● 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.
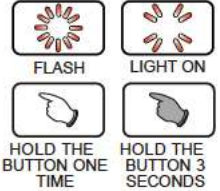
⚠ Notice

● To avoid a short circuit from 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.

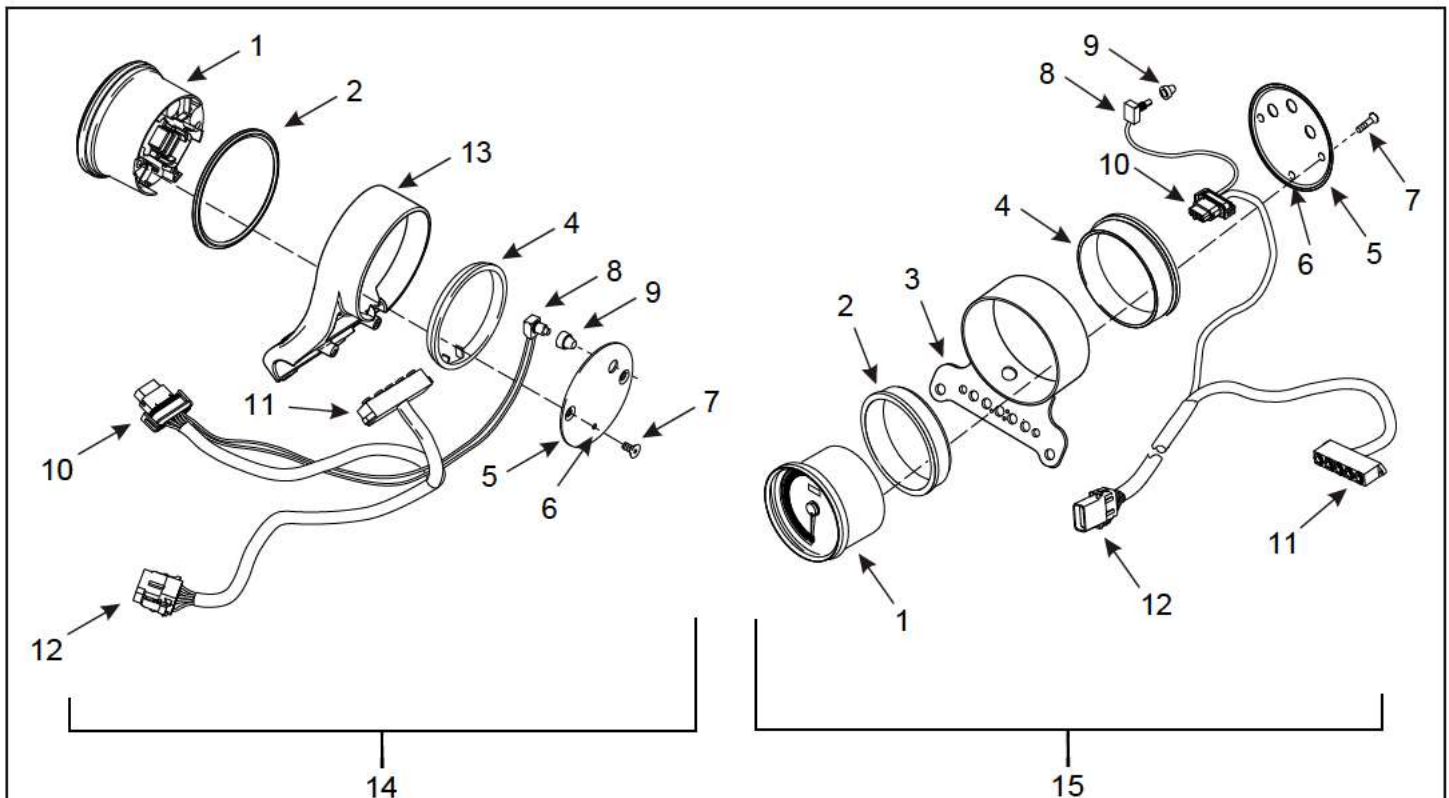◎ Symbol description:

NOTE

⚠	Some procedures must be followed in order to avoid faulty installation
⚠ **Warning!**	Some procedures must be followed in order to avoid damages from occuring to yourself and others.
⚠ **Caution!**	Some procedures must be followed in order to avoid damages from occuring to the vehicle.

FLASH   LIGHT ON

HOLD THE BUTTON ONE TIME   HOLD THE BUTTON 3 SECONDS

1 Accessories

1 LCD Meter X1

2 Installation Diagram

1. Speedometer
2. Front gasket
3. Instrument housing / bracket
4. Back gasket
5. Back plate
6. Vent hole
7. Screw (2)
8. Trip odometer reset switch
9. Reset switch boot
10. Speedometer harness connector [39B]
11. Indicator lamp module
12. Instrument harness connector [20A]
13. Speedometer housing / handlebar clamp
14. XL 1200L / XL 1200N
15. 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
		●Backlight brigntness	Setting range : 1 / 5 (darkest) ~ 5 / 5 (brightest)
○Trip meter A,B	Display range : 0 ~ 9,999.9 km (mile) returns to zero upon exceed Display unit : 0.1 km (mile)	○Backlight color	Setting range : red, orange, yellow, green, blue, light blue, purple, white
○Tire circumference	Setting range : 50 ~ 210 % Setting unit : 1 %	●Millage maintenance	Setting range : Off. 500 ~ 16,000 km (300 ~ 10,000 mile) Setting unit : 100 km (mile)
●Gear meter	Display range : off, highest gear, N and highest gear, show all (N / 1 ~ 6)	●Operating voltage	DC 12 V
●Tachometer	Display Range : 0 ~ 8,000 RPM	●Temperature range	-10 ~ +60 °C
○RPM shift light	Setting range : 2,000 ~ 8,000 RPM Warning lights on when exceed setting value (including). Setting unit : 100 RPM	●Specifications	JIS D 0203 (S2)
		●Meter Size	D94.7 X 55.8 mm
		●Meter Weight	165 grams
○Max. RPM warning mode	Setting range : F-OFF (Lit.), F-ON (blink)	●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)
●Engine temperature	Setting range : -40 ~ 215 °C (-40 ~ 419 °F)		
●Fuel meter	Display range : off, original fuel kit (PN 6120008A), Sportster fuel switch		
○Fuel tank volume	Setting range : OFF/ 1.0 ~ 9.9 US gallons		

