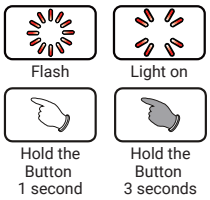
KOSO® Feel The Speed

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.

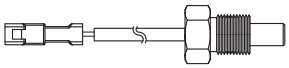
1-1 Accessories

1 Speedo & Tacho Meter X1

2 Fuel Level Meter X1

3 Oil Temp. Meter X1

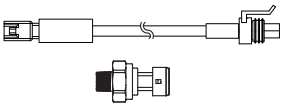
4 PT1/2-20UFN sensor X1



5 Extension wire X1

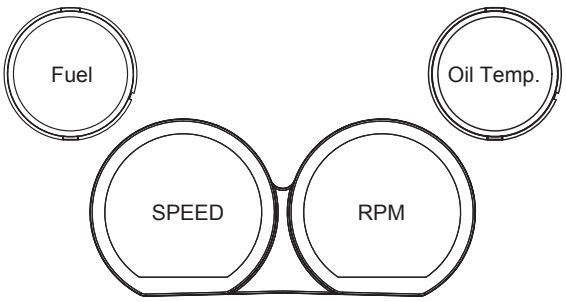
1-2 Optional accessories

1 Air pressure sensor kit 180 cm (BZ012000) x1

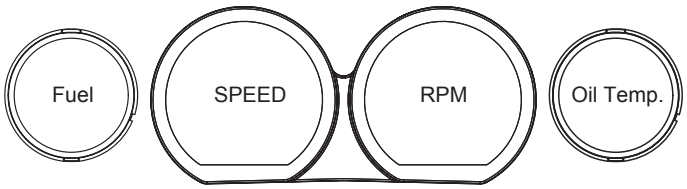


2-1 Gauge location

Road Glide | Harley-Davidson



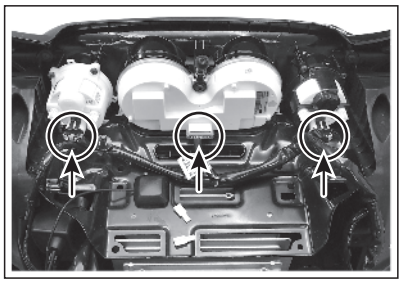
Street Glide | Harley-Davidson



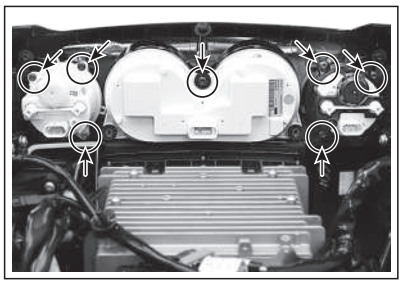
NOTE Fits Harley-Davidson® FLHX, FLTC and FLTR from 2014 to 2022.

2-2 Disassembling Instructions

1.Disconnect the ground (-) (negative pole of the battery) from the vehicle's battery.
2.Remove the mounting screw and remove the fairing.

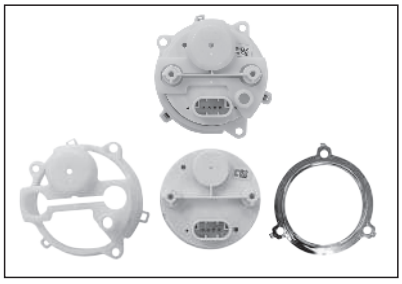


3.Disconnect the 3 gauges.



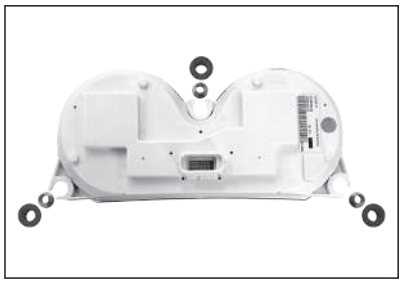
4.Remove the remaining 7 screws.

5.Ensure the Speed and Tach bezels remain in the fairing.



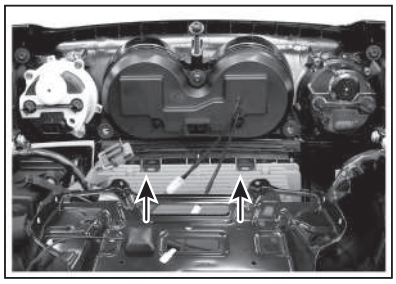
6.The Fuel and Volt bezels and mounting cups will be reused. There are 3 tabs on the bezels that need to be carefully pushed back through the mounting cup to separate the bezel from the mounting cup and to release the factory gauge.

