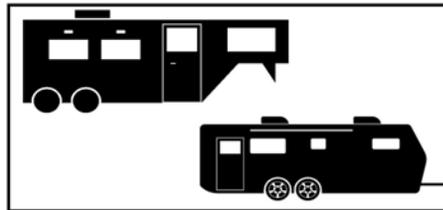
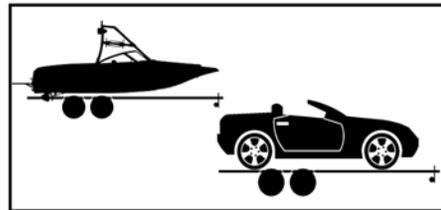


# Dill<sup>®</sup> 1502

## TPMS Trailer Kit

### Key Features:

- Alerts when tire pressure is too low or too high
- Alerts when tire temperature is too high
- Visual and audible warnings
- Set desired PSI levels
- Adjustable windshield mount included
- Easy Plug-In DC power source
- Adjustable Angle Valve Stems fit a variety of wheels



Thank you for purchasing the Dill TPMS Trailer Kit. Properly inflated tires increase fuel economy, reduce tire wear, and increase handling. A warning system to notify you of an underinflated tire will help give you time to respond prior to potentially damaging your tire or trailer.

For more information visit our website at <http://www.trailertpms.com>

<b>Table of Content</b>	<b>Page</b>
<b>1. System Overview:</b>	3
1.1 System Components	3
1.2 How the System Works	3
1.3 Display indicators and Controls	4
1.4 Transmitter Components	4
1.5 Position of Transmitter and ID Module	5
<b>2. Transmitter Installation &amp; Position</b>	6-7
<b>3. Using TPMS Unit:</b>	7
3.1 Getting Started	7-8
3.2 Transmitter Activation	8
3.3 Cold Inflation Pressure Setting	9
3.4 Restore Default Setting	9
3.5 Normal Monitoring	9
3.6 Warnings	9-11
3.7 Antenna Installation & RF Interference	11-12
3.8 Tire Rotation	13
3.9 Replace Transmitter and ID Module	13
3.10 Restart System	13
<b>4. Specifications:</b>	14
4.1 Transmitter	14
4.2 Display Unit	14
4.3 Component Part Numbers	14
4.4 Available Valve Configurations	15

## 1. System Overview

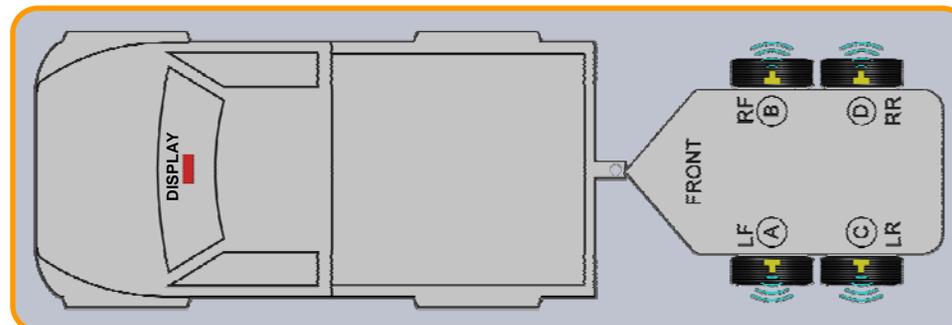
As a vehicle safety device, the TPMS trailer kit monitors tire pressure and temperature. It will provide warnings about abnormal conditions such as low pressure, high pressure, and high temperature.

