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Introduction

Dear Customer,

We would like to thank you for choosing a TEXA product for your workshop.

We are certain that you will get the greatest satisfaction from it and receive a great deal of help in your work.

Please read through the instructions in this manual carefully and keep it for future reference.

Reading and understanding the following manual will help you to avoid damage or personal injury caused by improper use of the product.

TEXA S.p.A reserves the right to make any changes deemed necessary to improve the manual for any technical or marketing requirement; the company may do so at any time without prior notice.

This product is intended to be used exclusively by technicians specialised in the Automotive industry. Reading and understanding the information in this manual cannot replace adequate specialised training in this field.

The sole purpose of the manual is to illustrate the functioning of the product sold. It is not intended to offer technical training of any kind and technicians will therefore carry out any interventions under their own responsibility and will be accountable for any damage or personal injury caused by negligence, carelessness, or inexperience, regardless of the fact that a TEXA S.p.A. tool has been used following the information contained in this manual.

Any additions to this manual, useful in describing the new versions of the program and the new functions associated to it, may be sent to you through our TEXA technical bulletin service.

This manual is to be considered an essential part of the product to which it refers to. If it is resold, the original buyer is therefore required to forward the manual to the new owner.

Reproduction, whole or in part, of this manual in any form without written authorisation by the manufacturer is strictly forbidden.

The original manual was written in Italian, every other language is a translation of the original manual.

1 ABOUT THE MANUAL

In this document the terms "tool" and "device" refer to the purchased product, subject of this manual.

Any other specific term is explained in the text.

This manual is divided into the following chapters:

1. **Glossary:** *provides the meaning of the technical terms used in the manual.*
2. **Environmental information:** *provides indications related to the disposal of the purchased tool/device.*
3. **Operation of the Radio Devices:** *provides information concerning the wireless connectivity of the tool/device.*
4. **Safety:** *provides important information concerning operator safety and describes safety precautions in the workplace.*
5. **Description:** *describes the tool/device, the technical features, the equipment.*
6. **Operation:** *explains all the functions and operation modes of the tool/device.*
7. **Legal Notes:** *provides indications related to the guarantee of the purchased tool/device.*

2 GLOSSARY

This chapter provides the meaning of the technical terms used in the manual:

- **Diagnosis/diagnostic socket:** *female connector installed in the vehicle that allows connecting to the vehicle's control unit.*
- **OBD socket:** *diagnostic socket specific for the OBD protocol.*
- **Diagnosis/diagnostic connector:** *male connector installed in the diagnostic tool or as end part of a cable that connects to the diagnostic tool.*
- **OBD connector:** *diagnostic connector specific for the OBD protocol.*
- **Diagnosis/diagnostic cable:** *cable that allows connecting the diagnostic cable to the diagnostic socket.*
- **OBD cable:** *diagnostic cable specific for the OBD protocol.*
- **Display unit:** *device equipped with a screen (PC, PAD etc.) in which a specific software is installed, allowing you to communicate with a tool, configure it, process and view the data it collected. This definition also includes devices that are equipped with internal modules for the acquisition and processing of data and that do not require / are not able to connect to "external" tools.*
- **Peripheral device:** *with respect to the display unit, any tool or device that the display unit is able to interface with.*
- **Device connector:** *USB connector to connect to the device.*
- **Host connector:** *USB connector to connect to the display unit.*

3 LEGEND OF THE SYMBOLS USED

The symbols used in the manual are described in this chapter.

	Asphyxiation Risk
	Explosion Risk
	High Voltage Hazard
	Fire / Burn risk
	Poisoning Hazard
	Corrosive Substances Risk
	Noise Hazard
	Moving Parts Risk
	Crushing Risk
	General Risk
	Important information

4 GENERAL SAFETY REGULATIONS

4.1 Glossary

- **Operator:** *qualified individual, in charge of using the device/tool.*
- **Machine/device/tool:** *the product purchased.*
- **Workplace:** *the place where the operator must carry out her/his work.*

