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# Precautions

- Please choose the installation location carefully so that the LCD monitor will not interfere driver when driving.
  - A. Please make sure LCD monitor firmly fixed to the front windshield or dashboard.
  - B. When read through tire pressure figures from LCD monitor, please also take care of driving safety.
- 2. Please make sure the LCD display can receive signals from all tire pressure sensors.
- 3. Tyredog TPMS has unique anti-theft tool to prevent sensor being stolen. You can decide whether install or not.
- 4. Please double confirm if sensors are fitted tightly. If necessary, please spreading detergent water on the valve stem to check any air leakage.
- If tire pressure is getting down or dropping quickly, please stop car immediately to find out if tire is deflated or another other problem is happening.
- 6. The monitor will automatically make connections in whole system when car starts to run. It is normal that some tire pressure figures might not be updated immediately due to there is no change of tire pressure in those tires.
- 7. Tyredog TPMS has mechanism to avoid interfering /being interfered with other signals.
- 8. Many environmental factors cause tire temperature rise and down as well. For example, hot weather or warm tire will lead rising tire pressure.
- 9. It is natural that tire pressure will decrease by days but not caused by the installation of tire pressure monitoring system. Tyredog TPMS can response

with its real figure of pressure.

10. If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Tyredog dealer.

# The Main Purpose

The Tire Pressure Monitoring System (TPMS) is an efficient and effective solution to many of current automotive safety problems. TPMS will help prevent driving on deflated tires and reduce fuel consumption. There are benefits here:

- Improves ride performance and handling
   Tire pressure leads to driving condition a lot.
- Decreases chance of tire blowout
   It is very critical to keep tire pressure in a good condition when driving, especially when buses, trucks are carrying people life and dangerous materials such as poisonous substances, oil, etc.
- Reduces labour of tire pressure inspections
   Multi-wheel trucks cause time consuming in human inspection in tire pressure. Goes without saying that no chance to monitor tire pressure when running. The system can have a very clear picture of tire pressure status among all tires.
- Not adds much maintenance cost
   Advanced designs to give the best convenience to all drivers by wireless/ cordless design, external sensors, etc.
- Less downtime

Real time monitoring gives you highly control of your tire pressure and temperature and avoid unexpected accidents caused from abnormal tire

pressure and temperature.

## Reduces fuel expense

Fuel efficiency is reduced by one percent for every 3 P.S.I. of under inflation. It is for sure that tire pressure is also one of important factors to save gas consumption.

#### Extends tire life

Research finds that running tires 20% under –inflation can reduce tire life by up to 50%. It is crucial to keep tire pressure at a right level (right tire pressure figures for each tire normally suggested by your car manufacturer)

#### Increases return on investment

Concludes advantages mentioned above, by taking care of tire pressure with simple Tire Pressure Monitor System, gains are much more than what you expect.

# The features of Tyredog TD2200A-X Series

TYREDOG TRUCK TPMS (Tire Pressure Monitoring System)- Powerful tool for maximizing uptime and improving safety- The New WTPMS Standard-TYREDOG Tire Pressure/ Temperature Monitoring Solutions

TYREDOG is a leading WTPMS solution for from the light to heavy-duty trucking industry. By continuing to develop new and better TPMS designs and manufacturing technologies, TYREDOG has helped the trucking industry improve safety issues and reduce operational costs. The major milestone of TYREDOG truck WTPMS is the introduction of lightweight valve stem cap sensor design. The extremely lightweight, compact sensor has been

specifically designed to simplify and reduce the installation time. Now there is no need to sacrifice tire maintenance efforts to gain safety. Through wireless technology, tire pressure and temperature information is displayed on the friendly Graphic User Interface (LCD monitor).

TYREDOG WTPMS series is available in configurations to fit all types of trucks-including light truck, bus, agriculture, ambulance, trailer, etc.

## Installation

- Do it yourself (D.I.Y.): it can be fully installed in a short time without any technical knowledge
- Wireless and cordless: wireless sensors, relay and LCD monitor ensure a quick and easy installation.
- Battery-powered: Battery powered LCD monitor, relay and sensor and battery low indicators on the monitor can remind driver of battery power status in all tires.
- Light and compact sensor: extremely lightweight and compact with specially designed electronic sensors

# Management

- Graphic user interface: Powerful graphical user interface for rapid understandings of tyre status.
- Real-time: high accuracy, real-time monitoring tire pressure and temperature and accuracy achieve 3 P.S.I. difference.
- Adjustable: fully adjustable pressure and temperature warning range

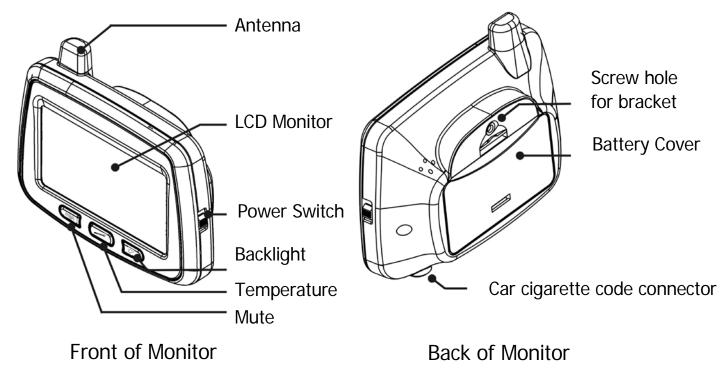
- Warnings: you will be award of abnormal status of tire pressure easily from 3.5" LED panel or from beep sounds
- 3-way adapter design: new design of 3-way adapter allows users to inflate tire without removing sensors