7.The new OIL TEMP gauge will use the existing white Volt mounting cup and the new Fuel Level gauge will use the existing black Fuel mounting cup. Place the new VOLT and OIL TEMP gauge in the appropriate housings and secure the bezel in place by lining up the tabs.



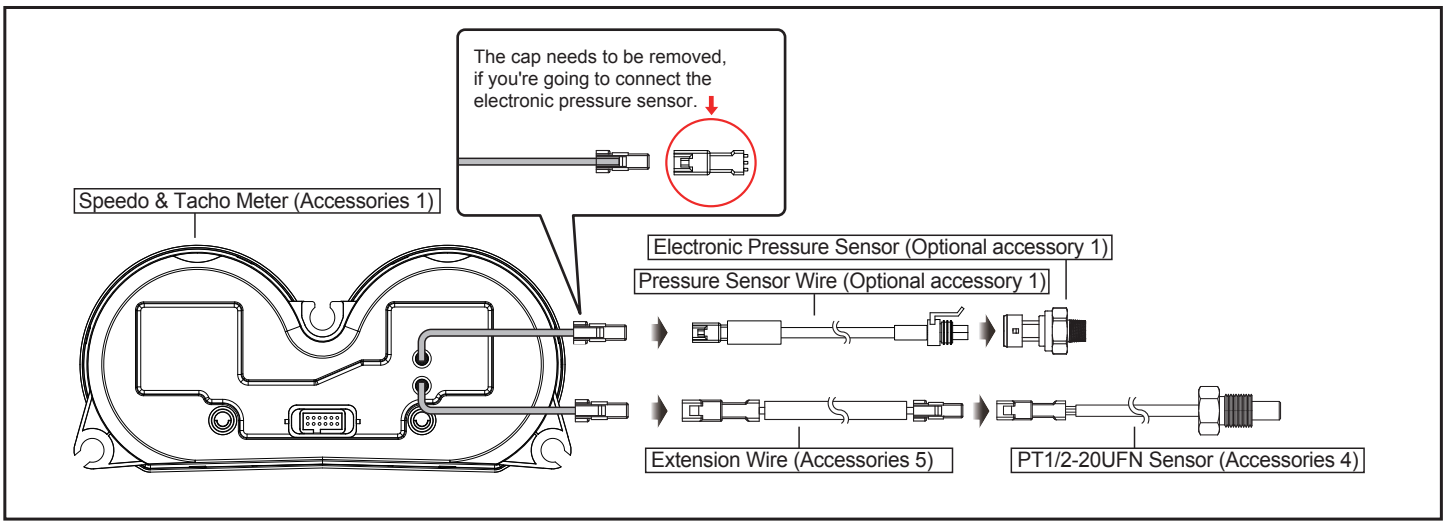
8.Remove the bushings and nuts for original Speed / Tachometer.

9. Re-use the bushings and nuts to install the KOSO speed/ta - chometer



10.Reassemble the amplifier tray to the radio and speaker enclosures using the factory hardware; also give the top center Speed / Tach screw a final torquing with the gauge aligned to the fairing and amplifier tray.

2-3 Wiring Installation Instructions



Speedometer
●Display range : 0 ~ 299 km/h (0 ~ 199 MPH) ●Display unit : 1 km/h (MPH)

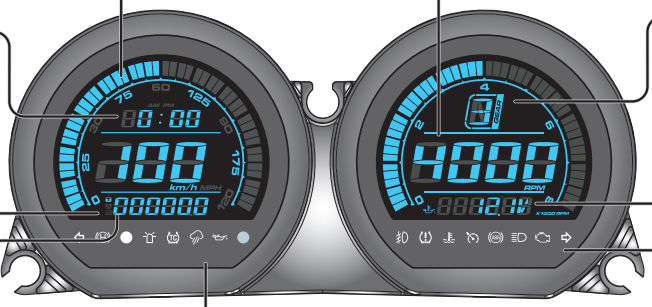
Tachometer
●Display range : 0 ~ 9,990 RPM ●Display unit : 10 RPM

Clock
●Display range : 12 / 24 hour format
Time is not displayed when using radio.

