

# Manual

52mm/60mm StepMaster(E)

## Warning 【Please read carefully.】

- This product is designed for use on 12V vehicles. Do not install this product on vehicles with 24V systems.
- Have this product installed by the retail store or dealer where it was purchased. Installation by the customer will void the warranty.
- Do not disassemble or modify this product. Such actions will not only void the warranty but also damage or destroy the product.
- Do not operate during driving.
- 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.

## Main Features

- The opening mode and ending mode can be selected from five variations.
- A warning value (arbitrary) can be set and the warning buzzer can be selected from three variations or turn off.
- The buzzer can be selected in three loud levels.
- 7 Colors backlights can be selected.
- Flat glass, high-definition scale and long, narrow pointer provides accurate indication and high visibility.
- Brushless stepping motor is used to enable a smooth, instantaneous response to high performance sport driving.
- Data obtained during driving (peak value and warning value) can be stored up, and the peak value can be reviewed and cleared.

## Product Specifications

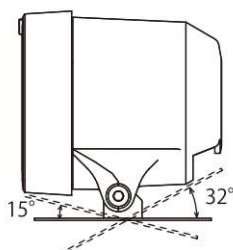
### Technical informations

- Power-supply voltage: 10V to 15V DC(12V vehicles only)
- Current consumption: +B line: MAX 120mA  
IGN line: MAX 120mA  
ILM line: MAX 2mA

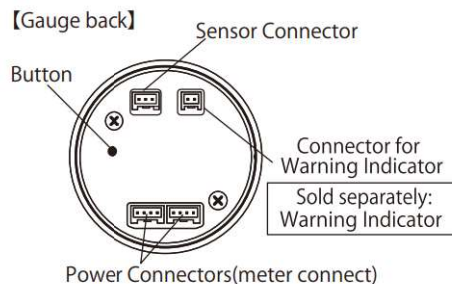
【Gauge front】



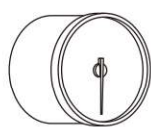
【Gauge side】



【Gauge back】



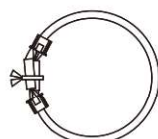
### Common Parts (Only for reference, the reality may be different with the below pictures)



Gauge



Meter cup



Meter wire



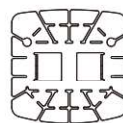
Power supply wire



Double sided tape (large)



Buffer



Mounting bracket



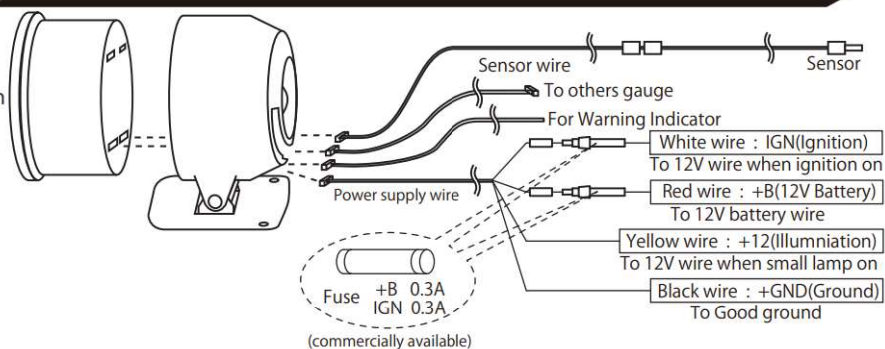
M4 bolt nut

### Individual Parts (Only for reference, the reality may be different with the below pictures)

Water temp. / oil temp.		Oil Press. / Fuel Press.		Boost / Vacuum	
	Temperature sensor (1/8NPT)		Pressure sensor (1/8NPT)		Boost sensor
	Three way joint		Rubber hose		Exhaust temperature sensor
	Fitting (1/8NPT)		signal wire		

## How to connect the power supply wire

- 1) Disconnect negative(-) battery cable.
- 2) Connect the power supply wire as shown.
- 3) Connect each sensor. Refer to "How to attach sensor" sections.(Except the Volt)
- 4) Connect the sensor wire.
- 5) Reconnect negative(-) battery cable.

