



**CUT40HF/CUT40NHF**

**CUT45PFC/CUT45PFC SC**

**IGBT INVERTER WELDER**

**Congratulations on choosing JASIC equipment!** This operating manual contains important information on the use and maintenance of this product, as well as safe handling of the product. Please refer to technical parameters of the equipment in Technical Parameter in this manual, and read the manual carefully before using the equipment for the first time. For your own safety and that of your working environment, please pay particular attention to the safety instructions in the manual and operate the equipment according to the instructions. For more information on JASIC products, please contact JASIC Technology, consult an authorized JASIC dealer or visit JASIC website at [www.jasictech.com](http://www.jasictech.com).

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**For your safety, please read this manual carefully before installing and operating this JASIC equipment.**

**Pay extra attention to all content marked with "  ".**

**All operations must be carried out by professional, suitably qualified persons!**

# 1. Safety precautions

## 1.1. General safety



### SAFETY INSTRUCTION

These general safety norms cover both arc welding machines and plasma cutting machines unless otherwise noted.

It is important that users of this equipment protect yourselves and others from harm or even death.

The equipment must only be used for the purpose it was designed for. Using it in any other way could result in damage or injury and in breach of the safety rules.



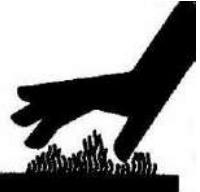
Only suitably trained and competent persons should use the equipment.





Pacemaker wearers should consult your doctor prior to using this equipment

PPE and workplace safety equipment must be compatible for the application of work involved.

Always carry out a risk assessment before carrying out any welding or cutting activity

	<p><b>Only qualified personnel should operate this machine!</b></p> <ul style="list-style-type: none"> <li>·Always use the appropriate personal protective equipment.</li> <li>·Always pay attention to the safety of other persons around the working zone</li> <li>·Do not carry out any maintenance with the power on the machine</li> </ul>
	<p><b>Electric shock—May cause serious injury or even death!</b></p> <ul style="list-style-type: none"> <li>·The equipment should be installed by a qualified person and in accordance with current standards in operation. It is the user's responsibility to ensure that the equipment is connected to a suitable power supply. Consult with your utility supplier if required. Do not use the equipment with the covers removed.</li> <li>·Do not touch live electrical parts or parts, which are electrically charged.</li> <li>·Turn off all equipment when not in use.</li> </ul>
	<p><b>Fumes and gases—May be hazardous to your health.</b></p> <p>Locate the equipment in a well-ventilated position and keep your head out of the fume.</p> <p>Do not breathe the fume.</p> <p>Ensure the working zone is well ventilated and provision should be made for suitable local fume extraction system to be in place.</p> <p>If ventilation is poor, wear an approved air fed welding helmet or respirator.</p> <p>Read and understand the Material Safety Data Sheets (MSDS's) and the manufacturer's instructions for metals, consumable, coatings, cleaners and de-greasers.</p> <p>Do not work in locations near any de-greasing, cleaning or spraying operations.</p> <p>Be aware that heat and rays of the arc can react with vapours to form highly toxic and irritating gases.</p>

	<p><b>Arc rays—May injure the eyes and burn the skin.</b></p> <p>The arc rays from all processes produce intense, visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin.</p> <ul style="list-style-type: none"> <li>·Wear an approved welding helmet fitted with an appropriate shade of filter lens to protect your face and eyes when working or watching.</li> <li>·Wear approved safety glasses with side shields under your helmet.</li> <li>·Never use broken or faulty welding helmets.</li> <li>·Always ensure there are adequate protective screens or barriers to protect others from flash, glare and sparks from the working area.</li> <li>·Ensure that there are adequate warnings that welding or cutting is taking place.</li> <li>·Wear suitable protective flame resistant clothing, gloves and footwear.</li> </ul>
	<p><b>Precautions against fire and explosion</b></p> <p>Avoid causing fires due to sparks and hot waste or molten metal.</p> <p>Ensure that appropriate fire safety devices are available near the welding and cutting area.</p> <p>Remove all flammable and combustible materials from the welding, cutting and surrounding areas.</p> <p>Do not weld or cut fuel and lubricant containers, even if empty. These must be carefully cleaned before they can be welded or cut.</p> <p>Always allow the welded or cut material to cool before touching it or placing it in contact with combustible or flammable material.</p> <p>Do not work in atmospheres with high concentrations of combustible fumes, flammable gases and dust.</p> <p>Always check the work area half an hour after cutting to make sure that no fires have begun.</p> <p>Take care to avoid accidental contact of electrode to metal objects. This could cause arcs, explosion, overheating or fire.</p>
	<p><b>Risks due to hot material</b></p> <p>The process will create hot metal, sparks and drips of molten metal, so it's very important to ensure the operator is equipped with full PPE and to always ensure there are adequate protective screens or barriers to protect others from flash, glare and sparks from the working area. Hot surfaces will create fires and will burn any exposed skin.</p> <p>Always protect your eyes and body. Use the correct welding screen and filter lens and wear full PPE protective clothing.</p> <p>Do not touch any hot surfaces or parts bare handed.</p> <p>Always allow hot surfaces and parts to cool down first before touching or moving.</p> <p>If you are required to move hot parts, ensure you use proper tools and insulated welding gloves (PPE) to prevent burns to your hands and arms.</p>

	<p><b>Noise—Excessive noise may be harmful to hearing</b></p> <ul style="list-style-type: none"> <li>·Protect your ears by ear shields or other hearing protectors.</li> <li>·Give warning to nearby personnel that noise may be potentially hazardous to hearing.</li> </ul>
	<p><b>Risks due to magnetic fields</b></p> <p>The magnetic fields created by high currents may affect the operation of pacemakers or electronically controlled medical equipment.</p> <p>Wearers of vital electronic equipment should consult their physician before beginning any arc welding, cutting, gouging or spot welding operations.</p> <p>Do not go near welding equipment with any sensitive electronic equipment as the magnetic fields may cause damage.</p> <p>Keep the torch cable and work return cable as close to each other as possible throughout their length, this can help minimize your exposure to harmful magnetic fields.</p> <p>Do not wrap the cables around the body.</p>
	<p><b>Protection from moving parts</b></p> <p>When the machine is in operation keep away from moving parts such as motors and fans.</p> <p>Moving parts, such as the fan, may cut fingers and hands and snag garments.</p> <p>Protections and coverings may be removed for maintenance and controls only by qualified personnel after first disconnecting the power supply cable.</p> <p>Replace the coverings and protections and close all doors when the intervention is finished and before starting the equipment.</p> <p>Take care to avoid getting fingers trapped when loading and feeding wire during set up and operation.</p> <p>When feeding wire be careful to avoid pointing it at other people or towards your body.</p> <p>Always ensure machine covers and protective devices are in operation.</p>
	<p><b>Troubleshooting</b></p> <p>Before the machines are dispatched from the factory, they have already been checked thoroughly. The machine should not be tampered with or altered.</p> <p>Maintenance must be carried out carefully. If any wire becomes loose or is misplaced, it maybe potentially dangerous to user!</p> <p>Only professional maintenance personnel should repair the machine!</p> <p>Ensure the power is disconnected before working on the machine. Always wait 5 minutes after power switch off before removing the panels.</p> <p>If you still do not fully understand or cannot solve the problem after reading the instructions in this manual, you should contact the supplier or JASIC's service center immediately for professional help.</p>

## 1.2. Other precautions



### **Warning! Location**

The machine should be located in a suitable position and environment. Care should be taken to avoid moisture, dust, steam, oil or corrosive gases. Place on a secure level surface and ensure that there is adequate clearance around the machine to ensure natural airflow.



**Warning!** The handle or strap on the machine is only suitable for manual lifting of the machine. If mechanical equipment such as crane is used to lift the machine, please ensure the machine is secured with suitable lifting equipment.



### **Warning!**

#### **Input connection**

Before connecting the machine, you should ensure that the correct supply is available. Details of the machine requirements can be found on the data plate of the machine or in the technical parameters shown in the manual. The equipment should be connected by a suitably qualified competent person. Always ensure the equipment has a proper grounding.

