

**BOOST
VACUUM**

Pivot
STEPPING GAUGE

BOOST PRESS / VACUUM PRESS
SG-BP / BPG / SG-VP / VPG

USER'S GUIDE (No.003)

Thank you for purchasing our PIVOT STEPPING GAUGE SERIES.
Please read these instructions carefully before installing or using this meter.

SG-BP/BPG, VP/VPG FEATURES

- Microcomputer controlled stepping motor drive provides highly precise display of plus pressure (Boost) and minus pressure (Vacuum).
- Includes highly precise oil pressure sensor.
- One-touch hold peak function to view highest data.
- Includes U-shaped brace and easy-to-install stand allows freedom in installation.
- White LED Illumination(BP/VP). Blue LED Permeating Illumination(BPG/VPG).

[Opening Demo]

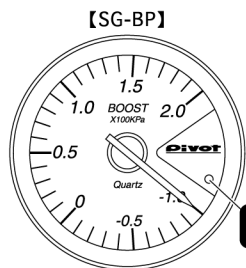
By turning the key switch on, the needle will move in a fixed pattern. (searching for the origin)

CONTENTS

Meter	Adjustable Stand	U-shaped Brace	Pressure Sensor	3-pin Coupler Cable	Nylon Hose	Rubber Hose	Change Joint	3Way Joint	I-Joint
Wire Connectors × 2	Allen Wrench	Double-Sided Tape(L) × 3	Double-Sided Tape(S) × 1	Hex Bolt	Hexagonal Washer Nut	Spring Washer	Knurled Nut	Zip Tie	User's Guide

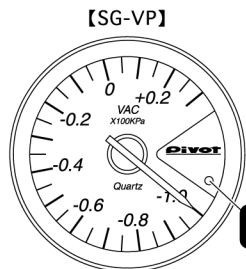
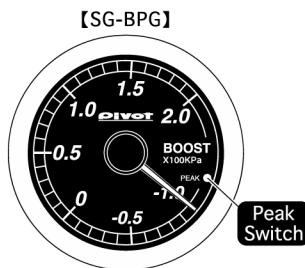
PART NAMES AND OPERATIONS

<FRONT>



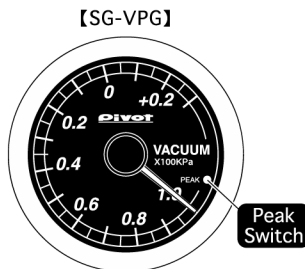
METER INDICATOR (BP/BPG)

- Display Range
-1.0~+2.0 (×100kpa)
- Lamp
·BP=White LED Illumination.
·BPG=Blue LED Permeating Illumination.
- Linkage to Small Lamps
·Brightness Control Function

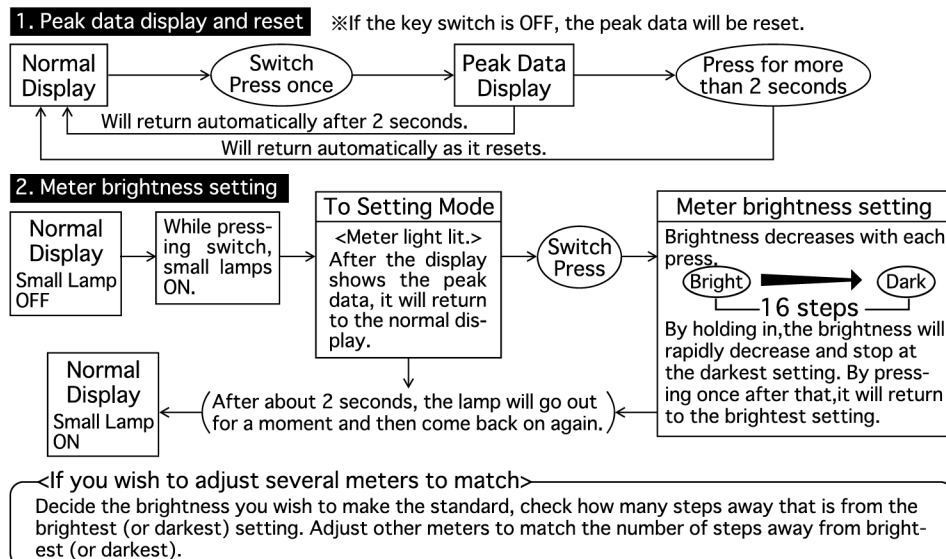


METER INDICATOR (VP/VPG)

