IDEAL PRAKTIK MIG 200 IGBT MMA

INSTRUCTIONS MANUAL

WARNING! FOR SAFETY REASON PLEASE READ AND UNDERSTAND THE FOLLOWING INSTRUCTIONS BEFORE FIRST USE OF THE DEVICE.

1. General instructions

Read the operating instructions!

The operating instructions provide an introduction to the safe use of the products. An incorrectly performed installation can result in material damage and injure persons as a result. For this reason, we do not accept any responsibility or liability for losses, damages or costs arising from incorrect installation, improper operation or incorrect usage and maintenance or any actions connected to this in any way.

- Read the operating instructions for all system components!
- Observe accident prevention regulations!
- Observe all local regulations!
- Confirm with a signature where appropriate.

2. Safety instructions

DANGER!

Electromagnetic fields!

The power source may cause electrical or electromagnetic fields to be produced which could affect the correct functioning of electronic equipment such as IT or CNC devices, telecommunication lines, power cables, signal lines and pacemakers.

• Observe the maintenance instructions! (see Maintenance and Testing chapter)
• Unwind welding leads completely!
• Shield devices or equipment sensitive to radiation accordingly!
• The correct functioning of pacemakers may be affected (obtain advice from a doctor if necessary).

Do not carry out any unauthorised repairs or modifications!
To avoid injury and equipment damage, the unit must only be repaired or modified by specialist, skilled persons! The warranty becomes null and void in the event of unauthorised interference.

• Appoint only skilled persons for repair work (trained service personnel)!

Electric shock!
Welding machines use high voltages which can result in potentially fatal electric shocks and burns on contact. Even low voltages can cause you to get a shock and lead to accidents.

• Do not touch any live parts in or on the machine!
• Connection cables and leads must be free of faults!
• Switching off alone is not sufficient!
• Place welding torch and stick electrode holder on an insulated surface!
• The unit should only be opened by specialist staff after the mains plug has been unplugged!
• Only wear dry protective clothing!
• Wait for 4 minutes until the capacitors have discharged!

WARNING!

Risk of injury due to radiation or heat!
Arc radiation results in injury to skin and eyes.
Contact with hot workpieces and sparks results in burns.
• Use welding shield or welding helmet with the appropriate safety level (depending on the application)!
• Wear dry protective clothing (e.g. welding shield, gloves, etc.) according to the relevant regulations in the country in question!
• Protect persons not involved in the work against arc beams and the risk of glare using safety curtains!
Explosion risk!
Apparently harmless substances in closed containers may generate excessive pressure when heated.
• Move containers with inflammable or explosive liquids away from the working area!
• Never heat explosive liquids, dusts or gases by welding or cutting!

WARNING!

Smoke and gases!
Smoke and gases can lead to breathing difficulties and poisoning. In addition, solvent vapour (chlorinated hydrocarbon) may be converted into poisonous phosgene due to the ultraviolet radiation of the arc!
• Ensure that there is sufficient fresh air!
• Keep solvent vapour away from the arc beam field!
• Wear suitable breathing apparatus if appropriate!

Fire hazard!
Flames may arise as a result of the high temperatures, stray sparks, glowing-hot parts and hot slag produced during the welding process.
Stray welding currents can also result in flames forming!
• Check for fire hazards in the working area!
• Do not carry any easily flammable objects such as matches or lighters.
• Keep appropriate fire extinguishing equipment to hand in the working area!
• Thoroughly remove any residue of flammable substances from the workpiece before starting welding.
• Only continue work on welded workpieces once they have cooled down.
Do not allow to come into contact with flammable material!
• Connect welding leads correctly!

Risk of accidents if these safety instructions are not observed!
Non-observance of these safety instructions is potentially fatal!
• Carefully read the safety information in this manual!
• Observe the accident prevention regulations in your country.
• Inform persons in the working area that they must observe the regulations!