# Reliability and Robust

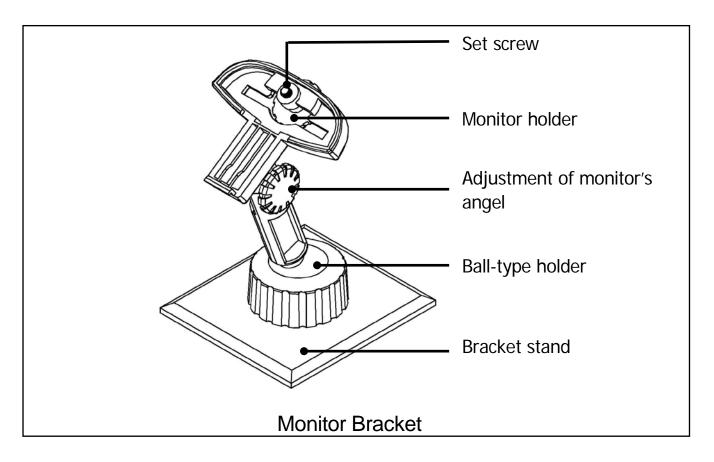
- Anti-theft tool for sensor: all electronic sensors can be locked in place to prevent theft.
- Sensors are changeable in the very unlikely event of defect or damage,
   so down time is minimal
- Ensure signal accessibility by providing peripheral signal integrity technology
- Strict environmental test has approved its reliability.
- 180 P.S.I: Tire pressure can support up to 180 P.S.I.
- Corrosion protection: metal section completely immersed in rust preventative coating for increased service life and reduced downtime.
   Rust preventative coating is applied for durability

# Location of controls and outlook

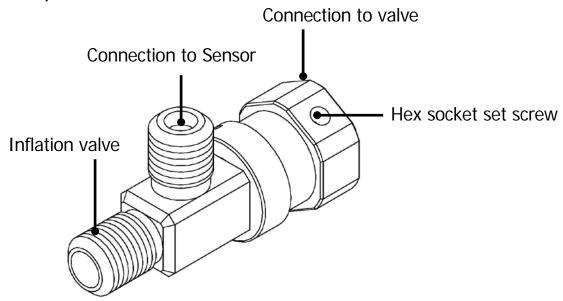
# Monitor description



# Monitor bracket description



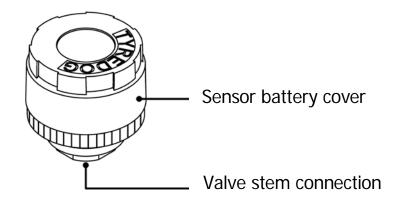
# 3-way adapter description



(The 3-way adapter is not included. Please purchase it separately.)

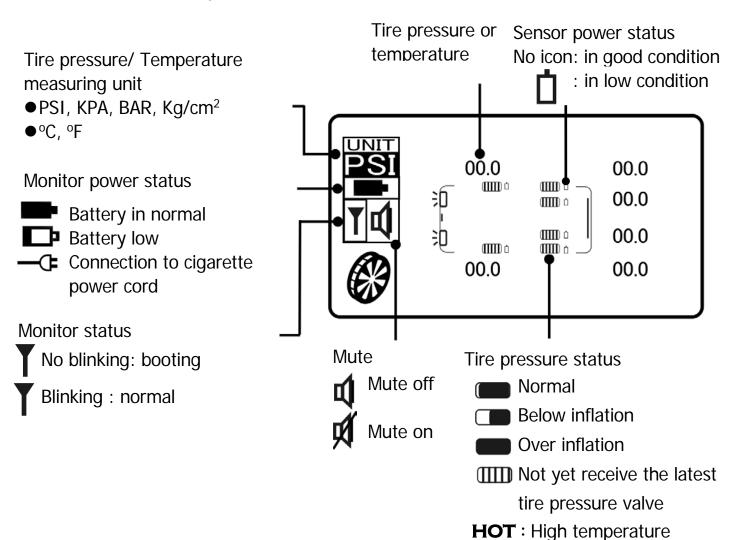
# Sensor description

The sensor has two portions: sensor cap and sensor body. Its external type can benefit user to install tire pressure sensors at home without any assistance from technicians.



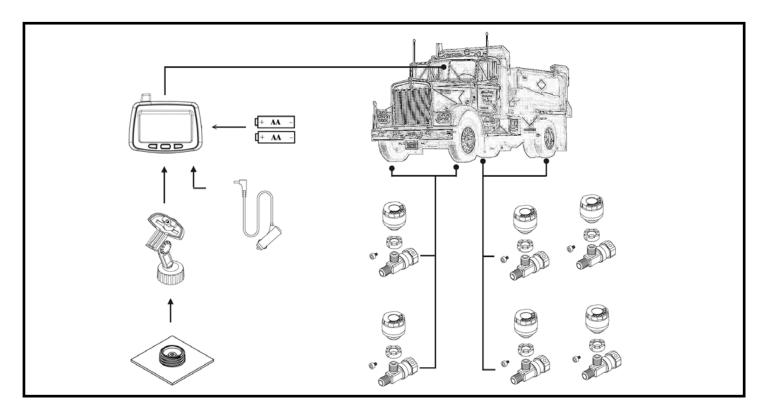
# Graphic user interface description

All information can be presented in 3.5" LCD monitor.



# **Getting Started**

# System map



Note: the 3-way adapter is not included. Please purchase it separately.

# Installation

You can choose to use battery power or connect Cigarette power cord to your car. Here we suggest that you can insert battery instead. Please follow coming steps to install batteries into relay, monitor and sensors.

## **Installation Procedure**

- 1. Insert batteries into monitor
- 2. Switch on monitor

- 3. Insert batteries into sensors
- 4. screw sensors on every tires

The installation of LCD monitor

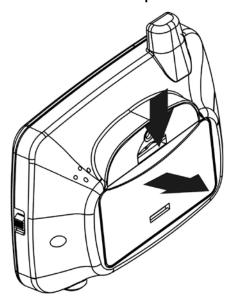
## Battery as power source

A. Please prepare AA battery which is provided in product package as well

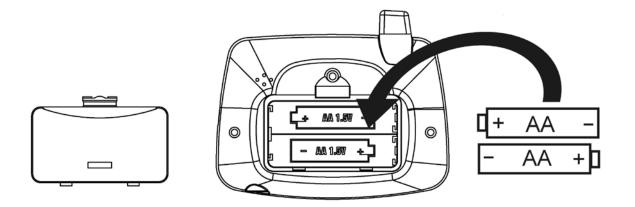


B. Open the battery compartment cover

Slide the lever as shown by the arrow and open the cover



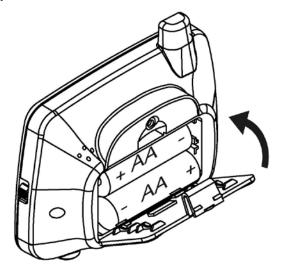
C. Insert the battery
Insert the end with the battery contacts and insert the battery until it locks in place.



