



QUICK START UP GUIDE for WELDER Model

L/350

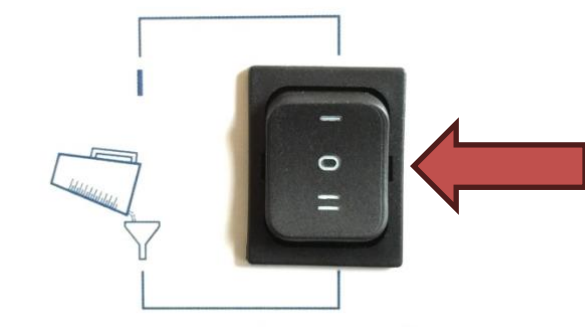


OPEN PACKAGE AND PLACE ALL ITEMS ON A WORKING BENCH TABLE.

The package contains: burner tips/nozzles; user manual; quick start up guide; USB tutorial guide; spare fuse; plastic funnel; torch(es); fire proof plastic hose.

For a better understanding, Elettronica Todescato recommends to take vision of our USB Key guide, and to simultaneously consult the present manual.

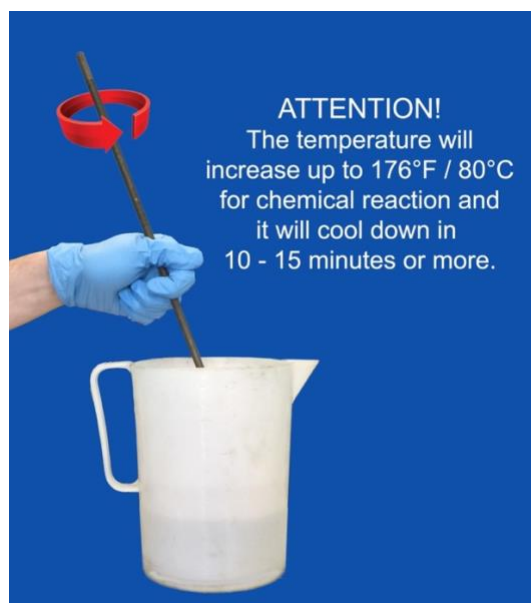
Step 1 Make sure that the switch is turn on “O” (OFF). Then, plug the power cord / cable into the electrical socket making sure the voltage is correct.



(3 POSITION SWITCH)

Step 2 PREPARE THE ELECTROLYTE SOLUTION

Carefully read **Section 4.2** in the **USER MANUAL** and follow the instructions properly to prepare the electrolyte solution. Make sure to understand the necessary pre-cautionary procedures explained under the “DANGER” ⚠ symbol, in **section 4.2** in the **USER MANUAL** to avoid hazardous complications and mistakes.



ATTENTION!

Always use clean objects to prepare the electrolyte solution. If some of the tools used are not clean wash then with tap water a few times until day are clean and after dry then with a rag.

DO NOT USE DETERGENTS OR LIQUID SOAPS.

ATTENTION!

It is important to use Protective gloves and glasses due to the corrosive nature of the solution.

NOTE:

- **5,8 liters** of **distilled or demineralized water** needed to fill the tank.
- Mix with **2340 grams of potassium hydroxide (KOH)**.
- Let the chemical components cool down for 10 to 15 minutes or more.
- **In appendix 1, there are Conversion Tables that can assist you in the amounts needed for different units of measure.**

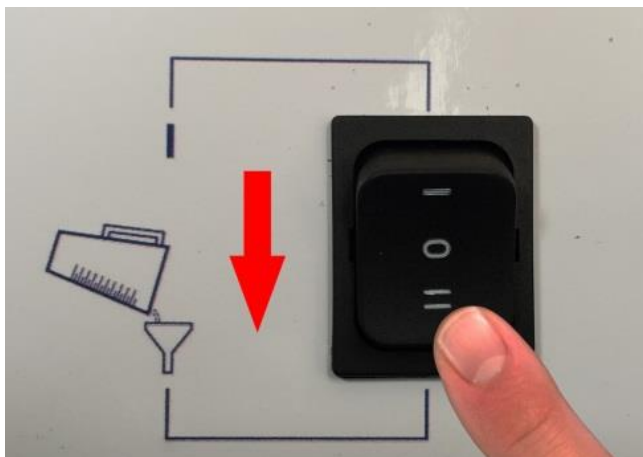
Step 3 UNSCREW THE SAFETY CAP ON TOP OF THE MACHINE.