4.2 Operator Safety Regulations

4.2.1 General Safety Regulations

- *The operator must be completely clear-headed and sober when using the device; taking drugs or alcohol before or when operating the device is strictly forbidden.*
- *The operator must not smoke during device operation.*
- *The operator must carefully read all the information and instructions in the technical documents provided with the device.*
- *The operator must follow all the instructions provided in the technical documents.*
- *The operator must always watch over the device during the various operating phases.*
- *The operator must make sure she/he is working in environment which is suitable for the operations that must be carried out.*
- *The operator must report any faults or potentially hazardous situation in connection with the workplace or the device.*
- *The operator must carefully follow the safety regulations required for the workplace in which she/he is working and required by the operations she/he has been asked to carry out.*

4.2.2 Risk of Asphyxiation

	Exhaust gas from internal combustion engines, whether they may be petrol or diesel, are hazardous to your health and can cause serious harm to your body.

Safety Precautions:

- *The workplace must be equipped with an adeguate ventilation and air extraction system and must be in compliance with standards according to current national laws.*
- *Always activate the air extraction system when working in closed environments.*

4.2.3 Risk of Impact and Crushing

	The vehicles which are undergoing A/C system recharging operations and the devices, must be properly blocked using the specific mechanical brakes/blocks, while being service.

Safety Precautions:

- *Always make sure that the vehicle is in neutral gear (or that it is set in parking position in case of a vehicle equipped with automatic transmission).*
- *Always activate the hand brake or parking brake on the vehicle.*
- *Always block the wheels on the vehicle with the specific mechanical blocks.*
- *Make sure the device is stable, on a flat surface and the wheels are locked with the specific brakes.*

4.2.4 Hazards Caused by Moving Parts

Vehicle engines include parts that move, both while running and not running (eg: the cooling fan is controlled by a thermal switch in connection with the coolant temperature and become activated even when the vehicle is off), that can injure the operator.

Safety Precautions:

- *Keep hands away from moving parts.*
- *Disconnect the engine cooling fan each time the engine you are working on is still hot. This will avoid the fan from becoming activated unexpectedly even when the engine is off.*
- *Do not wear ties, loose clothes, wrist jewellery or watches when working on a vehicle.*
- *Keep connection cables, probes and similar devices away from the moving parts of the engine.*

4.2.5 Risk of Burning or Scalding

The parts that are exposed to high temperatures in engines that are moving or have just stopped could burn the operator.
Remember that catalytic mufflers reach very high temperatures, able to cause serious burns or even start fires.
Acid in the vehicle batteries is another potential hazard.

Safety Precautions:

- *Protect your face, hands, and feet by using suitable protection.*
- *Avoid contact with hot surfaces, such as spark plugs, exhaust pipes, radiators and connections within the cooling system.*
- *Make sure there are no oil stains, rags, paper or other inflammable material near the muffler.*
- *Avoid splashing electrolyte on skin, eyes and clothes, as it is a corrosive and highly toxic compound.*

4.2.6 Fire and Explosion Hazard

The following are potential fires and/or explosion hazards:

- *The types of fuel used by the vehicle and the vapours released by these fuels.*
- *The refrigerants used by the A/C system.*
- *The acid in the vehicle batteries.*

Safety Precautions:

- *Let the engine cool.*
- *Do NOT smoke near the vehicle.*
- *Do NOT expose the vehicle to open flames.*
- *Make sure that the electrical connections are all well insulated.*
- *Collect any fuel that might have spilled.*
- *Collect any refrigerant that might have spilled.*
- *Make sure you are always working in an environment equipped with a good ventilation and air extraction system.*
- *Always activate the air extraction system when working in closed environments.*
- *Cover the openings of the batteries with a wet cloth in order to stifle the explosive gases before proceeding in testing or recharging.*
- *Avoid causing sparks when connecting cables to the battery.*

4.2.7 Noise Hazard

	Loud noises that may occur within the workplace, especially during service operations may damage the operator's hearing.

Safety Precautions:

- *Protect your ears with suitable protective ear wear.*

4.2.8 High Voltage Hazard

	The voltage supply from the mains that powers the devices in the workplace and the voltage within the vehicle starter system is a potential shock hazard to the operator.

