

BRUGERVEJLEDNING TEXA OPABOX AUTOPOWER



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OPABOX AUTOPOWER TECHNICAL MANUAL

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 to which it refers.

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 for use by technicians specialized in the automotive field only. Reading and understanding the information in this manual cannot replace adequate specialized training in this field.

The sole purpose of the manual is to illustrate the operation 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 based on the information within this manual.

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

This manual should be considered an integral part of the product to which it refers. In the case 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 whatsoever without written authorization from the producer is strictly forbidden.

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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. **Legend of the Symbols:** *provides the description of the symbols used in the manual.*
2. **Glossary:** *provides the meaning of the technical terms used in the manual.*
3. **General Safety Rules:** *provides important information concerning the safety of the operator and its workplace.*
4. **Specific Safety Rules:** *provides important information concerning the safety of the operator in relation to the use of the product.*
5. **Environmental information:** *provides indications related to the disposal of the purchased tool/device.*
6. **Operation of the Radio Devices:** *provides information concerning the wireless connectivity of the tool/device.*
7. **Normative information:** *reports the declaration of conformity of the tool/device*
8. **Description:** *describes the tool/device, the technical features, the equipment.*
9. **Operation:** *explains all the functions and operation modes of the tool/device.*
10. **Maintenance:** *provides indications on the maintenance of the tool/device.*
11. **Solutions to problems:** *suggests "what to do when..." and gives information on our client help service.*
12. **Legal Notes:** *provides indications related to the guarantee of the purchased tool/device.*

1 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

2 GLOSSARY

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

- **Display unit:** *device equipped with a screen (PC, mobile device, etc.) on which the special software is mounted that allows communicating with the tool, configuring it, displaying the data processed by it.*
- **Sampling probe:** *a probe equipped with a handle that allows the exhaust gas to be introduced into the tool in order to carry out analysis.*
- **Sampling hose:** *hose that runs from the sampling probe to the tool.*
- **Service hose:** *hose used to extract any gas that has been analyzed and condensation out of the tool.*
- **External rev counter module:** *Bluetooth device designed for rpm detection and engine temperature measurements, if required.*

3 GENERAL SAFETY REGULATIONS

3.1 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.*

3.2 Operator Safety Regulations

3.2.1 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.*

3.2.2 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 adequate 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.*


3.2.3 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.
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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.*



3.2.4 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.*

3.2.5 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.*


3.2.6 Fire and Explosion Hazard

	<p>The following are potential fires and/or explosion hazards:</p> <ul style="list-style-type: none"> • <i>The types of fuel used by the vehicle and the vapours released by these fuels.</i> • <i>The refrigerants used by the A/C system.</i> • <i>The acid in the vehicle batteries.</i>
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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.*


3.2.7 Noise Hazard

	<p>Loud noises that may occur within the workplace, especially during service operations may damage the operator's hearing.</p>
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Safety Precautions:

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


3.2.8 High Voltage Hazard

	<p>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.</p>
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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.*

3.2.9 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.
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Safety Precautions:

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

3.3 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.*

4 SPECIFIC SAFETY RULES FOR THE USE OF OPABOX AUTOPOWER

The technology used for the design and inspection of the manufacture of the tools **OPABOX AUTOPOWER** make them reliable, simple and safe to use.

Personnel in charge of using the diagnostic tools is required to follow the general safety regulations and use the devices **OPABOX AUTOPOWER** for their intended use only. Furthermore, they are required to carry out the maintenance as described in this manual.

4.1 Glossary


Operator: qualified person responsible for using the diagnosis tool.

Tool/device: any OPABOX AUTOPOWER device.

4.2 General Rules

- *The operator must have basic knowledge in mechanics, automotive, car repairs and potential dangers that can occur during the emissions analysis and Official Tests.*
- *The operator must carefully read all the information and instructions in the technical documents provided with the tool.*

4.3 Operator Safety

	<p>The tool has been ergonomically designed and developed, allowing the operator to work easily and efficiently. Moving and handling the tool inappropriately can cause the operator discomfort and physical strain.</p>
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Safety Measures:

- *Make sure the tool and any devices connected to it are securely fastened to the trolley before moving it around the workshop.*
- *To move the tool use the handles the tool and the trolley are equipped with.*



The sampling probe has been designed and developed to provide a thermally insulated handle.
Handling the probe incorrectly may cause serious burns.

Safety Measures:

- *Protect your hands by using suitable protection.*
- *Use the specific handle to extract the probe from the exhaust pipe after having carried out a test.*
- *Handle the sample probe with care.*
- *Make sure the probe is cold before putting it back.*

4.4 Tool Safety



The tool was designed for the use in specific environmental conditions.
The use of the tool in environments with temperature and moisture characteristics different from those specified may impair its efficiency.

Safety Measures:

- *Place the tool in a dry place.*
- *Don not expose or use the tool near heat sources.*
- *Position the tool making sure it can be properly ventilated.*
- *Do not use corrosive chemicals, solvents or harsh detergents to clean the tool.*



The tool was designed so as to be mechanically tough and suitable for use in a workshop.
Carelessness in the use and excessive mechanical stresses may impair its efficiency.

Safety Measures:

- *Do not drop, shake or subject the tool to shocks.*
- *Do not place objects over the cables and do not bend them.*
- *Do not perform any kind of intervention that may damage the tool.*
- *Do not open or dismantle the tool.*
- *Do not bend the antenna of the tool.*
- *Use the tool only with the provided antenna or with another one authorized by the manufacturer of the tool.*
- *Make sure the tool and any devices connected to it are securely fastened to the trolley before moving it around the workshop.*

- *To move the tool use the handles the tool and the trolley are equipped with.*



The tool was designed so as to be electrically safe and to work with specific power supply voltage levels.
Failure to comply with the specifications related to the power supply may impair the tool efficiency.

Safety Measures:

- *Do not wet with water or other liquids.*
- *The power supply of the tool must be always connected according to the procedures indicated in the present manual.*
- *Never use external batteries to power the tool.*

5 ENVIRONMENTAL INFORMATION



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

6 OPERATION OF THE TOOL RADIO DEVICES



Wireless connection with Bluetooth, WiFi and GPRS technology

The wireless connectivity with the Bluetooth, WiFi and GPRS technology is a technology that supplies a standard, reliable method to exchange information between different devices, using radio waves. Adding to the TEXA instruments, many more products use this technology, such as cellular phones, portable devices, Computers, printers, photo cameras, Pocket PCs etc.

The Bluetooth, WiFi and GPRS interfaces look for compatible electronic devices according to the radio signal they emit and establish a connection between them. TEXA tools select and only prompt you with compatible TEXA devices. This does not exclude the presence of other sources of communication or disturbance.


THE EFFICIENCY AND THE QUALITY OF BLUETOOTH, WiFi AND GPRS COMMUNICATION MAY BE INFLUENCED BY THE PRESENCE OF RADIO DISTURBANCE SOURCES. THE COMMUNICATION PROTOCOL HAS BEEN DEVELOPED TO MANAGE THESE TYPES OF ERRORS; HOWEVER, IN THESE CASES COMMUNICATION MAY BECOME DIFFICULT AND CONNECTION MAY REQUIRE SEVERAL ATTEMPTS.

SHOULD THE WIRELESS CONNECTION BE CRITICAL AND COMPROMISE A REGULAR COMMUNICATION, THE SOURCE OF THE ENVIRONMENTAL ELECTROMAGNETIC DISTURBANCE MUST BE IDENTIFIED AND ITS INTENSITY MUST BE 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 materials or with any metallic materials in general.

7 NORMATIVE INFORMATION

Compliance declaration

	TEXA S.p.A hereby declares that this unit, OPABOX Autopower complies with the essential requirements and provisions of the Directive 1999/5/EC.
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A copy of the Declaration of Conformity and all other certifications can be obtained at

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

Antenna

This product has been designed and tested to operate with the antenna provided.

In order to guarantee compliance with the above-mentioned regulations, use the tool only with the antenna provided or with another antenna authorized by Texa S.p.A.

8 OPABOX AUTOPOWER

OPABOX Autopower is the new emissions analysis module for diesel engines.

OPABOX Autopower allows you to carry out emissions tests for diagnosis purposes (engine not working properly, high consumption, diagnosis warning lights on, etc.) and allows you to verify if values are within those permitted by law.



