M207 User Manual

Table of contents

To ensure correct operation and service，read the following instructions before operating the Motorcycle TPMS accessory.

TPMS

Tire Pressure Monitoring Systems (TPMS) improves safety while driving. Once installed in your vehicle, the system will automatically monitor your tires in real-time for pressure and temperature. When any tire’ s pressure and/or temperature appear abnormal, the system will, in real-time, transmit signals to active an alarm and show a digital figure to warn the driver of a problem. The system aids safety, can extend the tire life and help reduce fuel consumption.

NOTICE

FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the factoring measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected

Caution: Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating to conjunction with any other antenna or transmitter.

System Scope of Use and Warnings

Tire Pressure Monitoring System, TPMS

This system is a sensing device designed to measure and display tire operation and / or activate an alert to the driver when pressure and temperature irregularities are detected. It is the responsibility of the driver to react promptly and with discretion to alerts. Abnormal tire inflation pressure should be corrected at the earliest opportunity.

Caution: The system is wireless RF product; therefore, it may not receive signal due to interference environment or incorrect operating or installation. When the system continually cannot receive signal from one of the tire sensor more than 10 minutes since the system be switched on, the system will show “E2”. In this case, it may cause by a RF interference environment and driver needs to drive the vehicle to other place. If the display still cannot receive any correct signal from tire sensor, then, driver needs to find a nearby qualified tire maintain service for checking and maintain. It may cause by a tire sensor damaged or battery power consumption is low (the battery consumption will be lower than under normal using condition due to sensors need to send warning signal continually to driver) . If the system continually cannot receive signal from any sensors more than 10 minutes, the system might damaged and will show “E1”. Driver needs to drive to other place (there might be a interference nearby) or send the system to agent for repair.

System Installation and Usage

Proper use of the TPMS requires that a qualified tire service technician has properly installed the

TPMS sensors. The system is intended for use on 2-wheel motorcycles. The pressure monitoring range is 74 Psi (Gauge), below instruction is Gauge value mentioned.

Suggestion: Please check valve stem every year to be sure the valve stem is not leaking air.

Reacting to Alerts

When an alert or warning is received, reduce vehicle's speed and proceed to a safe location to stop where the tire can be inspected and /or serviced.

The low-pressure alert indicates that the air pressure has dropped to a selected minimum and a high-temperature alert indicates that the temperature of the tire content has surpassed the threshold value set.

Use of Chemicals

Temporary resealing or re-inflation products containing internal sealants or propellants in any tire assembly may adversely affect the operation of the sensor/transmitter.

SPECIFICATION

M207 RECEIVER SPECIFICATION	
Operating voltage	9V-16V (DC)
Operating Current	< 150mA
Operating Temperature	-20°C to 80°C / -4°F to 176°F
Storage Temperature	-20°C to 80°C / -4°F to 176°F
Tire pressure/temperature reading unit	psi, bar, kPa / °F, °C
Dimension of display	L:6cm x W:4.4cm x H:2cm
M207 SENSOR SPECIFICATION	
Operating Temperature	-30°C to 110°C / -22°F to 230°F
Storage Temperature	-40°C to 125°C / -40°F to 257°F
Operating humidity	Maximum 95%
Operating Frequency	433.92 MHz ± 50kHz
Pressure Monitoring Range	0 ~ 74psi / 0 ~ 508kPa / 0 ~ 5.1bar
Pressure Reading Accuracy	±1psi / ±10kPa / ±0.1bar (as normal pressure)
Temperature Monitoring Range	-30°C to 110°C / -22°F to 230°F
Temperature Reading Accuracy	±4 °C in normal environmental conditions
Transmission Power	Maximum 75.1 dBuV/m
Battery	3V

