

Jefferson®

PROFESSIONAL TOOLS & EQUIPMENT

140A

**DC INVERTER
ARC WELDER** 230V/50Hz



JEFARC140M-230

User Manual

v.1.1



DESCRIPTION

This equipment has been designed with inverter technology which allows the construction of a lightweight and portable MMA Inverter DC welder machine which can be used in a wide variety of general welding applications and environments.

The equipment uses the latest pulse width modulation (PWM) technology together with an Insulated Gate Bipolar Transistor (IGBT) Power Module to deliver a consistent current output and reliable welding arc with relatively low power consumption.

DC Output

This equipment has a DC output and when combined with the correct type of electrode it is suitable for welding alloy, non-alloy steels, stainless steel and cast iron. Electrodes up to 3.2mm can be used with ease.

Generator Friendly

The welder is able to cope with fluctuations in power input of +/-10% making it compatible for use with a wide range of modern generators.

Electrode Current Protection

If the electrode touches the workpiece for longer than 1.5 seconds the welding current will drop to the minimum current level (while arc force is maintained with the MMA operation).

SPECIFICATIONS

Model Number:	JEFARC140M-230
Voltage:	230V
Frequency:	50Hz
Rated Input Current:	13A
No-Load Voltage:	24V
No Load Loss:	50W
Output Current Range:	20-140A
Duty Cycle:	60% @ 30°C • 20% @ 40°C
Efficiency:	85%
Power Factor:	0.73
Electrode Diameter:	1.6 - 4.0mm
Insulation Class:	H
Protection Class:	IP21S
Weight:	3.2kg
Dimensions (mm)	260 x 185 x 110mm

UNPACKING

Upon receipt of the equipment, ensure all components are present and have remained undamaged in transit. Retain the packing materials and packaging in case future transportation of the equipment is necessary.

We recommend that the packaging is kept, at least within the period of the guarantee.

FEATURES

- 140A DC inverter arc welder (230V ~ 50Hz)
- Fitted with 13A UK Plug
- Generator friendly
- Insulated Gate Bipolar Transistor (IGBT) technology
- Integrated smart fan cooling system with thermostat
- Includes Voltage Reduction Device (VRD) for improved electrical safety
- Hot-start, Arc Force, Anti-stick, MMA Welding



230V ~ 50Hz



Voltage Reduction Device



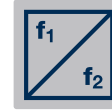
Insulation Gate Polar Transistor (IGBT)



MMA Welding



Forced Air Cooling



Inverter Technology



DC Current



Hot Start



Generator Friendly



Arc Force



Thermostatic Protection



Anti-Stick

BOX CONTENTS

- 2M earth clamp lead
- 3M electrode holder
- Carry Strap
- User manual

RECOMMENDED USAGE

This welder can be used to weld stainless steel, alloy steel, carbon steel, copper and other metals. It is also suited to use in high altitudes, and in the open air.

DUTY CYCLE

The duty cycle is the proportion (percentage) of time that the welder can work continuously within a 10 minute period at the rated welding current. For example, 60% = 6 minutes constant welding every ten minutes.

OVER-HEATING

In the event of over-heating, the IGBT protection unit will send an instruction to cut-off the welding current. An over-heating state will be indicated by the alarm light on the control panel on the front of the welder. Allow the welder to cool for 10 minutes and reduce the welding output current before starting the welding process again (or else reduce the duty cycle).

SAFETY GUIDELINES



Please read and ensure that you understand all of the operating instructions, safety precautions and warnings in this Instruction Manual before operating or maintaining this equipment. An accident can often be avoided by recognizing a potentially hazardous situation before it occurs, and by observing appropriate safety procedures. Hazards that must be avoided to prevent bodily injury or machine damage are identified by warnings on the equipment and in this Instruction Manual. Never use this equipment or modify it in any way that has not been specifically recommended by the manufacturer. Contact Jefferson Tools for all information relating to the repair and maintenance of this equipment. Contact a qualified electrician for advice on any issues relating to electrical safety in your working environment.

ELECTRICAL SAFETY



Ensure that you check the equipment thoroughly to ensure it is safe and fit for purpose before each use. It is important that you inspect all plugs, sockets, power cables and electrical fittings for wear and damage and repair or replace any defective components. The risk of electric shock can be minimised by the correct use of the appropriate electrical safety devices.

