



Thank you for purchasing **Koso TNT-02 meter for Harley-Davidson**.
 Before operating the unit, please read the instruction thoroughly and retain it for the future reference.

⚠ Notice

1. **DC 12V applications only.**
2. For installation, please follow the steps described in manual. Any damage caused by wrong installation shall be imputed to the users.
3. To avoid the short circuit, please don't pull the wire when installing. Don't break or modify the wire terminal.
4. Do not disassemble or change any parts excluding the manual description.
5. The interior examination or maintenance should be executed by our professionals.

MARK MEANING:

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

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

⚠ WARNING! Some processes must be followed to avoid damages to yourself or the public.

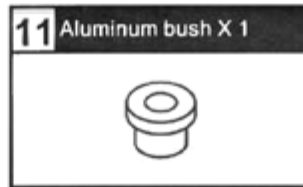
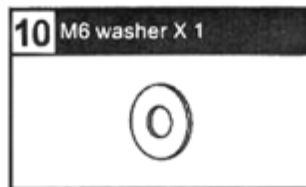
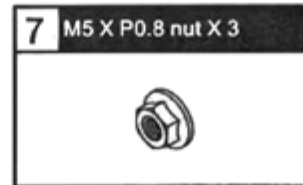
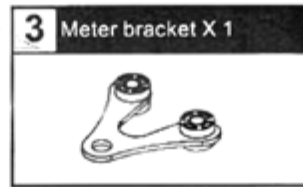
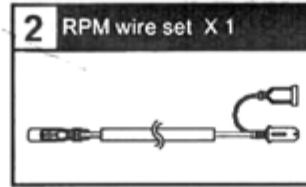
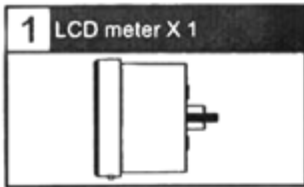
⚠ CAUTION! Some processes must be followed to avoid the damage to the vehicle.



