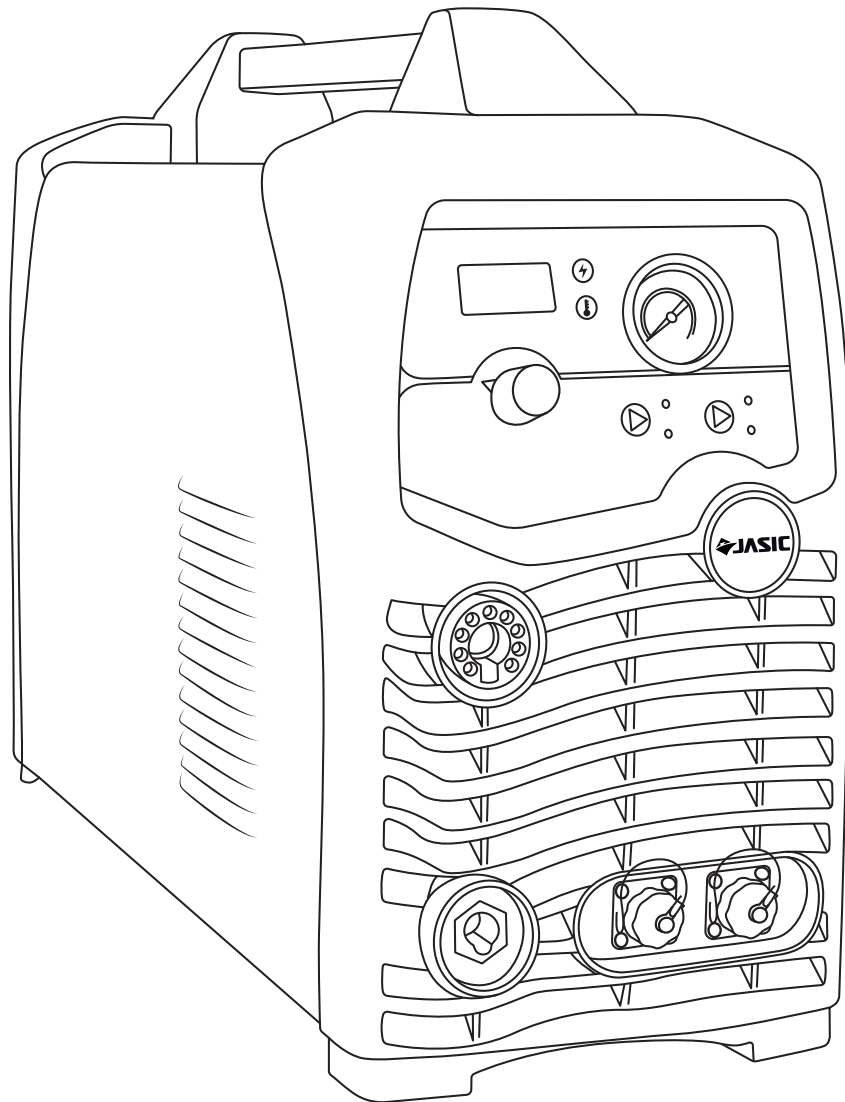


Plasma Cut Series

| Plasma Cut 60 (JP-61) | Plasma Cut 80 (JP-81) |



Operator Manual

Your new product

Thank you for selecting this Jasic Technology, Wilkinson Star product.

This product manual has been designed to ensure that you get the most from your new product. Please ensure that you are fully conversant with the information provided paying particular attention to the safety precautions. The information will help protect yourself and others against the potential hazards that you may come across.

Please ensure that you carry out daily and periodic maintenance checks to ensure years of reliable and trouble free operation.

Wilkinson Star Limited are a leading supplier of equipment in the UK and our products are supported by our extensive service network. Call your distributor in the unlikely event of a problem occurring. Please record below the details from your product as these will be required for warranty purposes and to ensure you get the correct information should you require assistance or spare parts.

Date purchased _____

From where _____

Serial Number _____

(The serial number will normally be located on the equipment data plate on the top or underside of the machine)

Disclaimer

Whilst every effort has been made to ensure that the information contained within this manual is complete and accurate, no liability can be accepted for any errors or omissions. Please note products are subject to continual development and may be subject to change without notice.

This manual should not be copied or reproduced without the written permission of Wilkinson Star Limited

SAFETY

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

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. Operators should respect the safety of other persons.

