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## Plasma CUT45DV



## Instruction Manual



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## 1, Safety Instructions

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Important safety precautions

### Warning

Operation and maintenance of plasma arc cutting equipment is very dangerous to health may be compromised.

Plasma arc cutting produces high-intensity electromagnetic radiation, this radiation may interfere with heart pacemakers, hearing aids, rehabilitation, or other similar electronic devices. In plasma arc cutting equipment around the staff who would like professional medical rehabilitation equipment manufacturer or consult the relevant circumstances to determine whether a hazard exists.

To prevent potential harm in using the device, please read all the "warnings, safety precautions, and that" information. And strictly comply with the content.



### Fumes and gases

Plasma cutting process produces fumes and gases hazardous to health is harmful.

- To avoid cutting the breathing zone generated fumes and gases. The operator's head to avoid welding fumes group.
- If ventilation is poor, you cannot drain all the fumes and gases, then to the use of air respirator.
- plasma arc generated fumes and gases according to a metal, a metal outer layer and a drug different processes and different. When cutting or welding contains one or more components of metal, we must be especially careful:  
Antimony Chromium Mercury Arsenic Cobalt Nickel  
Barium Copper Selenium Beryllium Lead Silver  
Cadmium Manganese Vanadium
- Always read the Material Safety Data Sheet accompanying materials, these data alone will tell you dangerous harmful gases and fumes such as the type and amount of relevant information.
- using a dedicated device to collect fumes and gases, such as water or down draft cutting table.
- Do not place flammable or explosive gases flammable explosive materials spaces utilized plasma cutting torch.
- toxic gas phosgene from chlorinated solvents and cleaning agents vapor. All of this can be evaporated to remove gases.



### Shock

Shock can make a person injured or killed. The plasma arc process uses and produces high voltage electrical energy high voltage electrical energy, they can cause the operating plant operating personnel or other Staff severe or even fatal electric shock.

- Never touch any of the "live" or "hot" parts.



### Fire or explosion

Hot welding / cutting slag, sparks, or the plasma arc can cause a fire or explosion.

- work shop may not have flammable or combustible. The material must remain in place must be properly protected.
- ventilated to remove all flammable or explosive vapors.
- Do not combustible containers may be equipped with cutting and welding work.
- When the fire-prone locations in the work should always remain vigilant.
  - the use of water in the water table or cutting aluminum workpiece, it is easy to produce hydrogen and hydrogen gas ring set under the workpiece. Do not cut aluminum alloys underwater or water-table work, unless the hydrogen gas can be excluded or disperse. Once gathered combustion occurs because the hydrogen will explode.



### Noise

Noise can cause irreversible deafness. Plasma arc noise may be greatly exceeded the safety limit, it must be protected against hearing.

- To protect your hearing, to wear ear plugs and / or noise reduction earmuffs. Other personnel should work shop for hearing protection.
- For noise level is measured to ensure that the decibel does not exceed safety limits.



### Plasma Arc Radiation

with drying gloves, drying clothes. The operator and the workpiece or other parts of the welding circuit insulation.

- Repair or replace all worn or damaged parts.
  - Plasma arc radiation can burn skin and eyes hurt. The plasma arc process produces very bright ultraviolet light
  - To protect your eyes, always wear a helmet when working mask, and a cheek protection safety glasses, goggles or other eye protection equipment.
    - Wear welding gloves and wear appropriate clothing to prevent skin arc radiation, sparks, burns the skin.
    - helmet and safety glasses to take good care, if the lens to replace broken or blurred.
    - Other personnel in the work area should be anti-arc radiation, you can use protective booths, screens or enclosures.





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**Disposal**

Do not dispose of this device with normal domestic waste! To comply with the European Directive on Waste Electrical and Electronic Equipment and its implementation as national law, electrical equipment that has reached the end of its life must be collected separately and returned to an approved recycling facility. Any device that you no longer require must be returned to your dealer, or you must locate the approved collection and recycling facilities in your area. Ignoring this European Directive may have potentially adverse effects on the environment and your health!

