

Pivot
STEPPING GAUGE
USER'S GUIDE (No.3)
G-METER SG-GM

Thank you for purchasing our PIVOT STEPPING GAUGE SERIES.
Please read these instructions carefully before installing or using this device.
● When installing this product, we recommend that if technical knowledge becomes necessary please consult a qualified mechanic. ● Please do not lose this user's guide, as you will held liable for the cost of reissuing it.

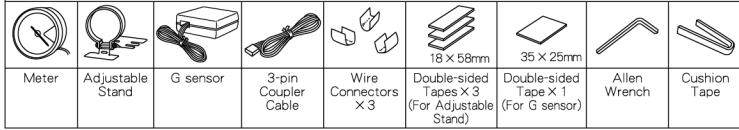
FEATURES

- Our stepping motor brings you high precision and quick response.
 - Analog display makes it easy to see changes in G's.
 - Improve handling technique by knowing G-limit for sliding while cornering and/or braking.
 - A Variety of Applications: from sports racing to safer more comfortable driving.
 - Timer hold display function ensures that you don't miss even momentary changes. (The highest value is held for 5 seconds.) ● Real/Timer Hold Switching Function.
 - The warning function makes it easy to see if you are driving under or over the G-limit by lighting up at 0.05G before the setting and flashing when the setting has been exceeded.
 - Roll/Pitch angle adjustment setting function according to the car.
 - Peak Hold Display. ● High Precision Semi-conductor G sensor.
- [Opening Demo]**
By turning the key switch ON, the needle will move in a fixed pattern. (searching for the origin)

APPLICATION

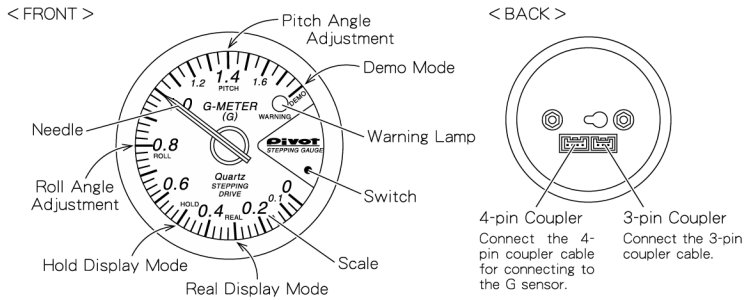
- Use to improve handling technique when pursuing speed during sports racing by knowing the G-limit for sliding while cornering and/or braking.
- Understanding the G-limit for sliding of the tire gripping power.
- Settings for vehicle body height, center of gravity, spring rate, tires, brakes, engine power, etc...
- Use to check the road surfaces μ according to temperature and dryness or wetness.

CONTENTS

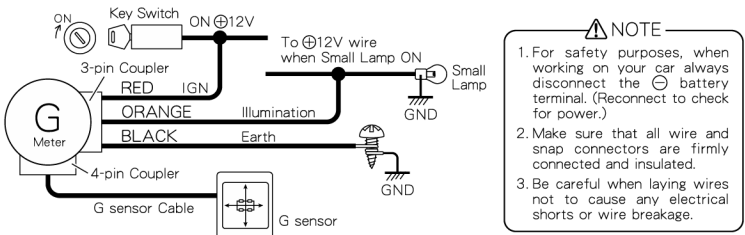


• User's Guide

PART NAMES



HOW TO WIRE



- NOTE**
1. For safety purposes, when working on your car always disconnect the battery terminal. (Reconnect 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.

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 the key switch ON.
ORANGE wire (Illumination) = Connect to the wiring that carries (+12V) when the small lamp ON.
BLACK wire (GND) = Connect with the same screw (body earth) in the steel panel 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 G sensor Cable
Connect the 4-pin coupler to the back of the meter.

SWITCH OPERATIONS SETTINGS

Peak Data Display/Reset Order ① Key Switch ON ↓ ② Opening Demo ③ Press ● (Switch) ④ Peak Data Display ⑤ Press ● (Switch) for a long time ⑥ Reset ⑦ Release ● (Switch) ⑧ Normal Display	Warning Settings Order ① Key Switch ON ↓ ② Opening Demo ③ Press ● (Switch) for a long time ④ Warning Displays ⑤ Press ● (Switch) ⑥ Display Change ⑦ Release ● (Switch) ⑧ Setting is fixed ⑨ Normal Display	Meter Brightness Settings Order ① Key Switch ON, Small Lamp OFF ↓ ② While Pressing ● (Switch), Small Lamp ON ③ Meter Light comes on ④ Press ● (Switch) ⑤ Brightness Change ⑥ Release ● (Switch) ⑦ Setting is fixed ⑧ Normal Display
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Display Settings of Each/Initial Setting

Order ① Key Switch OFF
 ↓
 ② While Pressing ● (Switch), Key Switch ON
 ③ Opening Demo
 ④ Setting Display
 ⑤ Press ● (Switch)
 ⑥ Setting Change
 ⑦ Release ● (Switch)
 ⑧ Setting is fixed
 ⑨ Normal Display

Scale
 0.3G (Real Display)
 ↓
 0.5G (Hold Display)
 0.8G (Roll Angle Adjustment)
 1.4G (Pitch Angle Adjustment)
 1.8G (Demo Mode)

• Adjust to the desired point for each type of setting and release the switch to fix the setting.
 • To make changes to any setting, please follow directions from step ①.