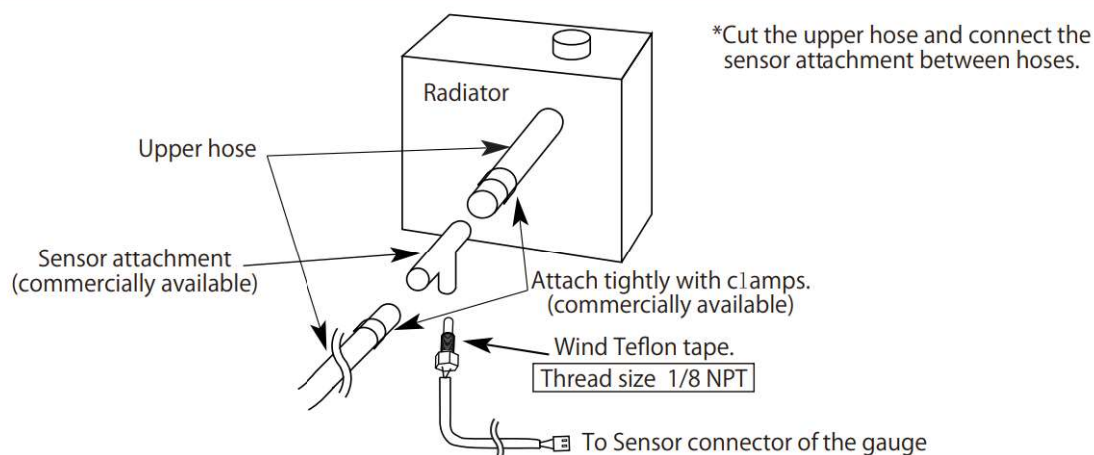


## Installation

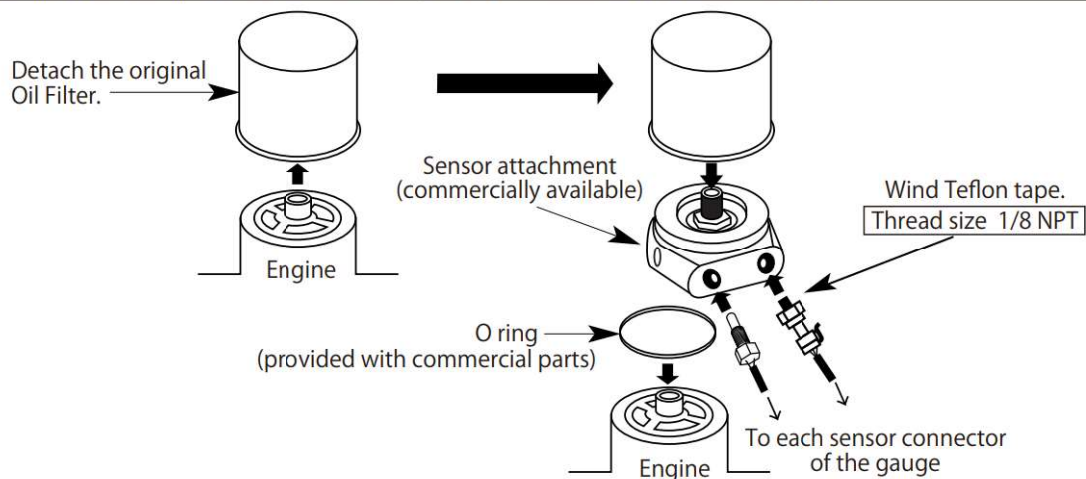
### How to install Volts gauge

- There is no sensor in the Volts gauge set, so just connect the power supply wire. Refer to "How to connect the power supply wire"

