



PR-111, PR-112 & PR-113  
**Inverter  
Plasma Cutter  
Series**



**Instruction Manual**

Version 1.0





## ■ About Pro Spot

Pro Spot International, Inc., based in Carlsbad, California, manufactures resistance spot welding equipment specializing in applications for the collision repair industry. The company began in 1986. The company owns and manages an on site machine shop, research & development department, a fabrication facility and production lines for the various welders.

Pro Spot International exports its products worldwide, export sales are managed through our headquarter office. The company owns numerous patents for our ingenious application tools, machines, and procedures.

## ■ Pro Spot training and services

Pro Spot Distributors and Sub-Distributors are carefully selected and are well trained in the collision repair industry. We offer technical and service education at our world wide training facilities at regular intervals so your local distributor will always be up to date and able to pass on the latest in spot welding technology to our customers.

Customer service is an important part of any investment and our distributors and sub-distributors will be there to support your technical and service needs. We have a great customer service record, we intend to keep it that way.



**Pro Spot is certified by ASE and a member of the I-CAR Industry Training Alliance**

## ■ Contact Information

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### **CAUTION!**

**BEFORE INSTALLING, OPERATING OR CARRYING OUT MAINTENANCE ON THE PLASMA CUTTER, READ THE CONTENTS OF THIS MANUAL CAREFULLY, PAYING PARTICULAR ATTENTION TO THE SAFETY RULES.**

**In the event of these instructions not being clear, please contact your supplier.**

CONGRATULATIONS ON YOUR NEW PURCHASE!  
YOU ARE NOW IN THE POSSESSION OF ONE OF THE SAFEST AND MOST TECHNOLOGICALLY ADVANCED PLASMA CUTTERS ON THE MARKET.  
FOLLOW OUR SUGGESTIONS AND YOU WILL BE GUARANTEED SAFE AND PROBLEM-FREE OPERATION.

## **SAFETY RULES AND GENERAL WARNINGS**

### **INTRODUCTION**

Your plasma cutting unit is fitted with sophisticated safeguards which block functioning and therefore the cutting operations until all the safety conditions are present. The plasma cutting technique requires dangerously high voltage for pilot arc starting and during cutting, therefore the following safety rules must be observed with great care.



### **ELECTRICITY**

- 1-Make sure that the unit is earthed and that the supply line has an adequate earth connection.
- 2-Make sure that the work bench has a satisfactory earth connection.
- 3-Avoid contact between the metal bars being cut and bare skin or damp clothes.
- 4-Do not lean on the piece being cut or hold it in your hands.
- 5-Do not carry out cutting operations in damp environments or on wet surfaces.
- 6-Do not use the unit if the torch or cables appear damaged.
- 7-Always turn the unit off before replacing the electrode, the nozzle or the spreader tip of the torch.
- 8-Always switch the unit off and remove the power cable from the mains socket before carrying out any maintenance inside the unit.



### **CAUTION!**

**Repairs, maintenance and operation of the unit should be carried out by trained personnel who are aware of the risks caused by the high voltage needed to operate the plasma cutting unit. The operator should work in compliance with current standards and abide by all safety regulations.**

### **CAUTION!**

**If during the cutting operation a slight electric shock is felt, stop work immediately and do not use the unit until the fault has been discovered and resolved.**

### **EYE AND BODY PROTECTION**

One of the hazards during the cutting process is the emission of electromagnetic waves due to the electric arc. The length of these waves ranges from infrared to ultraviolet. If these rays hit the eyes, they can cause various complaints such as conjunctivitis, burns to the retina, deterioration of sight, etc. Moreover a high concentration of ultraviolet rays can burn the skin. It is, therefore, extremely important that the operator uses adequate safety equipment and clothing, such as:

- 1-Split or leather gloves
- 2-Split or leather aprons
- 3-Shin-guards
- 4-Safety shoes
- 5-Safety mask (or even better helmet) large enough to cover the whole of the face, equipped with safety lenses able to filter all the radiation and reduce the intensity of the light absorbed by the eye.



**CAUTION!**

Never, under any circumstances, look at an electric arc without eye protection.

**CAUTION!**

A further hazard for eyes is the risk of splinters or particles which may be detached during the cutting operations or during grinding, brushing or hammering away of the scale.

Always wear goggles or protective shields with transparent lenses during these operations to prevent splinters or other foreign bodies from entering the eye.



**IMPORTANT:** *safety screens should be installed around the cutting area to protect other people, who may be working in adjacent areas, from the radiation given out by the arc.*

### CUTTING FUMES AND GASES

Harmful fumes and metallic powders are produced during the cutting operation. Metals which are painted or coated or which contain mercury, cadmium, zinc, lead and graphite may produce harmful concentrations of toxic fumes during cutting.

To protect the operator or other persons from exposure to possible toxic fumes, fume respirators should be worn and work areas should be adequately ventilated.

When working in enclosed environments, suction units should be fitted below the cutting area.

**CAUTION!**

When halogenated solvents or degreasing agents are present, the material to be cut should be cleaned properly to prevent the formation of toxic gases. Some chlorinated solvents may decompose in the presence of the radiation given out by the arc and may generate phosgene gas.

### FIRE HAZARDS

- 1-Prevent sparks or hot scale from producing flames
- 2-Remove inflammable or combustible materials from the cutting area.
- 3-Make sure that fire-fighting equipment is located near the work area.
- 4-Situate the unit in an area where the air can be sucked in and exhausted from the grilles on the panel

**CAUTION!**

Do not cut fuel or lubricant containers even if these are empty.

Do not cut containers or casings which contain inflammable material.

Never cut in environments which are polluted by inflammable gas or combustible liquid vapours (such as petrol).

## NOISE

Noise is generated during the cutting process. The noise level depends on the cutting parameters used.

**CAUTION!**  
**Noise can damage hearing**  
**Wear adequate hearing protection.**

## BURNS

The operator should be adequately protected during cutting operations. This should be routine practice.

**CAUTION!**  
**Do not point the torch jet at people or foreign bodies.**

## EMC

Before installing the plasma cutting unit, carry out an inspection of the surrounding area, observing the following guidelines:

- 1-Make sure that there are no other power supply cables, control lines, telephone leads or other equipment near the unit.
- 2-Make sure that there are no radio receivers or television appliances.
- 3-Make sure there are no computers or other control systems.
- 4-Make sure that there is no-one with a pacemaker or hearing aid in the area around the unit.
- 5-Check the immunity of any other equipment operating in the same environment. In certain cases additional protective measures may be required.

Interference can be reduced in the following ways:

- 1-If there is interference in the power supply line, an E.M.C. filter should be inserted between the mains and the unit.
- 2-The output cables of the unit should be shortened; these should be kept close together and stretched along the ground.
- 3-All the panels of the unit should be correctly closed after carrying out maintenance.

## GENERAL INFORMATION

### PLASMA ARC AND BASIC PRINCIPLES FOR THE PERFORMANCE OF PLASMA CUTTING

- √ Plasma is a gas that is heated to an extremely high temperature and ionised so that it becomes a conductor of electricity.
- √ This cutting procedure utilises the plasma to transfer the electric arc to the metal workpiece, which is melted by the heat and then separated.
- √ The torch uses compressed air from a single source, for both the plasma and cooling and protective gas.
- √ The start of the cycle is determined by an arc, called the pilot arc, which is struck between the mobile electrode (negative polarity) and the torch nozzle (positive polarity) due to the short circuit between these two elements.
- √ When the torch is brought into direct contact with the workpiece to be cut (connected to the positive polarity of the power source) the pilot arc is transferred between the electrode and the workpiece itself thus striking a plasma arc, also called cutting arc.
- √ The duration of the pilot arc is set in the factory at 3 seconds; if the transfer has not been made within this time, the cycle is automatically stopped except for the cooling air which is kept on.

## POWER SUPPLY CONNECTION

The machine must be connected to a Line-Neutral system with a “PE” protected grounding wire. **Check that the relevant socket terminal is actually connected to the distribution system grounding.**

## CONNECTION TO GROUND CABLE

Connect the dinse plug to the socket and the work cable clamp to the piece to be cut or to the metallic workbench. Take following precautions:

- √ Verify that there is a good electrical contact particularly if insulated or oxidated coated sheets are cut.
- √ Make ground connections as close as possible to the cutting area. The use of the metallic structures which are not part of the workpiece, such as the return cable of the cutting current, may endanger the safety system and give poor cutting results.
- √ Do not make a ground connection on the piece which has to be removed.

## TORCH CONNECTION

**WARNING!: Before starting the cutting operations verify that the parts are properly assembled by inspecting the head of the torch as shown on paragraph “Torch Maintenance”**

## LOCATION AND HANDLING OF THE POWER SOURCE

- √ Choose location verifying that there is a good air flow and no dust, smoke or gas is present.
- √ Make sure that obstacles do not prevent the cooling air flow out of front and rear openings of the machine.
- √ Arrange an open space of at least 5m around the machine.
- √ In the case the machine has to be moved, always disconnect the plug from the outlet and gather the cables and pipes so as not to damage them.

## COMPRESSED AIR

A source of clean, dry air or nitrogen must be supplied to your plasma cutting unit. The supply pressure must be between 72.5 and 150 psi (5 and 10.3 bar). The flow rate is approximately 3.5 cu.ft./min. (100L/min.). Failure to observe these precautions could result in excessive operating temperatures or damage to the torch.

An air regulator is included with the unit with optimum pressure setting set to 65 PSI, 4.5 Bar.

**Note: the regulator should never be set above 6 bar.**

## MANUAL PURGE

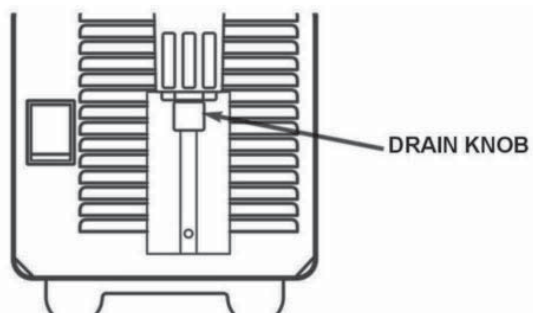
Oil in the air is a severe problem and must be avoided. The unit is also equipped with an air filter which captures water and oil vapor.