### 1.1 System Components

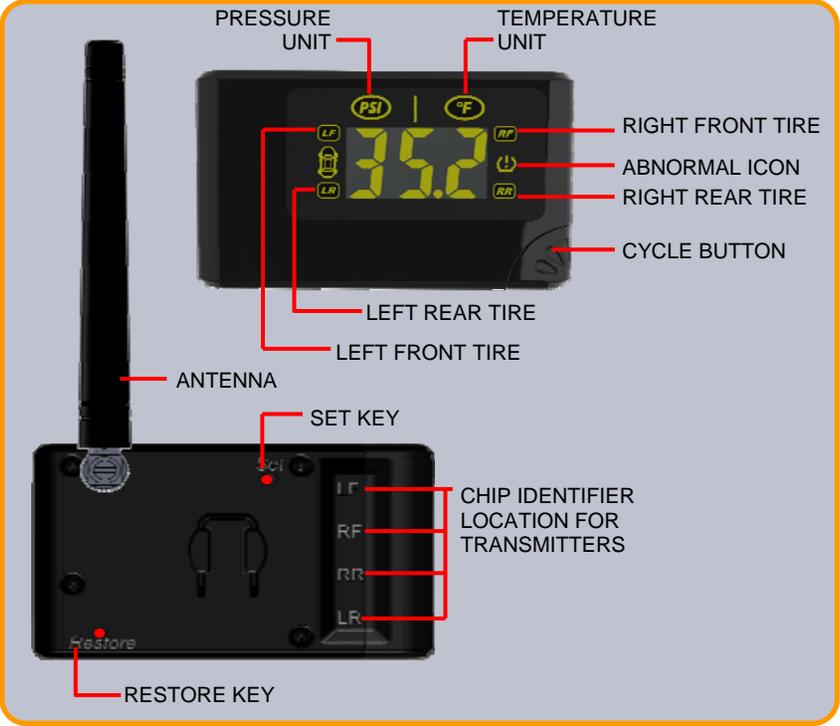


### 1.2 How the System Works

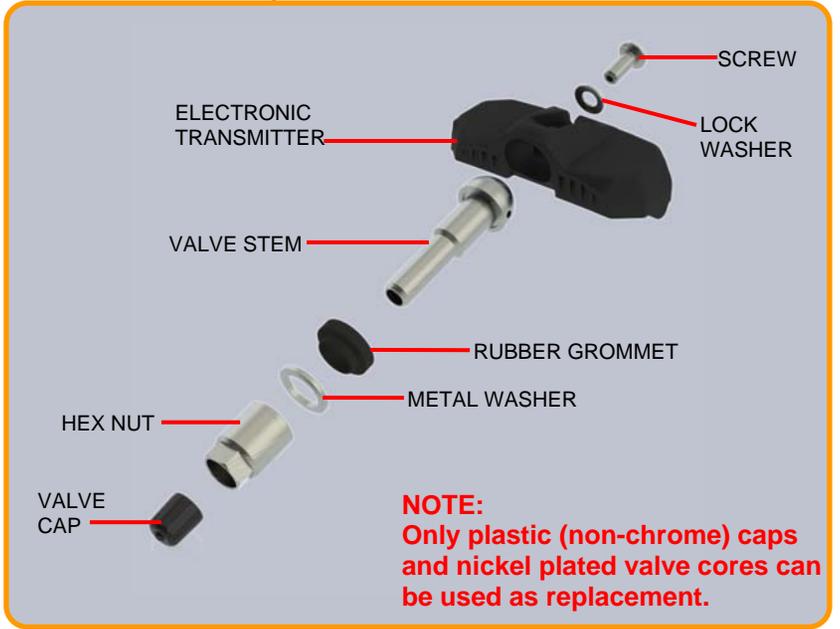
A transmitter is installed in each wheel with an aluminum valve stem and monitors the pressure and temperature conditions inside each wheel of the vehicle. This data is wirelessly sent to the receiver that is installed on the vehicle. The receiver displays the pressure and temperature for each tire position. When an abnormal condition is detected, the display will alert the driver.