**Safety Symbols**

Devices with the UKCA and CE label satisfy the essential requirements of the low-voltage and electromagnetic compatibility directive (e.g. relevant product standards of the BS EN IEC 60974 series).

AES Industrial Supplies Ltd declares that the device complies with Directive 2014/53/EU.  
All UK and European Directives.

Devices marked with the CSA test mark satisfy the requirements of the relevant standards for Canada and the USA.

**Data backup**

The user is responsible for backing up any changes made to the factory settings. The manufacturer accepts no liability for any deleted personal settings.

**Copyright**

Copyright of these Operating Instructions remains with the manufacturer/importer.

Text and illustrations were accurate at the time of printing. AES Industrial Supplies Ltd reserves the right to make changes. The contents of the Operating Instructions shall not provide the basis for any claims whatsoever on the part of the purchaser. If you have any suggestions for improvement or can point out any mistakes that you have found in the Operating Instructions, we will be most grateful for your comments.



## 2, DECLARATION OF CONFORMITY, UKCA & CE



In accordance with UK Government Guidance  
Electrical Equipment (Safety) Regulations 2016  
Electromagnetic Compatibility Regulations 2006.  
Regulation (EU) 2019/1784 on **ecodesign** requirements for welding equipment.  
The Low voltage Directive 2014/35/EU  
The EMC Directive 2004/108/EC, entering into force 20 July 2007  
The RoSH Directive 2011/65/EU, entering into force 2 January 2013

### **Type of Equipment**

Plasma Cutter

### **Type Designation etc**

Max-Arc CUT45DV

### **Brand name or trade mark**

AES Industrial Supplies Ltd

### **Manufacturer or there authorised representative established within the UK & EEA**

AES Industrial Supplies Ltd  
Olympic House  
Collett, Southmead Park  
Didcot, Oxon  
OX11 7WB  
Phone: +44 1509 509269

The following harmonised standards in force with the UK Government and the EEA has been used in the design:  
BS EN IEC 60974-1 - Arc welding Equipment, Arc striking and stabilizing devices  
BS EN IEC E 60974-10 - Arc Welding Equipment, Arc Striking, Electromagnetic compatibility

Additional information: restrictive use, Class A equipment, intended for use in locations other than residential

**We declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications. The units comply with applicable essential requirements of the directives.**

Place and Date

Didcot, UK  
10/01/2025

Lloyd Robertson

Signature

Technical Director



### WEEE Directive & Product Disposal

*At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.*

### 3, Technical Specification

<u>Power Supply Voltage</u>	<u>1ph AC 110V</u>		<u>1ph AC 230V</u>	
Frequency	50/60Hz		50/60Hz	
Rated Input Current (A) I Max	31.0		28.2	
Rated Input Current (A) I Eff	22.0		17.8	
No Load Output Voltage	290		290	
Efficiency	80%		80%	
Protection Class	IP23S			
Insulation Class	F			
Weight (Kg)	8			
Output Power (A)	25	18	45	28
Duty Cycle @ 40 Degrees C	50%	100%	40%	100%
Output Current Range (A)	15-25		15-45	

**Note, when used on 110V Mains Power Supply the Output Power available is reduced (see above chart).**

**When using a extension lead from a 110V supply the cross section of the conductors should be 4mm<sup>2</sup>, if not the output power may be compromised.**





