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› STAHLWERK ARC 160 MD Electrode Welding Machine User Manual

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Model: ARC 160 MD

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, setup, maintenance, and troubleshooting of your STAHLWERK ARC 160 MD electrode welding machine. Please read this manual thoroughly before operating the device.



Figure 1: STAHLWERK ARC 160 MD Welding Machine with electrode holder and ground clamp.

Key Features:

- **Universal MMA Electrode Welding:** Compact DC inverter from 20 to 160 A for powerful arc welding. Operable without shielding gas, suitable for maintenance, assembly, and demanding DIY tasks.
- **Lift-TIG Option:** Upgradeable for DC TIG welding with contact ignition using an optional WP-17V torch. Ideal for fine and precise welds on steel and stainless steel.
- **Latest Generation IGBT Technology:** Equipped with a modern IGBT monobloc inverter for high switching frequency and excellent energy efficiency, ensuring stability and durability.
- **Hotstart & Anti-Stick Functions:** Hotstart facilitates ignition by automatically increasing voltage at startup. Anti-Stick prevents the electrode from sticking, ensuring a stable arc and reliable weld penetration.
- **Ultra-Light and Robust Design:** Weighing only 3.3 kg, this unit is highly portable. The shock-resistant ST-Guard casing and intelligent cooling system with a controlled fan protect against overheating and overvoltage.

2. SAFETY INSTRUCTIONS

Always prioritize safety when operating welding equipment. Failure to follow safety guidelines can result in serious injury or death.

- Wear appropriate personal protective equipment (PPE), including a welding helmet with proper shade, welding gloves, protective clothing, and safety shoes.
- Ensure adequate ventilation in the work area to disperse welding fumes.
- Do not weld near flammable materials or in explosive atmospheres.
- Ensure the welding machine is properly grounded.
- Avoid direct contact with live electrical parts.
- Keep children and unauthorized personnel away from the welding area.

3. SETUP

Follow these steps to set up your welding machine for operation.

1. **Unpacking:** Carefully remove the welding machine and all accessories from the packaging. Inspect for any damage during transit.
2. **Power Connection:** Connect the welding machine to a suitable power outlet. Ensure the power supply matches the machine's requirements (refer to specifications).
3. **Ground Clamp Connection:** Attach the ground clamp cable to the negative (-) terminal on the front panel of the welding machine. Securely connect the ground clamp to the workpiece or a sturdy metal workbench that is in direct contact with the workpiece.
4. **Electrode Holder Connection:** Attach the electrode holder cable to the positive (+) terminal on the front panel of the welding machine. Insert the welding electrode into the electrode holder.



**Connexions librement accessibles
garantissent un travail confortable**

Figure 2: Freely accessible connections on the front panel for comfortable work.

Soudage sans gaz protecteur

Appareil de soudage à électrode ARC/MMA pour le soudage sans gaz protecteur

Single Board

La technologie Single Board permet une construction peu encombrante



Figure 3: The compact design of the ARC 160 MD, highlighting its gas-free operation and single board technology.

4. OPERATING INSTRUCTIONS

This section details the operation of the STAHLWERK ARC 160 MD.

4.1 Powering On and Current Adjustment

1. Turn on the welding machine using the power switch. The digital display will illuminate.
2. Use the current adjustment knob to set the desired welding current (Amperes). The current range is 20 to 160 A. Refer to electrode manufacturer specifications for recommended current settings.



Figure 4: The clear and intuitive digital display for easy current adjustment.

4.2 MMA Welding (Electrode Welding)

The ARC 160 MD is primarily designed for MMA welding.

- **Hotstart Function:** This feature automatically increases the voltage at the start of welding, making arc ignition easier and more reliable.
- **Anti-Stick Function:** If the electrode sticks to the workpiece, the Anti-Stick function automatically reduces the welding current, preventing the electrode from overheating and allowing for easy detachment.
- Maintain a consistent arc length and travel speed for optimal weld quality.



Figure 5: Welding in progress, demonstrating the stable arc and benefits of Hotstart and Anti-Stick functions.

