

[Manuals.plus](#) /

> [IBELL](#) /

> iBELL TIG/MMA Welding Machine User Manual

IBELL T250-106

iBELL TIG/MMA Welding Machine User Manual

Model: T250-106

1. INTRODUCTION

Thank you for choosing the iBELL TIG/MMA Welding Machine, Model T250-106. This inverter-based welding machine is designed for both TIG (Tungsten Inert Gas) and MMA (Manual Metal Arc) welding processes, offering versatility and high performance for various applications. This manual provides essential information for safe operation, proper setup, maintenance, and troubleshooting to ensure optimal performance and longevity of your welding machine.



Image 1.1: The iBELL TIG/MMA Welding Machine (Model T250-106) shown with its included accessories, such as the TIG torch, electrode holder, earth clamp, and various consumables.

2. SAFETY INFORMATION

WARNING: Welding can be dangerous. Always follow safety precautions to prevent serious injury or death.

- **Eye and Face Protection:** Always wear a welding helmet with appropriate shade lenses to protect your eyes and face from arc rays and sparks.
- **Body Protection:** Wear flame-resistant clothing, welding gloves, and safety shoes to protect against burns, electric shock, and radiation.
- **Ventilation:** Ensure adequate ventilation to remove welding fumes and gases, which can be hazardous to your health. Work in a well-ventilated area or use local exhaust ventilation.
- **Electrical Safety:** Never touch live electrical parts. Ensure the machine is properly grounded. Disconnect power before servicing.
- **Fire Prevention:** Keep flammable materials away from the welding area. Have a fire extinguisher readily available. Welding sparks can travel.
- **Gas Cylinders:** If using shielding gas, secure cylinders properly and handle them with care. Ensure

connections are leak-free.

- **Children and Bystanders:** Keep children and unauthorized persons away from the welding area.

3. PRODUCT OVERVIEW

The iBELL T250-106 is a compact and powerful inverter welding machine featuring advanced IGBT technology for stable arc performance. It supports both TIG and MMA welding modes, making it suitable for a wide range of metal fabrication tasks.

Key Features:

- **Dual Operation (TIG/MMA):** Seamlessly switch between TIG and MMA welding modes.
- **IGBT Technology:** Ensures stable current output, high efficiency, and reliable performance.
- **Hot Start:** Provides excellent arc ignition, preventing electrode sticking.
- **Anti-Stick:** Minimizes short circuit current if the electrode sticks to the workpiece.
- **VRD (Voltage Reduction Device):** An in-built safety function that reduces open-circuit voltage for enhanced user safety.
- **Arc Force:** Improves weld performance on specified electrode sizes, making the job easier.
- **Digital Display:** Provides precise current readings for accurate control.



Image 3.1: Visual representation highlighting the key features of the iBELL T250-106, including Dual Operation, IGBT Technology, Anti-Sticking Feature, and Voltage Reduction Device.

Component Identification:



**AUTOMOTIVE
MAINTENANCE**



**LAWN & GARDEN
MAINTENANCE**



**HOME
MAINTENANCE**



**DIY
METAL CRAFTS**

**WIDE RANGE
OF WELDING
APPLICATIONS**

iBELL®
POWER TOOLS
WELDING MACHINES &



TRUSTED PERFORMANCE. PROVEN QUALITY

Engineered for professionals, backed by quality—unleash the welding power that gets the job done right.

Image 3.2: A detailed diagram showing the various components of the iBELL TIG/MMA Welding Machine, including the digital display, adjustable current knob, TIG/MMA switch, gas inlet, torch sockets, cooling fan, and power input.

