SURFOX TURBO
USER MANUAL

SURFOX
website

TABLE OF CONTENTS

It is necessary to read carefully the instructions of this manual before any operation.
This manual provides the main information for adequate and safe installation, start-up, operation and maintenance of the device.
This manual is intended to familiarize the user with this unit, its particular features, applications, limitations, and the manufacturer's suggestions and recommendations.
The manual is an integral part of the device and should be stored with care until the unit is dismantled.
This manual reflects the state of the device at the time of delivery and cannot be regarded as inappropriate simply because of later updates based on additional experience.
This device is built with extra durability to stand up to the heavy demands of industrial use. However, like any piece of electrical equipment, care and safety should always be taken when using and maintaining this valuable investment. With proper care and maintenance, your unit will provide years of reliable service.

WALTER CUSTOMER ASSISTANCE DEPARTMENT (walter.com) is at your disposal to provide all the marketing and user information.

1. SAFETY

WALTER's SURFOX TURBO is produced in accordance with applicable standards governing the manufacture, performance and safety of industrial products.

All persons in charge of device installation, operation, maintenance and repair must possess the appropriate technical qualifications and must meticulously comply with the provisions of this user manual.
To reduce the risk of fire, electric shock, and personal injury, always follow basic safety precautions when using this equipment.

OBLIGATIONS OF THE PERSON IN CHARGE OF THE DEVICE

The owner of the device and/or any person responsible for safety are required to:

- Ensure that all users of the device are adequately trained as regards current occupational health and safety regulations.
- Ensure that all users of the device have read this user manual in its entirety and have understood all of it, in particular the sections on safety standards.
- Periodically check that all personnel always operate in compliance with safety standards.
- Inspect the equipment regularly to ensure that it is operating properly and performing its intended function. Damaged or defective parts must be repaired or replaced immediately by **WALTER** qualified personnel only. Refer to spare parts list for the ordering number and contact a **WALTER** Factory Service Center or **WALTER** Authorized Service Center.
- Periodically check that all the safety signs affixed to the device (data plate, stickers bearing danger symbols, etc.) are clearly legible and not damaged, overwritten, removed or obscured by other objects.

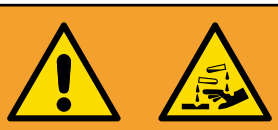
OBLIGATIONS OF THE USER

Personnel authorized to use the device must:

- Operate in accordance with current occupational health and safety regulations.
- Read this user manual carefully, paying particular attention to the sections on safety standards.
- Sign a document in which they declare that they have read and understood this manual, and that they undertake to follow all the instructions contained therein.
- When working, always wear personal protective equipment and clothing (see *chapter 1.1*).
- Use the device only as explained in this manual; improper use increases the risk of accidental personal injury and/or property damage.
- Stay alert at all times when handling this unit. Watch what you are doing. Use common sense. Do not operate the device if you are tired. Never leave it running unattended.
- Do not use the unit if the switch does not turn ON and OFF.
- Hold the wand firmly. Do not overreach, maintain good footing and balance at all times.
- Keep the work area clean and well lit. A cluttered environment invites accidents. Remove any material that may be ignited by sparks. Do not use this equipment in the presence of flammable liquids or gases are. Keep handles clean, dry and free from cleaning solution, oil and grease. Do not use in rain, damp or wet locations.
- Take appropriate precautions and always secure the device during periods when the workstation is not manned (such as during breaks or at the end of the shift).
- Do not abuse the power cord. Never pull or lift this unit by its cord or yank to disconnect it from the outlet. Keep the cord away from heat, oil, and sharp edges. Inspect the cord regularly and have it replaced by a **WALTER** Factory Service Center or **WALTER** Authorized Service Center if damaged.
- Keep children and others away from the work area. Make sure no one is under you when working in high places. Do not allow unqualified persons handle this machine.

1.1. PERSONAL PROTECTIVE EQUIPMENT (PPE)

The use of this device entails several risks, therefore the use of appropriate personal protective equipment (PPE) is necessary.



ELECTROLYTE SOLUTIONS

For its normal operation, the device requires the use of special electrolyte solutions that contain phosphoric acid. **These products are dangerous because:**

- They are corrosive.
- They may cause irritation and burns if they come into contact with the skin or mucous membranes.
- If they come into contact with the eyes, they can cause serious eye damage.
- Using them exposes the operator to the risks typically associated with the use of chemical substances.

In addition, during processing, these substances:

- Conduct potentially dangerous high electrical current flows if you touch them.
- Release harmful fumes when they evaporate.

Do not use products other than those indicated in this manual (otherwise any form of warranty will be voided) and do not mix these products with others.

Always store these substances in a safe place in their original containers, out of the reach of children and other unqualified persons. Keep container contents clean. Do not reuse electrolyte cleaning solutions.

In case of accidental contact with the eyes or skin, or if swallowed, follow the instructions shown on the product safety data sheets (MSDS).
See also *chapter 1.4*, where some first aid measures are illustrated.

You can request a copy of the safety data sheets for electrolytic solutions at:
WALTER
Phone (US): +1 866 592-5837
Phone (CA): +1 888 592-5837
Website: walter.com

All users of the device must wear appropriate work clothing in order to mitigate the risks related to the use of electrolyte solutions. The clothing must meet the following requirements:

- Gloves must be made of materials that are resistant to acids and chemicals.
- All garments must be waterproof to ensure better protection for the user.
- Clothes and protective devices must always be intact and kept in good condition.

It's important to keep the device as clean as possible to reduce the risk of accidental contact with electrolyte solutions.

The operations performed with this device **must be carried out in well ventilated places**.
If this is not possible, as for example in the case of use in confined spaces (silos, sewers, tanks, furnace combustion chambers, pipes, etc.), **an adequate extraction system must be implemented**.

The SURFOX TURBO is not equipped with a built-in fume extraction device, **so it is recommended that an appropriate external system be used for this purpose.**

BURN PREVENTION

During the cleaning process, the wand tip and work piece can reach very high temperatures:

- Very hot parts can cause skin burns upon contact.
- Do not touch the wand tip or work piece while working or immediately after use, they may be extremely hot and could cause serious burns.
- Allow to cool before coming in contact with exposed skin.

Be very careful when handling a newly processed piece and when removing the brush.

All users of the device must wear suitable protective gloves for the handling of the parts and for the use of the wand.

ELECTRIC SHOCKS

All electric shocks are potentially fatal, so it is necessary to take appropriate safety measures to minimize the risk of electric shock:

- **Before connecting this unit, check that the voltage and amperage shown on its rating plate match the power supply. Operating this unit other than specified on the rating plate may result in personal injury to the user and damage the unit.**
- **The device must be connected to a mains power supply fitted with an efficient, functioning and periodically tested earthing system. Otherwise, the manufacturer is relieved of any liability for any loss or damage caused by this serious act of negligence.**
- This unit is equipped with a 3-conductor power cord and a 3-prong electrical plug that must be connected to an appropriately grounded electrical outlet.
- Do not use the device in damp rooms.
- Never touch live parts.
- Never operate the unit with its protective cover removed.
- Always switch off the device if the workstation remains unattended (during breaks and at the end of shifts).
- Frequently inspect the power supply cable and if there is any damage or abrasion to the protective coating, replace it immediately.
- When not in use, turn OFF the unit, unplug the power cord and the air hose (if any).
- **Carry out maintenance only after disconnecting the device from the mains.**
- Maintenance of electrical parts must only be performed by experienced and authorized personnel.
- Always use original spare parts.

If while using the device you experience even the slightest sensation of electric shock, switch off the unit immediately and do not use it until the problem has been identified and resolved by qualified personnel.

All users and maintainers of the device must wear insulating gloves to protect themselves from accidental contact with live parts.
To maximize safety, it is preferable to always use insulating tools when performing maintenance operations.

1.2. PROTECTION SYSTEMS BUILT INTO THE DEVICE

THERMAL PROTECTION

All SURFOX units automatically shut down if excessive overheating is detected on the inverter board.
When this protection system is activated, the device immediately shuts down and cannot be restarted until it has cooled down; once the temperature has returned to normal levels, the unit automatically resumes operation.

To prevent the unit from overheating, air must flow freely through the air vents. Maintain a minimum clearance of 8" (20 cm) around the unit to ensure that all air openings are clear of any obstruction.

PROTECTION AGAINST SHORT CIRCUITS

All SURFOX units are equipped with a built-in short circuit protection system that can occur between the brush installed on the wand and the workpiece, in particular when the currents involved are high.
In the rare cases in which this happens, the system is designed to automatically intervene and terminate the flow of current to the wand; in this way the device electronic parts are safeguarded. The operation of the unit is restored immediately once the electrode has been removed from the workpiece.

If the device repeatedly trips, it is recommended to check the wear of the consumables.

Do not disable and/or bypass the device's built-in protection systems.

1.3. RESIDUAL RISKS

The risks involved in the use of this devices are significantly reduced if both the safety rules indicated in *chapter 1.1* and the instructions for use shown in this manual are followed.
However, there are still risks arising from the high temperature reached by the electrode, possible contact with electrolyte solutions and the operator's potential exposure to harmful fumes generated during processing; therefore, it is advisable to always follow all the safety procedures described in this chapter.