PRESS THE
BUTTON ONE
TIME

PRESS THE
BUTTON 3
SECONDS

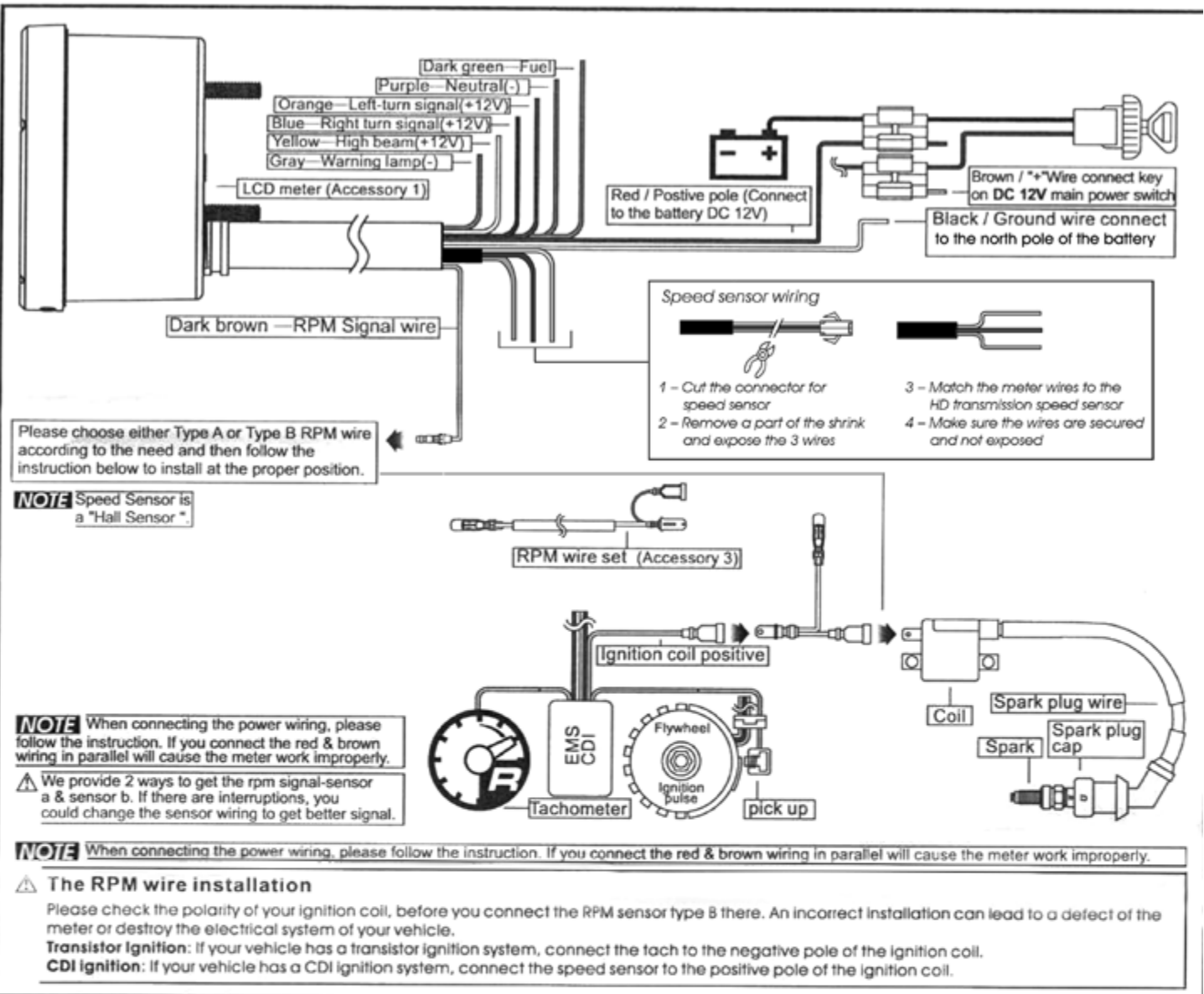
1-1 Accessory



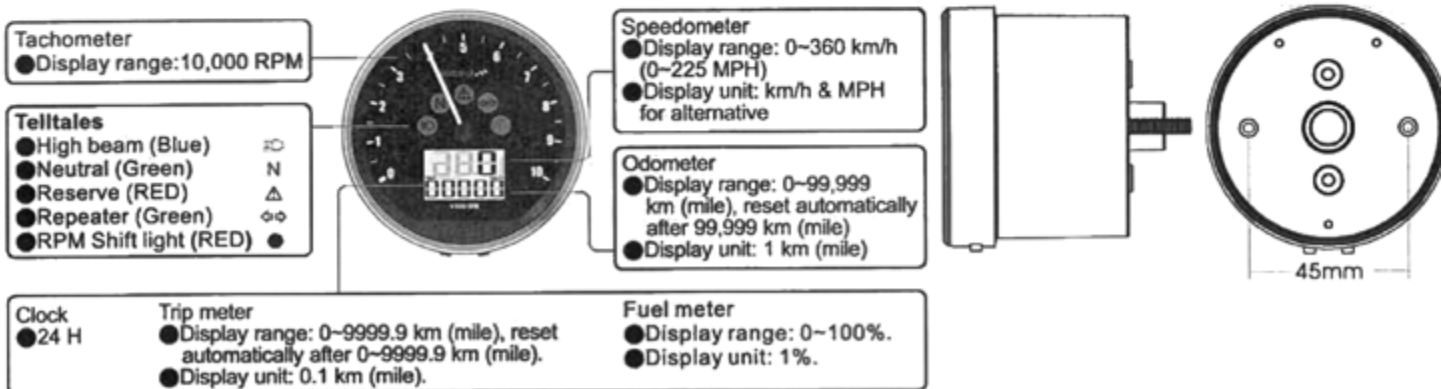
1-2 Optional accessories



2-1 Wiring installation instructions



3-1 Basic function instruction



3-2 Function, setting instruction

●Speedometer	Display range: 0~360 km/h (0~225 MPH) Display unit: km/h & MPH or alternative
○Display interval	<0.5 second
○Odometer	Display range: 0~99999 km (mile), reset automatically after 99999 km (mile) Display unit: 1 km (mile)
○Trip meter A, B	Display range: 0~9999.9 km (mile), reset automatically after 0~9999.9 km (mile). Display unit: 0.1 km (mile).
○Top speed record	Display range: 0~360 km/h (0~225 MPH)
○Tire circumference	Setting range: 300~2,500 mm Sensor point: 1~20 · Setting unit: 1
●Tachometer	Display range: 10,000 RPM
○The shift light	Setting range: 5000~20000 RPM Setting unit: 100 RPM
○Warning	F-OFF (LIGHT ON) · F-ON (FLASH)
○RPM input pulse	Display range: 0.5, 1~6
○The RPM input pulse	setting range: Hi-ACT (Positive wave pulse) Lo-ACT (Negative wave pulse)