- We recommend that you fit a **Residual Current Circuit Breaker (RCCB)** in the main distribution board and that a **Residual Current Device (RCD)** is used when operating this equipment.
- The **Electricity at Work Act 1989** includes legislation that places legal implications on employers to ensure the safety of electrical devices in the workplace. The regulations dictate that all portable equipment must be inspected regularly and tested to ensure that it is safe for use. 'Portable equipment' means any electrical item that can be moved and this is often referred to as **Portable Appliance Testing (PAT)**. PAT testing should be carried out regularly on this equipment by trained, authorised personnel, as required by the legislation.
- The **Health and Safety at Work Act 1974** states that it is the responsibility of the owner of electrical appliances to ensure that both the equipment and working environments are maintained to ensure safe operation at all times.
- Check that all equipment cables are secure, correctly insulated, free from damage, and protected against short circuit and overload before connecting to the power supply. Do not use worn or damaged cables, plugs, sockets or other fittings.
- Ensure that the power supply matches voltage requirements specified on the equipment.
- Ensure the power cable is kept away from heat, oil and sharp edges.
- Always disconnect the equipment from the power source before servicing, inspecting, maintaining, cleaning, replacing or checking any parts.
- Do not carry the equipment while it is connected to its power source.
- Do not use this equipment in damp or wet conditions or environments with high condensation.
- Do not touch live electrical parts.
- Wear dry protective clothing (free from oil or other flammable residues).
- Avoid contact with work piece or ground during welding.
- Do not touch the work piece & welding wire at the same time.
- Use only the cables and rods recommended by the manufacturer.
- Always disconnect from the mains before carrying out any service or maintenance on this equipment.
- Use AC output ONLY if required for the welding process. If AC output is required, use remote output control if present on unit.
- Protect yourself from electric shock by insulating yourself from work and ground using dry rubber mats, dry wood or plywood, or other dry insulating material big enough to cover the full working area.

GENERAL EQUIPMENT SAFETY

The welding process can be dangerous if the correct safety procedures are not followed. It is important that anyone operating this equipment is fully-trained and wearing the appropriate personal protection equipment. Please read these instructions carefully and store them in a safe place for future reference.

ARC Rays can injure eyes and cause burns:

- Always wear a helmet with full face and neck protection with shade #10 Lens.
- Ensure that you use the appropriate eye, ear and body protection equipment.
- Do not touch work piece & welding wire at the same time.
- Use only the cables and rods recommended by the manufacturer.
- Always disconnect from the mains before carrying out any service or maintenance on this equipment.

Fire Hazards:

- Remove all flammable materials from within 35ft of the welding arc.
- Never carry out welding near pets or small children.
- Ensure that a fire extinguisher is available when welding.
- Wear oil free garments without pockets or cuffs.
- Do not weld on closed containers.

Toxic Fumes and Gases:

- Do not breathe fumes emitted by the welding process.
- Wear appropriate breathing apparatus.
- Ensure that you are working in a well-ventilated environment and that there is suitable exhaust at the arc.
- Do not cut coated, galvanised or plated materials (for example zinc, cadmium, mercury, barium) to avoid the risk of poisoning.
- Use a ventilator when necessary.
- Always refer to the MSDS for all welding materials used.

Magnetic Fields:

- Keep people with pacemakers away from the area when the welder is in use.

FIRST USE / SET UP

1. Make sure the air intake is clean and clear to ensure the cooling system can operate at optimum performance levels.
2. Ensure that the housing is earthed using cable not less than 4mm².
3. Connect the electrode holder and earth clamp.
4. Check that the polarity is correct for the welding process to ensure safety, a stable arc and avoid weld spatter.
5. Check that the power supply is compatible with welder specifications and that all cables and plugs are correct and free from damage.

When using extension cables ensure that the length of cable is sufficient to carry the required voltage as any voltage drop will deplete safety and performance not wrap the cable around any part of your body while welding.

Personal Protection Equipment:

- Anyone in the general area of the welding process should wear ear defenders to protect hearing.
- Wear approved safety glasses with side shields under your welding helmet or face shield and at all times in the work area.
- Wear complete body protection. Wear oil-free protective clothing such as leather gloves, heavy shirt, cuffless pants, and high boots.

Fig1: Welder Setup

INVERTER TECHNOLOGY

TERMINOLOGY

- MMA** - Manual Metal Arc Welding
- PWM** - Pulse Width Modulation
- IGBT** - Insulation Gate Polar Transistor

CURRENT PROCESSES

This welding equipment is manufactured using advanced inverter technology. The single phase AC input voltage is rectified into DC current (about 300V) this is then inverted to medium frequency AC voltage (about 20KHz) by the inverter device (IGBT Module).

The voltage is reduced by a medium transformer and rectified before being outputted by inductance filtering. The circuit uses current feedback control to ensure that the output current is kept at a stable rate.

This process is illustrated below in **Fig.1**:

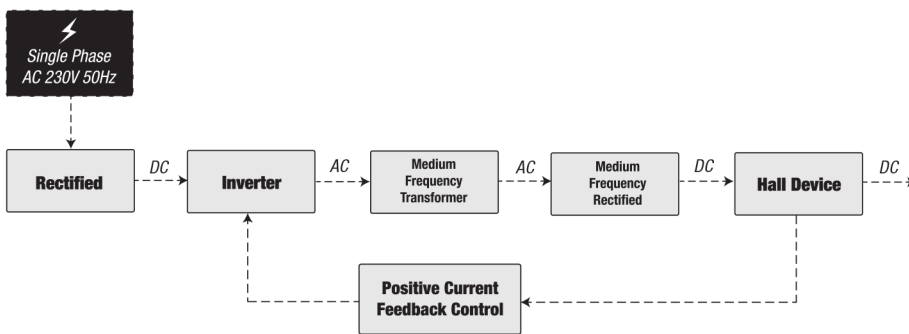


Fig1. Inverter Technology Process Diagram

This equipment is designed to deliver a constant current output providing a more stable welding arc and a fast dynamic response speed reduces the impact from the arc length fluctuation to the current.

