

Lincoln Electric B18259-1

Lincoln Electric Bester 190C Multi-Process Welder 230V User Manual

1. INTRODUCTION

This manual provides essential information for the safe and effective operation, setup, and maintenance of your Lincoln Electric Bester 190C Multi-Process Welder. The Bester 190C is a versatile 230V inverter welding machine capable of MIG-MAG (Gas Metal Arc Welding), MMA (Manual Metal Arc Welding), and TIG Lift (Tungsten Inert Gas Welding) processes. It is designed to be portable, lightweight, compact, and robust, offering powerful performance for various welding tasks. Please read this manual thoroughly before using the equipment.

2. SAFETY INFORMATION

WARNING: Welding can be dangerous. Always follow safety precautions to prevent injury or death. Read and understand all safety information before operating this equipment.

- **Electric Shock:** Can kill. Do not touch live electrical parts. Wear dry welding gloves and protective clothing. Ensure the workpiece is properly grounded.
- **Fumes and Gases:** Can be hazardous to your health. Keep your head out of the fumes. Use ventilation or exhaust to remove fumes from the breathing zone.
- **Arc Rays:** Can burn eyes and skin. Wear a welding helmet with a proper shade filter. Wear protective clothing to cover exposed skin.
- **Fire and Explosion:** Welding sparks can cause fire or explosion. Keep flammable materials away from the welding area. Have a fire extinguisher readily available.
- **Hot Parts:** Can cause severe burns. Allow equipment to cool before touching.
- **Noise:** Excessive noise can damage hearing. Wear ear protection.
- **Pacemakers:** Magnetic fields from high currents can affect pacemakers. Consult your doctor before welding.

3. PRODUCT OVERVIEW AND COMPONENTS

The Bester 190C features a user-friendly digital display and controls for easy operation. It is equipped with a robust housing for durability.

3.1 Front Panel Controls and Connections



Figure 1: Lincoln Electric Bester 190C Multi-Process Welder front panel with controls and digital display. This image shows the main interface for selecting welding modes, adjusting current and voltage, and monitoring parameters.



Figure 2: Another view of the Lincoln Electric Bester 190C Multi-Process Welder, highlighting the control panel and various connection points for welding cables and gas lines.

The front panel includes:

- **Digital Display:** Shows welding parameters such as current and voltage.
- **Mode Selection Buttons:** For choosing MIG-MAG, MMA, or TIG Lift welding.
- **Parameter Adjustment Knobs:** To fine-tune welding current, voltage, and other settings.
- **Output Terminals:** Connections for welding torch and earth clamp.
- **Wire Feeder Mechanism:** For MIG-MAG welding wire spool and feeding.

3.2 Included Accessories



Figure 3: The included MIG-MAG torch and the 3-meter earth clamp cable. These are essential for starting MIG-MAG welding operations.

The welder is supplied with:

- MIG-MAG Torch (3 meters)
- Earth Clamp Cable (3 meters)

Note: An electrode holder and TIG torch are not included and must be purchased separately for MMA and TIG Lift welding, respectively.

4. SETUP AND INSTALLATION

Before beginning any setup, ensure the welder is switched off and disconnected from the main power supply.

4.1 Power Connection

- Connect the welder to a 230V single-phase power supply. The machine is designed to operate within a voltage range of 230V +/- 15%.
- Ensure the power outlet is properly grounded and capable of supplying the required current (16A fuse recommended).
- The Bester 190C is compatible with sufficiently powerful generators.

4.2 Connecting Welding Cables



Figure 4: The Bester 190C Welder with the MIG torch and earth clamp properly connected to the front panel terminals, ready for operation.

- **Earth Clamp:** Connect the earth clamp cable to the appropriate terminal on the front panel. Attach the clamp securely to the workpiece, ensuring good electrical contact.
- **MIG-MAG Torch:** Connect the MIG-MAG torch to its designated connector on the front panel. Ensure it is firmly seated.
- **MMA/TIG (Optional):** If using MMA or TIG Lift, connect the electrode holder or TIG torch to the appropriate terminals (positive or negative, depending on polarity requirements for the specific process and electrode/filler material).

4.3 Gas Connection (for MIG-MAG and TIG)

- Connect the gas hose from your shielding gas cylinder (e.g., Argon/CO2 mix for MIG, pure Argon for TIG) to the gas inlet on the welder.
- Ensure all connections are tight to prevent gas leaks.
- Set the gas flow rate according to your welding process and material requirements using a flowmeter on the gas cylinder regulator.

4.4 Wire Loading (for MIG-MAG)

- Open the wire spool compartment.

- Place the wire spool (max 5 kg, 200 mm diameter) onto the spindle, ensuring it rotates freely.
- Feed the welding wire through the guide tube and into the drive rollers.
- Close the drive roller tension arm and adjust the tension. The wire should feed smoothly without slipping or deforming.
- With the torch pointed away from yourself and others, press the trigger to feed the wire through the torch liner until it exits the contact tip.
- The welder supports wire diameters from 0.6 mm to 1.0 mm.