○Max. RPM record	Display range: 0~10,000 RPM
●Fuel meter	Display range: 0~100% Display unit: 1%.
○Insufficient fuel warning	Setting unit: 100.0, 250.0, 510.0, USER
●Clock	24 H
●Backlight brightness	Setting range: 1-5 (Darkest)~5-5 (Brightest) Setting unit: Each level represents 20%
●Effective voltage	DC 12v
●Effective temperature range	-10~+60 °C
●Meter standard	JIS D 0203 S2
●Meter size	85.5 X 54.5 mm
●Meter weight	Around 330 g
●Telltails	High beam (Blue) □ Neutral (Green) N Reserve (RED) △ Repeater (Green) ○○ RPM Shift light (RED) ●

NOTE Design and specification are subject to change without notice!

3-3 Function switch instruction

●Select button function instruction



- In RPM screen, Press the Select button once to switch function from ODO to Max. RPM record.



- In Max. RPM record screen, Press the Select button once to switch from the Max. RPM record function to the main screen.
- Hold pressing the Adjust button for 3 seconds to reset the Max. RPM record.



- The RPM screen.

●Adjust button function instruction



- In ODO screen, press the Adjust button once to switch the function from ODO meter to trip A



- In trip A screen, press the Adjust button once to switch from trip A to trip B
- Hold pressing the Adjust button for 3 seconds to reset the trip A.



- In trip B screen, press the Adjust button once to switch from trip B to clock screen.
- Hold pressing the Adjust button for 3 seconds to reset the trip A.



- Adjust In clock screen, press the button once to switch from clock to fuel screen.



- Adjust In fuel screen, press the button once to switch from fuel to ODO screen.



- The ODO screen.

4 Function setting instruction



- In main screen, hold pressing the Select + Adjust button for 3 seconds to enter the setting screen.

4-1 Speed unit setting



- Press the Select button one time to enter the speed unit setting.



- EX. To change the setting from km/h to MPH.
- Press the Adjust button to change the setting.

NOTE Default: km/h

▲ Now the default is flashing

NOTE Setting range: km/h or MPH.

NOTE The odometer & trip meter will change together with the speed unit.



- Press the Select button once to go back to the Speed unit setting screen.
- EX. The Speed unit setting is changed from km/h to MPH.



- Press the Adjust button once to go back to the tire circumference and sensor point setting screen.

4-2 The tire circumference and sensor point setting



- Press the Select button one time to enter the tire circumference setting

The circumference must be set to 1000.



- Press the Select button to move to the digit you want to set.

NOTE Default: 1,000 mm

▲ Now the default is flashing

NOTE The tire circumference setting range: 300~1,000 mm, and the digit you set is from left to right in order.

CAUTION!

- Please measure the tire circumference (the tire you will install the sensor on) and make sure the number of magnet sensor point (You could install the magnet into the disc screw or the sprocket screw.)
- The speed displayed on the meter will be affected by the setting, please make sure the setting number is correct before you make the setting.



- Press the Adjust button to choose the setting number.



- Press the Select button once to go back to the sensor point setting screen.
- EX. The sensor point setting is changed from 01 P to 06 P.



- EX. The sensor point you want to set is 6.
- Press the Select button to move to the digit you want to set.

NOTE Default: 01P

▲ Now the default is flashing

NOTE The sensor point setting range: 1~20 points. You could change the setting from left to right.



- Press the Adjust button to choose the setting number.

The setting point must be set to 20.



- Press the Select button once to go back to the tire circumference and sensor point setting screen.



- Press the Adjust button once to go back to the RPM pulse and input signal setting screen.

4-3 RPM pulse and input signal setting



- Press the Select button one time to enter the RPM pulse setting.



- EX. You want to change the current setting value from 1 to 2.
- Press the Adjust button to enter the corresponding value for the RPM signal number per ignition. (Please check the reference table below!)
- EX. The original setting is 1(4C-2P)

NOTE The piston type can be set is 0,5,1,2,3,4

The setting value	The corresponding sprockets and pistons number	The corresponding RPM signal number per ignition.
0,5	4C-1P	2 RPM signal per 1 ignition.
1	2C-1P 4C-2P	1 RPM signal per 1 ignition.
2	2C-2P 4C-4P	1 RPM signal per 2 ignition.
3	2C-3P 4C-6P	1 RPM signal per 3 ignition.
4	2C-4P 4C-8P	1 RPM signal per 4 ignition.

