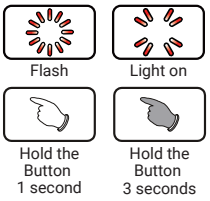
KOSO Feel The Speed

INSTRUCTIONS

Thank you for purchasing our product. Before installing/operating the product, read the instructions carefully and retain them for future reference.

⚠ Attention!

- For installation, follow the steps described. Any damage caused by wrong installation shall be imputed to the users.
- To avoid a short circuit from occurring do not pull or modify the wires during installation.
- Do not disassemble or change any parts. 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 to avoid damages to the product.

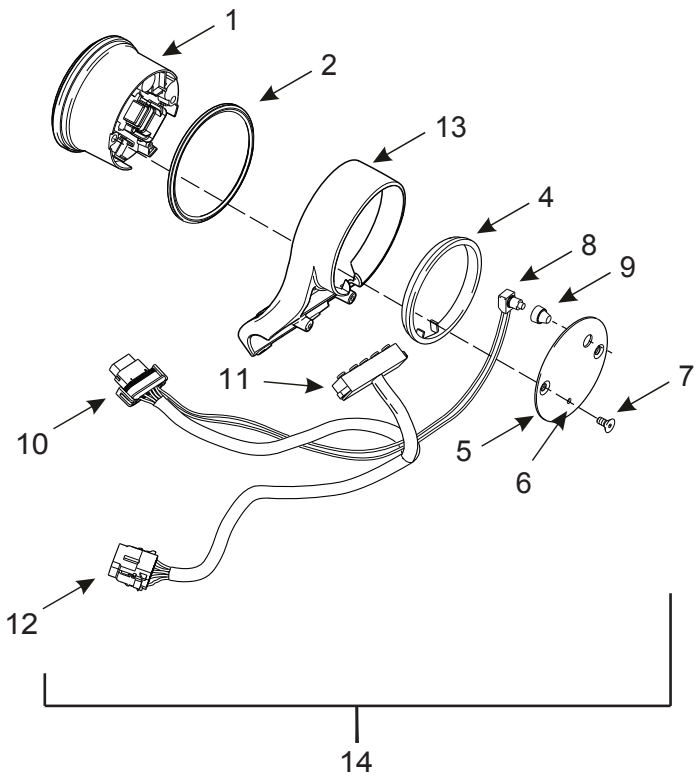
⚠WARNING! Certain procedure must be followed to avoid damages to yourself, to the vehicle or to others.

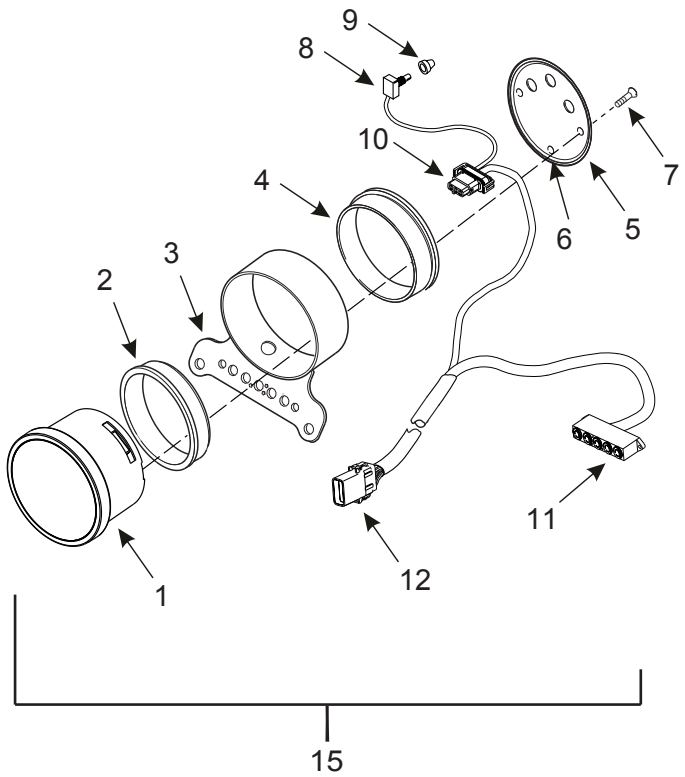
1 Accessories

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 Installation may require instrument cluster gasket, OEM part #70900822.

⚠Warning! Keep the stock upper and lower gaskets from the stock holder and install the gauge in between the gaskets.