**Model PR-111:** The vapor collected can be drained out turning the drain knob located on the air filter. Three Position Drain knob, select the desired position:

1. Open
2. Open when no air pressure, closed when air pressure. **The drain knob should not be left in this position during cutting operations.**
3. Closed

**Model PR-112/113:** water contained in the filter glass can be drained by pushing upward the drain connector.

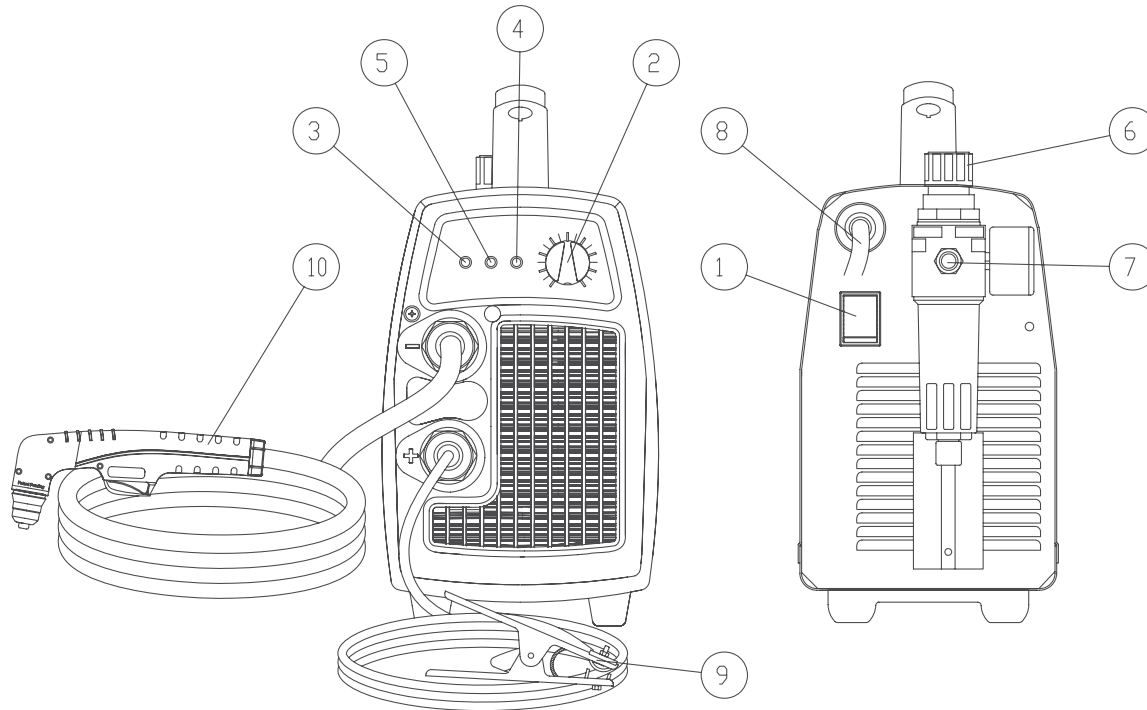
**Note: The unit will not operate if the input air pressure is below 55 PSI, 3.8 Bar.**





## FUNCTIONS

### PR-111



**1.ON/FF Switch – In the ON position the machine is ready for normal operation. All system control circuits are activated. OFF position deactivates control circuits.**

**2.Output Current Knob - Adjusts the cutting current supplied by the machine according to the thickness of material/speed.**

**3.Green LED– Turns ON when input voltage is applied within normal range – blinks slowly when input voltage goes above 260Vac, or below 180Vac.**

**4.Red LED–Turns ON when torch is triggered. Blinks quickly during 3 second safety pre-flow prior to pilot arc ignition. Blinks slowly if cutting arcs not initiated after 3 second pilot arc ignition.**

**5.Yellow LED– Turns ON when the thermal protection is activated. Blinks slowly when the under pressure protection is working (the pressure is under 3,8 Bar).**

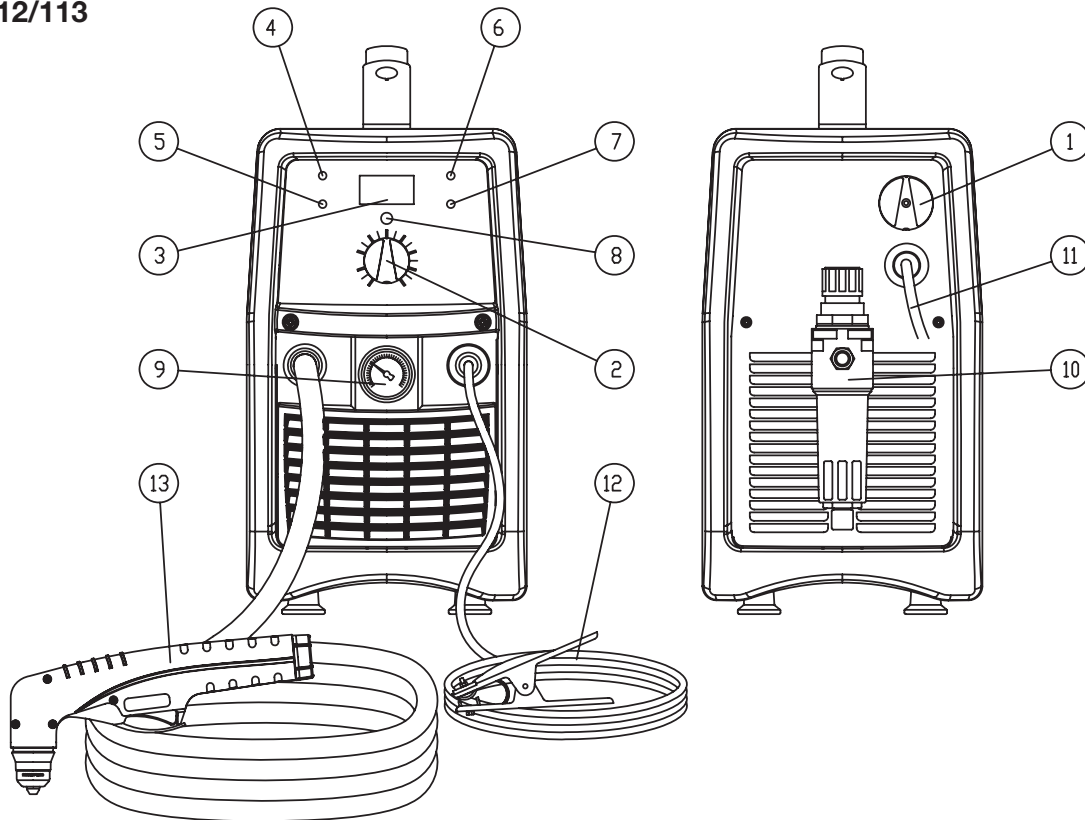
**6. Air regulator - Adjusts the input air pressure - pull upward to unlock - nominal air pressure setting is 4,5 Bar. Note: the regulator should never be set above 6 Bar.**

**7.Compressed air connection**

**8. Input cord**

**9. Work cable with clamp**

**10. Torch (with a trigger security cap)**



**1.ON/FF Switch – In the ON position the machine is ready for normal operation. All system control circuits are activated. OFF position deactivates control circuits.**

**2.Output Current Knob - Adjusts the cutting current supplied by the machine according to the thickness of material/speed.**

**3.Digital Ammeter - when unit is on views the set cutting current when unit is on, during pilot arc time views the pilot arc current and during cutting views the cutting current.**

**4.Green LED – Turns ON when input voltage is applied to the machine.**

**5.Red LED –Turns ON when pilot or cutting arcs are initiated.**

**6.Yellow LED – Turns ON when the thermal protection is activated or when voltage exceeds with compressed air**

**7.Yellow LED – Turns on when the under pressure protection is working (the pressure is under 3,8 Bar) or when voltage exceeds without compressed air.**

**8.Torch Gas Purge Button – Allows to remove any condensation that may have accumulated in the torch and leads while the system was shut down.**

**9. Air Pressure Gauge – shows the input air pressure**

**10.Air regulator - Adjusts the input air pressure - pull upward to unlock - nominal air pressure setting is 4,5 Bar. Note: the regulator should never be set above 6 Bar.**

**11.Input cord**

**12.Work cable with clamp**

**13.Torch (with a trigger security cap)**



## CUTTING OPERATION

### PRELIMINARIES

**WARNING: unplug the unit from the power supply before assemble or disassemble piled parts, single parts, parts of the torch, torch assemblies or cables.**

- √ Check and follow instructions as foreseen in the paragraphs "Safety and Installation" of the present instructions manual.

### PARTS OF THE TORCH

- √ Check the torch for proper assembly. Install proper torch parts for the desired application (refer to Section called Torch Consumable Parts Selection). NOTE: The power supply will not operate unless the torch shield cup is fully seated against the PIP (Parts in Place) pins in the torch head.

### INPUT POWER

- √ Check the power source for proper input voltage.
- √ Make sure the power source meets circuit protection and wiring requirements.
- √ Plug unit in and close main disconnect switch to supply primary power to the system.

### GROUND CABLE

- √ Check for a solid ground cable connection to the workpiece.

### AUTOMATIC PURGE SYSTEM

30A - 40A model

- √ Place the ON/OFF switch to the ON position. The ON light will flicker momentarily as the system powers up and then stays on. Activate the torch button to initiate gas purge (pre-flow) to remove any condensation that may have accumulated in the torch and leads while the system was shut down. When the gas purge is complete, pilot arc will be initiated.

45A model

- √ Place the ON/OFF switch to the ON position. Activate the torch button to initiate gas purge (pre-flow) to remove any condensation that may have accumulated in the torch and leads while the system was shut down. When the gas purge is complete, pilot arc will be initiated. To cool torch handle or to further remove condensation in the torch and leads push the torch gas purge button on the front panel of the unit.

### WARNING

**Do not** initiate pilot arc during adjustment.

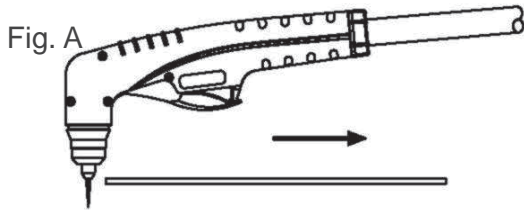
### CHECKING AIR QUALITY

- √ To check air quality, deactivate the torch (post-flow) and place filter lens in front of the torch. Any oil or moisture in the air will be visible on the lens. DO NOT initiate pilot arc while checking air quality.