**Never connect the machine to the mains supply with the panels removed.**

- 1) When the operator's movement is limited by the surroundings (for example, the operator can only bend his knees, barefoot, or lie down during operation), the operator shall practice proper insulation and avoid direct contact with conductive parts on the equipment.
- 2) Do not use the machine in closed containers in narrow spaces where conductive components cannot be removed.
- 3) Do not use the machine in humid environments where the operator is prone to the risk of electric shock.
- 4) Do not use the machine in sunlight or rain, and no water or rainwater shall seep into the machine.
- 5) Do not perform gas shielded welding in an environment with strong air flow.
- 6) Avoid welding or cutting in dusty area or environment with corrosive chemical gas.
- 7) The ambient temperature must be between -10°C and 40°C during operation and between -25°C and 50°C during storage.
- 8) Welding or cutting shall be carried out in a relatively dry environment, and the air humidity shall not exceed 90%.
- 9) The inclination of the machine shall not exceed 10°.
- 10) Ensure that the input power supply voltage does not exceed 15% of the rated voltage of the machine.
- 11) Beware of falling when welding or cutting at heights.



## 2. Description of symbols



Warning! Read the explanation



Electric shock risk warning



WEEE tag



Current unit "A"



Overheat protection indication



Overcurrent protection indication



2T continuous cutting



4T continuous cutting



Mesh cutting



Cutting mode switching

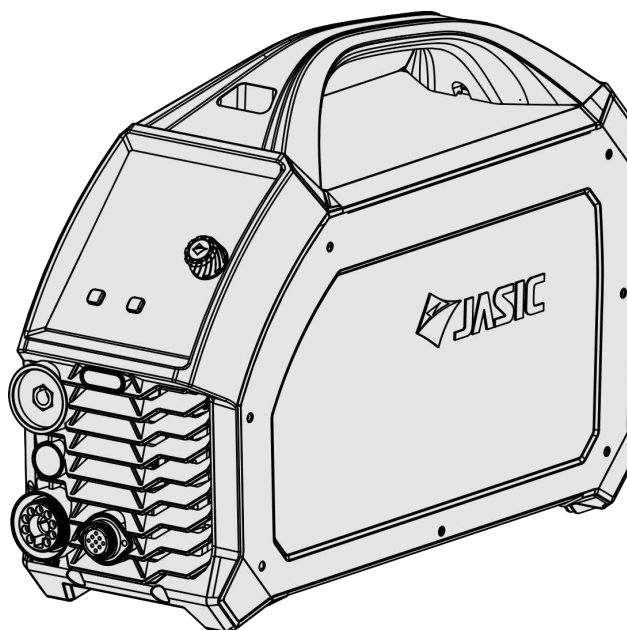


Gas detection indicator



Gas check button

### 3. Product overview



This is a digital inverter plasma cutter with excellent performance and advanced technology. It can generate a stable DC arc used to cut carbon steel, low alloy steel, stainless steel and other materials. The length of the cutting torch and post-flow time can be adjusted separately. It is durable and has a wide range of applications.

The unique electrical structure and air duct design accelerate the dissipation of heat generated by the power component, thereby improving the duty cycle. Due to its unique air duct heat dissipation efficiency, it can prevent dust sucked in by the fan from damaging the power component and control circuit, thereby greatly improving the reliability of the machine. Its main functions are as follows:

- ◆ Three cutting modes: 2T continuous cutting, 4T continuous cutting, and mesh cutting.
- ◆ Stepless adjustment of cutting current for more precise adjustment.
- ◆ Intelligent fan temperature control: improves the service life of the fan and reduces accumulation of dust inside the machine.
- ◆ Parameters are automatically saved before shutdown, and the settings are restored after starting again.
- ◆ Reset to factory parameter settings function.
- ◆ Optional CNC interface, convenient for use with CNC machine tools.

## 4. Technical parameters

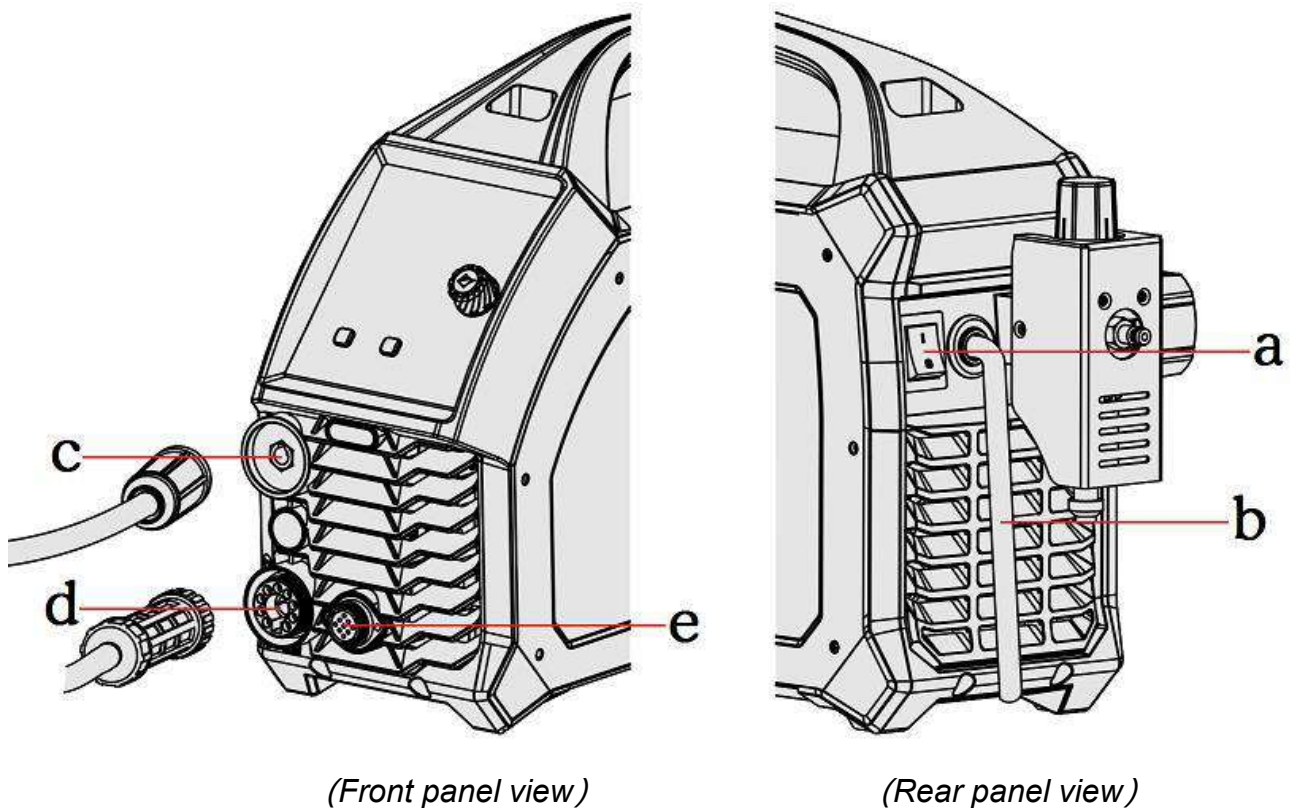
Item	Unit	Parameters			
Model	/	CUT45PFC	CUT45PFC SC	CUT40HF	CUT40NHF
Input voltage	VAC	AC95~265V	AC115/230V±15%	AC230V±15%	AC230V±15%
Input frequency	Hz	50/60	50/60	50/60	50/60
Rated input current	A	AC115V: 31 AC230V: 23	AC115V: 37 AC230V: 27	26	26
Rated input power	kVA	AC115V: 3.6 AC230V: 5.3	AC115V: 4.3 AC230V: 6.2	6	6
Output current range	A	AC115V: 20-30 AC230V: 20-45	AC115V: 20-30 AC230V: 20-45	20-40	20-40
No-load voltage	V	300	300	280	280
Rated operating voltage	V	AC115V: 92 AC230V: 98	AC115V: 92 AC230V: 98	96	96
Arc start mode		NHF	NHF	HF	NHF
Duty cycle	%	25	25	25	25
Power factor		0.99	0.99	0.6	0.6
Insulation class		H	H	H	H
Protection class		IP23S	IP23S	IP23S	IP23S
Dimensions L*W*H	mm	546×165.8×341.1	547.5×187×558	546×165.8×341.1	546×165.8×341.1
Net weight	Kg	10	26.5	9.6	9.2
Overall total weight	Kg	14.5	33.6	14.1	13.7
Good cutting (Carbon Steel)	mm	AC115V: 5 AC230V: 14	AC115V: 5 AC230V: 14	10	10
Severance (Carbon Steel)	mm	AC115V: 12 AC230V: 25	AC115V: 12 AC230V: 25	20	20
Power supply efficiency (at maximum input current)	%	86	86	88	88
Idle state power	W	11.7	11.7	10.8	10.8
Characteristics		CC	CC	CC	CC
Pollution level		Grade 3	Grade 3	Grade 3	Grade 3

## 5. Installation



**Warning!** All connections shall be made with the power supply is turned off.  
**Warning!** Electric shock may cause death; after power failure, there is still a high voltage on the equipment, do not touch the live parts on the equipment.  
**Warning!** Incorrect input voltage may damage the equipment.  
**Warning!** This product meets the requirements of Class A equipment in EMC requirements and is not to be connected to a residential low-voltage power supply grid.