### 1.3 Display Indicators and Controls



### 1.4 Transmitter Components



## 1.5 Position of Transmitter and ID module

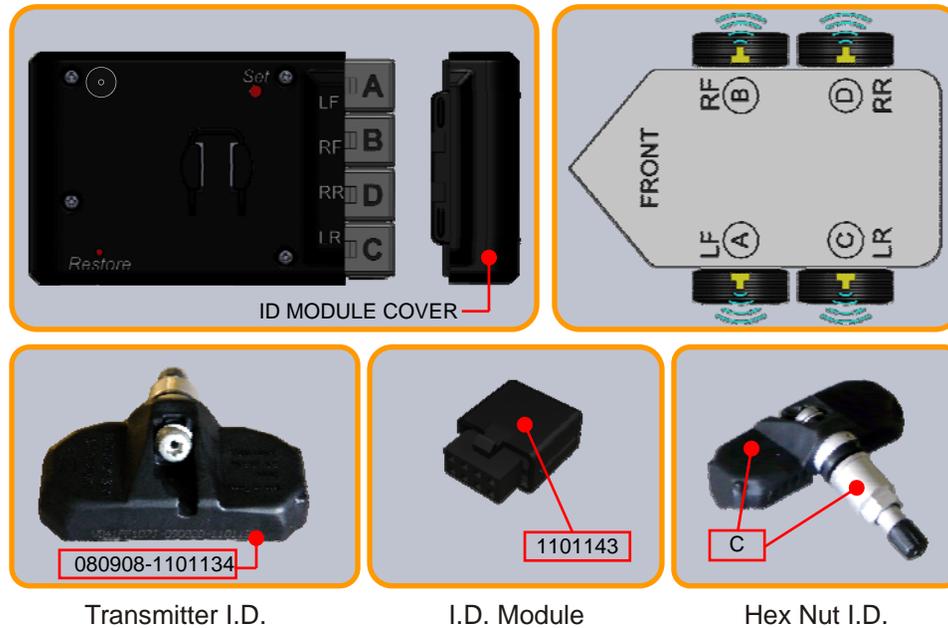
Note the default installation position of the transmitter and ID modules as illustrated. A letter identifier marked on the transmitter, ID module, and hex nut is shown on each component.

The letters “LF/RF/LR/RR” on the back of the display unit correspond to the tires’ respective positions. Each pair of transmitter and ID module need to be installed in the same position.

To access the ID modules, pull the ID module cover away from the display unit.

For example, if you install transmitter “A” in the left front tire, then you should plug the ID module “A” in “LF” position on the receiver.

**NOTE:** When installing the ID chips into the display unit verify the ID letters are facing towards the back of the display and is in the correct orientation. Small clip must face the back, regardless if the letter identifier is facing the wrong orientation.



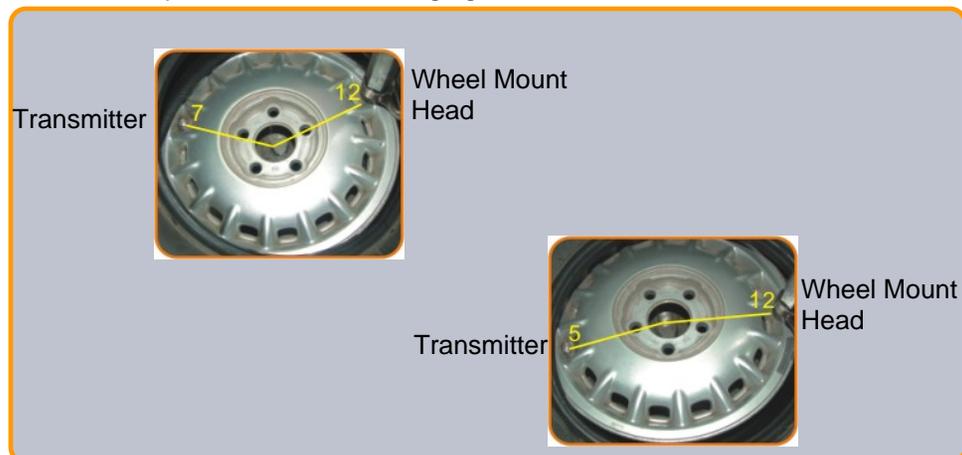
## 2.0 Transmitter Installation

Before installation into the rim hole, you must assemble the transmitter and valve stem together.

