



QUICK START UP GUIDE for WELDER Model

L/160



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

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


For a better understanding, Elettронica Todescato recommends to take vision of our DVD and/or 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 machine and into the electrical outlet make sure the voltage is make sure that the switch is on the off position, "O".



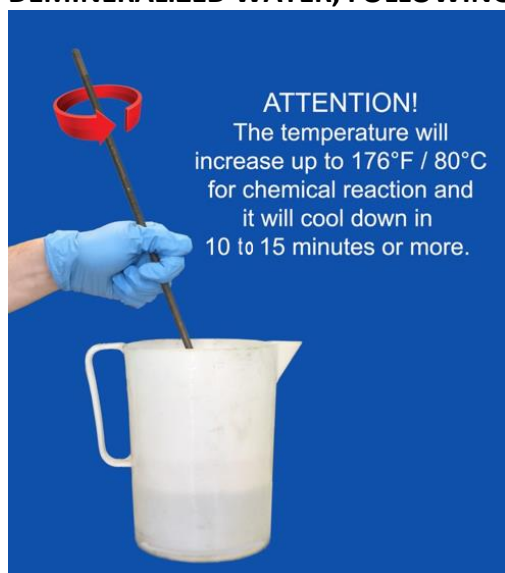
(3 POSITION SWITCH)

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.

PLEASE NOTE, ELECTROLYTE CAN BE IN TWO FORMS:

- 1 – PRE-MIXED: IT IS LIQUID AND IT CAN BE POUR DIRECTLY INTO THE ELECTROLYTE TANK.**
- 2 – DRY MIX: IT IS SOLID (USUALLY IN FLAKES OR PELLETS) AND IT MUST BE MIXED WITH DEMINERALIZED WATER, FOLLOWING CAREFULLY THE INSTRUCTIONS.**



ATTENTION!
The temperature will increase up to 176°F / 80°C for chemical reaction and it will cool down in 10 to 15 minutes or more.

ATTENTION!

Always use clean objects for preparing the electrolyte solution. If some of the tools used are not clean wash it with tap water a few times until it becomes clean and after dry it with a rag.

DO NOT USE CLEANINGS OR LIQUID SOAPS.

ATTENTION!

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

NOTE:

- **2,6 liters of distilled or demineralized water** needed to fill the tank.
- **Mix with 1080 grams of KOH (Potassium Hydroxide).**
- **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.**

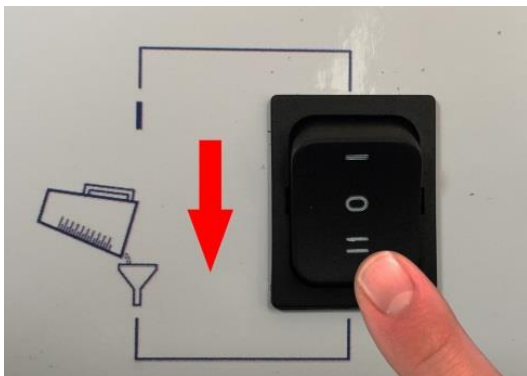
Step 3 UNSCREW THE SAFETY CAP ON TOP OF THE MACHINE.



(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.



(3 POSITION SWITCH)

Notice:

- a.** **Green** light is “on”, indicating the machine is connected to the electricity (pic 1).
- 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 below).
- c.** **Red** light is, “off”, indicating that the internal tank needs to be filled.



Step 5 POUR ELECTROLYTE SOLUTION

IMPORTANT NOTICE: The electrolyte solution's lifetime is of one year. 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, etc.

After the electrolyte solution has cooled off, pour the solution into the internal tank (slowly) using a funnel, until the Red-light indicator comes on, (pic. 2) indicating the internal tank is properly filled. At the same time, the Yellow light will turn "off", indicating that the tank is being filled and has reached above the minimum level required. Stop pouring the solution, as soon as the red light comes on. When the red light comes on, stop pouring the electrolyte, in order to avoid over filling the tank. **(This is IMPORTANT: DO NOT OVERFILL).** Then close the cap tightly safe.

Notice: The booster tank initially is disconnected.



Step 6 PREPARE THE DEOXIDIZER

FLUX (deoxidizer) Methyl Alcohol (1 liter) + Boric Acid (15 – 20 grams)
sec . 4.5 in the USER MANUAL,
contains the procedure and safety precautions to follow.

Step 7 BOOSTER TANK FILLING

Take the un-attached booster tank in hand, 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.



*EXAMPLE OF
HERMETIC SEAL*



Fill to the maximum level indicated on the outside of the booster tank.
(DO NOT OVER-FILL)

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 KNOB)

