



•Thank you for purchasing KOSO's HD-04 meter. This product is a multifunction meter that has a digital liquid crystal display (LCD) with a back light design, and is easy to install. Before using, please read the instructions carefully and retain them for future reference.

Notice

- To avoid a short circuit from occurring 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.

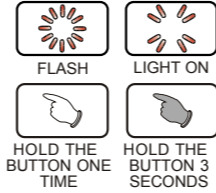
◎Symbol description:

NOTE

△ Some procedures must be followed in order to avoid faulty installation

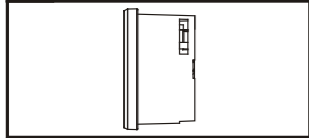
△ **Warning!** Some procedures must be followed in order to avoid damages from occurring to yourself and others.

△ **Caution!** Some procedures must be followed in order to avoid damages from occurring to the vehicle.



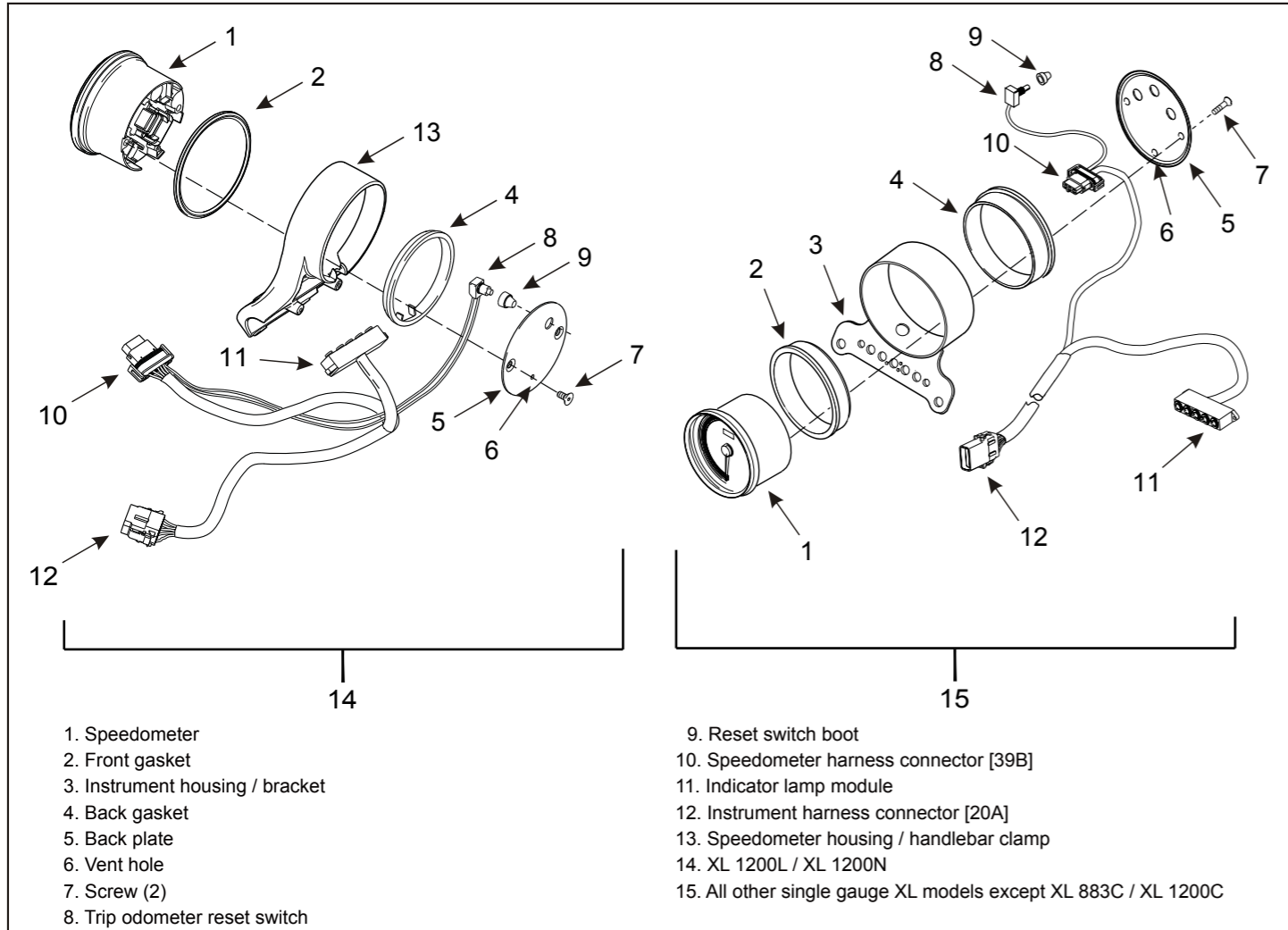
1 Accessories

1 LCD Meter X1



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

2 Installation Diagram



- Speedometer
- Front gasket
- Instrument housing / bracket
- Back gasket
- Back plate
- Vent hole
- Screw (2)
- Trip odometer reset switch
- Reset switch boot
- Speedometer harness connector [39B]
- Indicator lamp module
- Instrument harness connector [20A]
- Speedometer housing / handlebar clamp
- XL 1200L / XL 1200N
- All other single gauge XL models except XL 883C / XL 1200C

NOTE Speedometer Components: XL Single Gauge Models Except XL 883C/XL 1200C

NOTE For installation on "Dyna" or "Softail", follow the procedure according to your Harley-Davidson Service Manual.

3-1 Overview

Tachometer
•Display Range : 0 ~ 8,000 RPM

Indicator
•RPM shift light
•low fuel warning light
•Engine warning light
•low voltage warning light
•security light
•Constant speed light
•ABS light

Gear meter
•Display range : off, highest gear, N and highest 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 : 1km (mile)

Speedometer
•Display range : 0 ~ 360 km (0 ~ 255 mile)
•Display unit : 1 km (mile)

Millage maintenance user settings (closable)
•Display range : user adjustable (500 ~ 16,000km / 300 ~ 10,000 mile) ~ -999 mile, automatic decrease according to the increase of total millage.