CAUTION!

Some 4 stroke engine with single cylinder also generate 1 ignition signal per revolution of the engine. In this case the setting should be set as same as 2 stroke engine with single cylinder type of bike.

NOTE Pvalue is how many ignition signal the engine will generate per revolution (360°)



- EX. The ignition angle setting is changed from 1 to 2 (4C-4P).
- Press Selec button to enters the shift light setting screen.



- EX. We would like to change the setting to LoAct. (The negative impulse)
- Press the Adjust button to choose the input signal you want to set.

NOTE Default:HiAct

▲ Now the default is flashing

NOTE The impulse setting range is between Hi (the positive impulse)& Lo (the negative impulse)

NOTE If the tachometer can't detect the signal (No RPM is displayed on the screen), you could choose another setting, and check it again.



- Press the Select button once to go back to the RPM pulse and input signal setting screen.
- EX. The input signal setting is changed from HiAct to LoAct.



- Press the Adjust button once to go back to the shift light and shift light warning setting screen.

4-4 Shiftlight setting



- Press the Select button one time to enter the Shift light setting.



- EX: You want the shift light to light on at 8000 RPM Please change the shift light setting value to 8500 directly.
- Press the Select button to move to the digit you want to set.

NOTE Default:8,000RPM

▲ Now the default is flashing

NOTE Setting range : 5,000~20,000 RPM
Setting unit : 100 RPM



- Press the Adjust button to choose the setting number.



- Press the Select button to choose the Shift light setting.
- EX: Now the shift light setting is changed from 8,000RPM to 8,500 RPM.



- EX: You want to set the shift light F-ON (Flash).
- Press the Adjust button to choose the setting number.

NOTE Default:F-OFF(Light on)

▲ Now the default is flashing

NOTE Setting range: F-OFF(Light on) 、 F-ON(Flash).



- Press the Select button once to go back to the RPM input signal and shiftlight setting screen.
- EX: The shiftlight setting is changed from F-OFF(Light on) to F-ON(Flash).



- Press the Adjust button to choose the clock setting screen.

4-5 Clock setting



- Press the Select button one time to enter the clock setting.



- EX: To change the setting to 10:00.
- Press the Adjust button to choose the setting number.

NOTE Default:0 H.

▲ Now the default is flashing

NOTE Setting range: 0~23 H.



- EX: Now the setting is changed from 0:00 to 10:00.
- Press the Select button to enter the minute setting.



- EX: To change the setting to 14:10.
- Press the Select button to move to the digit you want to set.

NOTE Default:0 minutes.

▲ Now the default is flashing

NOTE Setting range: 00~59 minutes.



- Press the Adjust button to choose the setting number.



- Press the Select button once to go back to the clock setting screen.
- EX: Now the setting is changed from 14:00 to 14:10.



- Press the Adjust button to choose the backlight setting screen.

4-6 Backlight setting



- Press the Select button one time to enter the backlight setting.



- EX. You want to set the backlight at 3-5 (60%).
- Press the Adjust button to choose the setting number.

NOTE Default: 5-5

⚠ Now the default is flashing

NOTE Setting range: 1-5 (Darkest)–5-5 (Brightest), 5 different levels available. Setting unit: 20% per level. The backlight brightness will change immediately after you set the value.



- Press the Select button one time to enter the backlight setting.
- EX: The backlight setting is changed from 5-5 (100%) to 3-5 (60%).



- Press the Adjust button to choose the fuel gauge resistance setting screen.

4-7 Fuel gauge resistance settings



- Press the Select button to enter the fuel gauge resistance setting screen.



- EX. If the vehicle is a YAMAHA T-MAX 530 ; it's resistance is 100Ω according to the service manual.
- Press the Adjust button to choose the setting number.

⚠ Now the setting value is flashing!

NOTE The fuel gauge resistance setting range: USER, 100 Ω, 250 Ω, 270 Ω, 510 Ω, 1200 Ω, SW (turn off)

NOTE Custom fuel level resistance:
 1. Manual - Please check 4-2-1 Fuel Level Resistance Manual Setting Instructions.
 2. Auto - Please check 4-2-2 Fuel Level Resistance Auto Setting Instructions.



- Press the Select button to go back to the fuel gauge resistance setting screen.
- Ex. Now the fuel gauge resistance setting from USER to 100 Ω .