(SAFETY CAP)

Step 4

Turn the switch into the down position (“=”) to refill, this will enable the operator to check the level of demineralized water only. In this position, the unit is not generating the gas.



(3 POSITION SWITCH)

Notice:

- a.** **Green** light is “on”, indicating the machine is connected to the electricity. (see picture 1, below)
- b.** **Yellow** light is “on”, initially indicating the internal tank level is empty and needs to be filled, or the water level is below normal during daily usage and there is need to add more water. (see picture 1, below)
- c.** **Red** light is, “off”, indicating that the internal tank needs to be filled.



(picture # 1)

IMPORTANT NOTICE:

The electrolyte solution's lifetime is of one year and it must be poured when:

- 1- Using unit for the first time.
- 2- When solution has previously been poured through contaminated or dirty funnel.
- 3- When unnecessary or contaminated liquids have been poured inside the internal tank, such as deoxidizer, oil, soap, etc.

Step 5 POURING THE ELECTROLYTE SOLUTION

After the electrolyte solution has cooled off, pour **slowly** the solution into the internal tank by using the equipment funnel, until the Red-light indicator comes on, (pic. 2) indicating the internal tank is properly filled. A few moments before the red light goes on, the yellow light will turn “off”, indicating that the tank is being filled and has reached above the minimum level required.

Electrolytic solution needs to distribute itself inside the tank so the red light might go on and then off a few times during the pouring procedure. When it goes on stop pouring, wait a few seconds and start pouring slowly again, until the red light will go on permanently.

Then close the cap tightly safe. **DO NOT OVERSCREW!**

IMPORTANT! Stop pouring the solution, as soon as the red light comes on.

When the red light comes on, stop pouring the demineralized water, in order to avoid over filling the tank.

IMPORTANT: NEVER OVERFILL THE TANK!

Notice: The booster tank initially is disconnected.



(picture #2)

Step 6 PREPARE THE DEOXIDIZER

FLUX LIQUID MIX COMPOSITION: Methyl Alcohol (1 liter) + Boric Acid (15 – 20 grams).

Sec . 4.5 in the USER MANUAL, page 15 contains the procedure and safety precautions to follow.



Example of hermetic flux bottle



Graduated flux bottle for booster tank

Step 7 BOOSTER TANK FILLING

Take the un-attached booster tank in hand, and by using the equipment flux graduated bottle, start pouring the deoxidizer in the booster tank by placing your index on the hole in the center of the booster tank to avoid filling the interior chamber.



(picture # 3)



(picture # 4)

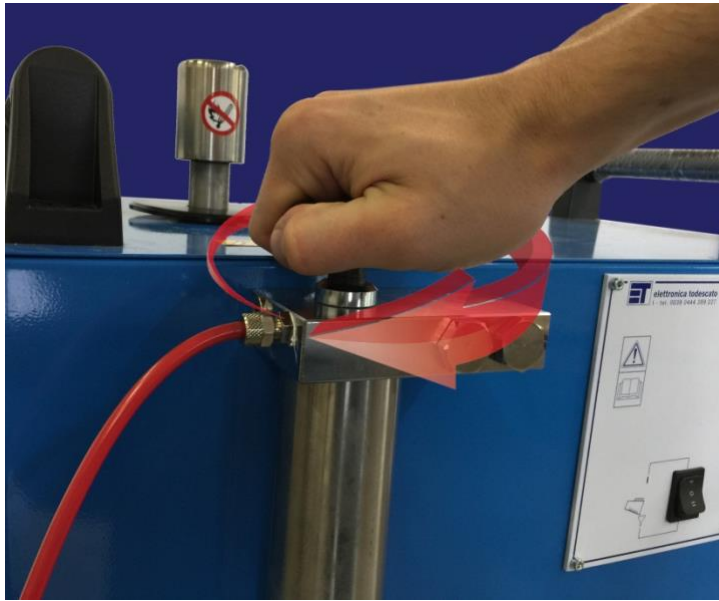
Fill to the maximum level indicated on the outside of the booster tank or pour MAX ½ liter (500 cc) of deoxidizer (see pic. # 4, above).