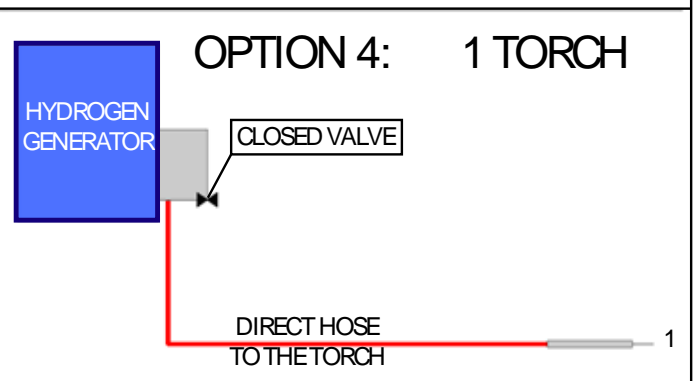
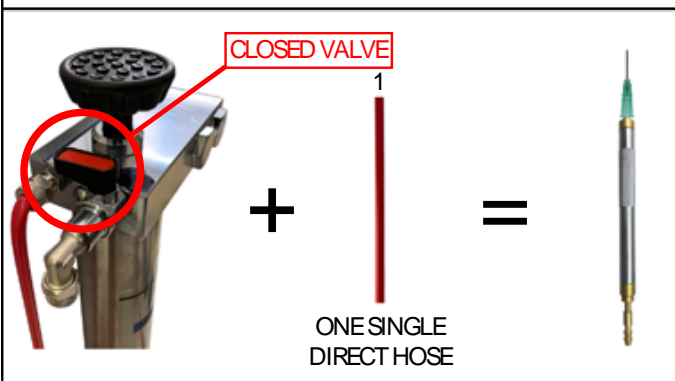
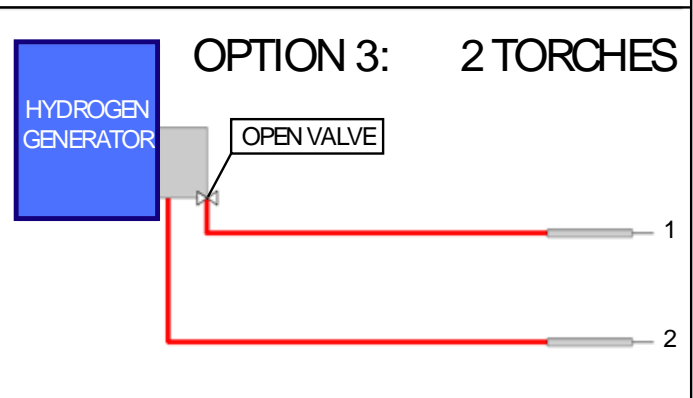
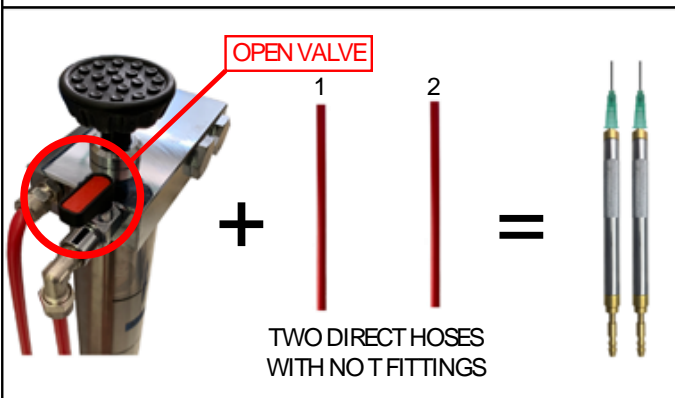
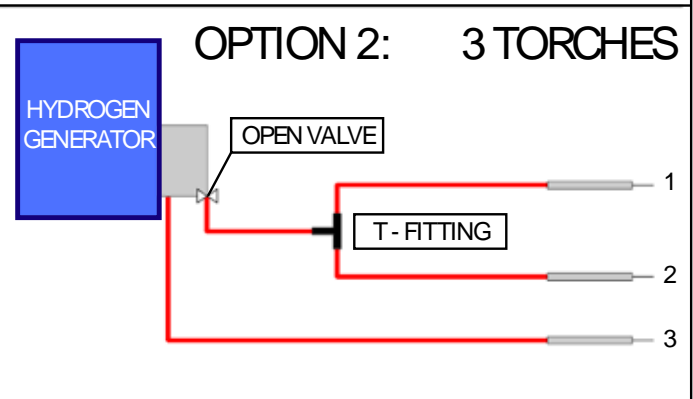
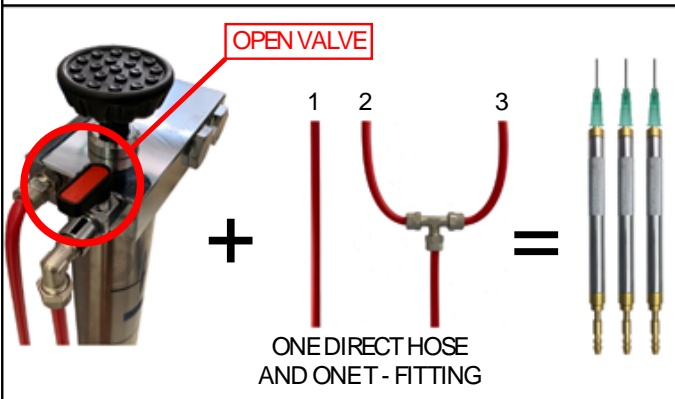
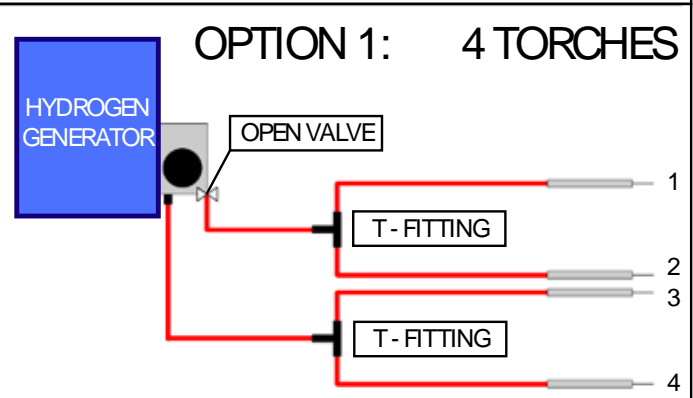
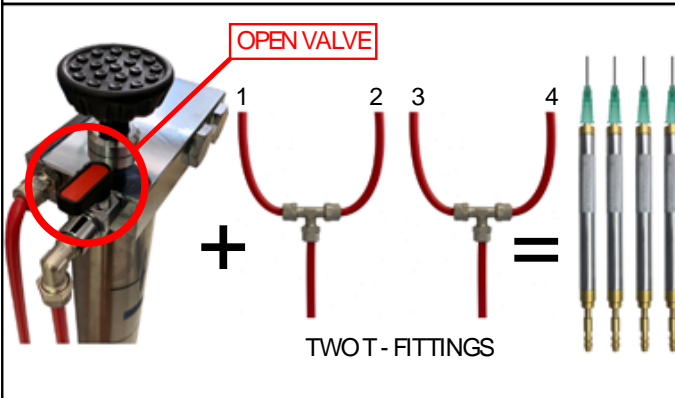
NOTE: For daily use and refill, refer to the section called “Attention “(page 14).

