MANUAL BOOK

WM250I

CO2/MAG/MIG/ AUTOMATIC

WELDING MACHINE

ANUGRAH DUTA NIAGA

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Prolegomenon

We do very appreciated for your selecting our products.

This kind of welding power Model WM 250I is taken foreign advanced technology to develop and manufacture the new generation inverter integrated controlling Semi-auto MIG/ MAG ARC Welding machine.

It can be composed the WM 250I MIG/MAG/MMA ARC Welding system equipped with wire feeder and welding gun .It has many characteristic such as easy Arc starting .good Arc springiness .adjustable arc thrusting ,low splash,good welding form ,easy welding operation, wide range and electricity save.

The MIG/MAG semi-auto Arc welding machine model WM 250I is advanced welding machine and it can be compared with foreign products.

This operation manual can help you for the machine installation, operation and maintenance correctly and safely.Pay attention to the points as following.

. Installation of the power cord. Be grounded correctly.

. Don't put sundries under the welder.Otherwise it will affect the heat released.

. Installation for the positive and negative cable of the power output.

. Welding voltage selection

. Welding current selection (speed of wire feeder)

The amendment right and the explanation right of the manual belonging to my company.We have no special notice if the manual is amended.

11.Transportation,storage and environment conditions

★The package (Wooden cases or cartons)of the manufacturer is suitable for air ,sea , railway and highway (three class more) transportation..

★Pay attention to the indication on the package during the transportation.

★ the environment conditions

A Temperature range	operating	0℃ ~ 40℃
	transportation	-25℃ ~+55℃
B The air humidity	40℃	50%RH
	20℃	90%RH

C The dust ,acid and causticity gas in the environment must be lower than the normal level (The welding process produced not included)

D Rain proof when it is used outside.

12.Quality Guaranteed

If you have any problem of the quality ,please contact us in time .We generally have one year quality guarantee on condition that you operate or transport the machine properly according to the operation manual.

SAFETY PRECAUTIONS

Follow these precautions carefully. Improper use of any welder can result in injury or death.

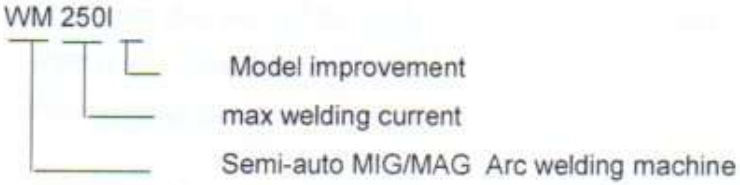
1. ONLY CONNECT WELDER TO A POWER SOURCE FOR WHICH IT WAS DESIGEND. The specification plate on the welder lists this information. When welding outdoors only use an extension cord intended for such use.
2. ONLY OPERATE WELDER IN DRY LOCATIONS and on cement or masonry floor. Keep area clean and uncluttered.
3. KEEP ALL COMBUSTIBLES AWAY FROM WORK SITE.
4. DO NOT WEAR CLOTHING THAT HAS BEEN CONTAMINATED with grease or oil.
5. KEEP CABLES DRY AND FREE FROM OIL AND GREASE and never coil around shoulders.
6. SECURE WORK WITH CLAMPS or other means; don't overreach when working.
7. NEVER STRIKE AN ARC ON A COMPRESSED GAS CYLINDER
8. DON'T ALLOW THE INSULATED PORTION OF THE ELECTRODE HOLDER TO TOUCH THE WELDING GROUND WHILE CURRENT IS FLOWING.
9. SHUT OFF POWER AND UNPLUG MACHINE WHEN REPAIRING OR ADJUSTING. Inspect before every use. Only use identical replacement parl.
10. FOLLOW ALL MANUFACTURER'S RULES on operating switches and making adjustments.
11. ALWAYS WEAR PROTECTIVE CLOTHING when welding . This includes: long sleeved shirt(leather sleeves), protective apron without pockets, long protective pants and boots. When handing hot materials, wear asbestos gloves.
12. ALWAYS WEAR A WELDER'S HELMET WITH PROTECTIVE EYE PIECE when welding. Arcs may cause blindness. Wear a protective cap underneath the helmet.
13. WHEN WELDING OVERHEAD, BEWARE OF HOT METAL DROPPINGS. Always protect the head, hand, feet and body.
14. KEEP A FIRE EXTINGUISHER CLOSE BY AT ALL TIMES.
15. DO NOT EXCEED THE DUTY CYCLE OF THE MACHINE. The rated cycle of a welding machine is the percentage of a ten minute period that the machine can operate safely at a given output setting.
16. KEEP ALL CHILDREN AWAY FROM WORK AREA. When storing equipment, make sure it is out of reach of children.
17. GUARD AGAINST ELECTRIC SHOCK. DO not work when tired. Do not let body come In'contact with grounded surfaces.