Note: If the electrode touches the electrode during MMA operation for longer than 1.5 seconds the welding current will drop to the minimum current automatically to protect the electrode.

This allows the use of a much smaller transformer, permitting a significant weight saving and improved power efficiency.

Volt-Ampere Characteristics

The relationship between the rated loading voltage U^2 and welding current I^2 is shown in the equation and graph shown in **Fig.2**:

When $I^2 \leq 600A$, $U^2 = 20 + 0.04 I^2 (V)$; When $I^2 > 600A$, $U^2 = 44 (V)$

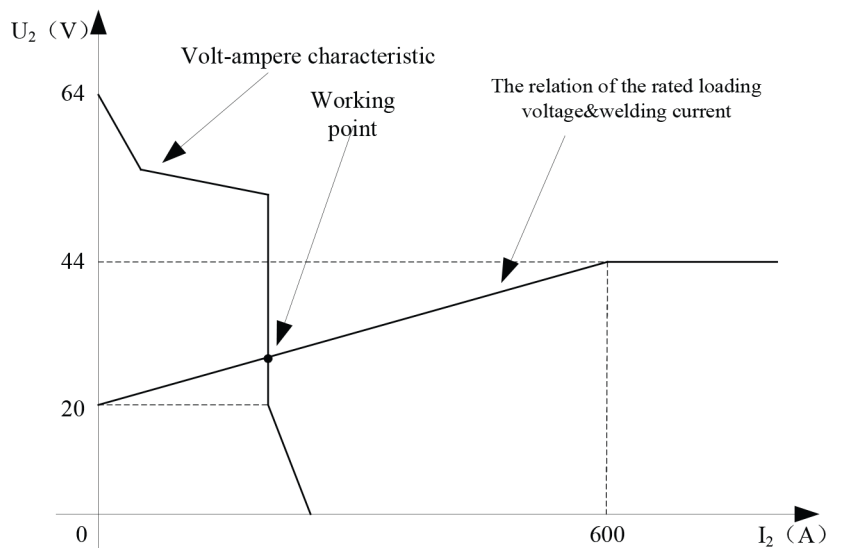
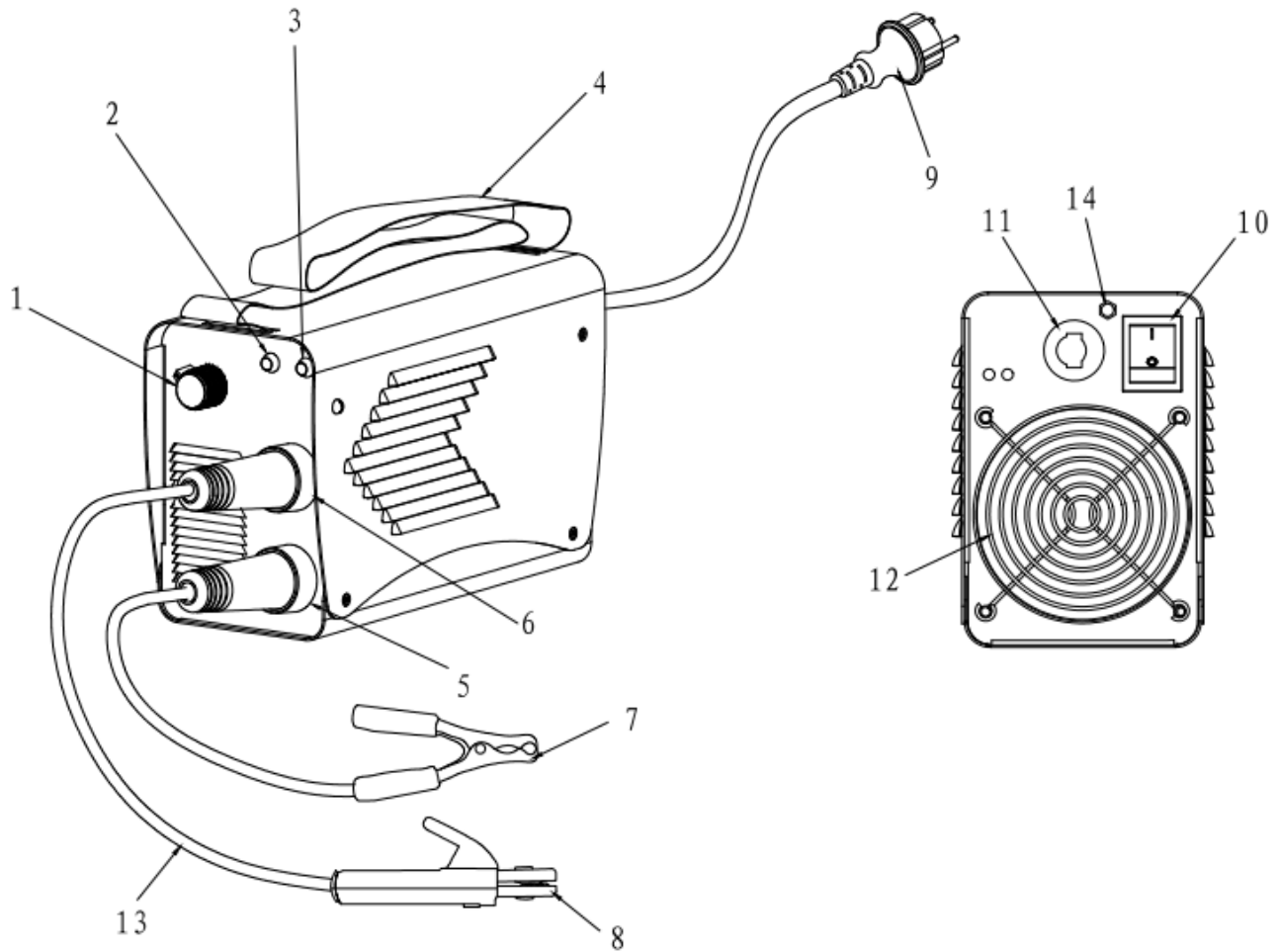


