



***i-TECH* MIG170**

DC Inverter MIG Welding Machine User Manual



Do not attempt to set up or operate this equipment until you have read & fully understood the contents of this manual. If you do not fully understand any of the instructions, please contact your supplier for further information & advice before beginning any welding procedure.

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1. General Description

- This welding machine is manufactured with advanced inverter technology.
- IGBT technology enhances the reliability of the machine.
- It is capable of MIG, MMA and scratch start TIG welding.
- High duty cycles enable continuous welding for longer periods.
- Closed loop feedback control, constant voltage output, workable under network voltage fluctuation within $\pm 15\%$.
- Adjustable welding voltage and circuit enable excellent welding characteristics.
- During arc welding, a unique dynamic characteristic control circuit ensures a stable arc, little splashing, good shaping and efficient welding.
- Melting ball removing, high no-load and slow wire feed functions increase the success rate of arc starting.
- Reductions in metal loss enhance the welding efficiency and energy saving effect.
- The switching frequency is beyond audio range, almost eliminating noise pollution.

2. Warranty

1. Your i-TECH MIG170 welder is covered by a comprehensive 2 year return-to-base parts & labour warranty.
2. Improper use, abuse or any attempt to repair the product by an unauthorised third party will invalidate any warranty claim.
3. Any parts or consumables fitted or used in conjunction with the i-TECH MIG170 which affect the equipment operation & which are deemed by Inverter Fusion Ltd to be of inferior quality or not fit for that purpose will be regarded as abuse and will invalidate the warranty claim.
4. The claimant is responsible for all carriage, insurance and transportation costs in returning the product to Inverter Fusion Ltd.
5. Upon receipt and inspection of the product, it will be repaired or replaced at the discretion of Inverter Fusion Ltd. In the event of a chargeable repair, or a repair being required that is not considered to be a warranty issue, the claimant will be contacted for further instructions.
6. Following the completion of any authorised warranty claim work, the product will be returned to the claimant at the cost of Inverter Fusion Ltd (UK only).

3. Safety

There are inherent safety issues whilst welding so please ensure you read this manual carefully before commencing operations and follow the safety guidelines below to protect yourself and others from injury:

1. Whilst welding, ensure that you are working in a well ventilated area to avoid breathing in smoke & fumes.
2. Always wear a suitable welding mask/helmet, welding gloves & protective clothing whilst welding.
3. Never look at the welding arc when not wearing a welding mask or helmet.
4. Never touch the work piece with bare hands whilst it is still hot.
5. When appropriate use a suitable welding screen or curtain to protect other people.
6. Do not weld near flammable materials or combustible liquids or gases.
7. Ensure the earth return is connected appropriately to prevent danger of electric shock.
8. Never touch moving parts on the machine, such as the fan, and ensure all doors, panels and covers are closed and in place during operation.
9. Magnetic fields produced by the welder during operation may affect cardiac pacemakers — *pacemaker users should consult a doctor before welding.*

