

[Manuals.plus](#) /

› [VECTOR WELDING](#) /

› VECTOR WELDING ARC 160 MMA Electrode Welder Instruction Manual

VECTOR WELDING ARC 160

VECTOR WELDING ARC 160 MMA Electrode Welder Instruction Manual

Model: ARC 160

1. IMPORTANT SAFETY INSTRUCTIONS

Before operating the VECTOR WELDING ARC 160 MMA Electrode Welder, carefully read and understand all safety instructions. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- **Electric Shock:** Welding current can cause fatal electric shock. Ensure proper grounding. Do not touch live electrical parts. Wear dry welding gloves.
- **Fumes and Gases:** Welding produces fumes and gases that can be hazardous to health. Work in a well-ventilated area. Use a fume extractor if necessary.
- **Arc Rays:** Arc rays can burn eyes and skin. Wear a welding helmet with appropriate filter shade and protective clothing.
- **Fire and Explosion:** Welding sparks and hot metal can cause fire or explosions. Keep flammable materials away from the welding area. Have a fire extinguisher readily available.
- **Burns:** Hot metal and electrodes can cause severe burns. Wear protective clothing, gloves, and footwear.
- **Overcurrent Protection:** The machine is equipped with overcurrent protection. Do not bypass safety features.
- **Overvoltage Protection:** The machine includes overvoltage protection. Ensure stable power supply.
- **Overload Protection:** The welder has overload protection. Avoid exceeding the duty cycle.
- **Overheating Protection:** The unit features overheating protection. Allow the machine to cool down if the thermal protection activates.

SEGURO Y ESTABLE



Protección Contra
Sobrecorriente



Protección
Contra Sobretensión



Protección
Contra Sobrecarga



Protección Contra
Sobrecalentamiento



Disipación
Eficaz del Calor



Image: Visual representation of the welder's integrated safety features, including protection against overcurrent, overvoltage, overload, and overheating, alongside efficient heat dissipation.

2. PACKAGE CONTENTS

Verify that all items listed below are included in your package. If any items are missing or damaged, contact your supplier immediately.

- VECTOR WELDING ARC 160 MMA Electrode Welder
- Welding Helmet
- Electrode Holder with Cable
- Ground Clamp with Cable
- Wire Brush
- Sample Welding Electrodes



Image: The VECTOR WELDING ARC 160 welding machine displayed with all its standard accessories, including the welding helmet, electrode holder, ground clamp, wire brush, and a set of welding electrodes.

3. PRODUCT OVERVIEW

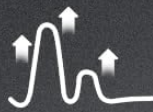
3.1. Key Features

- **160A Welding Current:** Offers a welding current range of 30 to 160 A.
- **IGBT Technology:** Advanced Insulated Gate Bipolar Transistor technology ensures stable welding performance and high energy efficiency.
- **Hot Start Function:** Simplifies arc ignition, ensuring a reliable start to the welding process.
- **Anti-Stick Protection:** Prevents the electrode from sticking to the workpiece and protects against overheating.
- **Arc Force Function:** Improves arc stability, especially with short arc lengths.
- **MCU Control & LED Display:** Intelligent Microcontroller Unit (MCU) control for immediate reaction to changes and a clear, easy-to-read LED display for all settings.
- **Smart Fan Control:** The cooling fan activates only when necessary, increasing efficiency and reducing noise.
- **Compact and Portable:** Weighing 3.2 kg with dimensions of 260 x 122 x 195 mm, ideal for mobile use.

SOLDADOR INVERTER MMA 160A



IGBT



Hot Start



Anti-Stick



Arc Force



Image: The ARC 160 Inverter MMA Welder highlighting its core features: IGBT technology, Hot Start, Anti-Stick, and Arc Force functions, represented by distinct icons.

3.2. Components and Controls

The front panel of the ARC 160 features a clear LED display and a single control knob for easy adjustment of welding parameters.

- **LED Display:** Shows the current welding amperage and selected electrode diameter.
- **Control Knob (1):** Used to adjust the welding current.
- **Electrode Diameter Indicators (2):** Lights up to indicate the recommended electrode diameter based on the

set current.

- **Positive (+) Terminal:** For connecting the electrode holder cable.
- **Negative (-) Terminal:** For connecting the ground clamp cable.

PANEL DE CONTROL CON PANTALLA LED

Funcionamiento sencillo en 2 pasos

1. Ajustar la corriente de soldadura.
2. Seleccionar el diámetro del electrodo en función de la corriente de soldadura.



Image: A close-up of the ARC 160's control panel, showing the LED display indicating '160' amps, the central control knob labeled '1', and the electrode diameter selection indicators labeled '2'.

4. SETUP

4.1. Connecting the Welding Cables

1. Ensure the welder is turned off and unplugged from the power source.
2. Connect the electrode holder cable to the positive (+) terminal on the front panel. Twist clockwise to secure.
3. Connect the ground clamp cable to the negative (-) terminal on the front panel. Twist clockwise to secure.
4. Attach the ground clamp securely to the workpiece or a metal workbench that is in direct contact with the workpiece. Ensure good electrical contact.
5. Insert a suitable electrode into the electrode holder.