Fig2. Volt-Ampere Relationship

EQUIPMENT IDENTIFICATION



1. Current adjusting knob
2. Power indicator
3. Protection indicator
4. Straps
5. Quick connector socket: welding machine output (-)
6. Quick connector socket: welding machine output (+)
7. Earthing clamp
8. Electrode holder
9. Power Plug
10. On-off Switch
11. Power cord anchorage
12. Cooling Fan
13. Welding Cable
14. Additional Ground-connecting terminal

OPERATION

WORKING ENVIRONMENT

This equipment is designed for use in the following conditions:

- Areas free from moisture and dust with an ambient temperature between 0° to 40°C
- Areas free from oil steam and corrosive gases
- Areas usually not subjected to abnormal vibration or shock
- Areas with suitable ventilation free from any flammable or combustible materials
- Areas not exposed to direct sunlight or rain

Ensure that the equipment is not placed at a distance of 12" (304.79mm) or more from walls or similar obstructions that could restrict the natural airflow or cooling of the system.

CONNECTING TO THE POWER SUPPLY

Warning: Jefferson Tools recommends that this equipment be grounded and connected by a qualified electrician before use. Connect the earth cable to a suitable ground in compliance with the applicable electrical regulations. Connection to the correct input supply is necessary to avoid damage to internal components.

Connect the power cable to the required voltage. The primary cable should be connected to the correct supply to avoid arcing or overheating. Ensure that the input power supply is rated to match the maximum output of this equipment (AC, Single Phase, 50Hz, 230V).

WELDING CURRENT & ARC VOLTAGE

The welding power source is designed with a coiled safety feature that can withstand short-term overload without any adverse effects.

The welding current range values indicated on the control panel and specification plate should be used as a guide only. The current delivered to the arc is dependent on the welding arc voltage and because the welding arc voltage can vary between different classes of electrodes, the welding current at any one setting would vary depending on the type of electrode in use.

Use the supplied welding current range values as a guide and then adjust the current setting to suit the welding materials and processes you are using.

CABLE & ELECTRODE CONNECTION

Before connecting the work clamp to the work piece and inserting the electrode in the electrode holder make sure the primary power supply to the welder is disconnected.

MMA CABLE CONNECTIONS

1. Connect the work lead to the negative connection
2. Connect the electrode lead to the positive terminal
3. Insert an electrode into the holder
4. Connect the welder to the mains supply and turn the welder on
5. Adjust the current to the required level using the control knob
6. Set up is complete and you are ready to start welding

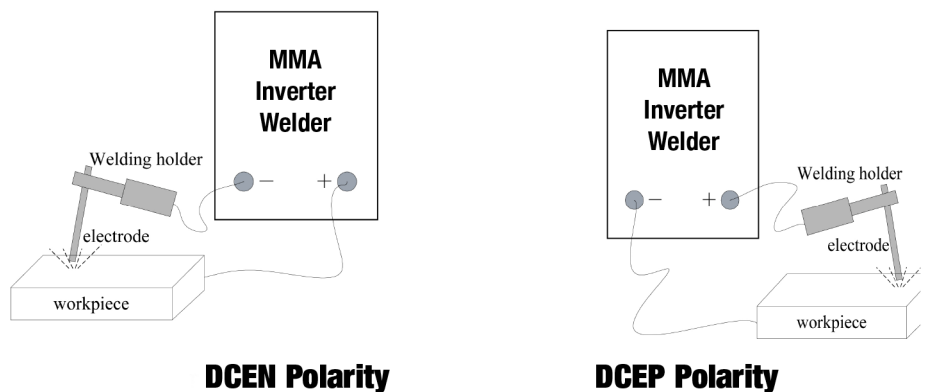


Fig4. DCEN / DCEP Connectivity

DCEN AND DCEP WELDING POLARITY

Always refer to the electrode manufacturer's operating instructions before making any connections. For DCEN and DCEP connections please refer to the diagram shown in Fig.4:

ELECTRODE SELECTION

The type of electrode required for the welding process will be based on the thickness of the workpiece, the welding position, the joint form and the welding layer. The level of current required to weld the electrode is outlined below:

Electrode	Ø1.6mm	Ø2.5mm	Ø3.2	Ø4.0
Current	25~40A	50~80A	100~130A	160~200A

The relationship between the welding current (I), factor (K) and electrode diameter (d) is shown below and be illustrated as (I=K X d: Carbon Electrode).

Electrode	Ø1.6mm	Ø2.0mm - 2.5mm	Ø3.2mm
Factor / K	20~25	25~30	30~40

WORKING ENVIRONMENT

1. Welding should be done in relatively dry environments, with air humidity less than 90%.
2. Avoid welding in strong sunshine or damp conditions, welder and all working materials should remain dry at all times.
3. Avoid welding operation in dusty environments and corrosive air environment.
4. Avoid welding in windy and drafty areas.

WELDER

1. Ensure that the air inlet is kept clear to allow the fan and cooling system to perform as required.
2. Prevent overloading - keep the welding current less than the maximum overload current. Overloading the current will reduce the performance and lifespan of this equipment and is potentially dangerous.
3. Ensure that the voltage is kept to recommended levels as indicated on the specification plate.
4. Ensure that the welder is earthed using a minimum of 6mm square cable before operation.
5. Ensure that the equipment operates within the recommended duty cycle. Failure to operate within the specified duty cycle will result in thermal cut-out or damage to PCBs.

MAINTENANCE



WARNING:

Ensure that the power supply is disconnected before opening the casing and ensure that all maintenance and repairs are carried out by qualified technicians.

1. Remove any dust and particle debris from the welder, air inlet and fan regularly. Keep all welding equipment clean and dry.
2. Use a mild air flow to remove dust and particles avoid using water or steam on any part of the equipment.
3. Check the insulation regularly using an ohmmeter.
4. Store all welding equipment in a safe, mild and dry environment when not in use.

Important:

During warranty period all repairs and maintenance must be carried out by an authorized Jefferson engineer. Any unauthorized maintenance and repairs will invalidate the warranty. Contact Jefferson Tools for any enquiries.

When not in use place the fan in its original box or otherwise cover to protect from dust, and store in a safe, dry, environment and safe from children and animals.

MMA TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Air pockets or voids in the weld metal (porosity)	<ol style="list-style-type: none"> 1. The electrodes are damp 2. The welding current is too high 3. Presence of surface impurities such as oil, grease, paint etc. 	<ol style="list-style-type: none"> 1. Only use dry electrodes 2. Reduce the welding current 3. Clean the joint before welding
Gaps & voids left in the root of the weld root by the electrode	<ol style="list-style-type: none"> 1. Welding current is too low 2. The electrode is too large for the joint 3. Insufficient gap 4. Incorrect sequence 	<ol style="list-style-type: none"> 1. Increase the welding current 2. Use a smaller diameter electrode 3. Allow a wider gap 4. Use the correct build-up sequence
Cracks appearing in the weld metal soon after solidification commences	<ol style="list-style-type: none"> 1. Pressure on the weld joint 2. Insufficient throat thickness 3. Cooling rate is too high 	<ol style="list-style-type: none"> 1. Reposition the weld joint with less stress / pressure or try using a crack resistant electrode 2. Travel slightly slower to allow greater build up in the throat 3. Preheat the plate and cool slowly
Portions of the weld run do not fuse to the surface of the metal or edge of the joint	<ol style="list-style-type: none"> 1. The electrode is too small for the welding process and/or used on plate that is too heavy or too cold. 2. Welding current is too low 3. Electrode is being used at the wrong angle 4. The travel speed of the electrode is too fast 5. There is scale or dirt on the joint surface 	<ol style="list-style-type: none"> 1. Use larger electrodes and preheat the plate 2. Increase the welding current 3. Adjust the angle so that the welding arc is directed more into the base metal 4. Reduce the travel speed of the welding electrode 5. Clean the surface before welding
Non-metallic particles are trapped in the weld metal (slag inclusion)	<ol style="list-style-type: none"> 1. Non metallic particles may be trapped in any undercut from the previous run 2. Joint preparation was not carried out correctly or was too restricted 3. Irregular deposits allow slag to be trapped 4. Lack of penetration from the welding arc because of slag trapped beneath the weld bead 5. Rust or mill scale is preventing full fusion 6. The Wrong electrode for position in which welding 	<ol style="list-style-type: none"> 1. If bad undercut is present clean the slag out and cover with a run from a smaller diameter electrode 2. Allow for adequate penetration and room by cleaning and removing any slag. 3. Remove the irregular deposits by chipping or grinding out the irregular deposits. 4. Use a smaller electrode with sufficient current to give 5. Clean the joint thoroughly before welding 6. Use electrodes best suited for the position in which the welding process is carried out