Note: Make sure battery polarity correct when insert it.

## D. Close the cover

Press the cover until snaps shut.



# E. Power on monitor

Slide the power switch followed by direction shown as below.



Now LCD monitor will be receiving signals from sensors. The booting-up screen is as picture below :

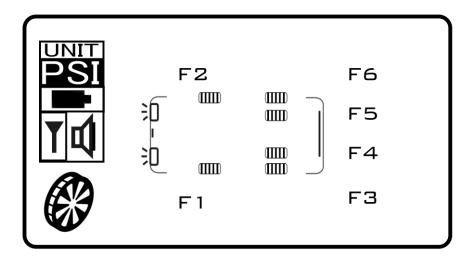


#### Note:

- 1. When batteries are exhausted soon, the battery level will be displayed. Please refer coming explanation.
- 2. Before you are going to next step, please switch on your display first.
- 3. Make sure battery polarity correct when insert it.
- 4. The system is designed for the convenience of user. Therefore, user doesn't need to switch off monitor and we even strongly suggest that user should keep the monitor power on all the time. The monitor will automatically enter 'sleeping mode' when system is not in use.

# The installation of tire pressure sensors

As sensor has its own position, you have to make sure its pre-set position. There could be different number of tires depends on your model. When inserting batteries in every sensors please don't mix up sensor caps and every sensors have own positions and relay & sensors map could give guidance for user to install. In order to meet most of configurations, the system with 6 –wheel tracker will be taken for example. Here is an example:



The actual arrangement will be followed by different product contents. The market position number will be found in every sensor caps.

## Note:

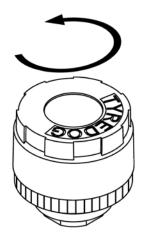
Make sure battery polarity correct when insert it.

Make sure sensor body won't mix up with other sensor cap.

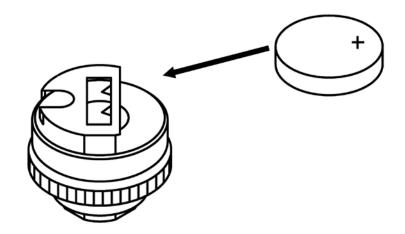
When batteries are exhausted soon, the battery level will be displayed on the LCD monitor.

## Insert batteries in sensors

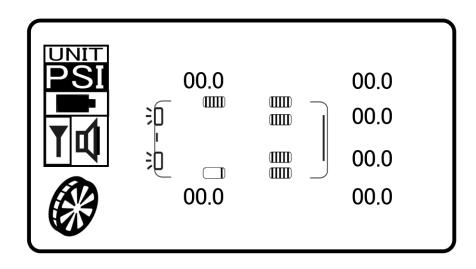
# A. Take away sensor cap



B. Insert lithium battery and make sure battery polarity correct when insert it.



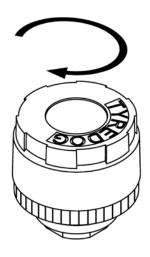
Right now, monitor will receive signals from corresponding sensors and report pressure value on the screen. At first, you will find that the value shows "00.0". It is because sensors have not been mounted yet. The screen could show as below:



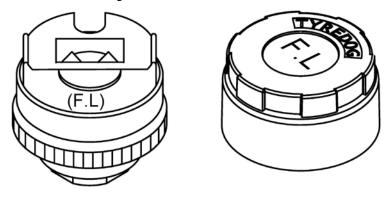
Take F1 (front right ) sensor for example

Note: After take away battery, the status of being without battery need to leave for 10 seconds and then insert battery again. It is for resetting system.

C. Fit sensor cap in a clockwise direction

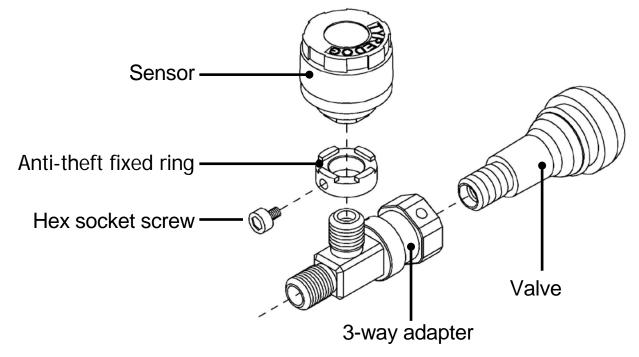


Please refer to "sensor map" to make sure the right position of each sensor and please don't mix up sensor caps either. You will find either sensor cap and sensor body have marks to remind user of its position.

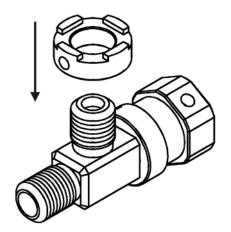


Sensor position (F1)

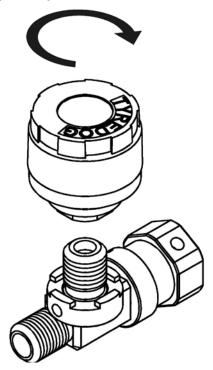
The installation of 3-way adapter (purchased separately)



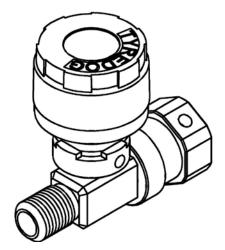
A. Put anti-theft fixed ring onto 3-way adapter.



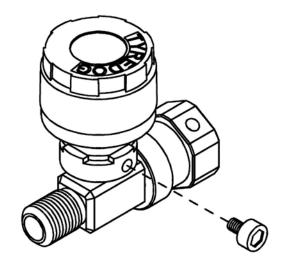
B. Install sensors onto 3-way adapter. Don't install sensors by brute force.