Prevention against electric shock

The equipment should be installed by a qualified person and in accordance with current standards in operation. It is the users responsibility to ensure that the equipment is connected to a suitable power supply. Consult with your utility supplier if required

If earth grounding of the work piece is required, ground it directly with a separate cable.

Do not use the equipment with the covers removed.

Do not touch live electrical parts or parts which are electrically charged.

Turn off all equipment when not in use.

Cables (both primary supply and welding) should be regularly checked for damage and overheating. Do not use worn, damaged, under sized, or poorly jointed cables.

Ensure that you wear the correct protective clothing, gloves, head and eye protection.

Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work ground.

Never touch the electrode if you are in contact with the work ground, or another electrode from a different machine.

Do not wrap cables over your body.

Ensure that you take additional safety precautions when you are welding in electrically hazardous conditions such as damp environments, wearing wet clothing, and metal structures. Try to avoid welding in cramped or restricted positions.

Ensure that the equipment is well maintained. Repair or replace damaged or defective parts immediately. Carry out any regular maintenance in accordance with the manufacturers instructions.

Safety against fumes and welding gases

Locate the equipment in a well-ventilated position.

Keep your head out of the fumes. Do not breathe the fumes.

Ensure the welding zone is in a well-ventilated area. If this is not possible provision should be made for suitable fume extraction.

If ventilation is poor, wear an approved respirator.

Read and understand the Material Safety Data Sheets (MSDS's) and the manufacturer's instructions for metals, consumable, coatings, cleaners, and de-greasers.

Do not weld in locations near any de-greasing, cleaning, or spraying operations. Be aware that heat and rays of the arc can react with vapours to form highly toxic and irritating gases.

Do not weld on coated metals, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings on many metals can give off toxic fumes if welded.

Prevention against burns and radiation

Arc rays from the welding process produce intense, visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin.

Wear an approved welding helmet fitted with a proper shade of filter lens to protect your face and eyes when welding or watching.

Wear approved safety glasses with side shields under your helmet.

Never use broken or faulty welding helmets.

Always ensure there are adequate protective screens or barriers to protect others from flash, glare and sparks from the welding area. Ensure that there are adequate warnings that welding or cutting is taking place.

Wear suitable protective flame resistant clothing.

The sparks and spatter from welding, hot work pieces, and hot equipment can cause fires and burns

Welding on closed containers, such as tanks, drums, or pipes, can cause them to explode.

Accidental contact of electrode to metal objects can cause arcs, explosion, overheating, or fire.

Check and be sure the area is safe and clear of inflammable material before carrying out any welding.

Protection against noise

Some welding and cutting operations may produce noise.

Wear safety ear protection to protect your hearing.

Protection from moving parts

When the machine is in operation keep away from moving parts such as motors and fans. Moving parts, such as the fan, may cut fingers and hands and snag garments.

Protections and coverings may be removed for maintenance and controls only by qualified personnel, after first disconnecting the power supply cable.

Replace the coverings and protections and close all doors when the intervention is finished, and before starting the equipment.

Take care to avoid getting fingers trapped when loading and feeding wire during set up and operation.

When feeding wire be careful to avoid pointing it at other people or toward your body.

Always ensure machine covers and protective devices are in operation.

Precautions against fire and explosion

Avoid causing fires due to sparks and hot waste or molten metal

Ensure that appropriate fire safety devices are available near the cutting / welding area.

Remove all flammable and combustible materials from the cutting / welding zone and surrounding areas

Do not cut/weld fuel and lubricant containers, even if empty.

These must be carefully cleaned before they can be cut/ welded.

Always allow the cut/welded material to cool before touching it or placing it in contact with combustible or flammable material.

Do not work in atmospheres with high concentrations of combustible fumes, flammable gases and dust.

Always check the work area half an hour after cutting to make sure that no fires have begun.

Risks due to magnetic fields

The magnetic fields created by high currents may affect the operation of pacemakers or electronically controlled medical equipment.

Wearers of vital electronic equipment should consult their physician before beginning any arc welding, cutting, gouging or spot welding operations.

Do not go near welding equipment with any sensitive electronic equipment as the magnetic fields may cause damage.

RF Declaration

Equipment that complies with directive 2004/108/EC concerning electromagnetic compatibility (EMC) and the technical requirements of EN60974-10 is designed for use in industrial buildings and not those for domestic use where electricity is provided via the low voltage public distribution system. Difficulties may arise in assuring class A electromagnetic compatibility for systems installed in domestic locations due to conducted and radiated emissions.