Safety Precautions:

- *Make sure the electrical system in the workplace is compliant to current national standards.*
- *Make sure the device being used is connected to ground.*
- *Cut off the power supply voltage before connecting or disconnecting cables.*
- *Do NOT touch the high voltage cables when the engine is on.*
- *Operate in conditions of insulation from ground.*
- *Work with dry hands only.*
- *Keep conductive liquids away from the engine while working.*
- *Never leave tools on the battery in order to avoid accidental contacts.*

4.2.9 Poisoning Hazard

	The hoses used to extract the refrigerants can release toxic gases, dangerous to the operator if exposed to temperatures higher than 250 °C or in case of a fire.

Safety Precautions:

- *Contact a doctor immediately should you inhale these gases.*
- *Use neoprene or PVC gloves when eliminating combustion deposits.*

4.3 *General User and Maintenance Warnings*

When using the device or carrying out scheduled maintenance (eg. fuse replacement) on the device, carefully follow the information provided below.

- *Do not remove or damage the labels/tags and the warnings on the device; do NOT in any case make them illegible.*
- *Do not remove, or block, any safety devices the device is equipped with.*
- *Only use original spare parts or spare parts approved by the manufacturer.*
- *Contact your retailer for any non-scheduled maintenance.*
- *Periodically check the electrical connections of the device, making sure they are in good condition and replacing any damaged cables.*
- *Check parts that are subject to wear periodically and replace if necessary.*
- *Do not open or disassemble the device.*

5 SPECIFIC SAFETY RULES FOR USING TMD NANO

The technology used in the design and production inspections of **TMD NANO** diagnostic tools makes them simple, reliable and safe to use.

The personnel in charge of using diagnostic tools are required to follow the general safety regulations, to use **TMD NANO** devices for their intended use only and to carry out maintenance correctly as described in this manual.

5.1 Glossary

Operator: qualified individual in charge of using the diagnosis tool.

Tool/device: any **TMD NANO** device.

5.2 General Rules

- *The operator must have basic knowledge of mechanics, automotive engineering, car repair and of the potential dangers that may arise during self-diagnosis operations.*
- *The operator must carefully read all the information and instructions in the technical documents provided with the tool.*

5.3 *Operator Safety*

	Some self-diagnosis operations allow you to activate/ deactivate certain actuators and safety systems on the vehicle.

Safety Measures:

- *In order to avoid accidents and/or damage to the device or to the electronic systems of the vehicle connected to the device, do not allow unqualified personnel to use the device.*
- *Follow the instructions supplied by the software thoroughly.*

5.4 *Safety Precautions*

	The device is designed for use in specific environmental conditions. Using the device in environments with temperatures and humidity that differ from those specified, may compromise its efficiency.

Safety Measures:

- *Always place the device in a dry area.*
- *Do not expose or use the device close to heat sources.*
- *Always place the device so as to ensure its proper ventilation.*
- *Do not use corrosive chemicals, solvents or harsh detergents to clean the device.*

	The tool is designed to be mechanically tough and suitable for use in a workshop. Careless use and excessive mechanical stress may compromise its efficiency.

Safety Measures:

- *Do not drop, shake or knock the device.*
- *Do not perform any kind of intervention that may damage the tool.*
- *Do not open or disassemble the device.*

- *Make sure not to damage the diagnosis connectors when connecting and disconnecting the device.*

The tool is designed to be electrically safe and to work with specific power supply voltage levels.
Failure to comply with the specifications on the power supply may compromise the tool's efficiency.

Safety Measures:

- *Do not wet the device with water or other liquids.*
- *If not otherwise specified, use the tool on vehicles with a 12V DC power supply and chassis connected to the negative pole.*
- *Do not use external batteries to supply the tool unless explicitly requested to do so by the software.*

The electromagnetic compatibility tests carried out on the device guarantee that it can be adapted to the technologies normally used on vehicles (ex.: engine control, ABS, airbag, etc.). Nevertheless, if malfunctions occur you should contact the vehicle dealer.