ET HYDROGEN WITH 2 OUTLET: TORCHES LAYOUT

With this unit, the operator can choose different options to set the ET hydrogen system from 1 to 4 torches working simultaneously.

All options can be performed with all kind of torches represented below, but always following the power regulations reported on table 2 and table 2 A in the user manual, quick start up guide and on the top cover of the unit. For a more simple and clear idea, the diagram showed below, takes as example the standard torch. But again the user can settle the different torches, also mixed together at the same time.

USABLE TORCHES

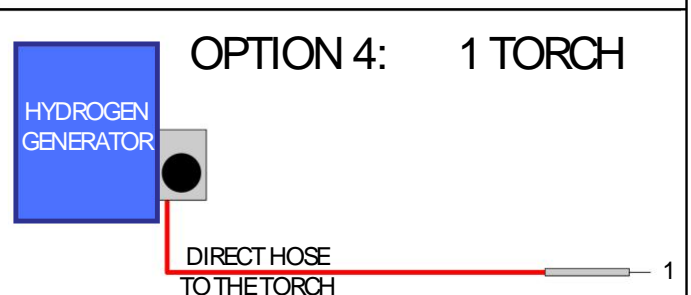
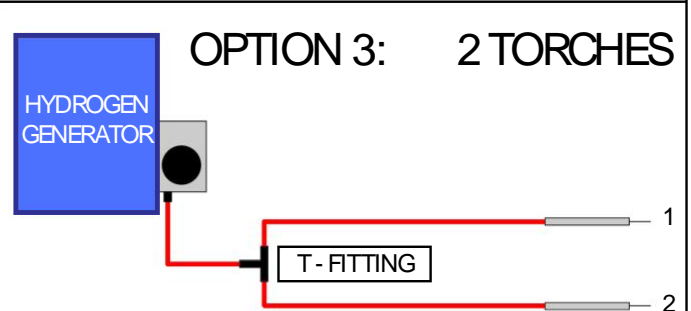
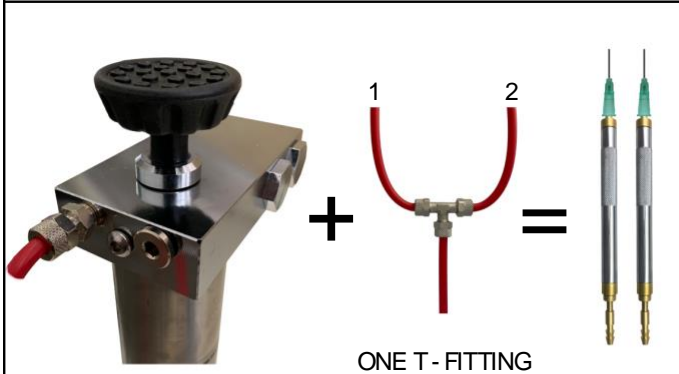
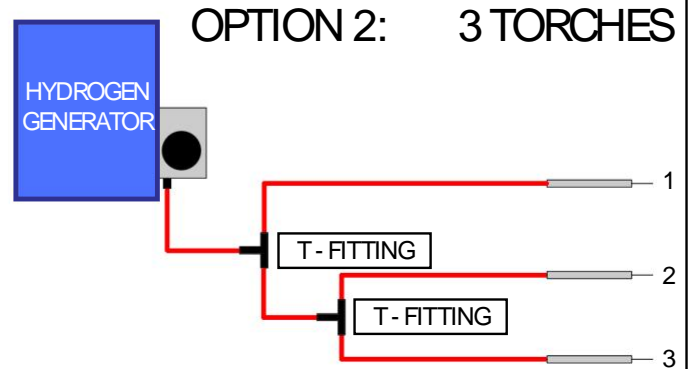
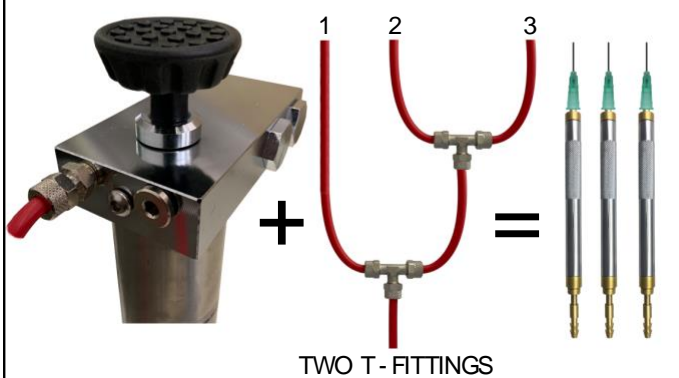
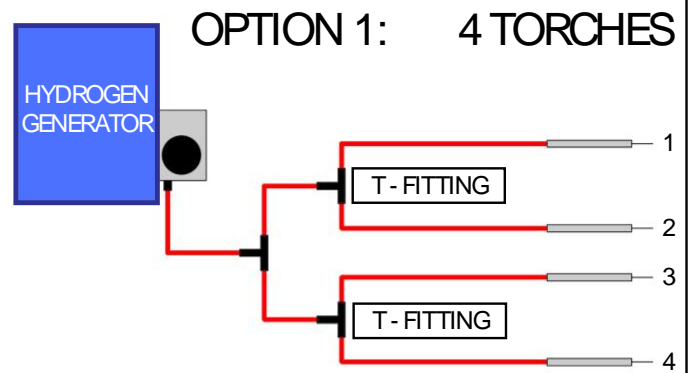
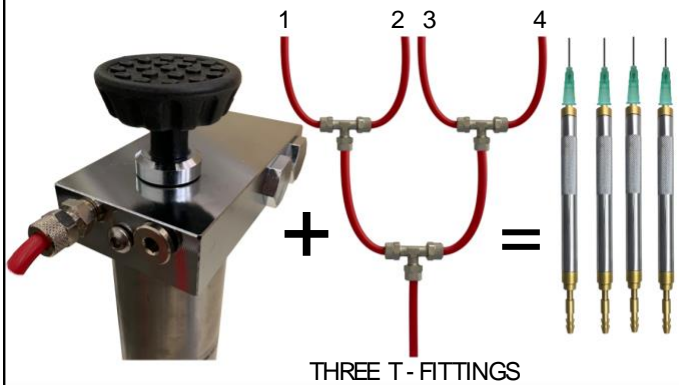