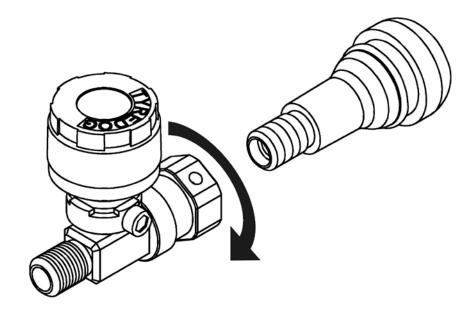
C. Adjust the anti-theft fixed ring position to install it with sensor in place firmly.



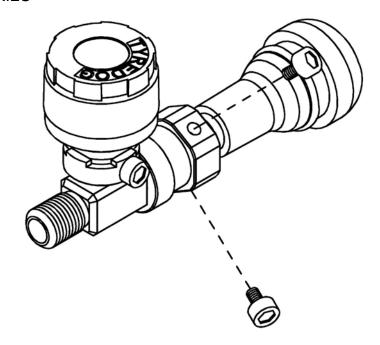
D. Put the hex socket screw onto the anti-theft fixed ring. (Please don't exert excessively to damage the valve.)



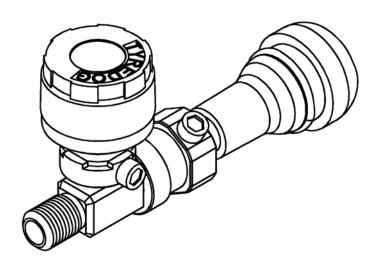
E. Screw 3-way adapter onto the valve stem
When screw 3-way adapter onto the valve stem, some paired- wheels could be difficult to reach valve stem. One of wheels might need to take off if necessary.



F. Put the hex socket screw onto the 3-way adapter.

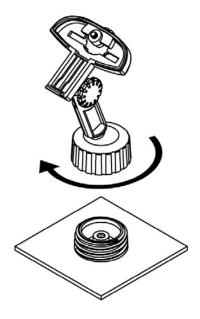


G. When four tire pressure sensors are installed, please check with detergent water if the tire pressure sensors and tire valve is completely fitted without any air leakage. (spread detergent water on the valve stem).



## LCD monitor bracket installation

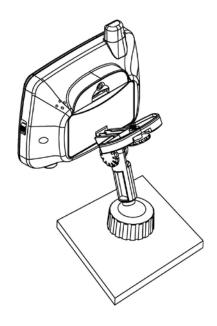
In package, there are two types of bracket stand. Chose one of them and connect to ball-type holder.



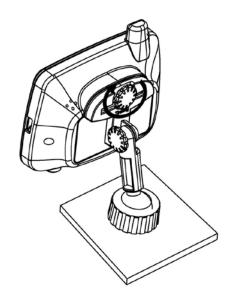
Bracket stand with sticker

## Mount LCD monitor to bracket

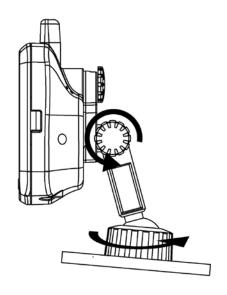
# A. Hook bracket to LCD monitor first



# B. Set screw tightly



C. Two joints available for adjustment LCD monitor see angel.



D. Mount the LCD monitor to the front windshield for dashboard.

### Note:

Be careful not to splash juice or other soft drinks onto the LCD monitor.

Before fix bracket, chosen flat and clean surface is necessarily for better hold of bracket.

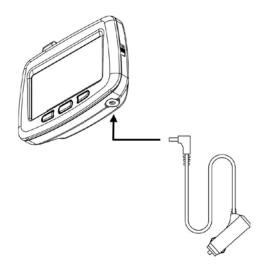
To keep the screen clean, do not touch the surface. Handle the display unit by its edge.

Monitor should keep standing -up vertically. Up side down or lay down monitor could lead to dysfunction

Optional - car cigarette power cord

Another option for use is by connecting to car cigarette adapter and battery will not be needed.

a. Connecting cigarette power cord to monitor

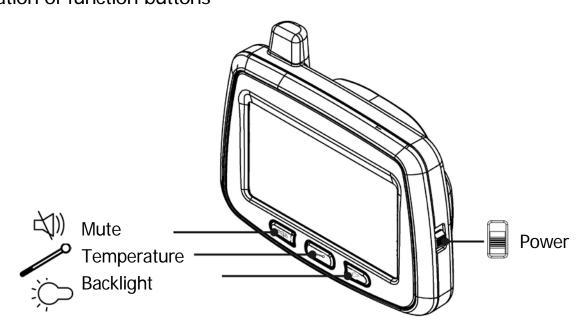


a. Connecting power cord to car cigarette adapter as well.

# Operating instructions

## Monitor basic function

### Location of function buttons



## The screen content and basic operation

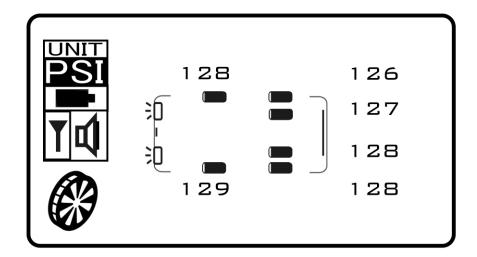


# power switch

Switch on monitor followed by direction shown above. Monitor will be booting up and shows tire pressure values that is kept from last time before system was off.



# Booting up



#### Main screen

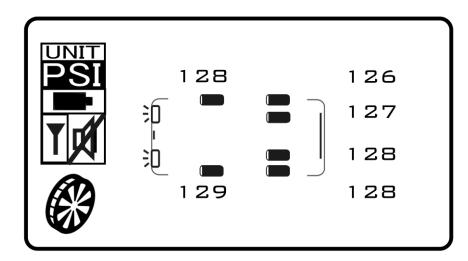
(This is a demo screen and the actual tire pressure figure and configuration could be different)

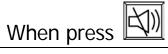
### The definition of button

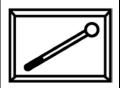


Mute

When tire pressure or temperature is in abnormal situation, beep sounds will give driver warnings. However, if switch to mute mode, beep sounds will stop and only visible warnings can be seen on the screen. Press mute button again, return to original audible warning setting.