IMPORTANT! DO NOT OVER-FILL THE BOOSTER TANK.

STEP 8.

BOOSTER TANK INSTALLATION

To mount the booster tank after having it filled with the flux (deoxidized), tighten the handle knob making sure to not over screwing in order to preserve the gaskets and the internal thread of the booster tank.



(BOOSTER TANK HANDLE KNOB)

NOTE: For daily use and refill, refer to the section called **ATTENTION! (page 17).** “

Step 9 a.

NOTE: to connect the hoses properly, see picture BELOW.

Prepare the special torch making sure the hose is fitted (#16) to its fitting and the nozzle or burner tip (refer to Table 2 or Table 2A. page 10, 11) is selected and fitted (#11).



SPECIAL TORCH

Step 9 b.

One Special Torch or Standard Torch (optional).

Connect the hose to the GAS OUTLET fitting, then select the nozzle or burner tip (refer to Table 2A or Table 2B page 10, 11).

NOTE:

TO CONNECT HE HOSES TO THE FITTINGS, UNSCREW THE FERRULE.

See Picture Below.



Then insert the plastic hose to the fitting, tightening the ferrule to ensure a proper and secure connection.

NOTE: For daily use and refill, refer to the section called “

ATTENTION ! “ After mounting the booster tank, select the burner tip you will use.

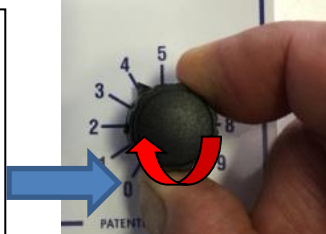
HOW TO ADJUST THE POWER ACCORDING TO NEEDLE TIP SIZE:

Standard torch

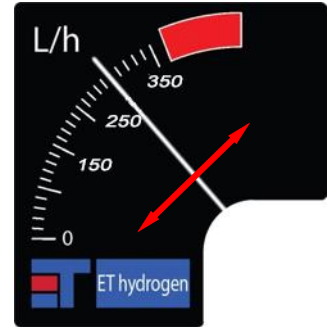


Gas supply Indicator




How to
adjust the
Power
Control Knob



Simultaneously
check the gas
supply indicator,
according to Min
and Max L/h (see
Table 2)



Refer to **TABLE 2*B**

NUMBER OF TORCHES	BURNER TIP EXTERNAL DIAMETER			POWER ADJUSTMENTS IN Lt/h	
				Min	Max
7	Ø 0.6 mm/0.0236 inch		VIOLET	180	220
7	Ø 0.7 mm/0.0275 inch		BLACK	240	300
7	Ø 0.8 mm/0.0314 inch		GREEN	315	350

Then check the minimum and maximum settings for the power control knob (picture # 5, page 12) according to the diameter of the burner tip. Failure to follow the suggested in/max settings will result in melted or fused burner tips (picture # 7, page 12).

Refer to TABLE 2*A

How to adjust power according to brass nozzle.

TABLE 2* A
for Welder Mod. L/350

SPECIAL TORCH (with one nozzle)



Hole diameter mm	Indication of gas supply indicator Liter / Hour	
	MIN	MAX
Ø 0,4	50	100
Ø 0,6	100	160
Ø 0,7	160	200
Ø 0,8	200	240
Ø 0,9	240	280
Ø 1	280	320
Ø 1,1	200	350

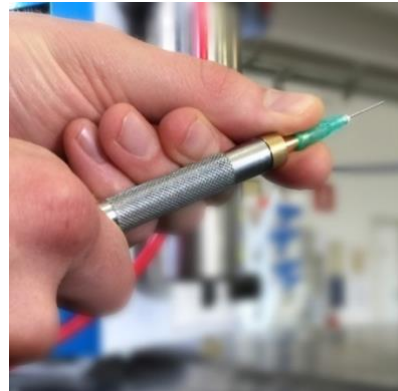
USE OF TWO SPECIAL TORCHES

Hole diameter mm	Indication of gas supply indicator Liter / Hour	
	MIN	MAX
Ø 0,4	100	200
Ø 0,6	200	300
Ø 0,7	280	350

