

# INSTRUCTIONS



Thank you for purchasing Koso's HD-05 meter for Harley-Davidson®. This product is a multifunction meter that has a digital liquid crystal display (LCD) with a backlight design, and is easy to install. Before using, please read the instructions carefully and retain them for future reference.

- •To avoid a short circuit from occuring,do not pull or modify the wires during installation.
- Any damages caused by faulty installation shall be imputed to the users.
- Opening and dissassembling this unit will void any warranty.
- Maintenance and repairs should be executed by our professionals only.

OSymbol description:

NOTE You could get the installation details from the information behind the mark.

Nome processes must be followed to avoid the affection caused by wrong installation.

\*Warning! Some procedures must be followed in order to avoid damages from occuring to yourself and others.

A Caution! Some procedures must be followed in order to avoid damages from occuring to the vehicle.

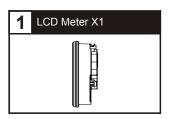






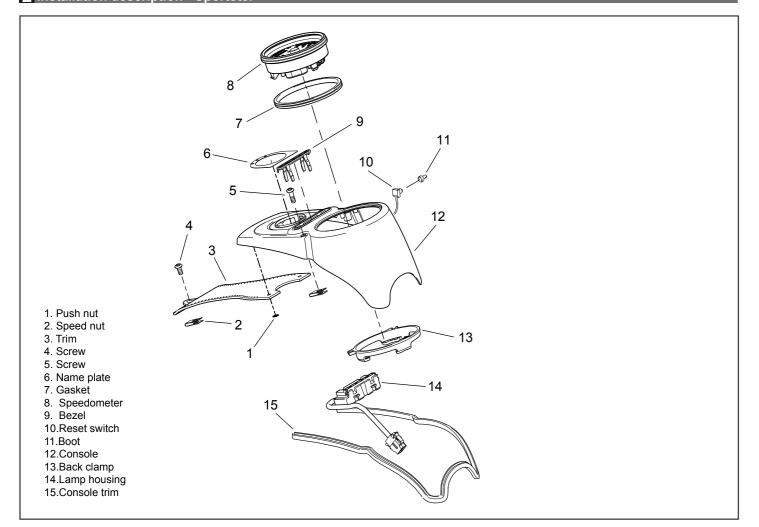


# 1 Accessories



NOTE Contact your local distributor if the items received are not the same as the items listed above.

# 2 Installation description - Sportster



#### 3-1 Overview

Tachometer

●Display Range: 0 ~ 8,000 RPM

Indicator

●RPM shift light ●

Low fuel warning light

•Engine check light

Battery discharge light

 Security light Cruise light <a>™</a> <a>™</a>

Gear meter

•Display range : off, highest gear, N and highest

●ABS light (⊚)

gear, show all (N / 1 ~ 6)

Fuel meter

Display Range: 6 Levels

Odometer

•Display range : 0 ~ 999,999 km (mile) return to zero upon exceed

Display unit: 1 km (mile)

Distance meter A,B

●Display range: 0 ~ 9,999.9 km (mile) returns to zero upon exceed

•Display unit : 0.1km (mile)

Speedometer

Display range: 0 ~ 360 km/h (0 ~ 225 MPH)
Display unit: 1 km/h (MPH)

Mileage maintenance user settings (closable) •Display range : user adjustable (500 ~ 16,000km / 300 ~ 10,000 mile) ~ -999 km (mile), automatic decrease according to the increase of total mileage.

Display unit : 1 km (mile)

Remaining mileage

•Display range: 0 ~ 9,999 km (mile), when mileage is lower than 16 km (10 mile) will display LO RNG

Average fuel consumption

Display range: L/100km, km/L, MPG (US-spec.), MPG (UK-spec.)