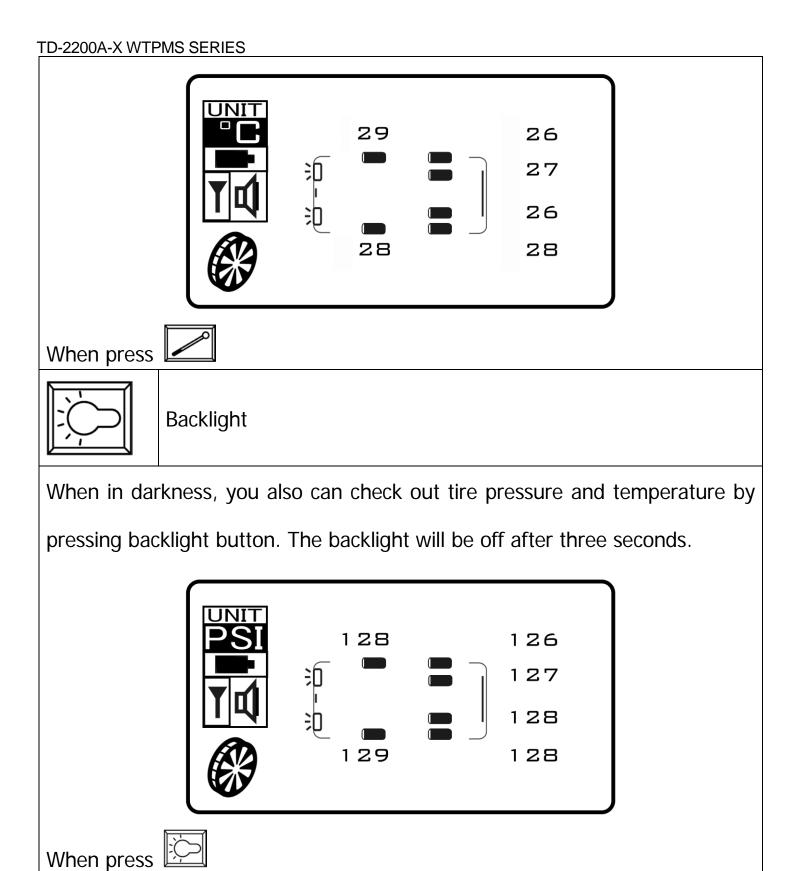






Temperature

By press temperature button, you can see all tire temperatures from screen and after three seconds, the screen will return back to main screen.



The advanced settings with buttons

In advanced settings, the three buttons play important roles to guide users to finish all settings. Different definitions will be given and presented on the

bottom of screen. Here is the simple chart of their definitions in different setting modes.

Settings	<u>[</u>		
In main screen	Mute	Temperature	Backlight
In the advanced	NEXT	ESC (escape)	ENTER
setting list	(go to next option)		(enter in one of advanced settings)
In the advanced	NEXT	ADJ	ENTER (chose this
setting of SET UNIT	(go to next option)	(adjustment)	configuration)
In the advanced	NEXT	DEC	ADD (increase)
setting of SET	(go to next option)	(decrease)	
THRESHOLD			
In the advanced	NEXT	/	ENTER (chose this
setting of SET CAR	(go to next option)		configuration)
TYPE			
In the advanced setting of SET SENSOR ID	ESC (escape)	/	/

First, please press mute' for more than 5 seconds and you will enter 'advanced mode.' In 'advanced mode', there are 4 opinions you can configure as needs.

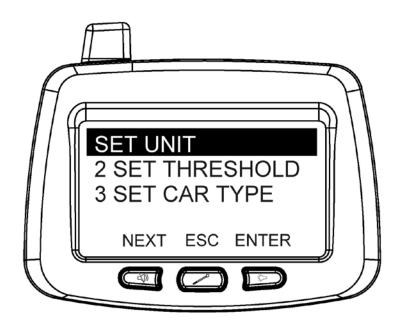
# Advanced functions and setting

Except three based functions, there are eight advanced functions.

1. SET UNIT: set up tire pressure or temperature measuring unit

- 2. SET THRESHOLD: set up warning values
- 3. SET CAR TYPE: chose the truck type you are applying (this function could be frozen depends on models)
- 4. SET SENSOR ID: retrieve ID numbers from sensors

Note: when get into advanced mode, the three buttons will be given different functions. In coming chapters, before getting into main content, the definition of the three buttons will be explained first.

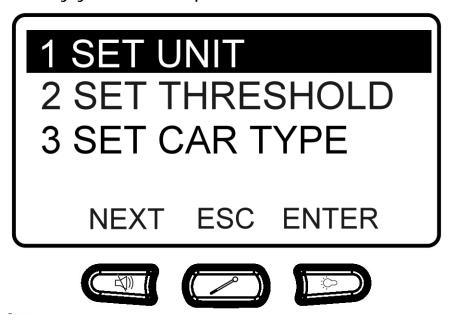


Entering into 'advanced mode'

### 1. SET UNIT

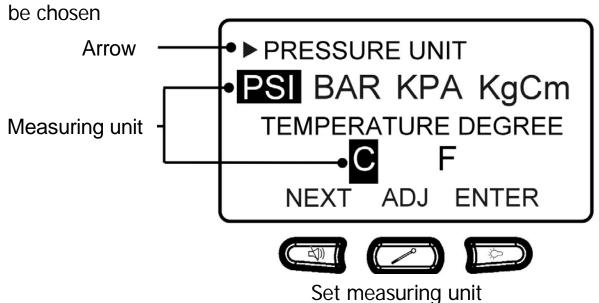
Settings			
In main screen	Mute	Temperature	Backlight
In the advanced	NEXT (go to	ADJ (adjustment)	ENTER (chose this
setting of SET UNIT	next option)		configuration)

Monitor can support four types of pressure measuring units – PSI, KPA, BAR and KG/cm<sup>2</sup> and two types of temperature measuring units -  $^{\circ}$ C and  $^{\circ}$ E. You can choose by your own request.