1. Main characteristic and suitable range

This kind of welding power Model WM 250I is taken foreign advanced technology to develop and manufacture the new generation inverter integrated controlling Semi-auto MIG/MAG Arc welding machine.It makes use of the import key parts such as Siemens IGBT module of Germany,alloy magnetic core and the resume diode module of America. It has the perfect performance of high quality ,good reliability, quick speed of welding current, steady welding process,low splash and good welding form . Anyway,It becomes the welding very easy.

1.1 Structure of the INVERTER MIG255 MIG/MAG/MMA semi-auto Arc welding machine

a.The name of the model



b. Composing of the product

This product is composed by three parts as following

★ Power source(WM 250I)

★ welding gun

1.2 Suitable range of the WM 250I

★ Suitable material: low-carbon steel, stainless steel

★Thickness of the material:low-carbon steel and stainless:more than 0.5mm

★Suitable position:all positions

★Suitable wire : ϕ 0.6,0.8,1.0solid wire/flux cord wire.

1.3 Characteristic of WM 250I

★ Wide output current 30-250A: 0.6 ----------30-100A

0.8----------50-180A

1.0 ----------80-250A

★Steady welding process,low splash,easy control,good welding form.

★High efficiency: 250A/26.5V the duty cycle is 35%

200A/24V the duty cycle is 60%

160A/22V the duty cycle is 100%

continuous wire feed,the max speed of wire feed is15m/min

2.Main technical Data :

★	Input Voltage	1~220V/230V/240V ; 50/60Hz
★	Rated Input current	40 A
★	Rated Input power	9KVA
★	No-load Voltage	74V
★	Voltage adjusting Range	14±3V~26.5±3V
★	Current output Range	30~250A (MIG/MAG)
		20~200A(MMA)
★	Suitable wire	0.6 , 0.8,1.0
★	Duty cycle	250A/26.5V the duty cycle is 35%
		200A/24V the duty cycle is 60%
		160A/22V the duty cycle is 100%
★	Efficiency	$\eta \geqslant 0.85$
★	Power factor	$\lambda = 0.8$
★	Insulation class	F
★	Protection class of shell	fan cooling

3.Function

3.1 Adjusting function for the welding voltage and welding current

3.1.1 WM 250I supply the adjusting range at MIG/MAG as following,

Welding voltage : 14V±3V~26.5V±3V use the voltage adjusting knob

Welding current : 30A~250A use the current adjusting knob

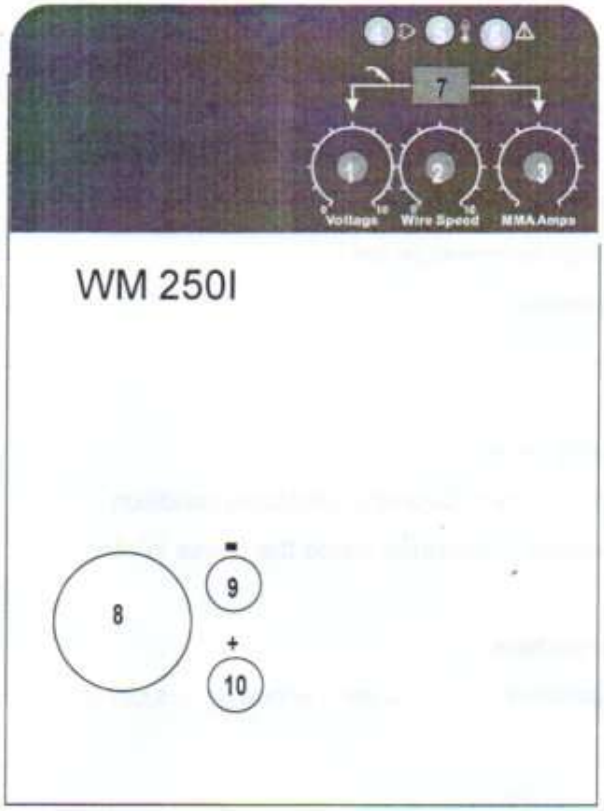
3.1.2 WM 250I supply the adjusting range at MMA as following,

Welding current : 20A~200A use the welding current knob on the panel.