Thanks to Bluetooth technology **OPABOX Autopower** can communicate, without the use of awkward wires, with all the viewing units:

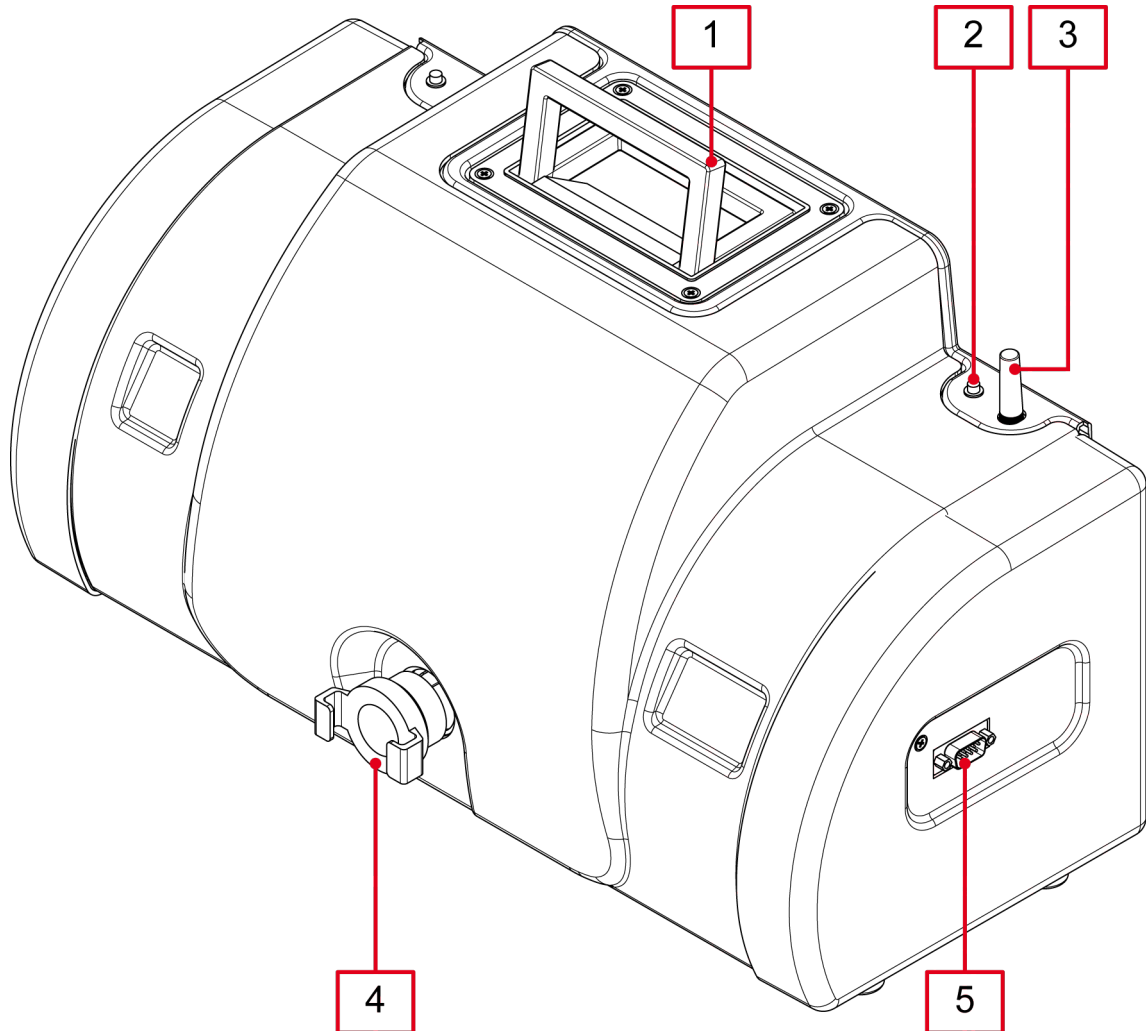
- *PC*
- *PEGASO series*
- *AXONE series*
- *GAS MOBILE*

Thanks to the practical **trolley** and **Power Pack** (external battery pack), bulky supply cables are no longer a problem and the tool can be easily moved about from one work area to another.

9 DESCRIPTION

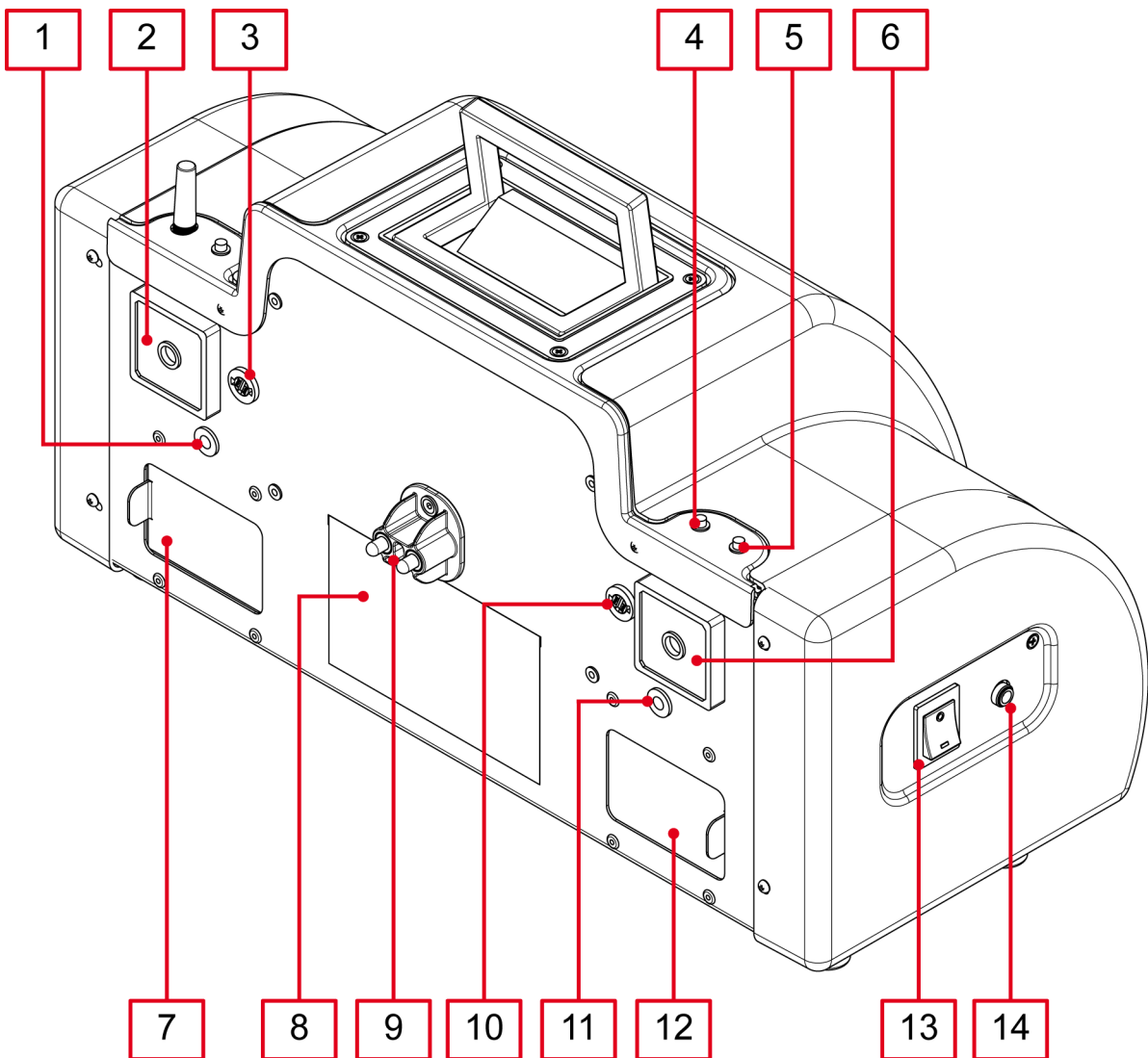
This chapter describes the technical characteristics of the **OPABOX AUTOPOWER**.

9.1 Front view



1. **Handle**
2. **Blue LED**
3. **Antenna**
4. **Exhaust smoke inlet fitting**
5. **RS232 serial port**

9.2 Back View



1. **Threaded insert**
2. **Air intake**
3. **12 V Power Supply Connector**
4. **Red LED**
5. **Green LED**
6. **Air intake**
7. **Gas chamber receiver compartment**
8. **Plate holder**
9. **Recharge connectors**
10. **12 V Power Supply Connector**
11. **Threaded insert**
12. **Gas chamber emitter compartment**
13. **Switch**
14. **Connector for external power adapter**

9.3 Technical Features

Operating conditions	
Temperature:	5 ÷ 40 °C
Pressure:	850 ÷ 1060 hPa
Humidity:	0 % ÷ 95 % RH
Technical Features:	
Actual chamber length:	200 mm
Chamber temperature:	> 75 °C
Heating time:	5 minutes (maximum)
Light source:	Green LED
Resetting:	Electronic and automatic
Calibration:	Electronic and automatic
Electrical Characteristics:	
Absorption (Max):	80 W
Recharge with adapter:	115-230 VAC ± 10% ; 50-60 Hz ± 2%
Automatic warning for battery voltage variations out of the expected range: 11.3 ÷ 14.5 V	
Physical Characteristics:	
Storage temperature:	- 20 ÷ 60 °C
Physical dimensions (without trolley):	460 x 200 x 250 mm
Physical dimensions (with trolley):	460 x 200 x 480 mm
Weight:	9 kg (approximately, including trolley)
Hardware and Software:	
Serial port:	RS232 standard with proprietary protocol for PC connection
Wireless port:	Bluetooth
Clock:	Internal, battery powered
Control system:	Win PC-compatible emissions analysis software

Safety check:

Pressure change within the measurement chamber.
Chamber cleaning fan operation.
Condition of neutral filters (cleanliness).