•Display range: 12 / 24 hour format

Engine temperature

•Setting range : -40 ~ 215°C (-40 ~ 419 °F)

Voltmeter

●Display range: 8~18V

# 3-2 Features and settings description

•Speedometer	Display range : 0 ~360 km/h (0 ~ 225 MPH) switchable	oAverage fuel consumption	Display range : OFF \ L/100km \ km/L \ MPG (US spec.) \ MPG (UK spec)
	Display unit: 1 km/h (MPH)	●Clock	Setting range : 12 / 24 hour format
oDisplay interval	<0.5 second	<ul><li>Voltmeter</li></ul>	Display range : 8 ~ 18 V
oInternal and external	Display range: 0 ~ 999,999 km (mile)	<ul> <li>Backlight brightness</li> </ul>	Setting range: 1/5 (darkest) ~ 5/5 (brightest)
odometer	return to zero upon exceed	∘Backlight color	Setting range : red, orange, yellow, green,
	Display unit: 1 km (mile)		blue, indigo, purple, white
∘Trip meter A,B	Display range: 0 ~ 9,999.9 km (mile)	Mileage maintenance	Setting range : Off. 500 ~ 16,000 km
	returns to zero upon exceed		(300 ~ 10,000 mile)
	Display unit: 0.1 km (mile)		Setting unit: 100 km (mile)
oTire circumference	Setting range : 50 ~ 210 %	<ul> <li>Operating voltage</li> </ul>	DC 12 V
	Setting unit: 1 %	<ul> <li>Temperature range</li> </ul>	-10 ~ +60 °C
<ul> <li>Gear meter</li> </ul>	Display range : off, highest gear, N and highest	<ul> <li>Specifications</li> </ul>	JIS D 0203 (S2)
	gear, show all (N / 1 ~ 6)	<ul><li>Meter size</li></ul>	D117 X 45 mm
<ul><li>Tachometer</li></ul>	Display Range : 0 ~ 8,000 RPM	<ul><li>Meter weight</li></ul>	208.5 grams
∘RPM shift light	Setting range : 2,000 ~ 8,000 RPM	<ul><li>Indication light</li></ul>	RPM shift light (Red light)
	Warning lights on when exceed setting value		Low fuel warning light (Amber light) 🔒
	(including).		Engine check light (Amber light) 🧠
	Setting unit: 100 RPM		Battery discharge light (Red light)
oMax. RPM warning mode	Setting range : F-OFF (Lit.), F-ON (blink)		Security light (Red light)
<ul> <li>Engine temperature</li> </ul>	Setting range : -40 ~ 215 °C (-40 ~ 419 °F)		Cruise light (Amber / Green light) (5)
•Fuel meter	Display range : off, Dyna, Dyna-04, Dyna-09		ABS light (Amber light) (iii)
∘Fuel tank volume	Setting range : OFF/ 1.0 ~ 9.9 US gallons		

NOTE Design and specification may change without further notice.

### 3-3 Vehicle supporting features

\/abiala tura	Feature			
Vehicle type	Gear	Fuel Level	Remaining mileage	
Dyna <sup>®</sup>				
2004 ~ 2007	-	YES (1)	-	
2008	YES (1)	YES (1)	-	
2009 ~ 2011	YES (1)	YES (1)	YES (3)	
Softail® (Except FLSTSE)				
2004 ~ 2007	-	YES (1)(2)	-	
2008 ~ 2010	YES (1)	YES (1)(2)	YES (3)	

2.[Fuel Type] Please set as CUSt (user define), and follow the procedure to learn the fuel position for 0% (E), 33%, 66%, and 100% (F).

3. Please set the vehicle fuel tank volume in the [fuel volume settings].

#### 3-4 Main menu functions



- •In the total millsge screen, press the button once to switch to Trip A screen.
- •When the engine switch is OFF, hold the **button** for 3 seconds to enter into the setting screen.





