

Manual



This product functions with the Defi-Link ADVANCE Control Unit. This product does not function alone. Please refer to the Defi-Link ADVANCE Control Unit operation manual as well.

Thank you very much for purchasing our product.
This product is an additional product for providing information to automobile users about engine conditions and other important factors. Before installing and using the product, please read this manual and the warranty card thoroughly. All sections are for customers and installation personnel. After installation, please keep this manual and the warranty card for future reference. 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 and the warranty card accompany the product.

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

When installing and operating this product, be sure to read the cautionary items in the operation manual for the vehicle in which this product will be installed in addition to the manual of this product. Please obtain a full understanding of the cautionary items and use the product accordingly. Before using the product, please confirm all the components are included in the package.

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

Safety Warning [Please read carefully.]

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.

	Indicates a hazard that could cause death or serious personal injury if the product is mishandled.
	Indicates the possibility of death or serious injury if the product is mishandled.
	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.

Properties for safety warning

		Indicates attention needs to be paid. (Including warnings)
		Indicates restricted actions. (PROHIBITED actions)
		Indicates actions that need to be carried out. (MUST actions)

Before handling (for installation personnel)

- Danger**
- ① 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.
 - ① 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.
 - ① 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.
 - ① When 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.
 - ① 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.
 - ① Discontinue use of this product if a blowout of the fuse has occurred. Continued use while the condition exists could result in an accident, fire, or damage to the vehicle.
 - ① Use the fuse of regulated capacity when the fuse of the power wire is changed. Using a fuse that exceeds regulated capacity may cause fire.
 - ① Do not install the product at the wet places. It may result in a fire caused by an electrical short circuit.

- Warning**
- ① 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 the airbag system. 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 damage by impeding driving.
 - ① Do not disassemble or modify this product. Such actions will not only void the warranty but also damage or destroy the product.
 - ① 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.
 - ① Ensure that the wiring of this product does not have an adverse impact on the other wiring of the vehicle. Incorrect wiring may destroy your ECU, ignition system and other engine management devices.
 - ① 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 fire.
 - ① Please keep children and infants away from the installation area. Children may swallow small parts or be injured in other ways.
 - ① Do not install this product in the area where safety equipment such as airbags are mounted. This may cause more injuries in the event of an accident.

- Caution**
- ① This product is designed for use on 12V vehicles. Do not install this product on vehicles with 24V systems.
 - ① Insulate any unused wires. If any wires or connectors loosen during installation, please make sure they are correctly reattached.
 - ① Do not drop any of the components of this product. It may result in damage to the product.
 - ① Do not apply excessive force on switches/terminals. It may result in damage to the product.
 - ① Do not use wires other than the provided wires.
 - ① 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 emits electric waves should not touch the Defi-Link ADVANCE Control Unit. It may result in incorrect operation.
 - ① 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.
 - ① When installing the sensor, do not bend the wire near the sensor body.
 - ① Wear gloves to avoid burns when soldering and cuts when installing wires, sharp edges of parts.
 - ① Do not expose the Defi-Link ADVANCE Control Unit to moisture, dust or direct sunlight, or place product directly in front of heat vents.
 - ① Install sensors away from hot or wet places.
 - ① When using sunshade, put sunshade between products and windshield to avoid direct sun exposure.
 - △ Use a dried soft cloth for cleanup. Do not use cleaners except neutral detergent. It may damage the product.
 - ① 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.
 - ① Do not install gauges into the passenger side or the center of the dashboard. It doesn't meet vehicle safety standards.

- Confirmation**
- ① 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.
 - ① Do not lay the gauge face down due to oil leakage. Angle "A" must be more than 90 degrees.
 - ① After installation is complete, return this operation manual, warranty card, and the package to the customer along with the warranty.
 - △ The needle pointer may not be in the proper position when you purchase the product. Normal function will resume when power is connected.
 - ① Please confirm with the maintenance book on the car that the manufacturer issued when installing and detaching genuine parts.
 - ① Before the power supply wiring, check the voltage of the existing wire. After wiring, check the voltage of the on the connector of the power supply wire again to confirm whether you have tapped into the proper place.
 - ① 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.
 - △ On no event will Nippon Seiki Co., Ltd. be liable to you for any damages or losses of genuine parts for your vehicle while installing.