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

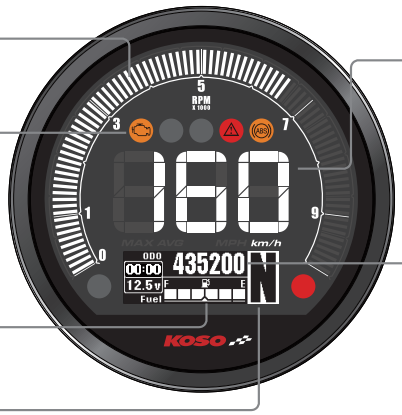
3-1 Overview

Tachometer
●Display Range : 0 ~ 10,000 RPM

Indicator
●Check engine indicator (Amber)
●RPM shift indicator (Red)
●ABS indicator (Amber)
●security indicator (Red)
●Cruise control
●low voltage warning indicator

Fuel meter
●Display Range : 6 Levels

Gear meter
●Display range : off, highest gear, N and highest gear, show all (N / 1 ~ 6)



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

Mileage 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 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.)

Clock
●Display range : 00:00~23:59 (24H)/ 1:00~12:59 (12H)

Temperature
●Display range : -40 ~ 215°C (-40 ~ 419 °F)

Voltmeter
●Display range : 8~18V

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)

3-2 Features and settings description

●Speedometer	Display range : 0 ~ 360 km (0 ~ 255 mile) switchable Display unit : 1 km (mile)
○Overspeed warning	Display range : 30~360 km/h (20~225 MPH) Display unit : 1km/h (1 MPH)
○Max. speed record	Display range : 0 ~ 360 km/h (0 ~ 225 MPH), can return to zero manually Display unit : 1 km/h (MPH)
○Internal and external odometer	Display range : 0 ~ 999,999 km (mile) Display unit : 1 km (mile)
○Trip meter A,B	Display range : 0 ~ 9,999.9 km (mile) can return to zero manually Display unit : 0.1 km (mile)
●Motor oil maintenance (Trip O)	Display range : OFF, -999~16,000 km (-999~10,000 mile), can be reset manually Display unit : 1 km (mile)
○Motor oil maintenance warning	Setting range : OFF, 500 ~ 16,000 km(300~10,000 mile) When lower than 0 km (mile), the value shows on the screen and flickers for warning and the warning signal will be lit according to the setting. Setting unit : 100 km(mile)
●Fuel reserve tripmeter (Range)	Display range : 0 ~ 9999.9km(mile) Display unit : 0.1km(mile)
○Fuel reserve tripmeter warning	Display range : the value is lower than 16 km (10mile), will display " LO RNG " .
○Tire circumference	Setting range : 50 ~ 210 % Setting unit : 1 %
●Gear meter	Display range : OFF, highest gear, N and highest gear, show all (N / 1 ~ 6)
○Max. Gear record	Display range : - , N,1~the highest gear, can return to zero manually
●Tachometer	Display Range : 0~10,000 RPM Display unit : 100 RPM
○Shift light warning	Setting range : 2,000 ~ 10,000 RPM Warning lights on when exceed setting value (including). Setting unit : 100 RPM
○Max. RPM record	Display Range : 0~10,000 RPM, can return to zero manually Display unit : 100 RPM
●Temperature	Display range : -40~225 °C (-40~419 °F) Display unit : 1 °C (°F)
○Max. temperature record	Display range : -40~225 °C (-40~419 °F) , can return to zero manually Display unit : 1 °C (°F)
●Fuel meter	Display range : 6 levels Display unit : 1 level(16.6 %) Setting range : OFF,SPO-SW,SPO-F-KIT,Dyna-04, Dyna-09,Softail,Tour-04,Tour-08,Custom
○Fuel tank volume	Setting range : OFF/ 1.0 ~ 9.9 US gallons
○Average fuel consumption	Setting range : OFF, L/100km, km/L MPG (US spec.), MPG (UK spec)
●Clock	Setting range : 00:00~23:59 (24H) 1:00~12:59 (12H)
●Voltmeter	Display range : DC 8.0~18.0 V Display unit : DC 0.1 V
●Backlight brightness	Setting range : 1 / 5 (darkest) ~ 5 / 5 (brightest) Setting unit : 1 / 5
●Operating voltage	DC 12 V
●Temperature range	-10 ~ +60 °C
●Specifications	JIS D 0203 (S2)
●Meter Size	D96.0 X 57.7 mm
●Meter Weight	190 grams
●Indication light	Check engine indicator (Amber) RPM shift indicator (Red) ABS indicator (Amber) security indicator (Red) Cruise control low voltage warning indicator

NOTE Design and specification may change without further notice.