POWER TROUBLESHOOTING

Welding quality is dependant on the selection of the of the correct consumables for the job at hand and the maintenance of the and the proper preparation and welding techniques. The following troubleshooting guide will help you to identify some of the most common problems that you might encounter and the best steps to prevent or overcome them.

PROBLEM	CAUSE	SOLUTION
Unable to establish a welding arc	<ol style="list-style-type: none"> 1. The primary supply voltage has not been switched on 2. The welding power source has been disconnected 3. Loose internal electrical connections 	<ol style="list-style-type: none"> 1. Switch on the primary supply voltage 2. Switch on the welding power source 3. Have the equipment and circuitry checked and repaired by a qualified engineer
Maximum output welding current cannot be achieved with nominal mains supply voltage	Defective control circuit	Have a qualified service engineer inspect and repair the equipment
Welding current is reduced during the welding process	Poor work lead connection to the work piece	Ensure that the work lead has a positive electrical connection to the work piece
Power outage / pilot light off / Fan is not operating	<ol style="list-style-type: none"> 1. Input voltage failure 2. Over voltage 3. Internal electrical fault 	<ol style="list-style-type: none"> 1. Re-establish mains supply 2. Check required voltage for the equipment, if necessary move the equipment to a suitable supply source 3. Have machine tested and repaired by a qualified technician
The fault indicator light is displayed and no power is being supplied	<ol style="list-style-type: none"> 1. The equipment has over-heated 2. The equipment is in an over current cut-off state 3. Internal electrical fault 	<ol style="list-style-type: none"> 1. Allow the equipment to cool with the fan-running 2. Switch off the mains supply to the equipment and re-start 3. 3. Have machine tested and repaired by a qualified technician

Jefferson
PROFESSIONAL TOOLS & EQUIPMENT

Parts & Servicing

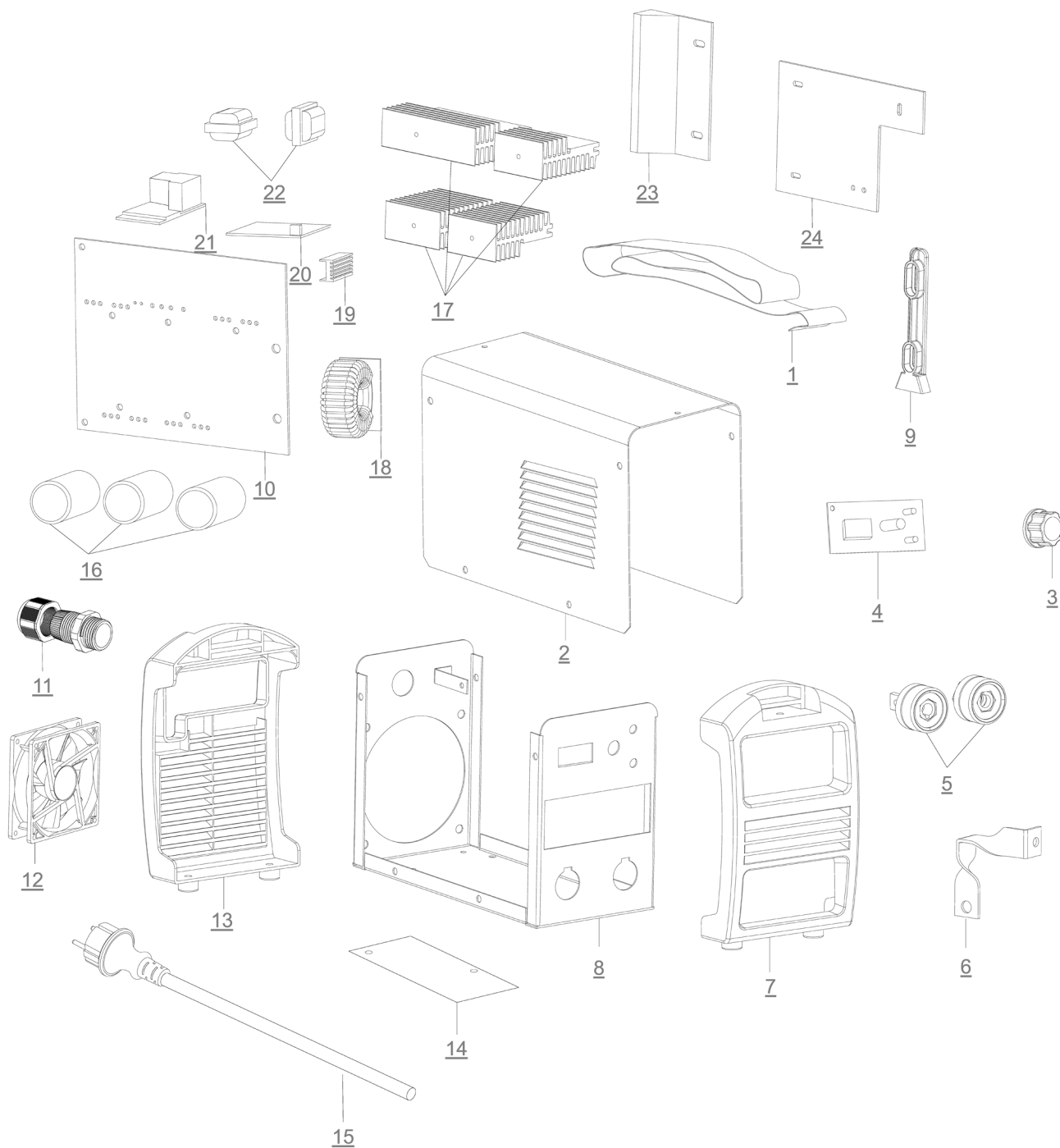
For Jefferson approved replacement parts contact your nearest dealer or contact Jefferson tools