ET HYDROGEN WITH 1 OUTLET: TORCHES LAYOUT

With this unit, the operator can choose different options to set the ET hydrogen system from 1 to 4 torches working simultaneously.

All options can be performed with all kind of torches represented below, but always following the power regulations reported on table 2 and table 2 A in the user manual, quick start up guide and on the top cover of the unit. For a more simple and clear idea, the diagram showed below, takes as example the standard torch. But again the user can settle the different torches, also mixed together at the same time.

USABLE TORCHES



! WARNING !

REMEMBER TO SHUT OFF ALL THE FLAMES BEFORE DOING THE FOLLOWING OPERATIONS:

- **OPENING THE TANK OR THE BOOSTER TANK FOR REFILLING OR POURING THE CHEMICALS.**
- **CHANGING OR ADDING MORE TORCHES, HOSES OR BURNER TIPS AND/OR NOZZLES.**
- **TURNING OFF THE MACHINE.**

FAILURE TO FOLLOW THE UPPER ACTIONS WITHOUT SHUTTING OFF THE FLAME MAY CAUSE THE BURNER TIP FUSING AND/OR BACKFLAME.

In the following steps, you must choose to operate with one or two outlets according to your working needs.

Two outlets system is on the left side of the manual, starting from the next pages. (highlighted in **BLACK**);

One outlet system is on the right side of the manual, starting from the next pages.

With the L/160 model, you can choose different working options:

SETTING THE MACHINE WITH TWO OUTLETS

YOU CAN WORK WITH:

- 1, 2, 3 OR 4 STANDARD TORCHES.



- OR 1, 2, OR 3 SPECIAL TORCHES.



SETTING THE MACHINE WITH ONE OUTLET

YOU CAN WORK WITH:

- 1 STANDARD TORCH (SUGGESTED).



- OR 1 SPECIAL TORCH (SUGGESTED).



PROCEDURE FOR TWO OUTLET SYSTEMS

Step 9.

With the model L/160 with two outlets, you can use between one and four torches with the following procedures:

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

ONE TORCH:

Connect the hose to LINE 1 fitting (closest to the machine), with the shut-off gas valve of LINE 2 in the "off" position, then select the green burner tip (refer to Table 2 – STEP 13) and light the flame.

TWO TORCHES:

You must use the default LINE 1.

Connect the hose with the two split torches to LINE 1 fitting (closest to the machine), with the shut-off gas valve of LINE 2 in the "off" position, then select the green burner tips (refer to Table 2 – STEP 13) and light the flames.

THREE TORCHES:

USE of LINE 1: Connect the hose with the two split torches to LINE 1 fitting (closest to the machine).

USE of LINE 2: Connect the hose with one single hose and torch to LINE 2 by opening the gas valve in the "on" position, then select the green burner tips (refer to Table 2 – STEP 13) and light the flames.

FOUR TORCHES:

USE of LINE 1: Connect the hose with the two split torches to LINE 1 fitting (closest to the machine).

USE of LINE 2: Connect the hose with the two split torches to LINE 2 fitting by opening the gas valve in the "on" position, then select the green burner tips (refer to Table 2 – STEP 13) and light the flames.

NOTE:

TO CONNECT THE HOSES TO THE FITTINGS, UNSCREW THE FERRULE. See Picture Below.



