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IMPORTANT: In order to insure that you receive product support services, technical updates and information pertaining to upgrades, please take a few minutes to properly register your KTlp.s.t.© Tool. Please either complete the warranty registration card shipped with your tool or register online at www.ktipst.com.

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Important Safety Instructions

DO NOT DISCARD. RETAIN FOR FUTURE REFERENCE.

The exclamation point with an equilateral triangle is intended to alert the user to important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to uninsulated “dangerous voltage” within the product enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

WARNING: This product emits magnetic and electromagnetic waves that may interfere with the safe operation of pacemakers. Individuals that have pacemakers should never use this product.

WARNING: Risk of Explosion. This equipment has internal arcing or sparking parts that should not be exposed to flammable vapors. This equipment should be used at least 460 mm (18 inches) above the floor.
FCC Notice: ID RNSTIPS001

This tool complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This tool may not cause harmful interference, and
2. This tool must accept any interference received, including interference that may cause undesired or improper operation.

This equipment is an intentional transmitter. Any changes or modifications not approved by the manufacturer could void the users authority to operate the equipment.

NOTICE

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Caution

READ THESE INSTRUCTIONS BEFORE USING

Your Tire Pressure Monitoring (TPM) Tool has been designed to be durable, safe, and reliable when properly used. All KTIp.s.t.© tools are intended to be used only by qualified and trained personnel in a laboratory or a light industrial repair shop environment. Please read all instructions below before using. Always follow these safety instructions. If you have any question that pertains to the safe or reliable use of this tool, please call (800) 762-6002 between 9:00 a.m. - 4:30 p.m. Eastern Time or email your question to support@ktoolinternational.com.

1. Read All Instructions
   All warnings on the tool and in this manual should be adhered to. All operating and use instructions should be followed.

2. Retain Instructions
   The safety and operating instructions should be retained for future use.

3. Heed Warnings
   All warnings on the tool and in the operating instructions should be adhered to.

4. Follow Instructions
   All operating and use instructions should be followed.

5. Cleaning
   Clean with a soft dry cloth, or if necessary, a soft damp cloth. Do not use any harsh chemical solvents such as acetone, thinner, alcohol, etc. as this may damage the plastic surface.
6. **Water & Moisture**

Do not use this tool where contact or immersion in water is a possibility. Never spill liquid of any kind onto the tool.

7. **Storage**

Do not use or store the tool in an area where it is exposed to direct sunlight or excessive moisture, i.e., outdoors, near wash systems, etc.

8. **Use**

To reduce the risk of fire, do not operate the tool in the vicinity of open containers or flammable liquids. Do not use where the potential for explosive gas or vapors exists. Keep the tool away from heat generating sources. Do not operate the tool with the battery cover removed.

9. **Battery Replacement**

Replace all six batteries promptly after receiving the low battery indication (blinking RED ACTIVATION LED). Replace with size AA batteries making sure that the polarities, + and - are properly aligned within the battery cradle. When disposing of batteries, please comply with all local, state, or country guidelines.

10. **Servicing**

Do not attempt to service this tool yourself, as opening or removing covers (with the exception of the battery cover) may expose you to dangerous voltage or other hazards and will void the warranty. Refer all servicing to authorized service personnel. Do not use this tool if it appears damaged or is not operating properly.

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**Introduction**

Tire Pressure Monitoring Systems, commonly known as TPM systems, will soon be installed on most of the automobiles manufactured in the world. Most of these systems use a “direct” approach that incorporates the use of wheel based transmitters or sensors (typically incorporated into the valve stem) which report tire pressure (in addition to the sensor ID) to the engine control module (ECM) or some similar control module on the vehicle. In order to conserve battery life, most sensors are designed to transmit information to the vehicle after the vehicle has been in motion for a specified period of time.

(Figure 1)

For many of these vehicles, specifically those that use four (4) tire TPM position indicators (Figure 1 above) on the instrument cluster or electronic vehicle information console (EVIC), each time that you rotate tires/wheels (or replace a broken or defective sensor) the TPM system must be re-trained or reprogrammed in order to properly inform the driver of the correct vehicle location for a low or high pressure tire. If the receivers are not reprogrammed, the system will continue to report the correct pressures, but they will be reported in the wrong position on the vehicle information console or instrument cluster.
Introduction (cont.)

In order to re-train the sensors, you must first make sure that the vehicle is placed in "learn mode". Each manufacturer has its own procedure for putting the vehicle in learn mode. You will usually find detailed instructions in the vehicle owner’s manual on how to accomplish this.

With the vehicle in learn mode, you can now proceed to re-train the TPM system. While each manufacturer may have their own protocol, typically you will work clockwise around the vehicle beginning with the left front tire, followed by right front, right rear, and finally the left rear (some vehicle manufacturers may require that the spare be programmed and this would be done between the right rear and left rear).