- •Trip A screen, press the **button once** to switch to Trip B screen.
- Hold the button for 3 seconds to clear the Trip A recordings





- •Trip B screen, press the **button once** to switch to the mileage maintenance screen.
- •Hold the **button for 3 seconds** to clear the Trip B recordings

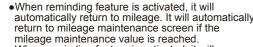


NOTE Display can be switch off (refer to setting 4-8-1)



- •In the mileage maintenance screen, press the button once to switch to the remaining mileage
- Mileage maintenance will count down from setting value, when it reaches 0, the screen will blink to indicate mileage reached.





•When reminding feature is activated, it will automatically switch to mileage maintenance screen during startup if remaining mileage value



•Hold the button for 3 seconds to switch to inform function switch.



NOTE It will not display if it's not supported in engine computer.

•Hold the button for 3 seconds to clear the millsge maintenance recordings



oIn the 0 second, start holding the



In the 3rd second, the inform feature will blink once.



In the 5th second, inform feature will switch back, mileage display will begin blinking.



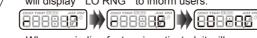
oDuring the 6~9th seconds, if release button, will cancel the

On the 10th second, the mileage maintenance record is cleared.

NOTE Display can be switch of (refer to setting 4-9)



- •In the remaining mileage screen, press the button once to switch to the average fuel consumption
- •Remaining mileage is lower than 16 km (10 mile), will display " LO RNG " to inform users.



•When reminding feature is activated, it will automatically return to the remaining mileage screen, if remaining mileage is too low. •When reminding feature is activated, it will

automatically switch to the remaining mileage screen during startup, if remaining mileage is too



•Hold the button for 3 seconds to switch to inform feature switch.



NOTE It will not display if it's not supported in engine computer.

- •The following situation will result displaying "r----" or no display at all.
- Abnormal fuel sensor (short / open circuit)

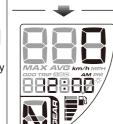
•Fuel related settings will affect this value's precision. NOTE Display can be switch off (refer to setting 4-7-3)



•In the average fuel consumption screen, press the button once to switch to the clock screen.

NOTE It will not display if it's incompatible in engine computer.

NOTE Display can be switch off (refer to setting 4-7-4)



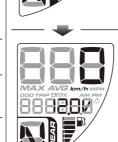
•In the clock screen, press the **button once** to switch to the engine temperature screen.

NOTE Display can be switch off (refer to setting 4-1)



•In the engine temperature screen, press the button once to switch to the voltage screen.

NOTE Display can be switch off (refer to setting 4-8-2)



•In the voltage screen, press the **button once** to return to total mileage screen.

NOTE Display can be switch off (refer to setting 4-8-3)

# 4 Settings and features index screen



•When the engine switch is OFF, hold the button for 3 seconds to enter settings

value

• realures index screen	
- a 1.Time(time format, time adjustment) - refer to procedure	4-1
<ul> <li>a 2.Unit(speed unit, temperature unit)- refer to procedure</li> </ul>	4-2
<ul> <li>a 3.Back light(back light color, brightness)- refer to procedure</li> </ul>	4-3
- a 4.Tire(tire ratio percentage)- refer to procedure	4-4
- a 5.Gear(gear indicating mode)- refer to procedure	4-5
- a 6.Warning light(overspeed warning)-refer to procedure	4-6
- a 7.Fuel - refer to procedure	4-7
- 1.Fuel sensor type	4-7-1
2.Fuel test display	4-7-2
3.Fuel tank volume	4-7-3
L .4.Fuel consumption display	4-7-4
- a 8.Feature display- refer to procedure	4-8
- 1.Mileage B display switch	4-8-1
2.Engine temperature display switch	4-8-2
L.3.Voltage display switch	4-8-3
- a 9.Mileage maintenance - refer to procedure	4-9
- a10.Total mileage-refer to procedure	4-10
1.Unable to adjust internal mileage	4-10-1
L.2.Able to adjust external mileage	4-10-2
LExit settings	

# 4-1 Clock settings



•In the clock settings screen, hold the button for 3 seconds to enter into the setting screen.



- Example : Set time clock setting from 1:00 to 1:05.
- •Hold the button for 3 seconds to return to the clock settings main screen.