4.2. Power Connection

1. Ensure the power switch on the welder is in the 'OFF' position.
2. Connect the welder's power cord to a suitable power outlet (230V, 50/60Hz). Ensure the outlet is properly grounded and can handle the required current.

4.3. Installing the Welding Helmet

Assemble the welding helmet according to its separate instructions. Ensure the protective lenses are clean and correctly installed before use. Always wear the helmet when welding to protect your eyes and face from arc rays and sparks.

5. OPERATING INSTRUCTIONS

5.1. Basic Operation Steps

1. **Adjust Welding Current:** Turn the control knob (1) to set the desired welding current (amperage) on the LED display.
2. **Select Electrode Diameter:** Based on the adjusted current, the welder will indicate the recommended electrode diameter (2). Ensure you are using an electrode of the correct size.

PANEL DE CONTROL CON PANTALLA LED

Funcionamiento sencillo en 2 pasos

1. Ajustar la corriente de soldadura.
2. Seleccionar el diámetro del electrodo en función de la corriente de soldadura.



Image: The ARC 160 control panel illustrating the two-step operation process: first, adjusting the welding current with the knob (1), and second, selecting the appropriate electrode diameter based on the current (2).

5.2. Electrode Selection and Current Settings

The ARC 160 is suitable for both basic (alkaline) and rutile (acidic) welding electrodes. Refer to the table below for recommended current ranges based on electrode diameter:

Electrode Diameter	Recommended Current Range
2.0 mm	50 - 80 A

Electrode Diameter	Recommended Current Range
2.5 mm	70 - 100 A
3.2 mm	110 - 140 A



Image: A welder operating the ARC 160, demonstrating its use with various electrodes. The image also displays a chart indicating compatible electrode types (alkaline and acidic) and their corresponding current ranges.

5.3. Welding Techniques

The ARC 160's features assist in achieving quality welds:

- **Hot Start:** Provides an initial surge of current to make arc ignition easier, especially with difficult-to-start electrodes.
- **Arc Force:** Automatically increases current when the arc length becomes too short, preventing the arc from extinguishing and maintaining stability.
- **Anti-Stick:** Reduces the welding current if the electrode sticks to the workpiece, allowing for easier removal without damaging the electrode or the machine.



Image: A visual representation of the ARC 160 in action, demonstrating quick and easy welding. The image includes close-up

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your welding machine.

- **Cleaning:** Periodically clean the internal components of the welder using dry compressed air to remove dust and metal particles. Ensure the machine is unplugged before cleaning.
- **Cable Inspection:** Regularly inspect welding cables, electrode holder, and ground clamp for damage, cuts, or loose connections. Replace damaged components immediately.
- **Ventilation:** Ensure the ventilation openings on the welder are clear and unobstructed to allow for proper cooling.
- **Storage:** Store the welder in a dry, clean environment, away from direct sunlight and extreme temperatures.

7. TROUBLESHOOTING

This section provides solutions to common issues you might encounter during operation.

Problem	Possible Cause	Solution
Welder does not power on	No power supply; Power switch off; Faulty power cord	Check power outlet and circuit breaker; Turn on power switch; Inspect and replace power cord if damaged.
No welding arc	Loose cable connections; Poor ground connection; Incorrect current setting; Wet electrode	Secure all cable connections; Ensure good ground contact; Adjust current; Use dry electrodes.
Electrode sticks frequently	Low welding current; Incorrect electrode angle; Arc length too short	Increase welding current; Adjust electrode angle; Maintain proper arc length. The Anti-Stick function should assist.
Welder overheats (thermal protection activates)	Exceeded duty cycle; Poor ventilation; High ambient temperature	Allow welder to cool down; Ensure clear ventilation openings; Work in a cooler environment.
Unstable arc	Poor ground connection; Contaminated workpiece; Incorrect current setting	Clean workpiece and ground connection; Adjust current. The Arc Force function should assist.

8. TECHNICAL SPECIFICATIONS

The following table outlines the technical specifications for the VECTOR WELDING ARC 160 MMA Electrode Welder.

Parameter	Value
Model	ARC 160
Input Voltage	230V, 50/60Hz
Welding Current Range	30 - 160 A
Technology	IGBT Inverter
Protection Class	IP21S
Insulation Class	F
Product Dimensions (L x W x H)	260 x 122 x 195 mm
Product Weight	3.2 kg
Manufacturer Product ID	ARC160DSET
Manufacturer Model Number	A1601D SET1

SOLDADOR DE ELECTRODO LIGERO PORTÁTIL

Diseño con asa de transporte,
fácil de llevar

Peso **3.2KG**

195mm

260mm

122mm

Image: A person demonstrating the portability of the ARC 160 welder, with its compact dimensions (260mm x 122mm x 195mm) and light weight (3.2kg) clearly indicated.

9. WARRANTY AND SUPPORT

VECTOR WELDING products are manufactured to high-quality standards. This product comes with a standard manufacturer's warranty against defects in materials and workmanship. Please refer to your purchase

documentation for specific warranty terms and duration.

For technical support, warranty claims, or spare parts, please contact VECTOR WELDING customer service through the retailer where the product was purchased or visit the official VECTOR WELDING website for contact information.

ASK A QUESTION ABOUT THIS MANUAL

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

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