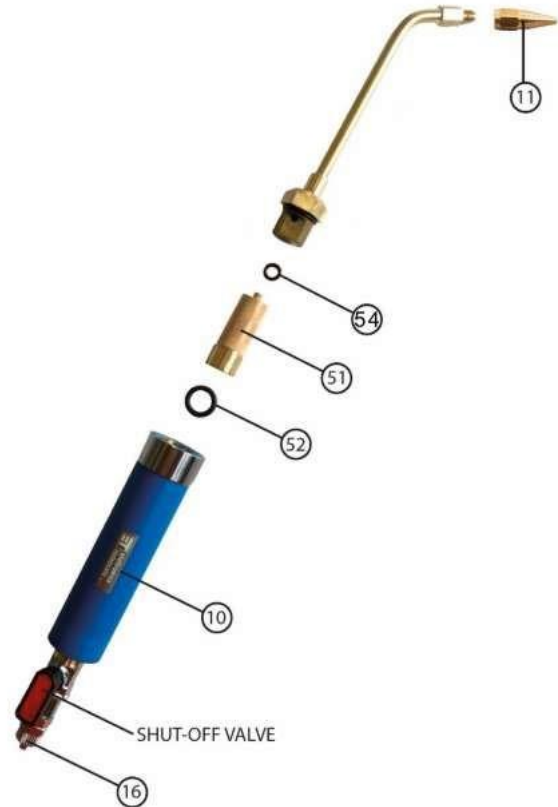
Then insert the plastic hose to the fitting, tightening the ferrule to ensure a proper and secure connection.

PROCEDURE FOR ONE OUTLET SYSTEMS

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) 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 2 or Table 2A).

NOTE:

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

See Picture Below.

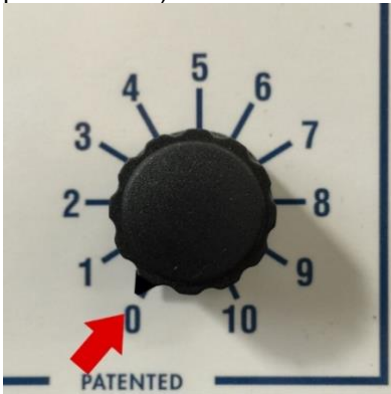


Then insert the plastic hose to the fitting, tightening the ferrule to ensure a proper and secure connection.

TWO OUTLETS SYSTEM

STEP 10.

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



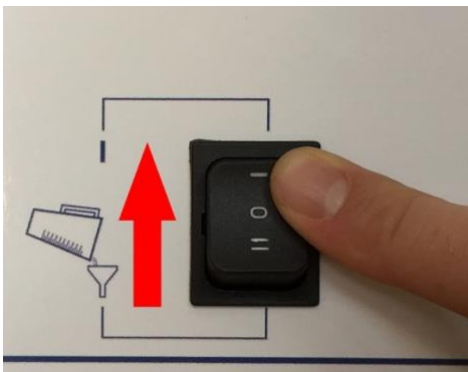
Step 11.

After mounting the booster tank, select the green burner tip (0.8 mm). Refer to **TABLE 2.** (Step 13).

WARNING: Failing to follow the values of power regulation indicated in TABLE 2, may cause the burner tip fuse and/or back flame.

Step 12.

Turn "on" the machine by pushing the 3 position switch to the TOP position, where the "-" is indicated. After a couple of minutes this will start the gas emission. (see picture below).



(3 POSITION SWITCH)

ONE OUTLET SYSTEM

Step 10.

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



Step 11.

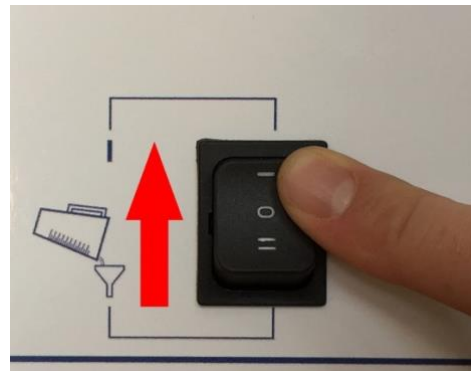
After mounting the booster tank, select the burner tip or nozzle (refer to table 2 or table 2A).

WARNING: When using burner tips, failing to follow the values of power regulation indicated in TABLE 2 or TABLE 2A, may cause the burner tip fuse and/or back flame.

Step 12.

TURN ON THE MACHINE

Turn "on" the machine by pushing the 3 position switch to the TOP position, where the "-" is indicated. After a couple of minutes this will start the gas emission. (see picture below).



(3 POSITION SWITCH)

TWO OUTLETS SYSTEM

STEP 13. HOW TO ADJUST THE POWER ACCORDING TO BURNER TIP TIP SIZE.

How to adjust the
Power Control
Knob



And simultaneously
check the gas supply
indicator, according
to Min and Max Lt/h
(see table 2 or Table 2A)