4.3 TIG DC Welding (Optional)

The ARC 160 MD can be upgraded for TIG DC welding with an optional WP-17V torch (not included).

- Connect the WP-17V TIG torch to the appropriate terminals as per the torch's instructions.
- The machine supports Lift-TIG ignition, where the arc is initiated by briefly touching the tungsten electrode to the workpiece and then lifting it.
- TIG DC welding is suitable for precise welds on steel and stainless steel.

5. MAINTENANCE

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

- **Cleaning:** Periodically clean the exterior of the machine with a dry, soft cloth. Ensure ventilation openings are free from dust and debris.
- **Fan Inspection:** The Smart Cooling system utilizes a controlled fan. Regularly check the fan for obstructions

and ensure it operates freely.

- **Cable Inspection:** Inspect all welding cables, connections, and the power cord for signs of wear, cuts, or damage. Replace damaged components immediately.
- **Storage:** Store the welding machine in a dry, clean environment, away from direct sunlight and extreme temperatures.



Figure 6: The intelligent cooling fan, crucial for preventing overheating.

6. TROUBLESHOOTING

This section addresses common issues you might encounter.

Problem	Possible Cause	Solution
Machine does not power on	No power supply; faulty power cord; internal fault	Check power connection and outlet; inspect power cord; contact support.
No welding arc	Poor ground connection; incorrect current setting; faulty electrode; damaged cables	Ensure secure ground connection; adjust current; replace electrode; inspect cables.
Electrode sticks frequently	Low current setting; improper technique; Anti-Stick not functioning	Increase welding current; improve welding technique; contact support if Anti-Stick fails.
Machine overheats (protection light on)	Exceeded duty cycle; blocked ventilation; high ambient temperature	Allow machine to cool down; clear ventilation openings; work in a cooler environment.

The machine features an integrated overheating protection system. If the machine becomes too hot, it will automatically shut down to prevent damage. Allow it to cool down before resuming operation.

7. TECHNICAL SPECIFICATIONS

Detailed specifications for the STAHLWERK ARC 160 MD.

- **Model:** ARC 160 MD
- **Manufacturer:** STAHLWERK
- **Welding Current (MMA):** 20 - 160 A
- **Welding Current (TIG DC):** 20 - 160 A (with optional torch)
- **Power Type:** AC/DC Inverter

- **Technology:** IGBT
- **Dimensions (L x W x H):** 26.9 x 11.6 x 18.7 cm
- **Weight:** 3.3 kg
- **Material:** Metal and Rigid Plastic
- **Features:** Hotstart, Anti-Stick, Smart Cooling, ST-Guard Casing, Overheating Protection



Figure 7: Physical dimensions of the ARC 160 MD.



Figure 8: Illustration of the IGBT technology for enhanced efficiency.

8. WARRANTY AND SUPPORT

STAHLWERK is committed to providing high-quality products and excellent customer service.

8.1 Warranty Information

The STAHLWERK ARC 160 MD comes with a **7-year warranty**, reflecting our confidence in the product's durability and performance. This warranty covers manufacturing defects and ensures extended support for your investment.

8.2 Customer Support

For any technical assistance, questions, or repair needs, please contact STAHLWERK customer support. We offer:

- On-site service and support via telephone and email.
- An in-house workshop for quick and efficient repairs.

You can find contact details on the official STAHLWERK website or through your purchase documentation.



STAHLWERK®



7 ans de garantie

Des prestations de garantie étendues



Service et poids

sur place, par téléphone et par e-mail



Atelier interne

pour des réparations rapides



Production propre

pour une qualité maximale



Un seul fournisseur

Vaste gamme d'accessoires



Fournisseurs traditionnels



2 ans de garantie

Norme minimale légale



Le désert du service

Pas d'accessibilité



Longs délais d'attente

L'appareil doit être renvoyé



Production extérieure

Marchandise bon marché
d'Extrême-Orient



Petit assortiment

Approvisionnement compliqué

Figure 9: STAHLWERK's commitment to extended warranty and comprehensive service.

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Details

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

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