- 2.1 Unscrew the hex nut and remove the metal washer from the valve stem.
- 2.2 Place the valve stem onto the transmitter and use the lock washer & screw to hold valve stem against the transmitter body.

Note: DO NOT TIGHTEN THE SCREW.

- 2.3 Insert the valve stem through the rim hole and verify that the rubber grommet is seated against the rim hole surface.
- 2.4 Adjust the angle of the transmitter body and verify the transmitter is resting flat against the wheel rim surface.
- 2.5 Tighten the screw at 35 inch pounds into valve stem at the same time verify 3 conditions:
  - 2.5.1 At least one of the transmitter's feet always contacts the rim surface.
  - 2.5.2 The grommet is fully seated against the valve hole.
  - 2.5.3 From the outside of the wheel, the valve stem is perpendicular to the rim's valve hole.
- 2.6 Place the metal washer and hex nut on the valve stem and turn the hex nut clockwise until the rubber grommet is pressed against the wheel rim surface.
- 2.7 Tighten the hex nut 35 to 40 inch pounds of torque to secure the valve stem to the rim. Verify at least one of the transmitter's feet has direct contact on the wheel rim surface. If not, uninstall the transmitter and redo it from 2.5.
- 2.8 Lock the wheel rim on the tire changer. Apply lubricant on both tire beads and rim. Mount the lower tire bead on the rim. Ensure that the tire bead does not touch the electronic module during mounting.
- 2.9 Mount the upper tire bead the same way and inflate the tire to standard cold inflation pressure. Avoid damaging the antenna.



2.10 Apply suds on the valve tip, grommet / rim seal. If no leakage is found, install the valve cap. Otherwise, re-inspect and resolve leak issue.



2.11 Dynamically balance the wheel before it is put back on the vehicle.



2.12 Visually inspect the wheel rim, valve stem, and electronic module to ensure no damage has occurred. Pressurized the tires to your desired cold inflation setting.

### 3. Using TPMS Unit

#### 3.1 Getting Started

3.1.1 Install the supplied antenna to your display unit located at the back of the unit.

3.1.2 Use the display mount to affix the display unit on the windshield or dashboard. Do not block the driver's view. Adjust the viewing angle of the display, if necessary.



3.1.2 Plug the power cord into the display unit and plug the adapter into auxiliary power supply.



An immediate audible “Beep” sound will indicate the display unit is on. In 2 to 3 minutes, the display unit will show the tire pressures in yellow, along with four blue tire position lights.

### 3.2 Transmitter Activation

**Note: reference section 2 for transmitter installation.**

The transmitters are shipped in “sleep” mode for battery conservation and will be activated when the transmitter detects pressure in the tires or when the vehicle speed exceeds 20mph.

The default cold inflation pressure setting of the display unit is 35PSI. The display unit is programmed to provide a low pressure warning when the pressure is 20% lower (28PSI) and 30% higher (46PSI).

Cold inflation pressure can be set to your desired pressure and a warning will alarm at 20% below and 30% above this pressure. For example, the driver will be alerted at the following low and high pressures base on various set pressure:

PSI LEVEL	20% LOWER	30% HIGHER
35	28	46
50	40	52
80	64	104

### **3.3 Cold Inflation Pressure Setting**

Cold inflation pressure setting is pre-set at the to 35PSI, when installation and replacement of each transmitter and ID modules.

To change cold inflation pressure setting, perform the following:

3.3.1 Inflate the tire pressures to the recommended cold inflation pressure.

3.3.2 Press the “SET” key on the back of display and hold for 8 seconds to enter new cold inflation pressure setting. A ‘beep’ will sound and all indicator lights will turn off and the screen display will show “ddd”. Allow 3 to 5 minutes for the receiver to accept new cold inflation pressure setting.