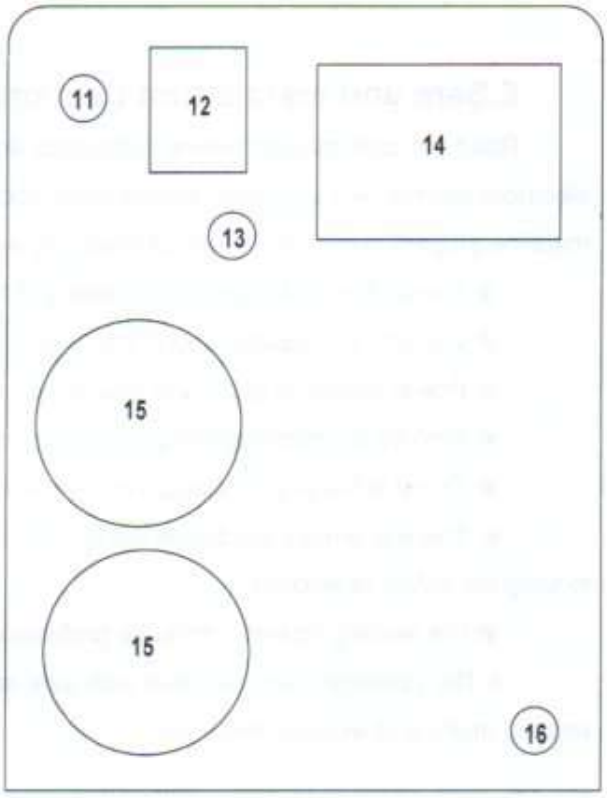
4. Indicating and warning on the INVERTER MIG control panel

4.1 Indicating and adjusting

FRONT PANEL



BACK PANEL



4.1.1 MIG Voltage regulator

4.1.2 MIG Current regulator

4.1.3 MMA Current regulator

4.1.4 Power indicating

If the indicating light is on the control circuit connects the power already.

4.1.5 MIG over heat indicating

4.1.6 MMA over heat indicating or output shorted

4.1.7 Switch for MIG or MMA

4.1.8 MIG torth CONNECTOR

4.1.9 output"-"

4.1.10 output"+"

4.1.11 incoming line of the power

4.1.12 power switch

4.1.13 Gas inlet

4.1.14 nameplate

4.1.15 FAN(DC24V)

4.1.16 grounding column

5.Safe and installation caution

Read the safe caution before installation and operation .It come down to the high voltage electricity,electric Arc and high temperature splash.So keep the safe regulation ,operate the machine properly,avoid the danger of electricity and high temperature arc.

★ Check if any damage ot out looking ot the welder.

★ Confirm the capacity:more than 30A.

★ Power source is grounded,diagram 6

★ Prohibit the combustible goods in the welding locale.

★ There is fire proof measure in the welding locale with favorable ventilated condition.

★ There is smoke discharge system if the welding is operated inside the house in order to keep the safety of workers.

★The welding operator must be professional workers.

★The operator must be fitted with safe accessories .Such as safe shoes,gloves,cover, welding make and welding dress etc.

6. Explanation of installation

6.1 MIG/MAG welding

put the switch"7" MIG/MMA SWITCH into "MIG"

★ Check the products according to the packing list when open the package.

★Grounded protection.Attached the diagram 6

The power source is 220Vac/(50~60Hz) .The yellow/green double cable is grounding cable.Be sure to connect the yellow/green double cable into the grounding connection in the welding locale .Another way is selecting the M8 bolt on the back on the machine and connect the grounding as the diagram as following.

★Install the welding gun on the front panel and screw the welding gun ,then lock the bolt.

★ Connect the gas pipe with the gas bottle according to the locale conditions. Check the air proof conditions to ensure the good airproof.