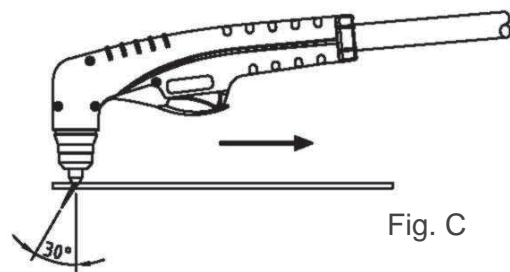
## CUTTING

### A. Cutting with a Hand Torch

- ✓ The torch can be comfortably held in one hand or steadied with two hands. Choose the technique that feels most comfortable and allows good control and movement. Position the index finger or thumb to press the control switch on the torch handle.
- ✓ For edge starts, hold the torch perpendicular to the workpiece with the front of the tip on the edge of the workpiece at the point where the cut is to start. - Fig. A. For piercing, angle the torch slightly to direct sparks away from the torch until the pierce is complete. Fig. B



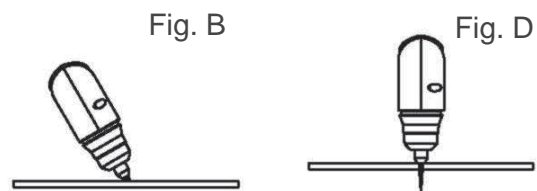
- ✓ For drag cuts keep the torch in contact with the workpiece. For standoff cutting, hold the torch 2-3 mm from the work.
  - ✓ With the torch in starting position, press the control switch. After an initial gas purge (pre-air), the pilot arc will come on and remain on for 3 seconds until the cutting arc starts.
  - ✓ Once on, the main arc remains on as long as the control switch is held down, unless the torch is withdrawn from the work or torch motion is too slow. Keep moving while cutting. Cut at a steady speed without pausing. Maintain the cutting speed so that the arc lag is about 30° behind the travel direction. Fig. C
- If the cutting arc is interrupted, and the torch trigger is still pressed, the pilot arc comes back on automatically for 3 seconds.
- ✓ To shut off the torch simply release the control switch. When the switch is released a post-flow will occur. If the torch trigger is pressed during the post-flow, the pilot arc will restart.



### B. Piercing with a Hand Torch

**Note: Recommended maximum piercing capacity is 2mm. If necessary to make a cut on a metal sheet with a thickness more than 2mm without an edge start, make a hole  $\varnothing$  6mm at least using an electric drill to start cutting.**

- ✓ When piercing with a hand torch, tip the torch slightly so that blowback particles blow away from the torch tip (and operator) rather than directly back into it. Fig. B
- ✓ Complete the pierce off the cutting line and then continue the cut onto the line. Hold the torch perpendicular to the workpiece after the cut is complete. Fig. D
- ✓ Clean spatter and scale from the shield cup and the tip as soon as possible. Spraying or dipping the shieldcup in anti-spatter compound will minimize the amount of scale which adheres to it.



### C. Grates Cutting

**To cut grates it is suggestable to set cutting current between 20 - 34A.**

## WARNING

Disconnect primary power at the source and wait that the torch has cooled before disassembling the torch or torch leads. Frequently review the Important Safety Precautions at the front of this Manual. Be sure the operator is equipped with proper gloves, clothing, eye and ear protection. Make sure no part of the operator's body comes into contact with the work piece while the torch is activated.

## CAUTION

Sparks from the cutting process can cause damage to coated, painted, and other surfaces such as glass, plastic and metal.

**NOTE** Handle torch leads with care and protect them from damage.

## TORCH CONSUMABLE PARTS SELECTION

To change the torch consumable parts use the following procedure: Position the torch with the shield cup facing upward to prevent these parts from falling out when the cup is removed.

Torch for models PR-111

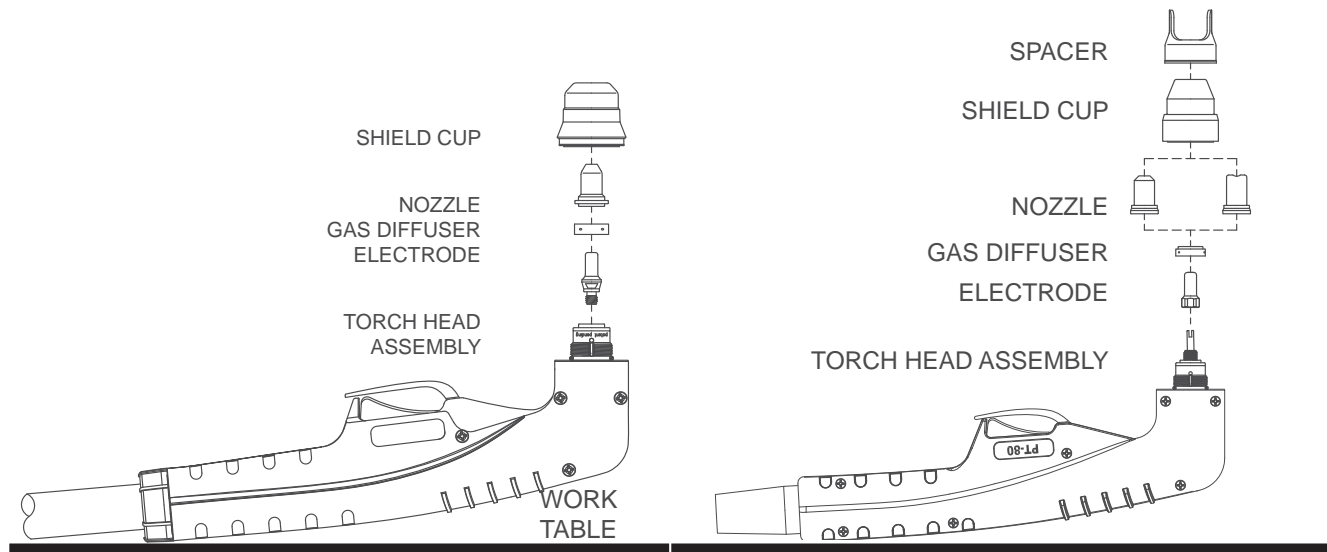
Use:

- 0,90 mm  $\varnothing$  nozzle to cut pieces more than 5 mm thick (output current 30-40 Amp)
- 0,80 mm  $\varnothing$  nozzle to cut pieces more than 5 mm thick (output current 20-30 Amp)
- 0,65 mm  $\varnothing$  nozzle to cut pieces less than 5 mm thick (output current 10-20 Amp)

Torch for model PR-112/113

Use:

- 1,00 mm  $\varnothing$  nozzle to cut with output current 40-45 Amp
- 0,90 mm  $\varnothing$  nozzle to cut with output current 30-40 Amp)



**WARNING:** Wait the torch has sufficiently cooled before replacing torch parts.

1. Unscrew and remove the shield cup from the Torch Head Assembly.
2. Remove the tip, gas distributor, and electrode.
3. Install the electrode, gas distributor, and tip.
4. Hand tighten the shield cup until it is seated on the torch head. If resistance is felt when installing the cup, check the threads before proceeding.

## OPERATING FAULTS

During cutting operations performance faults may arise which are not caused by plant malfunctioning but by other operational faults such as:

- √ Insufficient penetration :
  - too high cutting speed;
  - torch is too tilted;
  - piece is too thick;
  - cutting current too low;
  - torch parts are worn out;
  - non-genuine Manufacturer's parts;
  
- √ Interruption of the cutting arc:
  - cutting speed too slow;
  - excessive distance between torch and workpiece;
  - AC line too low - reduce output current;
  - torch parts are worn out;
  - non-genuine Manufacturer's parts;
  - work cable is disconnected;
  
- √ Excessive scoria settlement:
  - too low cutting speed (bottom dross);
  - too high cutting speed (top dross);
  - excessive distance between torch and workpiece;
  - cutting current too low;
  - torch parts are worn out;
  - non-genuine Manufacturer's parts;
  
- √ Tilted cutting (not perpendicular):
  - torch position not correct;
  - asymmetric wear of nozzle hole and/or wrong; assemblage of the torch parts;
  
- √ Excessive wear of nozzle and electrodes:
  - air pressure too low;
  - exceeding system capability (material too thick);
  - contaminated air (humidity-oil);
  - excessive pilot arc arc ignitions in the air;
  - Improperly assembled torch;
  - torch tip contacting workpiece;
  - damaged or loose torch head components;
  - non-genuine Manufacturer's parts.

## MAINTENANCE

Maintenance can only be carried out on the unit if the person in charge of this operation has the necessary technical knowledge and the correct tools. If this is not the case, contact your nearest service centre.

### CAUTION!

**Never access inside the machine (panel removal) or touch the torch (disassemblage) without having disconnected power plug.**

**Any inspection performed under voltage inside the machine or inside the torch may cause severe electric shocks caused by direct contact with parts under voltage.**

## **UNIT**

Keep the cutting or gouging area and the area around the machine clean and free of combustible materials. No debris should be allowed to collect, this could obstruct air flow to the machine. Inspect the unit every 3-4 months (depending on how often the unit is used) and use compressed air to remove any dust deposits.

### **CAUTION!**

**Only use dry compressed air for cleaning. Do not point the jet of air at the electronic circuits.**

## **TORCH**

Periodically, according to its use or to cutting faults verify wear of the parts connected to plasma arc:

### **Shield Cup:**

Unscrew manually from head of the torch. Clean thoroughly and replace if damaged (burns, distortions or cracks). Verify integrity of superior metal sector (actuator torch safety).

### **Tip:**

Check wear of plasma arc hole and of inner and outer surfaces. If the hole is widened compared to its original width or if it is damaged, replace tip. If surfaces are particularly oxidated clean them with extra fine abrasive paper.

### **Air Distribution Ring:**

Verify there are no burns or cracks or that airflow holes are not obstructed. If damaged, replace immediately.

### **Electrode:**

Replace electrode when crater settling on emitting surface is about 2mm.

## **WARNING!**

- √ Before making any operation to the torch let it cool at least all along the "postgas" period.
- √ Except for particular cases it is advisable to replace electrode and tip **AT THE SAME TIME**.
- √ Respect assembly order of torch parts (reserved compared to disassemblage).
- √ Be careful that distributing is assembled properly.
- √ Reassemble shield cup screwing tightly and manually.
- √ Never assemble shield cup without having assembled electrode distributing ring and tip beforehand.
- √ Timely and appropriate control procedures on torch parts are essential for safety and functionality of the cutting system.

## **TORCH BODY, HANDLE AND CABLE**

- √ These parts usually need no particular maintenance with the exception of a periodic inspection and an accurate cleaning to be made **WITHOUT THE USE OF SOLVENTS**.