About Installation and Operation(for customer and installation personnel)

- Warning**
- ① Please have this product installed by the retail store or dealer where it was purchased. Installation by the customer will void the warranty.
 - ① Do not disassemble or modify this product. Such actions will not only void the warranty but also damage or destroy the product.
 - ① 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.
 - ① Discontinue use of gauges and the Control Unit, if they doesn't operate, water gets into them, or smoke or a strange odor comes from them. 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.
 - ① Do not operate during driving.
 - ① Fix the switch unit and other parts tightly to the vehicle to avoid that children swallow those.

- 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.
 - ① 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 old Defi-Link System.
 - ① Do not connect more than one gauge of the same variety. (Ex. You can NOT connect 2 turbo gauges together.)
 - ① 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 uses high luminance LEDs. When several gauges are lined up, there might be color difference in the LED production tolerance, but it is not malfunction.
 - ① Please check the installed product regularly. Durability might deteriorate according to use conditions, etc.

Lineup (for customer)

Product Name	Product No.
Defi-Link ADVANCE Control unit	DF077703

Defi-Link Meter ADVANCE BF requires the Defi-Link ADVANCE Control Unit.

One Defi-Link ADVANCE Control Unit can control up to 7 gauges.

① Do not connect more than one gauge of the same variety. (Ex. You can NOT connect 2 turbo gauges together.)

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

■ BF gauges Φ 60 series (SI models)

Product name	Display range	White Model	Amber Red Model	Blue Model
Turbo3.0	-100~+300kPa	DF14701	DF14702	DF14703
Turbo2.0	-100~+200kPa	DF09901	DF09902	DF09903
Turbo1.2	-100~+120kPa	DF10001	DF10002	DF10003
In-Mani Press. *	-100~+20kPa	DF10101	DF10102	DF10103
Oil Press.	0 ~ 1000kPa	DF10201	DF10202	DF10203
Fuel Press.	0 ~ 600kPa	DF10301	DF10302	DF10303
Oil Temp.	50 ~ 150℃	DF10401	DF10402	DF10403
Water Temp.	20 ~ 120℃	DF10501	DF10502	DF10503
Exhaust Temp.	200 ~ 1100℃	DF10601	DF10602	DF10603
Tachometer	0 ~ 9000rpm	DF10704	DF10705	DF10706

■ BF gauges Φ 2 3/8" series (USDM models)

Product name	Display range	Amber Red Model
Boost	-30inHg~+29PSI	DF09904
Oil Press.	0 ~ 145PSI	DF10204
Fuel Press.	0 ~ 87PSI	DF10304
Oil Temp.	122 ~ 302 °F	DF10404
Water Temp.	68 ~ 248 °F	DF10504
Exhaust Temp.	392 ~ 2010 °F	DF10604

■ Factory default settings of warning values

Gauge	Default setting	Unit	Setting range	Minimum	Maximum	Lighting condition
Turbo3.0	166.7	kPa	-100	300		Set value and above

Common Features of ADVANCE BF

- The ADVANCE SYSTEM adopts interactive communication.
- Operation from distance is enabled using a remote control switch unit.
- The flat glass, the long and thin pointer, and high-definition scale provide accurate readings which are easy-to-read.
- Opening and Ending modes can be selected from two variations.
- Self-luminescence type provides clear visibility with high contrast.
- 5-levels dimming function is available for both the night and day modes.
- Night-time mode has a light-reducing cancel function
- When adding more than two gauges, you just connect one gauge to the next one, and arrange wires from the sensors to the Defi-Link ADVANCE Control Unit.
- Our original stepping motor provides smooth and quick response ideal for high performance sports driving.
- The maximum sweep angle 270° which is divided into 3072-4600(0.088°-0.059°) and controlled by the microcomputer provides accurate sensor data.
- Self-diagnosis function signals a warning LED when it defects broken wires, short circuits, or communication errors.
- The warning value can be set. An alarm buzzer sounds when the warning LED(red) is turned on. It is available to turn on or off.
- Sensors data, including peak value and warning value, can record for up to three minutes. And it can be replayed after driving.
- Mounting bracket and a gauge pod are included as standard.
- By installing both a fuel pressure sensor and a turbo sensor, the differential pressure can be displayed on the fuel pressure gauge or the ADVANCE ZD.
- * This feature is NOT available on Turbo3.0.