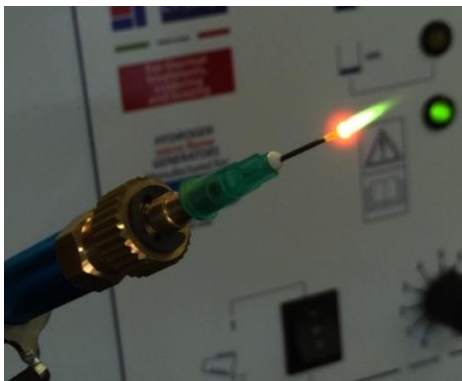
Select your chosen burner tip or nozzle and push and screw in to place at the base of the torch.
(picture # 6 and # 8).



(picture # 5)



(picture # 6)



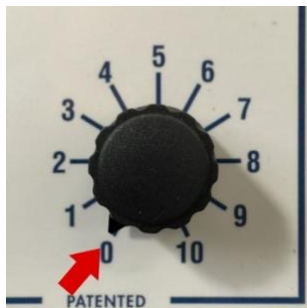
(picture #7)



(picture #8)

Step 10

IMPORTANT: Before turning on the machine set the power control knob to zero (see picture below).



Unscrew the ferrule refer to the user manual (*Fig. 1 # 66, page 6*).

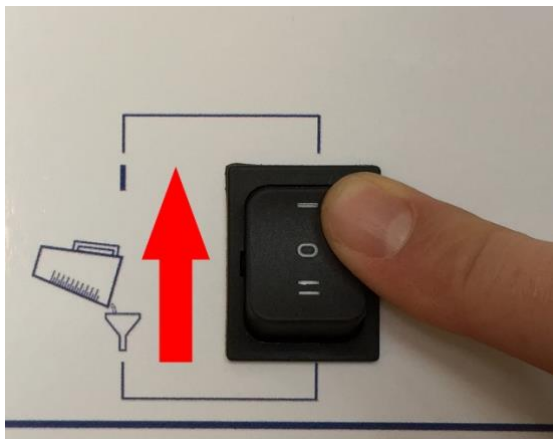


(picture # 8)

Then insert the rubber hose into the fitting, tightening the ferrule to ensure a proper and secure. ***(See above pic. # 8)***

Step 11

Switch the machine on by turning the switch up into “-”.



(3 POSITION SWITCH)

After turning the machine on, a couple of minutes later, gas production will start. Wait until you hear the gas being discharged and flow easily from the burner tip.

Step 12

Wait to the gas to exit from the burner tip (approximately two/three minutes or more), then light the flame with a lighter or electronic igniter. If the flame is too weak move on to the next burner tip on table two (2). See picture below.



(TORCH AND FLAME)

Step 13

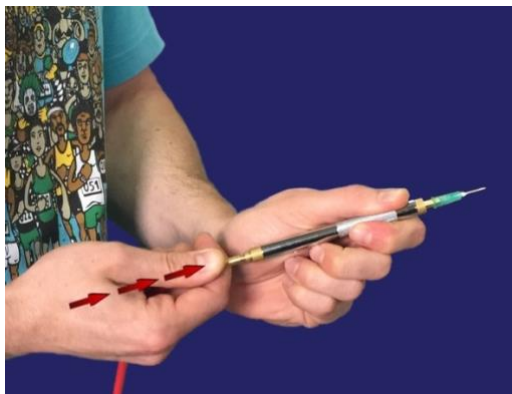
To turn off the machine switch the flame off by pushing the base of the torch (as you do with a pen), then ultimate the procedure by turning the switch to “0”.

Always shut the flame **OFF**, before turning machine off.

Do not turn the machine “off” while the flame is lit.

Always, turn **OFF** the flame from the torch, before shutting down the machine, always.

See picture below.





IMPORTANT NOTE

For the first startup of our ET systems, or for the yearly maintenance (once every year), the machine must be filled or re-filled with electrolyte solution.