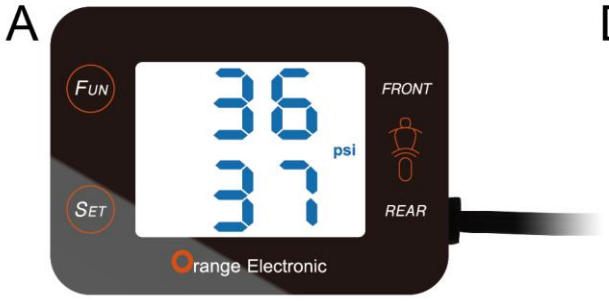
Note：

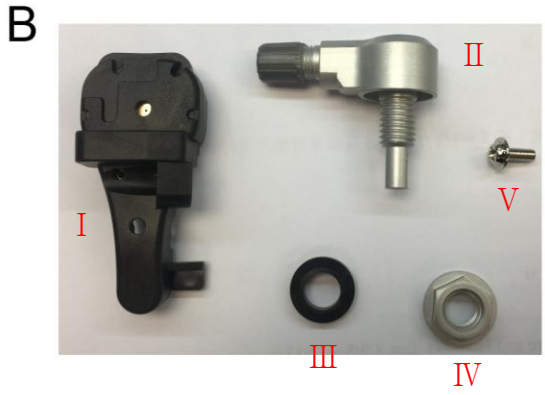
1. Due to different rims' spec, this product does not fit for all rims.
2. Torque wrench is 40~45kgf-cm (4~4.5Nm ; 35.4~39.8 inlb).

ACCESSORIES

NO.	Item	Qty
A	Display unit	1
B	Ⅰ、Sensor Ⅱ、Valve stem Ⅲ、Grommet Ⅳ、Nut Ⅴ、Screw	2
C	Velcro for Display	2
D	Ties for power cord	3
E	Clip	2
F	Orange display bracket	1

M207





SYSTEM INSTALLATION

The Orange Electronic Motorcycle TPMS Kit requires both the display unit and tire sensors to be installed. It is recommended to install the display unit before the two sensors.

DISPLAY UNIT INSTALLATION

Step	Process
1	**Red Wire** - positive (ACC) **Black Wire** - negative On the motorcycle's fuse box, connect red wire to positive electrical ACC connection and connect black wire to negative connection. Optional: Use clips (Accessory E) and ties (Accessory D) to help connect and fix electrical wires to the fuse box. Do not cut the wires more than 30cm due to the antenna(white wire) is inside the wires.
2	Attach velcro to the back of the display unit and place monitor at an appropriate position in front of driver.