The KTIp.s.t.© Tool has been designed to activate magnetic and frequency triggered tire sensors that have been installed at the factory by original equipment manufacturers. The KTIp.s.t.© Tool is capable of electronically triggering TPM sensors that respond to 125 KHz frequency input. KTIp.s.t.© Tool provides both a visual and audible confirmation that the TPM sensor has been triggered and is transmitting. In addition to triggering “continuous wave” sensors, the KTIp.s.t.© Tool provides the additional benefit of being able to trigger TPM sensors that rely on a 125 KHz “modulated wave” input. The KTIp.s.t.© Tool is digital and incorporates software which means it can be updated making it a truly universal TPM sensor triggering tool.

Note: A programming interface module (PIM) is required to update the tool with the latest protocols.

Operating Instructions

KTIp.s.t.© Model #71990

The KTIp.s.t.© Tool model is designed to “trigger” all electronic and magnetically activated sensors. Within the electronically activated sensors, the KTIp.s.t.© Tool will activate both “continuous wave” and “modulated wave” sensors that respond to 125 KHz signals. To initiate a frequency triggered TPM sensor, with the vehicle in "learn mode", place the KTIp.s.t.© Tool so that the rounded end is positioned on the tire (NOT RIM) adjacent to the sensor as shown in (Figure 2 below). IMPORTANT: If the rounded end is positioned in line with the tire valve, the sensor may fail to trigger. It MUST be positioned on the tire, adjacent to the sensor).

(Figure 2)

Push the ACTIVATION Switch once then release and the The KTIp.s.t.© Tool ACTIVATION LED (GREEN in color) will light and will remain lighted until the sensor protocol is identified and triggered by the tool. If the “hunting” process is unable to identify and activate the sensor, or if the sensor is defective, the tool will “time out” and power down after a specified period of time i.e. 90 – 120 seconds.

When the TPM sensor is "triggered", it will transmit signals over a 315 MHz or 434 MHz (433.92 MHz actual) frequency band to the vehicle TPM control module. This TPM sensor transmission is verified with an oscillating audible tone and a blinking LED (Amber in color) as shown in (Figure 3 A on next page).

NOTE: With most vehicles, if the vehicle is in "learn mode" the vehicle will also confirm that the TPM sensor has communicated to the ECM with a series of horn beeps.
A second or so following the frequency response indication (315 or 434 MHz), some specific sequence of the four LED’s will illuminate as shown in (Figure 3 B above). The LED pattern provides information as to what model of sensor was triggered i.e. continuous wave, modulation type 1, modulation type 2, etc. Each one of the modulation types corresponds to a specific sensor brand Seimens, Beru, Schraeder, etc. An updated listing can be found on the website.

If the TPM sensor transmission is confirmed by KTIp.s.t.© Tool, the software will use this triggering protocol for the next TPM sensor and so on until the tool is unable to confirm a TPM sensor transmission. If KTIp.s.t.© Tool is unable to confirm a TPM sensor transmission, the system will then start “hunting” for the next electronic triggering protocol until the sensor is identified and triggered.

IMPORTANT: Because vehicle manufacturers are constantly adding new sensor protocols, your tool may not be able to trigger all sensors in the marketplace. Also, you will want to purchase a Programming Interface Module (PIM) which allows you to upgrade your tool with new protocols as they become available.

Once you become familiar with the various triggering protocols that are available, to save time, you will want to manually select the one you desire rather than relying on the “hunting feature”. To manually select a protocol, you may press the SELECTION Switch Each time you press the switch, a SELECTION LED (AMBER in color) or combination of LED’s will illuminate. Each LED combination relates to a specific triggering protocol as illustrated in (Figure 4).

The illustration shown (Figure 4) is only intended to provide an overview and are for illustrative purposes only. To obtain the most up to date list of triggering protocols, you may obtain this information at www.ktipst.com.

Note: In order to use this service, you must have a properly registered tool. You will be asked to enter the serial number of the tool within the support area of the website.

If the KTIp.s.t.© Tool is unable to electronically trigger a sensor, it is possible that the sensor is designed to be activated magnetically. To initiate a magnetically triggered TPM sensor, place T.I.P.S so that the concave end is positioned around the tip of the tire stem as shown in (Figure 5 next page top.) Without moving the KTIp.s.t.© Tool press the ACTIVATION Switch once and release and the KTIp.s.t.© Tool ACTIVATION LED (GREEN in color) will light and will remain lighted until the sensor transmission is received and identified by the KTIp.s.t.© Tool or until the tool “times out” and powers down after a specified period of time i.e. 90 – 120 seconds. If the TPM sensor is "triggered" by the magnet, it will transmit signals over a 315 MHz or 434 MHz frequency band to the vehicle TPM control module. This TPM sensor transmission is verified with an oscillating audible tone and a blinking LED (AMBER in color).