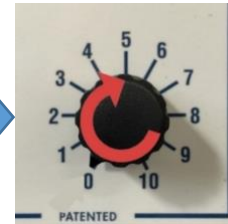


| STANDARD TORCH (NEEDLES UTILIZATION) | | | | |
|--------------------------------------|------------------------------|-----|----------|--|
| TORCHES QUANTITY | BURNER TIP EXTERNAL DIAMETER | MIN | Lt/h MAX | |
| 1 | Ø 0.6 mm (violet) | 25 | 50 | |
| 2 | Ø 0.6 mm (violet) | 50 | 120 | |
| 3 | Ø 0.6 mm (violet) | 80 | 130 | |
| 4 | Ø 0.6 mm (violet) | 100 | 160 | |
| | | | | |
| 1 | Ø 0.7 mm (black) | 35 | 60 | |
| 2 | Ø 0.7 mm (black) | 70 | 130 | |
| 3 | Ø 0.7 mm (black) | 95 | 150 | |
| 4 | Ø 0.7 mm (black) | 120 | 160 | |
| | | | | |
| 1 | Ø 0.8 mm (green) | 50 | 90 | |
| 2 | Ø 0.8 mm (green) | 90 | 150 | |
| 3 | Ø 0.8 mm (green) | 120 | 160 | |
| 4 | Ø 0.8 mm (green) | 160 | 160 | |
| | | | | |
| 1 | Ø 0.9 mm (yellow) | 80 | 130 | |
| 2 | Ø 0.9 mm (yellow) | 120 | 160 | |
| 3 | Ø 0.9 mm (yellow) | 150 | 160 | |
| | | | | |
| 1 | Ø 1 mm (stainless steel tip) | 90 | 140 | |

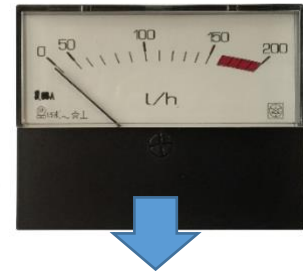
ONE OUTLET SYSTEM

STEP 13. HOW TO ADJUST THE POWER ACCORDING TO NEEDLE OR NOZZLE TIP SIZE.

How to adjust the
Power Control
Knob



And simultaneously
check the gas supply
indicator, according
to Min and Max Lt/h
(see table 2 or Table 2A)



| STANDARD TORCH (NEEDLES UTILIZATION) | | | | |
|--------------------------------------|------------------------------|-----|----------|--|
| TORCHES QUANTITY | BURNER TIP EXTERNAL DIAMETER | MIN | Lt/h MAX | |
| 1 | Ø 0.6 mm (VIOLET) | 25 | 50 | |
| 1 | Ø 0.7 mm (BLACK) | 35 | 60 | |
| 1 | Ø 0.8 mm (GREEN) | 50 | 90 | |
| 1 | Ø 0.9 mm (YELLOW) | 80 | 130 | |
| 1 | Ø 1.0 mm (STAINLESS STEEL) | 90 | 140 | |

Adjust the power control knob using the gas supply indicator according to the Min/Max values using Table 2 or Table 2A.

NOTE:

Remember to not regulate the power under the minimum value, indicated in Table 2. This may cause the burner tip to fuse and burn excessively or back flame.

| SPECIAL TORCH (NOZZLE UTILIZATION) | | | | |
|------------------------------------|---------------|-----|----------|--|
| TORCHES QUANTITY | HOLE DIAMETER | MIN | Lt/h MAX | |
| 1 | Ø 0.4 mm | 80 | 100 | |
| 2 | Ø 0.4 mm | 110 | 160 | |
| 3 | Ø 0.4 mm | 160 | 160 | |
| | | | | |
| 1 | Ø 0.6 mm | 100 | 160 | |
| 2 | Ø 0.6 mm | 160 | 160 | |
| | | | | |
| 1 | Ø 0.7 mm | 160 | 160 | |

TWO OUTLETS SYSTEM

Adjust the power control knob using the gas supply indicator according to the Min/Max values using Table 2 or Table 2A.




NOTE:

In order to insert the burner tip correctly, push and rotate this item simultaneously at the extremity of the torch, to make sure the burner tip (picture A) is properly fitted. According to the number of torches desired to use, and to the diameter of the burner tip, remember not to regulate the power under the minimum value, indicated in Table 2. This may cause the burner tip to fuse and burn excessively or back flame.



(picture A)

ONE OUTLET SYSTEM

| TABLE 2 A | | WELDER MODEL L/160 | | | |
|------------------------------------|--|--------------------|--------|------|-----|
| SPECIAL TORCH (NOZZLE UTILIZATION) | | HOLE DIAMETER | | Lt/h | |
| TORCHES QUANTITY | | | | MIN | MAX |
| 1 |  | Ø | 0.4 mm | 80 | 100 |
| 1 |  | Ø | 0.6 mm | 100 | 160 |
| 1 |  | Ø | 0.7 mm | 160 | 160 |

| ADAPTOR FOR SPECIAL TORCH WITH DUAL TIP | | | |
|---|--------------|-----|-----|
| DUAL TIP | Ø 0,65 # G23 | 40 | 80 |
| DUAL TIP | Ø 0,72 # G22 | 50 | 95 |
| DUAL TIP | Ø 0,82 # G21 | 75 | 120 |
| DUAL TIP | Ø 0,91 # G20 | 80 | 160 |
| DUAL TIP | Ø 1,08 # G19 | 120 | 160 |

Adjust the power control knob using the gas supply indicator according to the Min/Max values using Table 2 or Table 2A.

NOTE:

In order to insert the burner tip correctly, push and rotate this item simultaneously at the extremity of the torch, so as to make sure the burner tip (picture A) is properly fitted. According to the number of the torches desired to use, and with respect to the diameter of the burner tip, remember not to regulate the power under the minimum value, indicated in Table 2. This may cause the burner tip to, fuse and burn excessively.



(picture A)

TWO OUTLETS SYSTEM

Step 14.

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).