6 ENVIRONMENTAL INFORMATION

 **For information regarding the disposal of this product please refer to the pamphlet accompanying your tool.**

7 OPERATION OF THE TOOL'S RADIO DEVICES

Wireless connection with Bluetooth, WiFi and HSUPA technology

Wireless connectivity through Bluetooth, WiFi and HSUPA is a technology that supplies a standard, reliable method for exchanging information between different devices using radio waves. Many other products besides those built by TEXA use this technology, such as mobile phones, portable devices, Computers, printers, cameras, Pocket PCs etc.

The Bluetooth, WiFi and HSUPA interfaces search for compatible electronic devices based on the radio signals they emit and establish a connection. TEXA tools only select and prompt compatible TEXA devices. This does not exclude the presence of other sources of communication or disturbance.

THE EFFICIENCY AND QUALITY OF BLUETOOTH, WiFi AND HSUPA COMMUNICATION MAY BE AFFECTED BY THE PRESENCE OF RADIO DISTURBANCE. THE COMMUNICATION PROTOCOL IS DESIGNED TO MANAGE THESE TYPES OF ERRORS; HOWEVER, IN SUCH CASES COMMUNICATION MAY BE DIFFICULT AND CONNECTION MAY REQUIRE SEVERAL ATTEMPTS.

SHOULD THE WIRELESS CONNECTION ENCOUNTER SERIOUS PROBLEMS AND COMPROMISE REGULAR COMMUNICATION, THE SOURCE OF THE ENVIRONMENTAL ELECTROMAGNETIC DISTURBANCE MUST BE IDENTIFIED AND ITS INTENSITY REDUCED.

Position the tool so that the radio devices it is equipped with can work properly. In particular, do not cover it with any shielding or metallic materials in general.

8 NORMATIVE INFORMATION

Declaration of Conformity

CE	Texa S.p.A. hereby declares that this **TMD NANO** complies with the essential requirements and with all further provisions defined by the 1999/5/EC regulation.

A complete copy of the Declaration of Conformity can be found at

Texa S.p.A., Via 1 Maggio 9, 31050 Monastier di Treviso (TV), Italy

9 TMD NANO

TMD NANO is a small device capable of acquiring data while driving via the vehicle OBD socket on which it is installed.

Connecting the **TMD NANO** and disconnecting it from the vehicle is quick and easy.

Because of its small size it takes up little space and does not interfere with driving.

TMD NANO acts as a gateway between vehicle diagnosis resources and external devices capable of using this diagnosis data.

To do so it communicates with a tracking device via Bluetooth and transmits the acquired data.

Using the **TMD NANO** with a remote diagnosis device of the TMD series allows you to combine diagnosis functions with GPS tracking functions.

10 DESCRIPTION

This chapter describes the general features of the TMD NANO.

10.1 *Image of the device*

1. **Bluetooth Antenna:** *allows you to communicate with external devices.* *
2. **Green LED and red LED:** *provide information on the status of the device (if it's connected, if it's working correctly, if there are any generic errors, etc.).*
3. **OBD connector:** *allows the OBD to interface with the vehicle.*

(*) The Bluetooth antenna is integrated within the device and is not accessible from outside.

10.2 *Technical Features*

Microcontroller Core	CORTEX M3 STM32F103 72 MHz
Data memory	• **TO5XXXXXXXX serials:** *256 Mbit* • **TO8XXXXXXXX serials:** *2 Gbit*
Operating status warnings	Visible multifunctional built-in bi-colour LED
Vehicle interface	Standard OBD socket
Processing unit interface	Built-in Bluetooth module
EOBD compatibility	Complete electrical and mechanical compatibility as defined by the standard.
Supported protocols	Complete compatibility as defined by the standards: • *K, L, (with current protection 60 mA) ISO9141-2, ISO14230* • *CAN ISO11898, ISO11519-2* • *SAE J1850 PWM and SAE J1850 VPW* • *EOBD (all protocols): SAE1979, ISO15031-5 and ISO15765-4*
Electrical power supply when connected to the vehicle	Directly from the OBD socket Supports 12 V vehicles