Telephone: +44 (0)1244 646 048

Fax: +44 (0)1244 241 191

Email: warranty@jeffersonstools.com

PARTS DIAGRAM



PARTS LIST

#	DESCRIPTION	QUANTITY
1	Strap	1
2	Housing	1
3	Knob	1
4	Display Panel	1
5	European Connector	2
6	Aluminium Strip	1
7	Plastic Front Panel	1
8	Bottom Housing	1
9	Brace	1
10	Circuit Board	1
11	Power Cord Clasp	1
12	Fan	1
13	Plastic Rear Panel	1
14	Epoxy Board	1
15	Power Cable	1
16	Capacitor	3
17	Aluminium Radiator	4
18	Transformer	1
19	Aluminium Radiator	1
20	Small Signal Board	1
21	Switch Board	1
22	Transformer	2
23	Side Plate Guide	1
24	Side Plate	1

ENVIRONMENTAL PROTECTION



Recycle any packaging and unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment.

When the product becomes completely unserviceable, reaches the end of its working life and requires disposal, drain off any fluids (if applicable) into approved containers and dispose of the product and the fluids according to local regulations.

WEEE WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT STATEMENT



Information on Disposal for Users of Waste Electrical & Electronic Equipment

This symbol on the product(s) and / or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge.

For private households:

Dispose of this product at the end of its working life and in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). Contact your local solid waste authority for recycling information for this equipment.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

For business users in the European Union:

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union:

This symbol is only valid in the European Union. If you wish to discard this product please contact your local authorities or dealer and ask for the correct method of disposal.

ROHS DIRECTIVE 2011/65/EU

We hereby declare that this equipment has been tested and found to be compliant to RoHS Directive 2011/65/EU of the European Parliament and the Council from 08/06/2011 on restriction of the use of certain hazardous substances in electrical and electronic appliances.

Determination of levels of regulated substances in electrotechnical products, elements of Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium (Cr) and Bromine (Br) contents were measured by XRF Spectroscopy and chemical confirmation test for RoHS restricted substances.

EC DECLARATION OF CONFORMITY

We, Jefferson Tools as the authorised European Community representative of the manufacturer, declare that the following equipment conforms to the requirements of the following directives and / or standards:

Directive / Standard:	Description:	Notified Body:
2011/65/EU (as amended)	RoHS Directive	TÜV Rheinland (Shanghai)
2014/35/EU	Low Voltage Directive	
2014/30/EU	Electromagnetic Compatibility	
EN60974-11 : 2010	Arc welding equipment - Part 11: Electrode holders	
EN60974-1 : 2012	Arc welding equipment. Welding power sources	

Equipment Category: DC Inverter ARC Welder

Model Number • Description: JEFARC140M-230 • 140A DC Inverter ARC Welder

Signed by:

Stephen McIntyre



Position in the company:

Operations Director

Date:

14 March 2019

Name and address of manufacturer or authorised representative:

Jefferson Tools, Herons Way, Chester Business Park, Chester, United Kingdom, CH4 9QR
Telephone: +44 (0)1244 646 048
Fax: +44 (0)1244 241 191
Email: enquiries@jeffersonstools.com

LIMITED WARRANTY STATEMENT

Jefferson Professional Tools & Equipment, or hereafter "Jefferson" warrants its customers that its products will be free of defects in workmanship or material. Jefferson shall, upon suitable notification, correct any defects, by repair or replacement, of any parts or components of this product that are determined by Jefferson to be faulty or defective.

