

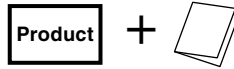
# USER'S MANUAL (Product Number: CSG)

# CHRONOSTEP

STEPPING GAUGE  
TACHO METER Ø80

Thank you for purchasing this PIVOT product.  
Please read this manual carefully and keep it for future reference.

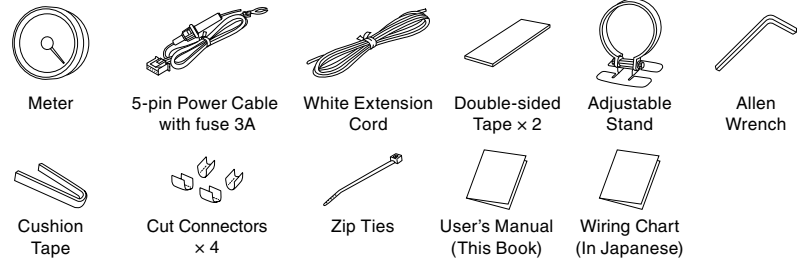
If this product is given to another user, make sure to include this User's Manual.



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## Please check the contents of the package



### **WARNING** Improper use or disregard of these warnings may result in the injury or death of people.

- **Do not work in areas where there is excessive exhaust.**  
Due to vehicle exhaust emission poisoning or fire may result in a damage to humans.
- **Do not operate while driving.**  
Operating or checking the display during driving may cause an accident; please use with the utmost consideration for safety.
- **Do not crush the cable.**  
Please be careful that the cable does not get crushed by the seat rail or car door steel plate, nor cut by any sharp steel plate as this may cause a poor connection or an electric short leading to fire or other danger.
- **Please securely fasten the product to a stable place and be sure to store bundle away all wires with tape, etc...**  
It is very dangerous to pull tangled wires by force or allow tangled wires to interfere with driving.

### **CAUTION** Improper use or disregard of these warnings may cause injury to persons, damage the product and other things.

- **This product is for DC12V cars;**  
Installation cannot be carried out on cars with other voltage batteries.
- **Just after installation do not exert any strong force on the product.**  
When double-sided tape is used for an installation be warned that when hot the tape temporarily loses adhesiveness.
- **Do Not Use Chemical Cleansers.**  
If the unit gets dirty please wipe with a soft cloth to remove any dirt. Do not use chemical cleansers such as thinner, benzene, or alcohol.
- **Do not install the product in any place subject to high temperature or any place where water may be splashed.**
- **Make sure to replace all screws and parts to their original place.**
- **Do not install the product in a place where it will cause distraction.**
- **Do not, in any manner, process, take apart, or make changes to this product.**

## Features

### Chronometric Display + Stepping Motor = Perfection

From the 1920s to the 1960s racing cars around the world used a chronometric tachometer. We have reproduced that sleek styling with a modern stepping motor to bring you a tachometer that can easily switch to real display.

#### Chronometric Display

To the clock-like design of yesteryear we have added a stepping motor that allows for a peak hold of about 0.5 seconds.

#### Switch display between Chronometric and Real Display

Engine rotation display can change easily between Chronometric and real-time display.

#### Nostalgic Design

Reprint the nostalgic design of the 1960s.

#### Sequential Shift Lamp

Includes an easy-to-read shift lamp that comes on 1000 rpm before the set shift point.

#### Compatible with wide range

Compatible with any 12V 1 to 8 cylinder gasoline models and some diesel models as well.

#### Translucent Illumination

The translucent LED system provides a clear display of dial and needle even at night.

#### Peak Value Display

This enables easy viewing of RPM peak value after engine start.

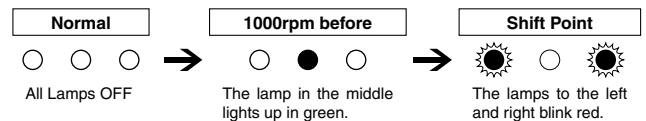
#### Opening Demo

When the key is turned ON the needle will move to the extreme left several times for searching position. Then it will move to the maximum value and finally to reading for current measurement item.