- Press the Select button to enter the lowest fuel level's resistance setting screen.
- EX: For YAMAHA T-MAX 530, according to the service manual, the fuel tank resistance from low to high is 90 - 100 Ω (the lowest) and 4 - 10 Ω (the highest). So enter the setting value as 10 Ω .



- EX: If the lowest fuel level is 90 Ω .
 - Press the Select button to the digit you want to set.
- ⚠ Now the default is flashing



- Press the Adjust button to choose the setting number.



- Press the Select button twice to enter in the highest fuel level's resistance setting screen.
- EX. The lowest fuel level setting is changed from 0 to 90 Ω .



- EX. If the highest fuel level is 10 Ω .
 - Press the Select button to the digit you want to set.
- ⚠ Now the default is flashing



- Press the Adjust button to choose the setting number.



- Press the Select button twice to go back to the highest fuel level's resistance setting screen.
- EX. The highest fuel level setting is changed from 0 to 10 Ω.



4-7-2 Fuel level resistance auto detection settings

- Press the Select button to enter the lowest fuel level's resistance auto detection screen.

CAUTION!

- Before detection, ensure that your current fuel level is in the lowest position that you would like to have.
- Stop the vehicle for a few seconds to allow the fuel surface to become steady, then start the detection of the resistance.



- Press the Adjust button to detect the lowest fuel level's resistance.



- Press the Select button 5 times to enter the lowest fuel level resistance auto detection screen
- EX. Auto Detection the lowest fuel level resistance is 90 ohms

CAUTION!

- Before detection, please ensure your current fuel level is in the highest position that you would like to have.
- Stop the vehicle for a few seconds to allow the fuel surface become steady, then start the detection of the resistance.



- Press the Adjust button to detect the highest fuel level resistance.



- Press the Select button 5 times to go back to the fuel gauge resistance.
- EX. Automatically detect the highest fuel level resistance value as 10 Ω.



- Press the Adjust button to enter the odometer display screen.

4-8 Meter Odometer display

- Press the Select button to enter the odometer display screen.



- EX. The internal odometer display is 12500 km.

- Press the Select button once to enter the external odometer setting screen.

⚠ This display only for viewing current mileage on the meter.



- EX. The internal odometer display is 12500 km.

- Press the Select button once to enter the external odometer setting screen.

⚠ This display only for viewing current mileage on the meter.



4-9 Meter Odometer setting



● Press the Select button once to enter the external odometer setting screen.

● EX. Set the odometer to 5000 km.
 ● Press the Select button to move to the digit you want to set.

NOTE Default: 00,000km(mile)

▲ Now the default is flashing

NOTE Display range : 0-99,999 km (mile)

● Press the Adjust button to choose the setting number.



● Press the Select button once to go back to the Meter Odometer screen.
 ● EX. The odometer setting has been changed from 0 km to 5,000 km.
 ● Press the Adjust button X3 seconds to go back to the main screen.

● The main screen.

5 Trouble shooting

The following situation do not indicate malfunction of the meter. Please 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.	<ul style="list-style-type: none"> ● The power doesn't supply to the meter. <ul style="list-style-type: none"> --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. 	The clock is incorrect.	<ul style="list-style-type: none"> ● Do you connect the wiring correctly. <ul style="list-style-type: none"> --Please check the positive wire (Red) connects to the battery, and main switch positive wiring (Brown) connects to the main switch.
Speed does not appear or appear incorrectly.	<ul style="list-style-type: none"> ● Please make sure the speed sensor is connected correctly. ● Please check the tire-size setting. <ul style="list-style-type: none"> --please refer to the manual a2. 	Backlight doesn't work or doesn't have enough brightness	<ul style="list-style-type: none"> ● Please check your setting. <ul style="list-style-type: none"> --Please refer to the manual a5. ● The harness connection might be wrong <ul style="list-style-type: none"> --Please check the backlight wire is properly connected according to the instruction.
Tachometer does not appear or appear incorrectly.	<ul style="list-style-type: none"> ● Please check the RPM sensor wiring is connected correctly. ● Please check the spark plug is R type or not. If not, please replace the spark plug with the R type spark plug. ● Please check your setting. <ul style="list-style-type: none"> --Please refer to the manual a3. 	Telltale doesn't work	<ul style="list-style-type: none"> ● Please check your setting. <ul style="list-style-type: none"> --Please refer to the manual a6. ● The harness connection might be wrong <ul style="list-style-type: none"> --Please check the harness wire is properly connected according to the instruction.