In case of damages to the insulation such as breaks, cracks and burns or even a loosening of electric conductors, the torch **CANNOT BE USED FURTHER SINCE SAFETY CONDITIONS HAVE NOT BEEN RESPECTED**.

**IN THIS CASE, REPAIRING (EXTRAORDINARY MAINTENANCE) CANNOT BE MADE ON SITE BUT NEEDS TO BE DELEGATED TO A SERVICE CENTER TO MAKE SPECIAL TESTS AFTER REPAIRING HAS BEEN EXECUTED.**

In order to keep the torch and the cable efficient it is necessary to follow these precautions:

- √ **DO NOT** touch torch and cable with warm or hot parts.
- √ **DO NOT** strain the cable.
- √ **DO NOT** move the cable on sharp edges or abrasive surfaces.
- √ gather the cable in regular coils if it is too long.
- √ **DO NOT** step on the cable.

## **COMPRESSED AIR FILTER**

The unit is equipped with a filter for the compressed air. This filter is fitted with a knob for the manual drain of the condensation. Purge periodically to remove the water/oil in the filter by following the instructions of paragraph "Compressed air".

## TROUBLESHOOTING

### SYMPTOM

### POSSIBLE CAUSE AND REMEDY

GREEN LED OFF, Fan not operating. No Input Power.

1. Plug unit into 230V outlet.
2. Reset Breaker.

GREEN LED ON, YELLOW Overtemperature LED ON. Unit is overheated.

1. Make sure the unit has not been operated beyond duty cycle limits.
2. Air Flow obstructed.

GREEN LED ON,  
Model 30A - 40A - YELLOW Overtemperature / under pressure LED blinks.  
Model 45A - YELLOW under pressure LED ON.  
No air flow in purge or pre-flow.

1. Air not connected or pressure too low. Check source for at least 5 Bar (72.5 PSI) during purge or pre-flow, adjust air pressure to 4,5 Bar (65 PSI).
2. Air filter or air line blocked, torch blocked. Replace filter cartridge. Check that air line and torch leads are free of twists and kinks.

GREEN LED ON, YELLOW Overtemperature / under pressure LED OFF, no air flow when torch switch pressed.

1. Shield cup not properly installed on torch. Check that shield cup is fully seated against torch.
2. Faulty Torch Switch or Parts Assembly in torch holder. Refer to Maintenance paragraph.
3. Faulty Main PC Board Repair / Replace Power Supply.

GREEN LED ON, YELLOW Overtemperature / under pressure LED OFF. Air flows, Pilot arc does not start.

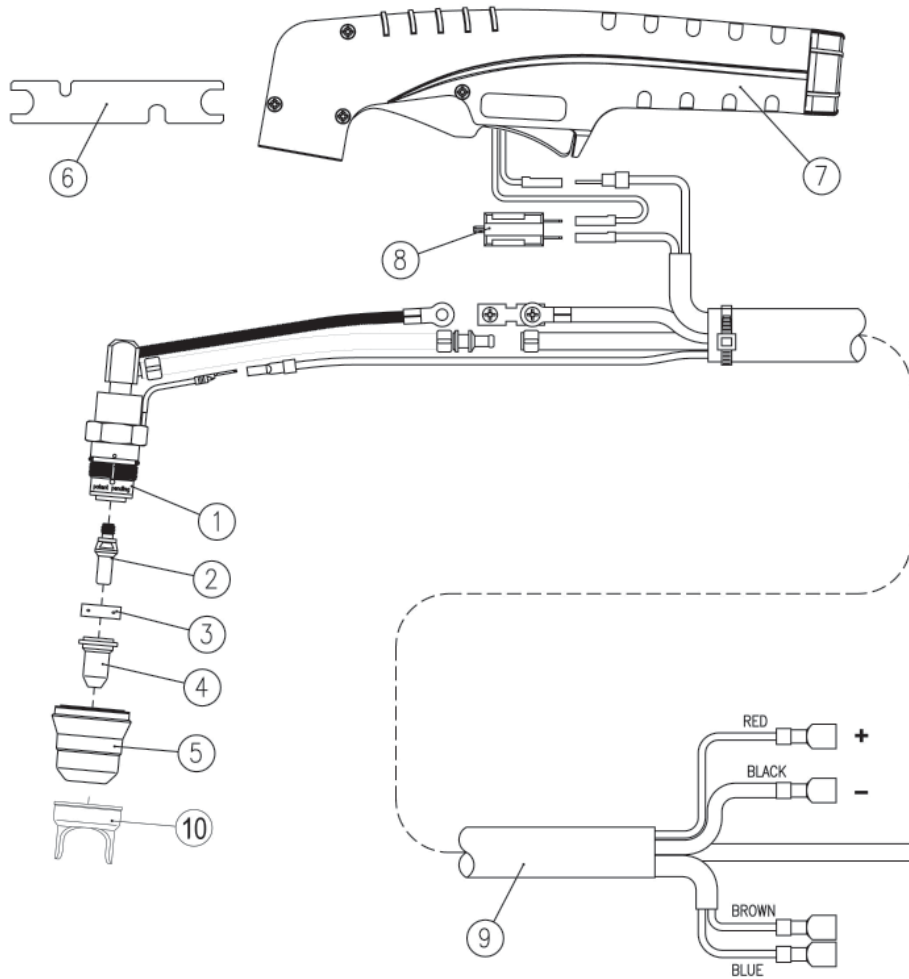
1. Faulty torch parts. Inspect torch parts and replace if necessary.
2. Gas pressure too high. Set pressure to 65 psi (4.5 BAR).
3. Faulty main PC Board. Repair /replace.

Torch has pilot arc but does not cut.

1. Work lead not connected. Make sure work lead is connected securely to bare metal.
2. AC input power too low. Use shortest distance to breaker panel possible.
3. Faulty Main PC Board. Repair/Replace.



LISTA RICAMBI TORCIA / TORCH PARTS LIST / LISTA DE REPUESTOS DE LA ANTORCHA /  
LISTE PIÈCES DE RECHANGE DE LA TORCHE PT40-60



01	CORPO TORCIA	TORCH HEAD	1
02	ELETTRODO	ELECTRODE	1
03	DIFFUSORE	AIR DIFFUSER	1
04	CAPPA 1,0 (40-45A)	TIP D.1,0 (40-45A)	1
04	CAPPA 0,9 (30-40A)	TIP D.0,8 (30-40A)	1
04	CAPPA 0,8 (20-30A)	TIP D.0,8 (20-30A)	1
04	CAPPA 0,65 (10-20A)	TIP D. 0,65 (10-20A)	1
05	UGELLO	SHIELD CUP	1
06	CHIAVE	ELECTRODE WRENCH	1
07	IMPUGNATURA+MICRO	HANDLE+MICRO	1
08	MICRO	MICRO	1
09	FASCIO CAVI	CABLE ASSEMBLY	1
MODELLO / MODEL 45A			
10	DISTANZIALE	SPACER	1

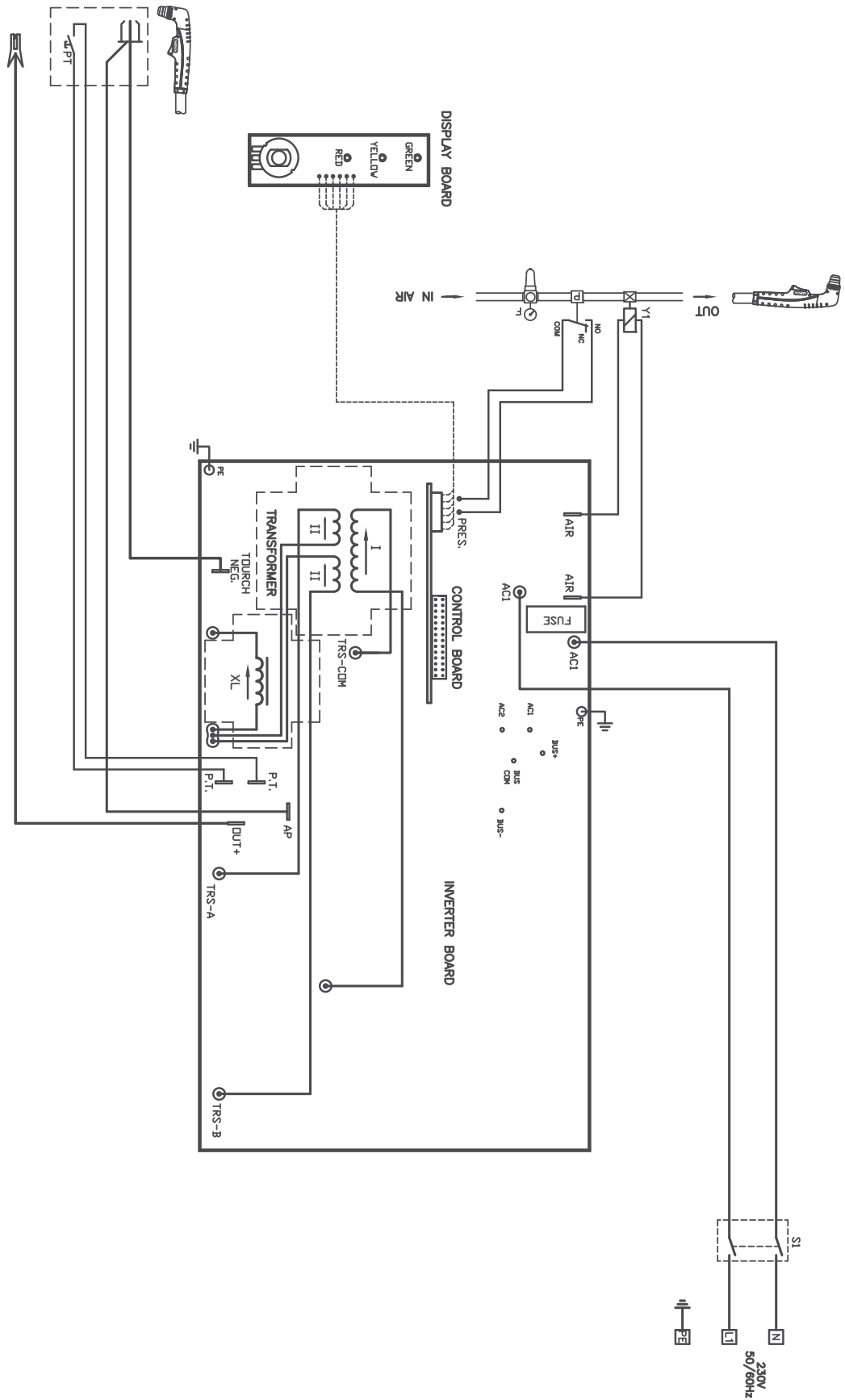
Da usare solo con correnti di taglio superiori a 35A - to be used only with cutting current over 35A