#### Shift Lamp

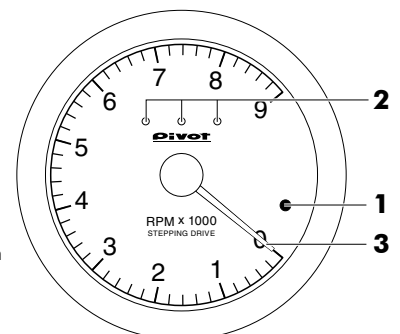
(Setting range; 3000–9000 rpm, 200 rpm unit)

Shows the peak reading after the engine begins running. In order to prevent over-revving while shifting, an F-1 sequential type shift has been included, which shows a green lamp 1000 rpm before the set engine rpm and a red lamp at the shift point.

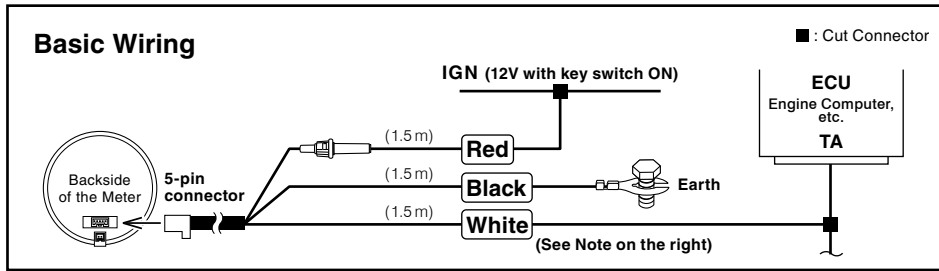


## Part Names and Displays

- 1 **Switch**  
Use to change modes and/or settings.
- 2 **Shift Lamp (LED)**  
Blinks at the set rpm.
- 3 **Needle**  
Show the current values.
- 4 **Illumination** (night illumination)  
Normally illuminated when on display.

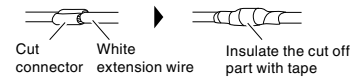


# Connecting The Wires



### Note:

If the **White** wire is not long enough, please use the white wire (1.5m) provided in this package to extend the length.



⇒ See [Reference 1] How to use the Cut Connectors on Page 2.

### IGN

**Red** Connect to the IGN (12V with key switch ON) using the cut connectors (included).

### Earth

**Black** with earth terminal Fasten to a screw of a metal part which is earthed.

- Painted screws and screws connected to plastic parts are not earthed; make sure to connect only to a place which is earthed.

### RPM Signal

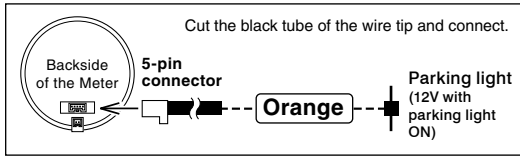
**White** Confirm the positions on the "Wiring Chart" and then connect the wire using the cut connectors (included).



- Make sure to connect the white wire to indicated place on the car.

### Dimming Shift Lamp along with parking lights

**Orange** This wiring is to use the lowest brightness for the shift lamp when only the parking lights are on; hence neither the dial or the needle will be it up when running with parking lights on.



⚠ When another device is already connected to the RPM signal from the ECU and that device works properly keep that wiring. and the meter or other device stops working properly or sometimes becomes unstable disconnect from the ECU wire and get the RPM from the minus terminal of ignition coil or diagnosis. ⇒ See following "To get the RPM signal from other than the ECU"

### ⚠ To get the RPM signal from other than the ECU

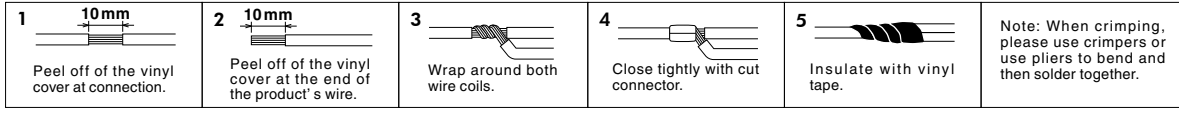
- To get the RPM signal from diagnosis (check connector)  
e.g.) in case of MAZDA EUNOS ROADSTER (NA6C)  
Location of the RPM signal (IG<sup>-</sup>)  
White  
To meter
- To get the RPM signal from the ignition coil  
White  
To meter  
Ignition coil
- To get the RPM signal from the ignition signal of the direct ignition coil  
Direct Ignition coil  
Ignition signal  
White  
To meter

If display the extremely low number of RPM by above connecting e.g.) Genuine tachometer of a six-cylinder car displays the 500rpm at the 3000rpm. The reason is that the car is independent ignition type.