### 5.1. External interface description



- a. Power switch
- b. Input power line
- c. Quick socket (positive output)
- d. Central plasma adaptor
- e. CNC aviation socket (optional) (applicable for CUT45PFC/CUT40HF/CUT40NHF)  
 Power supply aviation socket for external air compressor (standard) (applicable for CUT45PFC SC)

## 5.2. Power installation

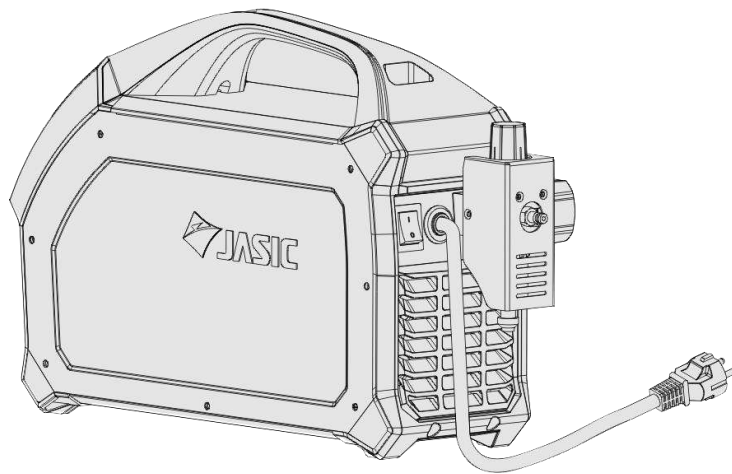


**Warning! The electrical connection of equipment shall be carried out by suitably qualified personnel.**

**Warning! All connections shall be made after the power supply is off.**

**Warning! Incorrect voltage may damage the equipment.**

- 1) Ensure the input voltage value is within the specified input voltage range.
- 2) Ensure that the power switch of the cutter is turned off.
- 3) Connect the input power cord to the input terminal or plug the power cord into the corresponding socket (if any) and ensure a good contact.
- 4) Ground the power supply well. (As shown in the diagram, the European plug has a grounding terminal, so no additional grounding is required.)



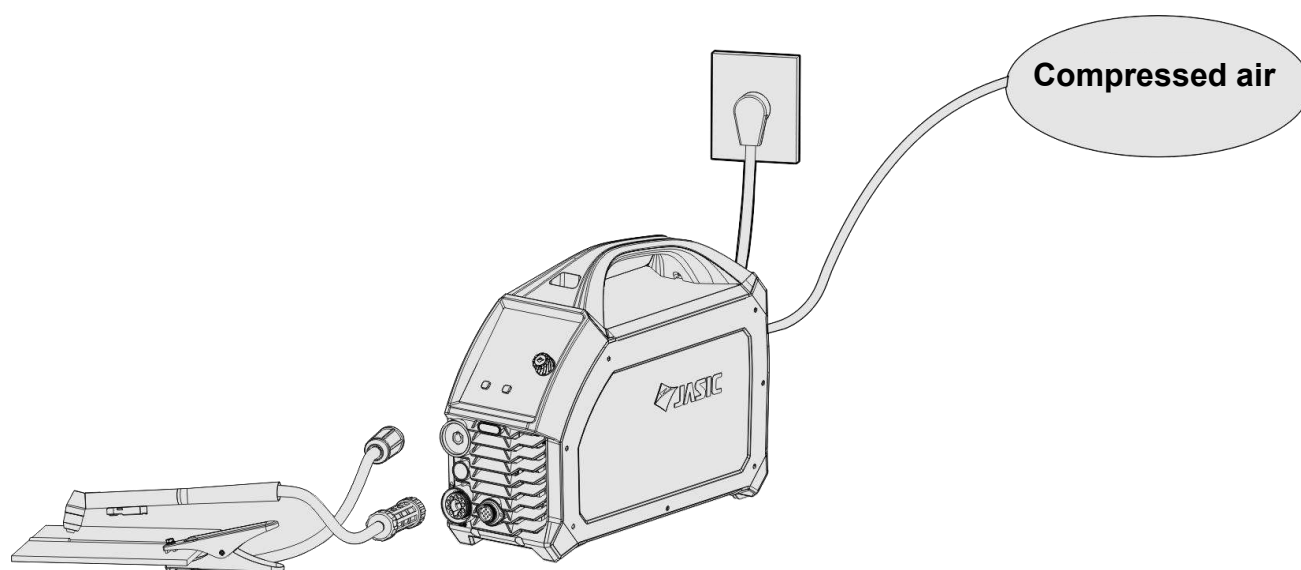
(Wiring diagram)

### **NOTE!**

**If the input cable needs to be extended, please use a cable with larger cross-sectional area to reduce the voltage drop, 3x2.5mm<sup>2</sup> or more is recommended.**

### 5.3. Connection of cutting torch, earth cable and gas pipe

- 1) Ensure that the power switch of the cutting machine is turned off.
- 2) Insert the cable plug with earth clamp into the corresponding positive quick socket on the front panel of the machine and tighten it clockwise.
- 3) Insert the central plasma plug of the cutting torch into the negative central plasma socket on the front panel, and tighten it clockwise.
- 4) Connect the input end of the air regulator on the rear panel to the output port of the compressed air source, and fix it firmly with the clamp.

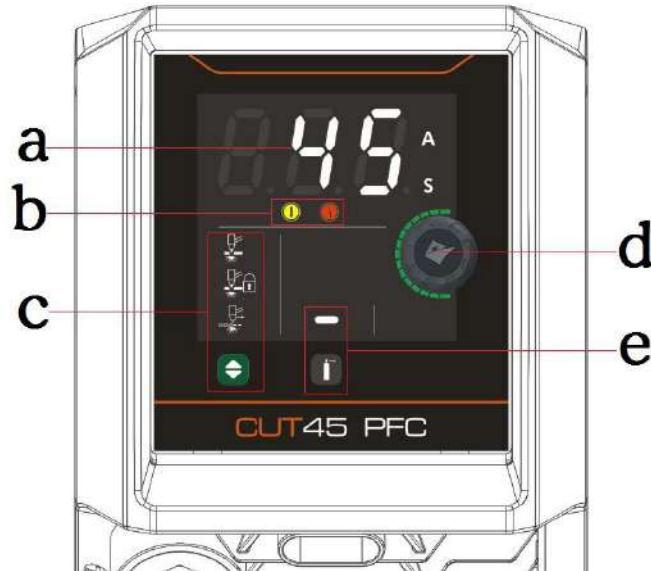


(Wiring diagram)

**NOTE!** If you want to use long secondary cables (plasma torch cable and earth cable), you must ensure that the cross-sectional area of the cable is increased appropriately in order to reduce the voltage drop due to the cable length.

## 6. Control panel

### 6.1. Overview



- a. Parameter and error code display
- b. Protection indicator
- c. Cutting mode selector
- d. Parameter adjustment knob
- e. Gas check buttons and indicators

### 6.2. Display of parameters and error codes

0.0.0<sup>A</sup>





- 1) Electric current configuration
- 2) When the factory settings are restored the countdown is displayed.
- 3) In user mode, the parameter settings are displayed during back-end adjustment.
- 4) When the barcode queried, the machine barcode is displayed.
- 5) In abnormal state, an error code will be displayed.

### 6.3. Parameter adjustment knob

- 1) Rotate the adjusting knob to adjust the parameters.
- 2) Rotating the adjusting knob clockwise increases the parameter value, and rotating the adjusting knob counterclockwise decreases the parameter value.
- 3) When the adjusting knob is rotated the adjusted parameters are displayed in the parameter display area.