#### **4, Connections to the Machine**

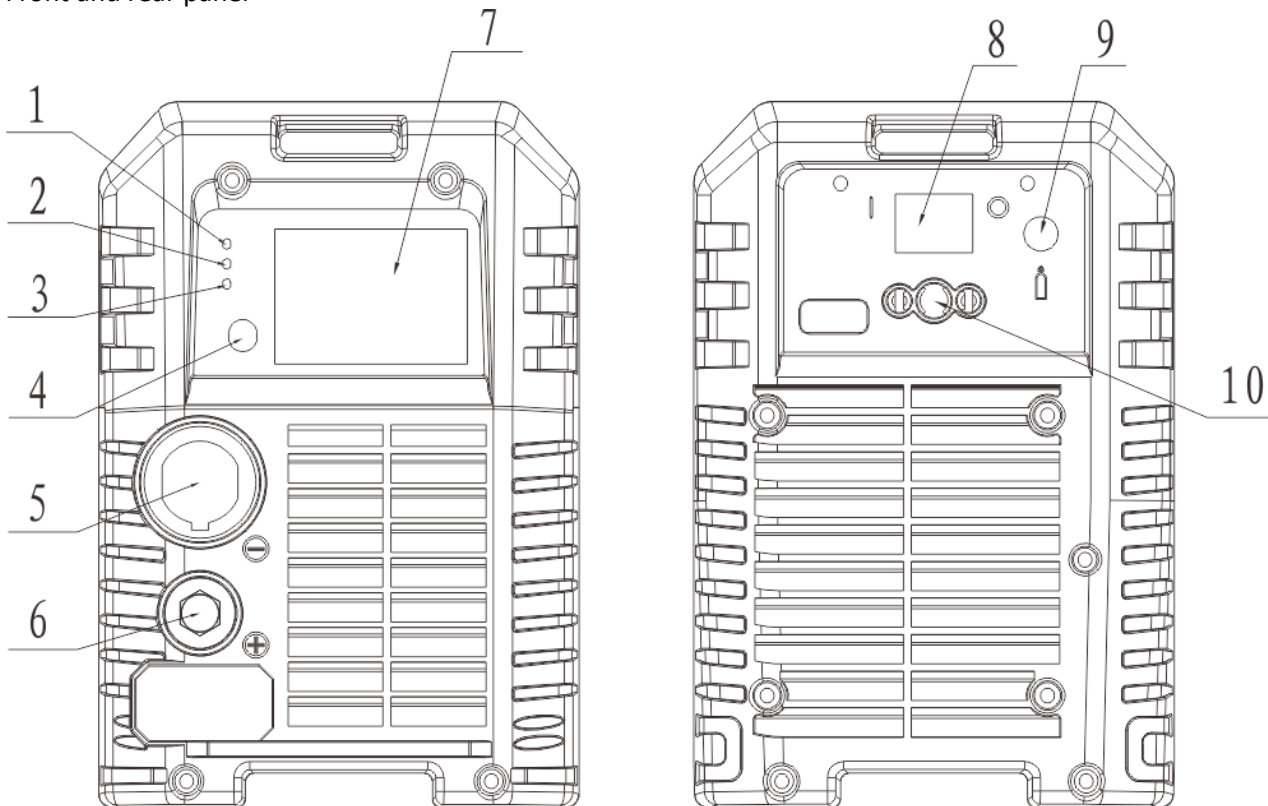
- 1, Connect the Input power Plug, ensuring the correct Plug is fitted for 230V AC or 110V AC, the machine will automatically detect the voltage supply, **note, when connected to 110V the cutting thickness of the work piece is reduced.**
- 2, Connect the Air Supply using the appropriate hose and fittings to withstand 7 Bar continuously.
- 3, Ensure the compressed air is Dry and Oil Free and regulated to 4.5-5.0 bar at the Plasma Cutter for optimum performance.

**Note: If the Air Pressure falls below 3.5 Bar before starting to cut or during the cutting process the machine will stop and display a fault code, and will not start until the Air Pressure is greater than 3.5 Bar.**