Caution for use of Turbo3.0 (for customer)

- **Offset function of the Defi-Link ADVANCE Control Unit is NOT available.**
- **The differential pressure display function is NOT available.**
- **When using it with the ADVANCE ZD, the setup values on the ADVANCE ZD and on the Turbo3.0 are different during setting the warning value. Use the value displayed on the Turbo Gauge for setting.**

Please refer to the manual of Defi-Link ADVANCE Control Unit about functions above.

Product Specifications of ADVANCE BF

- Power-supply voltage: 10V to 16V DC (12V vehicles only)
- Current consumption: the maximum value obtained when connecting seven gauges
 - +B line: 2A (IGN ON), 5mA (IGN OFF)
 - ILM line: 800mA
- Temperature range (humidity is assumed to be 80% or lower) Unit: °C(°F)
 - Temperature range for storage -30 (-22) ~ +80(176)
 - Temperature range for operation -20(-4) ~ +60(140)
 - Gauge -30 (-22) ~ +80(176)
 - ADVANCE Control Unit -30 (-22) ~ +80(176)
 - Switch unit -30 (-22) ~ +80(176)
 - Boost sensor -30 (-22) ~ +100(212)
 - Pressure sensor -30 (-22) ~ +140(284)
 - Temperature sensor -30 (-22) ~ +150(302)
 - Exhaust temperature sensor -30 (-22) ~ +130(266)
- * The upper temperature limit of sensor connectors is 105℃ (221°F).
- * The sensing part of exhaust temp. sensor is not included in the temperature range above.
- Illumination color
 - Illumination color: white, red, blue
 - Needle pointer: red
 - Warning LED: red
 - PEAK LED: blue
 - * The outer edge of the glass is not illuminated and the change of illumination color is not available on ADVANCE BF gauge.

*How to operate ADVANCE BF (Please refer to Defi-Link ADVANCE Control Unit operation manual for common operations of ADVANCE series.)

- Changing the Opening/Ending mode
 - For the Opening mode and Ending mode, you can select either A type (Simple) or B type (HA-NA-BI) by sliding the DIP switch 2 attached to the Defi-Link ADVANCE Control Unit. Before changing the Opening/Ending mode, make sure that the ignition is off.
 - Please check both A type and B type operations for their performances.
 - * The outer edge of the glass is not illuminated and the change of illumination color is not available on ADVANCE BF gauge.
- Real mode
 - Adjusting brightness manually
 - You can adjust the brightness by pressing the right **[R DIM/RESET]** in the Real mode, Rec mode or Play mode. Five levels of brightness are provided for daytime and nighttime separately.
 - Day mode is changed to night mode as illumination switch turns on.
 - Also, an illumination cancellation function is available which enables to set the highest level of brightness for daytime in night mode. This can be done by pressing the right **[R DIM/RESET]** several times.
- Setting mode
 - Setting the warning value
 - Regardless of the illumination status (ON/OFF), the dial illumination of selected gauge lights up with high brightness and the warning LED flashes, whereas the dial illumination of unselected gauge lights up with low brightness and the warning LED turns off.

Please refer to the manual of Defi-Link ADVANCE Control Unit for common operations of ADVANCE series.

Dimensions and Part names

[Gauge front] [Gauge side] [Gauge back] Connector for ADVANCE Indicator Sold separately: ADVANCE Indicator Part number: DF09601

Warning LED(Blue) PEAK LED(Blue)

[With Regular position bezel Gauge pod: Mounting bracket]

Connectors for meter wires

Lot No. label Do not peel off the labels stuck on the product and warranty card.

Gauge size BFΦ60(2 3/8")		Unit : mm(inches)	
A	66.3(2.3")	F	70.5(2.77")*
B	52.2(2.06")	G	77.6(3.05") ~ 79.1(3.1")*
C	15.5(0.6")	H	15**
D	68. 6(2.7")*	I	32**
E	17.8(0.8")*		

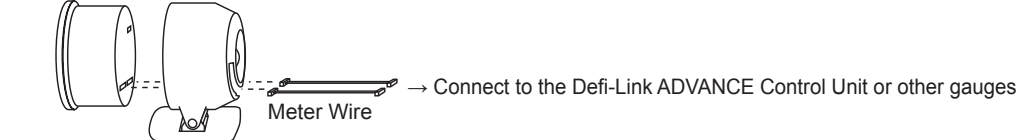
* A regular position bezel is not included in ADVANCE BF gauge unit.