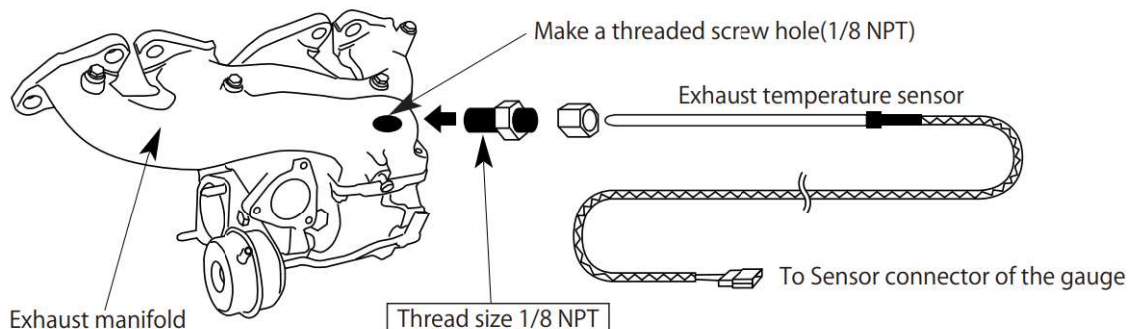
### How to install Water Temp. sensor ( Use a commercial sensor attachment. )