1.4. FIRST AID MEASURES

In the event of accidental exposure to electrolyte solutions or fumes produced during processing, please remain calm and avoid any unintentional or harmful actions. It is recommended that you comply with the following guidelines:

- In the case of inhalation of processing fumes, try to ensure an inflow of fresh air into the respiratory tract and aerate the surrounding environment when possible. If there are any subsequent respiratory tract complaints, seek medical advice.
- If the skin comes into contact with acid solutions, wash it immediately with running water and soap; if after drying you experience persistent skin irritation, consult a dermatologist or doctor.
- If acid solutions are swallowed, DO NOT induce vomiting. Call an ambulance immediately and in the meantime repeatedly rinse your mouth and then drink copious amounts of water.
- If a certain amount of electrolyte comes into contact with your eyes, rinse your face thoroughly while trying to keep your eyes open. Repeat the operation for at least 15 minutes, lifting eyelids occasionally. Use an emergency eyewash if available. If possible, remove any contact lenses and continue rinsing. If irritation or subsequent visual complaints persist, consult an ophthalmologist or doctor immediately.

2. DEVICE CHARACTERISTICS

2.1. FIELDS OF APPLICATION

WALTER's SURFOX TURBO quickly, easily and cost effectively removes the heat tint from heat affected zones on stainless steel and aluminum while completely passivating the stainless steel surface.
The device is equipped with self-regulating inverter boards that automatically monitor and adjust the current to ensure maximum cleaning efficiency without loss of productivity.
An electrochemical process allows the SURFOX TURBO to clean and passivate welds on stainless steel. SURFOX electrolyte solutions are phosphoric acid based, approved for food industry, and are activated by an electrical current to clean welds. The process takes only a few seconds without damaging or scratching the surface of the parts to be cleaned.

YOUR SURFOX TURBO CAN CLEAN:
TIG welds, Plasma welds, Laser welds, Spot welds, MIG welds.

Special care must be taken when using this device on particularly delicate steel surfaces (e.g. AISI 430), as permanent white halos may form during processing.
If in doubt, it is good practice to first perform a test on a sample of the same type of steel.
For further information contact **WALTER CUSTOMER SERVICE REPRESENTATIVE (walter.com)**.

WALTER is not liable for loss or damage caused by the device if used outside the fields of application mentioned above.
SURFOX devices are designed for industrial applications, so their use in the home is strictly prohibited.

2.2. BASICS OF PASSIVATION

The cleaning of the welds is not only for aesthetic purposes but most importantly for passivation.
Passivation is the treatment of stainless steel surfaces to remove contaminants and promote the formation of a thick and durable protective chromium oxyde layer.
This passive layer will insure the corrosion resistance of stainless steel. If passivation is not done properly, stainless steel and heat affected zones may start to rust.

2.3. TRANSPORT AND STORAGE OF THE DEVICE

To facilitate transport, the SURFOX TURBO is equipped with a handle at the top. See *chapter 11* for detailed information on the size and weight of the device.
Make sure the switch is in the OFF position before connecting or moving the unit to avoid unintentional starting.

The device must be kept in a sheltered and moisture-free place to protect its internal electrical components.
If the machine is to be stored for an extended period of time, the cleaning accessories must be removed, neutralized, rinsed and dried. The device must be carefully packed in a suitable container and properly protected, in particular from exposure to freezing temperatures. Store the unit in a safe place, out of the reach of children and other unqualified persons.

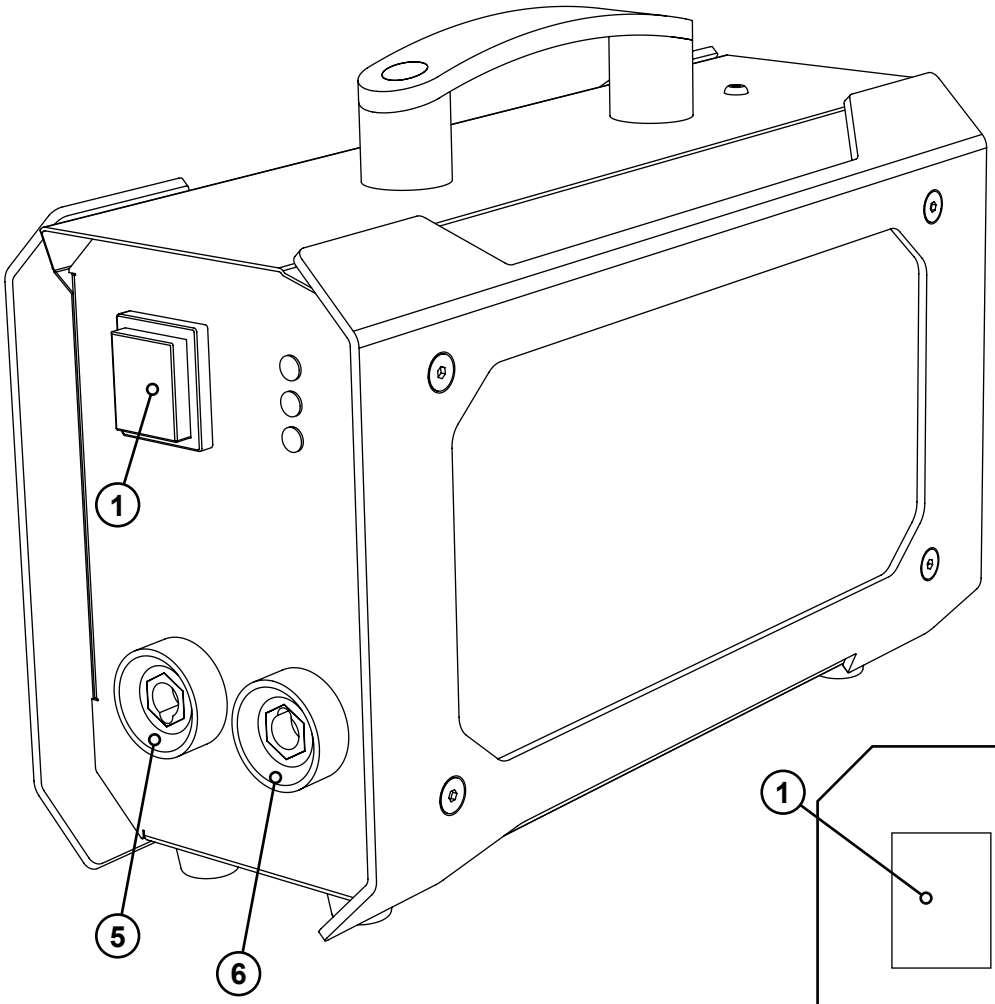
WALTER will not be held responsible for any damages resulting from a rough handling.

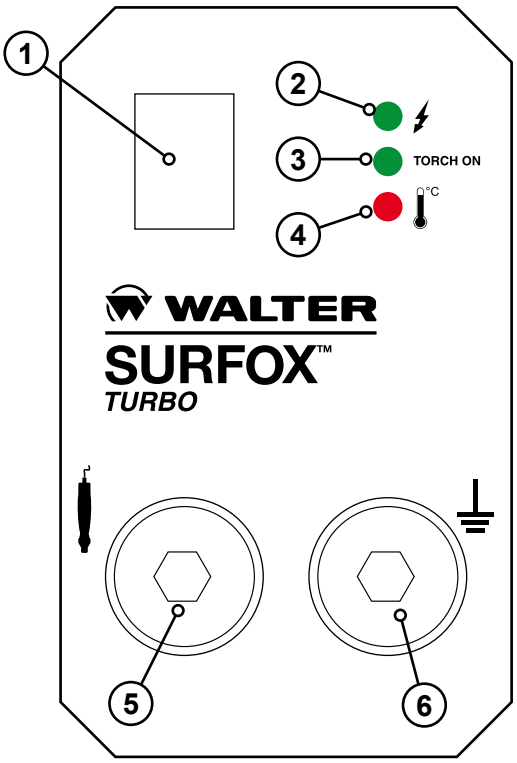
The handle is designed exclusively for carrying the device by hand.
Do not use it as a hook-up point for the forks of forklifts or other lifting machinery.

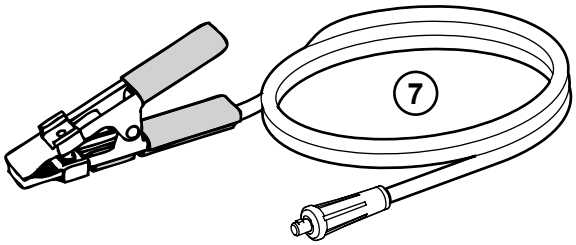
If it is necessary to return the SURFOX TURBO to the **WALTER** Factory or Authorized Service Center, please follow the instructions in *chapter 10* to carefully prepare and pack the shipment.

WALTER is not liable for any loss or damage to persons or property due to the leakage of electrolyte solution from the cleaning accessories during packing operations and shipping to service centers.