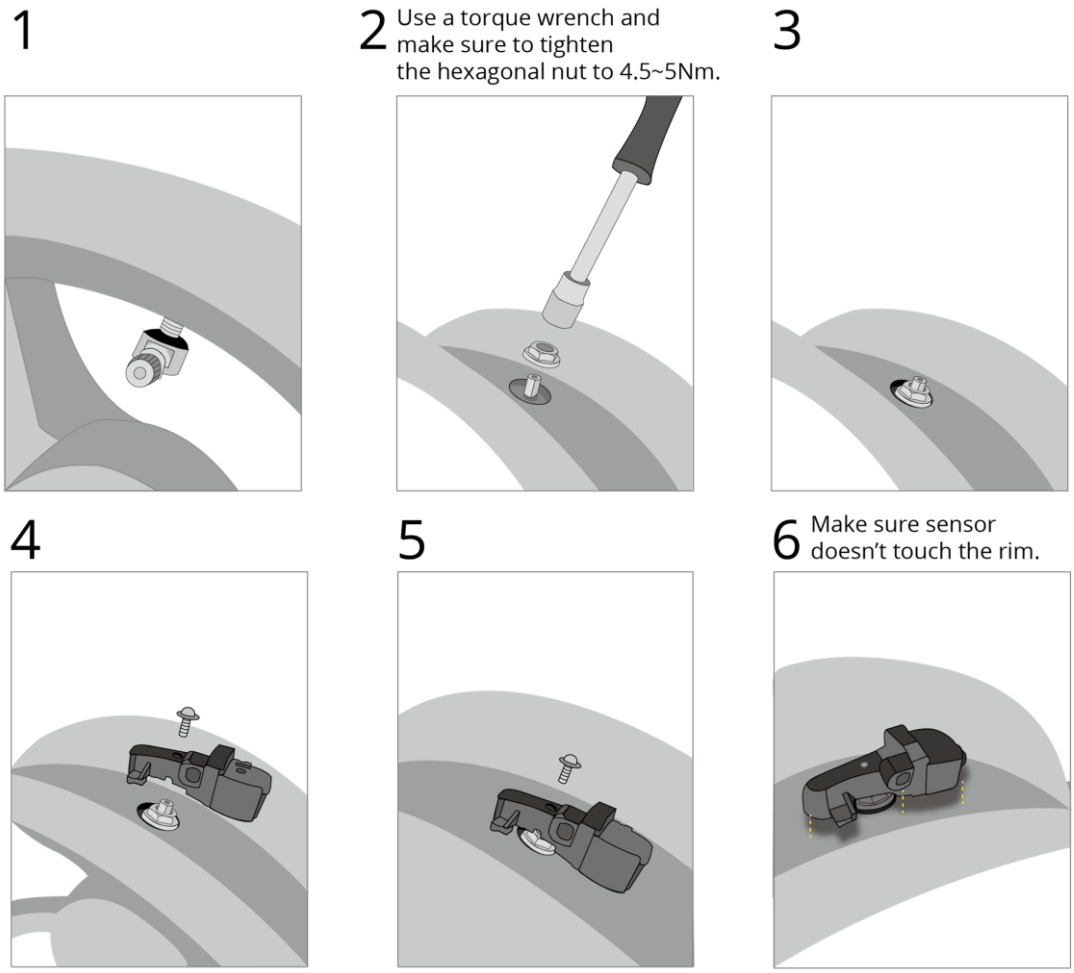
SENSOR INSTALLATION

Step	Process	photo
1	Only a professional tire dealer or mechanic should install the TPMS sensor	
2	Remove each tire and release the air pressure. Take off the air valves from the wheel of the tire. (**Note:** Need to change the valve to a TPMS valve)	
3	Match the number to each TPMS sensor with the correct wheel position on the motorcycle before installing. **(IMPORTANT)** **F-1:** Front tire **R-2:** Rear tire	
4	Take off the valve cap and nut. Set up the new TPMS sensor valve in the wheel. After valve stem is through the rim, load nut. Use a wrench to secure the valve and tighten nut to 40~45kgf-cm (4~4.5Nm ; 35.4~39.8 inlb).	
5	Inflate the tires to the manufacturer's recommended inflation level. Balance the tires to manufacturer's specifications: A lead tire weight may need to be added for balancing.	

SENSOR INSTALLATION NOTICE

SAFE

1. Valve stem aims vertically to sensor.
2. Use a torque wrench and make sure to tighten the hexagonal nut to 4.5~5Nm.
3. Make sure sensor doesn't touch the rim.



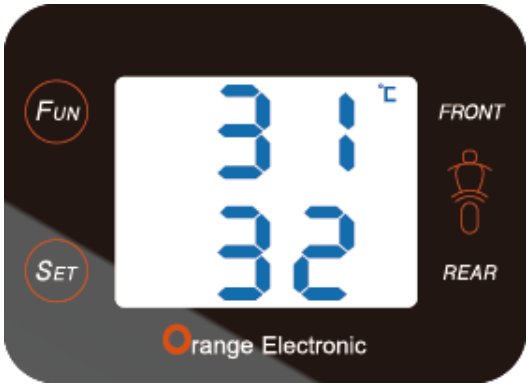
NOT SAFE

1. The sensor touches the rim
2. The grommet is visible from the rim.
3. Tighten the hexagonal nut less than 4.5Nm.

SYSTEM OPERATION

Once accessory power is applied, the system will scan both tire sensors and display tire pressure and temperature in real time within 3 minutes.

(Fig.1)



(Fig.2)

Use the “Fun” (function) button to cycle between display modes:

Mode 1: Cycle between tire pressure and temperature.

Mode 2: Tire pressure (Fig.1)

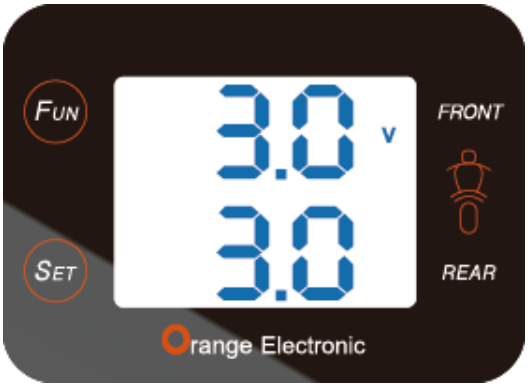
Mode 3: Tire temperature (Fig.2)

Mode 4: Battery (Fig.3)

Under any mode, if stay up to 30 seconds without，the display will record the mode automatically. Next time when restarting the display, it will be on the same mode.