### 6.4. Selection of working mode



- 1) Press the cutting mode selection button  while not cutting to switch between the three cutting modes as needed: 2T, 4T and mesh cutting.
- 2) If the indicator  is on, it indicates that the machine is currently in 2T cutting mode.
- 3) If the indicator  is on, it indicates that the machine is currently in 4T cutting mode.
- 4) If the indicator  is on, it indicates that the machine is currently in mesh cutting mode.

### 6.5. Gas check function




- 1) Press the gas check button  while not in cutting state.
- 2) When the  indicator is lit, the machine is in gas check mode.
- 3) Press the gas check button again or wait 20s. After the indicator light goes out, the machine has exited gas check mode.




## 6.6. Electrical current settings for cutting



In cutting mode, the display window displays the current cutting current, which can be set by turning the adjustment knob.

## 6.7. Protective indicators


The overheat indicator light  indicates that the machine has entered overheat protection and has stopped output.

The over-current indicator light  indicates that the machine has entered over-current protection and has stopped output.



## 6.8. Engineer mode

- 1) Press and hold the parameter adjustment knob  for 5s while not in cutting mode to enter engineer mode.
- 2) After pressing for 1 second, the display window will count down from 3, then the machine will enter engineer mode. Release the button during that time to exit the countdown without entering engineer mode.
- 3) Engineer mode: F01: Standby time selection; 0, 5, 10, or 15, unit is min, 0 means that the standby function is not enabled.  
F02: Input over-voltage protection enabled; 0 means the function is off, 1 means the function is on.  
F03: Post-flow time adjustment; 0-60s, precision is 1s.  
F04: Torch length selection; 0, 5, 10, 15, or 20, unit is m, 0 means self-adjusted.
- 4) After adjusting the parameters, press the cutting mode selection button  to save and exit.

## 6.9. Restoring factory settings

- 1) Press and hold the cutting mode selection button  for 5s while not cutting to restore factory mode.
- 2) After 1s, the display window will count down from 3. After completion, factory settings are restored. Release the button halfway to exit the countdown without restoring factory settings.
- 3) Factory settings: Cutting mode: 2T continuous cutting; cutting current: rated maximum; post-flow time: 15s.

## 6.10. Barcode display

- 1) Press and hold the cutting mode selection button  and parameter adjustment knob  for 5s at the same time while not cutting to enter barcode display mode.
- 2) The barcode of the machine is displayed in the display window. Press any key to exit.

## 7. Cutting function operation



**Warning!** Before turning on the power supply make sure that the equipment is disconnected to the output. Otherwise, an unexpected arc may be started when the power is turned on. This can cause damage to the work piece and to personnel.



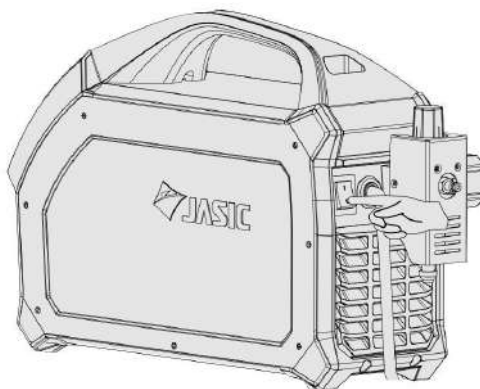
**Warning!** Be sure to wear appropriate protective equipment during welding or cutting operation. Arcs, spatter, smoke, and high temperatures produced in the process may cause injury to personnel.



**Warning!** After the power supply is turned off, the output voltage of the machine may continue for a period and then drop slowly. Please do not touch the conductive part of the output before the panel is extinguished.

### 7.1. Cutting operation

#### 7.1.1 Turn on the power switch.



The power switch is located at the rear panel of the machine; set it in the "ON" position; then the panel indicator will light up, the fan will start to rotate, and the machine will start to work normally.

**NOTE!** Some models are equipped with the smart fan function. When the power supply is turned on for a period before welding or cutting, the fan will automatically stop running. It will run automatically when welding or cutting begins.

7.1.2 Select the most appropriate cutting mode as needed: 2T or 4T continuous cutting, or mesh cutting.

7.1.3 Select the appropriate cutting current level according to the thickness of the sheet. The rotary encoder will adjust the electric current parameters.

Quick reference table for CUT45PFC cutting process (m/min)

Cutting thickness(mm)	0.5	1.0		5.0		10.0		15.0		20.0		25.0		30.0
Mild steel		8.0		1.2		0.7		0.4		0.2		0.1		
Stainless steel		6.0		1.0		0.5		0.2		0.1				
Aluminum		6.0		1.0		0.5		0.2		0.1				

Quick reference table for CUT40HF/CUT40NHF cutting process (m/min)

Cutting thickness(mm)	0.5	1.0		5.0		10.0		15.0		20.0		25.0
Mild steel		6.0		0.8		0.4		0.2		0.1		
Stainless steel		4.0		0.6		0.25		0.1				
Aluminum		4.0		0.6		0.25		0.1				

**NOTE! The operator should set the functions that meet the cutting requirements. If the selections are incorrect, this may lead to problems such as an unstable arc, incomplete cutting, more dross, rough cutting surface and heavy consumables consumption and etc.**

7.1.4 Start Cutting

2T continuous cutting: When the main arc is extinguished due to lack of base material, the cutting machine automatically cuts off the output. You must release the torch trigger and press it again to re-establish the pilot arc and keep cutting.

4T continuous cutting: When the main arc is extinguished due to lack of base material, the cutting machine automatically transfers to pilot arc output, and the pilot arc can be re-established and cutting continued without releasing the torch trigger.

Mesh cutting: When the main arc is extinguished due to missing workpieces, the cutting machine automatically establishes a pilot arc and maintains it for a certain period of time. When the pilot arc contacts the workpiece and ignites the main arc, cutting can continue. In mesh cutting mode, the machine automatically locks 2T/4T mode to 2T mode.

7.1.5 Turn off the power supply after cutting

The power switch is located on the rear panel of the machine and set it to the "off" position. After a time delay, the panel indicator is off and the cutter stops working.

## 8. Maintenance



### Warning!

The following operation requires sufficient professional knowledge on electric aspects and comprehensive safety knowledge. Make sure the input cable of the machine is disconnected from the electricity supply and wait for 5 minutes before removing the machine covers.

**Please note: The following should only be carried out by an authorised electrical technician.**

### 8.1. Power supply maintenance

In order to guarantee that the machine works efficiently and in safety, it must be maintained regularly. Operators should understand the maintenance methods and means of the machine operation. This guide should enable customers to carry out simple examination and safeguarding by oneself, try to reduce the fault rate and repair times of the machine, so as to lengthen service life of the machines.

<u>Period</u>	<u>Maintenance item</u>
Daily examination	Check the condition of the machine, mains cables, welding or cutting cables and connections. Check for any warnings LEDs and machine operation.
Monthly examination	Disconnect from the mains supply and wait for at least 5 minutes before removing the cover. Check internal connections and tighten if required. Clean the inside of the machine with a soft brush and vacuum cleaner. Take care not to remove any cables or cause damage to components. Ensure that ventilation grills are clear. Carefully replace the covers and test the unit. <b>This work should be carried out by a suitably qualified competent person.</b>
Yearly examination	Carry out an annual service to include a safety check in accordance with the manufacturers standard (EN 60974-1). <b>This work should be carried out by a suitably qualified competent person.</b>

## 9. Troubleshooting



**Warning! Before machines are dispatched from the factory, they have already been checked thoroughly. The machine should not be tampered with or altered. Maintenance must be carried out carefully. If any wire becomes loose or is misplaced, it maybe potentially dangerous to user! Only professional maintenance personnel should repair the machine!**

**Ensure the power is disconnected before working on the machine. Always wait 5 minutes after power switch off before removing the panels.**

### 9.1. Common malfunction analysis and solution



**The symptoms listed here may be related to the accessories, gas, environmental factors, and power supply you use. Please try to improve the environment and avoid such situations.**