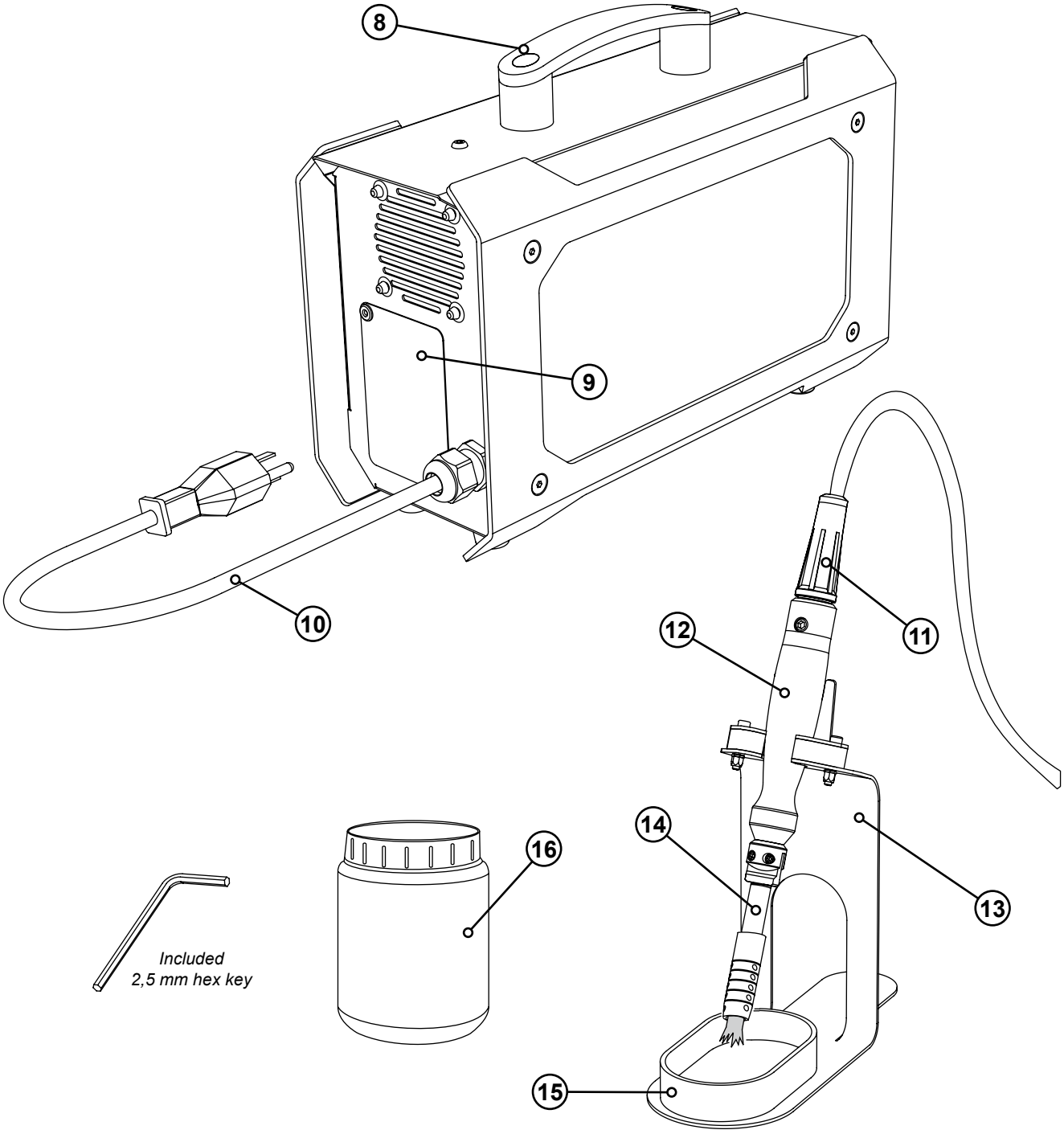
2.4. DEVICE COMPONENTS





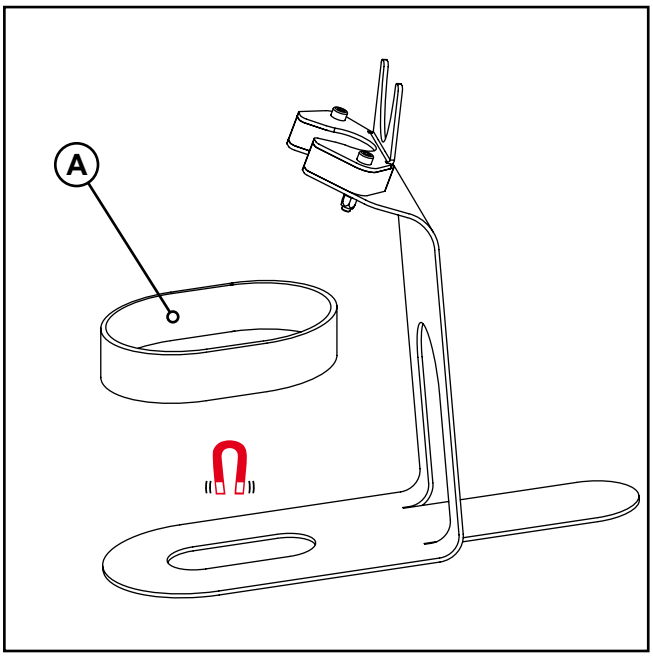


1	Main switch (ON/OFF)	**6**	Socket for ground cable
2	Power LED (green)	**7**	Ground cable
3	Working LED (green)		
4	Overheating LED (red)		
5	Sockets for DW wand		



8	Handle	**13**	Wand holder
9	Rating plate	**14**	DW brush
10	Power cord	**15**	Collecting tray
11	DW Wand black power cable	**16**	Plastic jar
12	DW Wand		

2.5. How to assemble the wand holder



- The collecting tray *(A)* is equipped with magnets and no tools are needed to fit it into the slot on the base.

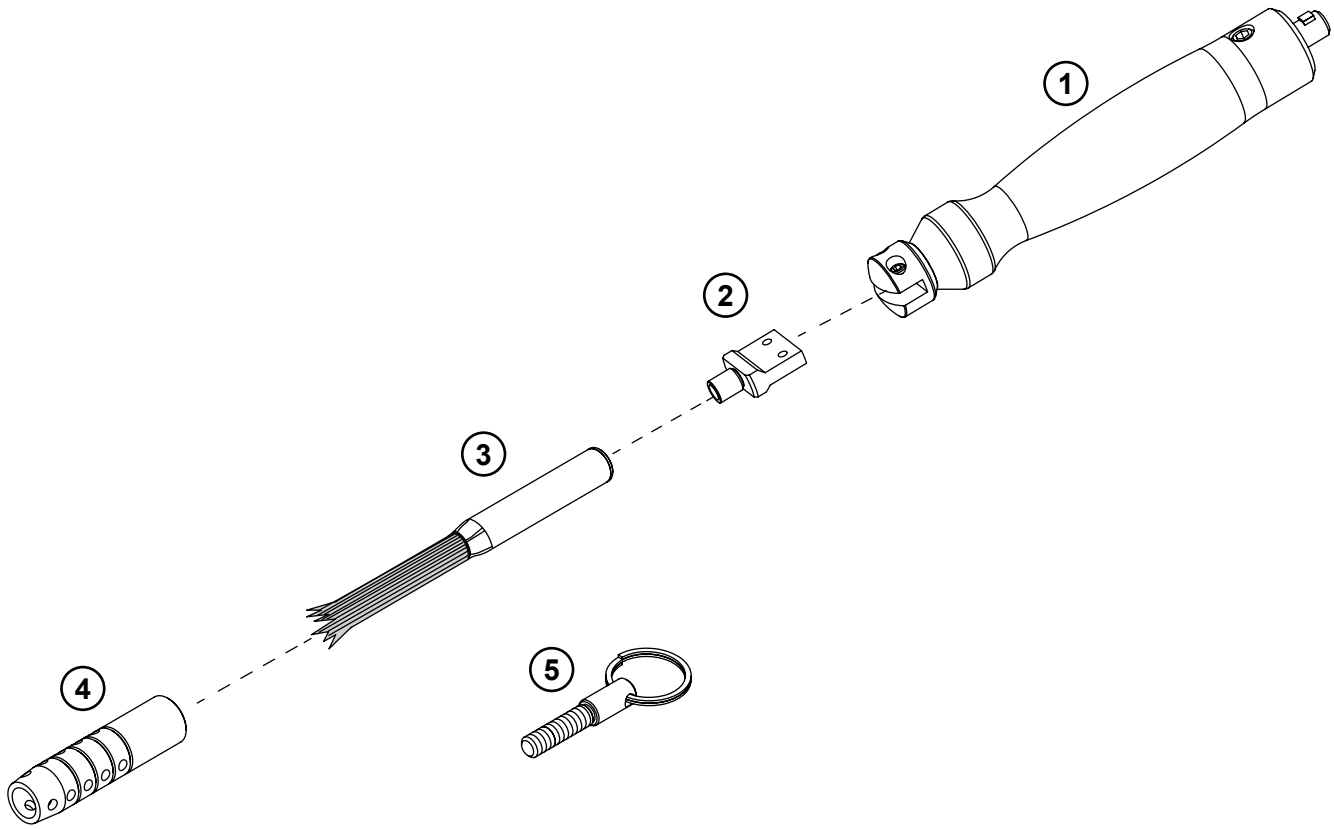
3. MOUNTING ACCESSORIES ON THE DW WAND

During the installation of the brushes, the device must be switched off:
- Switch the main switch to the "O" position.
- Disconnect the device from the mains.