•Display unit : 1 km (mile)

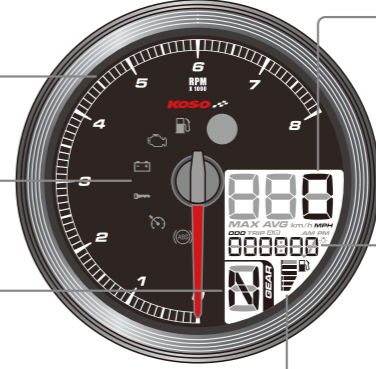
Remaining millage
•Display range : 0 ~ 9,999 km (mile), when millage is lower than 16 km (10 mile) will display LO RNG

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

Time
•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 (0 ~ 255 mile) switchable Display unit : 1 km (mile)	○Average fuel consumption	Display range : OFF \ L/100km \ km/L \ MPG (US spec.) \ MPG (UK spec)
○Display interval	<0.5 second	•Clock	Setting range : 12 / 24 hour format
○Internal and external odometer	Display range : 0 ~ 999,999 km (mile) return to zero upon exceed Display unit : 1 km (mile)	•Voltmeter	Display range : 8 ~ 18 V
○Trip meter A,B	Display range : 0 ~ 9,999.9 km (mile) returns to zero upon exceed Display unit : 0.1 km (mile)	•Backlight brightness	Setting range : 1 / 5 (darkest) ~ 5 / 5 (brightest)
○Tire circumference	Setting range : 50 ~ 210 % Setting unit : 1 %	○Backlight color	Setting range : red, orange, yellow, green, blue, light blue, purple, white
•Gear meter	Display range : off, highest gear, N and highest gear, show all (N / 1 ~ 6)	•Millage maintenance	Setting range : Off. 500 ~ 16,000 km (300 ~ 10,000 mile) Setting unit : 100 km (mile)
•Tachometer	Display Range : 0 ~ 8,000 RPM	•Operating voltage	DC 12 V
○RPM shift light	Setting range : 2,000 ~ 8,000 RPM Warning lights on when exceed setting value (including). Setting unit : 100 RPM	•Temperature range	-10 ~ +60 °C
○Max. RPM warning mode	Setting range : F-OFF (Lit.), F-ON (blink)	•Specifications	JIS D 0203 (S2)
•Engine temperature	Setting range : -40 ~ 215 °C (-40 ~ 419 °F)	•Meter Size	D94.7 X 55.8 mm
•Fuel meter	Display range : off,original fuel kit (PN 6120008A), Sportster fuel switch	•Meter Weight	165 grams
○Fuel tank volume	Setting range : OFF/ 1.0 ~ 9.9 US gallons	•Indication light	RPM shift light (Red light) ● Low fuel warning light (Yellow light) ☼ Engine warning light (Yellow light) ☼ Low voltage warning light (Red light) ☼ Security light (Red light) ☼ Constant speed light (Orange / Green light) ☼ ABS light (Yellow light) ☼