Gear meter
●Display range : -, N, P, R, 1~6

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) return to zero upon exceed.
●Display unit : 0.1 km (mile)

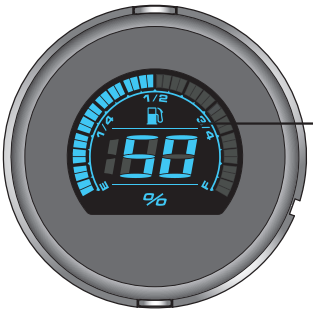
Air Pressure Gauge
●Display range : Display --- when no sensor is installed, 0 ~ 150 PSI
●Display unit : 1 PSI
Voltmeter
●Display range : DC 8.0 ~ 18.0 V



Mileage maintenance user settings (closable)
●Display range : user adjustable (500 ~ 16,000km / 300 ~ 10,000 mile) ~ -999 mile, automatically decreases according to the increase of total mileage.
●Display unit : 1 km (mile)
RANGE / Remaining Mileage Warning
●Display range : LCD shows "LO RNG" and flashing as warning when RANGE / Remaining Mileage lower than 16km (10miles).
Average fuel consumption
●Display range : OFF/ 0.0 ~ 99.9 (L/100km, km/L) / 0.0 ~ 999.9 (MPG(US), MPG(UK))

Indicator
●Left indicatior light (Green)
●VHC light (Amber)
●Security light (Red)
●Warning Light (Amber/Green)
●TCS light (Amber)
●Rain mode light (Blue)
●Oil pressure light (Red)
●Photometric Sensing

Indicator
●Fog Light (Green)
●TPMS light (Amber)
●Temperature warning light (Red)
●Constant speed light (Amber/Green)
●ABS light (Amber)
●High beam light (Blue)
●Engine warning light (Amber)
●Right indicatior light (Green)



Fuel meter
●Display range : 0 ~ 100 %
●Display unit : 1 %

Oil temp. meter
●Display range :
0 ~ 400 °F (32 ~ 248 °C)
●Display range : 1 °F (1 °C)
Oil temp. warning
●Setting range :
140 ~ 400 °F (60 ~ 250 °C)
●Setting unit : 1 °F (1 °C)
Engine temperature
●Display range : -40 ~ 300 °C
(-40 ~ 572 °F)

NOTE It will switch to engine temperature if the temperature sensor is not installed.