Set unit

When in the mode of advanced function- set unit, the icon (►) will be switched between (PRESSURE UNIT) and (TEMPERATURE DEGREE) for different measuring units. In this system, there are four pressure measuring unit provided – P.S.I., BAR, K.P.A. and Kg/cm. Also, C and F can

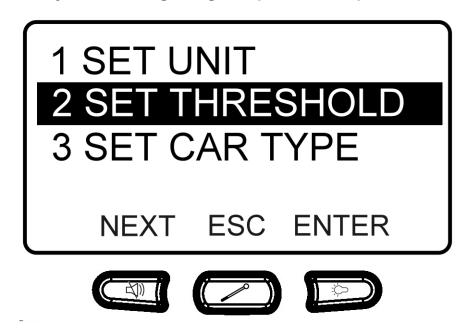


By pressing icon (Enter), settings will be saved.

### 2. SET THRESHOLD

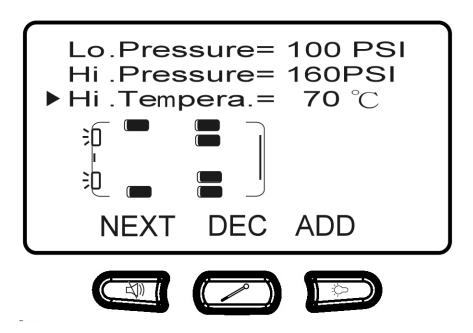
Settings			
In main screen	Mute	Temperature	Backlight
In the advanced	NEXT (go to next	DEC (decrease)	ADD (increase)
setting of SET	option)		
THRESHOLD			

This function can give user customized warning ranges of tire pressure and temperature between certain ranges. When tire pressure/ temperature are not in normal range, monitor will give both audible and visible warnings to driver. You could adjust warning range depends on specific situations.

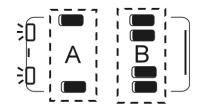


When enter 'SET THRESHOLD' mode, an help you make choice between option high pressure (Hi.Pressure), low pressure (Lo.Pressure) or

high temperature (Hi.Tempera.), and arrow (►) will follow with your instruction. ☐ and ☐ now stands for decrease (DEC) and increase (ADD).



The tire pressure warning range setting has two ways of group setting or fast setting. Group setting can let user to configure in different row of tires. As picture shows below, there are A AND B groups, when group A configuration is finalized, it will jump to group B immediately. Tire group will be blinking when you are making settings. After go through from group A to B (in this case), it will automatically jump out this screen.

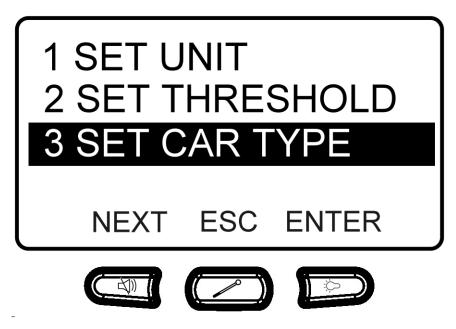


The fast setting will configure all tire pressure and temperature in same level in order to give convenience to users. You just need to press for more than 3 seconds and all tires will be blinking and followed by same procedure as previous content. •

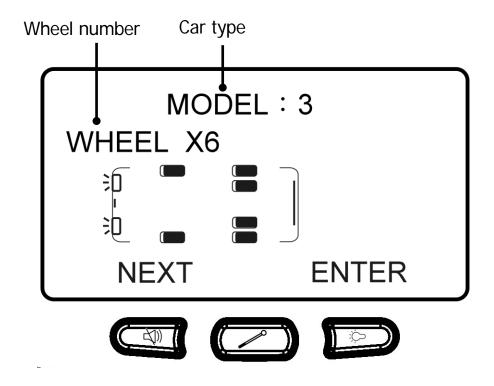
#### 3. SET CAR TYPE

Settings			
In main screen	Mute	Temperature	Backlight
In the advanced	NEXT (go to next	ADJ (adjust if any	ENTER (chose this
setting of SET	option)	trailer attached)	configuration)
CAR TYPE			

Monitor has pre-set 6 types of car. You can also have simple modifications in each model to satisfy your most needs. However, for most of TD2200A series products, this function will be frozen.



Here you can choose a car type you are applying. In this screen, by pressing (mute) that stands for NEXT now, you can go through different models to pick up one fitted with your car. By pressing that stands for adjust now, you can adjust the number of relays and connection to trailer or not.



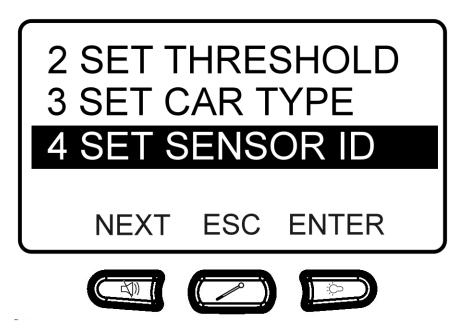
Car Type	Conceptual car drawing	Tire number
1.		4
2.		6
3.		6
4.		8
5.		8
6.		10

4. SET SENSOR ID (sensor identified number learning procedure)

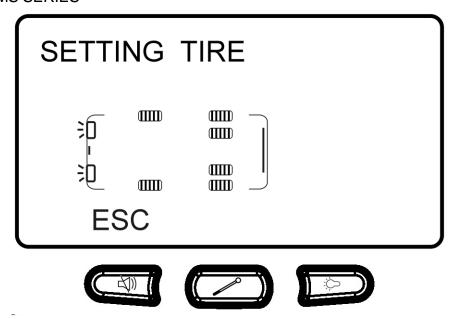
TD-2200A-X WTPMS SERIES

Settings	[ <del>\</del> \]))		
In main screen	Mute	Temperature	Backlight
In the advanced	ESC (escape)	/	/
setting of SET			
SENSOR ID			

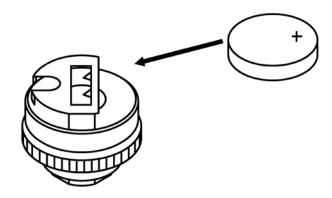
When you need to replace any of existing sensors with learnable sensor, you will need this function. Normally, original sensor has its own identified number and you won't need to do anything with sensors. However, whenever you lost your original sensor or sensor is broken, you will need to purchase a new 'learnable sensor' to replace. The 'learnable' sensor can be bought in your local dealer.