NOTE Design and specification may change without further notice.

3-3 Application List

Vehicle type	Feature			
	Gear	Low fuel level warning	Fuel Level	Remaining millage
Sportster				
2004 ~ 2006	-	-	-	-
2007	-	YES (2)	YES (1) (3)	YES (1) (3) (5)
2008 ~ 2013	YES (1)	YES	YES (1) (3)	YES (1) (3) (5)
Dyna				
2004 ~ 2007	-	YES	YES (1) (4)	-
2008	YES (1)	YES	YES (1) (4)	-
2009 ~ 2011	YES (1)	YES	YES (1) (4)	YES (5)
Softail				
2008 ~ 2010	YES (1)	YES	YES (1) (4)	YES (5)

Note:

- New feature
- Fuel Sender Resistor kit needs to be new version(PN 72545-08)
- Need to install fuel sensor kit(PN 61200008A)
- [Fuel Type] Please set as CUS (user define), and follow the procedure to learn the fuel position for 0% (E), 33%, 66%, and 100% (F).
- Set the vehicle fuel tank volume in the [fuel volume settings].

3-4 Fuel feature notes

- To enable fuel level and fuel range functionality, Sportster models require separate purchase of Fuel Sensor kit (PN 6120008A). If fuel sensor kit is not installed, 2007 Sportster models require separate purchase of Fuel Sender Resistor kit (PN 72545-08.)
- The Sportster Fuel Sensor kit (PN 61200008A) is not compatible wit Sportster Fuel Gauge kits (PN 75031-09 PN 75338-9). The motorcycle cannot support multiple electrical fuel gauges. If Fuel Gauge kit (PN 75031-09 or PN 75338-09) is equipped, it must be disabled or the Fuel Sensor kit (PN 61200008A) cannot be installed and the fuel function of this meter kit will not function.

3-5 Main menu functions



- In the total millage 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 settings 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 millage maintenance screen.
- Hold the **button for 3 seconds** to clear the Trip B recordings.



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



- In the millage maintenance screen, Press the **button once** to switch to the remaining millage screen.

- Millage maintenance will count down from setting value, when it reaches 0, the screen will blink to indicate millage reached.



- When reminding feature is activated, it will automatic return to millage maintenance screen if the millage maintenance value is reached.
- When reminding feature is activated, it will automatically switch to millage maintenance screen during startup if remaining millage value is reached.

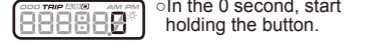


- Hold the **button for 3 seconds** to switch to inform function switch.



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

- Hold the **button for 10 seconds** to clear the millage maintenance recordings.



- In the 0 second, start holding the button.
- In the 3rd second, the inform feature will blink once.



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

- During the 6~9th seconds, if release button, will cancel the process

- On the 10th second, the millage maintenance record is cleared.

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



- In the remaining millage screen, Press the **button once** to switch to the average fuel consumption screen.

- Remaining millage is lower than 16 km (10mile), will display "LO RNG" to inform users.



- When reminding feature is activated, it will automatic return to the remaining millage screen, if remaining millage is too low.

- When reminding feature is activated, it will automatic switch to the remaining millage screen during startup, if remaining millage is too low.