(Fig.3)

Press “Fun” button for more than 3 seconds, the display will show sensor’s battery voltage for few seconds, the display will go back to the previous mode.



ADJUSTING OPERATING UNITS

1. Press the "Set" button and release after 3 seconds when screen goes blank.
2. Press the "Set" button to choose psi, kPa or bar.

3. Once your preferred pressure unit is displayed, press and hold "Set" button for 3 seconds until the temperature unit is displayed.
4. Press the "Set" button to choose Fahrenheit (F) or Celsius (C)
5. Once your preferred temperature unit is displayed, press and hold "Set" button for 3 seconds to set your preferred warning levels.

ADJUSTING WARNING LEVELS

Use the following steps to adjust the preset high/low pressure and high temperature warning levels for the individual front and rear tire.

The unit has been pre-loaded with alert thresholds, the details as below.

LOW/HIGH PRESSURE WARNING LEVELS：

Present warning level

Front	High warning level： 45psi	**Rear**	High warning level：50psi
	Low warning level： 27psi		Low warning level：30psi

To modify the high and low pressure warning levels for the front and rear tires, use the following steps:

1. Press and hold the "Set" button for 1 second to enter warning level modification.
2. The display unit will enter warning level modification for the FRONT tire first.
3. The display will show "Lo" with flashing numbers.
4. Use the "Fun" button to change the front tire's low pressure warning level by +1psi within the ranges of 17-50psi. After reaching desired low warning level, select front low pressure by pressing the "Set" button.
5. The display will show "Hi" with flashing numbers.
6. Use the "Fun" button to change the front tire's high pressure warning level by +1psi within the ranges of 22-70psi. After reaching desired high warning level, select front high pressure warning by pressing the "Set" button.

   Notice: After adjust the low pressure warning level, the lowest warning level of high pressure warning will +5 psi based on adjusted low pressure warning level.
7. The display unit will enter warning level modification for the REAR fire second.
8. The display will show "Set" with flashing numbers.
9. Use the "Fun" button to change the rear tire's low pressure warning level by +1psi within the ranges of 17-50psi. After reaching desired low warning level, select rear low pressure by pressing the "Set" button.
10. The display will show "Hi" with flashing numbers.
11. Use the "Fun" button to change the rear tire's high pressure warning level by +1psi within the ranges of 22-70psi. After reaching desired high warning level, select rear high pressure warning by pressing the "Set" button.
12. After selecting the high and low warning levels for the front and rear fires, the display will automatically enter the set-up for high temperature warning level.

HIGH TEMPERATURE WARNING LEVEL：

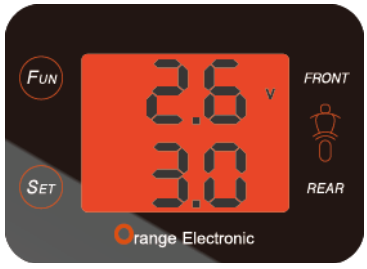
Preset warning level: 80°C /176 °F
Preset warning range: 60~100°C =140~212 °F

1. The display unit will show "Hi" and flashing numbers.
2. Press the "Fun" button to modify flashing numbers to desired high temperature warning level.
3. Press the "Set" button once desired warning level has been reached to set warning level.
4. System will return to normal display mode, showing tire pressure and temperature.