- Clock settings main screen.
- Press the **button once** to enter next setting.



•Example : Set time settings from 12 hours format to 24 hours format.

•EX: If want to set time to 24 hours format.

NOTE Setting range: 12 / 24 hours format.

Now the setting value will blink.

Press the button once to select desired setting

•Hold the **button for 3 seconds** to enter time into the (hour) setting screen.



## 4-2 Speed, temperature unit settings



•In the speed, temperature unit settings main screen, hold the button for 3 seconds to enter into the main screen.



- •EX: To set the temperature unit to °F.
- •Press the **button once** to select the desired value.

Now the setting value will blink.

NOTE Settings range :

°C(Celsius) and °F(Fahrenheit)



- •EX: To set speed unit to MPH(mile).
- Press the button once to select the desired value.

Now the setting value will blink.

NOTE Settings range: km/h, km and MPH, mile.

NOTE Total mileage and distance meter unit will vary according to the speed unit.



- •Example : Set temperature unit from °C(Celsius) and °F(Fahrenheit)
- •Hold the button for 3 seconds to return to the speed, temperature unit settings main screen.



- •Example: Set speed unit from km/h, km to MPH mile.
- •Hold the button for 3 seconds to enter into the temperature unit settings screen.



- •In the temperature unit settings main screen.
- Press the button once to enter next setting.





In the backlight (color / brightness) settings main screen, hold the button for 3 seconds to enter into the settings screen



- •EX: To set the backlight (brightness) to 5/5 (100%). • Press the button once to select the desired value.
- Now the setting value will blink.

NOTE Settings range

1/5 (darkest) ~ 5/5 (brightest).

Settings unit

Each stage about 20% brightness. Back light brightness changes as soon as setting value changes.

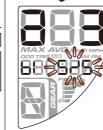


•EX: To set the backlight (color) to blue.

• Press the button once to select the desired value.

Yellow (YE), Green (Gr), Blue (bl), Indigo (ln), Purple (Pu), White (W).

Now the setting value will blink. NOTE Settings range: Red (rE), Orange light (Or),



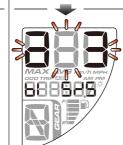
•Example: Set the backlight (brightness) from 3/5 (60%) to 5/5 (100%).

•Hold the button for 3 seconds to return to the backlight (Color / Brightness) settings main screen.



•EX: Changing backlight color from white (w) to blue(bl).

•Hold the button for 3 seconds to enter into the backlight (brightness) settings screen.

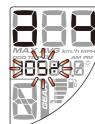


- ·Backlight (color / brightness) settings main screen.
- Press the button once to enter next setting.

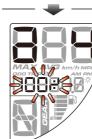




•In the tire circumference setting, hold the button for 3 seconds to enter into the setting screen.



- •Example: Set tire percentage from 100% to
- Hold the button for 3 seconds to return to the tire circumference main screen.



 Hold the button for 3 seconds to move the cursor to the desired settings level.



value.



NOTE Setting range: 50 ~ 210%.



- •Tire percentage settings main screen
- •Press the button once to enter next setting.

#### 4-5 Gear display settings



•In the gear settings screen, hold the button for 3 seconds to enter into the setting screen.



- •Example : Set gear from On (show all N / 1 ~6) to n-tG (N and highest gear).
- Hold the button for 3 seconds to return to the gear settings main screen.



- •EX: To set gear as n-tG (N and highest gear).
- Press the button once to select the desired value. Now the setting value will blink.

NOTE Settings range : On (show all N / 1 ~6), OFF tG (highest gear), n-tG (N and highest gear).

NOTE •Highest gear is learned duringtraveling. •To relearn the gear level, detach the meter's main power for 30 seconds then reconnect it again.



- •In the gear settings main screen.
- Press the button once to enter next setting.

### **4-6** The RPM shift light warning settings



•In the RPM shift light warning settings main screen, hold the button for 3 seconds to enter into the main screen.