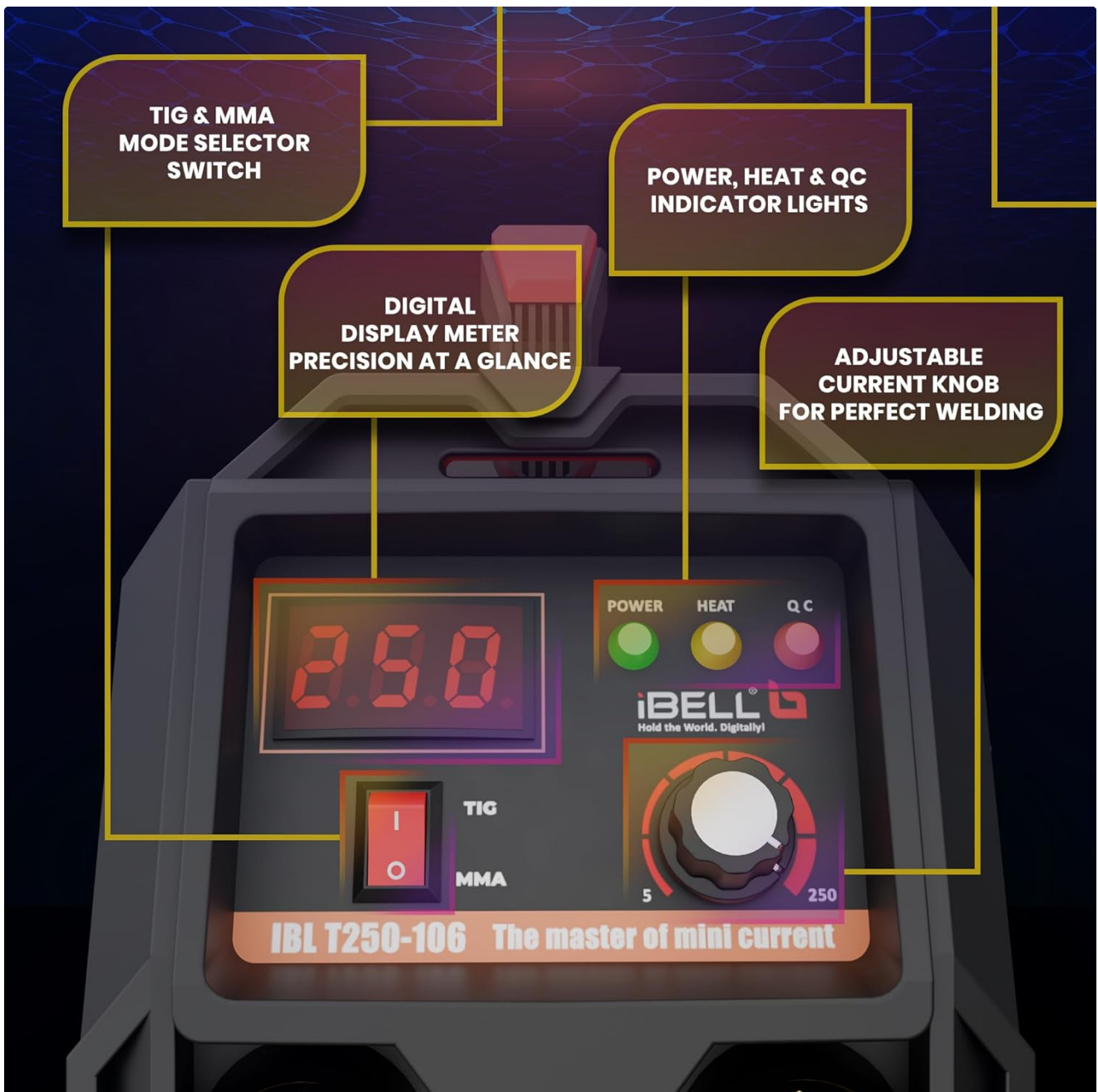


Image 3.3: Close-up view of the control panel, illustrating the digital display meter, TIG & MMA mode selector switch, power/heat/QC indicator lights, and the adjustable current knob for precise welding control.

4. SETUP

Before operating the welding machine, ensure all connections are secure and the work area is prepared according to safety guidelines.

4.1 Unpacking and Inspection:

- Carefully remove the welding machine and all accessories from the packaging.
- Inspect the machine for any signs of damage during transit. Do not operate if damaged.
- Verify all listed accessories are present: Electrode Holder, Earth Clamp, TIG Torch, Tungsten needles, Collet, Back Cap, etc.



Image 4.1: A visual guide to the accessories included with the iBELL T250-106, such as the electrode holder, earth clamp, TIG torch, and various TIG consumables like tungsten needles, collets, and back caps.

4.2 Electrical Connection:

- The machine operates on 220V. Ensure your power supply matches this requirement.
- Connect the power cord to a suitable grounded outlet.

4.3 Connecting Welding Cables:

- **Earth Clamp:** Connect the earth clamp cable to the negative (-) terminal on the front panel. Securely attach the earth clamp to the workpiece or welding table, ensuring good electrical contact.
- **Electrode Holder (for MMA):** Connect the electrode holder cable to the positive (+) terminal on the front panel.
- **TIG Torch (for TIG):** Connect the TIG torch cable to the appropriate socket (usually positive for DC TIG, check machine markings) and the gas hose to the gas inlet.

4.4 Shielding Gas Connection (for TIG):

- Connect the gas hose from the TIG torch to the gas inlet on the machine.

- Connect the other end of the gas hose to a regulator on your inert shielding gas cylinder (e.g., Argon).
- Ensure all gas connections are tight and leak-free.

5. OPERATING INSTRUCTIONS

This section details the operation of the iBELL T250-106 in both MMA and TIG welding modes.