Symptom	Reasons	Troubleshooting
No pilot arc after pressing the torch trigger	<ul style="list-style-type: none"> <li>·The machine is in gas check mode</li> <li>·The torch trigger circuit is blocked</li> <li>·Compressed air is not connected</li> <li>·The pilot arc circuit is damaged</li> </ul>	<ul style="list-style-type: none"> <li>·Turn off the gas check function or wait 20s to exit automatically</li> <li>·Check the torch trigger circuit</li> <li>·Reconnect the compressed air</li> <li>·Replace or repair the mainboard</li> </ul>
The pilot arc is discontinuous or extinguishes	<ul style="list-style-type: none"> <li>·The consumables are seriously worn</li> <li>·Input compressed air pressure is too high</li> <li>·Too much moisture or impurities in the compressed air</li> <li>·Pilot arc time exceeds 2s</li> </ul>	<ul style="list-style-type: none"> <li>·Replace with new consumables</li> <li>·Adjust the pressure of compressed air to 0.35-0.55MPa through the gas regulator on the rear panel</li> <li>·Manually drain the water in the filter cup of the gas regulator on the rear panel or replace the valve</li> <li>·Don't press the torch to keep pilot arc for a long time without cutting.</li> </ul>
The pilot arc cannot be transferred to the workpiece	<ul style="list-style-type: none"> <li>·The cutting circuit is blocked</li> <li>·Too much distance between the tip of cutting torch and the workpiece</li> </ul>	<ul style="list-style-type: none"> <li>·Check whether the earth clamp is damaged and clean the part which contacts the workpiece, and ensure good metal-to-metal contact</li> <li>·Ensure that the distance between the tip of the cutting torch and the workpiece remains within 3-5mm</li> </ul>

<p>Poor cutting quality</p>	<ul style="list-style-type: none"> <li>·The cutting current and speed do not match the thickness of the workpiece</li> <li>·The cutting air pressure is too low or high</li> <li>·The consumables are seriously worn</li> </ul>	<ul style="list-style-type: none"> <li>·Choose the correct cutting standard operation - refer to section 7.1.3 "Cutting Procedure Checklist"</li> <li>·Ensure that the working air pressure range is 0.35-0.55MPa</li> <li>·Replace with new consumables</li> </ul>
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## 9.2. Alarm and solutions

Error code	Category	Possible cause	Countermeasure
E10	Overcurrent protection	Continuously output the maximum capacity current of machine	Restart the machine. If overcurrent protection alarm is still active, contact the after-sales department.
E32	Overvoltage protection	Input grid voltage is too high	Turn it off and on again. If the alarm cannot be eliminated and the grid voltage remains too high, check the power grid voltage and wait for the grid to be normal before welding. If the grid voltage is normal and the alarm persists, contact professional maintenance personnel.
E60	Overheating	Inverter IGBT temperature is too high	Do not turn off the machine. Wait for a while, and then continue welding after the indicator goes out.
E61	Overheating	Output rectifier diode temperature is too high	Do not turn off the machine. Wait for a while, and then continue welding after the indicator goes out.

**NOTE! After applying the above countermeasures, the alarm still persists or reappears after lifting. Please contact professional maintenance personnel.**

## 10. Packaging, transportation, storage and waste disposal

### 10.1. Transportation requirements

In the process of handling the equipment, it should be handled with care, and should not be dropped or severely impacted. Avoid moisture and rain during transportation.

### 10.2. Storage conditions

Storage temperature: -25 °C ~ + 50 °C

Storage humidity: relative humidity ≤ 90%

Storage period: 12 months

Storage site: indoors with no corrosive gas and air circulation

### 10.3. Waste disposal

#### **Disposal**

The equipment is manufactured with materials, which do not contain any toxic or poisonous materials dangerous to the operator.

When the equipment is scrapped, it should be dismantled separating components according to the type of materials.

Do not dispose of the equipment with normal waste. The European Directive 2002/96/EC on Waste Electrical and Electronic Equipment states the electrical equipment that has reached its end of life must be collected separately and returned to an environmentally compatible recycling facility.

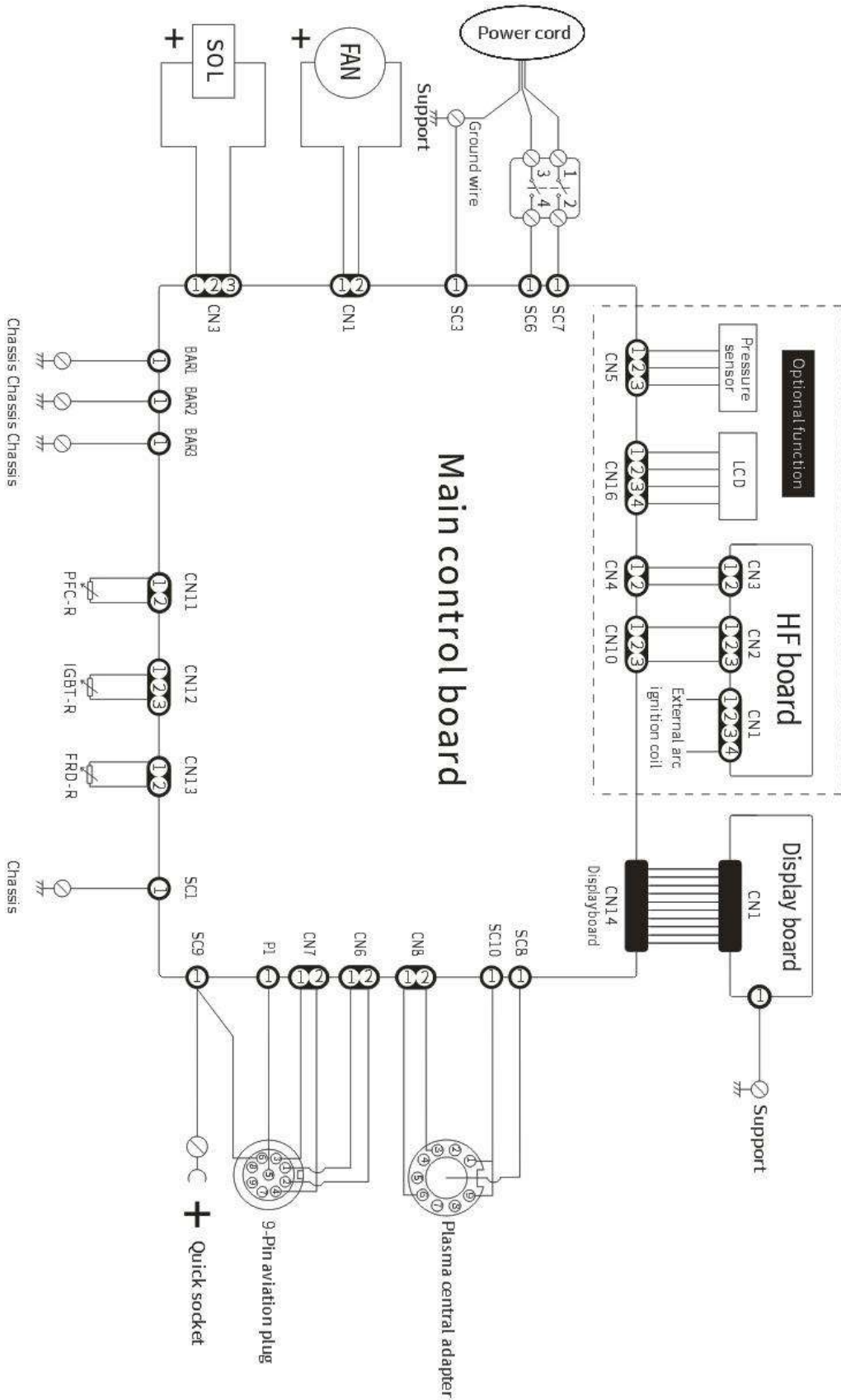
In order to comply with WEEE regulations in your country you should contact your supplier.

#### **RoHS Compliance Declaration**

We herewith confirm, that the above-mentioned product does not contain any of the restricted substances as listed in EU Directive 2011/65/EC in concentrations above the limits as specified therein.