- Hold the **button for 3 seconds** to switch to inform feature switch

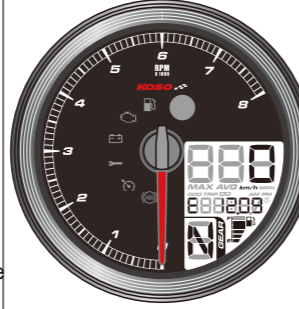


NOTE It will not display if it's not supported in engine computer.

- The following situation will result displaying "r----" or no display at all.
 - Abnormal fuel sensor (short / open circuit)
 - Engine computer does not support this feature

- Fuel related settings will affect this value's precision

NOTE Display can be switched 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 switched off (refer to settings 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 settings 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 settings 4-8-2)



- In the voltage screen, press the **button once** to return to total millage screen.

NOTE Display can be switch off (please 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.



•Features index screen

a 1.Time(time format, time adjustment) - refer to procedure	-- 4-1
a 2.Unit(speed unit, temperature unit)- refer to procedure	--- 4-2
a 3.Back light(back light color, brightness)- refer to procedure	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
4.Fuel consumption display	----- 4-7-4
a 8.Feature display- refer to procedure	----- 4-8
1.Millage B display switch	----- 4-8-1
2.Engine temperature display switch	----- 4-8-2
3.Voltage display switch	----- 4-8-3
a 9.Millage maintenance - refer to procedure	----- 4-9
a10.Total millage-refer to procedure	----- 4-10
1.Unable to adjust internal millage	----- 4-10-1
2.Able to adjust external millage	----- 4-10-2
Exit settings	

4-1 Clock settings



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



- EX : If want to set time to 24 hours format.
- Press the **button once** to select desired setting value.

Now the setting value will blink.

NOTE Setting range : 12/24 hours format.



- Example : Set time settings from 12 hours format to 24 hours format.
- Hold the **button for 3 seconds** to enter time into the (hour) settings screen.



- Example : Set clock settings 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.

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 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 millage and distance meter unit will vary according to the speed unit.



- **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.



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

⚠ Now the setting value will blink.

NOTE Setting range : °C (Celsius) and °F (Fahrenheit).



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



- In the temperature unit settings main screen.
- Press the **button** once to enter into the next settings screen.

4-3 Backlight brightness settings



- 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 (color) to blue
- Press the **button** once to select the desired value.

⚠ Now the setting value will blink.

NOTE Settings range : Red (rE), Orange light (Or), Yellow (YE), Green (Gr), Blue (bl), Blue light (ln), Purple (Pu), White (W).



- EX : changing backlight color from white(w) to blue(bl).
- Hold the **button** for 3 seconds to enter into the backlight (brightness) 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)
Setting unit : Each stage about 20% brightness.
Back light brightness changes as soon as setting value changes.



- **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.

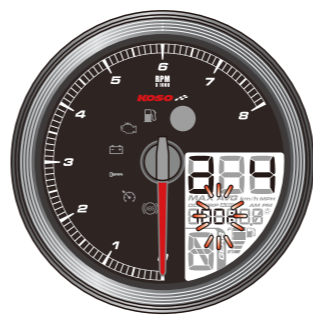


- Backlight (color/brightness) settings main screen.
- Hold the **button** once to enter into the next settings screen.

4-4 The tire circumference settings



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



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

⚠ Now the setting value will blink.

- Hold the **button** for 3 seconds to select the desired value.

NOTE Setting range : 50 ~ 210%.



- **Example : Set Set tire percentage from 100 % to 150 %.**
- Hold the **button** for 3 seconds to return to the tire circumference main screen.



- Tire percentage settings main screen.
- Hold the **button** once to enter into the next setting screen.

4-5 Gear display settings



- In the gear settings screen, hold the **button** for 3 seconds to enter into the settings screen.



- EX : To set gear as n-tG (N and highest gear).
- Press **button** once to select desired setting value.

⚠ Now the setting value will blink.

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

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



- **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.



- In the Gear settings main screen.
- Press the **button** once to enter into the next settings screen.



- 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 into the next settings screen.



- 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).
- Press the **button** once to select the desired settings value.
- ⚠ Now the setting value will blink.
- NOTE** Settings range : OFF, L/100 km, km/L, MPG (US), MPG (UK).