Metrological Characteristics

Measurement	Range	Unit	Resolution
Light absorption coefficient K [m ⁻¹]*	0 ÷ 9.99	m ⁻¹	0.01
Light attenuation N [%]	0 ÷ 99.9	%	0.1
Acceleration time	0 ÷ 5	s	0.05
Exhaust temperature	0 ÷ 300	deg C	1
RPM	0 ÷ 10000	rpm	1
Engine temperature	0 ÷ 200	deg C	1
Internal temperature	0 ÷ 70	deg C	0.1
Chamber pressure	750 ÷ 1100	hPa	1

(*) The **light absorption coefficient K** is calculated according the following formula:

$$k = \frac{-1}{L_A} \times \ln \left(\frac{\tau}{100} \right)$$

Where:

- **La - effective optical path length:** *length of a light beam between the emitter and the receiver that is intersected by the exhaust gas stream.*
- **N - opacity:** *fraction of light transmitted from a source through a smoke-obscured path, which is prevented from reaching the observer or the instrument receiver.*
 - $N = 100 - \tau$
- **τ - transmittance:** *fraction of light transmitted from a source through a smoke-obscured path, which reaches the observer or the apparatus receiver.*

10 TOOL OPERATION

OPABOX AUTOPOWER must be used by qualified personnel.

TEXA S.p.A. offers its clients professional training courses.

In these training courses the technicians are followed step by step by specialized personnel. Their goal is to give these technicians as much familiarity with the tools and their software as possible. This way the technicians will learn how to make the best use of TEXA S.p.A. products.

For more information regarding training courses offered by TEXA S.p.A. go to our website www.texa.com.

10.1 Mounting the Tool on the Trolley (Optional)

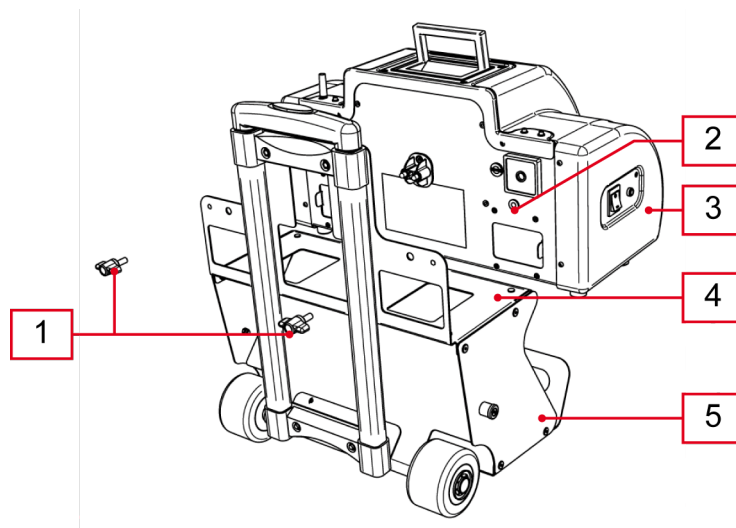
The tool can be mounted on a specific trolley (optional).

The trolley has various functions:

- allows you to move the tool easily
- allows you to attach the tool to the recharging stations
- provides a practical housing for the sample probe and various hoses required for the measurements
- allows for the installation of **Power Pack** (optional)



Without the trolley the tool can only be powered via the external power adapter.



1. Threaded wing bolt
2. Threaded inserts
3. Tool
4. Trolley resting surface
5. Trolley

Proceed as follows:

1. Place the **tool** onto the **trolley** making sure you position it securely and steadily on the **resting surface**.
2. Center the **threaded inserts** of the **tool** with the designated holes located on the back side of the **trolley**.
3. Fasten the **bolts** that have been provided with the trolley.

10.2 Power Supply

The tool can be powered in three ways:

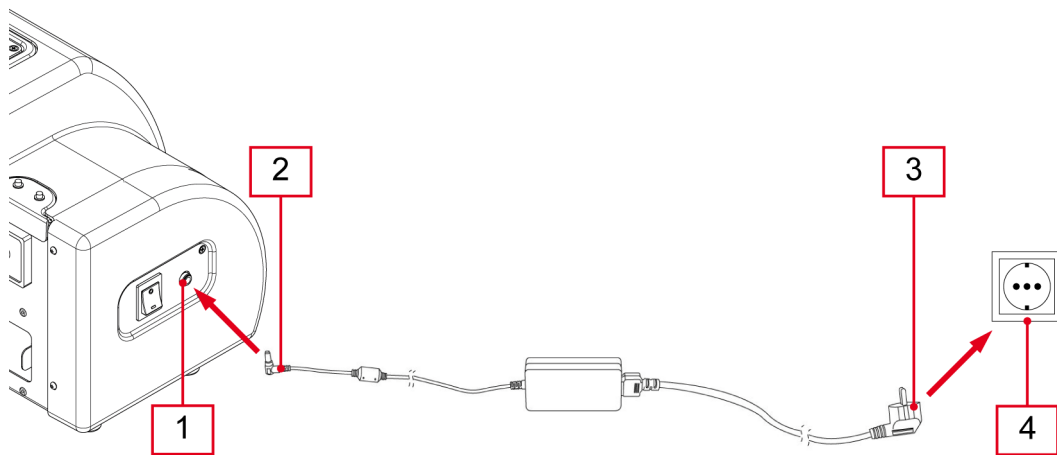
- from the mains using an external power adapter
- via a workstation (Pegaso Series or charging station for AUTOPOWER tools)
- from **Power Pack**

The green LED will turn on when the tool is being powered.

If you are powering your tool with Power Pack the green LED and the red LED are used to indicate the battery state of charge.

10.2.1 Power supply from the Mains

It is possible to power the tool by connecting it to the mains via a specific power adapter provided with the tool.



1. Tool female jack connector
2. Power adapter male jack connector
3. Power adapter plug
4. Mains socket

Proceed as follows:

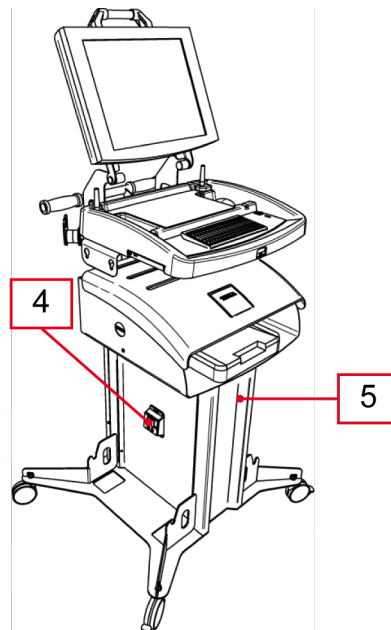
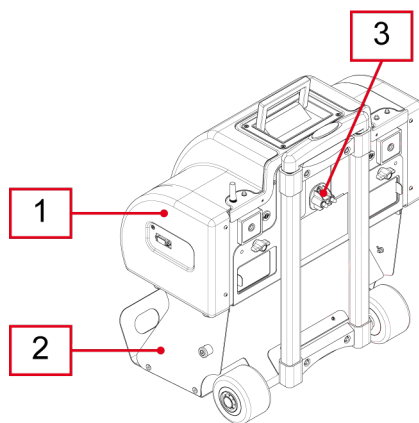
1. Connect the **power adapter male jack connector to the tool female jack connector.**
2. Connect the **power adapter plug to the mains power socket.**

10.2.2 Powering via a Workstation

It is possible to power the tool by placing it on the specific support brackets at the bottom of the **Pegaso Series** workstations and of the **recharging stations for AUTOPOWER tools**.



To power the tool in this way it must be mounted on the specific trolley (optional).



1. *Tool*
2. *Trolley*
3. *Charging connector of the tool*
4. *Recharging station recharging connector*
5. *Recharging station*

Proceed as follows:

1. *Fasten the **tool** to the **trolley** (for more information consult the corresponding chapter).*
2. *Insert the **tool**, fastened on the **trolley**, into the appropriate supports so that the **tool recharging connector** coincides with the **recharging connector of the recharging station or trolley**.*

10.2.3 Power supply from Power Pack (Optional)

It is possible to power the tool by connecting it to **Power Pack** (optional). **Power Pack** is an external battery pack that allows you to power the tool without the use of cables, making it therefore easy to move the tool from one work area to another .

The **Power Pack** provide continuous use throughout an entire working day.

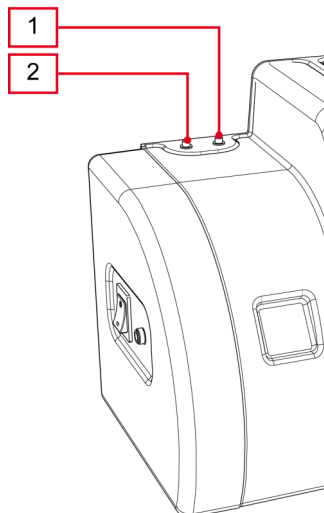


To power the tool in this way it must be mounted on the specific trolley (optional).



For more information refer to the Power Pack installation manual.

When **Power Pack** is connected to the tool the state of charge of the batteries is indicated by the **red LED (1)** and the **green LED (2)** located on the top part of the tool.



When the tool is in operation the LEDs indicate the following:

GREEN LED	RED LED	PERCENTAGE OF BATTERY CHARGE
on	off	75% ÷ 100%
blinking	off	50% ÷ 75%
off	blinking	25% ÷ 50%
off	on	charge < 25%

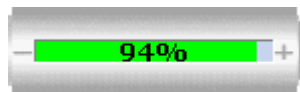
The green LED will remain on if Power Pack is disconnected and the tool is powered.

Any problem will be indicated on the viewing unit.

The **Power Pack** charge status is constantly monitored by the software within the viewing unit.

The level of the charge is indicated graphically and numerically via a specific icon.

For more information consult the software operating manual.



The icon appears when the tool is connected using the specific analysis and service software programs.

When the charge level drops below 25% a message informs the user that the measurement will stop and requests the user to recharge the tool.