3-2 Settings Instructions

●Speedometer	Display range : 0 ~ 299 km/h (0~199 MPH) switchable Display unit : 1 km/h (MPH)
○Display interval	<0.5 second
○Overspeed warning setting	Setting range : 30 ~ 299 km/h (19 ~ 199 MPH) when above(including) setting value, warning light will lit. Setting unit : 1 km/h (MPH)
○Max. speed record	Display range : 0 ~ 299 km/h (0~199 MPH)
○Internal and external odometer	Display range : 0 ~999,999 C Display unit : 1 km (mile)
○Tire circumference	Setting range : 50 ~ 210 % Setting unit : 1 %
○Trip meter A, B	Display range : 0.0~ 9,999.9 km (mile) Display unit : 0.1 km (mile)
○Mileage maintenance	Setting range : off, 500 ~ 16,000 km (300 ~ 10,000 mile) ~ -999 km (mile), decrease according to the increase in total mileage. Setting unit : 1 km (mile)
●Gear meter	Display range : -, N, P, R, 1~6
●Tachometer	Display range : 0 ~ 9,990 RPM Display unit : 10 RPM
○RPM shift light	Display range : 2,000 ~ 8,000 RPM Warning lights on when exceeding set value (included). Setting unit : 100 RPM
○Max. rotating speed	Display range : 0 ~ 9,990 RPM
●Engine temperature	Display range : -40 ~ 300 °C (-40 ~ 572 °F) Display unit : 1 ℃ (℉)
●Fuel meter	Display unit : 0~100 %
○Fuel warning setting	Setting range : 1. HD Standard - LCD flashing as warning when Fuel level resistance greater than 211Ω, and will turn off when resistance smaller than 187Ω. 2. Customize - LCD flashing as warning when Fuel level lower than 20%, and will turn off when fuel level higher than 30%.
○Fuel tank volume	Setting range : OFF/ 1.0 ~ 9.9 US gallons
○Average fuel consumption	Display range : OFF/ 0.0 ~ 99.9 (L/100km, km/L) / 0.0 ~ 999.9 (MPG(US), MPG(UK)) Display unit : L/100km, km/L, MPG(US), MPG(UK)
●RANGE / Remaining Mileage	Display range : 0 ~ 9,999 km (6,249 mile) Display unit : 1 km (mile)
●RANGE / Remaining Mileage Warning	Display range : LCD shows "LO RNG" and flashing as warning when RANGE / Remaining Mileage lower than 16km (10miles).
●Clock	Display range : 12 / 24 hour format
●Oil Temp.	Display range : 0 ~ 400 ℉ (32 ~ 248 ℃) Display unit : 1 ℃ (℉)
○Max. Oil Temp. record	Display range : 0 ~ 400 ℉ (32 ~ 248 ℃)
●Voltmeter	Display range : DC 8.0 ~ 18.0 V
●Air Pressure Gauge	Display range : Display --- when no sensor is installed, 0 ~ 150 PSI, 0~1034 kPa, 0.0~10.3 bar Display unit : 1 PSI, 1 kPa , 0.1 bar
○Air Pressure Gauge Calibration	Calibration range : 0 ~ 25 PSI±1 PSI Calibration unit : 1 PSI
●Tire pressure (TPMS, FR RR LR. It shows TPMS if the motorcycle supports it.)	Display range : --- , Hi, 0 ~ 73 PSI, 0~506 kPa, 0.0~5.0 bar Display unit : 1 PSI, 1 kPa, 0.1 bar
●Backlight brigntness	Setting range : 1 / 5(darkest) ~ 5 / 5(brightest)
○Backlight color	Setting range : white, red, orange, yellow, green,blue, light blue, purple
●Operating voltage	DC 12 V
●Temperature range	-10 ~ +60 °C
●Specifications	JIS D 0203 (S2)
●Meter Weight-Speedo & Tacho	286 grams
●Meter Weight-Oil Temp.	81 grams
●Meter Weight-Fuel Level	81 grams
●Indication light	Left indicatior light (Green) VHC light (Amber) Security light (Red) Warning Light (Amber/Green) TCS light (Amber) Rain mode light (Blue) Oil pressure light (Red) Photometric Sensing Fog Light (Green) TPMS light (Amber) Temperature warning light (Red) Constant speed light (Amber/Green) ABS light (Amber) High beam light (Blue) Engine warning light (Amber) Right indicatior light (Green)

NOTE Design and specification may change without further notice.

3-3 Settings mode

* To enter the gauge settings mode, you must follow the steps below:

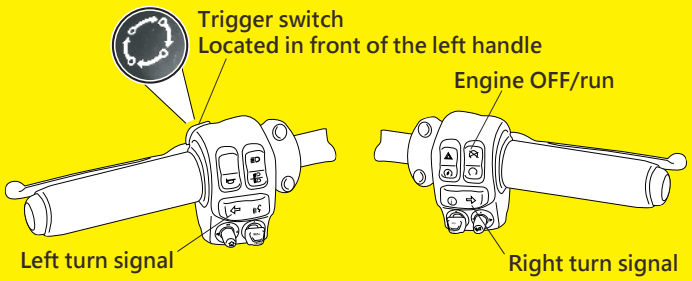
1 :The key must be switched to **ON/Accessories.**

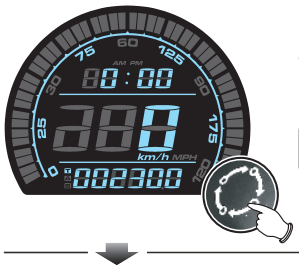
2 :**Engine OFF/run** switch must be **OFF.**

3 : Meter must be displaying **ODOMETER.**

4 : Hold both **turn signal** switches for 3 seconds.

5 : Use **trigger** switch to navigate through settings.

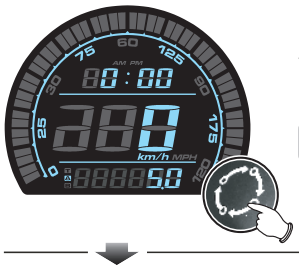




●In the total mileage screen, press the **button once** to switch to Trip A screen.

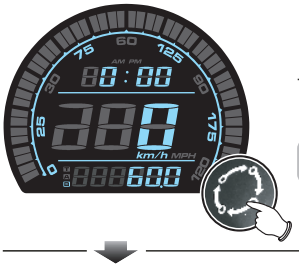
●Hold the **button for 3 seconds** to switch voltage or air pressure.