(TORCH AND FLAME)

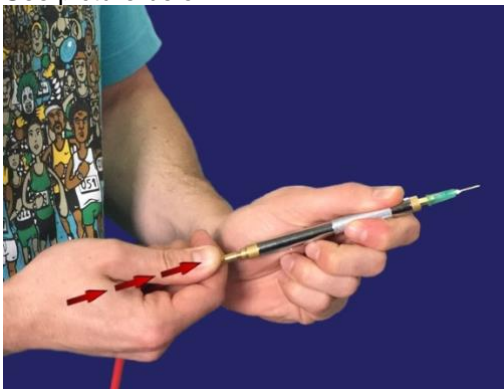
Step 15.

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.



ONE OUTLET SYSTEM

STEP 14.

NOTE 1 (REFERED FOR SPECIAL TORCH)

The operator will have to use the Gas Supply Indicator – Power Control Knob/(Burner Tip/Nozzle), with the min/max values, all simultaneously in order to achieve the correct flame desired, without burning the tips, before lighting the flame. (See picture A,B,C).

NOTE 2 (REFERED FOR STANDARD TORCH)

After selecting the burner, screw the tip (picture D) in place at the end of the torch, then turn on the machine, while simultaneously using the "Gas Supply Indicator" (picture C) for gauging purposes. Then from Table 2/Table 2A make sure the selected tip, does not go below the Min/Max Lt/h value permitted, while also using the Power Control Knob for adjusting purposes. (Picture A).

Failure to follow the suggested Min/Max setting will result in melted or fused burner tip/s.



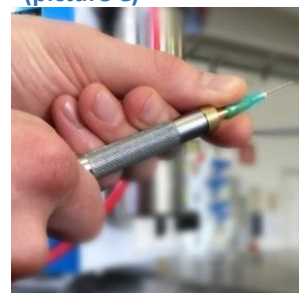
(picture A)



(picture B)



(picture C)



(picture D)

TWO OUTLETS SYSTEM

IMPORTANT NOTE:

IMPORTANT NOTICE:

The electrolyte solution's lifetime is of one year. 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, etc.

ONE OUTLET SYSTEM

Step 15.

Wait for the gas to be produced and exiting from the torch, (approximately 2 or 3 minutes or more) then light the flame with a lighter or electronic igniter.

If the flame is unsatisfactory, move to the next burner tip from Table 2/Table 2A. (see picture below).



HOW TO USE THE SPECIAL TORCH:

To turn on the flame, it is sufficient to open the Valve at the base of the torch ("OPEN" position)

To turn OFF the flame, rotate the valve (quickly),

From "open" to "close" and then to "open" again.

(see step 16).

Step 16.

To turn the machine "OFF", shut the flame off the torch by pushing the torch hose fitting, if you use a standard torch (picture 1), closing the shut off valve, if you use a special torch (picture 2). Then push the (3-position switch) to then central initial position, "O".

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 machine, always.

See picture below.



(PICTURE 1)



(PICTURE 2)

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.

TWO OUTLETS SYSTEM

GOOD DAILY HABITS FOR MAINTAINING THE MACHINE AT OPTIMAL PERFORMANCE

ATTENTION

1. Do not unscrew “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. RE-Fill WATER IN THE INTERNAL TANK by DEPRESSURIZING THE Booster Tank (first)

Whenever water or electrolyte solution needs 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 keep the flux (deoxidizer) from contaminating the electrolyte solution.

- A) *(unscrew safety cap) and add water or electrolyte solution until the Red lamp comes “on “, indicating its full.*
- B) *afterwards re-tighten the safety cap and the booster handle knob. Taking care not to over tighten, or over-screw, or de-thread the internal chamber. This will become a daily, on-going standard operation, as water will probably 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 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 position using a finger in the center to avoid spilling fluid in the improper location. Reattach the booster tank when done filling.

ONE OUTLET SYSTEM

GOOD DAILY HABITS FOR MAINTAINING THE MACHINE AT OPTIMAL PERFORMANCE

ATTENTION

1. Do not unscrew “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. RE-Fill WATER IN THE INTERNAL TANK by DEPRESSURIZING THE Booster Tank (first)

Whenever water or electrolyte solution needs 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 keep the flux (deoxidizer) from contaminating the electrolyte solution. Then, unscrew safety cap and add water or electrolyte solution until the Red lamp comes “on “, indicating its full. Then afterwards re-tighten the safety cap and the booster handle knob. Taking care not to over tighten, nor over-screw, nor de-thread the internal chamber. This will become a daily, on-going standard operation, as water will probably 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 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 position using a finger in the center to avoid spilling fluid in the improper location. Reattach the booster tank when done filling.

TWO OUTLETS SYSTEM

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 its filled). Re-insert 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. After work, never let the machine cool down unpressurized: leave the working pressure inside the electrolytic tank overnight.
9. When pushing the (3-point switch) to the down position, (fill-refill “= “), you will be able to check the 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 you use the machine once or twice a week, every 15-20 days, turn – ON the welder **at least 3 minutes at max power without lighting the flame**, to avoid that the check valve does not become blocked. After that, turn, OFF the machine.

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

11. If two torches are selected, and during operation, one of the two operators desires to leave, shut off both torches; then disconnect the hoses and then reconnect one single torch. In this case the power control knob must be readjusted for one torch power.

If on the other hand, one of the two operators chooses to stop using the torch and turns the flame off, this can only be done for 15-20 minutes since the gas will be omitted into the environment. If the period exceeds twenty minutes, just use the default line nearest the machine with one torch only.