! Power Pack must be recharged all night (at least 8-10) in order for it to have a good battery life.

! Make sure the green LED starts to flash (recharge in progress) once Power Pack is connected to the power source.

! Make sure not to turn off the power supply in the workshop while Power Pack is recharging.

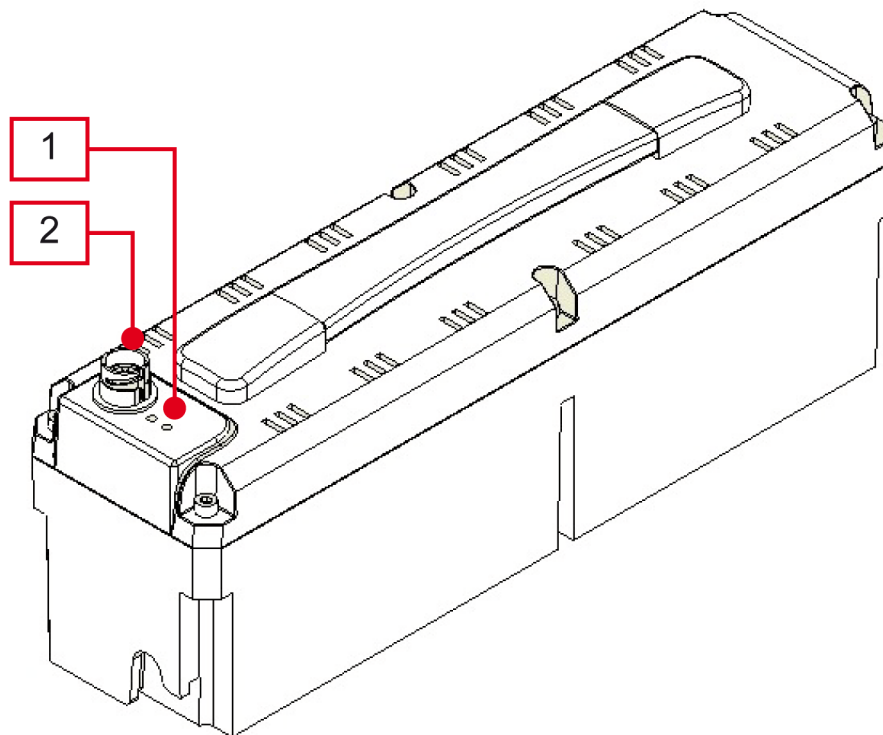
10.2.4 Charging the Power Pack (Optional)

It takes about 12 consecutive hours to charge **Power Pack** completely.

Power Pack can be charged in three ways:

- from the mains using an external power adapter
- from the tool connected to the mains through external power adapter
- via a workstation (Pegaso Series or charging station for AUTOPOWER tools)

Power Pack is equipped with two **green LEDs**, one for each battery, that indicate the battery state of charge if the device is being charged via an external power adapter.



1. Green LEDs
2. Recharge connector

Power Pack LEDs remain off if it is being charged via the analysis tool or a workstation.

In these cases the information on the state of charge of **Power Pack** is given by the **green LED** of the tool, with the same blinking patterns.

The table below illustrates the information provided by the LEDs according to the charging mode selected.

CHARGING MODE	POWER PACK LED	GREEN LED ON TOOL	STATE OF CHARGE
from the mains using an external power adapter	blinking	off	charging
	on	off	charged
from the tool connected to the mains through external power adapter	off	blinking	charging
	off	on	charged
via a workstation (Pegaso Series or charging station for AUTOPOWER tools)	off	blinking	charging
	off	on	charged

The tool is able to work normally while **Power Pack** is being recharged.

To store **Power Pack** correctly and when storing it for longer than one month, we recommend charging it completely.

Once charging is complete disconnect **Power Pack** from the tool and put it back to its original place.



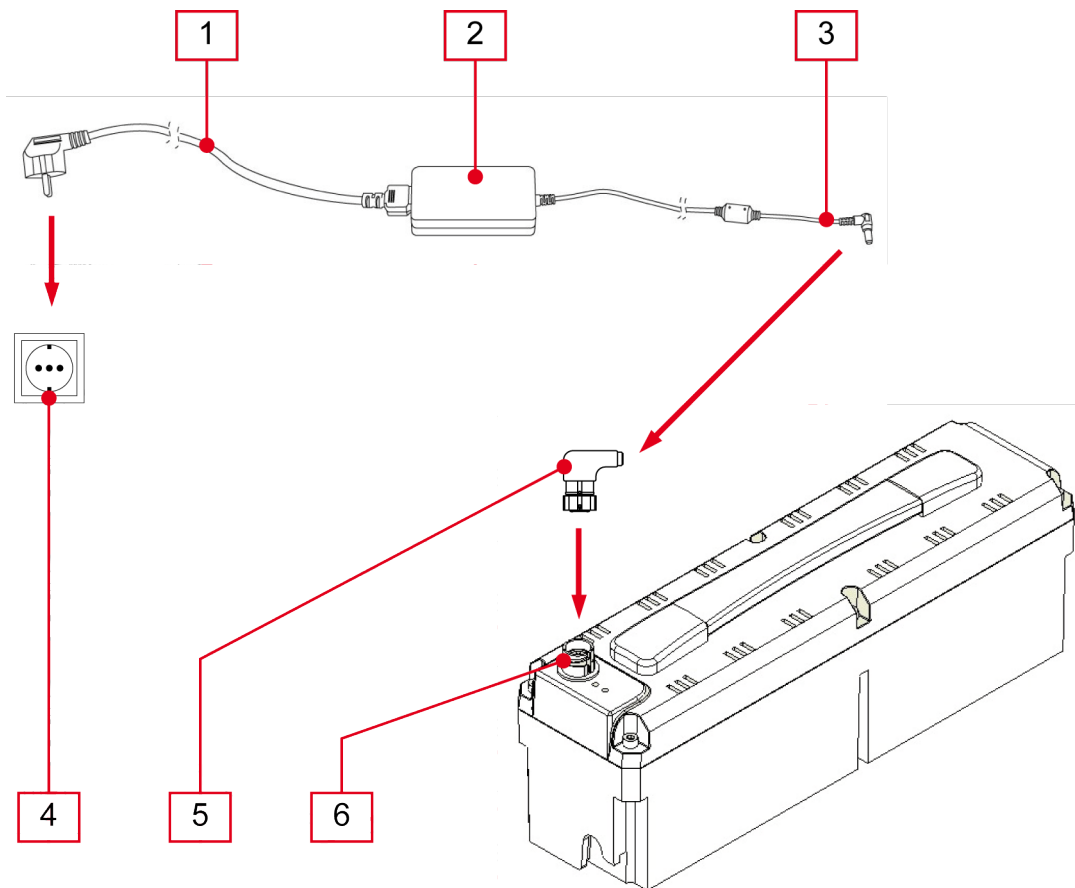
We recommend charging Power Pack completely any time it has not been used for 2-3 months.

CHARGING FROM THE MAINS

It is possible to charge **Power Pack** by connecting it directly to the mains via a specific external power adapter.

If you are charging using this method you must separate Power Pack from the tool.

This type of charging allows you to have more than one **Power Pack** charged and ready for use.



1. *Power supply cable*
2. *Power adapter*
3. *Female Jack connector of the power supplier*
4. *Mains socket*
5. *Adapter*
6. *Recharge connector*

Proceed as follows:

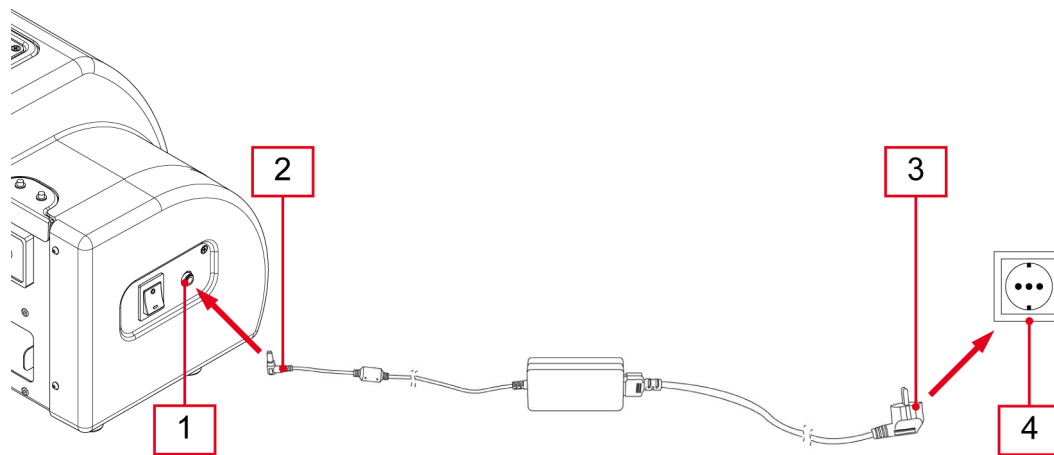
1. *Disconnect **Power Pack** from the tool.*
2. *Remove **Power Pack** from the trolley.*
3. *Connect the **adapter connector** to the **charging connector**.*
4. *Connect the **female connector** of the power adapter to the **adapter connector**.*
5. *Connect the **supply cable** to the power adapter.*
6. *Connect the **supply cable** to a mains socket.*

CHARGING VIA THE TOOL

It is possible to charge **Power Pack** by connecting the external power adapter to the tool.