For its normal operation, the device requires the use of particular acid solutions that can be dangerous (read *chapter 1* carefully).
When replacing an accessory on the wand, **be very careful of any electrolyte residues remaining on the brush.**

Always use suitable protective gloves when mounting/removing wand accessories in order to:
- Reduce the risk of direct contact between skin and acid solutions.
- Obtain a certain level of protection from burns if some parts are still too hot.

3.1. OVERVIEW OF DW WAND ACCESSORIES

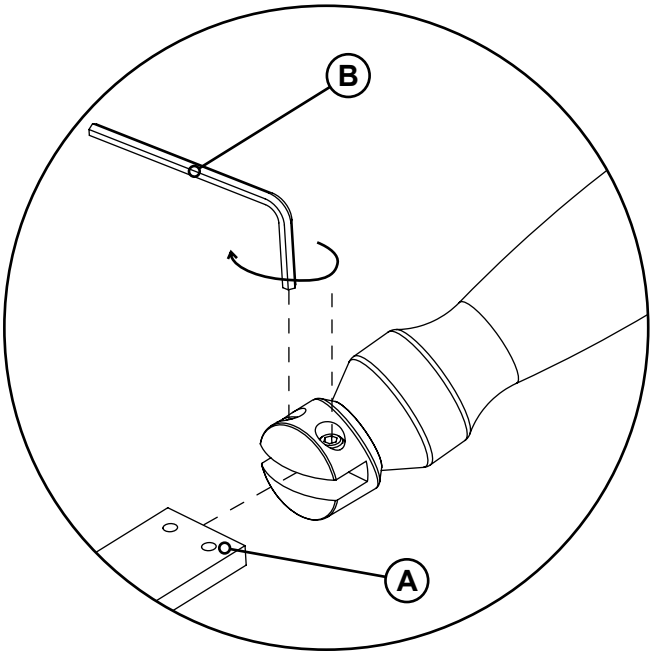


1	54-B 617	DW wand	included	*p. 13*
2	54-B 149	Brush adaptor	included	*p. 14*
3	54-B 602	DW brush for Surfox TURBO	included	*p. 15*
4	54-B 603	DW sleeve	included	*p. 15*
5	54-B 618	Brush extraction tool	included	*p. 15*

WALTER Customer Service (walter.com) is available for any additional information.

3.2. INSTALLATION OF BRUSH ADAPTOR

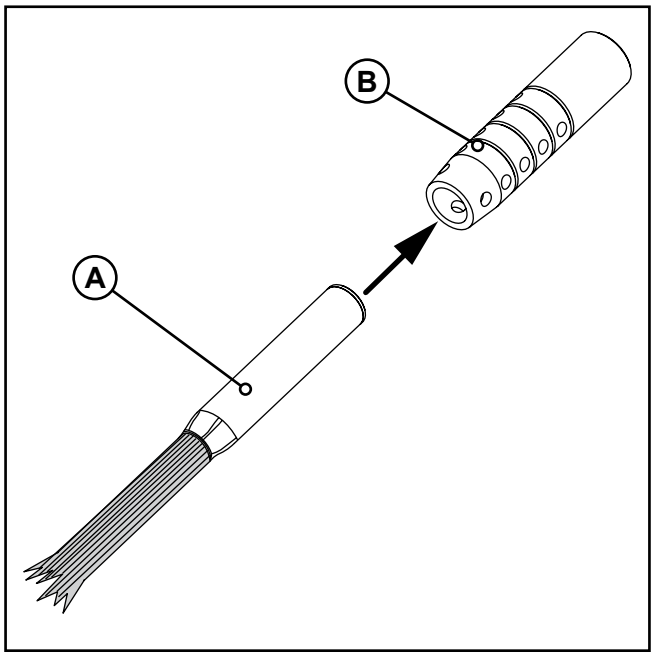
When installing the adaptor, the DW wand must not be connected to the device.

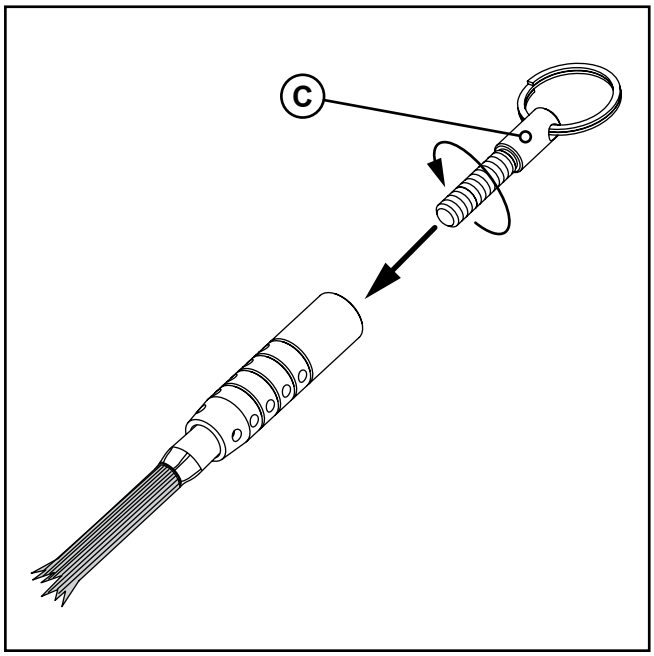


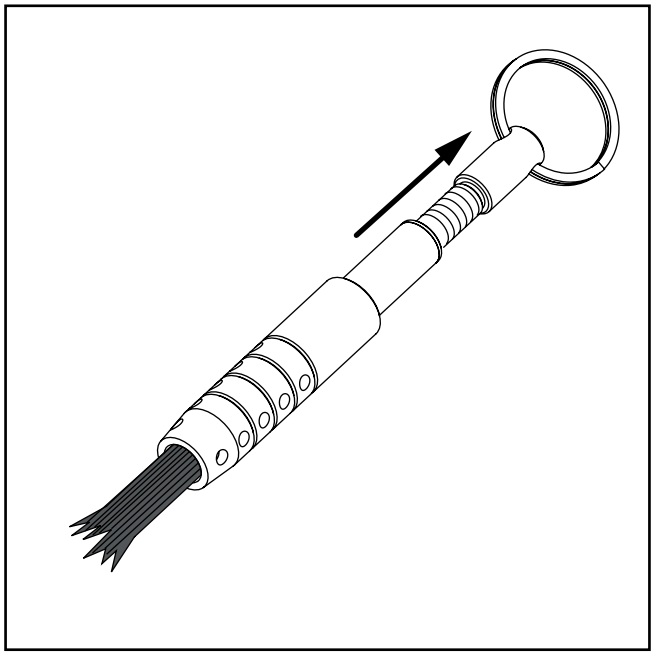
- Take the brush adaptor **54-B 149**.
- In the back of the adaptor there are the two countersinks *(A)* where the DW wand coupling set screws will be tightened.
- Place the adaptor on the DW wand coupling and tighten the two set screws with a 2.5 mm hex key *(B)* (included); make sure the set screws are properly aligned with the countersinks *(A)*.

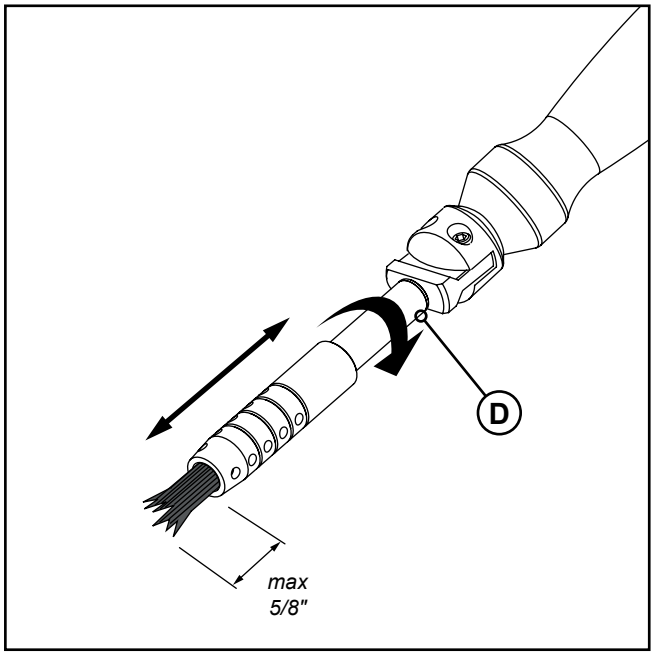
3.3. MOUNTING DW BRUSH

When installing the brushes, the DW wand must not be connected to the device.









- Install the **54-B 149** brush adaptor on the DW wand (see *chapter 3.2*).
- Insert the **54-B 602** DW brush *(A)* into the **54-B 603** sleeve *(B)*.
- Screw the threaded coupling of the extraction tool **54-B 618** *(C)* onto the brush.
- Pull the brush out of the sleeve.
- Remove the extraction tool.
- Screw the brush *(D)* onto the threaded coupling.
- Ensure that no more than 5/8" (15 mm) of carbon fiber is exposed.

