Pro-Tech TOOLS

Inverter MIG/MMA welder





Instructions for use

Translation of the original instructions

SAFETY WARNING !

Injury can occur when welding or cutting. Take care to protect yourself during operation. For more detailed information, please refer to the Safety Operating Manual, which is in accordance with the Preventive manufacturer's requirements.

Electric shock - can lead to death !!!

- Set the earthing fitting according to the applicable standard.
- It is forbidden to touch electrical parts and electrodes when the skin is bare in wet gloves or clothes.
- Make sure you are isolated from the ground and the workshop.
- Make sure you are in a safe position.

Gas - can be harmful to health!

- Keep your head out of the gas.
- When arc welding, an air extractor should be used to prevent gas inhalation.

Arctic radiation - harmful to the eyes and burns the skin.

- Wear a suitable helmet and light filter, wear protective clothing to protect eyes and body.
- Use a suitable helmet or sling to protect the observer.

Fire

- Welding sparks can cause fire, make sure there are no flammable substances around the welding area.

Noise - extreme noise damages hearing.

- Wear hearing protection or other means of hearing protection.
- Warning that noise is harmful to hearing if an observer is nearby.

Malfunction - when a problem occurs, contact the experts.

- If problems occur during installation and operation, follow these instructions to check.
- If you do not fully understand the operating instructions or if you fail to solve the problem by instructions, you should contact our service centre for expert assistance.



ATTENTION !

When using the machine, a protective switch against stray current should be installed!!!

ABOUT THE MACHINE

The welding machine is a rectifier using the latest inverter technology.

The development of inverter welding equipment in shielding gas benefits from the development of inverter power supply theory and components. The shielded gas inverter welding power supply uses a high power MOSFET component to transfer the 50/60 Hz frequency up to I00KHZ, then reduces the voltage and commutates and through

PWM technology outputs high power voltage. Due to the large reduction in weight and volume of the main transformer, efficiency is increased by 30%. The emergence of inverter welding equipment is considered a revolution for the welding industry.

The CO2 shielded welding machine uses Our's state-of-the-art inverter technology.
The inside of the machine is equipped with electronic reactor circuit, which can control the process accurately of electric short pass and stirring pass and has excellent welding properties. Compared with the synergistic welding machine and other machines, it has the following advantages: stable wire speed, compactness, energy saving, no electromagnetic noise. Continuous and stable operation with small current, especially suitable for welding low carbon steel sheet, alloy steel and stainless steel. Option
automatic voltage pulsation compensation, small arcing, good arc, uniform welding puddle, high working cycle, etc.

ATTENTION !

The machine is mainly used in industry. It will produce radio waves, so the worker should fully prepare for protection.

INSTALLATION

The welding machine is equipped with a supply voltage compensation kit. When the supply voltage fluctuates within ±15% of the nominal voltage, it still functions normally.

When using a long cable, it is recommended to use a cable with a larger cross section to prevent voltage drop. If the cable is too long, it may affect the performance of the power system. Therefore, we recommend that you use
configured length

INSTALLATION

1) Connect the CO2 cylinder firmly to the CO2 decompression flowmeter and the gas inlet behind the machine with the gas hose, insert the power plug of the flowmeter into the heater socket behind the machine.

2) Insert the ground cable fixing plug into the appropriate fixing socket on the front panel, fit and tighten the burner to the output socket on the front panel.

3) Set the wire spool with the wire spool on the spool axis, the wire spool hole should be identical with the spool fixer.

