

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

SG-OP/OPG Features

- Microcomputer controlled stepping motor drive provides highly precise display of oil pressure.
- 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(SG-OP). Blue LED Permeating Illumination(SG-OPG).
- 【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	Oil pressure sensor	Oil pressure sensor cable	3-pin coupler cable	Wire Connectors X 2
Allen Wrench	Double-Sided Tape X 3	Hex Bolt	Hex Nut	Spring Washer	Knurled Nut	User's Guide

PART NAMES AND OPERATIONS

<FRONT>

[SG-OP]

PEAK SWITCH

METER INDICATOR

- Display Range
0~10.0 (×100kpa)
- Lamp
· OP = White LED Illumination.
· OPG = Blue LED Permeating Illumination.
· Linkage to Small Lamps
· Brightness Control Function

[SG-OPG]

PEAK SWITCH

The operation method of a PEAK SWITCH

1. Peak data display and reset

※If the key switch is OFF, the peak data will be reset.

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    graph LR
      A[Normal Display] -- Switch Press once --> B[Peak data display]
      B -- Press for more than 2 seconds --> C[Peak data display]
      C -- Will return automatically after 2 seconds. --> A
      C -- Will return automatically as it resets. --> A
  
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2. Meter brightness setting

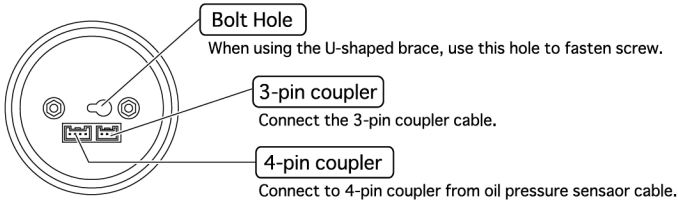
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    graph LR
      A[Normal Display. Small Lamp OFF.] -- While pressing switch, small lamps ON. --> B[To Setting Mode <br/> <Meter light lit.> <br/> After the display shows the peak data, it will return to the normal display.]
      B -- Switch Press --> C[Meter brightness setting <br/> Brightness decreases with each press <br/> Bright ← 16 steps → Dark]
      C -- By holding in, the brightness will rapidly decrease and stop at the darkest setting. By pressing once after that, it will return to the brightest setting. --> B
      C -- After about 2 seconds, the lamp will go out for a moment and then come back on again. --> D[Normal Display. Small Lamp ON.]
      D -- After about 2 seconds, the lamp will go out for a moment and then come back on again. --> A
  
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<If you wish to adjust several meters to match>

- 1 Decide the brightness you wish to make the standard, check how many steps away that is from the brightest (or darkest) setting.
- 2 Adjust other meters to match the number of steps away from brightest (or darkest).

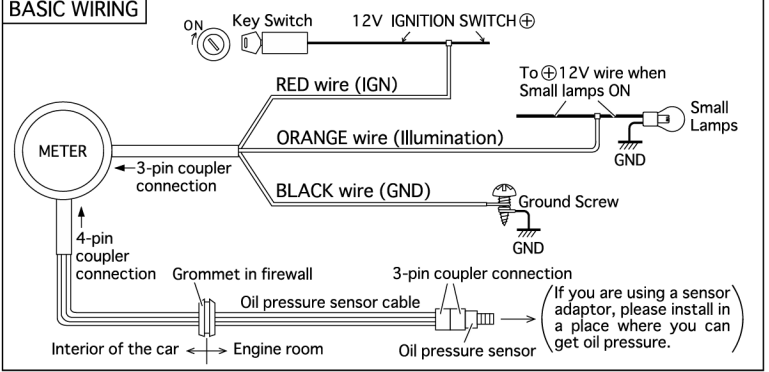
<REAR> OP/OPG common



Connecting the Wires

- INSTALLATION WARNING**
1. For safety purposes, when working on your car always disconnect the ⊖ 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.

BASIC WIRING



CONNECTION PROCEDURE

1. Connect the 3-Pin coupler cable.
 - ① Properly connect each wire and cable.
RED wire (IGN)= Connect to the wiring that carries (⊕12V) when key switch is ON.
ORANGE wire (Illumination)= Connect to the wiring that carries (⊕12V) when the small lamps are ON.
BLACK wire (GND)= Connect to a screw near the steel plate that carries earth.
 - ② 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 Oil Pressure sensor cable.
 - ① Pull the end with the 4-pin coupler into the interior of the car through a grommet in firewall.
 - ② Connect the oil pressure sensor to the sensor cable with the 3-pin coupler.
 - ③ Connect the 4-pin coupler to the back of the meter.