In the case of electromagnetic problems, it is the responsibility of the user to resolve the situation. It may be necessary to shield the equipment and fit suitable filters on the mains supply.

LF Declaration

Consult the data plate on the equipment for the power supply requirements.

Due to the elevated absorbance of the primary current from the power supply network, high power systems affect the quality of power provided by the network. Consequently, connection restrictions or maximum impedance requirements permitted by the network at the public network connection point must be applied to these systems.

In this case the installer or the user is responsible for ensuring the equipment can be connected, consulting the electricity provider if necessary.

Materials and their 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.

Handling of Compressed gas cylinders and regulators

All cylinders and pressure regulators used in welding operations should be handled with care.

Never allow the electrode, electrode holder or any other electrically “hot” parts to touch a cylinder.

Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.

Always secure the cylinder safely

Never deface or alter any cylinder

Functions and characteristics of the cutting machine

Advanced digital control mode

The Plasma cutting machines JP 61/81 MUC intelligent digital control technology, and all its major functions are performed using software controls. The digital control plasma cutting machine offers many improvements in function and performance when compared with the traditional type plasma cutting machines.

With PWM technology and high power component IGBTs, it inverts the DC voltage, which is rectified from 50Hz/60Hz input AC voltage, to 30K~50KHz AC high voltage. The voltage is dropped and rectified to output the DC power supply for cutting. This inverter technology provides a machine which is smaller and much less weight than the traditional style machine. The technology provides a high efficiency unit and the switching frequency is outside the audible range.

Good consistency and stable performance

In traditional machines consistency and performance is often governed by the tolerances of the components used in manufacture and environmental such as temperature and humidity. In some cases the same machine brand and type can vary in performance due to tolerance differences. One of the characteristics of digital control is that it is not sensitive to the change of these parameters. The performance of cutting machine will not be affected by the change of the parameters of individual parts. Therefore, the consistency and stability of performance of the digital control cutter is better than that of traditional cutter.

Powerful cutting performance

These machines provide economical cutting of metals using compressed air as the plasma gas source. The cutting speed is 1.8 times when compared with oxyacetylene cutting. The machines can cut steel, stainless steel, copper, cast iron and aluminium easily and quickly. The arc is easy to ignite and uses a non HF arc ignition mode. There is a post-flow function operates to cool the torch after cutting. The simple operation and high cutting speed, smooth cutting surface make the plasma process and excellent cutting method.

Unpacking

Check the packaging for any signs of damage. Carefully remove the machine and retain the packaging until the installation is complete.

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.

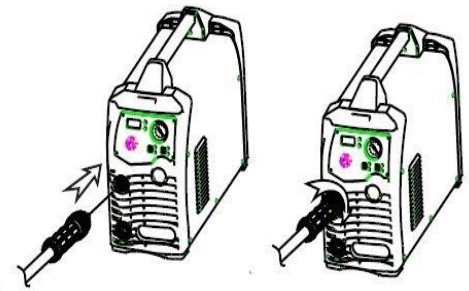
Input connection

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.

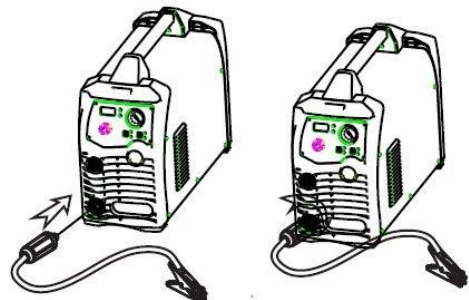
The equipment should be connected by a suitably qualified competent person. Always ensure the equipment has a proper grounding. Never connect the machine to the mains supply with the panels removed.