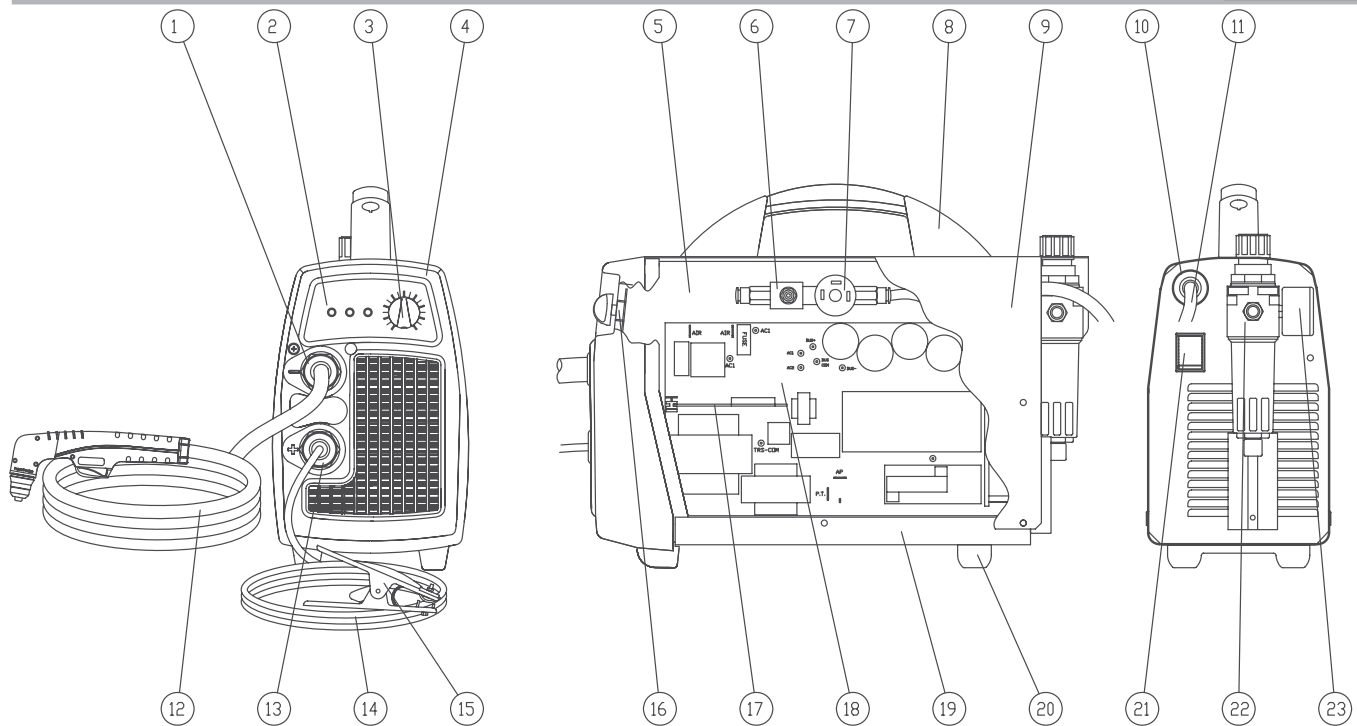
01	CUERPO ANTORCHA	TÊTE DE LA TORCHE	1
02	ELECTRODO	ELECTRODE	1
03	DIFUSOR AIRE	ANNEAU DE DIFUSION	1
04	TOBERA 1,0 (40-45A)	BEC D.1,0 (40-45A)	1
04	TOBERA 0,9 (30-40A)	BEC D.0,8 (30-40A)	1
04	TOBERA D.0,8 (20-30A)	BEC D.0,8 (20-30A)	1
04	TOBERA D. 0,65 (10-20A)	BEC D. 0,65 (10-20A)	1
05	BOQUILLA PROTEC. EXT.	COUPELLE BLINDÉE	1
06	LLAVE PARA ELECTRODO	CLÈ POUR ELECTRODE	1
07	EMPUÑADURA + MICRO	POIGNÉE + MICRO	1
08	MICRO	MICRO	1
09	HAZ DE CABLES	FAISCEAU DE CÂBLES	1
MODELO / MODÈLE 45A			
10	DISTANCIADOR	ENTRETOISE	1

para utilizar solo con corriente de corte superior a los 35A - à utiliser seulement avec courant de coupe superior à 35A

SCHEMA ELETTRICO / WIRING DIAGRAM / ESQUEMA ELECTRICO / SCHÉMA ÉLECTRIQUE  
 - MOD.30A

S1	ON - OFF	ON - OFF	ON - OFF	ON - OFF	ON - OFF
Y1	SOLENOID VALVE	ELEKTROVENTIL	ELEKTROVANNE	INTERRUPTOR ON - OFF	ON - OFF
P	PRESSOSTAT	LUFTDRUCKSCHALTER	PRESSOSTAT	ELEKTROVALVULA	PRESSOSTATO
PT	TORCH PUSH BUTTON	BRENNERSCHALTER	BOUTON TORCHE	PRESOSTATO	PRESOSTATO
F	AIR FILTER-REDUCER	FILTER-DRUCKMINDERER	FILTRE AIR-MANODÉTENTEUR	PULSADOR ANTORCHA	PULSANTE TORCHA
XL	CHOKE	IMPEDEANZ	IMPEDANCE	FILTRO AIRE-REGULADOR	FILTRO-REGOLATORE