### How to install Oil Temp. and Oil Press. sensor ( Use a commercial sensor attachment. )

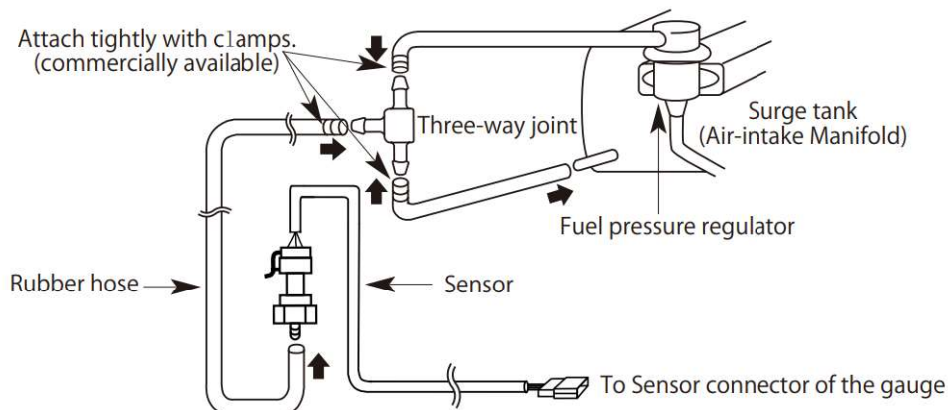


### How to install Exhaust gas temp sensor

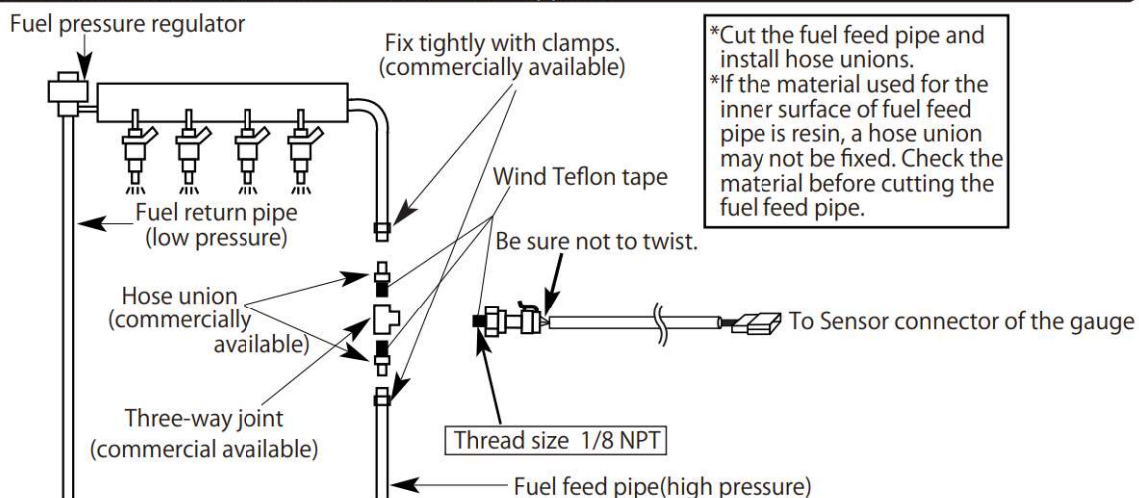




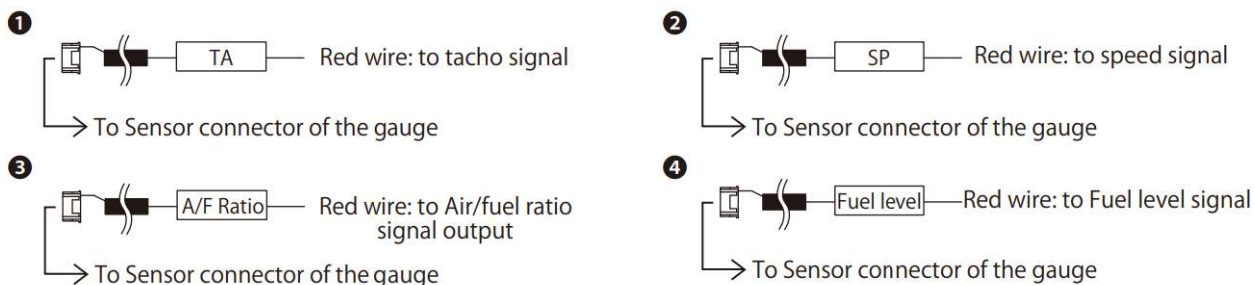
## How to install Boost / Vacuum sensor.



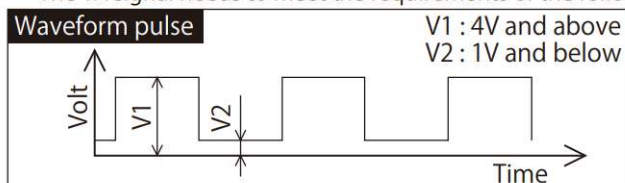
## How to install Fuel Press. sensor ( Use a commercial Three-way joint. )



## How to install Tachometer / Speedometer/ Air Fuel ratio.



- 1 Connect the red wire to tachometer signal wire of ECU of your vehicle. The TA signal needs to meet the requirements of the following graph.