Danger when coupling multiple power sources!
Coupling multiple power sources in parallel or in series has to be carried out by qualified personnel and in accordance with the manufacturer's guidelines. Before bringing the power sources into service for arc welding operations, a test has to verify that they cannot exceed the maximumallowed open circuit voltage.
• Connection of the machine may be carried out by qualified personnel only!
• When decommissioning individual power sources, all mains and welding current leads have to be safely disconnected from the welding system as a whole. (Danger due to inverse voltages!)
• Do not couple welding machines with pole reversing switch (PWS series) or machines for AC welding, as a minor error in operation can cause the welding voltages to be combined.

WARNING!

Hazards due to improper usage!
Hazards may arise for persons, animals and material objects if the equipment is not used correctly. No liability is accepted for any damages arising from improper usage!
• The equipment must only be used in line with proper usage and by trained or expert staff!
• Do not modify or convert the equipment improperly!

CAUTION!

Installation site!
The machine must not be operated in the open air and must only be set up and operated on a suitable, stable and level base!
• The operator must ensure that the ground is non-slip and level, and provide sufficient lighting for the place of work.
• Safe operation of the machine must be guaranteed at all times.

Equipment damage due to dirt accumulation!
Unusually high quantities of dust, acid, corrosive gases or substances may damage the equipment.
• Avoid high volumes of smoke, vapour, oil vapour and grinding dust!
• Avoid ambient air containing salt (sea air)!

Non-permissible ambient conditions!
Insufficient ventilation results in a reduction in performance and equipment damage.
• Observe the ambient conditions!
• Keep the cooling air inlet and outlet clear!
• Observe the minimum distance of 0.5 m from obstacles!

1. Technical specification

Power supply	AC 230V / 50Hz (1ph)
Welding processes	MIG, MAG, MMA
Technology	IGBT
Welding current MIG/MAG	30A - 200A
Welding current MMA	180A
Duty cycle	100% (130A) / 60% (180A)
Current regulation	Stepless (fluent)
No load voltage	56V
Power consumption	5.2 kW
Wire spool weight	5 kg
Compatible wire diameter	0.6 / 0.8 / mm
Minimum fuse	25A
Protection class	IP21S
Weight	15 kg
Wire feeder	2 rollers

2. Applications

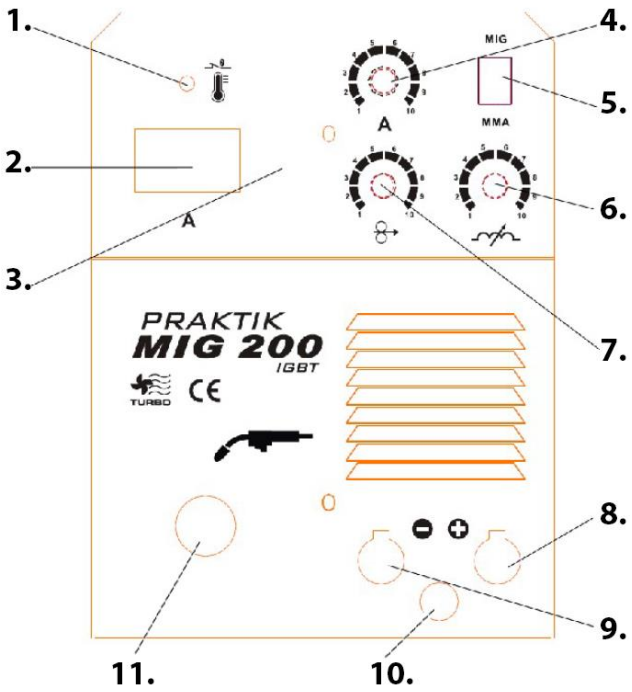
Device is intended for light industry applications and works with material thickness not greater than 5-8 mm depending on conditions and type of material. Welding process that can be conducted using the device is manual coated electrode welding (MMA) and semi-automatic arc welding with shield gas or flux core wire (MIG/MAG)

The manufacturer is not liable for damage caused by improper use of the device.