NOTE: Because the sensor is triggered magnetically, in this case the LED pattern which follows approximately one second after the frequency, identification is not relevant. The tool may report a different LED pattern each time which is considered normal operation.
Again, while each vehicle manufacturer may have their own procedure, typically you will work clockwise around the vehicle with the KTIp.s.t.® Tool starting with the left front tire, followed by right front, right rear, spare, and finally the left rear (Some vehicle manufacturers do require that the spare be programmed).

IMPORTANT: The KTIp.s.t.® Tool allows you to diagnose that the vehicle TPM sensors are working prior to performing any maintenance on the vehicle. This will reduce your liability associated with replacement of costly TPM sensors that may not have been working properly prior to tire rotation or replacement. Additionally, in the case where you are replacing a defective TPM sensor, you can use the Pro model to verify that you are installing the correct sensor (frequency) and you can confirm that it is working correctly prior to incurring additional labor costs.

Hint: If the wheel is made of steel, you will want to start with the electronic triggering method.

Using the KTIp.s.t.® Tool

We recommend a very simple yet effective four-step process as follows:

Low Battery Indication
Your KTIp.s.t.® Tool incorporates a low battery detection circuit. During normal use, when you push the ACTIVATION the KTIp.s.t.® Tool ACTIVATION LED will light and will remain GREEN in Color. If the “low battery” condition exists, the ACTIVATION LED will flash and change to a RED color indicating the need for battery replacement. Please replace the worn out batteries promptly to minimize the potential for damage to the KTIp.s.t.® Tool.

Battery Replacement
Remove the latched battery compartment cover located on the back side of the KTIp.s.t.® Tool. Replace all six (6) batteries with fully charged AA type batteries. Please make sure that the polarities, + and - are properly aligned within the battery cradle. When disposing of the batteries, please comply with all local, state, or country guidelines.
Using the KTIp.s.t.© Tool (cont.)

Software Upgrades
The KTIp.s.t.© Tool is upgradeable so that you can download the most current triggering protocols. In order to download the most up to date protocols, you will require a software subscription and a Programming Interface Module. For more information on this service, please contact customer service at (800) 762-6002 or by email at support@ktoolinternational.com. In order to determine if your KTIp.s.t.© Tool incorporates the most up to date software, you can go to www.ktipst.com and click on the support link.

Protecting Your TPM Tool
In order to maximize protection for your tool, we offer an optional custom holster which allows for easy access while providing an additional level of protection.

Cleaning
Your KTIp.s.t.© Tool has undergone extensive testing for resistance to chemicals typically found in the shop environment. In order to maximize the longevity of the tool, please do not use abrasive or caustic cleaning agents. Wherever possible, please use a damp cloth to clean your KTIp.s.t.© Tool.

Storage
Whenever possible, store your KTIp.s.t.© Tool in a tool chest or case at room temperature in an area which is free of excessive moisture and salt air. Please keep in mind that the tool incorporates a magnet that will attract and bond to ferrous metals, i.e. steel. While the performance of the KTIp.s.t.© Tool is not adversely affected by steel objects, you should keep the KTIp.s.t.© Tool away from devices that may be negatively affected by electromagnetic energy, i.e. computers, credit cards, etc. Also, storage of the tool by allowing it to magnetically hang from a tool cabinet is NOT recommended.

Trouble Shooting

The following trouble shooting list offers solutions to some of the more typical sensor triggering issues.

IMPORTANT: In the description of the problem below, it is assumed that an attempt was made to trigger the sensor using the magnetic and electronic portion of the tool without success.

- Description of the Problem
  The Sensor does not trigger (No audible sound from vehicle, no confirmation from LED, and no audible confirmation from tool)

And
ACTIVATION LED is Green until tool powers down from “time-out” condition.

Possible Problem
1. Tool is improperly positioned
2. Tool does not have the most up to date software
3. Faulty Sensor
4. Incorrect Modulated Sensor Triggering Protocol used
5. Internal Electronic Problem with the tool

Solution(s)
1. See instructions for proper tool positioning
2. See directions for upgrading tool
3. Replace Sensor
4. See directions for KTIp.s.t.© Tool i.e. selecting triggering protocols
5. Call for service
• Description of the Problem
  The Sensor does not trigger (No audible sound from vehicle, no confirmation from LED, and no audible confirmation from tool)

And
  ACTIVATION LED is FLASHING RED

Possible Problem
  Low Batteries

Solution(s)
  Change batteries

Customer Support

In order to obtain assistance with a question or problem concerning your KTIp.s.t.® Tool or to arrange for warranty repairs, you can contact customer support from 9:00 a.m. - 4:30 p.m. (Eastern) Monday - Friday. Please use any one of the following means to contact us;

• Toll Free: (800) 762-6002
  Fax: (800) 726-1295
  Email: support@ktoolinternational.com

When you call and write please be prepared to provide the following information.