Sold separately: Regular Position Bezel

Installation (for customer and installation personnel)

- ① Please refer to Defi-Link ADVANCE Control Unit operation manual when installing gauges.
- ① Confirm all the components are included in the package.

■ How to wire mete wires



■ How to attach Mounting Bracket Set

- 1) Cut the double sided tape as shown in figure 1.
- 2) Insert convex part of the mounting bracket over the legs of the gauge pod. Attach the mounting bracket to the gauge pod with the bolt, nut, and washer included in the kit as shown in figure 2.
- 3) Attach one piece of double sided tape and the buffer on the gauge as shown in figure 3. (Cut the buffer into 16cm(6.3") when installing Φ52(2 1/8") series.)
- 4) Pass the meter wires through the hole of the gauge pod and connect them to the gauge.
- 5) Place the gauge in the gauge pod making sure that the wires are not sandwiched.
- 6) Attach double sided tape on the back of the mounting bracket as shown in figure 4.
- 7) Bend the mounting bracket to conform to the structure of the location where you intend to attach it.
- 7) Fix the mounting bracket with commercial tapping screws as shown in figure 5.

Confirmation

① Use appropriate dashboard cleaning liquids (commercially available) to clean the area where the double sided tape will be attached.

① Do not lay the gauge face down due to oil leakage.

Angle "A" must be more than 90 degrees.

① Use commercial tapping screws with double sided tapes to fix gauges on dashboard.

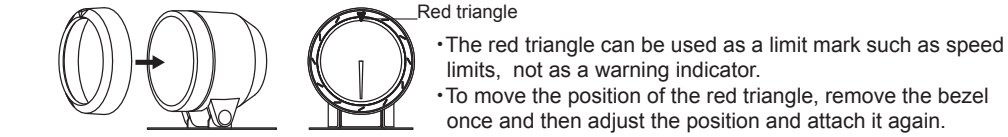
[figure 1] [figure 2] [figure 3] Buffer

[figure 4] Mounting bracket(rear side) Holes for screws (Φ4.4mm)

[figure 5]

Use tapping screws commercially available.

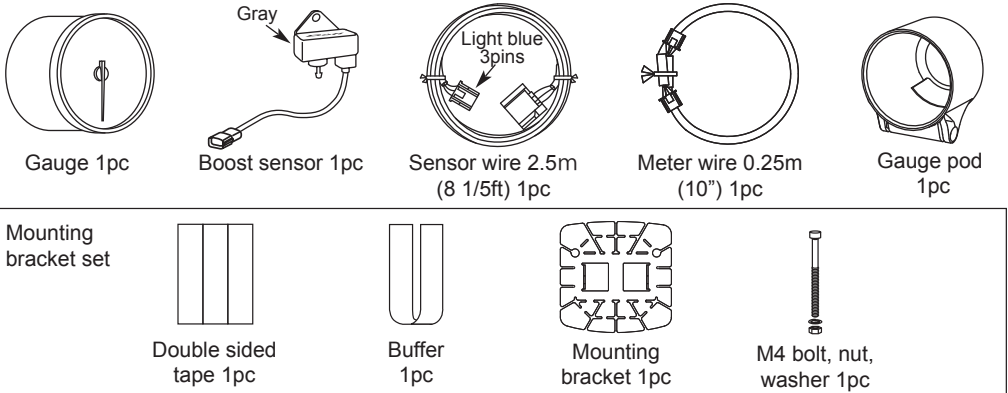
■ How to use Regular Position Bezel(Sold separately: PDF08607G)



*This product cannot be mounted with Single Meter Visor (DF11201).