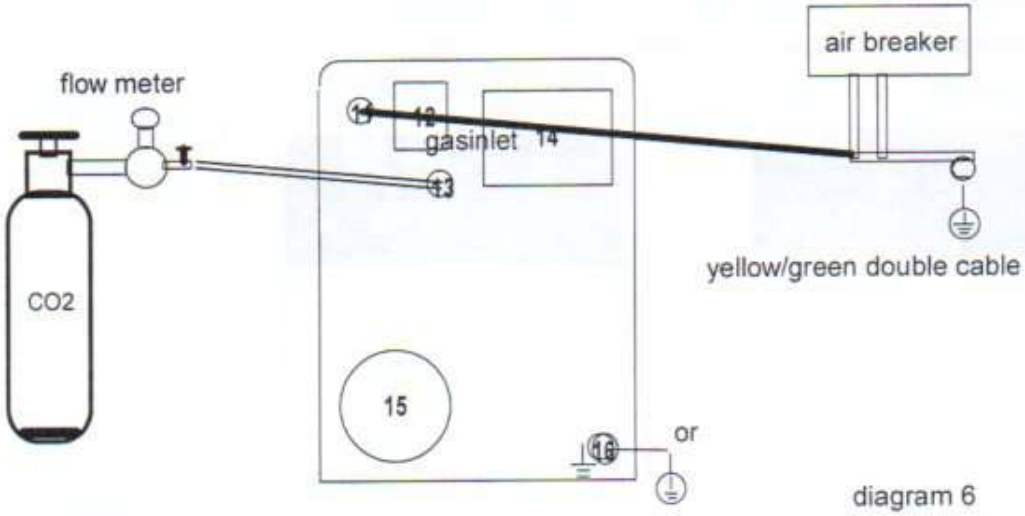


diagram 6

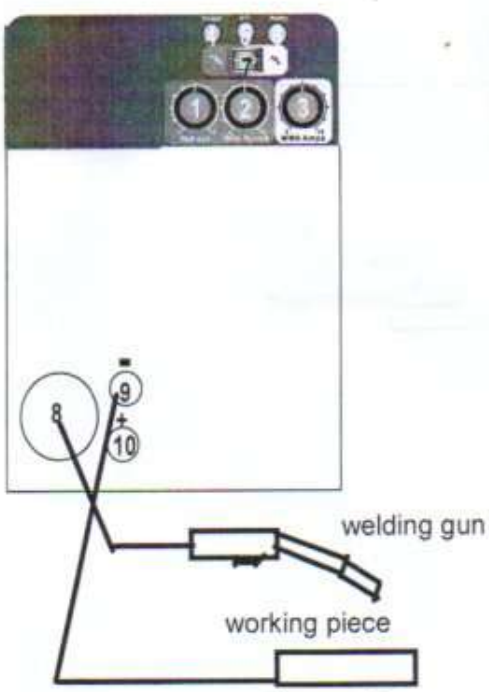


diagram 7

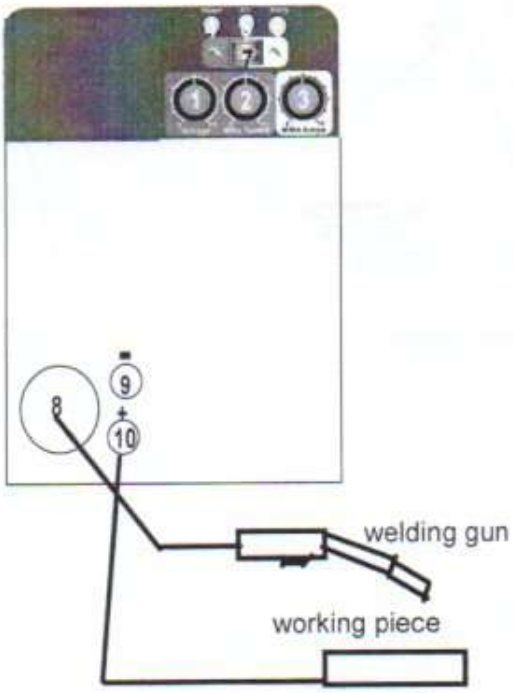


diagram 7

GAS

NO GAS

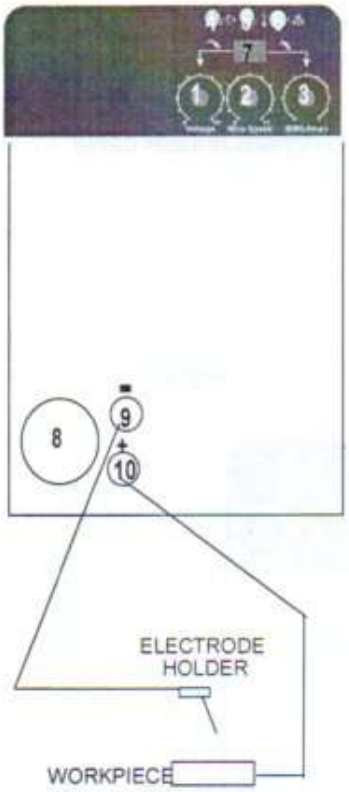
6.2 MMA welding

put the switch "7" MIG/MMA SWITCH into "MMA"

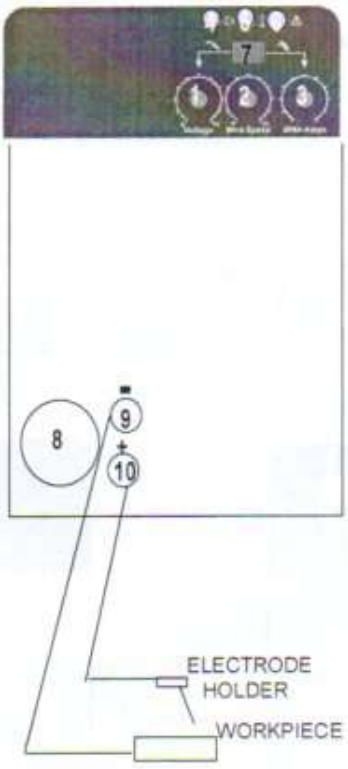
Selecting empiric formula: I=40*d ,d is dia. of the electrode.

Notice positive and negative connection during welding.

A positive connection



B negative connection



7. Operatings

★"ON" and "OFF" indicating switch on the back panel.

★Preset the welding voltage ,welding current(wire speed).and Arc force.Diagram 4

★ Confirm the specification of the wire feed hose

★Confirm the specification of nib base .It affects the extended length of the wire .

★Confirm the specification of nib. It affects the electric resistance.

★ Confirm the wire slot of the roller is suitable for the diameter of the wire. Different diameter of wire select different wire slot. Otherwise it affects the wire feed result.