Power Pack must be placed in the trolley and be correctly wired to the tool.




1. *Tool female jack connector*
2. *Power adapter male jack connector*
3. *Power adapter plug*
4. *Mains socket*

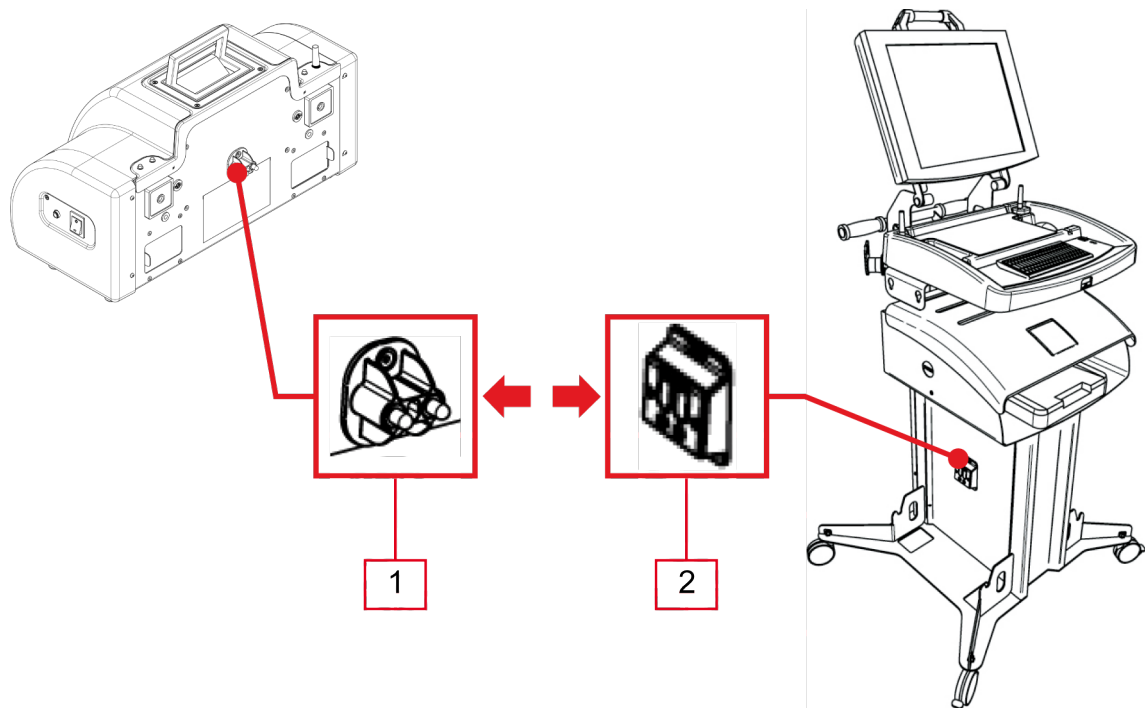
Proceed as follows:

1. *Connect the **power adapter male jack connector** to the **tool female jack connector**.*
2. *Connect the **power adapter plug** to the **mains socket**.*

CHARGING VIA A WORKSTATION

It is possible to charge **Power Pack** by placing the tool on the specific support brackets at the bottom of the workstations, **Pegaso Series** and the charging station for **AUTOPOWER** tools.

 **Power Pack must be placed in the trolley and be correctly wired to the tool.**



1. *Charging connector of the tool*
2. *Charging connector of the workstation*

Proceed as follows:

1. *Make sure the workstation or the charging station is powered and turned on.*
2. *Place the tool, secured to the **trolley**, on the specific support brackets so that the **charging connector of the tool** coincides with the **charging connector of the workstation** or of the charging station.*

10.3 ON/OFF

To turn on the tool set the switch located on the left side of the smoke meter to the "I" position.

The smoke meter launches a heating up procedure that lasts approximately 5 minutes.

During this time you cannot carry out any type of measurement; the software will block all the operations not permitted.

Once the heating up procedure has come to an end, the smoke meter will carry out a reset procedure and will prepare for measurements, while the software will enable all the functions that have been blocked up until now.

The smoke meter will go into stand-by if it does not receive a command within 4 minutes.

A message will appear informing you that the tool is carrying out the autozero procedure.

This procedure lasts approximately 10 seconds.

To turn off the tool set the switch located on the left side to the "O" position.

10.4 Communication mode with the viewing unit

The tool is not equipped with a user interface and the data acquired is sent to an appropriate viewing unit.



The viewing unit must always be installed with appropriate TEXA S.p.A. software that supports emissions analysis.



Before starting the communication with the display unit, you must perform the special configuration procedure.

The connection of the tool to the display unit can occur in the following modes:

- *Bluetooth*
- *USB*
- *Serial*

To best exploit the potential of the tool, you must use the Bluetooth connection.



Power, connect and turn on the tool before starting up the programs which will be used to interface with it. If this procedure is not followed communication errors could occur.

While the tool is turning on it **automatically detects the communication mode** through which it is connected to the display unit.

For example: the Bluetooth communication mode (active by default) is disabled when the serial cable is connected.



To change the communication mode between the tool and the viewing unit you must first turn off the tool and then choose the mode you prefer.

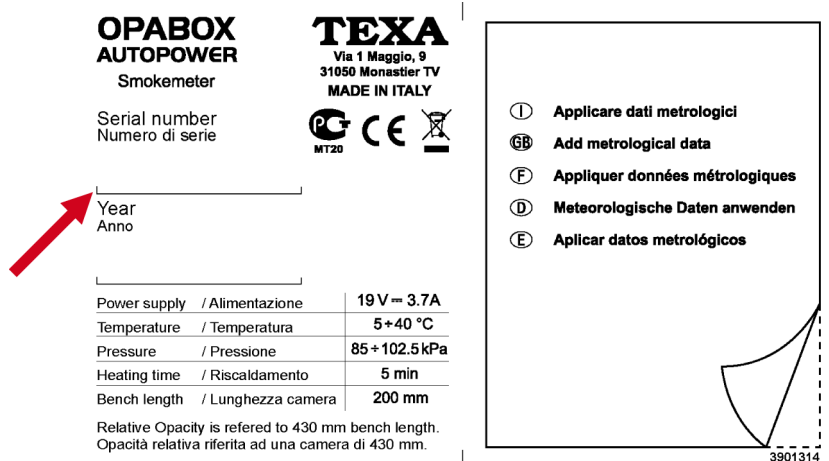
10.4.1 Connection via Bluetooth (suggested)

The wireless connection eliminates the communication cable with the viewing unit, making the tool more practical to use.



The external antenna for the Bluetooth communication is clearly visible on the top part of the tool.

The serial number to use in order to configure the Bluetooth communication can be found in the plate located on the back of the tool.



The **blue LED** provides information on the status of the Bluetooth communication:

BLUE LED	STATUS OF THE COMMUNICATION
off	no Bluetooth communication
on	not managed
blinking	the tool is communicating with the display unit via BLUETOOTH

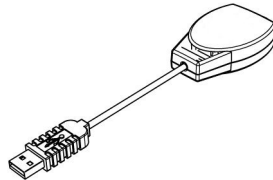


In order to configure properly we suggest you to turn on the device BEFORE turning on the viewing unit and only after proceed with the configuration procedure.

For more information consult the software operating manual.

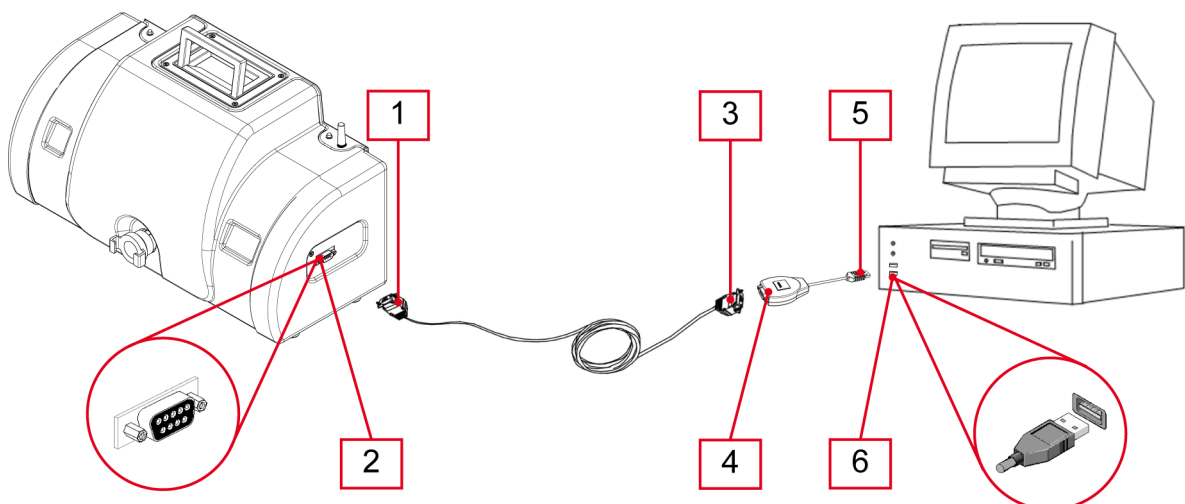
10.4.2 Via USB Connection (optional)

In order to connect the tool to the PC via USB you must be equipped with a USB/serial adapter.



In order to use the adapter you must install specific drivers developed by TEXA S.p.A in the PC.

For more information regarding drivers installation consult the manual provided with the adapter.