When you enter 'SET SENSOR ID' mode, you will have screen display as below. (Different truck type will have different display)



Insert battery into sensor and monitor will beep again to finish 'identified number learning procedure'.

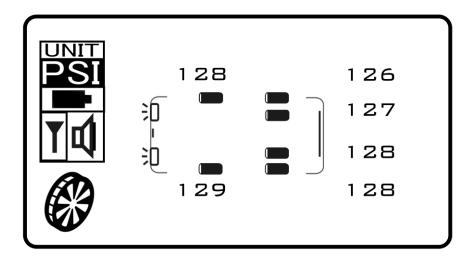


Note: 'SET SENSOR ID (sensor identified number learning procedure)' will need 'learnable sensor' but not any of its original sensors. The 'learnable sensor' should be purchased in your local dealer.

# Operating Procedure

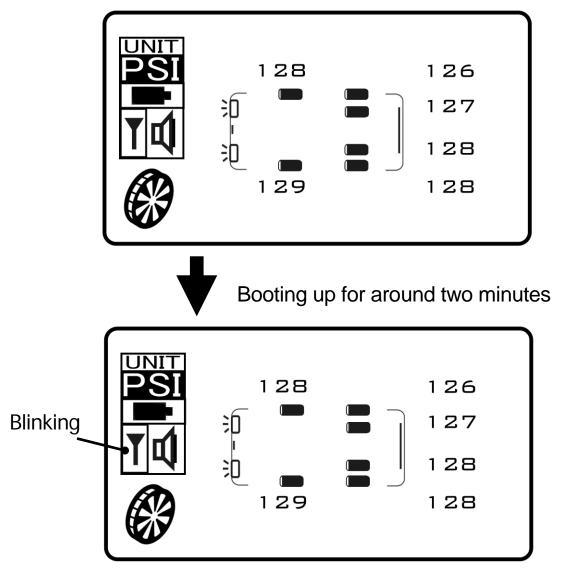
### Initialization

In initialization stage, monitor will detect relay(s) and sensor(s) first and show all necessary information after booting up.



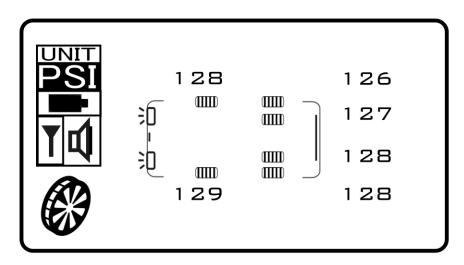
### Main screen

After booting up for around two minutes, system will enter main screen. Most of time, your system will stay in this mode and response with the latest figures of both tire pressure and temperature.



# Sleeping mode

For power saving purpose, very intelligent design in this system could automatically enter sleeping mode as long as the monitor has not been vibrated for more than 15 minutes. In this mode, monitor will be turn off to save battery power. Any vibration such as open car door or push any of buttons, monitor will be woken immediately. However, the display will look like picture below as the connection should be re-connected to get the latest tire and system status.

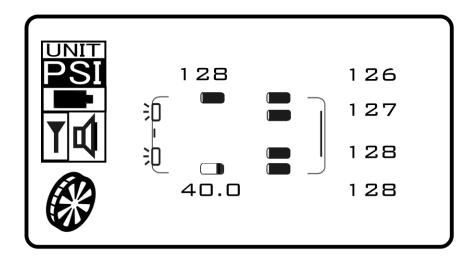


When making connections successfully, monitor will be back to main screen.

Abnormal tire pressure or temperature

Tire pressure below lower warning range

If tire pressure is below lower warning range (default value= 100 P.S.I.), monitor will beep for three times and tire shape icon will show shorter black bar, which means low tire pressure now. The picture is shown below to explain the front-right tire has tire pressure low now.



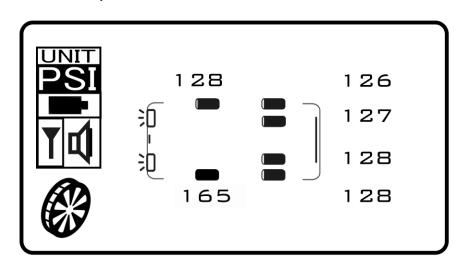
Take F1 (front left tire) for example

If tire pressure keeps on going down, every one P.S.I. lower, it will warn again. The situation will be stopped, when tire pressure is back to standard value.

Note: Strongly suggest that as long as low tire pressure warning is on, check tire situation first to ensure safety.

Tire pressure above topper warning value

If tire pressure is over topper warning range (default value= 160 P.S.I.), monitor will beep for three times and tire shape icon will show full black bar, which means high tire pressure now. The picture is shown below to explain the front-right tire has tire pressure low now.



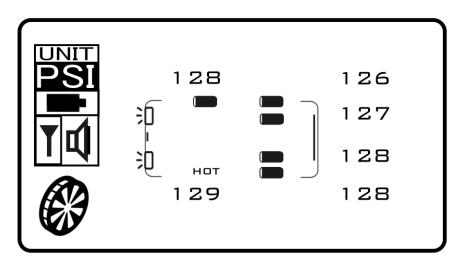
Take F1 (front left tire) for example

If tire pressure keeps on rising, every one P.S.I higher, it warns again. The situation will be stopped, when tire pressure is back to standard value.

Note: Strongly suggest that as long as low tire pressure warning is on, check tire situation first to ensure safety.

Tire temperature over topper warning value

If tire temperature is over topper warning range (default value=70°C), monitor will beep for three times and warning message "HOT" will be shown, which means high tire temperature now. The picture is shown below to explain the front-right tire has tire temperature high now.