ONE OUTLET SYSTEM

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 its filled). Re-insert 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. After work, never let the machine cool down unpressurized: leave the working pressure inside the electrolytic tank overnight.
9. When pushing the (3 point switch) to the down position, (fill-refill “=”), you will be able to check the 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 you use the machine once or twice a week, every 15-20 days**, turn – ON the welder at least 3 minutes at max power without lighting the flame, to avoid that the check valve does not become blocked. After that, turn, OFF the machine.

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

11. If one (1) torch is selected for use, follow the instructions at the beginning of the quick start guide, (step 9). Essentially the L/160 will then have one torch, and the operator will use the machine accordingly.

TWO OUTLETS SYSTEM

12. Do not light the flame until the gas flows out from the burner tip and at same time the power control knob (MUST) be in the correct position according to the Table 2 settings, before lighting the flame/s.
13. Clean the orifice (Fig. 1 # 11) with a thin steel 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 lukewarm water for approximately twenty minutes.
14. Get used to check the demineralized water level daily, and restore the demineralized water up to the MAX level. This will help the unit to last longer and work at peak performance.
15. Before lighting the flames, wait until you can feel a consistent gas flow coming out from the burner tips.

ONE OUTLET SYSTEM

12. If two torches are selected, and during operation, one operator desires to shut off one torch; then turn off the flame and then close the valve. If, on the other hand, the operator chooses to stop using the torch (nearest to the machine) and turns the flame off, this can only be done for 15-20 minutes since the gas will be omitted into the environment.
16. Do not light the flame until the gas flows out from the burner tip and at same time the power control knob MUST be in the correct position according to the settings in Table 2, before lighting the flame/s.
17. Clean the orifice of the burner tip (fig.1 # 11) with a thin steel wire daily before starting the machine.
18. Get used to check the demineralized water level daily, and restore the demineralized water up to the MAX level. This will help the unit to last longer and work at peak performance.
19. Before lighting the flames, wait until you can feel a consistent gas flow coming out from the burner tips.

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) |
|---------|--------------|----------------------------------|
| EU | L/160 | EU LT 3 |
| USA | L/160 | US gal 0.792 |
| UK | L/160 | UK gal 0.659 |

- **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) |
|---------|--------------|---------------------------------|--|
| EU | L/160 | LT 2,6 | grams 1080 |
| USA | L/160 | US gal 0.687 | ounces 38.09 |
| UK | L/160 | UK gal 0.572 | ounces 38.09 |

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

The deoxidizer is a liquid with particular compounds(methyl alcohol + boric acid) in order to obtain a clean flow solder. Useful for avoiding oxidation and porosity during the soldering / brazing process.

The following table illustrate proportions and quantities to take in consideration in order to obtain the correct deoxidizer and enable the machine function properly without obstructions.

| | |
|--|--|
| 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



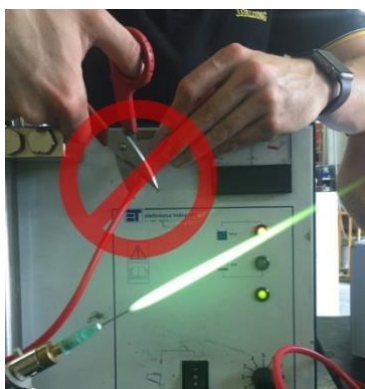
NEVER LEAVE THE MACHINE **ON** WITH THE TORCH **OFF**.
AVOID DISPERSING GAS INTO THE ENVIROMENT.
ALSO, **NEVER** LEAVE THE MACHINE **ON** WITH CLOSED TORCHES CAUSING A **DANGEROUS EXCEED OF PRESSURE!**



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.

NEVER LIGHT THE FLAME IF BOOSTER TANK IS EMPTY.



NEVER LIGHT THE FLAME WHEN THERE ARE NO BURNER TIPS OR NOZZLES MOUNTED ON THE TORCH.

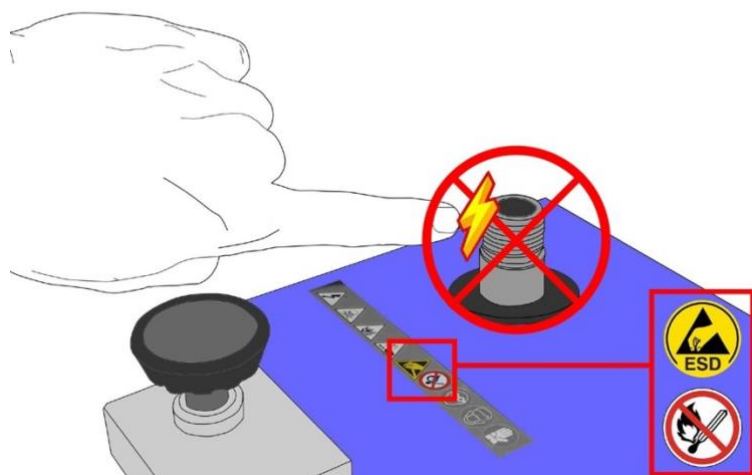


BEFORE OPENING ELECTROLYTE TANK OR BOOSTER TANK DISCHARGE ELECTROSTATIC ENERGY FROM YOUR BODY BY TOUCHING SOME METAL PARTS, WEAR RUBBER GLOVES AND SAFETY GLASSES



NEVER USE COMPRESSED AIR TO CLEAN PNEUMATIC PARTS OF THE UNIT.

NEVER INTRODUCE METAL OBJECTS INSIDE THE MACHINE.



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.



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