4. BEFORE DEVICE STARTUP

4.1. PRECAUTIONS FOR THE USE OF THE DEVICE

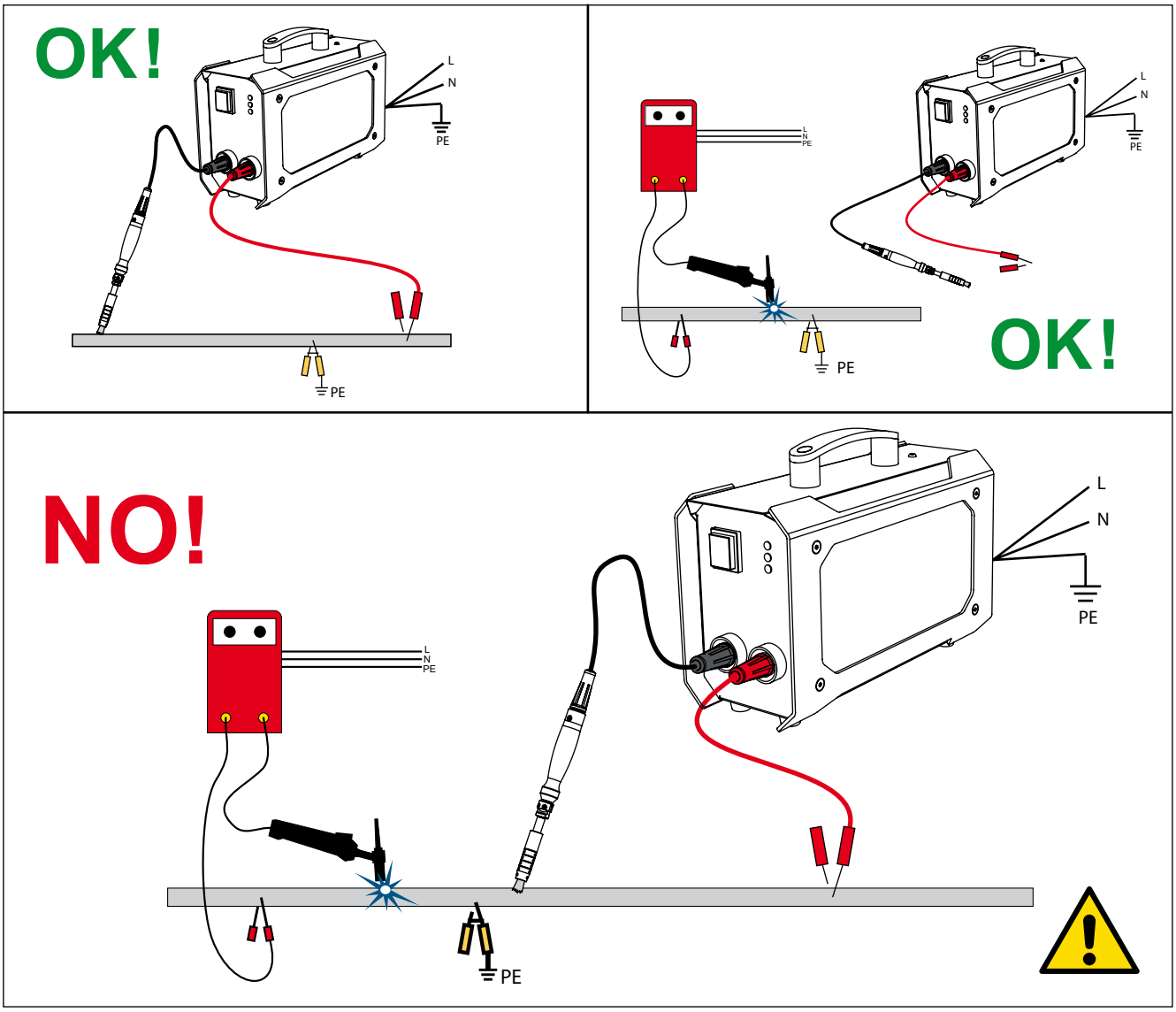
To avoid damage to the device, check that:

- The mains voltage corresponds to that supported by the unit (as specified in the technical data and rating plate).
- The surface to be treated is connected to ground with a cable of appropriate thickness.
- All sockets, connectors and cables used with the device are in good working order.
- The electrical system to which the unit is connected is equipped with protection devices against short circuits and current surges. These safety systems must be fully operational.
- The workstation where the device is used must always be kept clean and tidy.
- After processing or during breaks, the clamp for earthing the workpiece or work surface is deactivated.

In working environments where there are both welding and pickling stations:

- Do not weld and clean the same workpiece at the same time.
- Disconnect the ground cable from the device during any welding operation.

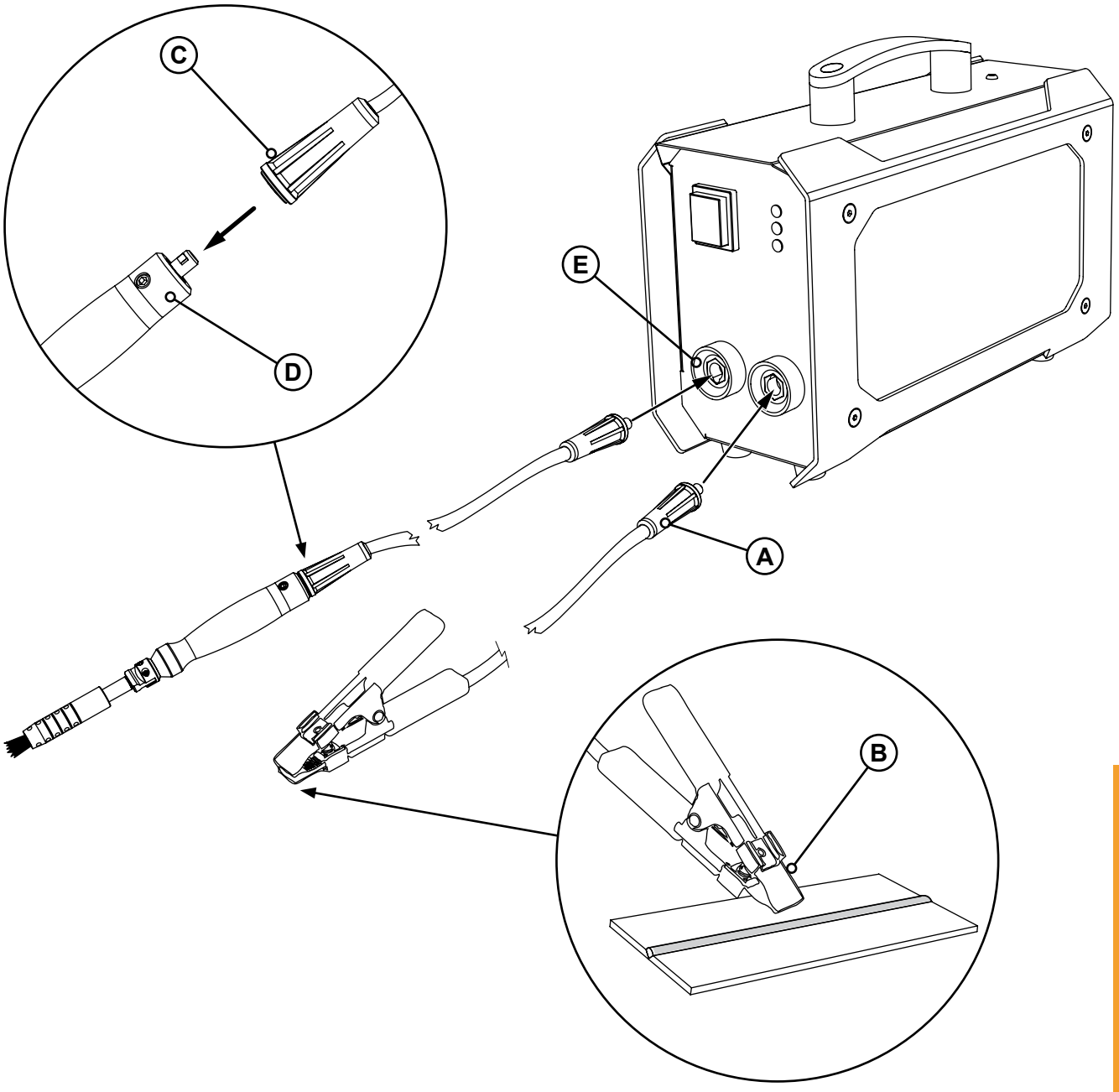
If the operator uses a welding machine while both earthing cables are connected to the surface being processed, the electrical components of the device may be damaged even if the welding torch does not come into contact with the workpiece. In particular, the internal components of the device could be subjected to a high voltage of up to 100 V.



4.2. ELECTRICAL INSTALLATION

Make sure you have read and checked all the precautionary notes in *chapter 4.1*.