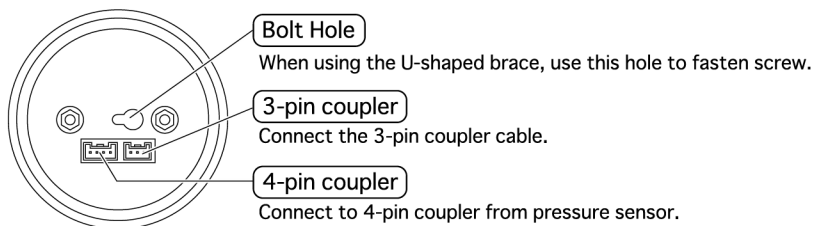
- Display Range
-1.0~+0.3 (×100kpa)
- Lamp
·VP=White LED Illumination.
·VPG=Blue LED Permeating Illumination.
- Linkage to Small Lamps
·Brightness Control Function



The operation method of a PEAK SWITCH

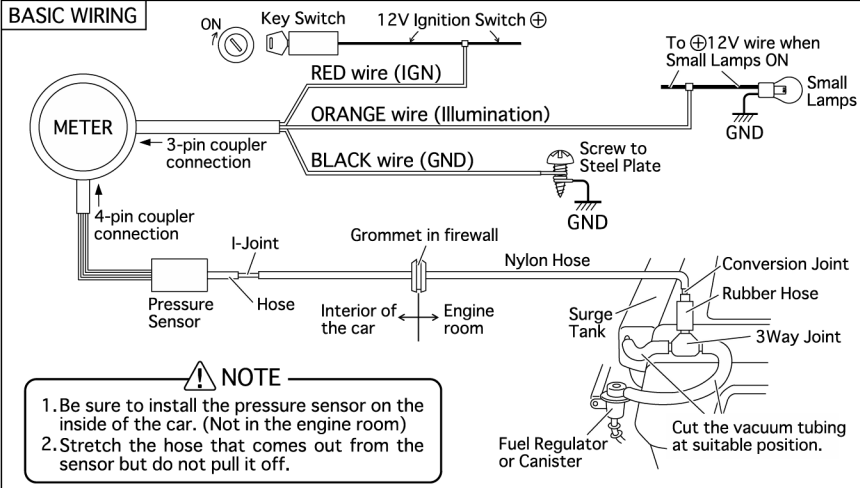


<REAR> BP/BPG,VP/VPG common



CONNECTING THE WIRES

BASIC WIRING



NOTE

1. Be sure to install the pressure sensor on the inside of the car. (Not in the engine room)
2. Stretch the hose that comes out from the sensor but do not pull it off.

INSTALLATION WARNING

1. For safety purposes, when working on your car always disconnect the \ominus battery terminal (re-connect to check for power).
2. Make sure that all wire and snap connectors are firmly connected and insulated.
3. Be careful when laying wires not to cause any electrical shorts or wire breakage.
4. When laying the hose, make sure not to bend it or damage it, so as to cause loss of pressure, and be sure to fasten it tightly with the zip tie included.

CONNECTION PROCEDURE

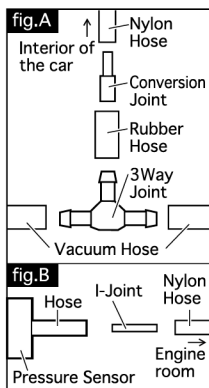
1. Connect the 3-Pin coupler cable.
RED wire(IGN)= Connect to the wiring that carries (\oplus 12V) when key switch is ON.
ORANGE wire(Illumination)= Connect to the wiring that carries (\oplus 12V) when the small lamps are ON.
BLACK wire(GND)= Connect to a screw near the steel plate that carries earth.
⇒Properly connect each wire and cable. Connect the 3-pin coupler to the back of the meter.

NOTE

Connecting the 3-pin coupler to the water, oil, intake temperature gauge, or speed meter will result in damage or a malfunction.

2. Connect the Pressure Sensor. (Be sure to install on the inside of the car = Not in the engine room.)

- ① In the engine room, locate a vacuum hose directly coming out from the intake manifold that can handle pressure. (Ex: A hose that connects to the fuel regulator or canister.)
- ② Cut the above hose at a suitable place and connect to the T-Joint as in above diagram.
- ③ Connect one end of the rubber hose to the T-joint and connect the other end of the hose to the wide end of the conversion joint.
- ④ Connect one end of the nylon hose to the narrow end of the conversion joint and pull the other end of the hose through a harness grommet into the car interior.
- ⑤ Using the I-joint, connect the end of the nylon hose you pulled into the car to the hose of the pressure sensor. (fig.B)
- ⑥ Connect pressure sensor 4-pin coupler to the back of the meter.
- ⑦ Using the double-sided tape (S), affix the sensor unit to a place in the interior where it will not get in the way.(Do not put it near an outlet of the blower fan.)