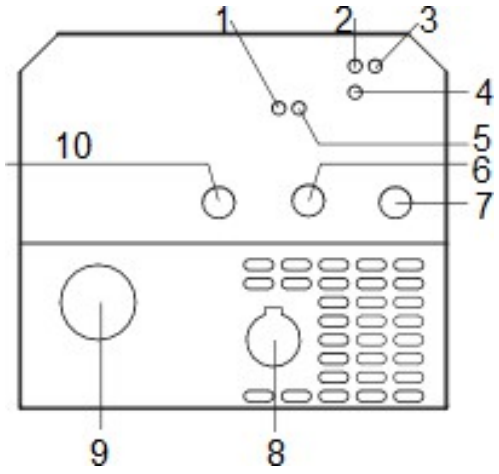
4) The wire spool should be rotated clockwise to unwind the wire, in order to prevent the wire from slipping, the wire is usually set on the fixed hole on the side of the spool. To prevent the bent wire from getting stuck, cut off this part of the wire

5) Select the wire groove according to the size of the wire used.

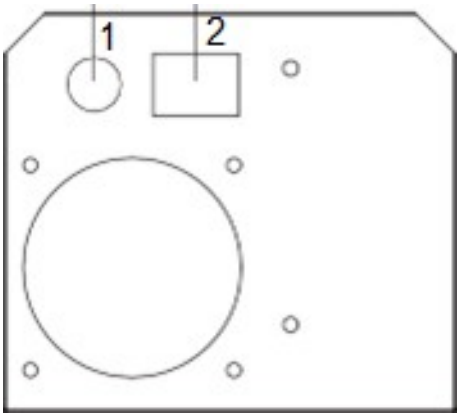
6) Insert the wire into the slot through the wire guide tube, insert the wire into the steel wire guide tube, let the wire pressing wheel press the wire firmly; align the wire pressing rod to fix the wire
from displacement, but the pressure should be appropriate if the wire is disturbed and affects the wire dispatch..

7) Press the slide switch to drop the wire into the burner head.

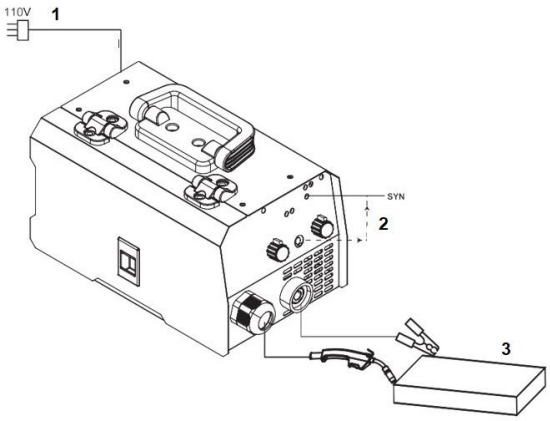
8) This machine has polarity conversion; there is a positive output terminal and a negative output terminal between the wire feeder and the wire coil; when using solid wire with gas protection, the burner socket should be connected to the positive output terminal, the grounding cable should be connected to the negative output terminal; when using flux-cored wire, the two connected cables should be exchanged.



1. Flow indicator 0.8
2. Power indicator
3. O.C. indicator
4. SYN indicator
5. Flow indicator 0,9
6. Selection button
7. Wire feed adjustment
8. Earthing clamp
9. Outlet from the burner
10. Voltage adjustment



1. Power cable
2. Power switch



1. Input cable
2. Press and hold the button for 3 seconds
3. Workpiece

PANEL INSTRUCTION AND OPERATION

1, Set the welder switch to the "ON" position, open the gas cylinder valve, release the wire crimping rod, press the torch switch, and set the flow meter to the desired flow rate.

2, Select the diameter of the welding torch contact tube hole according to the diameter of the wire.

3, According to the thickness and processing technique of the workpiece to be welded, adjust the VOLTAGE rotary knob and SPEED rotary knob to the desired position.

4, The electric arc characteristic knob is used to adjust the level of softness and hardness of the arc to achieve the best welding effect; when the current is small, the electric arc must be hard to reduce the arc interruption. When the current is large, the electric arc must be soft to reduce spatter.

5, Connect the grounding clamp to the workpiece, then press the torch switch, the welder works, release the torch switch, the welder stops.

NOTIFICATIONS OR PRECAUTIONARY MEASURES

1. Environment

1) The machine can operate in an environment where dry conditions are present with a maximum humidity of 90%.