5. OPERATING INSTRUCTIONS

The Bester 190C offers three welding processes: MIG-MAG, MMA, and TIG Lift.

5.1 Process Selection

- Turn on the welder using the main power switch.
- Use the mode selection buttons on the front panel to choose your desired welding process: MIG-MAG, MMA, or TIG Lift. The selected mode will be indicated on the digital display.

5.2 Parameter Adjustment

- **MIG-MAG:** Adjust the welding current (wire feed speed) and voltage using the dedicated knobs. Refer to welding charts for recommended settings based on material thickness and wire type. The machine allows for easy polarity inversion.
- **MMA:** Adjust the welding current (amperage) based on the electrode type and diameter.
- **TIG Lift:** Adjust the welding current. TIG Lift arc starting requires touching the tungsten electrode to the workpiece and then lifting it slightly to initiate the arc.

5.3 Advanced Features

The Bester 190C includes features to enhance welding performance:

- **Arc Force:** Automatically adjusts the welding current to prevent the electrode from sticking during MMA welding, improving arc stability.
- **Hot Start:** Provides an initial boost of current at the start of MMA welding to ensure easy arc ignition.
- **Anti-stick:** Reduces the current if the electrode sticks to the workpiece during MMA welding, making it easier to detach and preventing overheating.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your welding machine. Always disconnect the welder from the power supply before performing any maintenance.

- **Cleaning:** Periodically clean the exterior of the machine with a dry, soft cloth. Use compressed air to blow out dust from inside the machine, especially around cooling vents, but ensure the air is dry and oil-free.

- **Cable Inspection:** Regularly inspect all welding cables, power cords, and gas hoses for cuts, abrasions, or damage. Replace damaged components immediately.
- **Torch Maintenance:** For MIG-MAG, regularly clean the contact tip, gas nozzle, and check the wire liner for blockages or wear. Replace consumables as needed. For TIG, inspect the tungsten electrode and sharpen or replace as necessary.
- **Drive Rollers (MIG-MAG):** Clean the drive rollers and ensure they are free of wire debris. Check for proper tension.

7. TROUBLESHOOTING

This section addresses common issues you might encounter. For problems not listed here, contact customer support.

Problem	Possible Cause	Solution
Welder does not power on	No power from outlet; Power switch off; Internal fuse tripped	Check power supply and circuit breaker; Ensure power switch is ON; Contact service for internal fuse issues.
No arc / Weak arc	Poor earth connection; Incorrect current setting; Damaged cables; Incorrect process selected	Ensure earth clamp has good contact; Adjust current; Inspect and replace damaged cables; Verify correct welding mode.
Wire feeding issues (MIG-MAG)	Incorrect drive roller tension; Blocked liner; Worn contact tip; Incorrect wire spool installation	Adjust drive roller tension; Clean or replace liner; Replace contact tip; Reinstall wire spool correctly.
Poor weld quality	Incorrect parameters (current/voltage); Insufficient gas flow (MIG/TIG); Contaminated workpiece; Incorrect technique	Adjust welding parameters; Check gas cylinder and flow rate; Clean workpiece; Review welding technique.
Overheating protection activated	Exceeded duty cycle; Blocked cooling vents; High ambient temperature	Allow machine to cool down; Ensure cooling vents are clear; Operate in a well-ventilated area.

8. TECHNICAL SPECIFICATIONS

Feature	Specification
Model	Bester 190C Multi
Part Number	B18259-1

Feature	Specification
Input Voltage	230 V +/- 15% 1 Phase
Input Fuse	16 A
MIG-MAG Current Range	30 - 180 A
MMA Current Range	15 - 180 A
TIG Current Range	15 - 180 A
TIG Arc Starting	Lift
MIG-MAG Torch Length	3 m
Max Wire Spool Size	5 kg (200 mm diameter)
Wire Diameter	0.6 / 1.0 mm
Dimensions (L x W x H)	480 mm x 220 mm x 305 mm
Weight	13.7 kg
Duty Cycle (MIG-MAG)	20% @ 180 A, 60% @ 115 A, 100% @ 90 A (at 40°C ambient)
Duty Cycle (MMA)	15% @ 180 A, 60% @ 95 A, 100% @ 75 A (at 40°C ambient)
Duty Cycle (TIG)	25% @ 180 A, 60% @ 120 A, 100% @ 90 A (at 40°C ambient)

9. WARRANTY INFORMATION



Figure 5: The 2-year warranty badge, indicating the coverage period for the Bester 190C Welder.

The Lincoln Electric Bester 190C Multi-Process Welder comes with a **2-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims. For detailed warranty terms and conditions, refer to the official Lincoln Electric warranty policy or contact customer support.

10. CUSTOMER SUPPORT

If you have any questions, require technical assistance, or need to report a problem with your Lincoln Electric

Bester 190C Multi-Process Welder, please contact Lincoln Electric customer support. You can find contact information on the official Lincoln Electric website or through your local distributor.

When contacting support, please have your product model number (B18259-1) and serial number (if applicable) ready.