• Company Name & Address
  Your name and contact information
  KTIp.s.t.® Model number (found on back of tool)
  KTIp.s.t.® Serial number (found on back of tool)
  A detailed description of the problem
  Corrective measures attempted
Specifications

Battery Type: Six (6) Alkaline AA

Battery Life: Approximately 2,500 activations

Case Dimensions: (Max. L,W,D): 10.25" x 2.50" x 1.75" (260mm x 64 mm x 45 mm)

Case Material: High Impact ABS

Batteries: Six (6) type AA

Sensor Activation: Magnetic, 125 KHz continuous wave, 125 KHz modulated wave (Multiple formats)

Response Frequency: 315 MHz and 434 MHz (393.92 MHz actual).

Low Battery Indication: Activation LED flashes and changes to RED color

Weight: Approx. 2 lbs (With 6 AA Batteries).

Temperature: Operating: -20° C to +55° C; Storage -40° C to +60° C

Altitude: Operating: Up to 2,000 m

Storage: Up to 10,000 m

* We continuously seek to acquire all manufacturers modulated wave formats; however, we are sometimes unable to obtain sensor formats / specification prior to release of a vehicle to the marketplace.

Limited Warranty

1. LIMITED WARRANTY

K-Tool International products are guaranteed for a period of 90 days from original ship date to the original purchaser from the manufacturer or an authorized dealer, to be free from defects in material and workmanship when properly used and maintained by the Purchaser.

The manufacturer will, as its sole option, credit the purchase account a portion of the purchase price of, provide a replacement for, repair in-house, or authorize repair at an outside facility, products found to have been defective as outlined in this warranty. Claims of all defects must be submitted within 30 days of the occurrence of such defect and substantiated by an authorized KTIp.s.t.® representative. Any claim not filed in this manner within such period shall conclusively be deemed waived. If requested by the manufacturer, the product shall be returned to same, at its direction and expense, for examination. NO PRODUCTS MAY BE RETURNED WITHOUT PRIOR AUTHORIZATION. The manufacturer shall not be liable for any expenses incurred by the purchaser in order to remedy any defect, which is not authorized.

This warranty does not apply to damage or loss by any or all of the following circumstances or conditions:

• Freight damage.
• Decals, overlays or decorative materials.
• Misapplication, misuse, and/or failure to correctly follow the directions, or observe cautions and warnings on product, operation, application, inspection or maintenance specified in any specification sheet, service guides, user guides, etc.
• Minor stress cracks in surfaces deemed as cosmetic and which do not affect performance or safe operational use of the product.
• Any damage related to fire, accident, misuse, abuse, acts of war, natural/environmental disaster, or Act of God.
NO WARRANTY, EXPRESSED OR IMPLIED, IS EXTENDED ON COMPONENT PARTS WHICH ARE NOT PROVIDED BY K-TOOL INTERNATIONAL.

THIS WARRANTY IS EXCLUSIVE. MANUFACTURER DISCLAIMS ANY AND ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Under no circumstances shall the manufacturer be liable for any special, consequential or incidental damage arising from any defect in products manufactured or sold by K-Tool International outside of the responsibilities expressed by this warranty.

No person, distributor or representative of the manufacturer is authorized to make any representations on behalf of the manufacturer beyond those expressly stated in applicable literature, or to assume for the manufacturer or any obligations or duties not contained in this limited warranty. The manufacturer reserves the right to make design and other changes, modifications, or improvements without any obligation to install the same on previously sold or delivered products.

2. LIMITATION OF LIABILITY

It is expressly agreed that the liability of the manufacturer is limited, and manufacturer does not function as an insurer. The remedies set forth in this warranty shall continue the exclusive remedies available to the purchaser or user and are in lieu of all other remedies expressed or implied. The liability of the manufacturer, whether in contract, or in tort, under any warranty or otherwise, shall not exceed the selling price by the manufacturer of the particular product manufactured, sold, or supplied by the manufacturer.

3. INFORMATION NECESSARY TO OBTAIN ASSISTANCE

To enable the Manufacturer or its authorized representatives to respond to a request for assistance, please provide at a minimum the following information in your request for assistance.

A. Model number and product serial number alleged to be involved in the difficulty. This information can be found on the product label located on the back of the product.

B. The name of the supplier and the date in which the product was purchased.

C. State your difficulty, being sure to mention at least the following:
   2. Description of how and when problem occurred.
   3. Description of your request or recommendation to solve the problem.

EFFECTIVE JANUARY 1, 2005

THIS WARRANTY SUPERSEDES ALL WARRANTIES HERETOFORE WRITTEN OR IMPLIED.