NOTE Voltage and air pressure will display on tachometer.



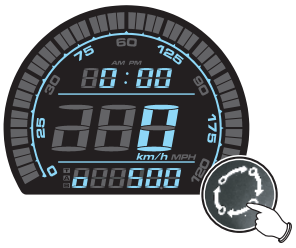
●Trip A screen, press the **button once** to switch to Trip B screen.

●Hold the **button for 3 seconds** to clear the Trip A recordings.



●In the 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.



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

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

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

●When reminding feature is activated, it will automatically switch to mileage maintenance screen during startup if remaining mileage 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 by the engine computer.

●Hold the **button for 10 seconds** to clear the mileage maintenance recordings.

○In the 0 second, start holding the button.

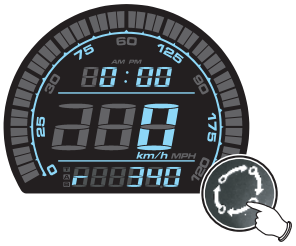
○In the 3rd second, the inform feature will blink once.

○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.

NOTE Display can be switched off. Reference video setting.



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

●If 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 reminding feature is activated, it will automatically switch to the remaining mileage screen during startup if remaining mileage is too low.

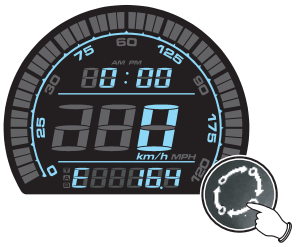
●Hold the **button for 3 seconds** to switch to inform feature switch

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

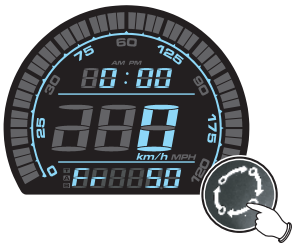
●The following situation will result with the screen displaying "r----" or no display at all:

○Abnormal fuel sensor (short / open circuit)

NOTE Display can be switched off. Reference video setting.

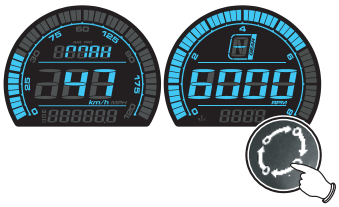


●In the average fuel consumption screen, press the **button once** to switch to the tire pressure screen.



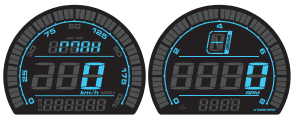
●In the tire pressure screen, press the **button once** to switch to the MAX. record screen.

NOTE Shows Fr, rr, Lr accordingly to different models.



●In the MAX. record screen, press the **button once** to switch to the total mileage screen.

●Hold the **button for 3 seconds** to clear the MAX. record.