Set the Cylinder Number setting to "1". ⇒ See page 3  
Connection for Cylinder Number Setting

Note : Set the Cylinder Number setting to "1". Make sure to check the wiring position of the ignition signal which will vary depending on the car models.

### [Reference] How to use the Cut Connectors



# Installing The Product

Install in an easy-to-view location.

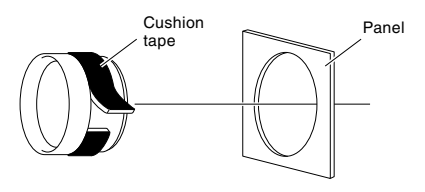
### A. Installation with the Adjustable Stand

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

- 1 Slightly loosen the Hexagonal bolt and install the gauge into the Adjustable Stand.
  - 2 Fasten using the double-sided tape. (Clean the surface; removing all oil and dust.)
  - 3 After deciding the position and angle of the meter face, fasten the Hexagonal bolt on both sides to secure.
- 
- Adjustable Stand
- Hexagonal bolt
- Double-sided tape (Included)
- Clean to remove oil and dust
- Note: Please be sure about where you wish to install the meter, as it is not advisable to reuse double-sided tape.
- Hexagonal bolt

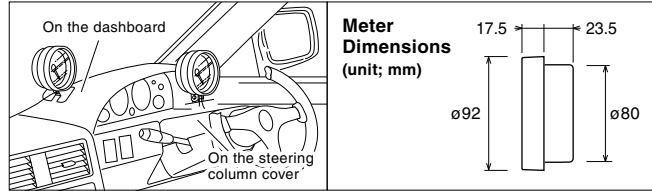
### B. Mount into the Panel

- 1 Wrap the cushion tape around the base of the meter.
- 2 Press into the 80 mm hole in the panel.



### Can be mounted in various places

Mount almost anywhere using the double-sided tape. After mounting it is possible to for easy-reading.



Note: If you wish to open holes to fasten the unit to the pillar or column cover, please purchase and use the separately sold pillar holder.

Pillar holder for ø80 PH-80

A pillar

Screw hole

Pillar holder

# Settings

After finishing the installation, make various settings.

**Preparation** Please check the number of cylinders and cycles for the model car being used.

## SETTING A Cylinder Number Setting

Set the cylinder number for the car being used. The number of cylinders is set by the shift lamp pattern.

- 1** Press the switch with the ignition in the OFF position (meter light off)
- 2** While holding the switch, start the engine within 5 seconds.
- 3** Opening Demo
- 4** **Cylinder display** Shift Lamp ON  
(The factory default setting is for a four-cylinder engine)
- 5** Press the switch once Press the switch to change the pattern and set to the proper one.

Turn 4-cylinder ▷ 5 ▷ 6 ▷ 8 ▷ Special A ▷ 1 ▷ 2 ▷ 3

Patterns for cylinder settings display ● = On ☀ = Blink ○ = Off

Number of cylinders	Shift lamp	Car models
1	● ○ ○	NISSAN (FAIRLADY Z Z33) / MAZDA (ATENZA and others)
2	○ ● ○	MAZDA (RX-8) / SUBARU (early type of PLEO and others)
<b>Note 1: For one and two cylinder engines, set the signal level switch to two.</b> ⇒ See <b>SETTING F</b> for details.		
3	○ ○ ●	Three-cylinder
4	○ ● ●	Four-cylinder and Rotary engine (RX-7)
5	● ● ○	Five-cylinder
6	● ● ●	Six-cylinder
8	● ○ ●	Eight-cylinder
Special A	☀ ○ ○	Some models of NISSAN

Reference: If the engine is a two cycle engine, multiply the number of cylinder by two. (e.g., For a two-cycle three-cylinder engine the setting would be six.)

- 6** With no operation for 5 seconds
- 7** Tachometer display

## SETTING B Switching the Display(Chronometric/ Real-time) Press

Switching the Chronometric / Real-time Display.

