



# Shanghai Pengwang Machinery Co., Ltd.

Address: Building 8, No.1098, Chuansha road, Pudong New Area, Shanghai  
Sales phone: +86 15801732387

## PW602 Double Heating Extrusion Welder

# Manual



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# Notice

1. Please read the manual carefully before use, in order to operate the machine correctly, and keep it for reference.
2. Pay attention to the danger, please make sure that the plug has been unplugged when disassembling the device.
3. Incorrect use of the machine will cause fire and burns.
4. The voltage (220V) on the machine must be the same as the main voltage on the plug, and the supply voltage cannot exceed  $\pm 10\%$  of the rated voltage of the machine.
5. Based on the principle of protecting users, please install leakage and power overload protection devices at the power supply.
6. Do not touch the welding tip and metal shell to prevent burns, and do not point the hot air at people and animals.
7. Please prevent the machine from getting wet.

## Company Profile

**Pengwang** is a high-tech enterprise specializing in the development and sales of mechatronics. "Pragmatic and pragmatic, humble and sincere, and strive for perfection" is the pursuit of all employees, and strive to provide users with advanced technology, high-quality products and considerate service are our consistent aim. Having advanced production and testing equipment, and regularly implements technical training for workers to ensure the advancement of technology and equipment, and create good conditions for the production of high-quality low-cost products. Also have a complete quality assurance system, and the products are checked at all levels from raw material procurement, production process, and factory inspection to ensure that the products can be 100% qualified.

Always follows the principle of quality first and customer first. Put the best products into the market and return users with the best service. We will continue to carry out technological innovation, improve production technology, improve product quality, and strengthen after-sales service to eliminate worries for users. We sincerely look forward to working with you.

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# Product Description

PW602 is a newly developed new generation of extrusion welder and plastic welding equipment, which meets the continuously expanding application demands of the plastics industry in various engineering fields. The machine adopts double heating mode to separately heat the welder melting and welder softening: a spiral heating tube is used to melt the plastic welder, and hot air is used to soften the plastic to be welded, so that the temperature of the welder melting and the softening of the plastic to be welded are adjusted separately. Don't affect each other to ensure that the welder melts more thoroughly.

The temperature control of the welder melting part adopts automatic constant temperature PID control, digital display control temperature and real-time temperature, high control accuracy, low temperature fluctuation; hot air softening part adopts the double number independently produced by us with multiple patented technologies. The dual-adjustable 1600W high-power hot air blower has extremely high working efficiency; the driving motor adopts imported German Metabo high-power motor, which has strong driving force, large torque, temperature protection design, and longer life.

The extrusion welder has a unique low-temperature motor safety lock design. It can prevent the screw & motor from being damaged by misoperation of the drive motor when the set melt temperature is not reached. Have stable working performance, convenient operation, high welding efficiency, strong reliability, large power, large extrusion materials, short preheating time and small temperature fluctuations.

## Main technical parameters

1. Voltage: 220V;
2. Power: Extrusion welder: 1100W
3. Hot air welding gun: 1600W
4. Welder melting and heating: 800W;
5. Temperature: Hot air 20~550°C, adjustable heating temperature of 280~380°C during plastic extrusion;
6. Preheating hot air volume: 200L/min ---400 L/min adjustable;
7. Electrode diameter size:  $\Phi$ 3.5mm--5mm

# Main spare parts



1. Y Style Extrusion Gun Body	8. ON/OFF Switch of Controller	15. Feed Inlet
2. Heating Element	9. Heating Tube Temp Controller	16. Handle
3. Heat Gun Power Switch	10. Motor Speed Control Knob	17. Screw
4. Temperature Control Button	11. Motor of Extruder	18. Welding Shoe
5. LED Panel	12. Shelf	19. Air Outlet
6. Torch Chimney	13. Electric Wire	
7. Air Regulation Knob	14. Hoop	

## Operation Steps

1. Put the extruder on the shelf and install the handle, connect the power supply.
2. Press the “POWER” button to start the green control box, press “▲” and “▼” button to set a wanted temperature value (**temperature is adjustable from 300°C to 420°C when welding the HDPE**). Pre-heating the extruder for 30s, until the first lamp on the panel turns to green which means the temperature has reached to setting value. Then operator can start to weld.