## 5, Operating Instructions

Front and rear panel



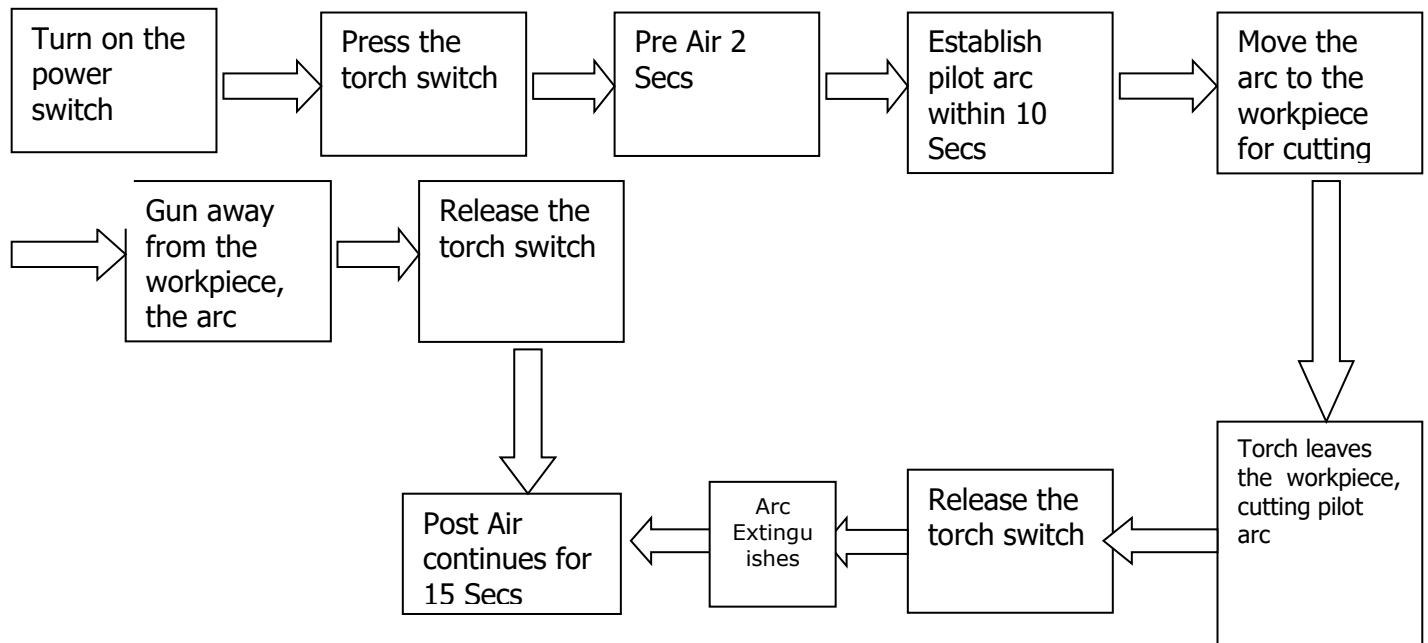
1. Alarm indication (display will show the fault)
2. Power indicator
3. Overheat indication, protection
4. Set/Run Power Output Control
5. Cutting Torch Socket
6. Work Ground Socket
7. Display
8. Power Switch
9. Air Inlet
10. Input Power



## 6, Working Procedure

1. Connect the power lead to the power supply circuit (230V AC/110V AC)
2. Connect the air supply to the Machine
3. Connect the Ground Cable to the workpiece
- 4, Connect the Plasma Torch
5. The power switch to the ON position, the power indicator will light
6. Ensure the Regulated Air Pressure is set between 3.5 ~ 6.0 bar, **optimal regulated pressure 4.5 to 5.0 Bar**
7. Adjust the Current Output Control to the desired value
8. Ready to start cutting.

### 4.3 machine working order



Note:

- (1) If a Fault condition occurs, you should release the torch trigger until the Fault is cleared.
- (2) If the electrode and the nozzle has been in use for some time, the contact surfaces will be worn and give a poor cut.

Replace the Electrode, Cutting Nozzle, Swirl Box or Shielding Cup as required if burned or damaged.



## 7, Fault Codes

### Troubleshooting

The machine will display the Fault, see below.

**WARNING:** This device has a very dangerous level of working voltage, ensure the machine is switched off at the Mains Power before touching or removing the working end parts of the torch.

**Note:** This cutting machine has intelligent fan cooling, the Fan will only Run when required to cool the machine.

**A,** Torch is not arcing when the trigger is triggered, TIP / GUN / AIR a long bright light.

Air Pressure is too low. Adjust the air pressure to 65psi/4.5bar.