3-3 Application List

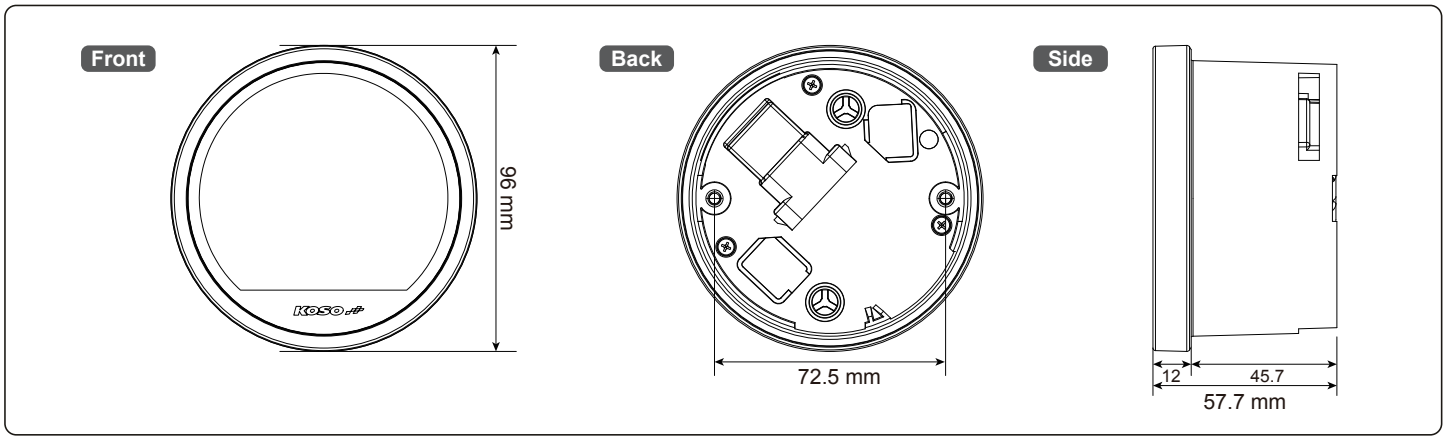
Vehicle type	Feature			
	Gear	Low fuel level warning	Fuel Level	Remaining mileage
Sportster				
2004 ~ 2006	-	-	-	-
2007	-	YES (2)	YES (1) (3)	YES (1) (3) (5)
2008 ~ 2013	YES (1)	YES	YES (1) (3)	YES (1) (3) (5)
Dyna				
2004 ~ 2007	-	YES	YES (1) (4)	-
2008	YES (1)	YES	YES (1) (4)	-
2009 ~ 2011	YES (1)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

3-5 Meter Size

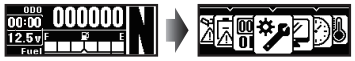


3-6 Main menu functions



●In the ODO screen, press the **button once** to switch to Trip A screen.

●In the ODO screen, hold the **button for 3 seconds** to enter into the setting screen.(refer to setting 4)





●Trip A screen, press the **button once** to switch to Trip B screen.

●Press 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.

●Press the **button for 3 seconds** to clear the Trip B recordings.





●In the mileage maintenance screen, press the **button once** to switch to the remaining mileage screen.

●Mileage maintenance will count down from the set value. When it reaches 0, the screen will blink to indicate mileage reached.



●When reminding feature is activated, it will automatically return to the mileage maintenance screen when the value is reached.



●Press the **button for 3 seconds** to switch to inform function.



●Press the **button for 10 seconds** to clear the mileage 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, mileage display will begin blinking.

○During the 6~9th seconds, if the button is released, it will cancel the process.



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



●In the remaining mileage screen, press the **button once to** switch to the average fuel consumption screen.

●Remaining mileage is lower than 16 km (10mile), 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 the reminding feature is activated, it will automatically switch to the remaining mileage screen during startup, if the remaining mileage is too low.



●Press the **button for 3 seconds to** switch to inform feature switch.



●The following situation will result in screen displaying "r----" or no display at all.