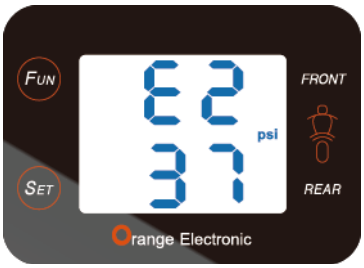
SYSTEM ALARM

When the Motorcycle TPMS unit detects abnormal tire pressure, the display unit will keep showing tire pressure in red until the abnormal pressure has been corrected

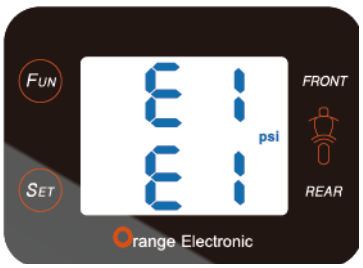
When the Motorcycle TPMS unit detects abnormal tire temperature, the display unit will keep showing tire temperature in red until the abnormal temperature has been corrected.



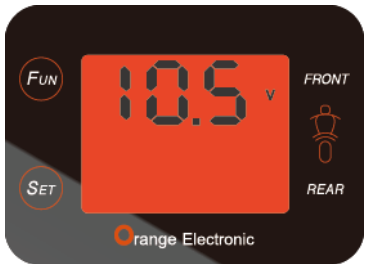
When the Motorcycle TPMS unit detects low battery voltage under 2.6V of the tire sensors, the display unit will keep showing sensor battery voltage in red until the sensor is replaced.
The warning can be lifted by pressing “Set”.



When the display cannot receive data from one of the sensors for about 10 minutes, the display will show “E2”.



If the display cannot receive data from any of the sensors for more than 10 minutes, the display will show two “E1”.



When the motorcycle battery voltage below 11V, in mode 3, the display will show in red number, but if switch to other mode, there will be a flickering low-voltage sign to remind the user.

※It is driver's responsibility to act with caution and discretion in response to a warning from the display unit. Tire pressure and temperature issues should be corrected as safely and early as possible.

SENSOR REPLACEMENT

If a new sensor is replaced or if tires are rotated, the sensors need to be relearned by the display unit in order to display the correct information.

Step	
1	Install a new Orange sensor according to directions (page 5).
2	Press the "Set" and "Fun" keys simultaneously for around 5 seconds. The screen will flash white and red text. Once a '1' is shown, release the buttons. This indicates that sensor replacement mode has been entered.
3	Press the 'Fun' key to switch between tire to be replaced. (1 = front, 2 = rear)
4	When select 1 (front tire), deflate the tire until the display shows 2, it means the display has recognized the front tire sensor. When display shows 2 (rear tire), deflate the tire until the display goes back to monitoring screen, it means the display has recognized the rear tire sensor.
5	Inflate tire back to manufacturer's recommended inflation level.
6	When the display unit recognizes the proper inflation level, it will return to normal display mode and monitor tire pressure and temperature in real-time.

APPENDIX 1

Glossary

kPa	Pressure reading in Kilo Pascal
psi	Pressure reading in pound per square inch
bar	Pressure reading in bar
°C	Temperature reading in degrees Celsius
°F	Temperature reading in degrees Fahrenheit
Inflating Pressure environment	Recommended inflation pressure of a tire at ambient temperature of 25°C / 77 °F by vehicle manufacturers.
Low Pressure Alert	Visual and audible warning will be activated when the tire’ s pressure is below the preset level.
High Pressure Alert	Visual and audible warning will be activated when the tire’ s pressure is higher than the present level.
High Temperature Alert	Visual and audible warning will be activated when the tire’ s temperature is higher than the present level.
Display / Receiver	The electronic module mounted inside the vehicle that alerts the driver of any tire irregularities.
Sensor / Transmitter	The electronic module mounted on the wheels that measure the air pressure and temperature of the tire.

APPENDIX 2

kPa , psi, bar Conversion Table								
kPa	**psi**	**bar**	**kPa**	**psi**	**bar**	**kPa**	**psi**	**bar**
10	1	0.1	210	30	2.1	410	59	4.1
20	3	0.2	220	32	2.2	420	61	4.2
30	4	0.3	230	33	2.3	430	62	4.3
40	6	0.4	240	35	2.4	440	64	4.4
50	7	0.5	250	36	2.5	450	65	4.5
60	9	0.6	260	38	2.6	460	67	4.6
70	10	0.7	270	39	2.7	470	68	4.7
80	12	0.8	280	41	2.8	480	70	4.8
90	13	0.9	290	42	2.9	490	71	4.9
100	15	1	300	44	3.0	500	73	5
110	16	1.1	310	45	3.1	510	74	5.1
120	17	1.2	320	46	3.2	520	75	5.2
130	19	1.3	330	48	3.3	530	77	5.3
140	20	1.4	340	49	3.4	540	78	5.4
150	22	1.5	350	51	3.5	550	80	5.5
160	23	1.6	360	52	3.6	560	81	5.6
170	25	1.7	370	54	3.7	570	83	5.7
180	26	1.8	380	55	3.8	580	84	5.8
190	28	1.9	390	57	3.9	590	86	5.9
200	29	2	400	58	4.0	600	87	6