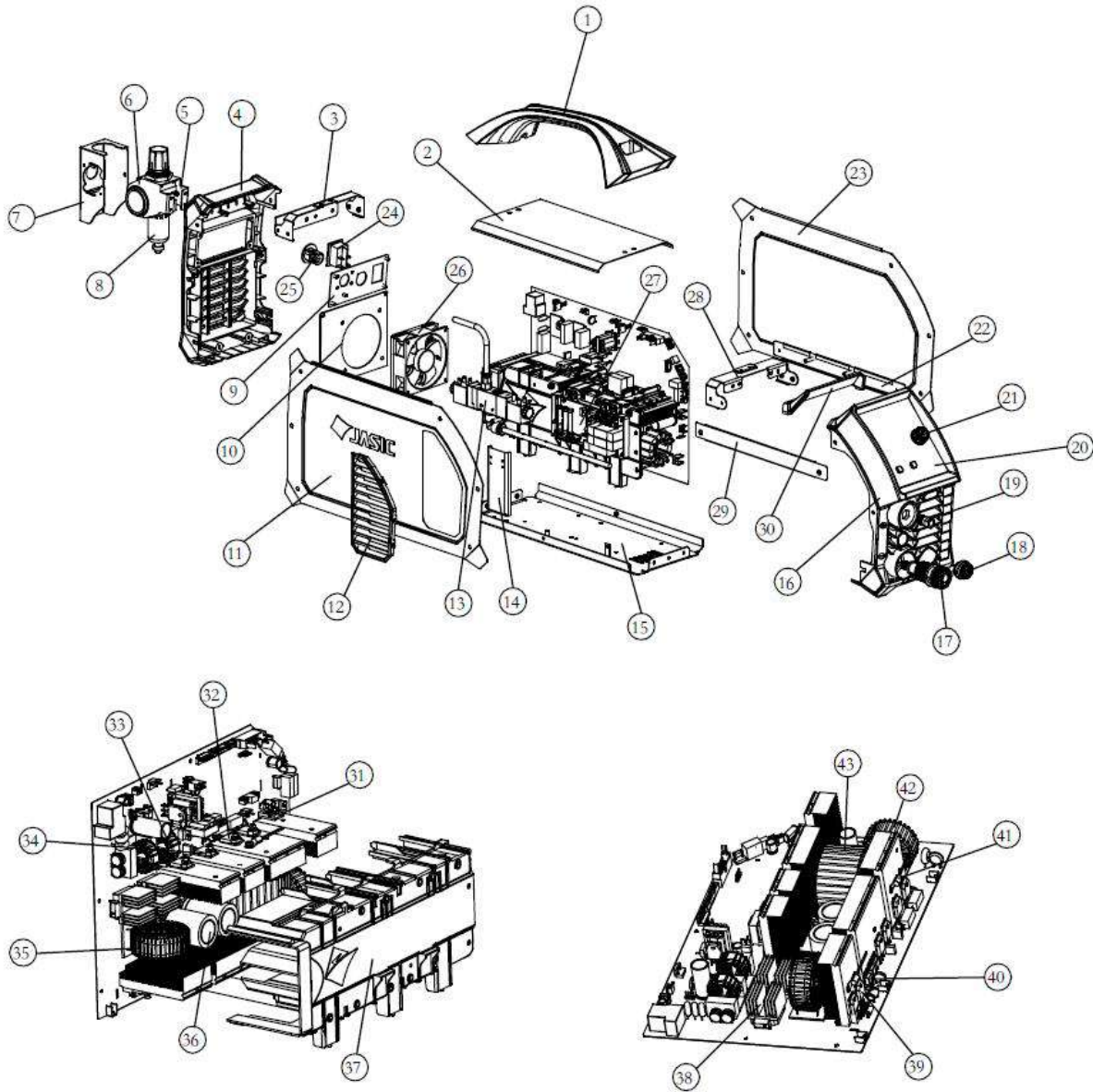
**Disclaimer:** Please note that this confirmation is given to the best of our present knowledge and belief. Nothing herein represents and/or may be interpreted as warranty within the meaning of the applicable warranty law.

# Appendix 1: Wiring diagram of CUT45PFC





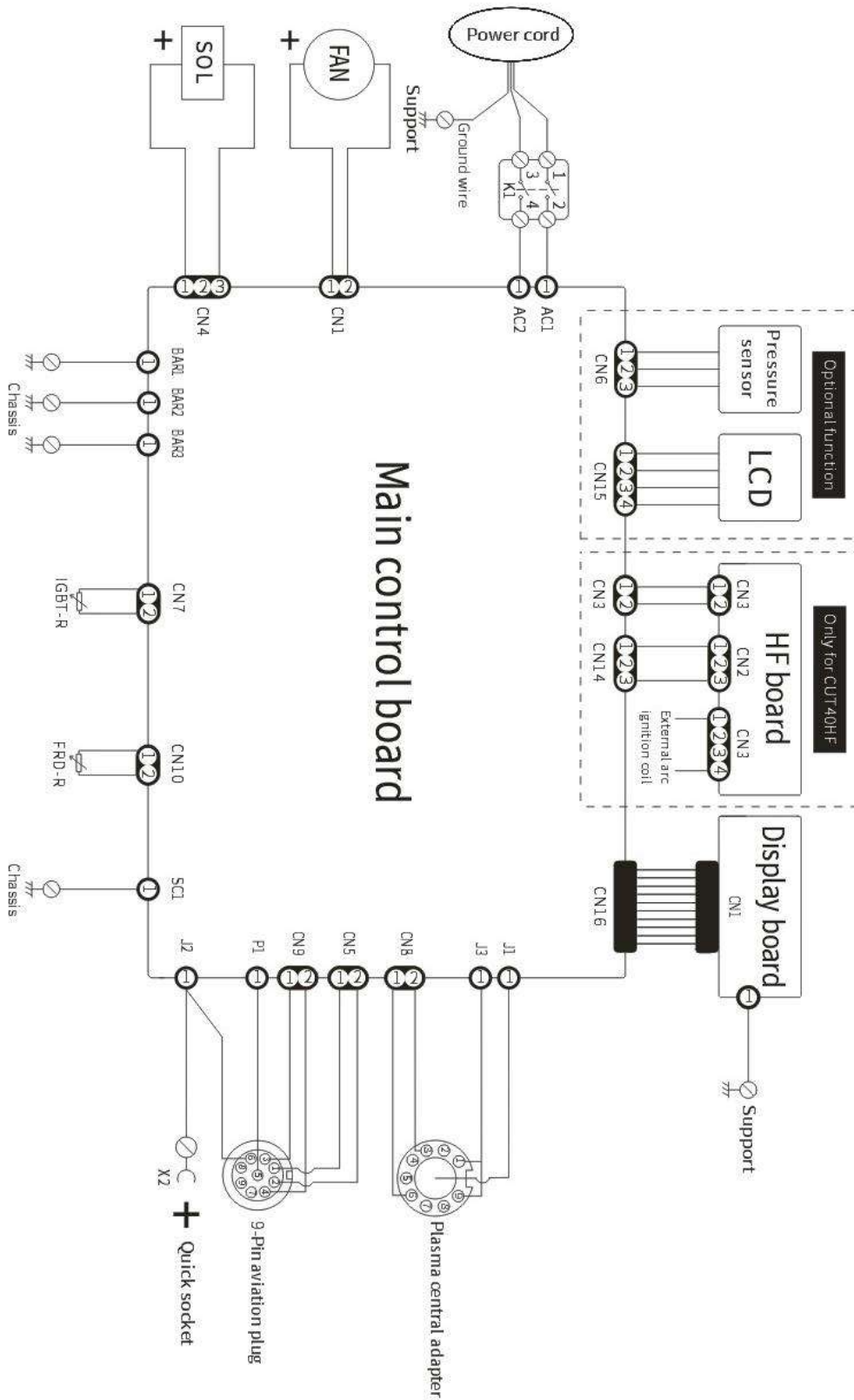
## Appendix 2: Exploded-view drawing of CUT45PFC