Output connections

Insert the torch connector into the connection socket and turn clockwise until it is tight taking care not to over tighten. No air should leak from this connection

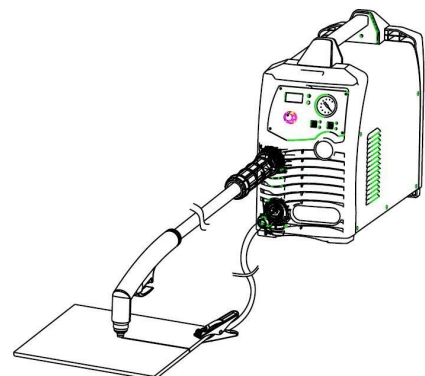


Insert the work return cable into the socket and tighten by turning clockwise



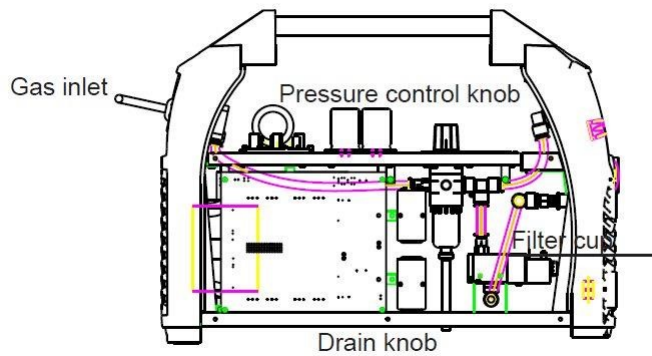
Check leads and connections daily before use.

Connect the work clamp to the workpiece



Air pressure setting

The machine should be connected to a suitable air supply, 4.5-5 Bar pressure.



The embedded filter reducer is preset prior to leaving the factory, and users should not need to set it themselves. Please note this adjustment should be carried out by a competent person only.

If for any reason the reducer needs to be adjusted then it needs to be done as follows:

- 1 Switch off the machine.
- 2 Carefully remove the machine cover panel and handle.
- 3 Switch on the machine taking care not to touch any electrical parts.
- 4 Switch on the air purge switch to start the airflow through the machine
- 5 Lift up the adjusting knob
- 6 Adjust the pressure by rotating the knob in the "+" direction to increase the air pressure . Turn the knob in the "-" direction to reduce the pressure.
- 7 When the correct pressure is set push down the adjusting knob.
- 8 Turn off the machine.
- 9 Replace the panel and handle

Any water which has been collected by the air regulator will be drained by the auto drain of the regulator. Air supplies should always be clean and dry.

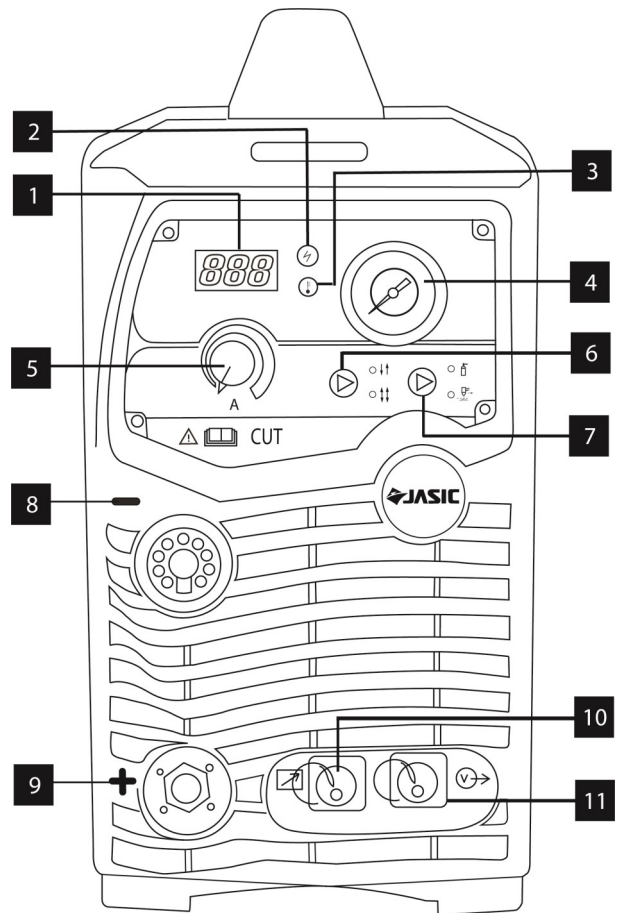
Operation

- 1 Turn on the power switch of the machine, and the power indicator illuminates.
- 2 Select proper working mode and proper function. There are two working modes available on the machine panel: 2T and 4T. There are two functions available: normal cutting and metal mesh cutting. The electrode and nozzle are more easily to wear out in metal mesh cutting.
- 3 Push the torch trigger on the cutting torch, the cutting machine works.
- 4 Set cutting current according to the thickness of workpiece.
- 5 Bring the copper nozzle of the cutting torch into contact with the workpiece (For models with pilot arc function, keep a distance of about 2mm between the copper nozzle of the torch and the