3.3.3 To check a tire’s cold inflation pressure setting, press and release the “Cycle Button” twice. Repeating this step will cycle through each tire’s pressure setting.

### **3.4 Restore Default Setting**

To switch to default setting, press and hold the “RESTORE” key for 3 seconds. The display unit will switch back to default operations within 30 seconds.

### **3.5 Normal Monitoring**

3.5.1 Stationary State:

The transmitter will detect tire pressures and temperatures at 8-second intervals and transmit the data to the display at 2-minute intervals as long as they are normal. As the data is received, the display will refresh.

3.5.2 Moving State:

The inertia switch of transmitter is on when the speed exceeds 16mph.

The transmitter will detect tire pressures and temperatures at 4-second intervals and transmit the data to the display at 30-second intervals as long as they are normal. As the data is received, the display will refresh.

3.5.3 Normal Data Display:

The display will automatically circulate among the tire positions in the following order LF/RF/RR/LR.

Press and release the “Cycle Button” to view the tire temperatures.

### **3.6 Warnings**

3.6.1 Low Pressure Warning

If the current pressure in a tire is 28PSI or lower in default mode or 20% lower than the cold inflation pressure setting, then the following will occur:

1. The display will show the pressure of the abnormal tire and the digits will flash.
2. An audible alert warning sound will be heard.
3. The abnormal icon will become red.
4. The indicator for the abnormal tire will become red.

**The system will not return to normal monitoring until the problem(s) is corrected.**

#### 3.6.2 High Pressure Warning

When current pressure in a tire is 46PSI or higher in default mode or 30% higher than the cold inflation pressure setting, then the following will occur:

1. The display will show the pressure of the abnormal tire and the digits will flash.
2. An audible alert warning sound will be heard.
3. The abnormal icon will become red.
4. The indicator for the abnormal tire will become red.

**The system will not return to normal monitoring until the problem(s) is corrected.**

#### 3.6.3 High Temperature Warning

When the current temperature in a tire exceeds 176°F, the following will occur:

1. The display will show the temperature of the abnormal tire and the digits will flash.
2. An audible alert warning sound will be heard.
3. The abnormal icon will become red.
4. The indicator for the abnormal tire will become red.

**The system will not return to normal monitoring until the problem(s) is corrected.**

#### 3.6.4 System Malfunction

If the display is not receiving the signals from a transmitter(s), in the tires, the display screen will appear as dashed lines “---” .

If you are not receiving a signal from the transmitter(s), verify the following conditions .

1. Verify that the unit is plugged into the DC power supply. Power off the display unit and restart the system. The system will return to normal monitoring after properly receiving signals from the transmitter(s).
2. Verify that the ID module chip(s) are installed properly in the correct locations of the display unit.

1. Check your antenna connection.
2. Drive your vehicle over 20mph for 3 to 5 minutes. This will “wake” the transmitter and begin to transmit a signal to your display unit.

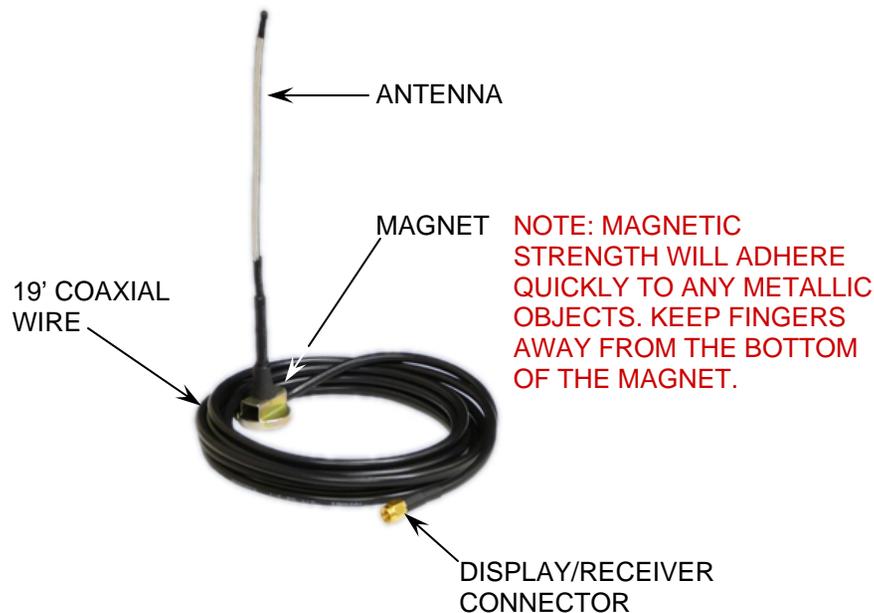
If the display unit is working properly and it still does not receive a signal from the transmitter(s), then the transmitter(s) and ID module(s) must be replaced simultaneously.