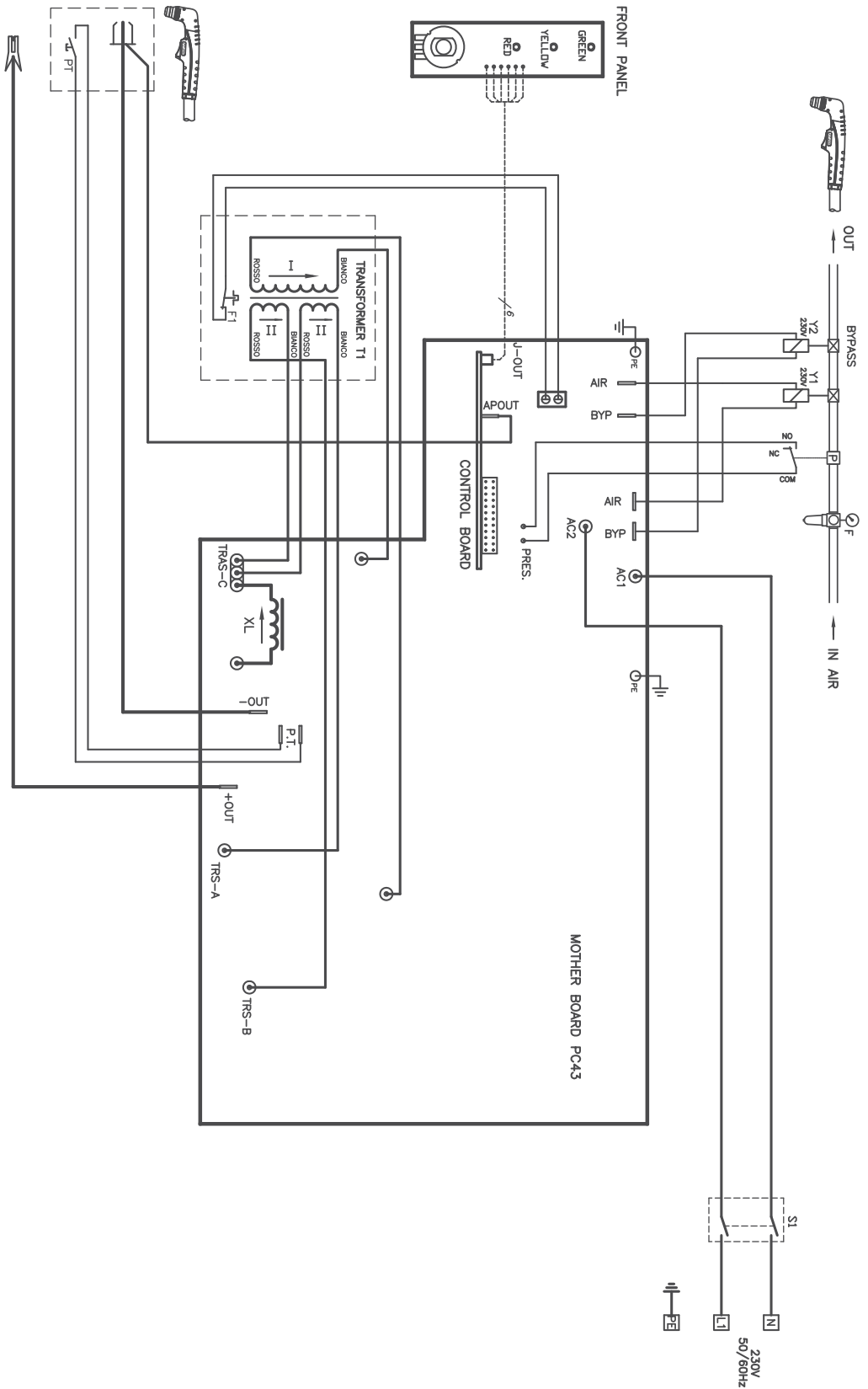


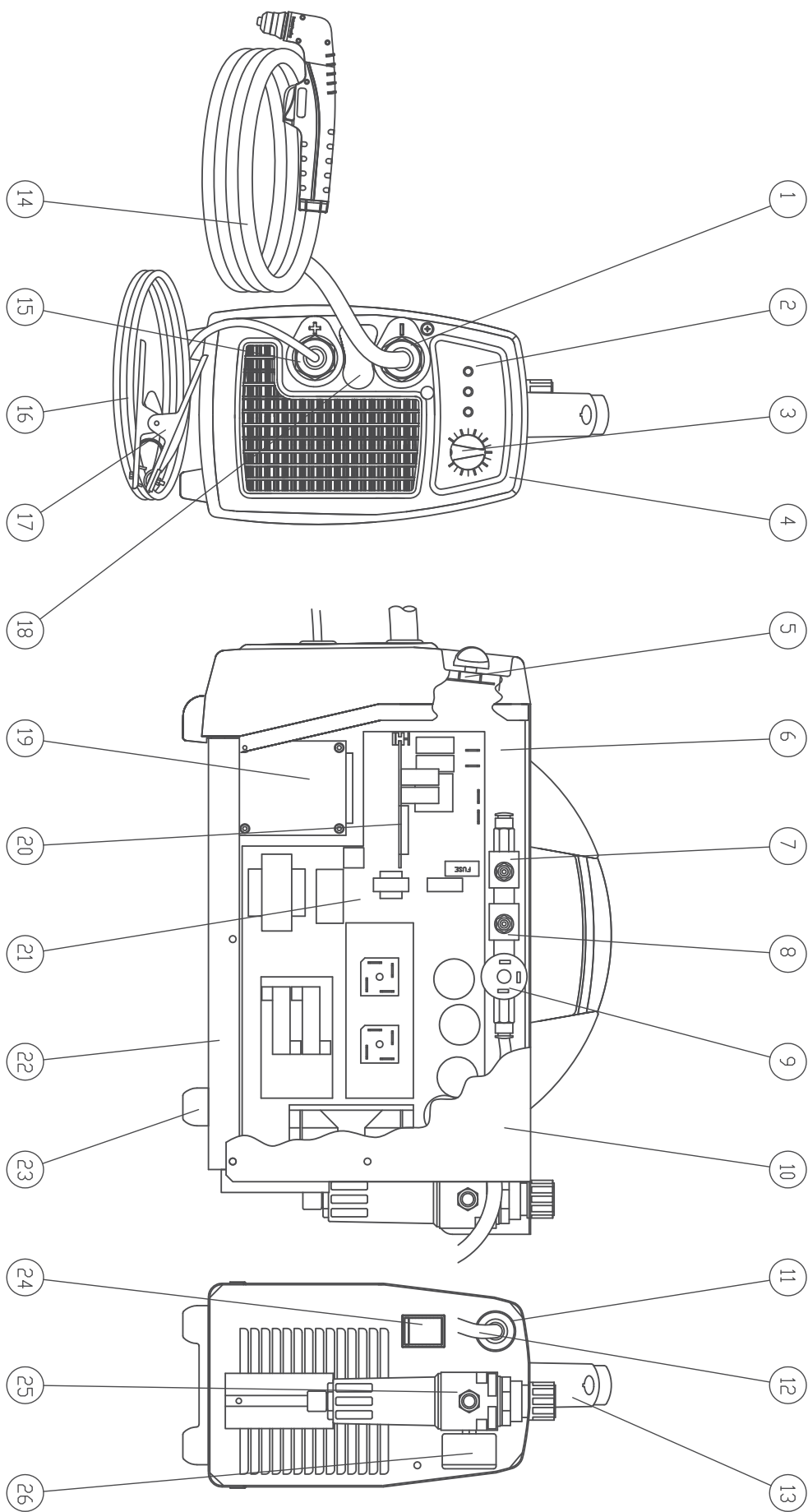


01	PRESSACAVO	CABLE CLAMP	1
01	DADO PER PRESSACAVO	NUT FOR CABLE CLAMP	1
02	TARGA ADESIVA	REGULATION PLATE	1
02	ETICHETTA FRONTALE	FRONT LABEL	1
03	MANOPOLA POTENZ.	POTENTIOMETER KNOB	1
04	GUSCIO FRONTALE	FRONT FRAME	1
05	DIVISORIO	DIVIDING PANEL	1
06	ELETTROVALVOLA	SOLENOID VALVE	1
07	PRESSOSTATO	PRESSURE SWITCH	1
08	MANIGLIA	PLASTIC HANDLE	1
09	COPERCHIO	COVER PANEL	1
10	PRESSACAVO	CABLE CLAMP	1
11	CAVO DI ALIMENTAZIONE	INPUT CABLE	1
12	TORCIA PLASMA PT-40	PLASMA TORCH PT-40	1
13	PRESSACAVO + GHIERA	CABLE CLAMP + NUT	1
14	CAVO DI MASSA	EARTH CABLE	1
15	PINZA DI MASSA	EARTH CLAMP	1
16	SCHEDA PANNELLO FRON.	FRONT PANEL P.C. BOARD	1
17	SCHEDA CONTROLLO	CONTROL P.C. BOARD	1
18	MODULO	COMPLETE P.C. BOARD	1
19	FONDO	LOWER PANEL	1
20	PIEDINO	LITTLE FEET	1
21	INTERRUTTORE ON/OFF	ON/OFF SWITCH	1
22	FILTRO	FILTER	1
23	MANOMETRO PER FILTRO	FILTER GAUGE	1
01	PASA CABLE	PASSE-CÂBLE	1
01	TUERCA PASA CABLE	ECROU POUR PASSE-CABLE	1
02	ETIQUETA REG. FRONTAL	ETIQUETTE DE RÉG. FRONT.	1
02	ETIQUETA FRONTAL	ETIQUETTE FRONTAL	1
03	POMO PARA POTENC.	POIGNÉE DU POTENTIOMÈTRE	1
04	MARCO FRONTAL	CADRE FRONTAL	1
05	PANEL INTERNO	PANNEAU INTÉRIEUR	1
06	VALVULA SOLENOIDE	ELECTROVANNE	1
07	PRESOSTATO	PRESSOSTAT	1
08	MANILLA DE PLASTICO	POIGNÉE	1
09	PANEL DE COBERTURA	COUVERCLE	1
10	PASA CABLE	PASSE-CÂBLE	1
11	CABLE DE ALIMENTACION	CÂBLE DE ALIMENTATION	1
12	ANTORCHA PLASMA PT-40	TORCHE PLASMA PT-40	1
13	PASA CABLE + TUERCA	PASSE-CÂBLE + ECROU	1
14	CABLE DE MASA	CÂBLE DE MASSE	1
15	PINZA DE MASA	BORNE DE MASSE	1
16	CIRCUITO PANEL FRONTAL	CIRCUIT PANNEAU FRONTAL	1
17	CIRCUITO DE CONTROL	CIRCUIT IMPRIMÉ DE CONTROL	1
18	CIRCUITO COMPLETO	CIRCUIT IMPRIMÉ COMPLET	1
19	FONDO	PANNEAU DU FOND	1
20	PIE CHICO	PETIT PIED	1
21	INTERRUPTOR ON/OFF	INTERRUPTEUR MARCHÉ/ARRÊT	1
22	FILTRO	FILTRE	1
23	FILTRO DEL MANOMETRO	FILTRE DU MANOMÈTRE	1

SCHEMA ELETTRICO / WIRING DIAGRAM / ESQUEMA ELECTRICO / SCHÉMA ÉLECTRIQUE  
 - PR-111

S1	ON - OFF	ON - OFF	ON - OFF	INTERRUPTOR ON - OFF	ON - OFF
Y1	SOLENOID VALVE	ELEKTROVENTIL	ELETRIVANNIE	ELEKTROVALVULA	ELETTROVALVOLA
Y2	SOLENOID VALVE BYPASS	ELEKTROVENTIL	ELETRIVANNIE BYPASS	ELEKTROVALVULA	ELETTROVALVOLA BYPASS
P	PRESSOSTAT	LUFTDRUCKSCHALTER	PRESSOSTAT	PRESOSTATO	PRESSOSTATO
PT	TORCH PUSH BUTTON	BRENNERSCHALTER	BOUTON TORCHE	PULSADOR ANTORCHA	PULSANTE TORCIA
F1	THERMOSTAT	THERMOSTAT	THERMOSTAT	TERMOSTAT	TERMOSTATRO
F	AIR FILTER-REDUCER	FILTER-DRUCKMINDERER	FILTRE AIR-MAODETENTEUR	FILTRO AIRE-REGULADOR	FILTRO-REGOLATORE
T1	TRANSFORMER	TRANSFORMATOR	TRANSFORMATEUR	TRANSFORMADOR	TRASFORMATORE
XL	CHOKE	IMPEDANZ	IMPEDANCE	IMPEDANCA	IMPEDENZA





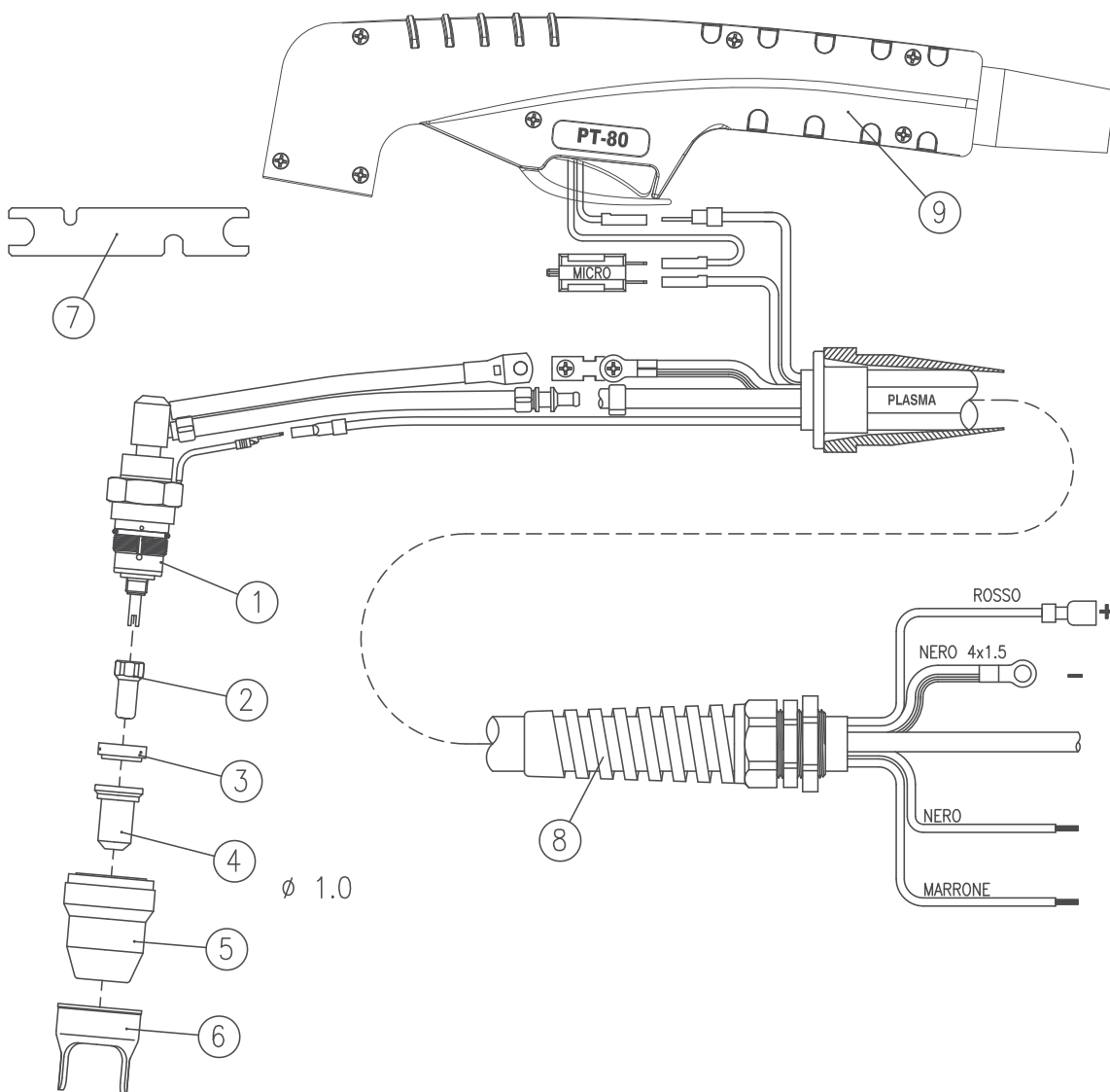
LISTA RICAMBI / PARTS LIST / LISTA DE REPUESTOS / LISTE DES PIÈCES DE RECHANGE - PR-111