**B,** Does not arc torch, when the trigger is triggered, TIP / GUN / AIR light flashing.

Shield Cup is not installed, the power switch is turned off, re-install the Shield Cup, hand tighten the Shielding Cup, turn on the power switch.

**C,** Does not arc, when the trigger is triggered, TIP / GUN/ AIR long bright light, intermittent supply, to fast paced cutting.

Nozzle or Electrode is not installed, Turn off Mains Power, re-install the Nozzle / Electrode. Then hand tighten the Shield Cup, turn on the power switch.

**D,** Does not arc, when the trigger is triggered, TIP / GUN / AIR long bright lights, intermittent supply, the cutting pace was too slow.

Because burning or short-circuit condition, Turn off Mains Power, the replacement of the electrodes, nozzles.

**E,** Power indicator light, temperature indicator light

Airflow obstruction

Inspect for airflow obstruction, and correct the blocked condition.

Fan blocked, check and un-block if required.

a. inspect and correct the blocked condition hindered the situation.

Overheating

let the unit cool for 5 minutes. Ensure that the operation of the device does not exceed duty cycle limit.

Input Power Supply Over Voltage, See Technical Data.

Machine has Electronic Fault

Return for repair or have qualified technician check for faults.



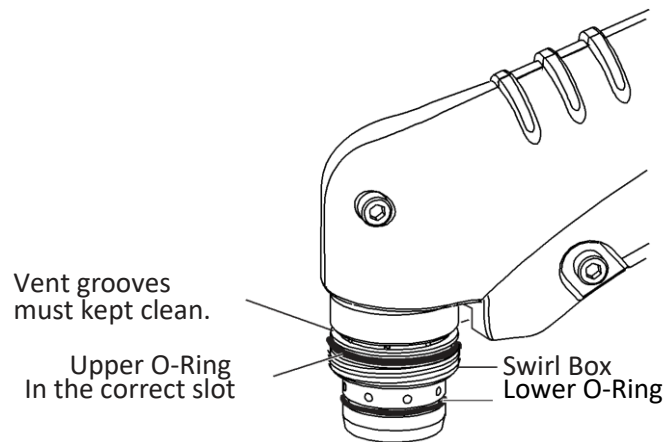
F, Torch switch is energized, no arc

System in the SET state on the display

Switch to the RUN state on the display

The upper part of torch head O-ring position is damaged or incorrect position.

Remove the torch retaining cup, check the position of the upper O-ring and lower O-ring





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Faulty torch parts

Inspect torch parts and replace if necessary.

Air pressure is too high or too low

The air pressure adjusted to the appropriate value.

Faulty Electronics.

Return it for repair or have qualified technician check for faults.

**G**, Torch is triggered, but not cutting torch, power indicator light, Air flow, Fan operation.

Poor torch or power connections

Inspect torch leads and power connections and ensure they are appropriate.

Ensure good working connection cables and the workpiece, and the connection of the workpiece is clean and dry.

Faulty Electronics

Returned for repair or have qualified technician check for faults.

Faulty torch

Returned for repair or have qualified technician check for faults.

**H**, Cutting Output Low

Current (A) control settings are incorrect

If Power is 110V ensure if using a long extension cable that the conductor size is at least 4.0mm<sup>2</sup>.

Faulty Electronic Components

Return for repair or have qualified technician check for repair

**I**, Excessive or uneven cutting

Worn torch parts (consumables)

Remove the Shield Cup, Cutting nozzle, Electrode and Swirl Box and inspect them, if the electrode or cutting nozzle is worn, replace them.

**J**, Arc extinguished torch, cannot be restarted.

Power overheating (OC / OT lights)



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Allow the device to cool for at least 5 minutes to ensure the continued operation of the device does not exceed the Duty Cycle.

Air pressure is too low (when the torch trigger switch, TIP / GUN / AIR indicator lit)

Check the Air supply, Air supply at least 65psi/4.5bar; adjust as needed.