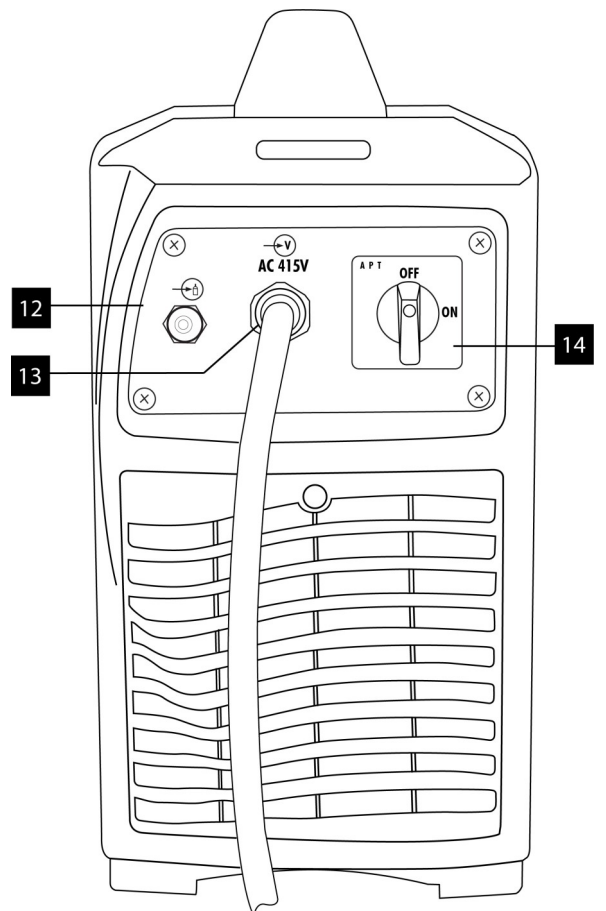
workpiece.), and then push the torch trigger. After the arc is ignited and started, raise the cutting torch to the position about 1mm above the workpiece, and start cutting.

Controls

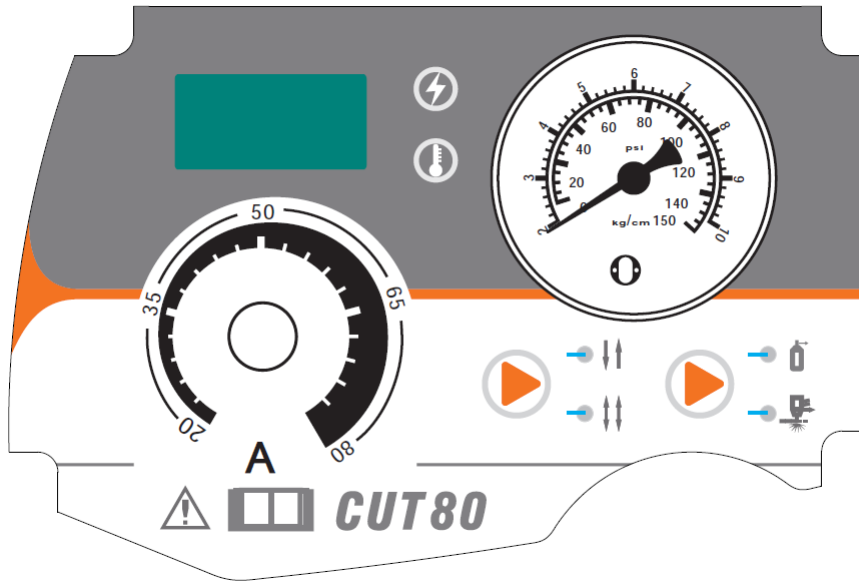
- 1 Digital Ammeter
- 2 Power indicator
- 3 Warning indicator
- 4 Pressure guage
- 5 Current adjustment knob
- 6 2T / 4T selector
- 7 Air purge / cut selector
- 8 Torch connector
- 9 Work return connector
- 10 Arc started signal
- 11 Arc voltage feedback



- 12 Air inlet
- 13 Mains Cable
- 14 Mains switch



Panel Indicators



	Symbol	Function
1		Power indicator. It illuminates when the machine is powered on, and it flashes after arc is successfully ignited.
2		Overheating indicator. It illuminates when the working temperature of the IGBT is overly high. When lit the machine stops working.
3		2T indicator: It illuminates when the machine is under 2T status.
4		4T indicator: It illuminates when the machine is under 4T status.
5		Gas-check indicator It illuminates when the machine is under gas-check status. When lit, the machine cannot cut.
6		Metal mesh cutting indicator The machine can cut metal mesh when this indicator illuminates.