4. Main Parameters

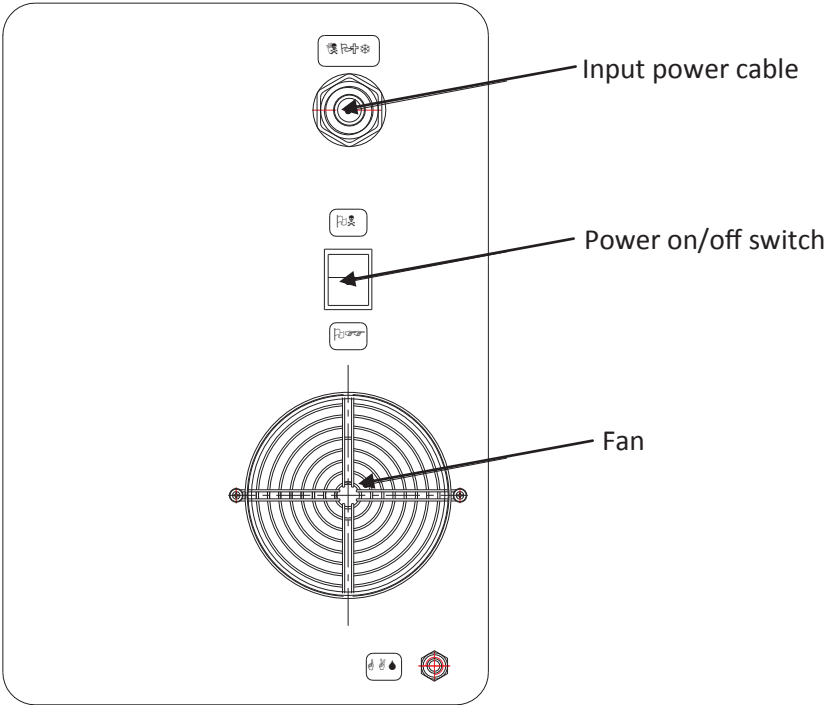
Input Power Voltage	240 — 50/60Hz
Maximum Input Current	22 Amps
Maximum Power Capacity	5.1 KVA
Current Range MIG	25—175 Amps
Current Range MMA & TIG	10—160 Amps
Voltage Range MIG	11—26
Open Circuit Voltage MMA	70
Wire Feed Speed (m/min)	1.5—16
MIG Welding Wire (Æ)	0.6, 0.8, 0.9mm
Duty Cycle @ 20°	60% @ 100 Amps
Power Factor	0.7
Efficiency	85%
Insulation Class	F
Protection Class	IP21
Weight	18 kg
Dimensions	480mm x 230mm x 360mm

5. Panel Structure

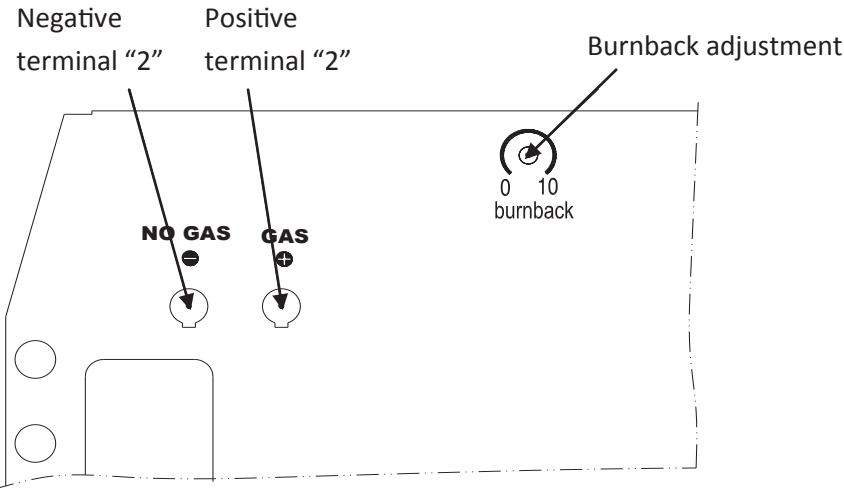
5.1. Front panel



5.2. Back panel



5.3. Internal panel structure



6. Set Up & Operation

Please ensure you follow these instructions whilst setting up your i-TECH MIG170:

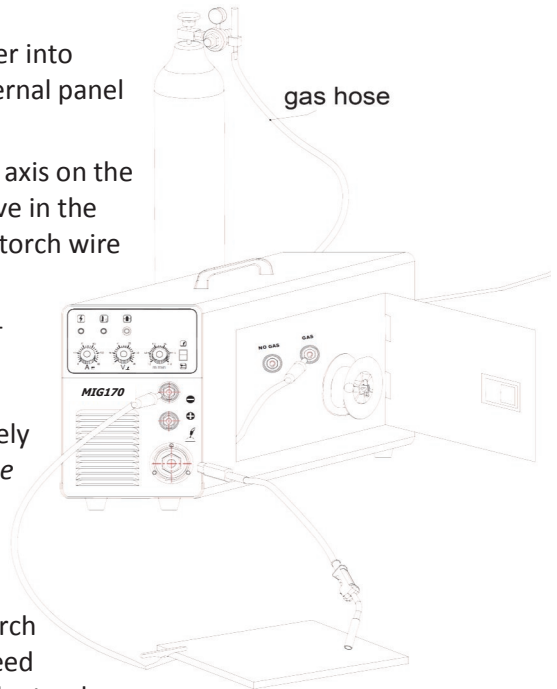
6.1. Power cable connection

Connect the power input lead to a suitable 240v single phase plug.