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:
1. New feature
2. Fuel Sender Resistor kit needs to be new version(PN 72545-08)
3. Need to install fuel sensor kit(PN 61200008A)
4. [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).
5. 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 mulitiple 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.

- 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, he 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

●Features index screen

●When the engine switch is OFF, hold the **button for 3 seconds** to enter 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.

- 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 : ℃ (Celsius) and °F (Fahrenheit).

- **Example : Set temperature unit. from ℃ (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.

- 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 (In), 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.

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

- **Example**：**Set Set tire percentage from 100 % to 150 %.**
- 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.

⚠ Now the setting value will blink.

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

NOTE Setting range : 50 ~ 210%.

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

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

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

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

- EX: To set the Max. RPM warning mode to F-ON (blink).
- Press the **button once** to select desired value.
- ⚠ Now the settings 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.

- ⚠ Now the setting value will blink.
- Hold the **button** to select desired value.

- NOTE Settings range: 2,000~ 8,000

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

- **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.

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

- In the fuel settings main screen, hold the **button for 3 seconds** to enter into the sub 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. SPo SU (Sporster fuel volume switch)
    3. F-KIT (Fuel Kit PN.6120008A)
    4. CUSt (User define)

4-7-1

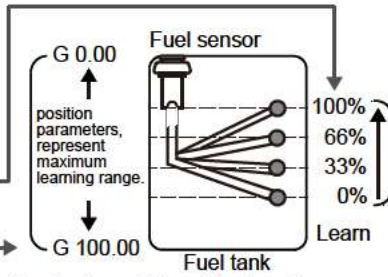- In the fuel type screen, hold the **button for 3 seconds** to enter into the fuel type settings screen.
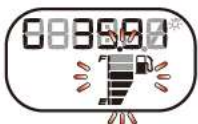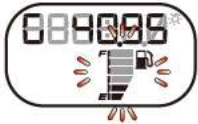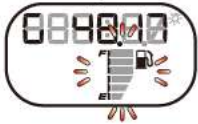
- **Example: To set fuel type from OFF (off) to CUSt (user define).**
- Hold the **button for 3 seconds** to enter into the user define mode.

- **User define mode**
  Needs to learn the position of 0% (E), 33%, 66%, 100% (F) fuel volume.

Fuel sensor

G 0.00 ↑ position parameters, represent maximum learning range.

G 100.00

Fuel tank

100%
66%
33%
0%
Learn

- Fuel volume 0% position learning screen.
- 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 position.
- Hold the **button for 3 seconds** ro enter into the next fuel volume position learning screen.

- 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** ro 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 position.
- 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 automatic return to fuel type settings screen.

[88 SAUE] ▶ [88 dOnE]

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

[88 SAUE] ▶ [88 Error]

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

[88 SAUE] ▶ [8 AbArt]

- In the Fuel type settings screen.
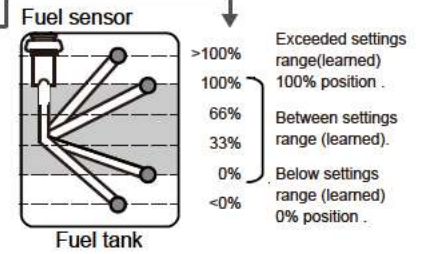- Press the **button once** to enter the next setting.

NOTE Setting range:
  - When set to OFF or SPo SU, will return to fuel type settings screen.
  - When set to other settings, will enter next setting option.

4-7-2

- 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.

Fuel sensor

>100%
100%
66%
33%
0%
<0%

Exceeded settings range(learned) 100% position.
Between settings range (learned).
Below settings range (learned) 0% position.

Fuel tank

- Press the button to enter fuel volume settings.

4-7-3

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

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

⚠ Currently setting value will blink.

NOTE Setting range : ON;OFF.

- **Example : Set fuel volume from OFF to ON.**
- Hold the **button for 3 seconds** 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 desired setting level.

[GAL 4.5] ▶ [GAL 4.5]

⚠ Now the setting value will blink.

- Hold the button to select desired value.

[GAL 4.5] ▶ [GAL 4.6] ▶ [GAL 4.7]

NOTE Setting range : 1.0 ~ 9.9 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.

- 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.

- Fuel volume settings main screen.
- Press the **button once** to enter into the next settings screen.

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

4-7-4

- To enter sub-settings screen, hold the **button for 3 seconds** to enter fuel consumption settings screen.

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

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

4-8-1

- 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.

- 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.

- 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.
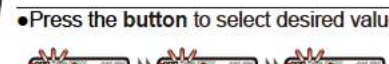

- Hold the **button for 3 seconds** to move the cursor to the desired settings level.

⚠ Now the setting value will blink.

- Press the **button** to select desired value.

NOTE Display range : 0 ~ 999,999 km (mile).

- **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 millage setting main screen.
- Press the **button once** to return to startup screen.

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

When it comes to quality motorcycle dashboard and gauges, KOSO is the brand you can depend on.