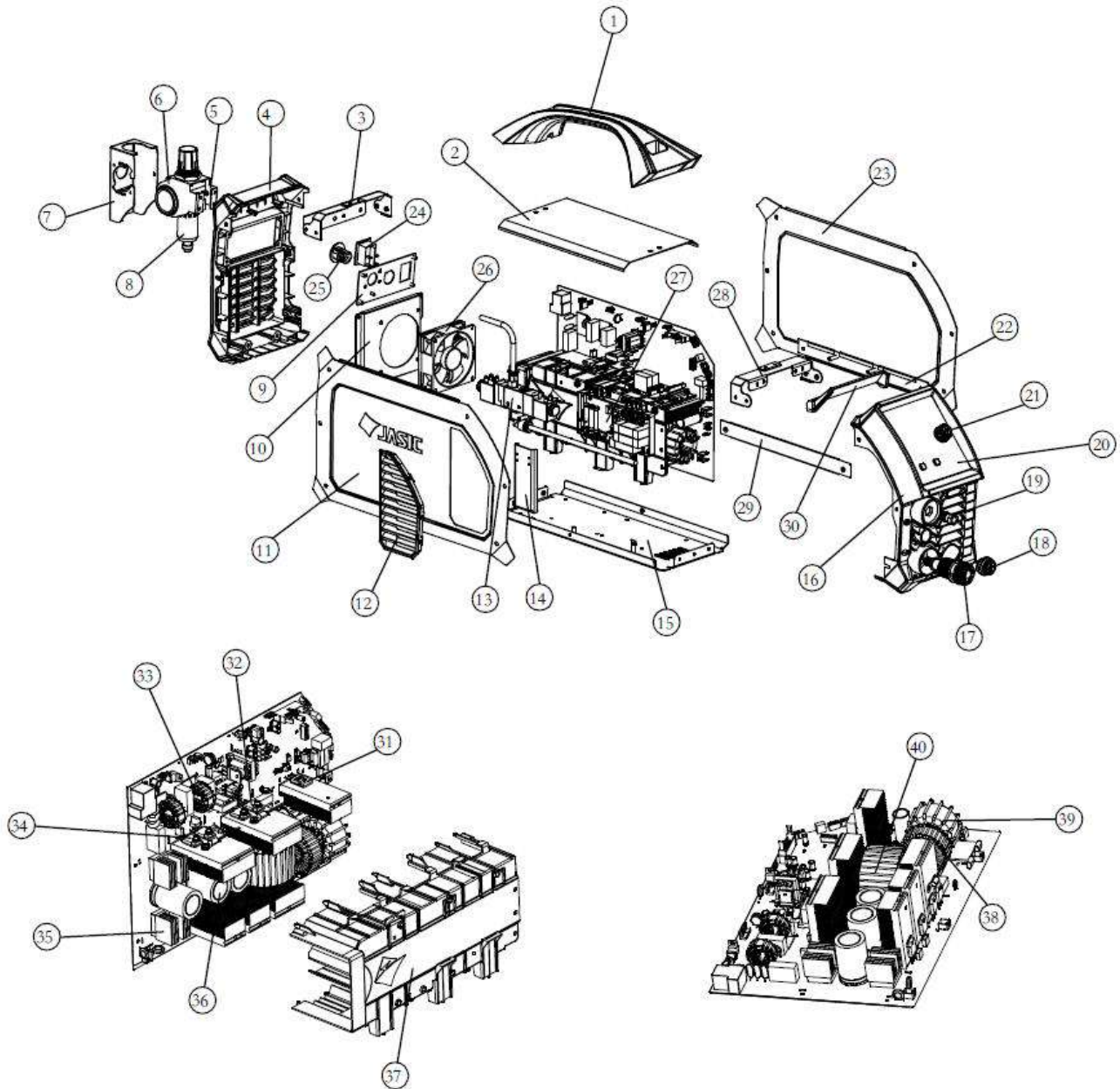
## Appendix 3: List of common spare parts - CUT45PFC

SN	Material code	Name	Quantity	SN	Material code	Name	Quantity
1	10084166	Handle	1	23	10084070	Right side cover	1
2	10084064	Top cover	1	24	51000471	Rocker switch	1
3	10084057	Rear bracket	1	25	10083802	Ring	1
4	10084109	Rear panel	1	26	51000336	Fan	1
5	10084071	Air regulator bracket	1	27	51000501	HF board	1
6	10084110	Gas meter protection cover	1	28	10084066	Front bracket	1
7	10084069	Air regulator protection cover	1	29	10084062	Left bracket	1
8	10080422	Air regulator	1	30	-	Front panel cover	1
9	10084052	Rear fixed plate	1	31	51000601	Pilot arc IGBT	1
10	10084055	Fan bracket	1	32	51000072	FRD	4
11	10084068	Left side cover	1	33	10006545	EMC inductor	1
12	10084105	Louver	1	34	51000602	Inverter IGBT	4
13	51000510	Air valve	1	35	51000455	PFC inductor	1
14	10084063	Air valve support	1	36	10078333	Electrolytic capacitor	2
15	10084056	Chassis	1	37	10084111	Wind shield	1
16	10084103	Front panel	1	38	10037345+ 51000332	Bridge rectifier + heat sink	2
17	51000513	Plasma central adapter	1	39	51000601	PFC IGBT	2
18	10041400	9-Pin aviation plug	1	40	10064645	PFC diode	3
19	10004635	Quick socket	1	41	51000705	Thermistor	2
20	51000779	Display board iron plate	1	42	10077123	Arc ignition coil	1
21	10083484	Encoder knob	1	43	10084177	Main transformer	1
22	10084067	Right bracket	1				