2) The ambient temperature ranges from 10 to 40 degrees Celsius.

3) Avoid welding in the sun or rain.

4) Do not use the machine in an environment where the air is polluted with conductive dust or corrosive gas.

5) Avoid gas welding in environments with strong air flow.

2. Safety standards

The welder has a surge, current and heat protection circuit installed. When the voltage, output current and temperature of the machine exceed the standard, the welder will automatically stop working. Because this will result in
damage to the welder, the user must pay attention to the following.

1) **The working area is sufficiently ventilated !**

The welding machine is a powerful machine, high current is generated during its operation, and the natural wind will not satisfy the cooling requirements of the machine. Therefore, there is a fan in the intermediate room to cool the machine. Make sure that the inlet is not blocked or covered. The user should ensure that the work area is adequately ventilated. This is important for the performance and life of the machine.

2) Machine overload !

The operator should remember to monitor the maximum operating current (response to the selected duty cycle). Ensure that the welding current does not exceed the maximum duty cycle current. Excessive current will damage and burn the machine.

3) No surge !

An automatic voltage compensation circuit ensures that the welding current is kept within the permissible arrangement. If the supply voltage exceeds the permissible limit, it will damage the machine components. The operator should understand the situation and take precautions

Issues that arise during welding

Fittings, welding materials, environmental factor, power forces may have something to do with welding. The user must try to improve the welding environment.

1. Arc punches are heavy and easy to pause

1) Make sure that the grounding cable connects well to the workpiece.
2) Check whether or not each connection point is connected.

2. Output current does not reach rated value

The fact that the supplied voltage differs from the rated voltage leads to a mismatch between the output current and the set current. If the supplied voltage is lower than the rated voltage, the maximum output current will be lower than the rated current.

3. Current is not stable when the machine is in operation

This is due to many factors:
1) The mains voltage of the power lines has been changed.
2) There is harmful interference from power lines or other equipment.

4. The welding gap has an air hole.

1) Check whether the gas supply loop is tight or not.
2) The surface of the base material is contaminated with oil, stains, rust, varnish, or other impurities.

Maintenance

1. Periodically remove dust with dry and clean compressed air, if the welding machine is working in an environment that is polluted by smoke and air pollutants, the machine must be cleaned every time.

2. The pressure of the compressed air must be within a reasonable arrangement to prevent damage to small components in the machine.

3. Periodically check the mutual circuit of the welder and make sure that the cable circuit is properly connected and the connectors are firmly connected. If the connections are loose, clean them and then reconnect them firmly.

4. Prevent water and steam from entering the intermediate machine, if the machine is wet, dry the intermediate machine, and then check the insulation of the machine.

5. If the welder will not be used for a long time, it must be put in a box and stored in a dry environment.

6, the hen wire machine works every 300 hours, the electric carbon brush and the armature rectifier should be polished, the reducer should be cleaned, and lubricant should be added to the turbo and bearing.

DAILY CONTROL

POWER SOURCE

Position	Control of keys	Notes
Control panel	1. Switch operation, transmission and installation conditions. 2. Power indicator test	
Cooling fan	1. Check if the wind is blowing and if there is sound normal or not.	If there is abnormal noise and no wind, check the inner part.
Power part	1 When energized, abnormal smell or not. 2. When it is energized, whether there are abnormal vibration and buzzing or not. 3. Color change when heating or not.	
Periphery	1. Broken or loose gas pipe. 2 The housing and other fixed parts to see if they are loose.	

THE WELDING TORCH

Position	Control of keys	Notes
Jet	1. If the installation is fixed, it distorts the front	The reason for the air hole.
Electric hole	1.If the installation is fixed	Reason for burner thread damage
	2. Damage to his head blocked or not	Reason for unstable arc and broken arc
Wire feeder	I.Check the extended pipe size	They must be replaced when they are smaller than 6mm, when the expanded part is too small, the arch will be unstable.
	2.Wire diameter and inner tube the average corresponds or not	The reason for the unstable arc, use suitable wire.
	3.Partial winding and extended	Reason z The Poor wires Send to a unstable arc..
	4. Blocking caused by impurities in the pipe and wire plating residues	This is due to poor wire feed and unstable arc (use kerosene to wipe or replace with new)
	5. Interrupted wire transmission tube	Broken pyrocondensation tube, replacement
Gas circulation	You have forgotten to insert or the hole is blocked, or another component is used from the factory.	There may be damage (splash) to the wrong gas shield, the burner body will burn (arc in the burner), please process.