- 1** Press the switch once While the tachometer is being displayed, press the switch once.
- 2** Peak reading display  
+  
Shift Lamp ON (Setting)
- 3** Press the switch Pressing the switch changes the display mode. Shift Lamp changes by pressing the switch.  
Chronometric ↔ Real-time
- 4** With no operation for 5 seconds
- 5** Tachometer display

## SETTING C Peak reading display and re-set Press

Display Peak reading and reset the value.

- 1** Press the switch once While the tachometer is being displayed, press the switch once.
- 2** Peak reading display
- 3** Press the switch for 2 seconds Pressing the switch will re-set the peak reading.
- 4** The needle will show "0" All shift lamps will light
- 5** Tachometer display

## SETTING D Shift Point Setting Press for 1.5 seconds

Make RPM setting for turning on the shift lamp. (Setting Range: 3000–9000rpm)

- 1** Press the switch for 1.5 seconds While the tachometer is being displayed, press the switch for long.
- 2** The needle will show the set shift point The lamps blink red
- 3** Press the switch While holding down the switch, change the RPM setting Each pressing of the switch will raise, the setting 200 rpm; at peak it will return to 3000 rpm. Note: By continually pressing down on the switch the needle will move to peak.
- 4** With no operation for 5 seconds
- 5** Tachometer display

## SETTING E Shift lamp brightness setting Press for 3 seconds

Make setting to change the shift lamp brightness. (It will be the minimum brightness if Orange cable is wired to parking light.)

- 1** Press the switch for 3 seconds While the tachometer is being displayed, press the switch for long.
- 2** After 1.5 seconds the shift point will be shown and after 3 seconds all lamps will light All shift lamps will light
- 3** Press the switch While holding down the switch, change the brightness. Each pressing will decrease the brightness; when pressed at the darkest setting it will return to the brightest possible setting.  
Bright ← 5 steps → Dark
- 4** With no operation for 5 seconds
- 5** Tachometer display

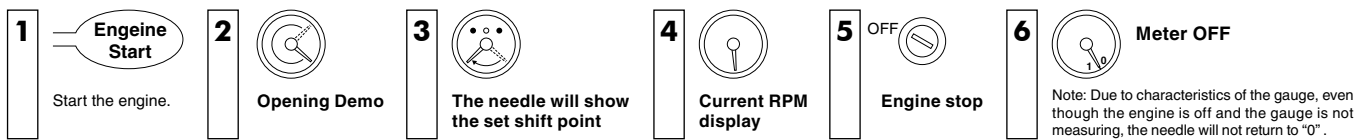
## SETTING F Switching the signal level Press for 5 seconds

Changes are only necessary for those car models listed below. NISSAN (FAIRLADY Z Z33)/MAZDA (after 2002)/MITSUBISHI (COLT and others) /SUBARU (early type of PLEO and others) ⇒ See the "Wiring Chart" for details.

- 1** The ignition OFF (Meter light Off) Press the switch with the ignition in the OFF position (meter light off).  
 Turn the ignition to the ON position (engine not running) Keep pressing the switch  
 Press the switch for 5 seconds
- 2** Opening Demo
- 3** The needle will show "1" or "2" The lamps blink red
- 4** Press the switch Set the signal detection level by pressing the switch to change the needle position to the correct setting.  
1 = If the generic car 2 = If the level is small
- 5** With no operation for 5 seconds
- 6** Tachometer display The needle will show "0"