°C / °F Conversion Table					
°C	**°F**	**°C**	**°F**	**°C**	**°F**
-40	-40	20	68	80	176
-30	-22	30	86	90	194
-20	-4	40	104	100	212
-10	14	50	122	110	230
0	32	60	140	120	248
10	50	70	158	125	257

WARRANTY POLICY

Orange Electronic products are guaranteed from material defects for 365 days after the date of purchase. If the product fails under normal circumstances within the 1st year, Orange Electronic will repair or replace the product. Product will not be replaced or repaired if damaged from misuse or incorrect application. To obtain repair or replacement of the product under warranty, contact Orange Electronic or distributor. Proof of purchase and date of purchase are required to validate the warranty claim.

Orange Electronic is not liable for any director or consequential loss or property damage arising from the use of the product

ATTENTION

Warning!!!

Only can replace new sensor by TP–checker TPMS replacement sensor (sensor can be purchased from agents).

Cannot use other brands' TPMS sensors for replacement parts. Using other brands will cause failure reception and invalid warranty.

Any questions pertaining to warranty information or other questions not answered in the preceding pages can be answered by the place of purchase or by Orange Electronic service phone line or e-mail address:

E-mail：sales@orange-electronic.com

TROUBLESHOOTING GUIDE

A. The receiver shows no sign or any information after its power is turned on

1.The power cord connector is not well connected with the receiver
Solution: Remove the power cord and plug it into the outlet again until it is connected completely.
2. The digits shown on the display panel become incomplete, or the light indicators become abnormal.
Solution：Send the defected receiver display back to agent for repair and reconfigure its ID follow "SENSOR REPLACEMENT" setting.
3. The fuse is blown in display
Solution：Send the defected receiver display back to agent for repair and reconfigure its ID by following "SENSOR REPLACEMENT" setting

B. The button has no response

1. The inner circuits of the receiver failed
Solution：Send the defected receiver display back to agent for repair and reconfigure its ID follow "SENSOR REPLACEMENT" setting

C. The receiver cannot receive signal from one tire after the power is turned on the numeric values representing the locations of those tires displayed on the screen become "E2".

1. There is interference from other electronic device in the vehicle.
Solution：Remove other electronic device in the vehicle to determine if TPMS is interfered by those removed devices.
2. The ID of the tire does not set up correctly
Solution： Reconfigure the ID of the tire by following "SENSOR REPLACEMENT" setting for single tire.
3. The sensor of the tire failed.
Solution：Reconfigure the ID by following by following "SENSOR REPLACEMENT" setting for single tire and then send the defected sensor back to manufacturer for repair.

D. The receiver cannot receive signal from any tire after the power is turned on the numeric values representing the locations of those tires displayed on the screen become "E1".

1. There is interference from other electronic device in the vehicle.
Solution：Remove other electronic device in the vehicle to determine if TPMS is interfered by those removed devices.
2. The ID of the tire does not set up correctly
Solution： Reconfigure the ID of the tire by following "SENSOR REPLACEMENT" setting for single tire.
3. The inner circuits of the display panel failed.

Solution：Send the defected receiver display back to agent for repair and reconfigure its ID by following “SENSOR REPLACEMENT” setting

E. The pressure (or temperature) values show the wrong tire locations

1. The IDs of the two tires are not configures correctly
Solution： Reconfigure the IDs of the tires by following “SENSOR REPLACEMENT” setting.
2. After rotating the tires, it cannot reconfigure the IDs from sensors.
Solution： Reconfigure the IDs of the tires by follow “SENSOR REPLACEMENT” setting.