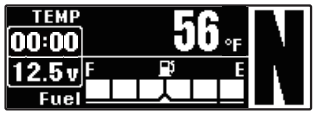
○Abnormal fuel sensor(short / open circuit)

○Engine computer does not support this feature

●Fuel related settings will affect this value's precision

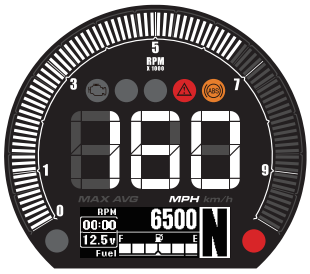


●In the average fuel consumption screen, press the **button once** to switch to the engine temperature screen.

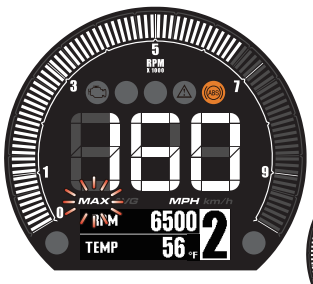


●In the engine temperature screen, press the **button once** to switch to the RPM screen.

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

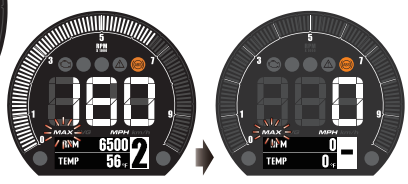


●In the RPM screen, press the **button once** to switch to the Max. record screen.



●In the Max. record screen, press the **button once** to switch to return to the ODO screen.

●Press the **button for 3 seconds** to clear the Max. record screen.

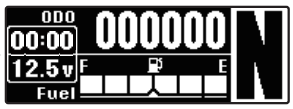


4 Setting Screen Switching Description

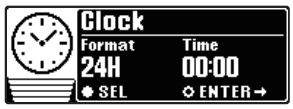
●Press the **button for 3 seconds** on the main screen to switch to the setting screen.
●Press the **button** to select
❶Clock ❷Unit(Speed/Temperature) ❸Display(Bright) ❹The tire circumference ❺Gear ❻Overspeed warning ❼Shift light warning
❽Fuel ❾Engine TEMP ❿Mileage maintenance ⓫Total internal and external mileage ⓬Exit

NOTE During setting, if the button is not pressed in 30 seconds, it will automatically return to the startup screen.

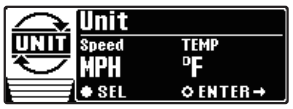
●Main screen(ODO)



❶Clock



❷Unit(Speed/Temperature)



❸Display(Bright)



❹The tire circumference



❺Gear



❻Overspeed warning



❼Shift light warning



❽Fuel



❾Engine TEMP



❿Mileage maintenance



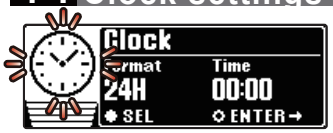
⓫Total internal and external mileage



⓬Exit



4-1 Clock settings



●In the clock screen, press the **button for 3 seconds** to enter the clock setting.



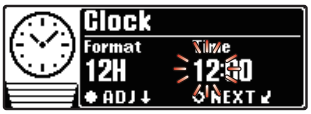
●**Example : If you want to set the clock to 12 hour format.**
●Press the **button once** to select desired setting value.

⚠ Now the setting value will blink.

NOTE Setting range : 12h / 24h



●EX : Set clock from 24 hour format to 12 hour format.
●Press the **button for 3 seconds** to enter time into the (hour / minute) setting screen.



●**Example :** Set clock to 01:05 AM.
●Press the **button for 3 seconds** to move the cursor to the desired setting level.



⚠ Now the setting value will blink.

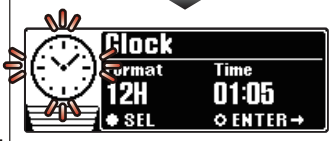
●Press the **button once** to select desired setting value.



NOTE **Setting range :**
Hour : 1~12 (12 h) / 0~23 (24 h)
Minute : 00~59 minutes.



●EX : Set clock setting from 12:00 to 1:05.
●Press the **button for 3 seconds** to return to the clock screen.



●The clock screen.

4-2 Unit (Speed & Temp.) settings



●In the unit screen, press the **button for 3 seconds** to enter the speed unit setting.



●Example : To set speed unit to km/h.
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

NOTE Setting range : km/h, MPH.

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



●EX : Set speed unit from MPH to km/h.
●Press the **button for 3 seconds** to enter into the temp. unit setting.