- Prepare the DW wand by installing the brush (see *chapter 3*).
- Connect the ground cable connector *(A)* to the designed socket on the front panel of the unit.
- Use the crocodile terminal of the ground cable *(B)* to grip the piece of stainless steel to be treated.
- Use the supplied cable to carry out the electrical installation of the DW wand; connect the female connector *(C)* to the DW wand *(D)* and insert the male connector into designated sockets on the front panel of the unit *(E)*.
- Connect the device power cord to a suitable socket.



5. CLEANING OF WELDS

5.1. START OF PROCESSING

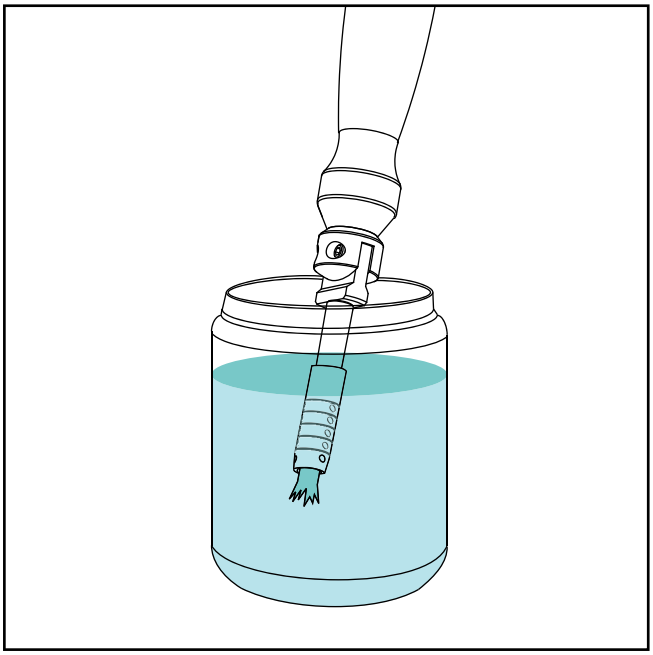
Before starting to pickle a piece of stainless steel, check that all the preliminary operations described in *chapter 4* have been carried out correctly.

For its normal operation, the device requires the use of special electrolyte solutions.
It is very important to choose the most appropriate liquid for the type of processing to be carried out:

- **SURFOX-T**, an heavy-duty cleaning solution.
- **SURFOX-G**, a pH neutral cleaning solution.

Always refer to the product data sheet for detailed indications regarding its field of use.
WALTER Customer Service (walter.com) is available for any additional information.

Acid solutions are dangerous and can cause damage to people and property: please read carefully the *chapter 1* on the safety regulations and personal protective equipment that must be used when working with these substances.

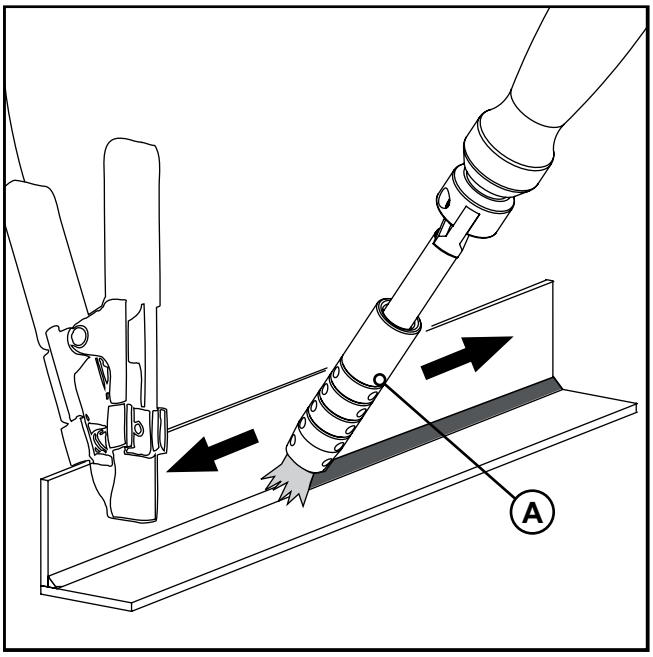


- Pour the electrolyte solution into the included jar or into a plastic container large enough to hold the brush.
- Fully immerse the brush in the container.

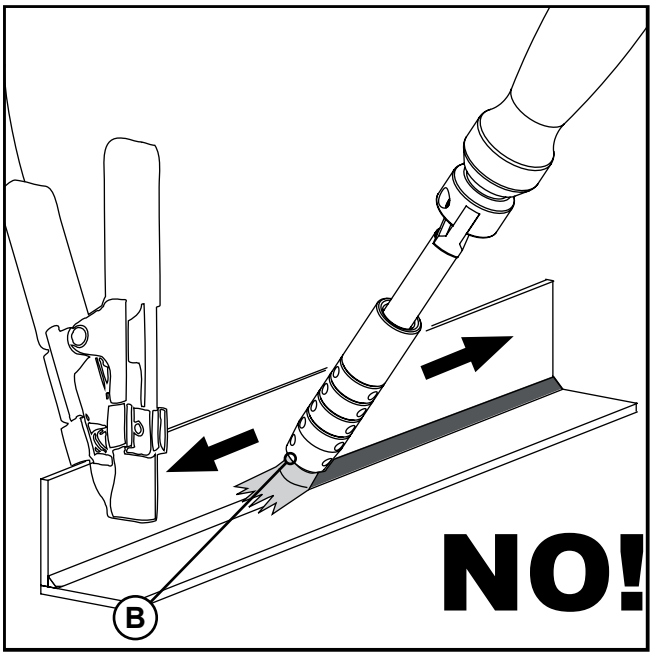
It is important to keep the brush bristles wet to prevent overheating.

- Turn on the device by turning the main switch (located on the front panel of the unit) to the "I" position.

- Start cleaning by positioning the brush *(A)* on the stainless steel workpiece.
- Pass the brush over the weld by applying light pressure and continue the process until each sign of oxidation is completely removed. Sparks and foam may form at the contact point between the brush and the weld during processing. This is perfectly normal.
- The green working LED (see *chapter 2.4*) will light up when current is flowing between the brush and the workpiece.
- The DW brush is suitable for hard-to-reach welds.

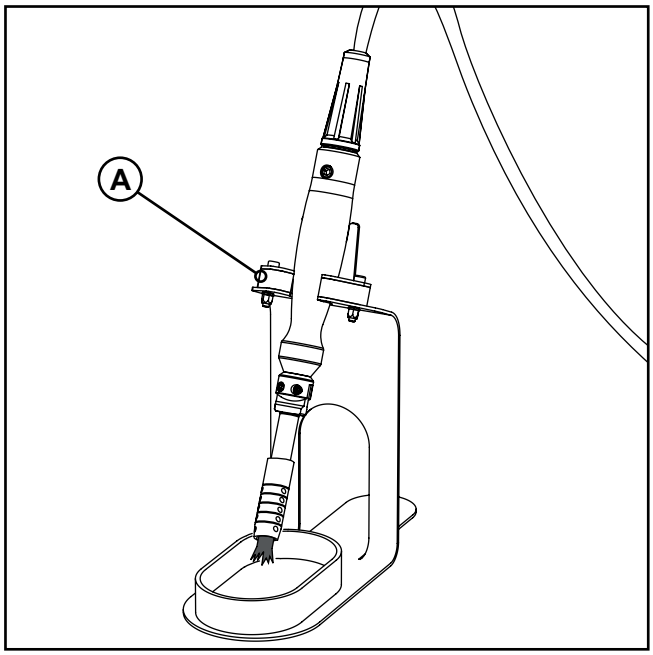


- Always keep the brush well moistened with the electrolyte solution to avoid overheating and a consequent significant reduction in its working life; if there are obvious signs of wear, replace the component immediately.
- When carrying out cleaning, keep the brush perpendicular to the weld and never press the carbon bristles excessively against the surface to be treated *(B).*
- For best results, periodically adjust the PTFE sleeve of the brush to leave approximately 5/8" (15 mm) of carbon fiber is exposed.



5.2. AFTER PROCESSING

- Put the DW wand back in its holder *(A)*.

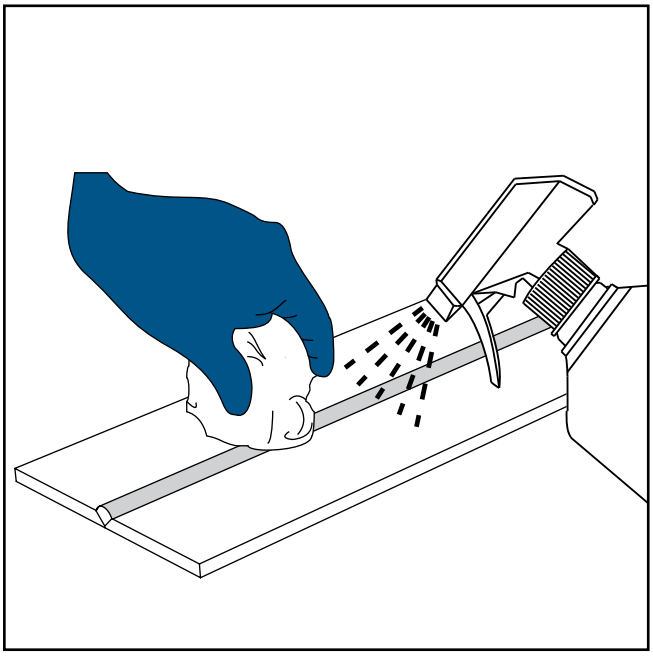


At the end of processing, always store the DW wand and other accessories appropriately.
Never place the wand on top of the device during breaks or at the end of processing, as the electrolyte solution could drip from the dampened brush and penetrate inside the unit. Always use the appropriate holder and empty the collection tray when necessary.
The device should in any case be kept as clean as possible.