01	PRESSACAVO	CABLE CLAMP	1
01	DADO PER PRESSACAVO	NUT FOR CABLE CLAMP	1
02	TARGA ADESIVA	REGULATION PLATE	1
02	ETICHETTA FRONTALE	FRONT LABEL	1
03	MANOPOLA POTENZ.	POTENTIOMETER KNOB	1
04	GUSCIO FRONTALE	FRONT FRAME	1
05	SCHEDA PANNELLO FRON.	FRONT PANEL P.C. BOARD	1
06	DIVISORIO	DIVIDING PANEL	1
07	ELETTROVALVOLA	SOLENOID VALVE	1
08	ELETTROVALVOLA	SOLENOID VALVE	1
09	PRESSOSTATO	PRESSURE SWITCH	1
10	COPERCHIO	COVER PANEL	1
11	PRESSACAVO	CABLE CLAMP	1
12	CAVO DI ALIMENTAZIONE	INPUT CABLE	1
13	MANIGLIA	PLASTIC HANDLE	1
14	TORCIA PLASMA PT-40	PLASMA TORCH PT-40	1
15	PRESSACAVO + GHIERA	CABLE CLAMP + NUT	1
16	CAVO DI MASSA	EARTH CABLE	1
17	PINZA DI MASSA	EARTH CLAMP	1
18	ETICHETTA	LABEL	1
19	TRASFORMATORE	TRANSFORMER	1
20	SCHEDA CONTROLLO	CONTROL P.C. BOARD	1
21	MODULO	COMPLETE P.C. BOARD	1
22	FONDO	LOWER PANEL	1
23	PIEDINO	LITTLE FEET	1
24	INTERRUTTORE	SWITCH	1
25	FILTRO REGOLATORE	FILTER	1
26	MANOMETRO PER FILTRO	FILTER GAUGE	1

01	PASA CABLE	PASSE-CÂBLE	1
01	TUERCA PASA CABLE	ECROU POUR PASSE-CABLE	1
02	ETIQUETA REG. FRONTAL	ETIQUETTE DE RÉG. FRONT.	1
03	POMO PARA POTENC.	POIGNÉE DU POTENTIOMÈTRE	1
04	MARCO FRONTAL	CADRE FRONTAL	1
05	CIRCUITO PANEL FRONTAL	CIRCUIT PANNEAU FRONTAL	1
06	PANEL INTERNO	PANNEAU INTÉRIEUR	1
07	VALVULA SOLENOIDE	ELECTROVANNE	1
08	VALVULA SOLENOIDE	ELECTROVANNE	1
09	PRESOSTATO	PRESSOSTAT	1
10	PANEL DE COBERTURA	COUVERCLE	1
11	PASA CABLE	PASSE-CÂBLE	1
12	CABLE DE ALIMENTACION	CÂBLE DE ALIMENTATION	1
13	MANILLA DE PLASTICO	POIGNÉE	1
14	ANTORCHA PLASMA PT-40	TORCHE PLASMA PT-40	1
15	PASA CABLE + TUERCA	PASSE-CÂBLE + ECROU	1
16	CABLE DE MASA	CÂBLE DE MASSE	1
17	PINZA DE MASA	BORNE DE MASSE	1
18	ETIQUETA	ETIQUETTE	1
19	TRANSFORMADOR	TRANSFORMATEUR	1
20	CIRCUITO DE CONTROL	CIRCUIT IMPRIMÉ DE CONTROL	1
21	CIRCUITO COMPLETO	CIRCUIT IMPRIMÉ COMPLET	1
22	FONDO	PANNEAU DU FOND	1
23	PIE CHICO	PETIT PIED	1
24	INTERRUPTOR ON/OFF	INTERRUPTEUR MARCHÉ/ARRÊT	1
25	FILTRO	FILTRE	1
26	FILTRO DEL MANOMETRO	FILTRE DU MANOMÈTRE	1



LISTA RICAMBI TORCIA / TORCH PARTS LIST / LISTA DE REPUESTOS DE LA ANTORCHA /  
LISTE PIÈCES DE RECHANGE DE LA TORCHE PR-112/113



01	CORPO TORCIA	TORCH HEAD	1
02	ELETTRODO	ELECTRODE	1
03	DIFFUSORE	AIR DIFFUSER	1
04	CAPPA 1,0 (40-50A)	TIP D.1,0 (40-50A)	1
04	CAPPA 0,9 (30-40A)	TIP D.0,9 (30-40A)	1
05	UGELLO	SHIELD CUP	1
06	DISTANZIALE	SPACER	1 *
07	CHIAVE	ELECTRODE WRENCH	1
08	FASCIO CAVI	CABLE ASSEMBLY	1
09	IMPUGNATURA+MICRO	HANDLE+MICRO	1

\* Da usare solo con correnti di taglio superiori a 40A - to be used only with cutting current over 40A

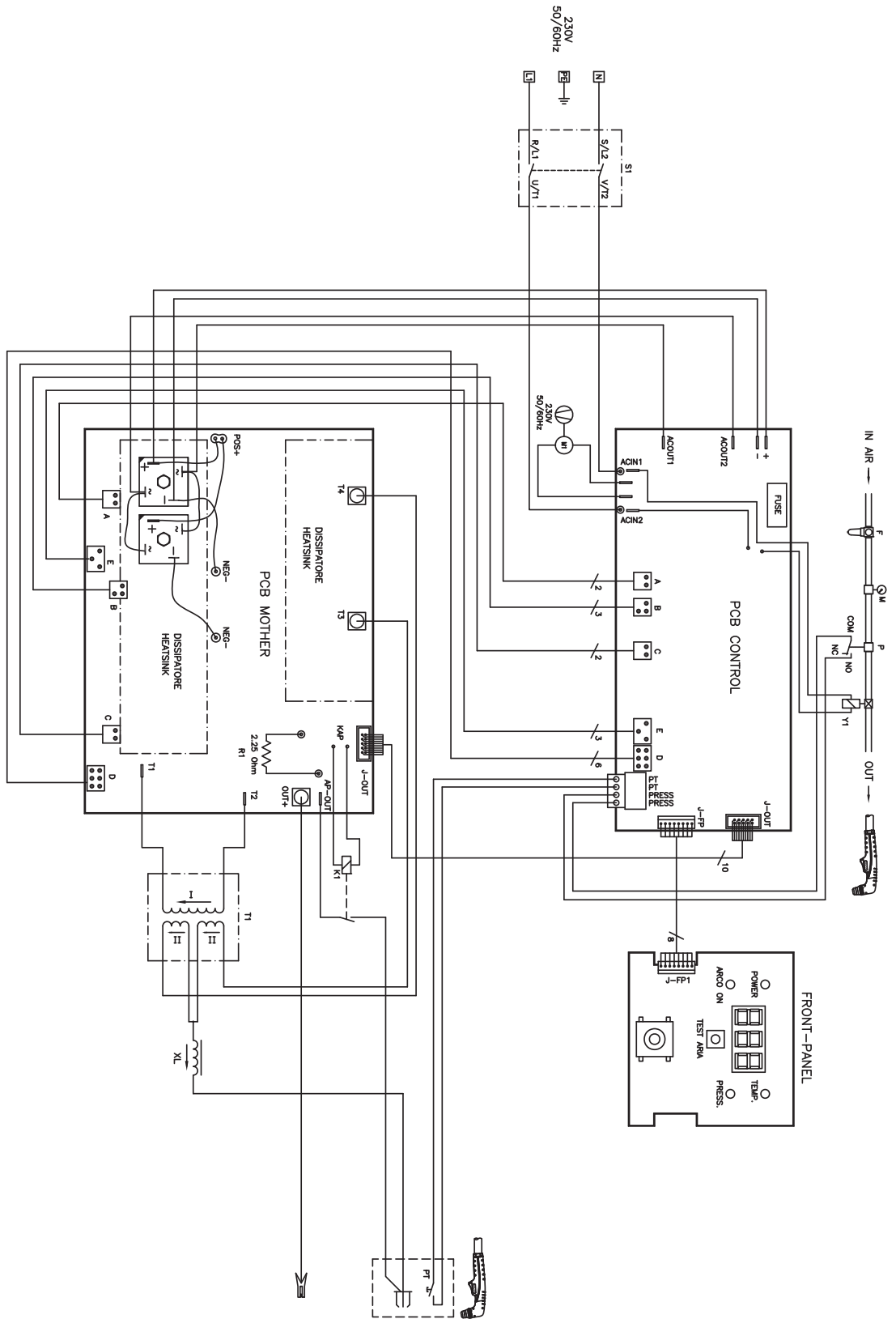
01	CUERPO ANTORCHA	TÊTE DE LA TORCHE	1
02	ELECTRODO	ELECTRODE	1
03	DIFUSOR AIRE	ANNEAU DE DIFUSION	1
04	TOBERA 1,0 (40-50A)	BEC D.1,0 (40-50A)	1
04	TOBERA 0,9 (30-40A)	BEC D.0,8 (30-40A)	1
05	BOQUILLA PROTEC. EXT.	COUPELLE BLINDÉE	1
06	DISTANCIADOR	ENTRETOISE	1 *
07	LLAVE PARA ELECTRODO	CLÈ POUR ELECTRODE	1
08	HAZ DE CABLES	FAISCEAU DE CÂBLES	1
09	EMPUÑADURA + MICRO	POIGNÉE + MICRO	1