A replacement transmitter and ID module can be purchased from a Dill distributor or retailer, list available at [www.trailertpms.com](http://www.trailertpms.com).

### 3.7 Antenna Installation (Optional) and RF Interference\*

If the display unit is receiving a signal on an intermittent basis, i.e. when the distance is greater than what is recommended or there is interference preventing a continuous signal reaching the display from the wheel, you will need to install an exterior antenna. The added benefit of an exterior antenna is to assure a better reception from your transmitters to the display/receiver.

The antenna is assembled with an industrial strength magnet, 19 feet of coaxial wire, and a coaxial connector to install into the back of your display/receiver.



Remove the original antenna from the back of the display unit and replace it with the coaxial wire antenna via display connector.

Installing the external antenna involves a small degree of experimentation for maximum signal reception. Temporarily connect the antenna cable to the display, passing the cable through the vehicle's door or window. This temporary connection allows you to test the antenna's location. If the location you have selected for the antenna has difficulty in picking up signals from all tire locations, change the antenna's location slightly and continue to test. Install the magnet/antenna at the rear of the vehicle, which will give it the nearest proximity to the transmitters. Thus, increasing signal reception between the display/receiver and transmitters. When signals from all tire locations report, install the antenna permanently in the vehicle.

**Do not install the magnet/antenna directly on the trailer.**

***Caution: Stay away from transmission, oil and exhaust lines avoiding the inherent heat from those locations which can melt the coaxial cable.***

It is the installer/end user's discretion how to install the antenna and coaxial wire from the exterior through the interior of the vehicle cabin.

If proper reception is not achieved with the external antenna, a signal boost will be required.

A signal booster is an optional part for RV's, fifth wheels and tow-vehicles and trailers. It enhances the signal from the transmitters. A signal booster is recommended to effectively receive the signals from each transmitter, when there may be interference from electronics, RV construction, length, etc.

\*The system has been tested to work 40 feet, along line-of-sight pathways. However, tire construction, vehicle construction, electronic interference and low temperatures all reduce this distance. RF signals are subject to interference from many types of signals and products, which can cause errors in the operation of the product. As with cell phones and other types of electronics using RF signals, signal interruption can occur and cause lost signal transmission.

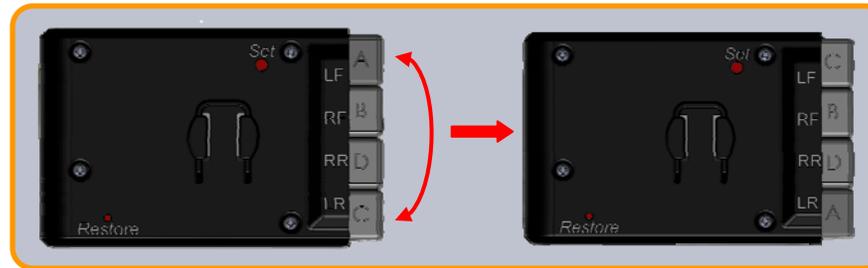
### 3.8 Tire Rotation

3.8.1 **Reference your tire manufacturer for proper tire rotation on your trailer.**

3.8.2 Note the current installation positions of the transmitter and ID modules.

For example, if you need to rotate the Left Front Wheel (LF) transmitter A and Right Rear Wheel (RR) transmitter C, then interchange ID chip module A and ID chip module C.