Maintenance and troubleshooting

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.

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

Period	Maintenance item
Daily examination	Check the condition of the machine, mains cables, welding cables and connections. Check for any warnings LEDs and machine operation. Check the air intake is unobstructed. Check the torch leads and components
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. This work should be carried out by a suitably qualified competent person.
Yearly examination	Carry out an annual service to include safety check in accordance with the manufacturers standard (EN 60974-4). This work should be carried out by a suitably qualified competent person.

Troubleshooting

Before cutting 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 may be potential danger 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 opening the case.

TECHNICAL PARAMETERS

	CUT 60 (JP-61)	CUT 80 (JP-81)
RATED INPUT POWER SUPPLY	3 PHASE 400V 50/60 Hz	3 PHASE 400V 50/60 Hz
RATED INPUT CAPACITY (KVA)	10.8	14.4
POWER FACTOR	0.7	0.7
RATED OUTPUT (A/V)	60/104	80/112
RATED DUTY CYCLE (%)	40	40
NO LOAD VOLTAGE (V)	310	310
ARC IGNITION MODE	NON HF	NON HF
POST AIR FLOW (S)	10	10
AIR PRESSURE (BAR)	4.5	4.5
INSULATION GRADE	F	F
PROTECTION CLASS	IP 21S	IP 21S
EFFICIENCY (%)	85	85