★ Confirm the pressure of the roller to avoid slipping.

If the pressure is not enough ,the wire feed is slow speed.

If the pressure is too much ,the wire will be anamorphic.

The wire feeder can not work properly.

★ Confirm the flow of the gas and air proof.

We suggest the gas flow to be "L" more than 10D(D-diameter of wire).If the selection is not proper,it also affects the welding quality.When using the CO_2 gas,please confirm if the heating power works properly or not .

★Straight the hose of welding gun as much as possible .The bending radius can not be less than 160mm.Otherwise it affects the wire feeder.

7.1 working process

press the switch of the gun ,the normal welding begins.Relax the switch,the arc stops.

7.2 Gas inspection

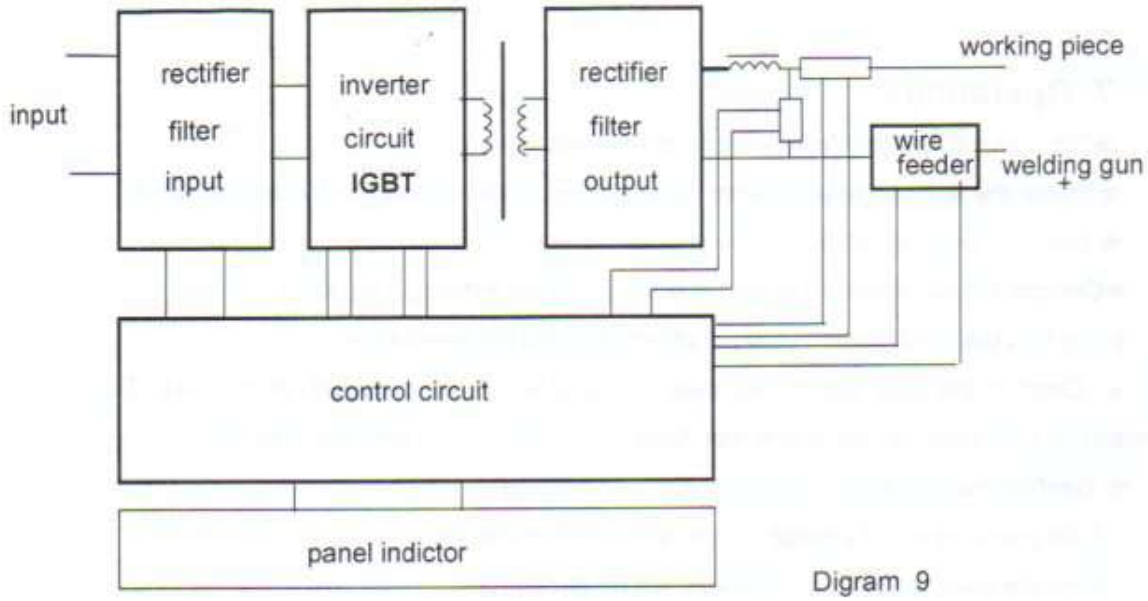
Press the switch of the gun before the wire roller is firmed,preset the gas flow through the meter to check if it is gas proof.Otherwise ,it affects the welding result.