1. *The RS232 male connector of the cable*
2. *Tool female RS232 connector*
3. *The RS232 female connector of the cable*
4. *Adapter RS232 male connector*
5. *Adapter USB male connector*
6. *The PC USB female connector*

Proceed as follows:

1. **Connect the cable RS232 male connector to the tool RS232 female connector.**
2. **Connect the RS232 female connector of the cable to the adapter RS232 male connector.**
3. **Connect the adapter USB male connector to the PC USB female connector.**

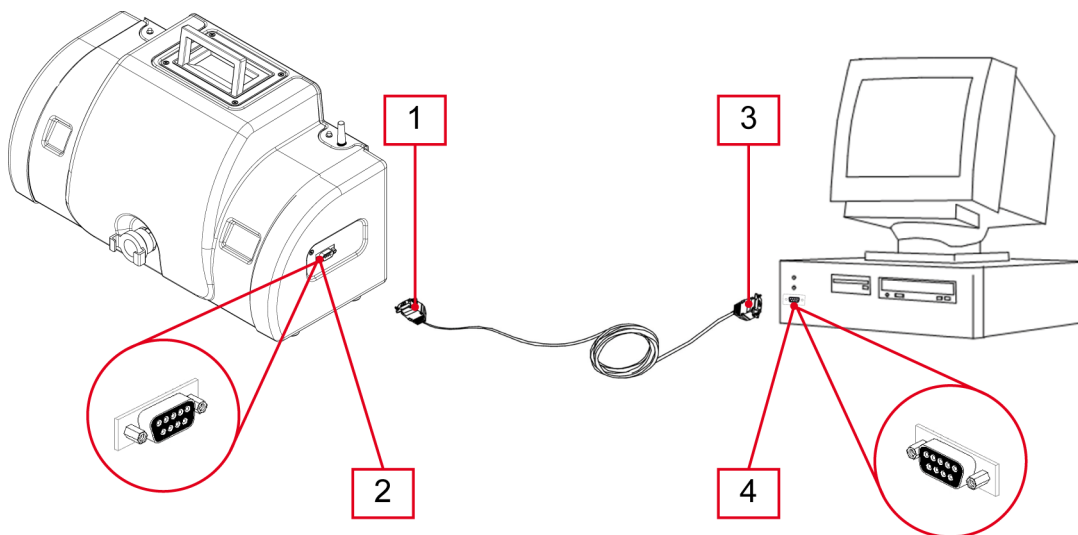
The configuration procedure is indicated in the software manual.



You cannot power the tool using the USB port.

10.4.3 Connecting Via RS232 (optional)

The serial communication is required in order to update the tool firmware but may also be used if you are having problems communicating with Bluetooth.



1. *The RS232 male connector of the cable*
2. *Tool female RS232 connector*
3. *The RS232 female connector of the cable*
4. *The PC RS232 male connector*

Proceed as follows:

1. **Connect the cable RS232 male connector to the tool RS232 female connector.**
2. **Connect the RS232 female connector of the cable to the PC RS232 male connector.**



The firmware update must only be carried out by qualified personnel.

10.5 Measuring Engine Temperature and Engine RPM

The tool detects temperature and engine rpms via an external rev counter. The probes required for engine temperature and engine RPM detection are connected to a TEXA S.p.A. external rev counter.

Using this method the external rev counter acquires the data related to the engine temperature and engine RPM and sends them to the viewing unit.

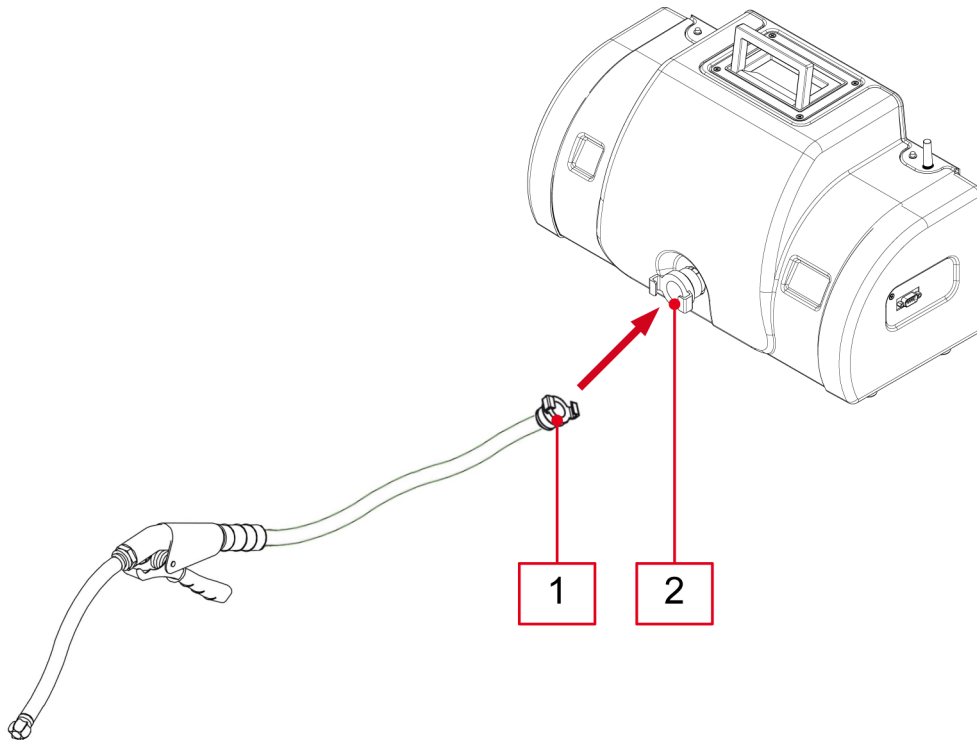


The external rev counter must be appropriately configured using the TEXA S.p.A. software.

For more information consult the external rev counter manual.

10.6 Connecting the Sample Probe

The exhaust smoke is extracted from the vehicle exhaust pipe via a specific probe.



1. *Sample probe fitting*
2. *Smoke meter fitting*

Proceed as follows:

1. **Connect the sample probe fitting to the smoke meter fitting.**

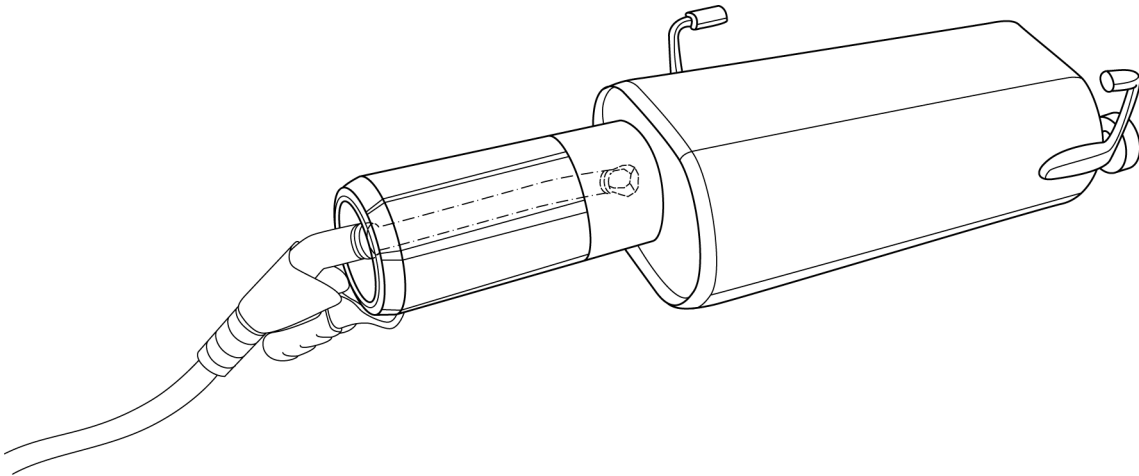
If the fans are not operating the exhaust smoke may deposit some impurities on the protection lenses.



Do not allow smoke to enter the smoke meter when it is off.

10.7 Inserting the Sample Probe into the Exhaust Pipe

In order to carry out a reliable detection you must insert the sample probe correctly.



Proceed as follows:

1. *Insert the probe far down into the exhaust pipe in order to optimize the sample of smoke.*
2. *Use the specific fastening methods to keep the probe well-fastened to the exhaust pipe during the test.*



Be careful NOT to touch the probe at the end of the test: it can reach very high temperatures.

10.8 How to Carry out a Standard Test

In order to carry out a correct detection pay particular attention to the following conditions:

- *Verify that the data related to the idle rpm are those established by the manufacturer.*
- *The outside temperature must be between $5\text{ °C} \pm 2\text{ °C}$ e i $40\text{ °C} \pm 2\text{ °C}$.*
- *Make sure the vehicle exhaust does not have leaks. To do so completely seal the exhaust making it airtight while the engine is running at idle and check that there are no gas leaks in the pipe joints.*
- *The temperature of the engine oil must be greater than 60 °C . For some official tests the temperature of the engine oil must be greater than 80 °C .*
- *Insert the exhaust gas sample probe into the exhaust pipe of the vehicle.*
- *Fasten the sample probe clamp to the exhaust pipe of the vehicle.*

11 MAINTENANCE

In order to keep the **OPABOX Autopower** in perfect working condition, we recommend having its general conditions checked at least every 12 months by an authorized TEXA S.p.A. Assistance Center

All TEXA S.p.A. centers have the appropriate tools in order to verify that the smoke meter and its built-in instruments are in perfect working condition.