Inspect Shield Cup, Cutting Nozzle, Swirl Box and Electrode, replace if required

Faulty Electronic Components

Return it for repair or have qualified technician check for faults

**N**, No airflow, power indicator light, Fan operation.

1. No connection of Shield Cup or Air pressure is too low

Inspection of the Shield Cup and check air pressure is adjusted to an appropriate value.

Faulty Electronic Components

Return the device for repair or have qualified technician check for faults

**K**, Cutting torch working but poor quality cut

Current (A) is set too low

Worn Torch Parts, check, Electrode, Nozzle, Swirl Box, Shield Cup, replace if required.



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## **8, Torch Maintenance**

**WARNING:** Check torch consumable parts for wear, if worn, replace if required as Trouble shooting notes above.

**Only remove these parts with the Mains Power disconnected.**

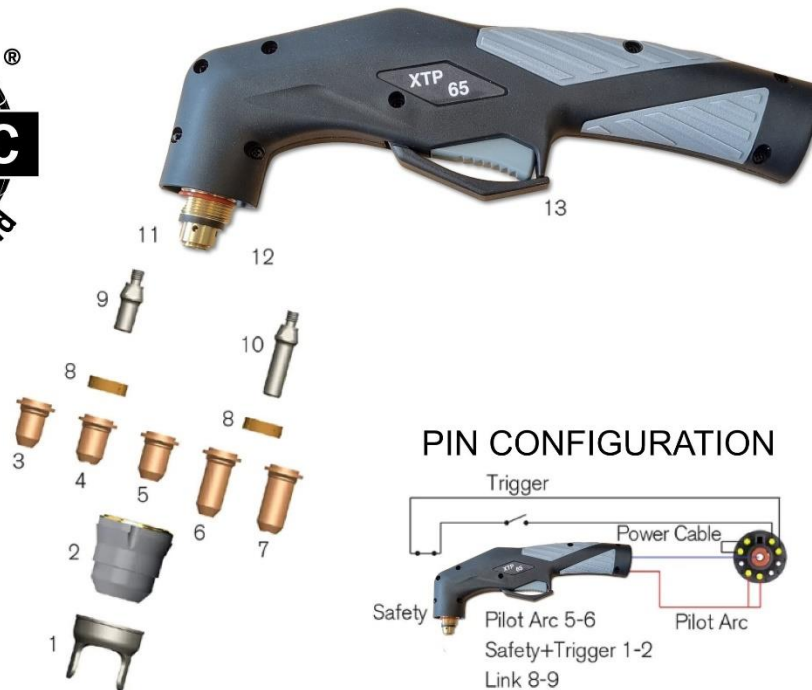
Note: Under normal conditions, when the torch operation, retaining cup and the torch handle a small amount of air discharge is normal, do not try to over-tighten the Shield Cup, otherwise it will damage the internal parts.





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## Max-Arc XTP 45/65 Replacement Plasma Torch Parts



<b>Stock Code</b>	<b>Diagram No.</b>	<b>Description</b>
PC.1566-DPS	1	Max-Arc XTP 45/65 Double Pointed Spacer
PC.1566-RC	2	Max-Arc XTP 45/65 Retaining Cap
PC.1566-CT08	3	Max-Arc XTP 45/65 Plasma Cutting Tip 0.8mm 20-30A
PC.1566-CT09	4	Max-Arc XTP 45/65 Plasma Cutting Tip 0.9mm 30-40A
PC.1566-CT11F	5	Max-Arc XTP 45/65 Flat Plasma Cutting Tip 1.1mm 50-60A
PC.1566-CT1F	5	Max-Arc XTP 45/65 Flat Plasma Cutting Tip 1.0mm 40-50A
PC.1566-ECT08	6	Max-Arc XTP 45/65 Extended Plasma Cutting Tip 0.8mm 20-30A
PC.1566-ECT09	7	Max-Arc XTP 45/65 Extended Plasma Cutting Tip 0.9mm 30-40A
PC.1566-GD	8	Max-Arc XTP 45/65 Plasma Gas Distributor
PC.1566-EL	9	Max-Arc XTP 45/65 Plasma Electrode
PC.1566-EE	10	Max-Arc XTP 45/65 Plasma Extended Electrode
PC.1566-OR	11	Max-Arc XTP 45/65 'O' Ring
PC.1566-TH	12	Max-Arc XTP 65 Torch Head
PC.1566-HT	13	Max-Arc XTP 65 Plasma Handle c/w Trigger
PC.1566-T6	Complete Torch	Max-Arc XTP 65 Plasma Cutting Torch, 6mtr Central Connection