5.1 MMA (Manual Metal Arc) Welding:

- Ensure the electrode holder cable is connected to the positive (+) terminal and the earth clamp to the negative (-) terminal.
- Select 'MMA' mode using the switch on the control panel.
- Adjust the welding current using the adjustable current knob. The digital display will show the set current (MMA output current ranges from 5-200A).
- Insert the appropriate electrode into the electrode holder.
- Strike the arc by lightly touching the electrode to the workpiece and quickly lifting it slightly to establish the arc.
- Maintain a consistent arc length and travel speed for a quality weld.

5.2 TIG (Tungsten Inert Gas) Welding:

- Ensure the TIG torch is connected to the appropriate terminal (typically negative for DC TIG) and the earth clamp to the positive (+) terminal.
- Select 'TIG' mode using the switch on the control panel.
- Adjust the welding current using the adjustable current knob. The digital display will show the set current (TIG output ranges from 20-160A).
- Ensure the shielding gas cylinder is open and the flow rate is set correctly via the regulator.
- Prepare the tungsten electrode by grinding it to a sharp point. Insert it into the TIG torch collet.
- Initiate the arc using the lift-arc or high-frequency start method (depending on machine features).
- Maintain a short arc length and feed filler rod into the weld puddle if required.

SPECIFICATIONS

RATED VOLTAGE	: 220V±15%~50/60HZ
INPUT CAPACITY	: 8.5KVA
INPUT CURRENT	: 43A
NO LOAD VOLTAGE	: 45V
MMA OUTPUT CURRENT	: 20-160A
TIG OUTPUT CURRENT	: 5-200A
USABLE ELECTRODES	: 1-5.0MM
GENERATOR REQUIRED	: 5.8KW
WEIGHT	: 5.28KG



Image 5.1: Illustrates the dual operation capability of the machine, showing both TIG (Tungsten Inert Gas) and MMA (Manual Metal Arc) welding processes in action, along with brief descriptions of each method.

6. MAINTENANCE

Regular maintenance ensures the longevity and safe operation of your iBELL welding machine.

- **Cleaning:** Periodically clean the machine's exterior with a dry cloth. Use compressed air to blow out dust and debris from inside the machine, especially from the cooling fan and vents. Ensure the machine is unplugged before cleaning.
- **Cable Inspection:** Regularly inspect all welding cables, connections, and the power cord for cuts, fraying, or damage. Replace damaged cables immediately.
- **Torch and Electrode Holder:** Clean the TIG torch nozzle and collet regularly. Replace worn-out parts. Ensure the electrode holder jaws are clean and provide good contact.
- **Storage:** Store the machine in a clean, dry, and well-ventilated area when not in use. Protect it from dust and moisture.

7. TROUBLESHOOTING

This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
No power to the machine	Power cord unplugged, circuit breaker tripped, faulty power switch.	Check power cord connection, reset circuit breaker, contact service if switch is faulty.
No arc or weak arc	Poor earth clamp connection, incorrect current setting, damp electrodes (MMA), worn tungsten (TIG), gas flow issues (TIG).	Ensure good earth connection, adjust current, dry electrodes, regrind tungsten, check gas supply and flow.

Problem	Possible Cause	Solution
Electrode sticks frequently (MMA)	Low current setting, improper arc striking technique, damp electrodes.	Increase current, practice arc striking, use dry electrodes. The Anti-Stick feature should help.
Overheat indicator on	Exceeded duty cycle, blocked ventilation, high ambient temperature.	Allow machine to cool down, clear vents, ensure adequate ventilation.
Poor weld quality	Incorrect current/voltage, improper travel speed, contaminated workpiece, incorrect gas flow (TIG).	Adjust settings, maintain consistent technique, clean workpiece, check gas flow.

If you encounter problems not listed here or if solutions do not resolve the issue, please contact iBELL customer support.

8. SPECIFICATIONS

Detailed technical specifications for the iBELL TIG/MMA Welding Machine T250-106.



Image 8.1: A table summarizing the key technical specifications of the iBELL TIG/MMA Welding Machine, including rated voltage, input capacity, input current, no-load voltage, MMA/TIG output current ranges, usable electrodes, generator required, and weight.

Specification	Value
Model Number	T250-106
Rated Voltage	220V \pm 15% ~ 50/60Hz
Input Capacity	8.5kVA
Input Current	43A

Specification	Value
No Load Voltage	45V
MMA Output Current Range	5-200A
TIG Output Current Range	20-160A
Usable Electrodes	1.0-5.0MM
Generator Required	5.8kW
Item Weight	5.28 Kilograms
Product Dimensions	40.5 x 28 x 29 cm
Manufacturer	TSP TECHNOLOGIES , NINGBO ,ZHEJIANG, CHINA

9. WARRANTY AND SUPPORT

For warranty information and customer support, please refer to the warranty card included with your product or visit the official iBELL website. Keep your purchase receipt as proof of purchase for any warranty claims. You can also visit the [iBELL Store on Amazon](#) for more product information and support resources.