Consumption	Without other devices powered by the proprietary serial connector: • **TO5XXXXXXXX serials:** ○ *vehicle ON: < 200 mA* ○ *vehicle OFF < 2 mA* • **TO8XXXXXXXX serials:** ○ *vehicle ON: < 200 mA* ○ *vehicle OFF: typical 2 mA, 3 mA max*
Backup Battery Life	• **TO5XXXXXXXX serials:** ○ *25 mAh* ○ *min. 18 months if not powered* • **TO8XXXXXXXX serials:** ○ *3,4 mAh* ○ *rechargeable battery*
Operating temperature	• **TO5XXXXXXXX serials:** *- 40 °C ÷ 70 °C* • *TO8XXXXXXXX serials: - 20 °C ÷ 60 °C*
Storage temperature	• **TO5XXXXXXXX serials:** *- 40 °C ÷ 70 °C* • **TO8XXXXXXXX serials:** *- 20 °C ÷ 60 °C*
Dimensions	• **TO5XXXXXXXX serials:** *23 x 45 x 28.2 mm, Hmax= 29.8 mm* • **TO8XXXXXXXX serials:** *23 x 45 x 28.2 mm, Hmax=30.6 mm*
Weight	• **TO5XXXXXXXX serials:** *21,5 g* • **TO8XXXXXXXX serials:** *25 g*
Approval type	Regulation ECE-ONU R10

11 INSTALLATION

The installation must be performed by qualified personnel.

11.1 *Precautions*

 **Make sure no connections (wires or cables in general) or hydraulic ducts of fuel or safety pneumatic devices are damaged during the installation.**

 **Make sure the installation does not affect the operation of vehicle controls, in particular of the brakes and in general of the safety devices.**

 **Make sure the various components around the OBD diagnostic socket do not damage the device during its installation.**

 **Make sure the position of the device does not interfere with driving.**

11.2 *Device Power Supply*

TMD NANO is designed to be used ONLY on vehicles with **12 V** DC power supply and chassis connected to the negative pole.

The device is powered via the vehicle's OBD socket only.

 **Do not supply the device using external batteries or through sources that differ from those specified in this manual.**

11.3 *Location of the OBD Socket*

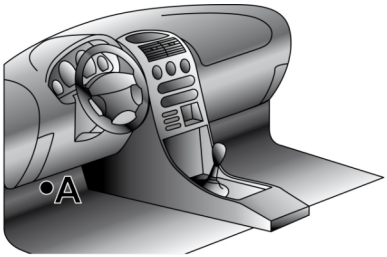
The images below indicate where the diagnosis connector may be located.

We always recommend checking the location of the OBD socket in the vehicle user manual.

The percentages indicated in each image refer to how often each location is used by the manufacturers.

The OBD connector is often located near plastic or metal elements and/or cables in general which could be damaged if you are not careful during the installation.