3. Welding machine description

3.1 Front view

1. Overheat / malfunction indicator
2. Amperage display
3. Control panel
4. Amperage adjustment knob
5. MIG/MAG / MMA process selector
6. Inductance regulation knob
7. Wire feed speed adjustment knob
8. Positive polarization socket (+)
9. Negative polarization socket (-)
10. Polarization selector plug
11. MIG torch



4. Preparing the device to work

- Before use please make sure that electric network you are going to use is corresponding to technical specification of the device. Power supply voltage and frequency is provided in the technical specification section of this manual.

- Please check if the power supply connection is grounded. Check if the fuse is sufficient and not less than 20A.

- In case of changing the plug follow the instructions to connect the green/yellow wire to the ground line in your socket.

5. Connecting welding cables and torch

- Before connecting welding cables make sure the device in not connected to power supply.

- Check if the ground cable is connected with ground clamp

- Ground plug should be connected to negative polarization socket (pic. 3.1.9). Insert plug and turn it to tighten. Loosely connected plug may cause sparks and damage to socket.

  In MIG/MAG process ground plug should be connected to negative socket (-) however when using flux core wire it is connected to positive socket (+). The other empty socket must connected with polarization selector (pic. 3.1.10)

  Please remember that you can't leave empty sockets as the circuit won't be closed and welding won't be possible.

- Make sure the contact tip and torch liner are compatible with the wire you are about to use. In the set there is torch compatible with 0.8mm steel wire. For a different wire diameter or type you will need to supply compatible parts.

6. Mounting wire spool into the feeder

- Please make sure that all the rollers installed in the drive assembly are corresponding to the type and diameter of the wire. Factory installed rollers are intended for steel wire from 0.6 to 0.8mm. For steel wires use V-shaped groove rollers

- Place wire spool on the spool mount, taking care to ensure that the wire unwinding direction was in line with the direction of the wire entering the drive unit.

- Lock the reel by tightening the plastic nut.

- Release roll locking mechanism on wire feeder to allow wire to enter the feeder.

- Insert the end of the wire into the guide located in the back of the feeder and carry it out over the drive rollers into the welding torch. Make sure the wire is straight and has no imperfections that may cause it to jam inside torch liner.

- By adjusting pressure on the locking mechanism you can either tighten or loosen wire against roller grooves. It allows you to correct wire feeding if irregular feed occurs.

- Prepare torch before inserting welding wire. Torch cable must be put in straight line to allow the wire to smoothly go through the liner. Remove the gas nozzle the contact tip to allow the wire to exit the torch.

- By pressing a red button inside spool compartment activate wire feeder to insert the welding wire until it leaves tip of the welding torch.

- Attach appropriate contact tip corresponding to wire diameter. Put the gas nozzle back on and remove excessive wire.

- Turn the device ON.

- Adjust the downforce of the feed roller by turning the pressure knob. Too low contact force, cause there will be a sliding of the drive roller. Too much force increases the resistance in the feeder and can deform the wire.

7. Connecting shield gas bottle

- Place the shield gas bottle dedicated platform.

- Attach a gas regulator type depending on shield gas type.

- Connect the regulator outlet with gas supply connector at the back of the welder using a gas hose.

- Open gas bottle valve and a gas regulator valve. After the welding is finished close the bottle valve to terminate gas flow.

- Please notice to avoid using the welder in windy conditions as it may cause the gas shield to dissipate.

8. Setting welding parameters for MIG/MAG

Basic parameters for mig welding are welding voltage and wire feed speed. Increasing welding voltage results in deeper penetration and longer arc. However increasing wire feed speed results in more wire being provided. If you notice that too much wire is being fed and it pushes the torch backwards it may be caused by to low welding voltage. Too low welding voltage or slower wire feed can also result in more spatter and large droplets developing at the tip. You can reduce that by increasing the voltage value or wire feed speed.

9. MIG/MAG welding tips

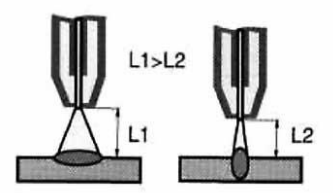
- Welding horizontal butt joints of thin materials should be carried out using push technique. However for thick material it should be a pull technique.