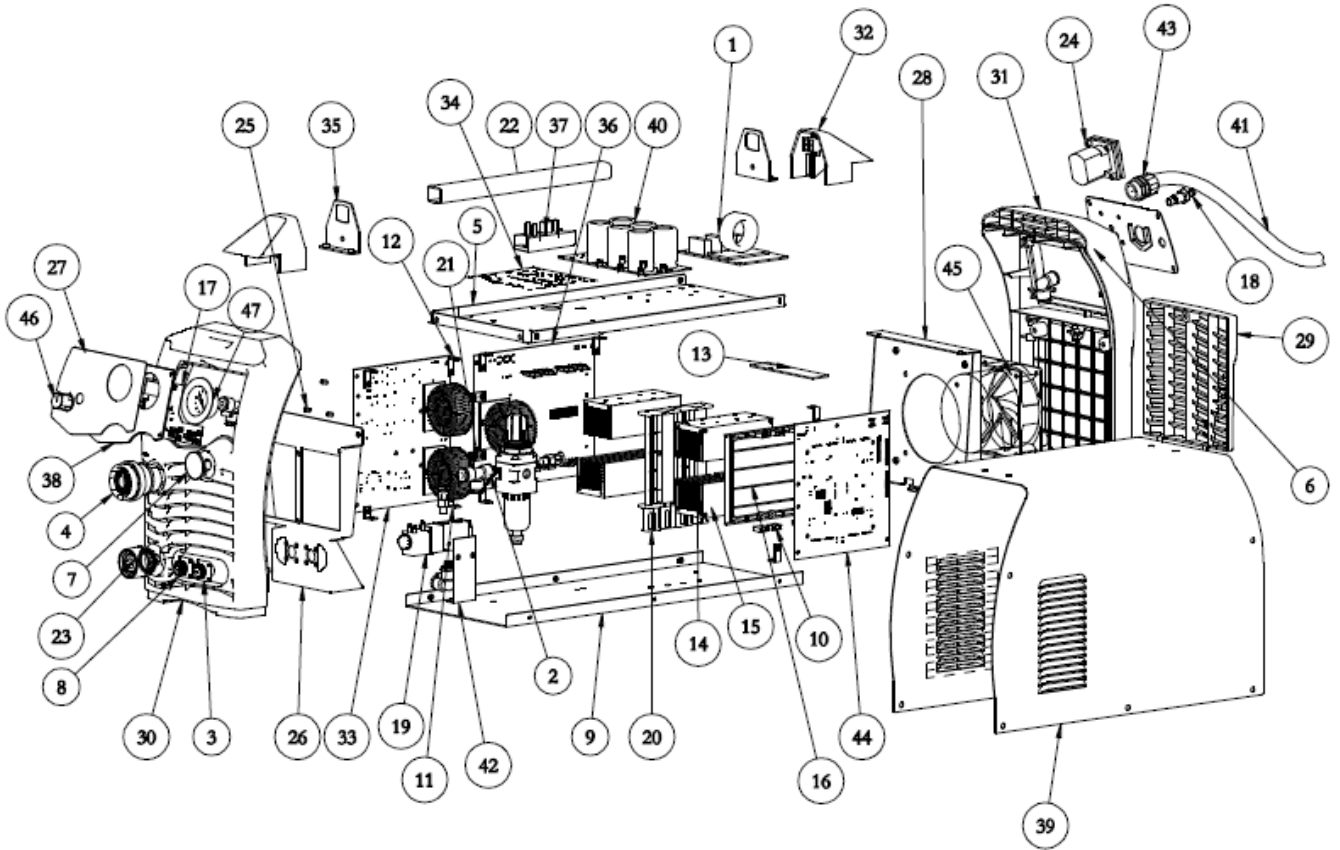
MACHINE DISPOSAL

Please do not dispose of electrical waste with normal waste products.

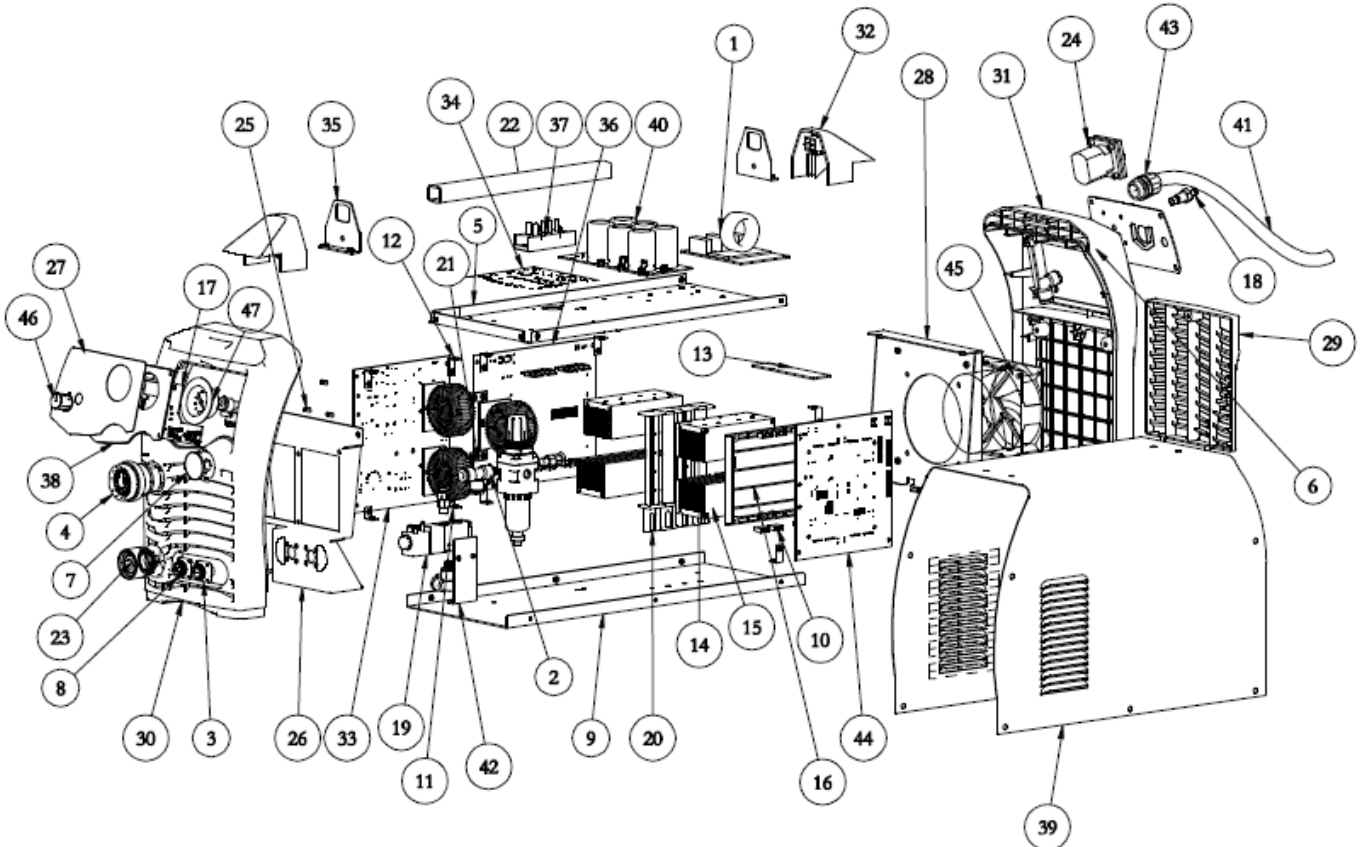
In accordance with the European directive 2002/96/EC regarding waste electrical and electronic equipment and its implementation into national law any electrical or electronic which has reached its end of life must be collected separately and disposed of via a suitable recycling facility.