- Disconnect the ground cable crocodile clip from the machined part.
- Wipe out excess of electrolyte solution with a microfiber cloth **54-B 090**.
- Use the SURFOX-N solution on the treated piece.

It is very important to spray the SURFOX-N solution on the workpiece; this product neutralizes any residual electrolyte, thus avoiding the formation of halos and white spots (which can only be eliminated by repeating the entire process).
Alternatively, it is possible to clean the surface with an abundant jet of water.

- Rub the surface with a microfiber cloth **57-M 001**.
- Dry the surface using a dry microfiber cloth.



5.3. SHUTDOWN

- Turn off the device by turning the main switch to the "O" position.
- Disconnect the unit plug from the power supply socket.
- Carry out routine maintenance on the device as described in *chapter 6.1*.
- To limit any environmental impact, used liquids must always be disposed of in accordance with current waste disposal regulations (see *chapter 7* for additional information).

6. MAINTENANCE

Maintenance must be performed on the device only by qualified technicians authorized by the manufacturer.
WALTER is not liable for loss or damage caused to the device during repair operations carried out by personnel not specifically trained for this task.
The manufacturer also assumes no liability in the case of use of non-original parts or accessories during maintenance work; any direct or indirect loss or damage caused by such conduct is entirely the liability of the customer.

It is important to always proceed with extreme caution during maintenance operations, remembering to:

- Switch the main switch to the "O" position.
- Disconnect the device from the mains.
- If maintenance operations require the device to be opened, always take the utmost care in handling the internal parts, especially if it is suspected that there is a loss of electrolyte solution from the hydraulic circuit.
- Be careful when removing components inside the device as the plates and supports may have sharp edges.

It is recommended that you consult *chapter 1,* where all the safety regulations are detailed so that you can work on the device while also minimizing risks.

6.1. ROUTINE MAINTENANCE

BEFORE EACH WORK SHIFT

- Check all components of the device for wear and replace them if necessary; use only original spare parts.
- Ensure that the sockets, connectors and cables used are in good condition; the reliability of all electrical equipment must always be guaranteed.
- Keep the ventilation slots on the unit clean to ensure that these openings are not obstructed by any obstacles. Keep enough space around the device to ensure proper ventilation.

CLEANING PROCEDURES AT THE END OF THE WORK SHIFT

It's important to keep the device as clean as possible.

- Remove the brushes from the adaptor to prevent the formation of incrustations on the electrode due to the evaporation of the electrolyte solution.
- Neutralize all these tools with the SURFOX-N solution.
- After neutralizing, always rinse the brushes with clean water and dry them with a dry microfiber cloth.
- If the brushes show obvious signs of wear or burns, replace them immediately.
- Once cooled, clean the wand insert and tip with running water to prevent the formation of incrustations.
- Clean dust and dirt deposits on the outside of the unit.
- Keep air vents clean and free of any obstructions.
- Clean the power cord to prevent deterioration and check for possible damage to the cord and plug.

6.2. EXTRAORDINARY MAINTENANCE

Extraordinary maintenance operations are usually carried out by specialized technicians of the **WALTER** company or by its network of authorized service centers.

7. DISPOSAL AND SCRAPPING

Act to ensure maximum environmental protection.
Dispose of residual waste in compliance with Federal, Provincial, State and local environmental regulations.

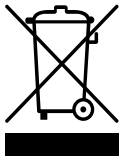
7.1. PACKAGING

This type of waste is similar to urban waste and can be disposed of in municipal waste centers without posing an increased threat to humans and the environment.

7.2. WASTE LIQUIDS

During the processing heavy metals are deposited in the electrolytic solutions used: therefore used liquids are to be considered special waste and must be disposed of according to the laws in force in the country of use.
Refer to **WALTER** Safety Data Sheet of the SURFOX electrolyte cleaning solutions.

7.3. OBSOLETE DEVICES AND EQUIPMENT



They are to be considered special waste, to be scrapped according to type. With reference to Directive EC-2002/96 on waste electrical and electronic equipment (WEEE), the user, when disposing of material, must separate the electrical and electronic components and dispose of them in appropriate authorized collection centers, or return them to the seller with the product still installed.

8. DECLARATION OF CONFORMITY

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TEST CERTIFICATE

J. WALTER COMPANY LTD.
5977 TRANS CANADA HIGHWAY
POINTE-CLAIRE, Québec
H9R 1C1
Requested by Nathalie Vézina X2848

Sample #: 48840
Lab #: 22156
COA #: 23756
Issue #: 2
Date: 2013-02-15

Material: NA
Shape: NA
Condition: Not Applicable

PO 230113NV **Customer's ID:** 2 samples 3" X 3" pre-passivated and identified as SURFOX-G sample 1 & 2 **Material:** Stainless steel panels

Description: Samples received were cleaned and passivated per ASTM A-380

Label: SURFOX-G sample 1 — **SALT SPRAY**

Parameter	Unit	Result
# of Samples		2
Specimen type		Panels
Dimensions	inch.	3X3
Exposure zone temperature	°F	92-97
Exposure period	hrs	2.5
Angle		15-30°
pH		6.5-7.2
Solution Concentration	% NaCl	4-6
Collection Rate	ml/hr/80cm²	1.0-2.0
Type of water	ASTM	Type IV
Purity of salt		99.95%
Copper content	ppm	< 0.3
Total other impurities		< 0.3%
Halides content		< 0.1%
Observation		See comments

Tested in Accordance To ASTM B117-11

SALT SPRAY test in accordance with ASTM A967-05 practice C.

After 2.5 hour exposition in the salt spray chamber:
Surfox- G sample 1: No rust present
Surfox- G sample 2: No rust present

Issue 2: To correct sample identification from issue 1, dated 2013-02-08

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TEST CERTIFICATE

J. WALTER COMPANY LTD.	**Sample #:**	**48840**	Material:	NA
5977 TRANS CANADA HIGHWAY	Lab #:	22156	Shape:	NA
POINTE-CLAIRE, Québec	COA #:	23756	Condition:	Not Applicable
H9R 1C1	Issue #:	2		
Requested by Nathalie Vézina X2848	Date:	2013-02-15		

PO	230113NV	**Customer's ID:**	2 samples 3" X 3" pre-passivated and identified as SURFOX-G sample 1 & 2	**Material:**	Stainless steel panels
Description:	Samples received were cleaned and passivated per ASTM A-380				

Label: SURFOX-G sample 1 — **TECHNICAL SERVICES ****

WATER IMMERSION TEST as per ASTM A967-05 practice A
The samples were immersed in distilled water for 1h, followed by a drying period of 1 h in a dessicator. This cycle was repeated 12 times. Test results
Surfox-G sample 1: No metallic iron particles were observed on the test zone at the end of the cycles.
Surfox-G sample 2: No metallic iron particles were observed on the test zone at the end of the cycles.

HUMIDITY TEST as per ASTM A967-05 Practice B.
The samples were cleaned with acetone and dried in a dessicator. They were then exposed to 100% humidity (38±3 °C) for 24 hours. Test results :
Surfox-G sample 1: No rust observed on the tested zone at the end of exposure.
Surfox-G sample 2: No rust observed on the tested zone at the end of exposure.

COPPER SULFATE TEST in accordance with ASTM A967-05 practice D.
The test solution was prepared by dissolving 4 grams of copper sulfate in 250 ml of water, to which 1 ml of sulfuric acid was added. The test solution was swabbed on the samples and were to keep them humid for at least 6 minutes. Test results:
Surfox-G sample 1: No copper deposit observed on the tested zone.
Surfox-G sample 2: No copper deposit observed on the tested zone.

POTASSIUM FERRICYANIDE-NITRIC ACID TEST in accordance with ASTM A967-05 practice E.
The test solution was prepared by adding 10g of chemically pure potassium ferricyanide to 500ml of distilled water , adding 30 mL of 70% nitric acid, agitating until all of ferricyanide was dissolved, and diluting to 1000 mL with distilled water. The test solution was swabbed on the surface of the samples. Test results :
Surfox-G sample 1: There was no formation of a dark blue color within 30s on the tested zone.
Surfox-G sample 2: There was no formation of a dark blue color within 30s on the tested zone.

Each test was performed on separate samples.

Issue 2: To correct sample identification from issue 1, dated 2013-02-08

Aerospace/military samples shall be retained for 6 months, other samples, see contract terms and conditions.
The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under federal law.
* Denotes the laboratory is accredited to the identified test method by ISO 17025 but not by NadCap.
** Denotes the laboratory is not accredited to the identified test method by ISO 17025 or NadCap.