Explanation of Position on Scale

Setting Name	Position on Scale	Detail
Real Display	0.3G	Real Time Display.
Hold Display	0.5G	View Highs with easy to see Timer Hold Display (0.5 seconds).
Roll Angle Adjustment	0.8G	Roll Angle Adjustment Function according to the Car.
Pitch Angle Adjustment	1.4G	Pitch Angle Adjustment Function according to the Car.
Demo Mode	1.8G	This Mode is for Demonstration at a Store. (There is usually no need to use it.)

Roll Angle Adjustment Setting

- Order ① After completing Display Settings, make the "Roll Angle Adjustment" and release the switch.
 ↓
 ② Angle Adjustment Display
 ③ Press ● (Switch)
 ④ Display Change
 ⑤ Release ● (Switch)
 ⑥ Setting is fixed
 ⑦ Normal Display

Pitch Angle Adjustment Setting

- Order ① After completing Display Settings, make the "Pitch Angle Adjustment" and release the switch.
 ↓
 ② Degree of Variation Display
 ③ Press ● (Switch)
 ④ Display Change
 ⑤ Release ● (Switch)
 ⑥ Setting is fixed
 ⑦ Normal Display

Example of the Roll/Pitch Angle Adjustment

To ensure correct G measurement, it is possible to adjust for two influencing factors: Roll (slant left and right) and Pitch (slant front and back).

• The adjustment values for each are as such: the roll angle adjustment is the degrees of slant and the pitch angle adjustment is the roll angle adjustment x the degree of variation (tread / wheelbase).
 ex) If the roll angle adjustment value is 7° and the degree of variation is 60%, then the pitch angle adjustment would be 4.2°.

Kind of Car	Standard Suspension				Reinforced Suspension			
	Roll Angle Adjustment		Pitch Angle Adjustment		Roll Angle Adjustment		Pitch Angle Adjustment	
	Angle Adjustment	Position on Scale	Degree of Variation	Position on Scale	Angle Adjustment	Position on Scale	Degree of Variation	Position on Scale
① Racing Kart	—	—	—	—	0°	0G	—	—
② Racing Car	—	—	—	—	0°	0G	—	—
③ Sports Car	5°	0.5G	60%	0.6G	2°	0.2G	60%	0.6G
④ Compact Car	5°	0.5G	60%	0.6G	3°	0.3G	60%	0.6G
⑤ MiniVan (Normal Car)	7°	0.7G	50%	0.5G	5°	0.5G	50%	0.5G
⑥ MiniVan (Sports Type)	5°	0.5G	50%	0.5G	5°	0.5G	50%	0.5G
⑦ SUV	5°	0.5G	60%	0.6G	3°	0.3G	60%	0.6G

※ If there is no need for adjusting, set the roll angle adjustment at 0°.

HOW TO USE THE WIRE CONNECTORS

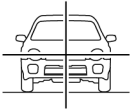
※ If soldering is possible, please do so.

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.	※ 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.
3. Twist the uncovered wires.	4. Close tightly with wire connector.	

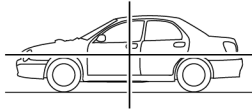
※ After covering, make sure to insulate properly with vinyl tape.

SENSOR INSTALLATION

① After wiring, park the car on a level surface and turn the key switch to ON.



Level to the Left and Right

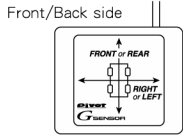


Level to the Front and Back

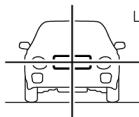


Do Not Install on an Incline.

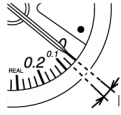
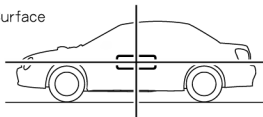
② Fasten the sensor on a level surface in the car where the meter reads nearest to 0~0.05G.



Left/Right side

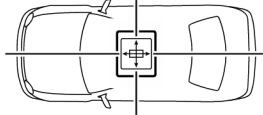


Level Surface

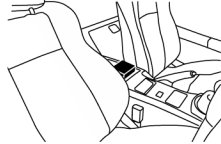
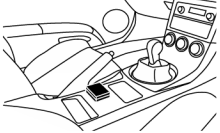


In this range.

Make sure sensor is straight with the direction of progress.



(Installation Example)



NOTE

1. Try to position the sensor at a low place in the car such as the floor or near the shift lever.
2. If affixing with some kind of stay, please make sure to use something thick enough to ensure stability.
3. It is possible to install the sensor upside down, but make sure that the front/back and left/right are in the appropriate directions according to the arrows.
4. After affixing, the 0 position of meter will change depending on the road inclination and your car inclination.

METER INSTALLATION

A Installation with the Adjustable Stand

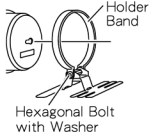
Fasten using the double-sided tape. (On top of the steering column cover or dashboard.)



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.



B Installation with the Cushion Tape

● Wrap the cushion tape around the base of the meter and forcibly insert into the 60mm hole in the panel.



TROUBLESHOOTING

※Please make the following checks before seeking repair.

Trouble	Possible Causes	Possible Solutions
The opening demo does not work with the key switch ON.	<ul style="list-style-type: none"> ●Contact failure of RED wire. ●Contact failure of BLACK wire. 	Check the wire connections or conditions.
Display dose not change.	Contact failure of 4-pin coupler wire from G sensor.	
Even with the small lamps ON, the meter light does not come on.	Contact failure of ORANGE wire.	Check the ORANGE wire connections or conditions.
The illumination color is slightly different from other meters.	The brightness is set at the darkest setting.	Make any necessary change to brightness.
	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.	