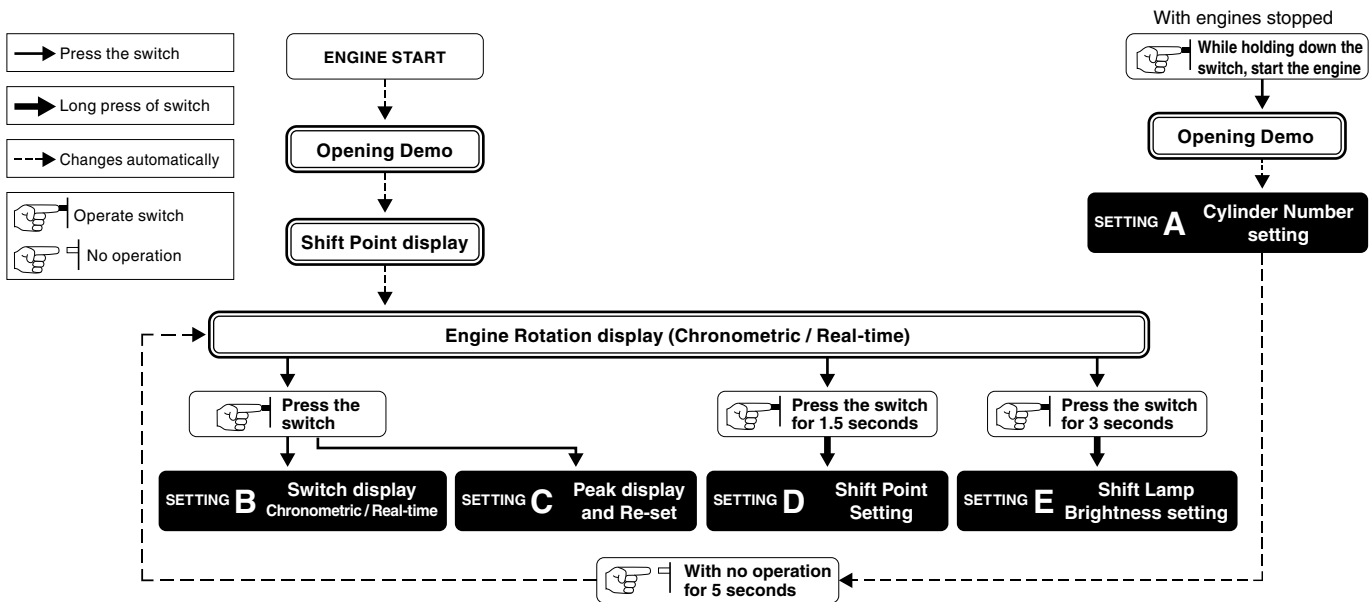
# Basic Operation

Basic operation from engine start to stopping.



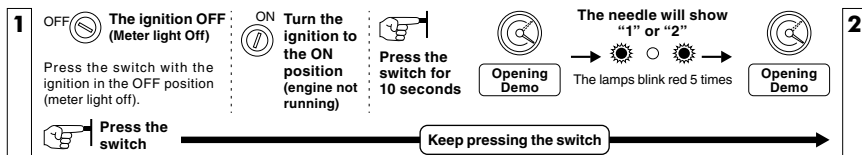
# Basic Flow of Operations

Basic Flow of Operations for CSG. For details about settings see page 3 [Settings].

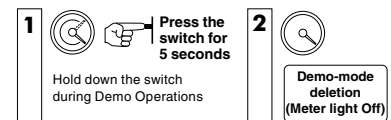


**Demo-mode setting and deletion** Demo-mode is used in stores to show and explain operations; for most users it is not necessary.

## Demo-mode setting



## Demo-mode deletion



# Troubleshooting

Trouble	Possible Causes	Possible Solutions
The Opening Demo does not work.	Poor connection or wrong wiring of each cable.	Please reconfirm whether wiring and connections are correct or not.
Opening Demo works but the needle does not work with Engine start.	Poor connection of <b>White</b> wire.	Please reconfirm whether wiring and connections are correct or not.
	The signal detection level is not correct.	See page 3 [SETTING F] and [Wiring Chart], make any necessary changes.
The car's tachometer and CSG reading are very different.	The cylinder setting is wrong.	See page 3 [SETTING A] and make any necessary changes.
	The signal detection level is not correct.	See page 3 [SETTING F] and [Wiring Chart], make any necessary changes.
The shift lamp does not light up.	The engine rpm has not reached the set shift point.	See page 3 [SETTING D] and make any necessary changes in the rpm shift point.
Even with the parking lights on, brightness of the shift lamp does not decrease.	Poor connection of <b>Orange</b> wire.	Check the <b>Orange</b> wire connections or conditions.
	The shift lamp brightness setting is set too low.	See page 3 [SETTING E], please check the setting.
The auto-power window function and/or other electronic devices are re-set.	This is due to the minus terminal on the battery being disconnected.	Re-connect the minus terminal and follow re-setting instructions of each vehicle manual for any affected devices.

**(Note)**

- Our products have already been recognized as our Industrial Property or are in the process of receiving Industrial Property status.
- We plan in the near future to take all possible legal measures to protect against unfair competition from look-alike products using similar designs, regulating characteristics, circuitry and circuitry layout.
- We strictly prohibit the unlicensed use of the PIVOT trademark and the unauthorized use of PIVOT User's Manual.