●Example : To set the temperature unit to ˚C.
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

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



●EX : Set temperature unit from ˚F(Fahrenheit) to˚C(Celsius).
●Press the **button for 3 seconds** to return to the unit screen.



●The unit screen.

4-3 Display (brightness) settings



●In the display screen, press the **button for 3 seconds** to enter the brightness setting.



●Example : To set the brightness to 5/5 (100%).
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

NOTE Setting range :
1/5~ 5/5 (Brightest),
5 different levels available.
Setting unit : 20% per level.



●EX : The brightness setting is changed from 3/5 (60%) to 5/5 (100%).
●Press the **button for 3 seconds** to return to the display screen.



●The display screen.

4-4 The tire circumference settings



●In the tire circumference screen, press the **button for 3 seconds** to enter into the tire circumference setting.



●Example : To set the tire circumference to 105%.
●Press the **button for 3 seconds** to move the cursor to the desired setting level.



⚠ Now the setting value will blink.

●Press the **button once** to select the desired value.



NOTE Setting range : 50 ~ 210%.



●Example : Set tire percentage from 100% to 105%.
●Press the **button for 3 seconds** to return to the tire circumference screen.



●The tire circumference screen.

4-5 Gear settings



●In the gear screen, press the **button for 3 seconds** to enter the gear setting.



●**Example : To set gear to OFF.**
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

NOTE Setting range : ON, OFF.



●EX : Set gear from ON to OFF.
●Press the **button for 3 seconds** to return to the gear screen.



●The gear screen.

4-6 Overspeed warning settings



● In the overspeed warning screen, press the **button for 3 seconds** to enter the overspeed warning setting.



●**Example : To set overspeed warning value to 200 MPH.**
●Press the **button for 3 seconds** to move to the digit you want to set.

⚠ Now the setting value will blink.

NOTE Setting range : 30~360 km/h (20~225 MPH).



●Press the **button** to choose the setting number.



●EX : Set overspeed warning value from 150 MPH to 200 MPH.
●Press the **button for 3 seconds** to return to the overspeed warning screen.



●The overspeed warning screen.

4-7 Shift light warning settings



●In the shift light warning screen, press the **button for 3 seconds** to enter the shift light warning setting.



●**Example : To set shift light warning value to 5,700 RPM.**
●Press the **button for 3 seconds** to move to the digit you want to set.

⚠ Now the setting value will blink.

NOTE Setting range : 2,000 ~ 10,000 RPM.



●Press the **button** to choose the setting number.



●EX : Set shift light warning value from 5,500 RPM to 5,700 RPM.
●Press the **button for 3 seconds** to enter the warning light screen.



●**Example : To set warning light to Flash.**
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

NOTE Setting range : Steady, Flash.



●EX : Set warning light from Steady to Flash.
●Press the **button for 3 seconds** to go return the shift light warning screen.



●The shift light warning screen.

4-8 Fuel settings



●In the fuel screen, press the **button for 3 seconds** to enter the fuel setting.

4-8-1



●In the fuel type screen, press the **button for 3 seconds** to enter the fuel type setting.



●**Example : To set the fuel type to Custom.**
●Press the **button once** to select desired setting value.

⚠ Now the setting value will blink.

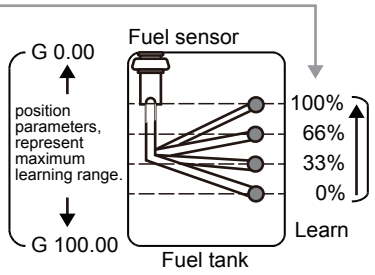
NOTE Settings range:
1.OFF【Fuel display. off】
2.SPO-SW【Sporster fuel volume switch】
3.SPO-F-KIT
4.Dyna-04
5.Dyna-09
6.Softail
7.Tour-04
8.Tour-08
9.Custom【User define】



●EX : To set fuel type from OFF to Custom.
●Press the **button for 3 seconds** to enter the user define mode setting.



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





●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.
●Press the **button for 3 seconds** to 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.
●Press 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 2/3 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.
●Press 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 3/3 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.
●Press the **button for 3 seconds** to enter into the learning conformation screen.



●Learning conformation screen.
●Press the button once to save the current learning results, then automatically return to the fuel type setting screen.

Save? ➧ **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.