- •EX: To set the Max. RPM warning mode to F-ON (blink).
- Press the button once to select the desired value. Now the setting value will blink.
- NOTE Settings range : F-OFF (Lid.), F-ON (blink).

 Hold the button for 3 seconds to move the cursor to the desired settings level. 8688

Now the setting value will blink.

Hold the button to select desired value.



NOTE Setting range: 2,000 ~ 8,000



- •Example: Set RPM shift light warning from 5,500 r to 5,700 r.
- Hold the button for 3 seconds to enter into the Max. RPM warning mode screen.



- Example : Set Max. RPM warning mode from F-OFF (Lit) to F-ON (blink).
- Hold the button for 3 seconds to return to the overspeed warning settings screen.



- Overspeed settings main screen.
- Press the button once to enter next setting.





•In the fuel settings main screen, hold the button for 3 seconds to enter into the sub settings



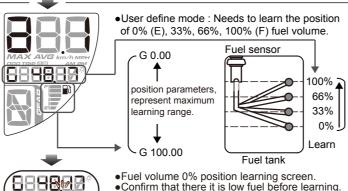
•In the fuel type screen, hold the button for 3 seconds settings screen.



- •EX: To set the fuel type to CUSt (user define).
- Press the button once to select the desired value. Now the setting value will blink.

NOTE Settings range

- 1.OFF (Fuel display,off)
- 2.dYNA-04 (Dyna 04) 3.dYNA-09 (Dyna 09)
- 4.CUSt (User define)
- - •Example : Set fuel type from OFF (off) to CUSt (user define).
  - •Hold the button for 3 seconds to enter into the user define mode.



- - Confirm that there it is low fuel before learning. Allow the vehicle to be still for 10 ~ 15 seconds
  - in order to steady the liquid surface. Press the button once to learn the current fuel
  - Hold the button for 3 seconds to enter into the
  - next fuel volume position learning screen.
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- •Fuel volume 33% position learning screen
- Confirm that there is 1/3 fuel volume in fuel tank before learning.
- Allow the vehicle to be still for 10 ~ 15 seconds in order to steady the liquid surface.
- Press the button once to learn current fuel position.
- Hold the button for 3 seconds to enter into the next fuel volume position learning screen.
- •Fuel volume 66% position learning screen. Confirm that there is 1/3 fuel volume in fuel tank before learning.
- Allow the vehicle to be still for 10 ~ 15 seconds in order to steady the liquid surface.
- Press the button once to learn current fuel position.
- Hold the button for 3 seconds to enter into the next fuel volume position learning screen.
- •Fuel volume 100% position learning screen. Confirm that there is 1/3 fuel volume in fuel tank before learning.
- •Allow the vehicle to be still for 10 ~ 15 seconds in order to steady the liquid surface.
- •Press the button once to learn current fuel
- Hold the button for 3 seconds to enter into the next fuel volume position learning screen.



- •Learning conformation screen.
- •Hold the **button once** to save the current learning results, then automatically return to fuel type settings screen.



•If an error occurs in the learning process, it will display "error" when saving. Then abandon this learning and return to fuel type screen.

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•Hold the button for 3 seconds to renounce current learning result and return to the sub settings screen.



•In the Fuel type settings screen.

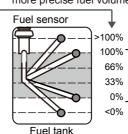
•Press the button once to enter the next setting.

NOTE Setting range

- •When set to OFF, will return to fuel type settings screen.
- When set to other settings, will enter next setting option.



- •Fuel position indicator.
- •This screen will display the current liquid surface position, if it exceeds the range it is recommended to reset the fuel volume parameters to acquire more precise fuel volume and range information.



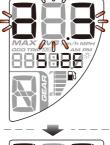
Exceeded settings range (learned) 100% position. Between settings range (learned).

Below settings range (learned) 0% position

• Press the button to enter fuel volume settings.