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3. If the third lamp is on which means the heating temperature is higher than minimum melting temperature, the motor fuse will open automatically. If the third lamp is not light up which means the temperature is lower than minimum melting temperature, the motor will lock automatically; meanwhile the motor will power-off automatically to prevent the wrong operation. The minimum melting temperature can be adjusted, **default value is 300 °C** , please contact manufacturer if you want to change the default temperature.
  4. Press “**POWER**” button to start the hot air gun, press “▲” to raise and press “▼” to turn down temperature. The hot air gun knob on the back of heat gun can be used to adjust the air volume (0-9 grades adjustable).
  5. Put the welding rod into suitable feed inlet, press the motor trigger. You could adjust the motor speed control knob “A to G” to adjust the speed.
  6. Adjusting the temperature and speed to ensure the welding rod is melting and extruding perfectly when actual operation.
  7. The operator needs to press the hand extruder on welding seam during operating, to make sure the melting material can be bond well on seam.
  8. The key point of setting warm-up hot air temperature and hot air volume depends on welding strength and speed. Generally, **the working temperature of hot air gun is between 300°C to 400°C**. If fast welding speed is needed, set higher heating temperature accordingly is necessary.
  9. Keep blowing cold air to cool down the hot air gun and extruder for few minutes before turning off the hot air gun.
  10. Make sure the welding rod is extruded totally before turning off the hand extruder. Then clean out the materials on the air outlet.
  11. The service life of carbon brush is around 1600 hours, please note and replace it in advance.
  12. Flat welding shoe and 90-degree welding shoe are suitable for different welding ways. Please rotate then pull the welding shoe when you need to replace it, do not pull directly.
  13. Please turn off the power switch on the green control panel if there is no welding rod feed. Do not keep extruder on working status more than 5 minutes.

## Feature

- High-quality preheated hot air welding gun, large preheating air volume, high temperature.
- The motor has large torque, long life and stable performance.
- The temperature of the melted part and the softened part are adjusted separately, the temperature adjustment is more precise.

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- The drive motor has a motor low-temperature safety lock design. When the welder is not melted, even if the motor switch is pressed, the motor will not start by mistake.
  - Short preheating time, the digital temperature control system, the set value and real-time value are displayed separately, which is clear at a glance.
  - The temperature is adjusted by a touch button, which is convenient for temperature adjustment. It can also enter the secondary adjustment mode to change the temperature value of the melt fuse and change the trigger temperature value of the motor safety switch.
  - Light weight, convenient to hold, the air outlet can be rotated 360°, and can be operated at different angles.
  - Large extrusion capacity, capable of welding seams over 10mm.
  - Optional different welding nozzles can be applied to different types of welds.
  - The machine is used on barrels and pipe fittings in accordance with Part 4 of the DVS standard (German Welding Association).

## **Warranty**

1. The warranty period of the machine is one year from the date of shipment.
2. After receiving the machine, the user should immediately check whether the machine is in good condition. If there is no response within two days, it is deemed complete and passed the acceptance.
3. For damage caused by the following conditions, no warranty:
  - a) The user fails to report the problems encountered in time or fails to take timely measures as required to cause serious damage;
  - b) Deliberate damage or overloaded use by the user;
  - c) The user conducts disassembly, repair and maintenance work without the permission of the manufacturer;
  - d) Users modify or install accessories without the permission of the manufacturer;
  - e) The user fails to operate according to the provisions of the manual;
  - f) Ceramic heating tubes or products not sold by our company.
4. Normal wear and tear are not covered by warranty.
5. Damages caused by force majeure (lightning strikes, floods, fires, accidents and other non-manufacturer reasons) are not warranted.
6. All clauses listed in the appeal will become invalid after the warranty period.

## Common faults & solution

Issue	Possible failure analysis	Solution
Don't blow hot air	Hot air gun motor does not rotate	Check and replace the stator, rotor, switch
	Heating gun core does not heat	Replace the heating gun core
	The air outlet on the upper side of the machine's discharge port is blocked	Remove debris from the air outlet
Noise during discharge	The discharge port is blocked	After preheating for a long time, clean the discharge port
	Worn screw or blade	Replace screw or blade
	Electrode particles jam the blade and the feed screw	Disassemble the connecting screws of the feeding cavity and the extrusion cavity, and clean the electrode particles
Drive motor does not rotate	The carbon brushes are worn out after running beyond service life	Replace carbon brushes
	The temperature does not reach the motor safety lock temperature	Wait for the temperature of the heating tube to rise to the set temperature before operating
	Motor burns due to overvoltage	Replace the stator and rotor of the drive motor
	Loose motor wiring	Rewiring
	The motor overheating protection lamp lights up	Wait 2-3 minutes, after the motor cools down, restart
Don't feed	The electrode is not inserted deep enough	Reinsert the electrode
	The welding rod cannot be inserted into the feed hole	φ4mm welding rod can only be inserted into the upper feed hole (φ4.5mm hole)
	The feed screw is worn, causing the gap to be too large	Replace the feed screw
Abnormal heating tube temperature	The temperature keeps rising and cannot stabilize	The heating tube integrated thermocouple is damaged, replace the heating tube
	No heating, no light on or off	Check the fuse and switch and replace

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