The owner of the equipment is required to return the equipment to a suitable recycling facility or to Wilkinson Star Limited for the correct recycling of the product.

EXPLODED PARTS LIST— JP-61



EXPLODED PARTS LIST— JP-81



PARTS LIST

		JP-61	JP-81
No	Description	Part No	Part No
1	EMC Board	10043995	
2	Gas connector	10048726	
3	2 Pin connector	10004691	
4	Torch connector	10004644	
5	Panel (middle)	10058211	
6	Bracket	10058273	
7	Jasic insert	10041712	
8	4 pin connector	10035556	
9	Base panel	10058232	
10	Insulating cover	10037078	
11	Support	10037028	
12	Support	10049912	
13	Deflector	10049881	
14	Heatsink	10049894	
15	Heatsink	10049893	
16	Heatsink subplate	10049883	
17	Display board	10060528	
18	Gas inlet	10041723	
19	Solenoid valve	10048389	
20	Column	10049874	
21	Connector	10049923	
22	Handle bar	10058227	
23	Quick connector	10004638	
24	Power switch	10021935	
25	Plastic bolt M3x6	10048737	
26	Front support	10058240	
27	Front sticker	10060347	10060343
28	Rear support	10058238	
29	Rear louver	10058230	
30	Front panel	10058228	
31	Rear panel	10058229	
32	Handle socket	10058231	
33	Arc striking board	10060523	
34	Control board	10060526	
35	Handle support	10058239	
36	Rectifying board	10052906	10053198
37	Rectifier	10006625	10006651
38	Display panel	10058233	
39	Cover	10060287	
40	Filter board	10052904	10053581
41	Power cable	10050677	
42	Valve support	10057001	
43	Cable clip	10004886	
44	Inverting board	10052907	
45	DC Fan	10043026	10056357
46	Knob	10040930	
47	Pressure guage	10007295	

Notes on cutting



It is recommended not to ignite the arc in the air if not necessary. It will shorten the lifespan of the electrode and nozzle of the torch.



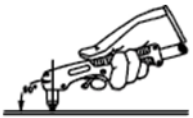
It is recommended to initiate the cutting from the edge of workpiece, unless penetration is needed.



Ensure spatter flies from the bottom of workpiece while cutting. If spatter comes up from the top of workpiece, it indicates that the workpiece is not fully cut because the cutting torch is moved too fast or the cutting current is too low.



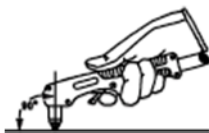
Keep the nozzle slightly touching the workpiece or keep a short distance between the nozzle and workpiece. If the torch is pressed against the workpiece, the nozzle may stick to the workpiece, and smooth cutting will be problematic.



For cutting round workpieces or to meeting precise cutting requirement, molding boards or other tools are needed



It is recommended to pull the cutting torch while cutting.



Keep the nozzle of cutting torch upright over the workpiece, and check if the arc is moving with the cutting line. If the space is not enough, don't bend the cable too much, step on or press upon the cable to avoid suffocating of gas flow. The cutting torch may be burned because the gas flow is too small. Keep the cutting cable away from edge tools.



Clean up the spatters on the nozzle timely, for it will affect the cooling effect of the nozzle. Clean up the dust and spatters on the torch head after using everyday to ensure good cooling effect.

Problems

The workpiece is not cut fully. This may be caused by:

- The cutting current is too low.
- The cutting speed is too high.
- The electrode and nozzle of the torch are burned.
- The workpiece is too thick.

Molten slag drops from the bottom of workpiece. This may be caused by:

- The cutting speed is too low.
- The electrode and nozzle of the torch are burned.
- The cutting current is too high.

JP 61-81

CUT 61

Order code JP– 61

CUT 81

Order code JP– 81

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