7.3Rip into the wire

Select the specification of the wire ,materials according to the craft requirements.Firm the bolt and press the button on the front panel.The speed of ripping wire can be controlled by the welding current knob.Unload the nib if necessary and load it again after the wire is out.

8. working elements

Diagram for the WM 250I working elements.Digram9



Digram 9

Input AC 220V/230V/240V,rectifier and filter it into 300VDC.

Control the IGBT by PWM+PFM,inverter the 300VDC to 55KHZ AC.

High frequency transformer pass the power by insulation and voltage reducing with high efficiency.

Output the second rectifier and the second filter.Output the required welding current and voltage.

9.Maintenance

Check the safety measure be efficiency.

Get rid of the dust for the power source (FORexample,dry compressed air)

Before operating,,Check the "workpiece" "torch"connectors of the power panel if they are relaxed

.Check the connection between the grounding cable and plug if they are relaxed,(If relaxed, the serious heating will damage the quick connectors)

.Check the fan if it works regularly.charge it if it is trouble.

Check the insulation and breakage of the input power cord

.Change it in time to ensure the safety.

check if there is any noisy for the wire feed motor.

Check the abrasion of the wire feed hose.Get rid of the dust inside of the hose.(!~2times / 40kg wire)

.Get rid of the splash inside the nib regularly to ensure the guaranteed result by the gas

blow.

Check the abrasion of the nib.Change it in time.(suggest 5~10pieces nibs/40kg wire).

10.Troubles and Remedy

Troubles and remedy and remedy are as the form 10 as following

Troubles	Cause	Remedy
1.Fan not works properly	1.the fan line lose 2.Fan breakage	1.Connect the line 2.Change the fan
2.No indicating on the front panel	1.the power line lose 2.Indicating light broken	1.Check the power,Connect the line 2.Change it(ϕ 8)
3.Over heating light on(use mig)	1.aeration is not good 2.The temperature is too high 3.over-load use 4.Thermostat broken 5.Control plate broken	1.get rid of the bar 0.5m around 2.Reduce the temperature 3.Reduce the use loading 4.Change the thermostat(JUC-OF) 5.Check and change the control plate
4.warning led lights RED color (use MMA)	1.aeration is not good 2.The temperature is too high 3.over-load use 4.Thermostat broken 5.Control plate broken 6.output shorted (holder)	1.get rid of the bar 0.5m around 2.Reduce the temperature 3.Reduce the use loading 4.Change the thermostat(JUC-OF) 5.Check and change the control plate 6.remove holder
5.Wire feeder not work (welding current not adjustable)	1.the fuse broken 2.Potentiometer line fall down or Potentiometer broken 3.the wire blocked 4.the drive circuit broken 5. no output 6.other reasons	1.Change the fuse 5A/250V (on left panel,open wire feeder case) 2.Connect the lines or Change it 3.Check the gun 4.Change the control panel 5.Contact with the namufacturer 6.Contact with the namufacturer
6.Welding Voltage not adjustable	1.Potentiometer line fall down 2.Potentiometer broken 3.The circuit broken	1.Connect the lines 2.Change it 3.Change the control pcb