The technicians can also check the software/firmware versions installed. Having the most recent versions is in fact essential in order to obtain the best performance from **OPABOX Autopower**.

11.1 Cleaning the Neutral Filters

The neutral filters are protection elements located in front of the optical components of the tool (emitter and receiver).

The filters are made with transparent glass that allows light to pass through the smoke chamber.

During normal tool operation the smoke particles stick to the glass of the neutral filters and partially darken the optical parts.

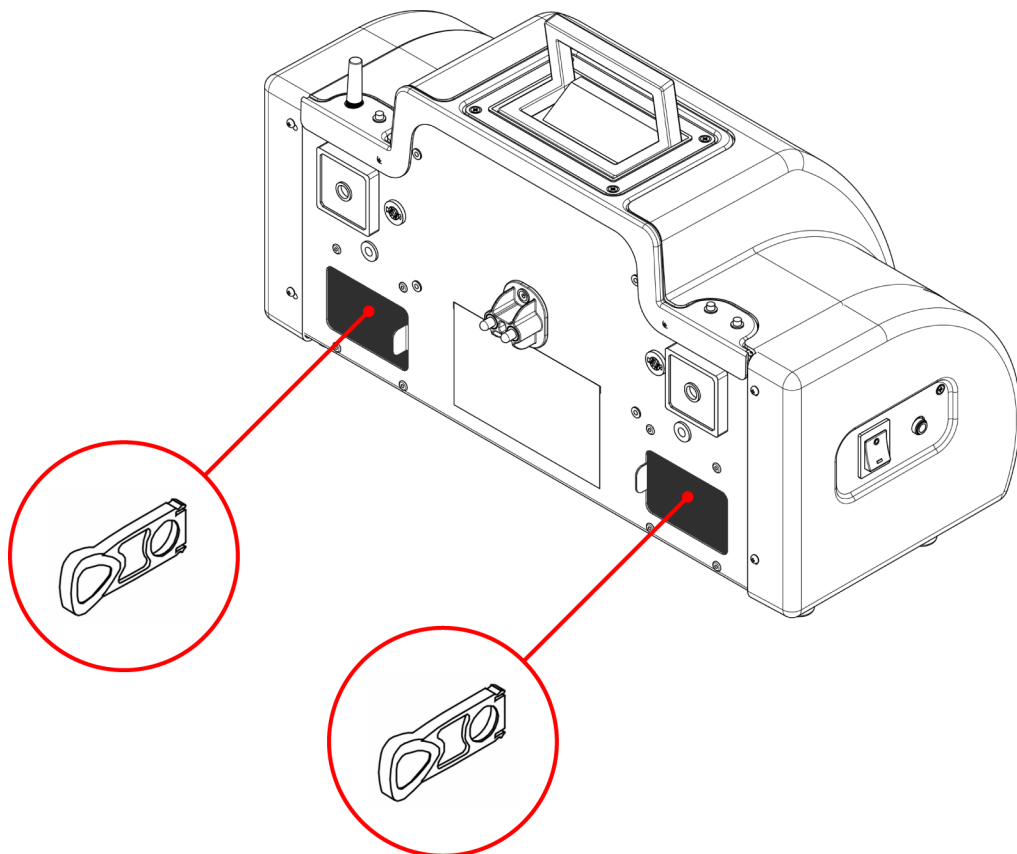
The smoke meter continuously checks the condition of the optical parts; a message will appear on your screen informing you when you are required to carry out a cleaning procedure.



Do not use solvents, harsh detergents or excessively rough or abrasive cloths to clean the lenses of the neutral filters.



Be careful not to scratch the lenses of the neutral filters during cleaning operations.



Proceed as follows:

1. *Open the gas chamber receiver and emitter compartments.*
2. *Remove the filters.*

3. *Clean the filters with water and soap.*
4. *Dry the filters with a soft cloth.*
5. *Reinstall the filters.*
6. *Close the compartments.*

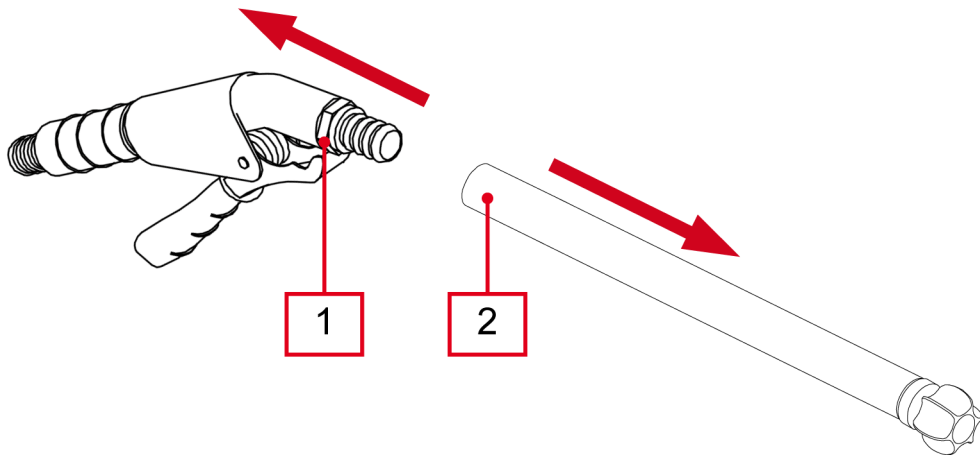
11.2 Repairing the Black Silicon Tube

The black silicon hose that connects to the exhaust smoke inlet fitting may get damaged during use.

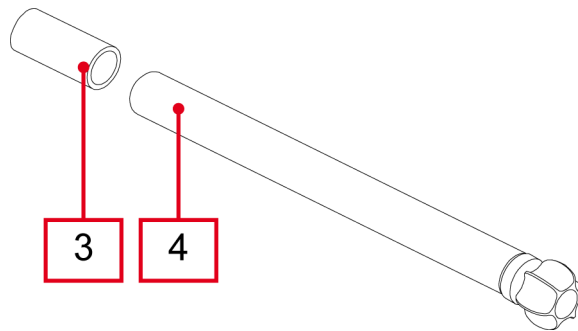
It is possible to repair the hose by removing the damaged part.

Proceed as follows:

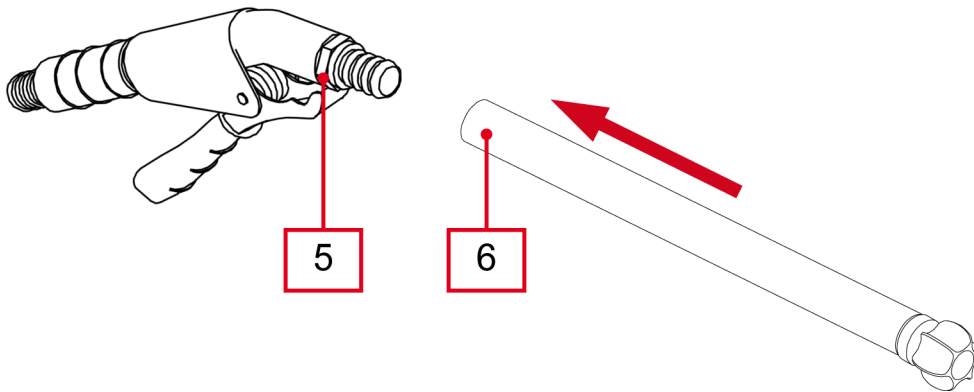
1. Slip the **tube (2)** out of the **sample probe clamp (1)**.




2. Cut the tube isolating the **damaged part (3)**.
3. Trim the end of the **undamaged part of the tube (4)**.



4. Slip the il **tube (6)** back into the **sample probe clamp (5)**.



 Always make sure the length of the tube complies with the relevant legislation.

11.3 Removing the Built-up Soot in the Intake Pipe

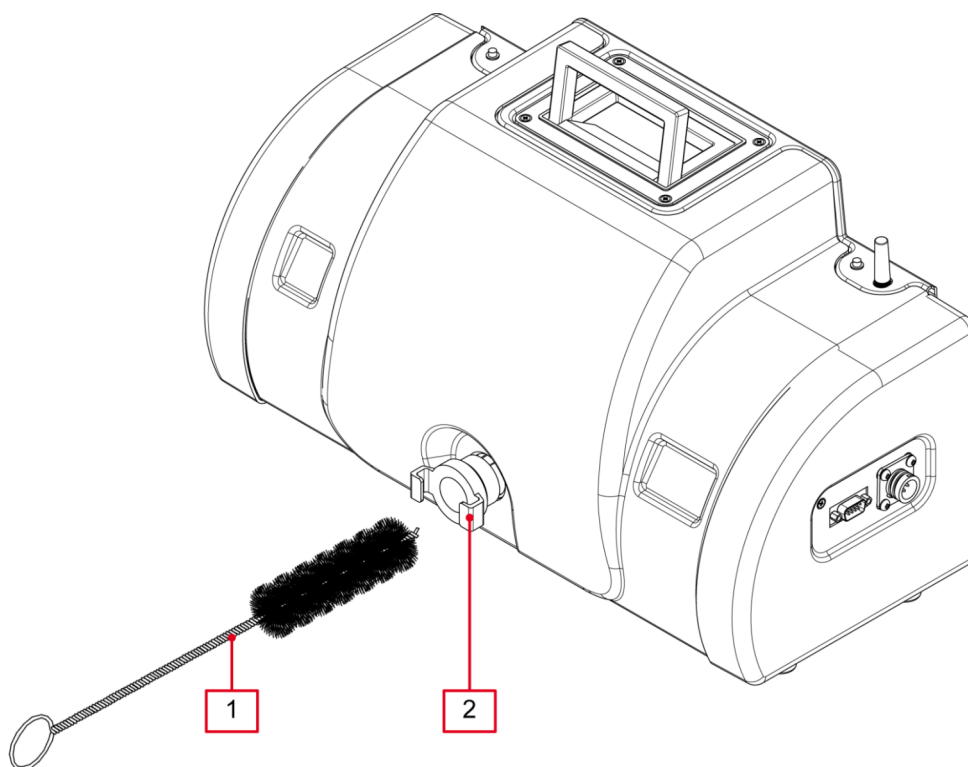
Soot within the exhaust smoke builds up in the analysis chamber inlet hose during normal tool operation.