6.2. MIG welding with gas

6.2.1. Set up

1. Connect the welding torch to the output socket on the front panel of the machines and tighten it.
2. Connect the earth return to the negative (-) terminal on the front panel of the machine.
3. Insert the dix plug on the wire feeder into the "GAS" output socket on the internal panel and tighten it clockwise.
4. Fix the welding wire coil to the rack axis on the wire feeder, ensuring that the groove in the wire feed wheel is aligned with the torch wire feed hole.
5. Unfasten the tensioner on the wire-pressing wheel and feed the wire into the appropriate groove in the wire feed roller, pressing it in securely but not too tightly. *NOTE: ensure the correct roller is fitted i.e. 0.8mm Ø wire needs a 0.8mm Ø groove on the roller.*
6. Thread the wire into the welding torch manually and then press the wire feed button to feed it out of the end of the torch.
7. Connect the gas hose tightly to the regulator on the gas bottle.



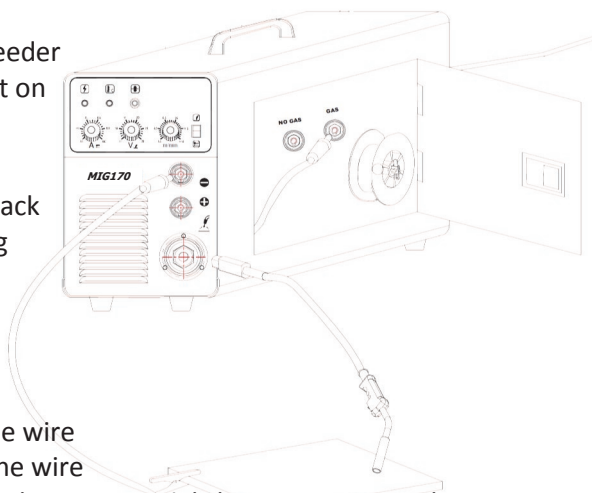
6.2.2. Operation

1. Switch the power on at the back of the machine — the LED power indicator will light up and you will hear the fan start to work.
2. Open the gas cylinder valve and adjust the flow meter to the desired position.
3. Turn the conversion switch on the front of the machine to the “MIG welding” position and adjust the voltage and wire feed speed appropriately.
4. Adjust the burnback control on the internal panel to ensure the required length of wire protrudes out of the contact tip after welding.
5. Press the switch on the welding torch and begin welding.
6. The gas cuts off automatically one second after the arc is stopped.

6.3. MIG welding without gas

6.3.1. Set up

1. Connect the welding torch to the output socket on the front panel of the machines and tighten it.
2. Connect the earth return to the negative (-) terminal on the front panel of the machine.
3. Insert the dix plug on the wire feeder into the “NO GAS” output socket on the internal panel and tighten it clockwise.
4. Fix the welding wire coil to the rack axis on the wire feeder, ensuring that the groove in the wire feed wheel is aligned with the torch wire feed hole.
5. Unfasten the tensioner on the wire-pressing wheel and feed the wire into the appropriate groove in the wire feed roller, pressing it in securely but not too tightly. *NOTE: ensure the correct roller is fitted i.e. 0.8mm Ø wire needs a 0.8mm Ø groove on the roller.*
6. Thread the wire into the welding torch manually and then press the wire feed button to feed it out of the end of the torch.



6.3.2. Operation

1. Switch the power on at the back of the machine — the LED power indicator will light up and you will hear the fan start to work.
2. Turn the conversion switch on the front of the machine to the “MIG welding” position and adjust the voltage and wire feed speed appropriately.
3. Adjust the burnback control on the internal panel to ensure the required length of wire protrudes out of the contact tip after welding.
4. Press the switch on the welding torch and begin welding.