- For vertical butt joints of thin elements place the joint from up to down.

- Horizontal corner joints should be carried out using push technique compensating by placing the torch at an appropriate angle towards welding material.

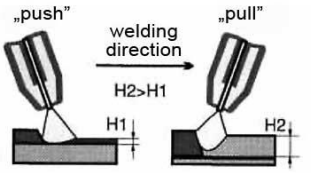
- In case of filling wider joints carry the oscillating move of the welding tip.

- During the welding torch tip should be placed at an appropriate angle. If the angle is not right it may cause air to be sucked into welding puddle resulting in joint imprefections. The proper angle is lower or equal to 10 degrees for vertical position.



Too long or too short arc can result in unstable arc and joint imprefections.

L1, L2 – arc length



The penetration depth can differ according to welding technique and torch position

H1, H2 – penetration depth

10. Welding using MMA process

The welding device can also be used for a stick electrode welding. To use that process turn the MIG/TIG/MMA switch to MMA position. Connect the electrode holder plug into the positive socket (+) and the ground cable plug into the negative socket (-) leaving the polarization selector unconnected. Using the welding current regulation knob (A) set the desirable welding current.
Please note that different electrode manufacturers may advise other polarization connections. In such case please refer to electrode manufacturers information.

11. Cleaning and maintaining the device

The protection class of this device is IP21S. Do not use the device in the rain, nor expose it to extensive moisture.

WARNING!

Device based on electronic components. Metal grinding and cutting close to the welder may cause contamination of the inside of the device, thus causing its damage.

The damage mentioned above is not covered by the warranty. If you need to work in such an environment, please clean device before use by blowing the inside of the welding machine with compressed air.

To prolong the life and reliable operation of the device, several rules must be observed:
1. The device should be placed in a well-ventilated room where there is free air circulation.
2. Do not place the device on a wet surface.
3. Use a wire diameter and spool weight according to the table.
4. Check the technical condition of the device and welding cables.
5. Remove any flammable materials from the welding area.
6. Use suitable protective clothing for welding: gloves, apron, safety boots and welding helmet

12. Troubleshooting

Symptoms	Possible cause	Remedy
Wire feed does not feed the wire or feeding is irregular (feeder motor is working)	- Feeding roll grooves are dirty - Contact tip is damaged - Locking mechanism is not tighten - Torch liner is stuck with debris - Feeder roll type is wrong - Contact tip diameter is wrong	- Clean or change roll - Change contact tip - Tighten the locking mechanism - Clean or change the liner - Mount appropriate roll - Check the contact tip and change for a right one if needed
Wire feed does not feed the wire (feeder motor is not working)	- Faulty feeding motor - Control module failure	- Turn directly to the service centre
Arc is not igniting	- Ground clamp not connected or connected improperly - Polarization selector cable not connected	- Check the connection of the ground clamp - Plug the selector to the appropriate socket
Arc is too long and irregular	- Welding current is to high - Wire feed is too slow	- Adjust the current value - Change wire feed speed
Arc is too short	- Welding current to low - Wire feed to fast	- Adjust the current value - Change wire feed speed
ON/OFF button does not light up	- No electric supply - Fuse failure - Switch malfunction	- Check the power connections - Replace the fuse - Replace the switch

13. Transporting and storage

Always store the devices in a dry, ventilated place, out of reach of children and bystanders. Protect the device against vibrations and shocks during transport.

14. Recycling

The packaging and device materials are suitable for recycling use. Disposal of the packaging and device must be done in accordance with local regulations. The packaging materials should be protected against children as they are potential source of danger.

15. Warranty

The manufacturer of the device provides full warranty service for the power supply unit within 24 months from the day device was purchased. An individual warranty card is issued for each device. Warranty is valid only if all conditions listed in the instructions manual were fulfilled. If the device was used inappropriate or against instructions the warranty becomes invalid. Service centre does not cover the postage cost for sending the device for repairs or sending it back after repairs.

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