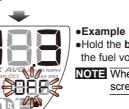
In fuel tank volume settings screen, hold the button for 3 seconds to enter into the settings



- EX: To set fuel volume as ON. •Hold button once to select desired setting value.

Now the setting value will blink.

NOTE Setting range: ON, OFF



Example : Set fuel volume from OFF to ON. •Hold the button for 3 seconds to return to enter the fuel volume settings screen.

NOTE When set to OFF, will return to sub setting screen



Hold the button for 3 seconds to move the cursor to the desired settings level



Now the setting value will blink

Hold button once to select desired setting value



NOTE Setting range: 1.0 ~ 9.9 US gallons

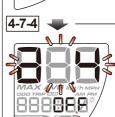
NOTE Volume calculation method checks for the total volume of the fuel tank and low fuel indicating volume in the user manual of vehicle, then substitutes it into the equation below: total vol. - (low fuel vol. / 2) = setting value Then enter the result into the setting value.



- Example : Set fuel volume value from 4.5 to 4.8
- •Hold the button for 3 seconds to return to fuel volume settings screen.



•Fuel volume settings main screen. • Press the button once to enter next setting.



- •To enter sub-settings screen, hold the button for 3 seconds to enter fuel consumption settings screen
- - EX: To set fuel consumption unit as MPG (US). •Hold button once to select desired setting value.

Now the setting value will blink.

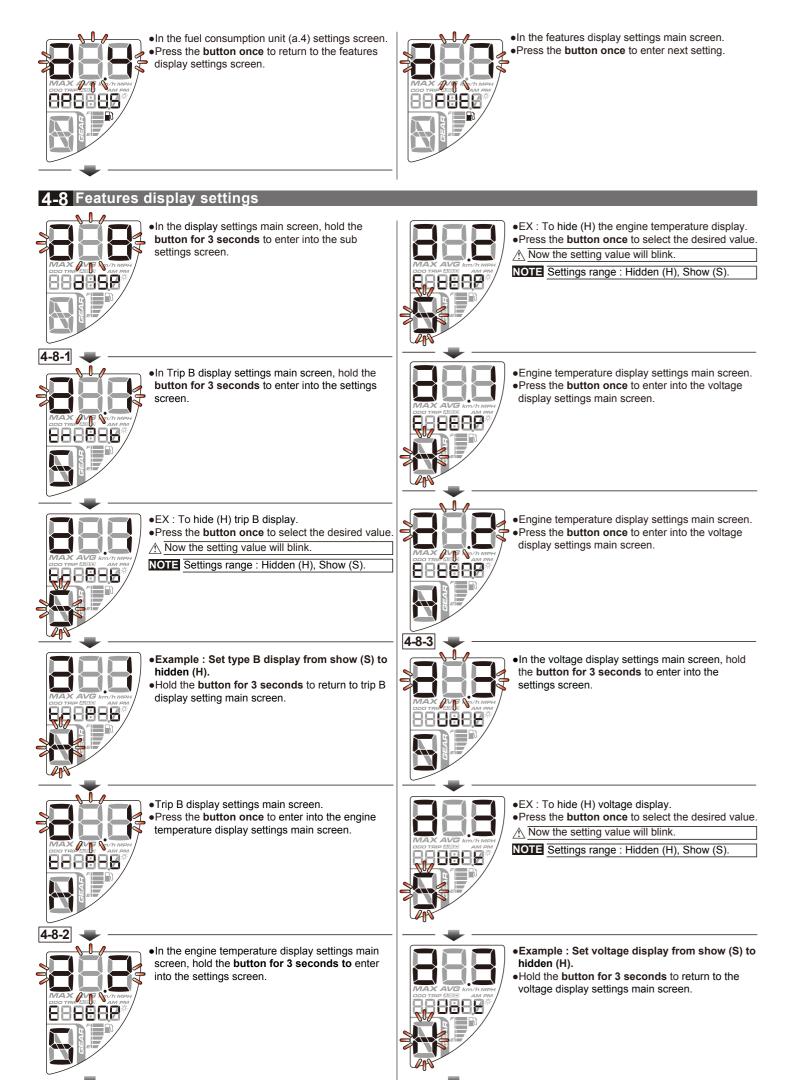
NOTE Setting range:

OFF, L/100 km, km/L, MPG (US), MPG (UK).