## Appendix 4: Wiring diagram of CUT40HF/CUT40NHF



## Appendix 5: Exploded-view drawing of CUT40HF/CUT40NHF

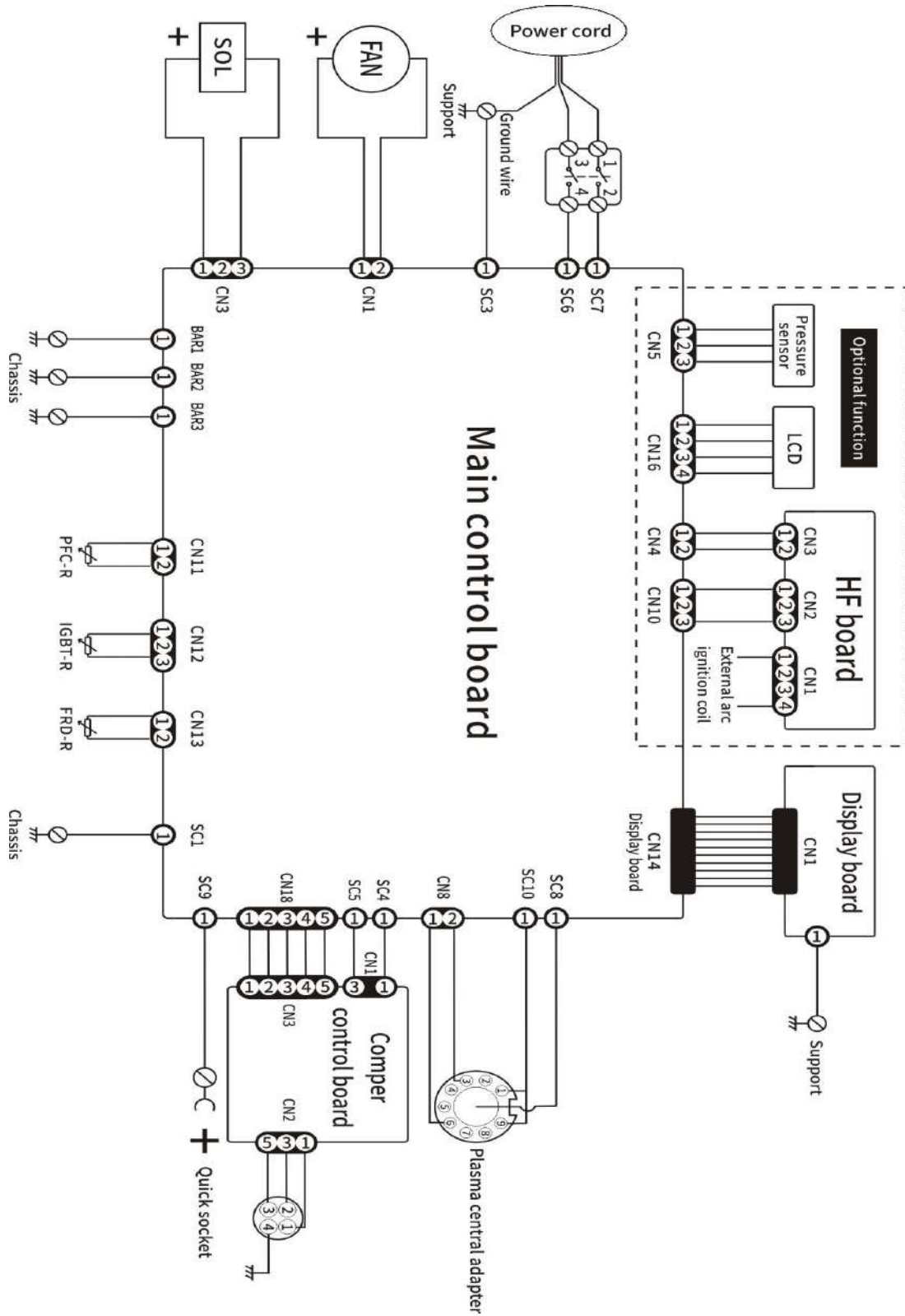


## Appendix 6: List of common spare parts -

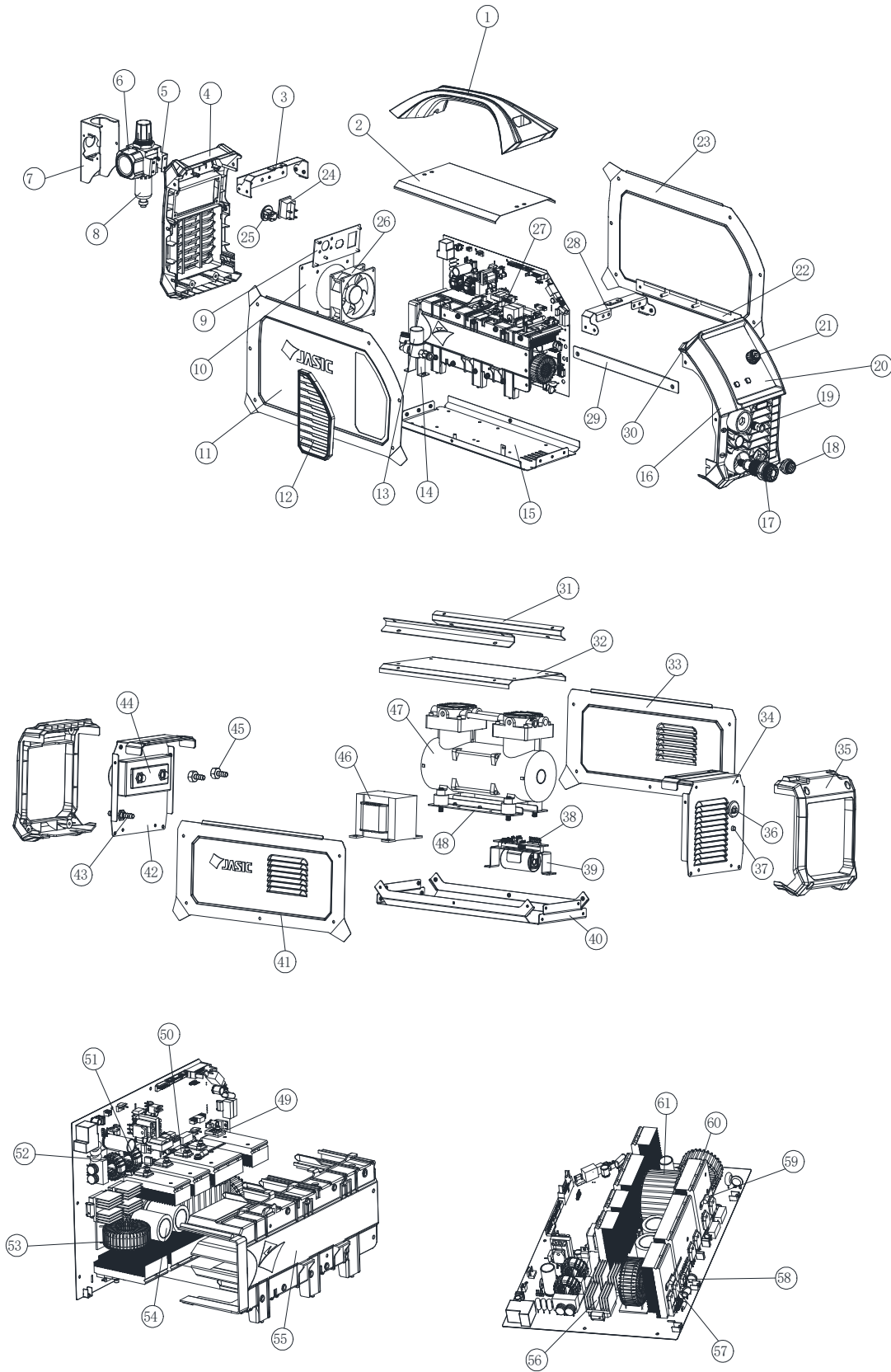
### CUT40HF/CUT40NHF

SN	Material code	Name	Quantity	SN	Material code	Name	Quantity
1	10084166	Handle	1	21	10083484	Chassis	1
2	10084064	Top cover	1	22	10084067	Right bracket	1
3	10084057	Rear bracket	1	23	10084070	Right side cover	1
4	10084109	Rear panel	1	24	51000471	Rocker switch	1
5	10084071	Air regulator bracket	1	25	10083802	Ring	1
6	10084110	Gas meter protection cover	1	26	51000515	Fan	1
7	10084069	Air regulator protection cover	1	27	51000501	HF board	1
8	10080422	Air regulator	1	28	10084066	Front bracket	1
9	10084054	Rear fixed plate	1	29	10084062	Left bracket	1
10	10084065	Fan bracket	1	30	-	Front panel cover	1
11	10084068	Left side cover	1	31	51000601	Pilot arc IGBT	1
12	10084105	Louver	1	32	51000072	FRD	4
13	51000510	Air valve	1	33	10006545	EMC inductor	1
14	10084063	Air valve support	1	34	51000602	Inverter IGBT	4
15	10084056	Chassis	1	35	51000552+ 51000332	Bridge rectifier + heat sink	2
16	10084103	Front panel	1	36	51000900	Electrolytic capacitor	2
17	51000513	Plasma central adapter	1	37	10084112	Wind shield	1
18	10041400	9-Pin aviation plug	1	38	10077123	Reactor	1
19	10004635	Quick socket	1	39	10077124	Arc ignition coil	1
20	51000728 /5100076 5	Display board iron plate	1	40	10084010	Main transformer	1

## Appendix 7: Wiring diagram of CUT45PFC SC



## Appendix 8: Exploded-view drawing of CUT45PFC SC



## Appendix 9: Common spare parts list - CUT45PFC SC

SN	Material code	Name	Quantity	SN	Material code	Name	Quantity
1	10084166	Handle	1	32	10085020	Top cover	1
2	10084064	Top cover	1	33	10084975	Right side cover	1
3	10084057	Rear bracket	1	34	10085021	Front bracket	1
4	10084109	Rear panel	1	35	10084836	Front and rear plastic panel	2
5	10084071	Air regulator bracket	1	36	10067378	Ring	1
6	10084110	Gas meter protection cover	1	37	51001081	Power indicate light	1
7	10084069	Air regulator protection cover	1	38	51001084	Connection board	1
8	10080422	Air regulator	1	39	10085026	Start-up capacitor bracket	1
9	10084052	Rear fixed plate	1	40	10085024	Chassis	1
10	10084055	Fan bracket	1	41	10084976	Left side cover	1
11	10084068	Left side cover	1	42	10085022	Rear bracket	1
12	10084105	Louver	1	43	10081198	Outlet	1
13	51001144	Air valve	1	44	10085025	Muffler mounting plate	1
14	10085028	Air valve support	1	45	10085017	Pagoda connector	2
15	10085023	Chassis	1	46	51001038	Autotransformer	1
16	10084101	Front panel	1	47	10084868	Air Compressor	1
17	51000513	Plasma central adapter	1	48	10085029	Air Compressor mounting bracket	2



18	51001039	4-Pin aviation plug	1	49	51000601	Pilot arc IGBT	1
19	10004635	Quick socket	1	50	51000072	FRD	4
20	51001132	Display board iron plate	1	51	10006545	EMC inductor	1
21	10083484	Encoder knob	1	52	51000602	Inverter IGBT	4
22	10084067	Right bracket	1	53	51000455	PFC inductor	1
23	10084070	Right side cover	1	54	10078333	Electrolytic capacitor	2
24	51000471	Rocker switch	1	55	10084111	Wind shield	1
25	10083802	Ring	1	56	10037345+ 51000332	Bridge rectifier + heat sink	2
26	51000336	Fan	1	57	51000601	PFC IGBT	2
27	51001115	Compressor control board	1	58	10064645	PFC diode	3
28	10084066	Front bracket	1	59	51000705	Thermistor	2
29	10084062	Left bracket	1	60	10077123	Arc ignition coil	1
30	-	Front panel cover	1	61	10084177	Main transformer	1
31	10085027	Connect bracket	2				

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