## 9, Input Power Requirements

### **General**

If no mains cable is connected, a mains cable that is suitable for the connection voltage must be fitted before commissioning.  
A strain-relief device for the following cable cross-sections is fitted to the power source:

<b>Power source</b>	<b>Minimum Cable cross-section</b>
MW-CUT45DV	2.5mm <sup>2</sup>

Strain-relief devices for other cable cross-sections must be designed accordingly.

### **Safety**



#### **WARNING!**

**Danger from work that is not carried out properly.**

This can result in severe personal injury and damage to property.



## **10, Warranty**

AES Industrial Supplies Ltd warrants that all new Max-Arc manual welding and cutting equipment purchased shall be free of failure from defective materials or manufacturing faults for a period of **2 years** from the date of purchase.

All warranty periods start from the date of purchase from AES Industrial Supplies Ltd or an approved Max-Arc distributor to the original end user.

The date on the sales invoice is considered, the date of purchase for the purpose of the warranty period, or the date of manufacture is used, if the proof of purchase is not available.

Equipment is warranted, to the original owner/user and is not transferable.

Subject to the underlying purchase contract, or, failing such the AES Industrial Supplies Ltd general Terms and Conditions of sale, both the cost of replacement parts and AES Industrial Supplies Ltd labour expense in correcting the defects covered by the warranty, will be assumed by AES Industrial Supplies Ltd during the warranty period. AES Industrial Supplies Ltd shall in no event be responsible for any direct or indirect damages, third party expenses, as well as any loss of income/revenue, all of which are excluded, under this warranty.

The warranty does not cover :- Any defects resulting from normal wear and tear; improper use; Failure to observe the operating and maintenance instructions ; connection to an incorrect or faulty mains supply; overloading during use; any transport or storage damage; External damage such as fire, impact or damage due to natural causes, eg flooding; Use of unapproved spare/wear parts or replacement parts not supplied or approved by AES Industrial Supplies Ltd; Any modification or alteration of the equipment ; or any other circumstances beyond the control of AES Industrial Supplies Ltd; The warranty period is based on a single day 8-hour 5-day shift pattern.

AES Industrial Supplies Ltd will submit an invoice for any repair work performed outside the scope of the warranty.

Any warranty repair must be performed by AES Industrial Supplies Ltd or an authorised Max-Arc Service Centre, the customer is responsible for all shipping costs and risks associated with all items covered by the warranty. AES Industrial Supplies Ltd may opt to refund the purchase price (less any costs and depreciation due to use and wear). Faults/Defects found under warranty should be reported to the AES Industrial Supplies Ltd Technical team for review before returning the machine.

The customer has no claim to any loan or replacement products whilst repairs are being performed or replacement parts being provided.

The decision about repair or replacement of any defective part(s) are made by AES Industrial Supplies Ltd, the replacement part(s) remain(s) property of AES Industrial Supplies Ltd. the warranty extends only to the machine power source, wire feed unit and parts contained inside. No other warranty is expressed or implied, including the fitness of the equipment for any particular application.

Under the terms of the warranty, welding torches, their consumable parts, wire feed drive-rolls and guide tubes, work return cables and clamps, electrode holders, connection and extension cables, mains and control leads, plugs, wheels, coolant, etc. are not covered.

Warranty support is facilitated by AES Industrial Supplies Ltd or by an Authorised Max-Arc Service Centre that provide, highly experienced capability and carry out the professional repair, service and calibration of Max-Arc equipment.