For the daily re-fill it is mandatory to pour only demineralized (or distilled) water inside the electrolyte tank.

Pouring daily electrolyte solution will cause a crystallization inside the tank and consequent obstructions of machine's hoses, potentially causing a general malfunction.



The pointer in the GAS SUPPLY INDICATOR (Fig.1 # 12, page 6) (Lt/h) will remain stationary if the power has been regulated correctly. However, there are 2 reasons why the needle indicator may transmit an irregularity or malfunction of the machine:

- (A) The pointer of gas supply indicator oscillates UP and DOWN quickly or slowly, and back down to ZERO and then returns to the previous indicated level.
This suggest an irregularity.

Case (A) This means the welder has been regulated at an extensive power, therefore it is necessary to modify the Power Knob Regulator (Fig 1 # 4, page 6) as indicated in **Table 2*A or 2*B**, page 10, 11.

- (B) The Pointer of gas supply indicator, remains at ZERO level after oscillating, and gas does not come out of the torch as intended.

Case (B) This suggests that the gas does not come out for the following reasons:

- Check valve is blocked
- back flame is involved and therefore one of the Flame Arresters needs replacing
- back flame is involved and therefore the Flame Arrester in the special torch or booster holder must to be replaced.
- torch/es is/are obstructed (need cleaning)
- the booster holder has encrustations (needs cleaning)
- burner tip/s is/are obstructed (need to be cleaned or replaced)

**GOOD DAILY HABITS FOR MAINTAINING THE MACHINE
AT OPTIMAL PERFORMANCE**

A T T E N T I O N

1. Do not unscrew the “booster tank” nor the “safety cap”, while the flame is on.
2. Do not leave the machine on for more than 30 minutes, while the flame is “off”.
- 3. Refill the internal tank with WATER by depressurizing the booster tank first.**

Whenever water or electrolyte solution need to be added to the internal tank it is **IMPORTANT** to depressurize the booster tank first by simply unscrewing the handle-knob (see photo in Step # 8). This will prevent the flux (deoxidizer) from contaminating the electrolyte solution.

A) unscrew safety cap and add water or electrolyte solution until the Red light comes on, indicating it's full.

B) afterwards retighten the safety cap and the booster handle knob. Taking care not to over tighten, nor over-screw, no break the internal chamber's thread.

This will become a daily, standard operation, as water will be constantly added to the internal tank, before starting the working day.

4. Do not turn the machine off while the flame is lit. Always, turn **off** the flame from the torch, before shutting down the machine. Always do this as a pre-cautionary procedure.
5. Shut **off** the flame before refilling any liquid flux deoxidizer or demineralized water
With the tanks full, the machine will operate approximately 6-8 hours.
6. If only the booster tank needs refilling, DO NOT OPEN THE SAFETY CAP on top of the machine. Just remove the booster tank and fill accordingly to the max level placing the index in the center to avoid spilling fluid in the hole in the center of the tank. Reattach the booster tank when done filling.
7. If both tanks need re-filling, first depressurize the booster tank by removing it, then remove the Safety Cap on top of the machine. Then pour water in the Internal Tank until the Red light comes on (indicating it's filled). Screw safety-cap back on top, then add the flux (deoxidizer) to the booster tank and tighten.
8. Whenever the machine has been refilled, it must be pressurized. Do not refill and let sit overnight without turning on to pressurize.

9. When turning the three-position switch to the down position, (fill-refill “=”), you will be able to check level of the demineralized water located in the internal tank.
- a. If the Red light is **off**, then water is needed in the internal tank, fill until the red light comes, “on”.
 - b. If the yellow light indicator is “on”, then it’s below the acceptable usage level and water must be added.
 - c. If both the (Red & Yellow) lights are off, then the water level is somewhere in the middle of the tank.
10. If the machine is not used for 15 - 20 days, turn **ON** the welder for at least 3 minutes to max power **without** lighting the flame, to avoid that the check valve does not become blocked. After that, turn, **OFF** the machine.

DO NOT DEPRESSURIZE THE INTERNAL TANK BY UNSCREWING THE SAFETY CAP.