NOTE

Make sure that all hose and joint connections are securely fastened so as not to disconnect or cause pressure loss. (Depending on the conditions, it may be necessary to take some action to prevent loosening and disconnection of the various connection points.)

METER INSTALLATION

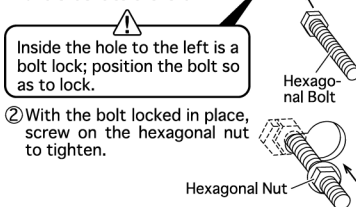
A Installation with U-shaped Brace

Fasten from the back of the instrument panel.



1. Fastening the Hexagonal Bolt for Installing the U-shaped Brace

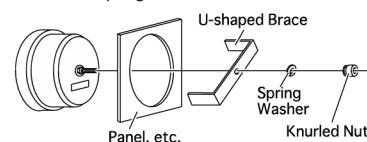
- ① Insert the six-sided part of the hexagonal bolt into the hole at the back of the case and slide it to the left.



- ② With the bolt locked in place, screw on the hexagonal nut to tighten.

2. Installing the Meter

- ① Insert the meter into the front side of the panel where you wish to install it.
- ② On the rear side, slide the U-shaped brace onto the hexagonal bolt and securely fasten with the spring washer and the knurled nut.



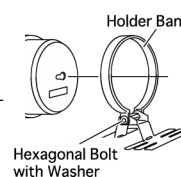
B Installation with the Adjustable Stand

Fasten to a stable place with the double-sided tape. (On top of the steering column cover or dashboard.)



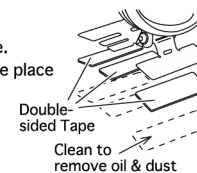
1. Installing the Adjustable Stand

- ① Place the stand's holder band around the back of the meter.
NOTE; If you cannot get the band around the meter, loosen the hexagonal bolt and expand the band.
- ② After getting the band in place, tighten the hexagonal bolt to secure the band.



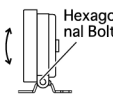
2. Installing to the Car

- ① Carefully decide installation place.
- ② Bend the stand to securely fit the place of installation.
- ③ Clean the surface; removing all oil or dust.
- ④ Fasten using the double-sided tape.



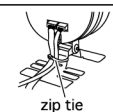
- ⚠ Please be sure about where you wish to install the meter, as it is not advisable to reuse double-sided tape.

- ⑤ After deciding the position and angle of the meter face, fasten the hexagonal bolts on both sides to secure.



NOTE

If after installing the meter, the 3-pin coupler cable is viewable and looks bad.
⇒Tie the 3-pin coupler cable behind the meter with the zip tie.



Troubleshooting

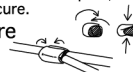
※Please make the following checks before seeking repair.

Trouble	Possible Causes	Possible Solutions
The opening demo does not work with key switched ON.	<ul style="list-style-type: none"> •Contact failure of RED wire (IGN). •Contact failure of BLACK wire (GND). 	Check the wire connections or conditions.
Display dose not change.	<ul style="list-style-type: none"> •There is no pressure or a lack of pressure. •Improper hose connection. •Contact failure of 4-pin coupler. 	Check the place to see if you can get pressure. Check the sensor and wire connections or conditions.
Even with the small lamps ON, the meter light does not come on.	<ul style="list-style-type: none"> •Contact failure of ORANGE wire (Illumination). 	Check the wire connections or conditions.
The brightness is set at the darkest setting.		Make any necessary change to brightness.
The illumination color is slightly different from other meters.		This is due to a variance in the LED and is not a malfunction. Please be aware that we cannot perfectly match the color.
The needle stops at the key OFF position.		This is a characteristic of the stepping motor and is not a failure or breakdown. With the key switch on (engine stopped), a 0 should appear in the display (some car models and in some conditions a numerical value may appear) after the opening demo is finished to show it is working properly.

How to use the Wire Connectors

※If soldering is possible, please do so.

1. Peel off about 10mm of the vinyl cover at connection point.
 2. Peel off about 10mm of the vinyl cover at the end of the product's wire.
 3. Twist the uncovered wires.
 4. Close tightly with wire connector.
- ※ Use a crushing tool to press the wire connector. If you do not have such a tool, use pliers or such to fold and crush the connector together for a secure contact.
※ Loose connections can cause wire to come apart, so please make sure the connection is secure.
Be sure to insulate and secure with vinyl electrical tape.



PIVOT CORPORATION

87-3 OKADA SHIMO-OKADA MATSUMOTO-SHI NAGANO 390-0313 TEL0263-46-5901