Pascal Roussy, ing./Eng. #125772, Manager,
Metallurgy and Mechanical Testing

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TEST CERTIFICATE

J. WALTER COMPANY LTD.		**Sample #:**	**31067**	Material:	NA
5977 TRANS CANADA HIGHWAY		Lab #:	13887	Shape:	NA
POINTE-CLAIRE, Québec		COA #:	15164	Condition:	Not Applicable
H9R 1C1		Issue #:	1		
Requested by Nathalie Vézina X2848		Date:	2010-11-19		

PO	08112010-NV	**Client's ID**	8 test panels 3" X 10" - 4 panels identified as Surfox-H and 4 panels identified as Surfox-T	**Description**	Samples received were cleaned and passivated per ASTM A380

Label: Surfox-H and T

TECHNICAL SERVICES **

WATER IMMERSION TEST as per ASTM A967-05 practice A
The two samples were immersed in distilled water for 1h, followed by a drying period of 1 h in a dessicator
This cycle was repeated 12 times
Observation after the test :
Surfox-H : No metallic iron particles were observed in the test zone at the end of the cycles.
Surfox-T : No metallic iron particles were observed in the test zone at the end of the cycles.

Aerospace/military samples shall be retained for 6 months, other samples, see contract terms and conditions.
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TEST CERTIFICATE

J. WALTER COMPANY LTD.		**Sample #:**	**31068**	Material:	NA
5977 TRANS CANADA HIGHWAY		Lab #:	13887	Shape:	NA
POINTE-CLAIRE, Québec		COA #:	15165	Condition:	Not Applicable
H9R 1C1		Issue #:	1		
Requested by Nathalie Vézina X2848		Date:	2010-11-19		

PO	08112010-NV	**Client's ID**	8 test panels 3" X 10" - 4 panels identified as Surfox-H and 4 panels identified as Surfox-T	**Description**	Samples received were cleaned and passivated per ASTM A380

Label: Surfox-H and T — **TECHNICAL SERVICES ****

HUMIDITY TEST as per ASTM A967-05 Practice B.
The two samples were cleaned with acetone and dryed is a dessicator. They were then exposed to 100% humidity (38±3 °C) for 24 hours.

Test results :
Surfox-H : No rust observed
Surfox-T : No rust observed

Aerospace/military samples shall be retained for 6 months, other samples, see contract terms and conditions.
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TEST CERTIFICATE

J. WALTER COMPANY LTD.
5977 TRANS CANADA HIGHWAY
POINTE-CLAIRE, Québec
H9R 1C1
Requested by Nathalie Vézina X2848

Sample #: **31069**
Lab #: 13887
COA #: 15166
Issue #: 1
Date: 2010-11-19

Material: NA
Shape: NA
Condition: Not Applicable

PO 08112010-NV **Client's ID** 8 test panels 3" X 10" - 4 panels identified as Surfox-H and 4 panels identified as Surfox-T **Description** Samples received were cleaned and passivated per ASTM A380

Label: Surfox-H and T — **SALT SPRAY**

Parameter	Unit	Result
# of Samples		2
Specimen type		Panels
Dimensions	inch.	3X10
Exposure zone temperature	°F	92-97
Exposure period	hrs	3
Angle		15-30°
pH		6.5-7.2
Specific gravity		1.0255-1.040
Collection Rate	ml/hr/80cm²	1.0-2.0
Type of water	ASTM	Type IV
Purity of salt		99.95%
Copper content	ppm	< 0.3
Total other impurities		< 0.3%
Halides content		< 0.1%
Observation		See comments

Tested in Accordance To SOP-54-009-93 (ASTM B117-09)

SALT SPRAY test in accordance with ASTM A967-05 practice C.

After 2 hour exposition in the salt spray chamber:
Surfox-H: No rust present
Surfox-T: No rust present

Aerospace/military samples shall be retained for 6 months, other samples, see contract terms and conditions.
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TEST CERTIFICATE

J. WALTER COMPANY LTD.		**Sample #:**	**31070**	Material:	NA
5977 TRANS CANADA HIGHWAY		Lab #:	13887	Shape:	NA
POINTE-CLAIRE, Québec		COA #:	15167	Condition:	Not Applicable
H9R 1C1		Issue #:	1		
Requested by Nathalie Vézina X2848		Date:	2010-11-19		

PO	08112010-NV	**Client's ID**	8 test panels 3" X 10" - 4 panels identified as Surfox-H and 4 panels identified as Surfox-T	**Description**	Samples received were cleaned and passivated per ASTM A380

Label: Surfox-H and T — **TECHNICAL SERVICES ****

COPPER SULFATE test in accordance with ASTM A967-05 practice D.

The test solutin was prepared by dissolving 4 grams of copper sulfate in 250 ml of water, to which 1 ml of sulfuric acid was added. The test solution was swabbed on the two samples and were to keep them humid for at least 6 minutes.

Test results:
Surfox-H :No copper deposit observed
Surfox-T :No copper deposit observed

Aerospace/military samples shall be retained for 6 months, other samples, see contract terms and conditions.
The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under federal law.
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9. GENERAL WARRANTY CONDITIONS

- The SURFOX TURBO and its accessories are inspected and tested before shipment and are warranted to be free from any defect in material and faulty workmanship
- Devices built by **WALTER** are guaranteed against defects in material and construction for a period of 24 months after the date of original purchase.
- If an examination shows that the malfunction was caused by defective material or faulty workmanship, **WALTER** will repair (or at our option, replace the unit) without charge.
- In the event of improper use, **WALTER** will not be liable for any of the following:
  - ◊ Personal injury (minor, moderate, or fatal) to the user or a third party.
  - ◊ Damage to property in the vicinity of the device or damage to the device itself.
  - ◊ Device performance below expectations.
  - ◊ Use in violation of applicable regulations.
  - ◊ Incorrect installation of the device.
  - ◊ Use of a power supply that does not comply with the equipment specifications.
  - ◊ Serious lack of maintenance.
  - ◊ Unauthorized modifications or adjustments.
  - ◊ Use of non-original spare parts or spare parts not specific to this model range.
  - ◊ Use of liquids that are not recommended by **WALTER** or not specific to this model range.
  - ◊ Failure, in whole or in part, to follow the instructions.
  - ◊ Exceptional conditions.
  - ◊ Other improper uses.
- Work covered by the warranty will be carried out at the **WALTER** Factory or Authorized Service Center on the following terms:
  - ◊ The warranty does not apply when normal maintenance is required.
  - ◊ Freight, packaging and shipping costs are always for the user's account and goods travel at the user's risk; we must receive the material freight prepaid and suitably packed.
  - ◊ The warranty does not apply to products which have been dismantled, repaired or in any way tampered with by unauthorized staff, or if the serial number has been removed or modified.
  - ◊ Failures deriving from knocks, negligence, improper use, incorrect power supply or correction errors are not covered by the warranty.
  - ◊ The warranty does not cover any damage caused by accidents, modifications, use of improper accessories, abuse or misuse, which also includes overloading the tool beyond its rated capacity as well as its continued use after partial failure.
  - ◊ The device's expandable accessory components are not covered by the warranty.
  - ◊ The warranty covers the materials and labor necessary for the replacement operations. Freight, traveling expenses etc. are not included and will be billed at cost.
- No other warranty, written or verbal, is authorized.
- In no event shall **WALTER** be liable for any indirect, incidental or consequential damages from the sale of the product. This disclaimer applies both during and after the term of this warranty.
- This warranty gives you specific rights. The provisions contained in this warranty are not intended to limit, modify, take away from, disclaim or exclude any warranties set forth in any Provincial or State legislation. To the extent required by law, the provisions in any Provincial, State or Federal legislation with respect to warranties take precedence over the provisions in this warranty.

10. REPAIR AND SERVICE

- After the warranty period, our after-sales service will be at the customer's disposal for any adjustments and/or repairs to the devices we have produced. The relative costs will submitted for approval in the form of a quotation (if requested) or billed on a time and materials basis.
- If it is necessary to return the SURFOX TURBO to the **WALTER** Factory or Authorized Service Center, all the equipment should be carefully prepared and packed to ensure safe shipment:
  - ◊ Clean, neutralize and dry all accessories.
  - ◊ Clean the unit.
  - ◊ Use original shipping case.
  - ◊ Use sufficient packing.
  - ◊ Ship on a small pallet.
  - ◊ Be sure to include a shipping document with a detailed description of the problem, company name, address, phone and fax numbers, and contact person.

Collect all liquid in a suitable acid-resistant container.

WALTER is not liable for any loss or damage to persons or property due to the leakage of electrolyte solution from the cleaning accessories during packing operations and shipping to service centers.

11. TECHNICAL SPECIFICATIONS

Model	SURFOX TURBO	
Part number	54-D 066	54-D 065
Input voltage	120 V - 50/60 Hz	230 V - 50/60 Hz
Input power	480 W	960 W
Input current	4 A	
Output voltage	12 V AC	
Insulation class	IP21S	
Noise level	<10 dB (A)	
Weight (empty)	9 lb (4.1 kg)	
Dimensions	5.1" x 9.4" x 12.6" (130 x 240 x 320 mm)	
Wands	DW wand	
Functions	Cleaning	

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