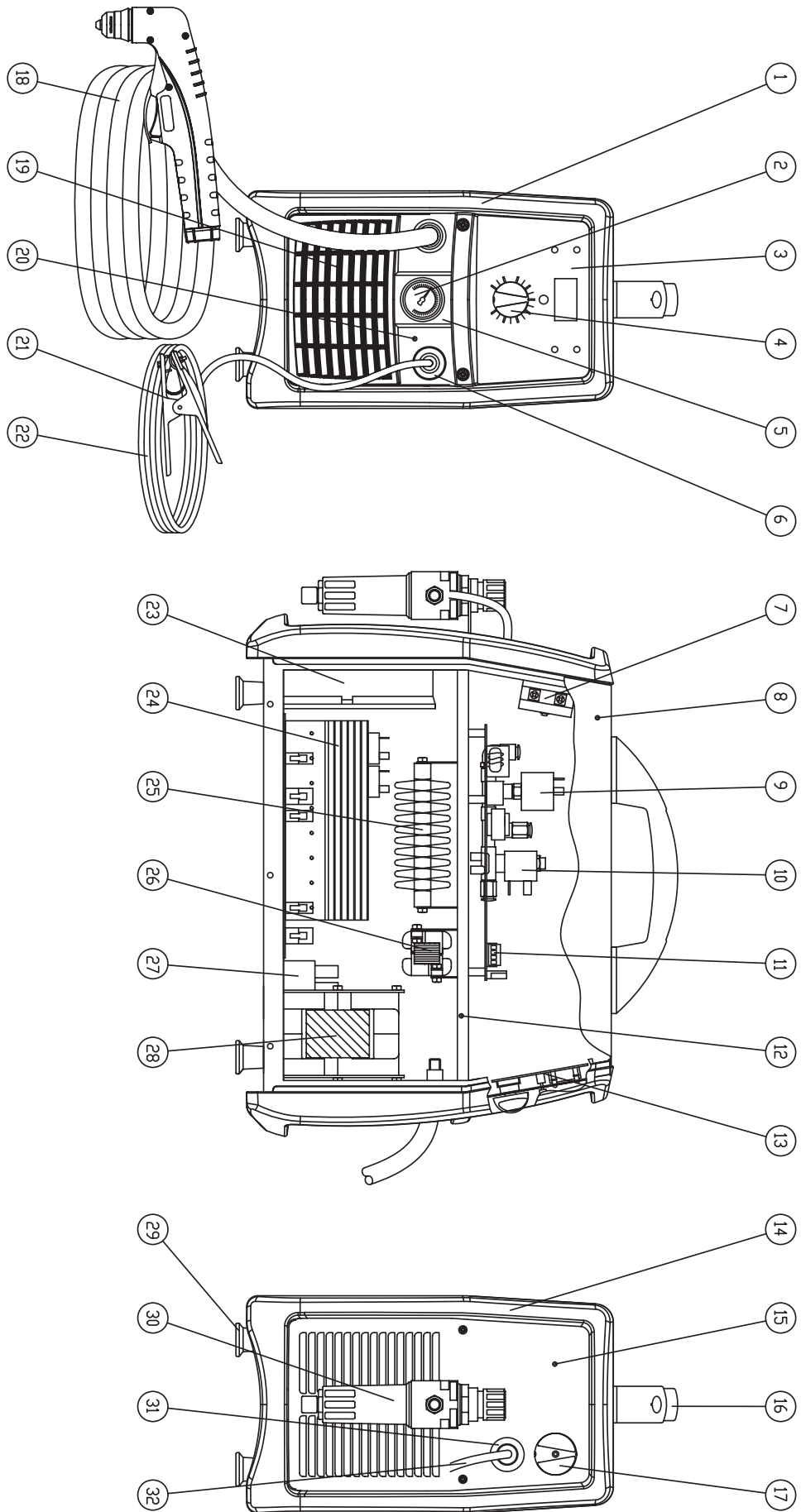
\* para utilizar solo con corriente de corte superior a los 40A - à utiliser seulement avec courant de coupe superior à 40A

SCHEMA ELETTRICO / WIRING DIAGRAM / ESQUEMA ELECTRICO / SCHÉMA ÉLECTRIQUE  
 - PR-112/113

S1	ON - OFF	ON - OFF	ON - OFF	ON - OFF
Y1	SOLENOID VALVE	ELEKTROVENTIL	ELECTROVALVULA	ELEKTROVALVOLA
K1	RELAY	RELAIS	RELAIS	RELÉ
P	PRESSOSTAT	LUFTDRUCKSCHALTER	PRESSOSTAT	PRESSOSTATO
PT	TORCH PUSH BUTTON	BOTTON TORCHE	PULSADOR TORCHA	PRESSOSTATO
F	AIR FILTER-REDUCER	FILTER-DRUCKMINDERER	FILTRO AIR-AVANTDETEUR	FILTRO-REGOLATORE

M	GAUGE	MANOMETR	MANOMETRE	MANOMETRO
M1	FAN	VENTILATOR	VENTILATEUR	VENTILADOR
R1	PILOT ARC RESISTANCE	PILOT LICHTBOGEN WIDERSTAND	RESISTANCE ARC PILOTE	RESISTENCIA ARCO PILOTO
T1	TRANSFORMER	TRANSFORMATOR	TRANSFORMATEUR	TRANSFORMADOR
XL	CHOKE	WIPERDANZ	WIPERDANCE	WIPERDANCA





**LISTA RICAMBI / PARTS LIST / LISTA DE REPUESTOS / LISTE DES PIÈCES DE RECHANGE - PR-112/113**

01	GUSCIO FRONTALE	FRONT FRAME	1
02	MANOMETRO	GAUGE D.40	1
03	ETICHETTA FRONTALE	FRONT LABEL	1
04	MANOPOLA POTENZIOM.	POTENTIOMETER KNOB	1
05	INSERTO PER MANOM.	GAUGE GROMMET	1
06.	PRESSACAVO	CABLE CLAMP	1
07	INTERRUTTORE 20A	SWITCH 20 A	1
08	COPERCHIO	COVER PANEL	1
09	PRESSOSTATO 3,6BAR	PRESSOSTAT 3,6 BAR	1
10	ELETTROVALVOLA 230V	SOLENOIDE VALVE 230V	1
11	SCHEDA CONTROLLO	CONTROL P.C.BOARD	1
12	DIVISORIO	DIVIDING PANEL	1
13	SCHEDA PANNELLO FRONT.FRONT	PANEL P.C.BOARD	1
14	GUSCIO POSTERIORE	BACK FRAME	1
15	FONDO/RETRO	BACK/LOWER PANEL	1
16	MANIGLIA	HANDLE	1
17	MANOPOLA POTENZ.	SWITCH KNOB	1
18	TORCIA PT-80 M4	TORCH PT80 MT4	1
19	FERRITOIA	PLASTIC AIR-VENT	1
20	PANNELLO FRONTALE	FRONT PANEL	1
21	PINZA DI MASSA	EARTH CLAMP	1
22	CAVO DI MASSA	EARTH CABLE	1
23	VENTILATORE	FAN 230V 50/60HZ	1
24	SCHEDA MADRE	MOTHER P.C.BOARD	1
25	RESITENZA 4,5OHM	RESISTANCE 4,5 OHM	1
26	IMPEDENZA 23X19CU	CHOKER 23X19 CU	1
27	RELE' 30A 24VDC	RELAY 30A 24VDC	1
28	TRASFORMATORE	TRANSFORMER	1
29	PIEDINO	LITTLE FEET	1
30	RIDUTTORE M140	REDUCER M140	1
31	PRESSACAVO+GHIERA	CABLE CLAMP+RING NUT	1
32	CAVO DI ALIMENTAZIONE	INPUT CABLE	1

01	MARCO FRONTAL	CADRE FRONTAL	1
02	MANOMETRO D.40	MANOMETRE D.40	1
03	ETIQUETA FRONTAL	ETIQUETTE FRONTAL	1
04	POMO PARA POTENC.	POIGNÉE DU POTENTIOM.	1
05	ABRAZADERA PARA MAN.	BAGUE POUR MANOMETRE	1
06.	PRENSACABLE	PRESSE FIL	1
07	CONMUTADOR 20 A	COMMUTATEUR 20 A	1
08	PANEL DE COBERTURA	COUVERCLE	1
09	PRESOSTATO 3,6 BAR	PRESSOSTAT 3,6 BAR	1
10	ELECTROVALVULA 230V	ELECTROVANNE 230V	1
11	CIRCUITO DE CONTROL	CIRCUIT DE CONTROLE	1
12	PANEL INTERNO	PANNEAU INTÉRIEUR	1
13	CIRCUITO PANEL FRONTAL	CIRCUIT PANNEAU FRONTAL	1
14	MARCO POSTERIOR	CADRE ARRIÈRE	1
15	FONDO/PANEL POSTERIOR	PANNEAU ARRIÈRE/DU FOND	1
16	MANILLA	POIGNÉE	1
17	POMO PARA CONMUTADOR	BOUTON DE COMMUT.	1
18	ANTORCHA PT-80 MT.4	TORCHE PT-80 MT.4	1
19	ASPILLERA	GRILLE DE VENTILATION	1
20	PANEL FRONTAL	PANNEAU FRONTAL	1
21	PINZA DE MASA	BORNE DE MASSE	1
22	CABLE DE MASA	CÂBLE DE MASSE	1
23	VENTILADOR 230V 50/60HZ	VENTILATEUR 230V 50/60HZ	1
24	CIRCUITO PRINCIPAL	CIRCUIT PRINCIPAL	1
25	RESISTENCIA 4,5 OHM	RESISTANCE 4,5 OHM	1
26	IMPEDANCIA 23X19 CU	IMPEDANCE 23X19 CU	1
27	RELÉ 30A 24VDC	RELAIS 30A 24VDC	1
28	TRANSFORMADOR	TRANSFORMATEUR	1
29	PIE CHICO	PETIT PIED	1
30	REGULADOR M140	MANODETENTEUR M140	1
31	PASA CABLE + VIROLA	PASSE-CÂBLE + BAGUE	1
32	CABLE DE ALIMENTACION	CÂBLE DE ALIMENTATION	1

# NOTES

# NOTES



# NOTES



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