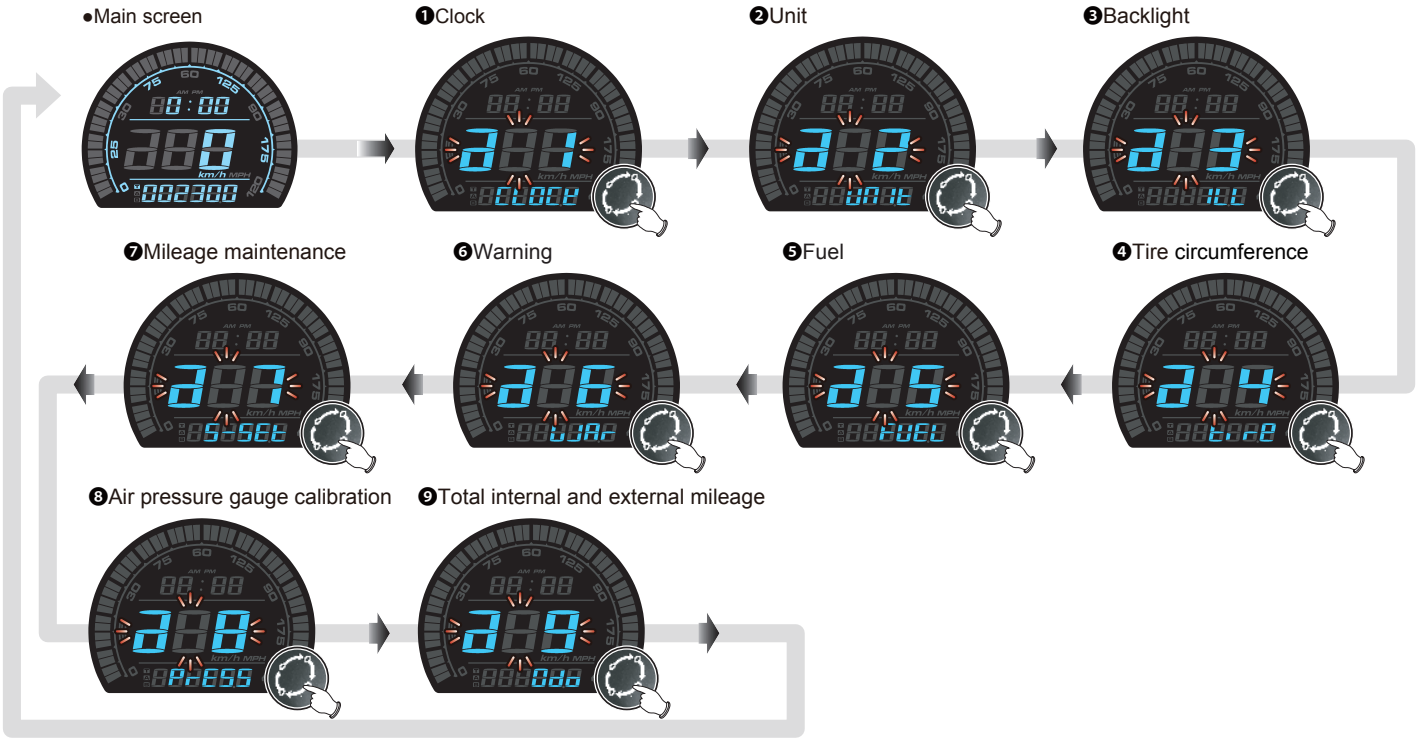


●Total mileage screen.

4 Setting Screen Switching Description

●Press the **button** to select
❶Clock ❷Unit ❸Backlight ❹Tire circumference ❺Fuel ❻Warning ❼Mileage maintenance
❽Air pressure gauge calibration ❾Total internal and external mileage.

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



4-1 Clock Settings

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

●**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
Default value : 24h

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

●**Example : Set clock to 01:05 AM.**
●Hold 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.

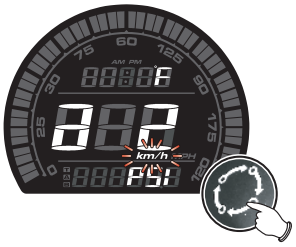
NOTE **Setting range :**
Hour : 1~12 (12 h) / 0~23 (24 h)
Minute : 00~59 minutes.
Default value :
Hour : 12(12h)/0(24h).
Minute : 0.

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

●The clock screen.

4-2 Unit Settings(Speed/ Temperature/ Air pressure gauge)

●In the unit screen, hold the **button for 3 seconds** to enter into the settings screen.



●**Example : To set speed unit to MPH(mile).**
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

NOTE Setting range : km/h, MPH.
Default value : km/h.

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

●EX : Set speed unit from km/h to MPH.
●Hold the **button for 3 seconds** to enter into the temperature unit settings screen.

●**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).
Default value : ˚F(Fahrenheit).

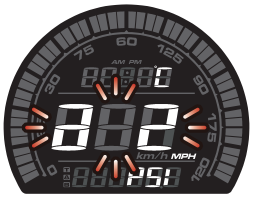
●EX : Set temperature unit from ˚F(Fahrenheit) to ˚C(Celsius).
●Hold the **button for 3 seconds** to enter into the air pressure gauge unit settings screen.

●**Example : To set the air pressure gauge unit to** BAr**.**
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

NOTE Setting range : PSI, bar, kPa .
Default value : PSI.

●EX : Set **air pressure gauge** unit from PSI to bar.
●Hold the **button for 3 seconds** to return to the unit screen.



●The unit screen.

4-3 Backlight Brightness Settings (Mode/ Color/ Brightness)

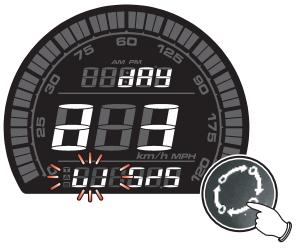
●In the backlight screen, hold the **button for 3 seconds** to enter into the settings screen.