11. Do not let gas out of the torch for more than fifteen (15) to twenty (20) minutes without lighting the flame (the exit of gas only isn’t good for the environment).
12. Do not light the flame until the gas flows out from the burner tip and at the same time the power control knob **MUST** be in the correct position according to table 2 (see page 10, 11) and/or the sticker positioned on top of the cover machine.
13. Clean the orifice like the burner tips, nozzles with a thin steal wire or other similar safe object, in order to avoid causing personal harm or damage to the burner tip. You can also clean the burner tip in boiling water for approximately twenty minutes.

APPENDIX 1

INFORMATION ON CHEMICALS USED IN OUR HYDROGEN GENERATORS.

- **ELECTROLYTE SOLUTION (LIQUID):**
GO TO STEP 2 IN THE QUICK START GUIDE.

Electrolytic solution ready for use

COUNTRY	WELDER MODEL	QUANTITY OF ELECTROLYTE (LIQUID)
<i>EU</i>	<i>L/350</i>	<i>EU LT 6,5</i>
<i>USA</i>	<i>L/350</i>	<i>US gal 1,58</i>
<i>UK</i>	<i>L/350</i>	<i>UK gal 1,71</i>

- **ELECTROLYTE SOLUTION IN DRY BAG:**
GO TO STEP 2 IN THE QUICK START GUIDE.

How to prepare the electrolytic solution with dry bag.

COUNTRY	WELDER MODEL	QUANTITY OF DEMINERALIZED WATER	QUANTITY OF POTASSIUM HYDROXIDE (KOH in FLAKES or POWDER with 90% of PURITY)
<i>EU</i>	<i>L/350</i>	<i>LT 5,8</i>	<i>grams 2340</i>
<i>USA</i>	<i>L/350</i>	<i>US gal 1,53</i>	<i>ounces 82,54</i>
<i>UK</i>	<i>L/350</i>	<i>UK gal 1,27</i>	<i>ounces 82,54</i>

- **FLUX (DEOXIDIZER) COMPOSITION:**
GO TO SECTION 4.5 IN THE USER MANUAL.

A liquid with particular compounds in order to obtain a clean flow solder. Useful for avoiding oxidation and porosity during the soldering / brazing process.

FLUX (DEOXIDIZER) STANDARD COMPOSITION (EU UNIT OF MEASURE)	1 Lt of Methyl Alcohol + (15 to 20) grams of Boric Acid
FLUX (DEOXIDIZER) STANDARD COMPOSITION (USA UNIT OF MEASURE)	US gal 0.264 of Methyl Alcohol + (0.529 to 0.705) ounces of Boric Acid
FLUX (DEOXIDIZER) STANDARD COMPOSITION (UK UNIT OF MEASURE)	UK gal 0.219 of Methyl Alcohol + (0.529 to 0.705) ounces of Boric Acid



DANGER

! ATTENTION!



DO NOT TURN/UNSCREW THE SAFETY CAP AND/OR THE HANDLE WHILE THE FLAME/FLAMES ARE LIT



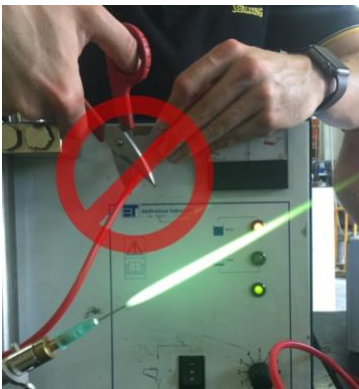
NEVER LEAVE THE MACHINE **ON** WITH THE TORCH **OFF**.
AVOID DISPERSING GAS INTO THE ENVIROMENT.
ALSO, **NEVER** LEAVE THE MACHINE **ON** WITH CLOSED TORCHES CAUSING A **DANGEROUS EXCEED OF PRESSURE!**