4-8 Features display settings



- In the display settings main screen, hold the **button** for 3 seconds to enter into the sub settings screen.

4-8-1



- Example : To 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.



- In the fuel consumption unit (a.4) settings screen.
- Press the **button** once to return to the features display settings screen.



- In the features display settings main screen.
- Press the **button** once to enter into the next settings screen.



- In Trip B display settings main screen, hold the **button** for 3 seconds to enter into the settings screen.



- EX : To hide (H) trip B display.
- Press the **button** once to select desired setting value.
- ⚠ Now the setting value will blink.
- NOTE** Setting range : Hidden (H) , Show (S).



- Example : Set trip B display from show (S) to hidden (H).
- Hold the **button** for 3 seconds to return to trip B display setting main screen.



- Trip B display settings main screen.
- Press the **button** once to enter into the engine temperature display settings main screen.

4-8-2



- In the engine temperature display settings main screen, hold the **button** for 3 seconds to enter into the settings screen.



- EX : To hide (H) the engine temperature display.
- Press the **button** once to select desired setting value.
- ⚠ Now the setting value will blink.
- NOTE** Setting range : Hidden (H) , Show (S).



- Engine temperature display settings main screen.
- Press the **button** once to enter into the voltage display settings main screen.



- Engine temperature display settings main screen.
- Press the **button** once to enter into the voltage display settings main screen.

4-8-3



- In the voltage display settings main screen, hold the **button** for 3 seconds to enter into the settings screen.



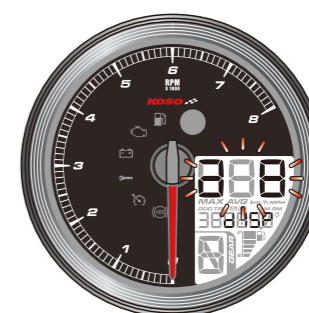
- EX : To hide (H) voltage display.
- Press the **button** once to select the desired setting value.
- ⚠ Now the setting value will blink.
- NOTE** Setting range : Hidden (H) , Show (S).



- Example : Set voltage display from show (S) to hidden (H).
- Hold the **button** for 3 seconds to return to the voltage display settings main screen.



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



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

4-9 Millage maintenance settings



- In millage maintenance settings main screen, hold the **button for 3 seconds** to enter into the settings screen.



- EX : To set millage 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 millage maintenance from OFF to ON.
 - Hold the **button for 3 seconds** to enter into the millage maintenance main screen.
- NOTE** When is set to OFF, will directly return to millage maintenance main screen.



- Hold the **button for 3 seconds** to move the cursor to the desired setting level.
- ⚠ Now the setting value will blink.



- Press the **button** to select the desired value.
- NOTE** Settings range : 500 ~ 16,000 km (300 ~ 10,000 mile)



- Example** : Set the millage maintenance from 500 to 1,500.
- Hold the **button for 3 seconds** to return to millage maintenance main screen.

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



- Example** : To set the total external millage from 0 to 5000 km.
- Hold the **button for 3 seconds** to move the cursor to the desired setting level.



- Total external millage settings main screen.
- Press the **button once** to return to total millage settings main screen.



- Total millage setting main screen.
- Press the **button once** to return to startup 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 when the power is on.	<ul style="list-style-type: none">● The power doesn't supply to the meter. →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 DC 12V to make the meter work.

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

4-10 Total internal and external millage settings



- In the total millage settings main screen, hold the **button for 3 seconds** to enter into the sub settings screen.



4-10-1

- EX : Current total internal millage display is 5 km.
 - Press the **button once** to enter into the total external millage settings screen.
- ⚠ User unable to adjust or remove total internal millage.
- NOTE** Display range : 0 ~ 999,999 km (mile).



4-10-2

- In the total external millage settings main screen, hold the **button for 3 seconds** to enter into the settings screen.



- Hold the **button for 3 seconds** to move the cursor to the desired settings level.
- ⚠ Now the setting value will blink.

- Press the **button** to select desired value.
- NOTE** Display range : 0 ~ 999,999 km (mile).