●**Example : To set the mode to Night mode.**
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

NOTE Setting Auto(automatically switches according to the environment : day mode display for a bright environment and Night mode display for a dark environment), Day mode, Night mode.
Default value : Auto.

●EX : Set background from Auto mode to Night mode.
●Hold the **button for 3 seconds** to enter the backlight color(day) setting.



●**Example : To set backlight color(day) to blue.**
●Press the **button once** to choose the color.

⚠ Now the setting value will blink.

NOTE Setting range :
White, Red, Orange, Yellow, Green, Blue, Indigo, Purple.
Default value : White.

NOTE The backlight color will change immediately after you set the value.

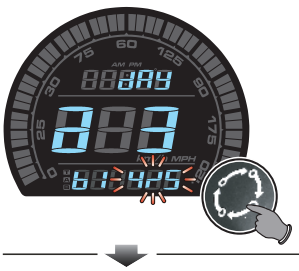
●EX : Set backlight color(day) from white to blue.
●Hold the **button for 3 seconds** to enter the backlight brightness(day) setting.

●**Example : To set the backlight brightness (day) to 4/5 (80%).**
●Press the **button once** to select the desired value.

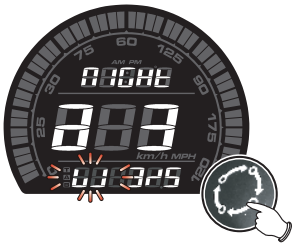
⚠ Now the setting value will blink.

NOTE Setting range :
3/5~ 5/5 (Brightest),
3 different levels available.
Setting unit : 20% per level.
Default value : 5/5(100%).

NOTE The backlight brightness will change immediately after you set the value.



●EX : The backlight brightness (day) setting is changed from 5/5 (100%) to 4/5 (80%).
●Hold the **button for 3 seconds** to enter the backlight color (night) setting.



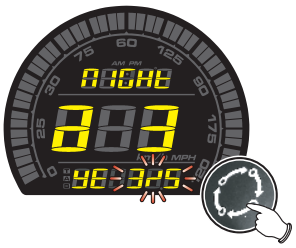
●**Example : To set backlight color(night) to Yellow.**
●Press the **button once** to choose the color .

⚠ Now the setting value will blink.

NOTE Settings range : White, Red, Orange, Yellow, Green, Blue, Indigo, Purple.
Default value : White.

NOTE The backlight color will change immediately after you set the value.

●EX : Set backlight color(night) from White to Yellow.
●Hold the **button for 3 seconds** to enter the backlight brightness(night) setting.



●**Example : To set the backlight brightness (night) to 2/5 (40%).**
●Press the **button once** to select the desired value.

⚠ Now the setting value will blink.

NOTE Setting range :
1/5(Darkest)~ 5/5 (Brightest),
5 different levels available.
Setting unit : 20% per level.
Default value : 3/5(60%).

●EX : The backlight brightness (night) setting is changed from 3/5 (60%) to 2/5 (40%).
●Hold the **button for 3 seconds** to return to the backlight screen.

●The backlight screen.

4-4 Tire Circumference Settings

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

●**Example : To set the tire circumference to 105%.**
●Hold 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 choose the setting number.

NOTE Setting range : 50 ~ 210%.
Default value : 100%.

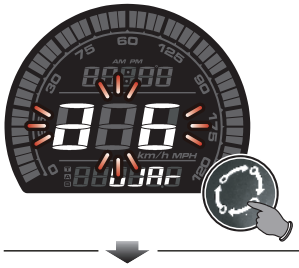
●**Example : Set tire percentage from 100% to 105%.**
●Hold the **button for 3 seconds** to return to the tire circumference screen.

●The tire circumference screen.

4-5 Fuel Settings

Scan QR code for information.

4-6 Warning Settings (Overspeed / Over RPM / Overheat)



●In warning screen, hold the **button for 3 seconds** to enter into the settings screen.

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

NOTE
●Warning indicator operation setting -overspeed, refer to 4-6-1.
●Warning indicator operation setting -over RPM, refer to 4-6-2.
●Warning indicator operation setting -overheat, refer to 4-6-3.

4-6-1 Warning Settings (Overspeed)

●Hold the **button for 3 seconds** to enter overspeed warning setting screen.