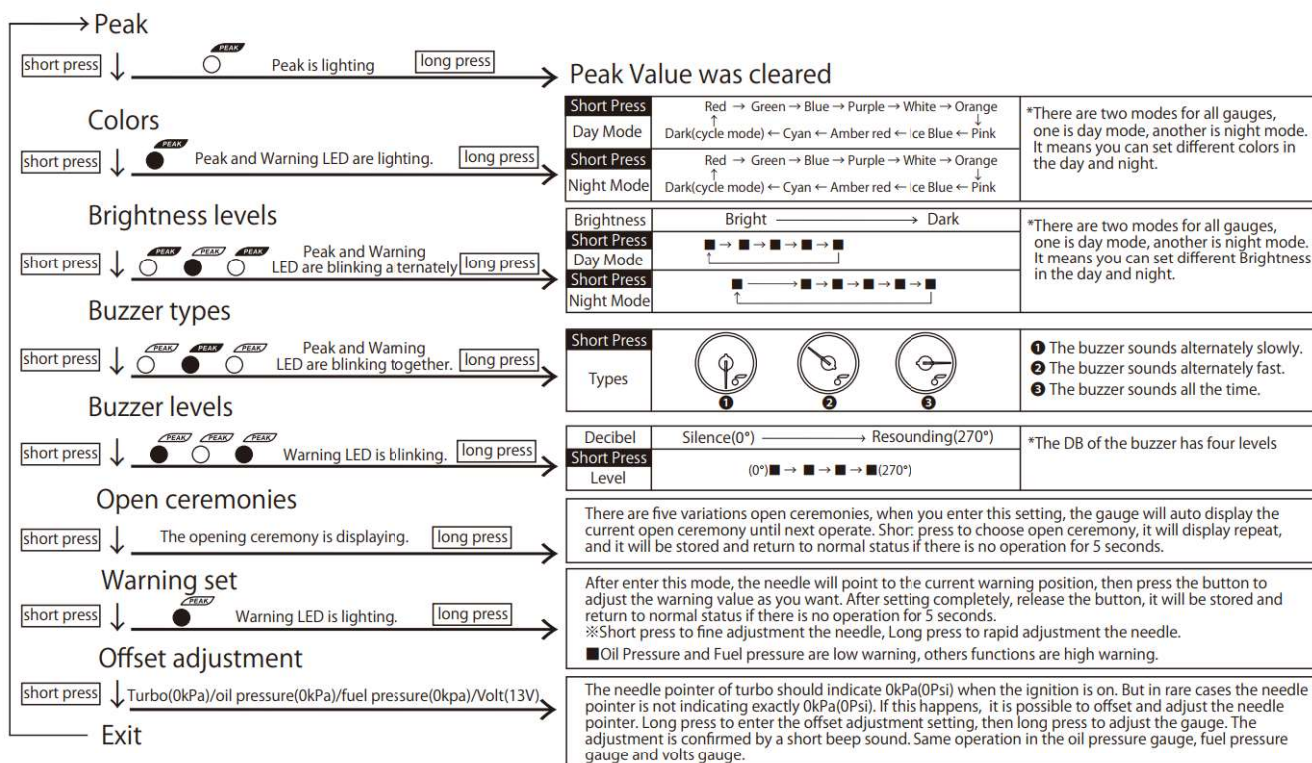


- 2 Connect the red wire to speed signal wire from ECU or speedo sensor output wire in the gearbox.
- 3 Connect the red wire to the output signal wire of the Air/Fuel ratio controller or ECU.
- 4 Connect the red wire to the fuel level sensor or ECU output signal.

## Operation

### Common Button Operation

- 1 There is a Button in the backside of the gauge, it is used to review and clear peak value, change the colors, adjust the brightness, choose the buzzer, set the warning and etc.
- 2 Short press to switch between different functions settings, long press until buzzer sounds, then enter the setting mode. It will return to normal status when the button is released after 5seconds.



## Individual Button Operation

### ❶ Cylinder setting of the tachometer.

Long press to enter the Cylinder setting when the gauge is in the real mode. The needle pointer will point to the number of Current cylinder number, the default is 4 cylinders, short press to choose the cylinder number to suit for your vehicle. Release the button for 5 seconds, the setting will take effect.

### ❷ Input signals of the Air/Fuel Ratio gauge.

There are two different input signals of the Air/Fuel Ratio gauge, they are narrowband(0-1v) and wideband(0-5), long press to enter the setting mode, the needle will point to LEAN area, short press to switch to the RICH area, release the button for 5 seconds, the setting will take effect.

### ❸ Speed pulse setting.

Different vehicles have different output speed pulses, please set the right pulse after installation. Long press the button, the needle pointer will point to 2 ↔ 4 ↔ 8 ↔ 16 ↔ 28(free), default set is 4pulses, short press the button to choose the proper pulse number. if your vehicle is not 2, 4, 8, or 16 pulse, please choose 28(free), when the needle point to 28(free), long press until the needle start to move between 0-28, press the button when the built-in speedometer indicates 60km/h(40MPH). The buzzer will sounds twice if successful, otherwise, it only sounds one time. Please ask people to assist you, Do not operate by yourself.

### ❹ Boost response rate adjustment.

This gauge use the Brushless stepper motor, the response is as fast as mechanical boost gauge, so when too much pressure being forced inside the gauge, the needle pointer may be rattle/shaky, there are three ways to solve this problem:

1. Insert a restrictor inside the nylon tube.
2. Find another vacuum/turbo source.
3. slow down the response rate, long press the button when the gauge is in the real mode, then short press to adjust the needle pointer, the response rate is slow down from 6 clock to 3 clock.(6 clock is fastest, 3 clock is slowest.)

### ❺ Fuel level sensor type setting.

Different vehicles have different fuel level sensor value, please set the right sensor value after installation. Long press the button, the needle pointer will enter the value setting mode:

The needle pointer will point a little than E degree(6 clock), the sensor value equals: 3-100,