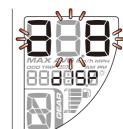
- Example : Set fuel consumption unit from OFF to MPG (US).
- Hold the button for 3 seconds to return to the fuel consumption unit (a.4) settings screen.







- •Voltage display settings main screen.
- •Press the **button once** to enter into the feature display settings main screen.



- •In the features display settings main screen.
- Press the button once to enter next setting.

#### 4-9 Total internal and external mileage settings



•In the total mileage settings main screen, hold the button for 3 seconds to enter into the sub settings screen.



- •EX: To set mileage maintenance to (ON).
- •Press the **button once** to select the desired settings value.

Now the setting value will blink.

NOTE Display range: ON, OFF



- •Example : Set mileage maintenance from OFF to ON.
- •Hold the button for 3 seconds to enter into the mileage maintenance main screen.

NOTE When is set to OFF, will directly return to mileage maintenance main screen



 Hold the button for 3 seconds to move the cursor to the desired settings level.



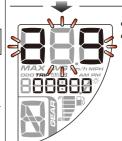
 Hold button once to select desired setting value 888 

100 **NOTE** Setting range

500 ~ 16,000 km (300 ~ 10,000 mile)

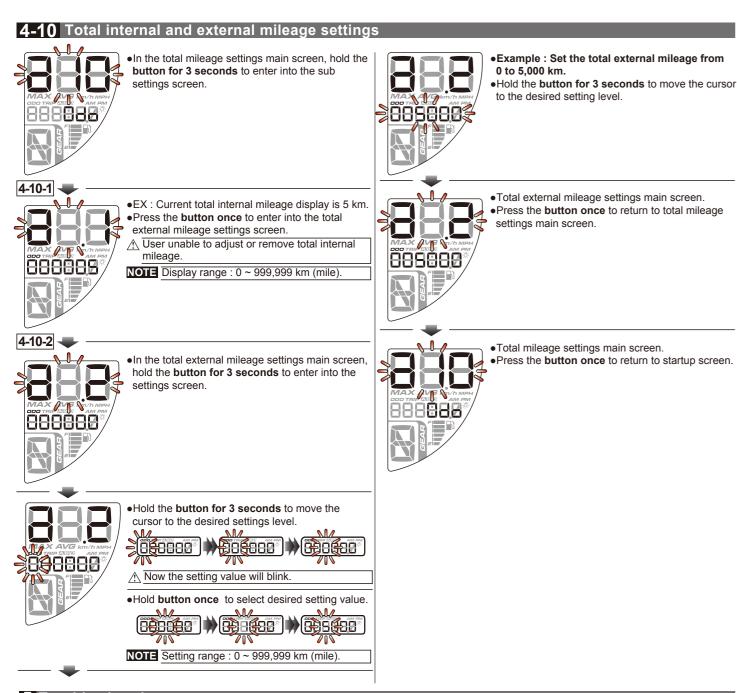


- Example : Set the mileage maintenance from 500 to 800.
- Hold the button for 3 seconds to return to mileage maintenance main screen



- •Mileage maintenance settings main screen.
- •Press the **button once** to enter into the next settings screen.





## 5 Trouble shooting

The following situation does not indicate malfunction of the meter. Please check the following points, before taking it in for repairs.

Trouble	Check item
The meter doesn't work	The power doesn't supply to the meter.
when the power is on.	→Please make sure the wiring is connected. The wiring and fuse are not broken.
	→The battery is broken or the battery is too old to supply enough power <b>DC 12V to</b> make the meter work.

\* If the problems persist after viewing the steps above, please contact your local distributor.