Do not force the device or the connectors and take the utmost care during all connecting and disconnecting operations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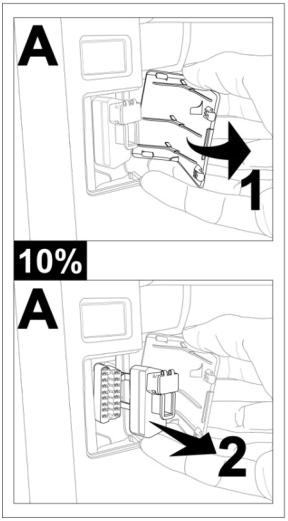
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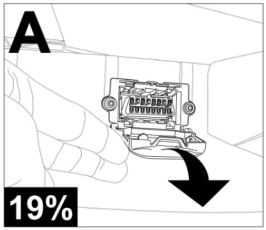
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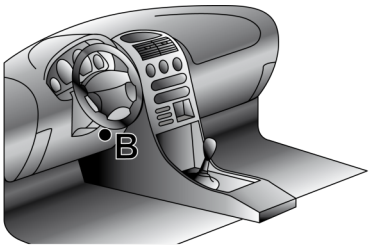
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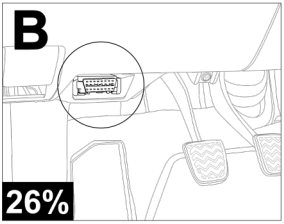
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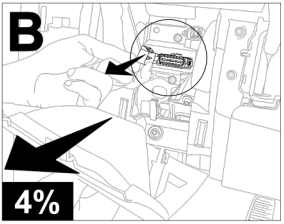
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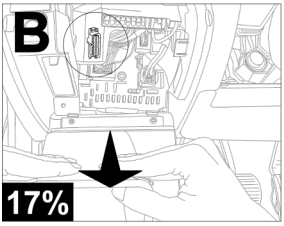
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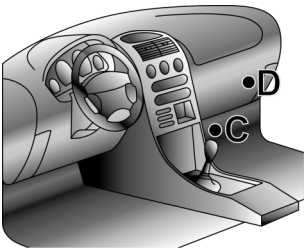
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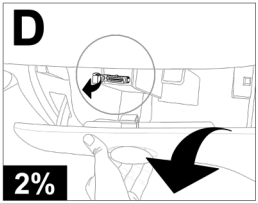
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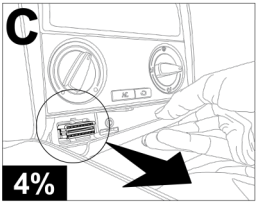
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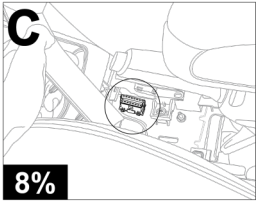
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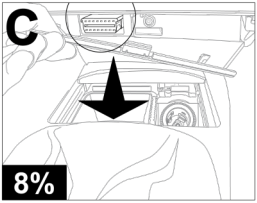
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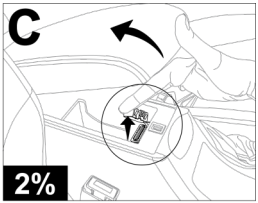
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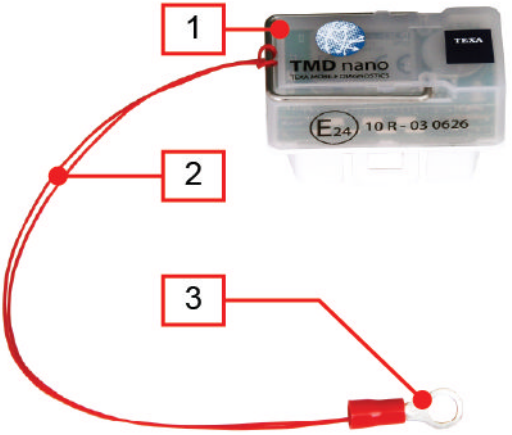
11.4 Connecting to the OBD socket and Securing the Device

The device is equipped with a string that allows it to be fastened securely and prevents it from getting lost.



1. *TMD Nano*
2. *String*
3. *Terminal*

A screwdriver may be necessary to loosen the screws that fasten the panels that cover the OBD diagnostic connector.

Make sure the vehicle is off (instrument panel off) when connecting and disconnecting the device from the OBD socket.

Proceed as follows:

1. Turn off the vehicle (ignition key off).

2. Locate the OBD socket.

3. Carefully remove any panels covering the OBD socket.

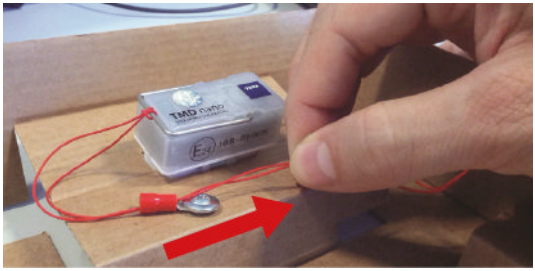
4. Connect the device to the OBD socket.

5. Check to see if there is a screw anywhere near the OBD socket with a small enough diameter to allow it to pass through the cable eyelet.

6. If there is no screw that serves this purpose, find a place where you can make a hole with the self-drilling screw.

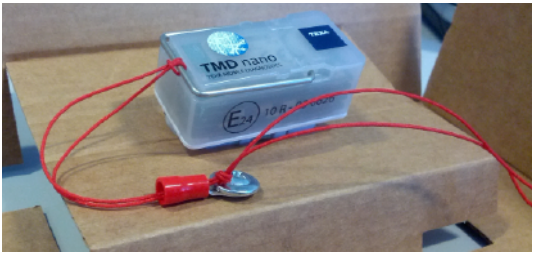
7. Fasten the eyelet terminal with the screw.