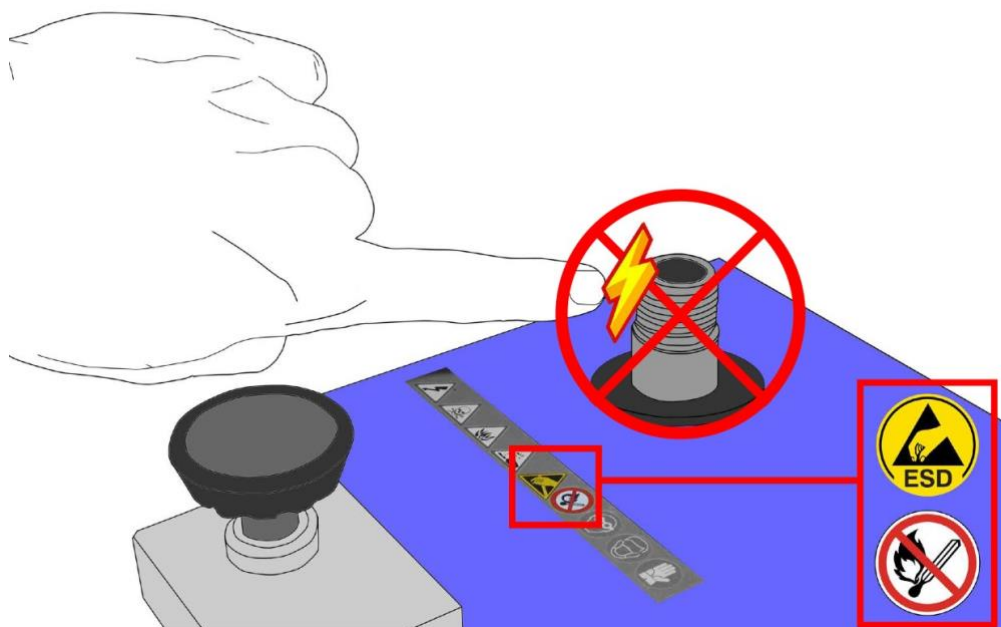
DO NOT TURN THE MACHINE **OFF** WHEN THE FLAMES ARE **LIT**.



DO NOT PLACE THE FLAME NEAR THE MACHINE,
IN PARTICULAR, ON THE BOOSTER TANK,
SAFETY CAP, THE FILLING NECK,
THE BOOSTER HANDLE KNOB
OR THE GAS HOSES.



DO NOT CUT THE GAS HOSES WHILE FLAMES ARE LIT.



ATTENTION!

IN ORDER TO AVOID A POSSIBLE BURST INSIDE THE TANK THROUGH THE FILLING NECK OR THE BOOSTER TANK, DUE TO OPERATOR'S ELECTROSTATIC CHARGE, ALWAYS USE SAFETY RUBBER GLOVES AND SAFETY GLASSES DURING THE FOLLOWING OPERATIONS:

- 1 DAILY RE-FILL OF DEMINERALIZED/DISTILLED WATER.
- 2 ELECTROLYTIC SOLUTION EMPTYING/REPLACEMENT FROM THE TANK.
- 3 BOOSTER TANK FLUX RE-FILLING/EMPTYING.

DO NOT TOUCH THE UNIT DIRECTLY WITH YOUR HAND/FINGERS WITH THE SAFETY CAP UNSCREWED!

ATTENTION: the flame reaches a very high temperature of (3200°C / 6100°F).

DO NOT COME IN CONTACT WITHIN THE VICINITY OF THE FLAME, (WITH A MINIMUM OF 50 CM / 20 INCHES). THE FLAME IS VERY DANGEROUS, AND MAY CAUSE, SEVERE ENJURIES IF THE OPERATOR DOES NOT FOLLOW THESE RULES.

KEEP THE MACHINE AND ITS ATTACHED AND UNATTACHED ACCESSORIES AWAY FROM CHILDREN.

Do not allow gas to enter the environment for more than 15-20 minutes.
Alternatively, it is best to turn off the machine completely.

ATTENTION!

ONCE A YEAR

For optimal performance of equipment, a yearly maintenance is required, with instruction located in sec. 5.3 of the technical user manual.



Via Alesssandro Volta 9/A, 36057 Arcugnano, (VI), ITALY
-Tel: +39 0444 289227 - fax: +39 0444 289229 -
info@elettronicatodescato.com - www.elettronicatodescato.com