This warranty is void if the equipment has been subjected to improper installation, storage, alteration, abnormal operations, improper care, service or repair.

Warranty Period

Jefferson will assume both the parts and labour expense of correcting defects during the stated warranty periods below.

All warranty periods start from the date of purchase from an authorised Jefferson dealer. If proof of purchase is unavailable from the end user, then the date of purchase will be deemed to be 3 months after the initial sale to the distributor.

1 Year:

JEFARC140M-230 • 140A DC Inverter ARC Welder

90 Days

- All replacement parts purchased **outside** of the warranty period

Important: All parts used in the repair or replacement of warranty covered equipment will be subject to a minimum of 90 days cover or the remaining duration of the warranty period from the original date of purchase.

Warranty Registration / Activation

You can register and activate your warranty by visiting the Jefferson Tools website using the following address:

www.jeffersontools.com/warranty and completing the online form. Online warranty registration is recommended as it eliminates the need to provide proof of purchase should a warranty claim be necessary.

Warranty Repair

Should Jefferson confirm the existence of any defect covered by this warranty the defect will be corrected by repair or replacement at an authorized Jefferson dealer or repair centre.

Packaging & Freight Costs

The customer is responsible for the packaging of the equipment and making it ready for collection. Jefferson will arrange collection and transportation of any equipment returned under warranty. Upon inspection of the equipment, if no defect can be found or the equipment is not covered under the terms of the Jefferson warranty, the customer will be liable for any labour and return transportation costs incurred.

These costs will be agreed with the customer before the machine is returned.

* Jefferson reserve the right to void any warranty for damages identified as being caused through misuse

Warranty Limitations

Jefferson will not accept responsibility or liability for repairs made by unauthorised technicians or engineers. Jefferson's liability under this warranty will not exceed the cost of correcting the defect of the Jefferson products.

Jefferson will not be liable for incidental or consequential damages (such as loss of business or hire of substitute equipment etc.) caused by the defect or the time involved to correct the defect. This written warranty is the only express warranty provided by Jefferson with respect to its products.

Any warranties of merchantability are limited to the duration of this limited warranty for the equipment involved.

Jefferson is not responsible for cable wear due to flexing and abrasion. The end user is responsible for routine inspection of cables for possible wear and to correct any issues prior to cable failure.

Claiming Warranty Coverage

The end user must contact Jefferson Professional Tools & Equipment (Tel: +44 (0) 1244 646 048) or their nearest authorised Jefferson dealer where final determination of the warranty coverage can be ascertained.

Step 1 - Reporting the Defect

Online Method:

- Visit our website www.jeffersonstools.com/warranty and complete the Warranty Returns form. You can complete the form online and submit it to us directly or download the form to print out and return by post.

Telephone Method:

Contact your Jefferson dealer or sales representative with the following information:

- Model number
- Serial number (usually located on the specification plate)
- Date of purchase

A Warranty Returns form will be sent to you for completion and return by post or fax, together with details of your nearest authorised Jefferson repair centre. On receipt of this form Jefferson will arrange to collect the equipment from you at the earliest convenience.

Step 2 - Returning the Equipment

It is the customer's responsibility to ensure that the equipment is appropriately and securely packaged for collection, **together with a copy of the original proof of purchase**. Please note that Jefferson cannot assume any responsibility for any damage incurred to equipment during transit. Any claims against a third party courier will be dealt with under the terms & conditions of their road haulage association directives.

Please note: Jefferson will be unable to collect or process any warranty requests without a copy of the original proof of purchase.

Step 3 - Assessment and Repair

On receipt, the equipment will be assessed by an authorised Jefferson engineer and it will be determined if the equipment is defective and in need of repair and any repairs needed are covered by the warranty policy. In order to qualify for warranty cover all equipment presented must have been used, serviced and maintained as instructed in the user manual.

Where repair is not covered by the warranty a quotation for repair, labour costs and return delivery will be sent to the customer (normally within 7 working days).

Note: If the repair quotation is not accepted Jefferson Professional Tools & Equipment will invoice **1 hour labour time at £30 per hour plus return carriage costs (plus VAT)**.

In cases where no fault can be found with the equipment, or, if incorrect operation of the equipment is identified as the cause of the problem, a minimum of 1 hour labour at **£30 per hour plus carriage costs** will be required before the equipment will be despatched back to the customer.

Any equipment repaired or replaced under warranty will normally be ready for shipment back to the customer within 7 working days upon receipt of the equipment at an authorised Jefferson Repair centre (subject to part availability). Where parts are not immediately available Jefferson will contact you with a revised date for completion of the repair.

General Warranty Enquiries

For any further information relating to Jefferson warranty cover please call **+44 (0) 1244 646 048** or send your enquiry via email to warranty@jeffersonstools.com

Disclaimer:

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IMPORTANT! SAFETY FIRST!

Before attempting to use this product please read all the safety precautions and operating instructions outlined in this manual to reduce the risk of fire, electric shock or personal injury.



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