 r/min (100 r/min increments)	Speedometer : LED lamps switch on as each step value is reached. All lights are OFF at zero speed.	2200 ● ● ● ● ● ● ● ●
F-4 MODE	Tachometer : 0~9900 r/min (100 r/min increments)	Tachometer : LED lamps switch on as each step value is reached. Seven lights are ON at MAX. value.	2200 ● ● ● ● ● ● ● ●

SPECIAL DISPLAY MODE

If the vehicle speed is zero for more than 10 seconds while in SPEEDOMETER AND TACHOMETER MODE, the LED will enter the SPECIAL DISPLAY MODE.

MAX SPEED DISPLAY MODE

If the UP/MAX switch is pressed while in SPEEDOMETER AND TACHOMETER MODE, the latest recorded maximum speed will be displayed for 3 seconds and the system will then return to SPEEDOMETER AND TACHOMETER MODE.

240
MAX km/h

If the UP/MAX switch is pressed for more than 2 seconds while displaying the MAX speed, the current MAX speed is cleared, 0(zero) is displayed for 3 seconds and the system will then return to SPEEDOMETER AND TACHOMETER MODE.

DISPLAY BRIGHTNESS ADJUSTMENT MODE

The level of display brightness in any mode changes each time the DOWN/DIM switch is pressed.

100% → 5% → 1%
 (Bright) (Dark)

POWER OFF MODE

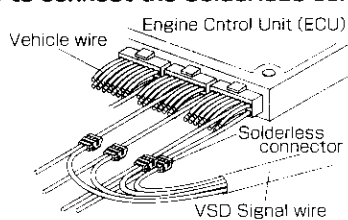
If MODE/POWER switch is pressed for more than 2 seconds while in any mode, all displays will turn OFF. If the MODE/POWER switch is pressed again, the system will turn on to the last display mode.

Wiring & Installation (for installation personnel)

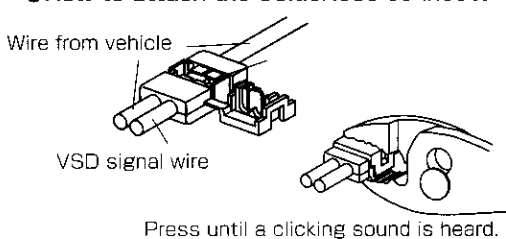
WARNING

- Make sure that both the display unit and the control unit are firmly attached.
- The display must be viewed on a portion of the bottom 5in(130mm) of the windshield.
- Attach the display unit in a location which will not hinder driving.
- The display is viewable even without the display film. The transmittance of the display film is about 45%. We are not responsible for any damage or problems arising from the use of the display film applied on the windshield. Please follow local regulations as for attaching the display film.

How to connect the Solderless connector

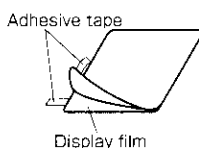


How to attach the Solderless connector



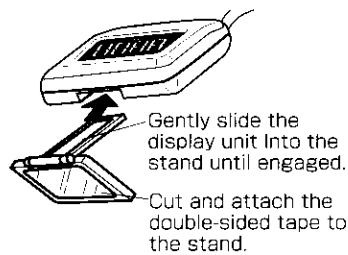
How to attach the display film

1. Wipe off tarnish and stain on the windshield.
2. Position the display unit and the display film in place. Mark a corner of display film with adhesive tape.
3. Separate the display film from the backing paper using adhesive tape as shown in the right figure.
4. Spray a mixture of water(150ml:5oz.) and mild detergent(1 or 2drops) to the windshield and the display film. Attach the film to the windshield in a longitudinal direction.
 - *dismount the display unit for a time to protect it from getting wet. Spread a towel on the instrument panel.
5. Gently squeeze out water and air bubbles under the film using a spatula. Wipe extra water with tissue.
 - *If tissue is wound around a spatula, the film will not get scratched.



How to attach the display unit and its stand

1. Gently slide the display unit onto the stand until engaged.
 2. Cut and attach the double-sided tape to the stand. The remainder will be used to attach the control unit.
- NOTE: Cover the display unit with a white cloth in high temperature conditions to prevent deterioration or damage to the components of the product. Prior to using double-sided tape to attach the stand to the vehicle dashboard, please make sure that the dashboard area is free of oil, dust and water.



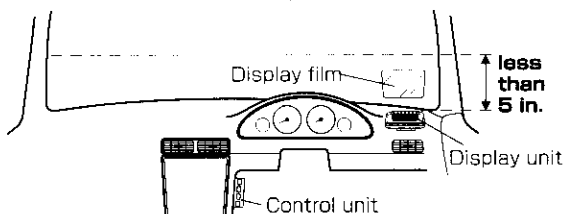
Wiring and Installation Procedure.

- Make sure that the product is compatible with your vehicle type.
1. Remove vehicle ignition key and disconnect the negative (-) battery terminal.
 2. Set number of cylinders in the engine using the cylinder switch of the control unit.
 3. Locate the Vehicle ECU.
 4. Connect the signal wire to the ECU.

CAUTION

- Use the solderless connectors to connect the signal wire to the ECU leads without cutting the wires connected to the ECU.
- Do not touch the battery terminal directly.
- Depending on the vehicle model, if the length of the signal wire supplied is insufficient, then you will need to obtain additional wire of the same specifications.

5. Before reconnecting the battery, make sure that all connections are correct and tight.
6. Connect the display unit wire to the control unit. (Make sure that the connector is correctly aligned).
7. Connect the negative (-) terminal to the battery.
8. Start the engine.
9. Check that the product is performing correctly according to this manual.
10. Use the double-sided tape to attach the stand and the display unit in a proper location.



11. Switch off the vehicle engine, disconnect signal and display unit wires from the control unit.
12. Attach the control unit in suitable location with the double-sided tape.
13. Attach signal and display unit wires to control unit. Make sure to align the connector correctly.
14. Attach the display film in a location that allows the image of the display to be reflected into the driver's line of sight.

The company is not responsible for any damage to the vehicle arising from misapplication of the display film on windshield.
15. Test drive the vehicle to ensure display corresponds to vehicle's original equipment manufacturer's instruments.

NOTE : Readings may differ slightly from the vehicle's original equipment manufacturer instruments, however slight variations are normal because of different calibration of the OEM instruments, variation in the sizes and other factors.