The soot must be removed to avoid the auto-zero solenoid valve from getting stuck.

During the reset phase, the solenoid valve closes the opening allowing the measurement chamber to empty any smoke residue.



If the solenoid is jammed it can damage the tool and hinder its precision.

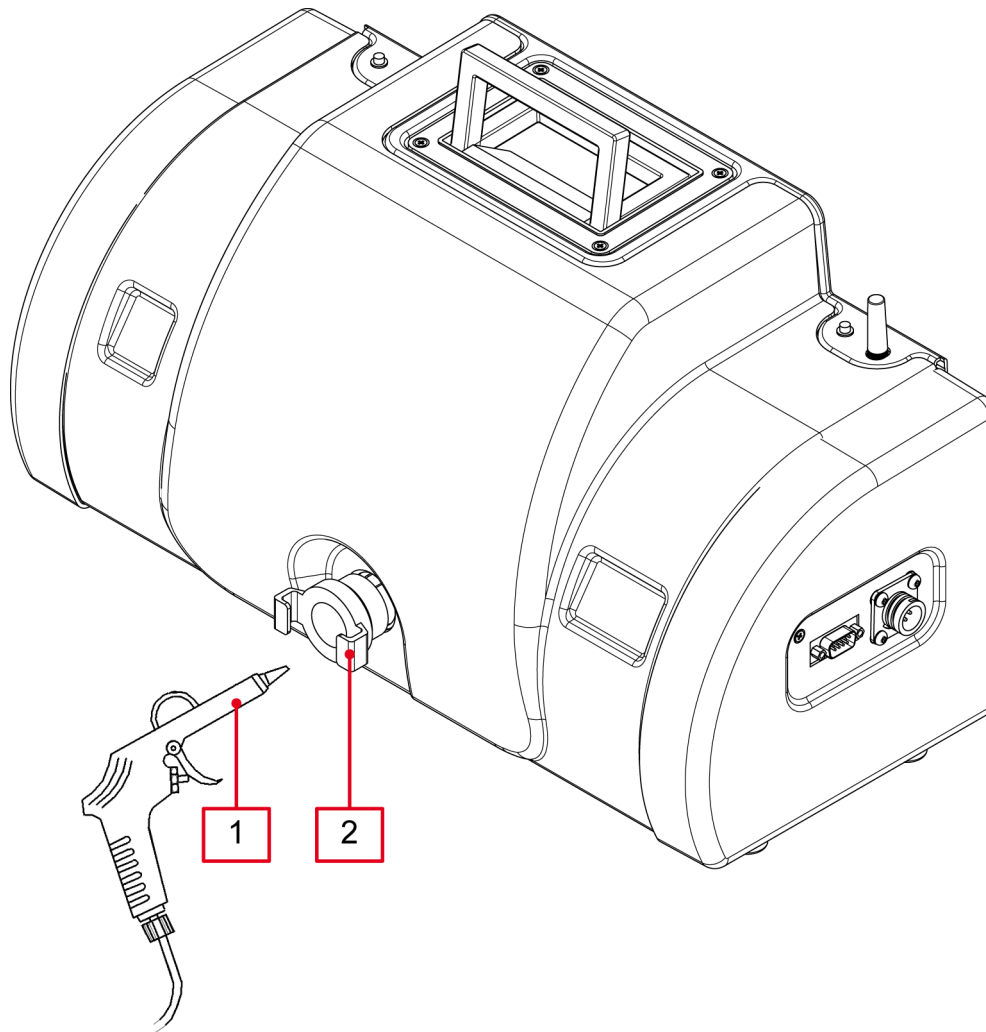


1. *Brush*
2. *Exhaust smoke inlet fitting*

Proceed as follows:

1. Disconnect the sampling probe.
2. Place the brush inside the fitting. Use the brush to carefully remove all the built-up soot.

Once the soot has been removed with the brush, use the compressed air to blow away any residuals.

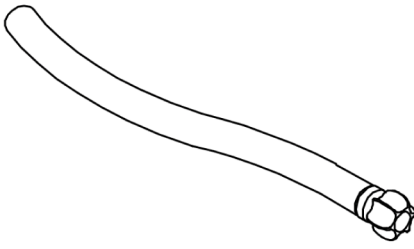


1. *Compressed air gun*
2. *Exhaust smoke inlet fitting*

Proceed as follows:

1. *Place the compressed air gun into the fitting.*
2. *Apply 5-6 atmospheres of air pressure into the fitting for at least 3 minutes.*

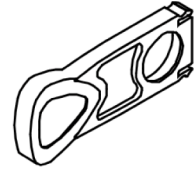
12 SPARE PARTS



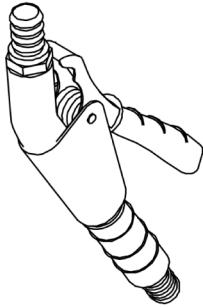
1



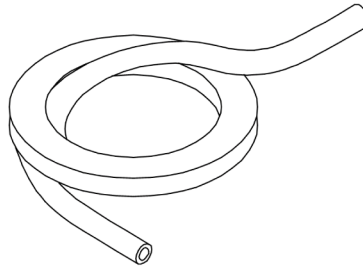
2



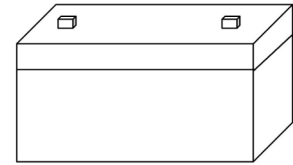
3



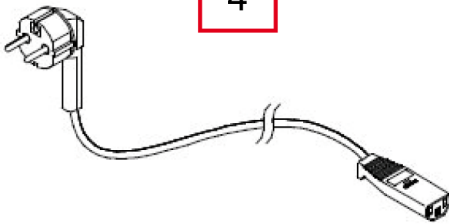
4



5



6



7



8

1.	Smoke sample tube L=24 cm	7494070
2.	Cone shaped rubber plug	7494030
3.	Smoke chamber protection glass	7494090
4.	Smoke meter sample clamp	7494044
5.	Smoke sample tube L=100 cm	7494072
6.	Rechargeable battery	51412112
7.	Power cable	1260320
8.	Power adapter	51861970

13 SOLUTIONS TO PROBLEMS

For any technical problem contact your retailer/distributor.

Below you will find a list of simple instructions that the client can carry out without having to ask for technical assistance.

PROBLEM	PROBABLE CAUSE	POSSIBLE SOLUTION
No battery LED lights up once the tool is on.	The external adapter is not connected to the mains.	Connect the power supply to the mains.
	The external adapter is not properly connected to the tool.	Connect the power adapter to the tool.
	The tool is not properly placed on the workstation/charging station	Make sure the tool is positioned correctly and that the charging connectors of the tool and of the workstation/charging station touch.
	Power Pack is not properly connected to the tool.	Check the wiring and make sure that the connections are correct.
	Power Pack is flat.	Charge Power Pack for approximately 12 hours.
The tool and the viewing unit do not communicate with each other correctly.	The Bluetooth antenna is not properly mounted.	Check the Bluetooth antenna and make sure it is tightly screwed onto the tool.
	The tool/viewing unit is off.	Turn on the Bluetooth peripheral/display unit.
	The tool and the viewing unit are out of Bluetooth operating range.	Check the distance between the tool and the display unit.

PROBLEM	PROBABLE CAUSE	POSSIBLE SOLUTION
The tool and the viewing unit do not communicate with each other correctly.	The tool/viewing unit has been placed near shielding material.	Place the tool/viewing unit away from shielding material.
	The presence of other wireless communications disturbs the signal.	Move away from possible sources of interference.
		If possible, turn off the devices that cause interference.
		Wait and repeat the communication attempt.
Power Pack discharges quickly.	Power Pack has not been charged completely.	Charge Power Pack for approximately 12 hours.
	Power Pack is not connected to the power source correctly.	Check the wiring and make sure that the connections are correct.
	The Power Pack batteries have expired.	Contact your retailer to replace the batteries.
Power Pack will not charge.	The external adapter is not connected to the mains.	Connect the power supply to the mains.
	The external power adapter is not properly connected to the tool.	Connect the power adapter to the tool.
	The external power adapter is not properly connected to Power Pack.	Connect the power adapter to Power Pack.
	The tool is not properly placed on the workstation/charging station	Make sure the tool is positioned correctly and that the charging connectors of the tool and of the workstation/charging station touch.

PROBLEM	PROBABLE CAUSE	POSSIBLE SOLUTION
Power Pack will not charge.	Power Pack is not properly connected to the tool.	Check the wiring and make sure that the connections are correct.

14 LEGAL NOTICES

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