8. Pull the string and shorten it as much as possible, leaving it only long enough so that you will be able to remove the device from the OBD socket in the future.

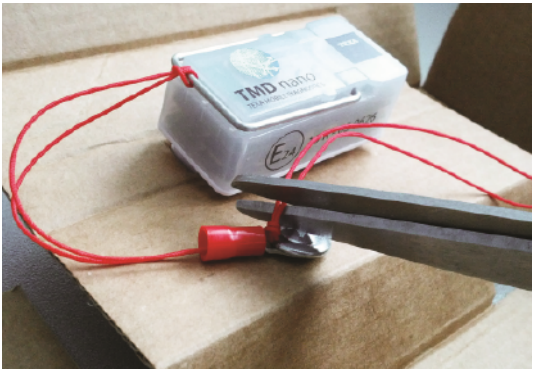


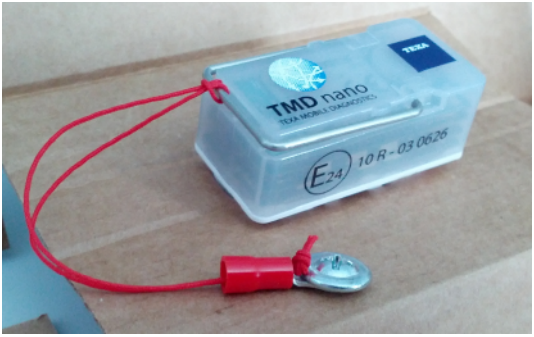
Choose the length of the string carefully, based on the position of the OBD socket. Make sure it does not interfere with the use of the clutch, brake or accelerator or other devices within the vehicle required for safety reasons or a normal operation of the vehicle itself, as specified by the car manufacturer.

9. Tie the string just before the eyelet terminal.



10. Cut the extra string after the knot.





11. Make sure the device is firmly connected to the diagnostic socket in order to avoid it from disconnecting during use.

12. Wait for the LED to flash.

13. Reposition and fasten the panels removed during the installation.

NOTE:

In some cases **TMD NANO** may remain in sight.

Do not be distracted by the device and check the status of the device while driving.

11.5 *Blink Code*

The bi-colour LED (green/red) on the device flashes to indicate the various states of the device itself, both while it is connecting to the display unit and when it is connecting to the vehicle.

The **BLINK CODE** of the LED is indicated in the table below.

LED		DURATION	STATUS
GREEN	RED		
1 flash every 5 seconds	Off	Undefined	Device connected to the PC
ON	Off	2 seconds	Device-vehicle connection: no error.
Off	Off	Undefined	Device ready to start the trip
ON	Off	Undefined	Start of trip detected, diagnosis system is started
ON	Off	10 seconds	End of trip detected
3 flashes every 2 seconds	Off	Undefined	Device connected to the vehicle, data acquisition in progress
Off	Quick flashing	60 seconds	Device connected to the vehicle Device NOT activated or NOT configured or generic error

NOTE:

- **Start of trip:** *engine is turned on.*

- **End of trip:** *engine is turned off.*

11.6 *Disconnection from the OBD Socket*

Make sure the vehicle is off (instrument panel off) when disconnecting the device from the OBD socket..

Proceed as follows:

1. *Turn off the vehicle (ignition key off).*
2. *Disconnect the device from the OBD socket.*

12 MAINTENANCE

This product does not require special maintenance.

For a longer tool life, keep the product clean and follow the instructions detailed in this manual carefully.

 **For further help, contact your Retailer or the Technical Assistance Service.**

13 LEGAL NOTICES

TEXA S.p.A.

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Cod. Fisc. - No. of Companies' Register of Treviso - Part. IVA: 02413550266

Single member company and subject to management and co-ordination of Opera Holding S.r.l.

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For information regarding the legal notices, please refer to **International Warranty Booklet** provided with the product in your possession.