METER INSTALLATION

A Installation with U-shaped brace

When fastening from the back of the instrument panel.

1. Fastening the hex bolt for installing the U-shaped brace

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

Inside the hole to the left is a bolt lock; position the bolt so as to lock.

Hexagonal Bolt, Hexagonal Washer Nut

② With the bolt locked in place, screw on the Hexagonal Washer 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 hex bolt and securely fasten with the spring washer and the knurled nut.

U-shaped Brace, Spring Washer, Knurled Nut, Panel

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 hex nut bolt and expand the band.

Holder Band, Hexagonal Bolt

- ② After getting the band in place, tighten the hex 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.

clean to remove oil & dust

NOTE

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 hex bolts on both sides to secure.

hexagonal bolt, zip tie

NOTE

If after installing the meter, the 5-pin coupler cable is viewable and looks bad.

↓

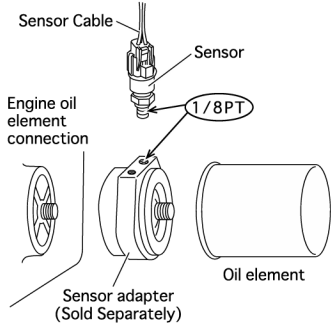
Tie the 5-pin coupler cable behind the meter with the zip tie.

zip tie

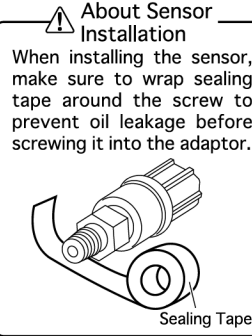
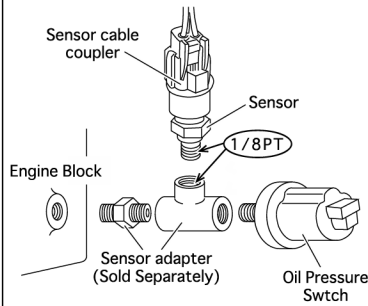
About Sensor Installation

● Depending on the installation you may need a sensor adaptor. (Sensor connector 1/8 PT=sold separately)

A. Oil Element Installation



B. Oil Pressure Switch Installation



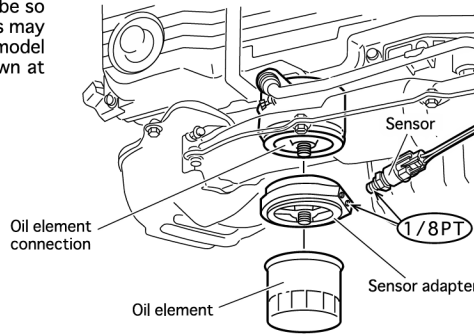
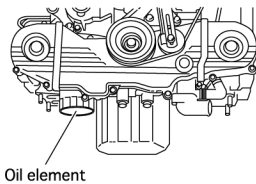
⚠ INSTALLATION WARNING

1. Be sure to securely connect the hose joint so as to prevent any leakage, and periodically check for leakage.
2. Carefully select the angle of the hose joint before you connect the sensor or the wire so as not to cause any sudden or drastic twists or bends.
3. Be careful not to carry out this installation while engine is hot; it may result in burns or injury. Make sure engine has sufficiently cooled down before attempting installation.

⚠ NOTE : About [SUBARU Horizontally-opposed Engine.]

If you install in a car with a Subaru horizontally-opposed engine, and use the screw hole in the oil pump to install the oil pressure sensor, the vibration from the oil pressure may be so great that it momentarily exceeds 3 times the full scale. This may cause damage to the sensor. If you plan to install in such a model car, please use the oil element installation adaptor as shown at right. (It is also possible to use the oil pressure switch.)

※ As seen from the engine front.



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"> ● Contact failure of Oil pressure sensor. ● Contact failure of Oil pressure sensor cable. 	Check the sensor and wire connections or conditions.
Even with the small lamps ON, the meter light does not come on.	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 moter 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.