WIRE FEEDING MACHINE

Position	Control of keys	Notes
Press shoulder	If you adjust the arm to the appropriate indication level.	Lead to unstable arc and water broadcast.
Wire lead tube	1 . If powder or residue accumulates in the mouth of the tube.	Clean up the residue.
	2.Wire diameter and tube inner diameter match or not	If they do not match, they lead to an unstable arc.
	3.If the center of the tube mouth coincides with the wire center of the wheel groove or not. (By eye)	If they are not comparable, they lead to instability Arc.
Wire wheel	1.The wire diameter corresponds to the requirements of the wheel 2. If the wheel opening is blocked	1. Lead to unstable arc and residue and blockage of the wire tube. 2. Replace with a new one if necessary

Pressure wheel	Check the stability of its movement and wear of the pressed wire, narrowing of its contact area	Leads to unstable arc and wire dispatch.

CABLE

Position	Check keys	Notes
Burner cable	1. If the burner cable is too bent. 2. If the metal connection point of the mobile plug becomes loose	1. Cause of bad wire sending 2. Unstable arc if the cable is bent too much.
Output cable	1. Wear and tear of the insulated material of the cable. 2. The cable connection head is exposed (damage insulation) or loose (the end of the power supply and the connection point of the main material of the cable).	For the safety of life and stable welding, please adopt the suitable control method according to the working place. • Simple daily check • Careful and in-depth inspection over a set period of time
Input cable	1. If the connection between the plug and the socket fixed 2. If the cable at the end of the power input is fixed 3. If the input cable is worn and without a conductor.	
Ground cable	If the ground cable that connects the main part is damaged.	Replace it

Fault control

Notes: to operate the machines according to these instructions, the user must be a worker in the specific field of electrical power and safety and have the appropriate certification to demonstrate his/her skills and knowledge. As part of the warranty, it is recommended to contact our company to obtain a certificate.

Disorders	Solvable method
Power indicator does not light, fan does not work and has no welding output	1, Make sure the power switch is closed. 2, Check that the mains power is working. 3, Some of the thermally variable resistors (four) of the power panel are damaged. In this case, the general DC24V relay is open or the connectors are in weak contact. 4, The power panel (bottom plate) is damaged, the DC3 I0V voltage can not be output. (1) The silicon bridge is broken, or the silicon bridge connector. Bad contact. (2) The power panel has been burned. (3) Check the contact and plug the cable from the air switch to the power panel, there is a weak contact, check the contact and plug the cable from the power panel to the MOS board to see if it is reliably connected.. (5) The auxiliary power supply of the control panel is faulty

Power indicator lit, fan working, no welding output	1, Check all kinds of cables have no weak contact.. 2, The output connector is disconnected or has a weak contact. 3, The control cable or burner switch is damaged. 4, The control circuit is broken.
Power indicator lit, fan working, abnormal condition indicator lit	1, Maybe it is over-current protection, first turn off the device, and then turn it on again when the abnormal status indicator goes off. 2,Maybe it's overheating protection, wait 2-3 minutes. 3, Maybe it is a fault in the inverter circuit, pull out the plug of the main transformer, which is located on the MOS board (VH-07 insert, located near the fan), and then open the device again: (1) If the abnormal indicator is still lit, one of the field resistors on the MOS board is damaged, find out and replace it with the same model. (2) If the abnormal condition indicator is not lit,: a. Maybe the transformer of the middle board is damaged. b. Perhaps the secondary rectifier tube of the transformer is damaged.