Turbo3.0 (DF147series)

■ Components

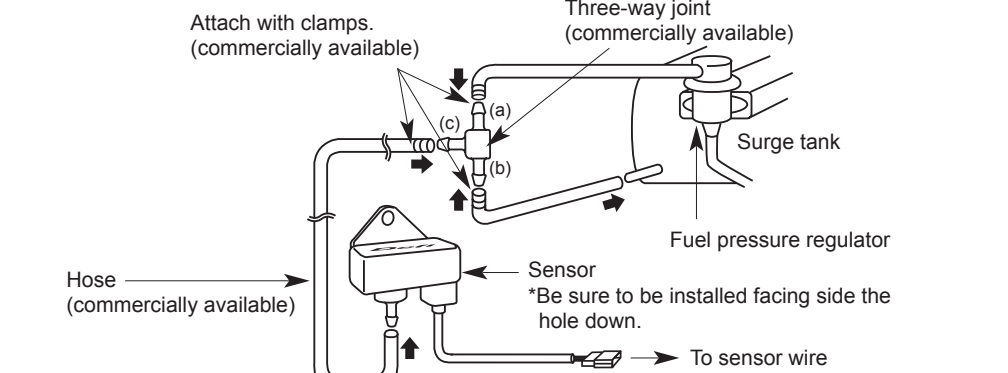


Operation manual (this sheet) and warranty card are included other than the parts listed above. Keep them at hand.

***A rubber hose and a three-way joint are NOT included in this package. Hoses which have more than withstanding pressure of 400kPa (inner diameter Φ4mm) and a three-way joint which can match both hoses and a vehicle vacuum hose size are required.**

***Do not use rubber hoses included in Turbo2.0(DF09901) package and so on because that hoses cannot withstand high pressure.**

■ How to attach boost sensor (i.e, gasoline vehicles)



- 1) The hose attached to the sensor should be as short as possible. Attach the sensor with bolts (M6) in the engine compartment in an area where it will not be subject to excess heat or vibration.
- 2) Access to the air pressure intake may be obtained between the surge tank and the fuel regulator.
 - (A) Detach the vacuum hose from the surge tank side that has less pressure oscillations and connect it to the point (a) or (b) of the three-way joint.
 - (B) Connect the surge tank to the point (a) or (b) of the three-way joint by using a hose.
 - (C) Connect the sensor to the point (c) of the three-way joint by using a hose.

- Warning**
- ① Be sure to use commercial hoses which can withstand more than 400kPa. Failure to do so could cause serious damage to the engine, such as engine blowout or hose burst.
 - ① To avoid disconnection of hose and air leak, attach hose clamps or use tie-wraps to secure the adjacent hose in the engine compartment. Disconnected hose or air leak could cause damage to the engine.
 - ① In the case that the gauge does not indicate correct intake pressure, shut off the engine immediately and stop using the product. Please recheck the wiring line. Air leaks or loose connections may happen, or the connected location may be wrong.

- Confirmation**
- ① The sensor must be installed being the hose connection side faced down.
 - ① For vehicles which have a solenoid valve between the surge tank and the fuel pressure regulator, place a three-way joint closer to the surge tank side than to the solenoid side.
 - ① Depending on vehicle types, there are some cases that this product cannot be installed to a vehicle. Please ask retailers or distributors for details.

Repair Parts (for customer)

Product Name	Product No.
Boost Sensor (for 300kPa)	PDF14604S

*Repair parts and optional parts are shown in the manual of the Defi-Link ADVANCE Control unit.

- ① Please refer to the Defi-Link ADVANCE Control Unit operation manual for installation, operation, troubleshooting, repair parts, optional parts, and terms and conditions.

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.
 - △ Except in the case of defects, we shall not be liable for any trouble including violation, accident or improper wiring resulting from using this product.
 - ① 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
 - Please ask the shop you purchased the product for inspection if any defect in product is suspected. We don't accept the order of fixing because Defi products require installation and wiring to the vehicle. In case you cannot go to the shop you purchased because of move-out or closure of shop, please ask the nearest Defi Distributor listed in the Defi website.
 - ① For a repair/inspection service, take the warranty card and customer contact information with you.
 - Please conduct periodic inspections by Defi through a shop which sells Defi products or Defi's official distributor every five years. Inspection is available at an additional cost. In the case you purchased used products or used vehicles with products of Defi, please have an inspection by Defi as well before using them.
 - Label
 - The label stuck on the product is for the product traceability. Do not peel it off.
 - 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 label on the package indicates that the package is recyclable.

Defi-Link Meter ADVANCE BF Turbo Gauge 300kPa Operation Manual

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