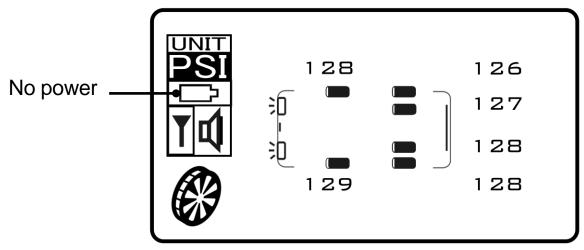
Take F1 (front left tire) for example

If tire temperature keeps on rising, every one °C higher, it warns again. The situation will be cleared, when tire temperature is back to standard value.

Note: Strongly suggest that as long as low tire temperature warning is on, check tire situation first to ensure safety.

## Monitor runs out of power

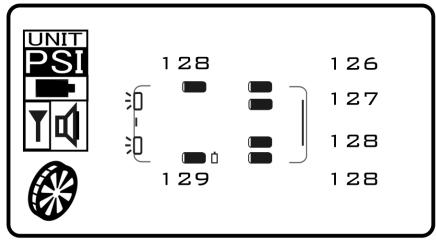
Battery power in monitor will decrease by daily operation and when power level is lower to some extent, battery low indicator in LCD monitor will appear to remind driver of time to replace battery. The icon is shown as picture below.



Please change monitor battery as early as possible to make sure system function well.

# Sensor run out of battery

Battery power in sensor will decrease by daily operation and when power level is lower to some extent, the sensor battery low indicator will appear to remind driver of time to replace battery. The icon is shown as picture below



Take F1 (front left tire) for example

Please change sensor battery as early as possible to make sure system function well.

# Additional Information

Under normal conditions, sensor batteries will last approximately 1~2 years. (The service life may be shorter, depending on the conditions of use.) When the battery becomes weak, the power low indicator will appear on the screen. Replace the battery with a new CR1632 lithium battery.

## Notes on battery

- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with dry cloth to assure a good contact
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Battery may explode if mistreated.
- Do not recharge, disassemble, or dispose of in fire.

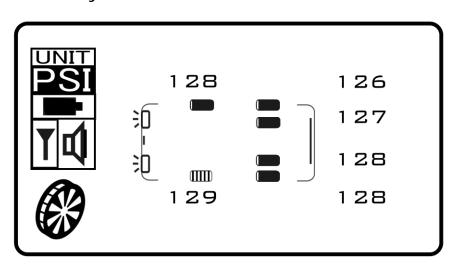
# Troubleshooting

The following checklist will help you remedy problems you may encounter with your unit. Before going through the checklist below, check the connection and operating procedures.

Indications disappear from / do not appear in the display

- A. Please make sure if power switch is on
- B. Please make sure if monitor has battery inserted.
- C. Be sure the power of battery is enough.
- D. Be sure to observe the correct polarity when installing the batteries.
- E. If you use power cord, make sure if it is disconnected.
- F. Please make sure if battery has no power after use for a long time.

  Battery could run out of power and we suggest to replace with new battery.
- G. Please make sure if the system is in 'sleeping mode' as the 'sleeping mode' will be triggered when system has been in idle for more than 10 minutes. It is for power-saving purpose. You can let system back to work by shocking monitor slightly or by pressing any of buttons in monitor.
- H. If these solutions do not help improving the situation, consult your nearest Tyredog dealer.
- 2. No connection to any of sensors.



# Take F1 (front left) tire for example

- A. Please make sure if sensors is screwed on where it should be.
- B. Please make sure if sensor has battery inserted.

- C. Battery has no power after use for a long time. Battery could run out of power and we suggest to replace with new battery.
- D. Please make sure if your sensor has mixed with other systems'. As each sensor has its unique identified number and monitor can only receive pre-loaded identified number in each tire position.
- E. If these solutions do not help improve the situation, consult your nearest Tyredog dealer.
- 3. Monitor cannot stop beep.

When battery-lower indicator is on and keeps on running system for days straight, it could make monitor abnormal and keep on beeping. Just change battery for back to normal operation.

- 4. Monitor display color is getting dark.
  - When car temperature is over 85°C, it is natural that LCD panel will be getting dark. When car temperature is back to normal, LCD panel will be normal as well.
- 5. When temperature is below -25°C, the response time could be slower in LCD monitor
- 6. Monitor in the 'sleeping mode'.
  - Temporarily park truck or drive truck in a stable speed, which could let monitor get into 'sleeping mode'. It is a special design for power-saving purpose. You can simply slightly shock monitor or press any of buttons to wake it up.
- 7. Please make sure the surface of glass is clean and flat to give the best fitness to monitor bracket. Otherwise, the monitor could drop off.
- 8. Tire pressure will be always changing by many environmental factors.

# Product package content

	Contont		Туре				
Item	Content	X04	X06	X08	X10	X12	Unit
TD2200A-X LCD Monitor		1	1	1	1	1	piece
Bracket for LCD monitor		1	1	1	1	1	piece
Bracket stand		2	2	2	2	2	piece
AA 1.5 battery for monitor	<b>AAA</b> –	2	2	2	2	2	piece
User guide		1	1	1	1	1	piece

TD-2200A-X W TPINS SERIES							
Cigarette power cord		1	1	1	1	1	piece
TD2200A-X Tire Pressure Sensor		4	6	8	10	12	piece
Spanner		1	1	1	1	1	piece
Anti-theft fixed ring		4	6	8	10	12	piece
Hex socket screw		4	6	8	10	12	piece
Optional Parts							
3-way adapter set3-way adapter		4	6	8	10	12	piece

Spanner	1	1	1	1	1	piece

# Product specification

Sensor specification					
Frequency	433.92MHz				
Pressure range	0-180PSI				
Accuracy	Pressure ±3 PSI · temperature ±2 °C				
Operating voltage	3V DC				
Operating temperature	-40°C~125°C				
Battery life	1~2 years (depends on working hours per day)				
Dimensions	Diameter 20.5mm X height 20mm				
Weight 10 g (±1)					

Monitor specification	
Frequency	433.92MHz
Operating voltage	3V DC
Battery life	1 years (depends on working hours per day)
Operating temperature	-20°C~ 80°C
Dimensions	Length 102mm X width 72mm X height 29mm
Weight	143 g