Save? ➧ **Error!**

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

Save? ➧ **Abort!**



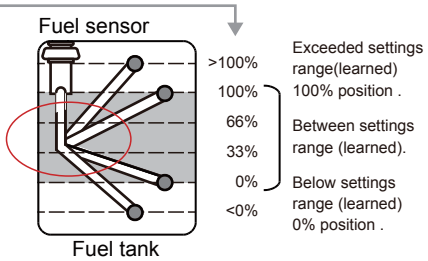
●In the Fuel type screen.
●Press the **button once** to enter the next setting.

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

4-8-2



●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.



●Press the button to enter the fuel capacity screen.

4-8-3



●In the fuel capacity screen, press the **button for 3 seconds** to enter the fuel capacity setting.



●**Example：To set fuel capacity function as ON.**
●Press the **button once** to select desired setting value.

⚠ Now the setting value will blink.

NOTE Setting range : ON,OFF.



●EX：Set fuel capacity function to ON.
●Press the **button for 3 seconds** to enter the fuel capacity setting.



●**Example：To set fuel volume to 4.7.**
●Press the **button for 3 seconds** to move the cursor to desired setting level.



⚠ Now the setting value will blink.

●Press the **button once** to select desired setting value.



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.



●EX : Set fuel volume value from 4.5 to 4.7.
●Press the **button for 3 seconds** to return to fuel capacity screen.



●Press the **button once** to enter the fuel consumption unit screen.

4-8-4



●In fuel consumption unit screen, press the **button for 3 seconds** to enter the fuel consumption unit setting.



●**Example：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).



●EX : To set fuel consumption unit from OFF to MPG (US).
●Press the **button for 3 seconds** to return to the fuel consumption unit screen.



●Press the **button once** to return to the fuel screen.



●The fuel screen.

4-9 Engine TEMP settings



●In the engine temp screen, press the **button for 3 seconds** to enter the engine temp setting.



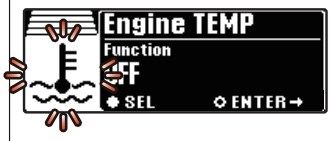
●**Example : To set engine temp function to OFF.**
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

NOTE Setting range : ON, OFF.



●EX : Set engine temp function from ON to OFF.
●Press the **button for 3 seconds** to return to the engine temp screen.



●The engine temp screen.

4-10 Mileage maintenance settings



●In the mileage maintenance screen, press the **button for 3 seconds** to enter the mileage maintenance setting.



●**Example : 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.



●EX : Set mileage maintenance to (ON).
●Press the **button for 3 seconds** to enter into the mileage maintenance main screen.

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



●**Example : To set mileage maintenance value to 500 mile.**
●Press the **button for 3 seconds** to move the cursor to the desired settings level.



⚠ Now the setting value will blink.

●Press the **button once** to select desired setting value.



NOTE Setting range : 500 ~ 16,000 km (300 ~ 10,000 mile).



●EX : Set the mileage maintenance from 300 mile to 500 mile.
●Press the **button for 3 seconds** to return to the mileage maintenance screen.



●The mileage maintenance screen.

4-11 Total internal and external mileage settings



●In the total mileage screen, press the **button for 3 seconds** to enter the total external mileage setting.



●**Current total internal mileage display is 5 km.**

⚠ User unable to adjust or remove total internal mileage.

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

●**Example : To set external total distance value to 50,000 km**
●Press the **button for 3 seconds** to move the cursor to the desired settings level.



⚠ Now the setting value will blink.

●Press the **button once** to select desired setting value.



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



●EX : Set the total external mileage from 0 to 50,000 km.
●Press the **button for 3 seconds** to return to the total mileage screen.



●The total mileage screen.

4-12 Exit



●In the exit screen, press the **button for 3 seconds** to return to the ODO screen.



●The ODO screen.

5 Troubleshooting

The following situations do not indicate malfunctions of the product. Check the following before taking it in for repair.

Trouble	Check item	Trouble	Check item
The meter doesn't work when the power is on.	**●The power isn't supplied to the meter. →Make sure the wiring is connected. The wiring and fuse are not broken. →The battery is too old to supply needed power (DC 12 V).**	**Speed appears incorrectly.**	**●May be wrong settings. →Check the settings menu to confirm whether the setting for speed is correct.**
The meter shows wrong information.	●Check the voltage of your battery and make sure the voltage is over DC 12 V.	The clock is incorrect.	●May be wrong setting. →Check the setting list to see whether the setting for clock is correct.

※ If the problems still cannot be solved, contact our technical department for assistance.