6.4. MMA welding

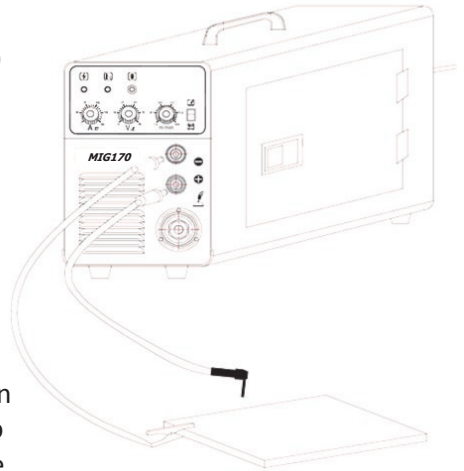
6.4.1. Set up

1. Connect the electrode holder to the positive (+) terminal on the front panel of the machine.
2. Connect the earth return to the negative (-) terminal on the front panel of the machine.

6.4.2. Operation

1. Switch the power on at the back of the machine — the LED power indicator will light up and you will hear the fan start to work.
2. Turn the conversion switch on the front of the machine to the “MMA welding” position and adjust the welding current according to the thickness of the electrode to ensure the desired welding performance.
3. Generally the required welding currents are as follows:

Ø 2.5mm: 70 - 100 Amps Ø 3.2mm: 110 - 130 Amps Ø 4.0mm: 140 - 170 Amps



7. Caution

7.1. Working environment

1. Welding should be carried out in a relatively dry environment with a humidity of 90% or less.
2. The temperature of the working environment should be -10°C to +40°C.
3. Avoid welding in the open air unless sheltered from sunlight and rain, and never let rain or water infiltrate the machine.
4. Avoid welding in dusty areas or where corrosive chemical gases are present.
5. Avoid MIG welding in environments with a strong airflow.

7.2. Ventilation

The i-TECH MIG170 contains an inner fan which cools it effectively, enabling it to work steadily for longer periods. To enable the fan to work efficiently, always ensure that the louvers on the front panel are uncovered and unblocked and that the minimum distance between the machine and other objects is 30cm.

7.3. Overheating protection

If the machine has become overheated because of continuous welding for long periods the overheat LED will light up and the overheat protection system will begin working, causing the machine to stop welding. If this occurs there is no need to restart the machine — once it has cooled down the LED will go out and welding can recommence.

8. Maintenance

1. Always use and store your i-TECH MIG170 in a clean, dry environment.
2. Regularly check that the cables and leads are in good condition.
3. Regularly check that the gas hose is in good condition and has no cracks.

WARNING

Improper use, abuse or any attempt to repair the product by an unauthorised third party will invalidate any warranty claim.

Any parts or consumables fitted or used in conjunction with the i-TECH MIG170 which affect the equipment operation & which are deemed by Inverter Fusion Ltd to be of inferior quality or not fit for that purpose will be regarded as abuse and will invalidate the warranty claim.

9. Troubleshooting

Fault	Cause	Remedy
The power on LED is not lit	No mains power available	Ensure that the machine is connected to a suitable live mains power source & is switched on
	The fuse in the plug is no longer working	Replace the fuse
The yellow LED light is lit	The machine has overheated because the working duty cycle has been exceeded	Stop welding for a while to allow the machine time to cool down. Ensure that the fan & output ducts are free from obstruction & that there is adequate ventilation space around the machine
No welding output	Welding leads are incorrectly fitted	Check that the leads are fitted to the correct sockets & that the earth return is connected to the work piece
MMA Welding operation is erratic or not as required	Incorrect welding current selected	Check that the current setting is correct for the selected electrode
	Faulty or damp electrode	Select an alternative electrode
Erratic or uncontrollable MMA welding arc	Faulty electrode holder or bad earth return connection	Check that the correct sized components are fitted & that the electrode holder is in good condition. Ensure that there is a good earth return connection with the work piece
MIG welding wire feed erratic	Incorrect wire feed roller	Check correct size wire feed roller is fitted
	Incorrect feed roller tension	Check feed roller tension
	Wire binding on reel	Check wire will easily feed from roll
	Nozzle blocked or wrong size	Check correct size nozzle is fitted in torch



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