Reactivate the system (reference section 3.2) to accept new transmitter positions and to indicate the proper location of the transmitter on the display unit.



### 3.9 Replacement of Transmitter and ID Module

Verify a "System Malfunction (reference section 3.6.4)" before replacing the transmitter or ID module.

3.9.1 Replace the inoperable transmitter and ID module with a new one.

3.9.2 Transmitter Activation (reference section 3.2).

3.9.3 Reset the cold inflation pressure setting (reference section 3.3).

### 3.10 Restart the system

The system has to be restarted to re-identify the ID module in the following situations:

3.10.1 Tire rotation.

3.10.2 Replacement of a transmitter and ID module.

3.10.3 To restart the system, disconnect the power cord for 1 minute and plug in again.

## 4. Specifications

### 4.1 Transmitter

- Weight: 1.25 oz. (35g)
- Dimensions: 0.59" x 2.50" x 1.11" (1.5 x 2.8 x 6.4 cm)
- Operating Temperature Range: -40°F to 257°F (-40°C to 125°C)
- Pressure Accuracy: ±2PSI (±.14Bar)
- Temperature Accuracy: ±5.4°F (±3°C)
- Battery life: 5 to 7 years
- Maximum Sensing Pressure: 188PSI (12.96Bar / 1296Kpa)
- Maximum Cold Inflation Pressure: 144PSI (9.93Bar / 993Kpa)
- Frequency: 433.92MHz

### 4.2 Display

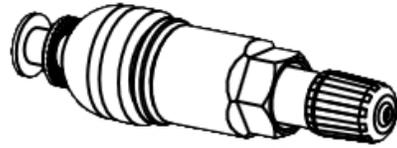
- Power Consumption: 130mW (regular) / 230mW(Max)
- Power Supply: DC12 Volt
- Weight: 1.06oz. (30g)
- Dimensions: 3.3" x 1.97" x 0.58" (8.5 x 5 x 2 cm)
- Pressure resolution: 0.1PSI (.01Bar / 1Kpa)
- Temperature resolution: 2°F (1°C)

### 4.3 Component Part Numbers

PART NUMBER	DESCRIPTION
1700	DISPLAY, MOUNT, 12V CORD, & MANUAL
9300	TPMS TRANSMITTER & CHIP
1905	SIGNAL BOOSTER

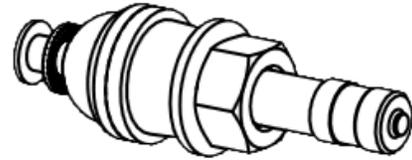
#### 4.4 Available Valve Configurations

WHEEL RIM HOLE SIZE: .453"

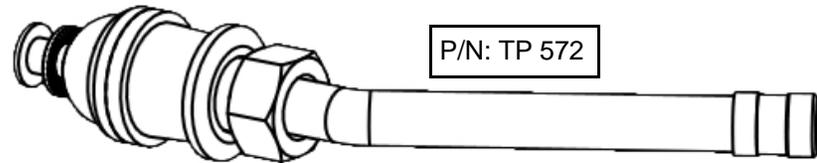


P/N: TP 416

WHEEL RIM HOLE SIZE: .625"

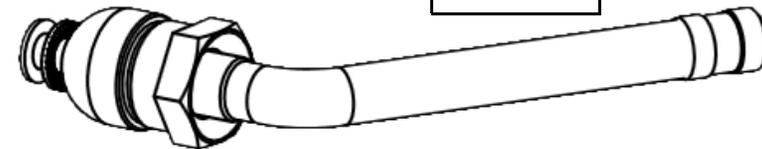


P/N: TP 501



P/N: TP 572

WHEEL RIM HOLE SIZE: .390"



P/N: TP 555

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