●EX：Set the overspeed warning value from 60 km/h to 90 km/h.
●Hold the **button for 3 seconds** to return to warning screen.

●**Example：To set overspeed warning value to 90 km/h.**
●Hold the **button for 3 seconds** to move the cursor to the desired settings level.

⚠ Now the setting value will blink.

NOTE Settings range : 30 ~ 299 km/h (19 ~ 199 MPH).
Default value : 60 km/h (38 MPH).

●The warning setting screen.
●Press the **button once** to enter next setting.

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

4-6-2 Warning Settings (Over RPM)

●Hold the **button for 3 seconds** to enter over rpm warning setting screen.

●**Example：To set over rpm warning value to 9,000 RPM.**
●Hold the **button for 3 seconds** to move the cursor to the desired settings level.

⚠ Now the setting value will blink.

NOTE Settings range : 1,000 ~ 10,000 RPM.
Default value : 5,500 RPM.

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

●EX：Set the over rpm warning value from 5,500 RPM to 9,000 RPM.
●Hold the **button for 3 seconds** to return to warning screen.

●The warning setting screen.
●Press the **button once** to enter next setting.

4-6-3 Warning Settings (Overheat)

●Hold the **button for 3 seconds** to enter overheat warning setting screen.

●**Example：To set overheat warning value to 203 °F.**
●Hold the **button for 3 seconds** to move the cursor to the desired settings level.

⚠ Now the setting value will blink.

NOTE Settings range : 60 °C ~ 250 °C
(140 ~ 400 °F).
Default value : 180 °C (356 °F).

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

●EX : Set the overheat warning value from 356 °F to 203 °F.
●Hold the **button for 3 seconds** to return to warning screen.

●The warning screen.

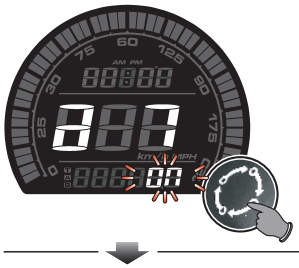
4-7 Mileage Maintenance Settings

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

- **Example : To set mileage maintenance to (ON).**
- Press the **button once** to choose the setting number.

⚠ Now the setting value will blink.

NOTE Settings range : ON, OFF.
Default value : ON.



- EX : Set mileage maintenance 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.

- **Example : To set mileage maintenance value to 800 km.**
- Hold the **button for 3 seconds** to move the cursor to the desired settings level.

⚠ Now the setting value will blink.

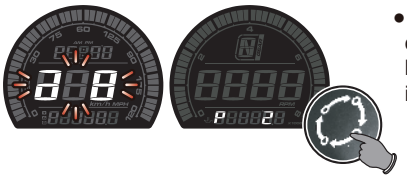
- Press the **button once** to choose the setting number.

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

- EX : Set the mileage maintenance from 500 km to 800 km.
- Hold the **button for 3 seconds** to return to mileage maintenance screen.

- The mileage maintenance screen.

4-8 Air Pressure Gauge Calibration Settings



- In the air pressure gauge calibration screen, hold the **button for 3 seconds** to enter into the settings screen.

- Press the **button once** to calibrate air pressure gauge.

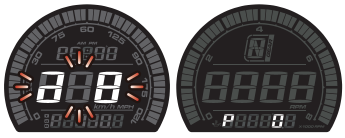
⚠ Now the setting value will blink.

NOTE Calibration range :
0 ~ 25 PSI±1PSI
Default value : 0 PSI.

- If it shows (OPEN), it confirms the SENSOR is installed correctly.

- If it shows (OVER), release the pressure.

- The calibration is complete.
- Hold the **button for 3 seconds** to return to air pressure gauge calibration screen.



- The air pressure gauge calibration screen.

4-9 Total internal and external odometer settings

Scan QR code for information.

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).	Fuel meter does not display or display error.	●Check your fuel tank. ●Make sure the wiring harnes. is connected properly.
The meter shows incorrect information or keeps performing system reboot.	●Check the voltage of your battery and make sure the voltage is over DC 12 V.	Thermometer does not display or display error.	●Make sure the temperature wire is connected properly.
Speedometer does not display or display error.	●Make sure the speed sensor is connected properly. →check the speed sensor wire is connected correctly. ●Check the setting. →Check in the settings menu to see if the settings speed are correct.	The clock is incorrect.	●Check in the clock settings. menu if the values are correct.

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