



LYNX

ELEKTRO MASCHINEN

WME_m MIG 217 Pulse Multimatic

EN WELDING MACHINE

OPERATING INSTRUCTION

DE SCHWEISSMASCHINE

BEDIENUNGSANLEITUNG

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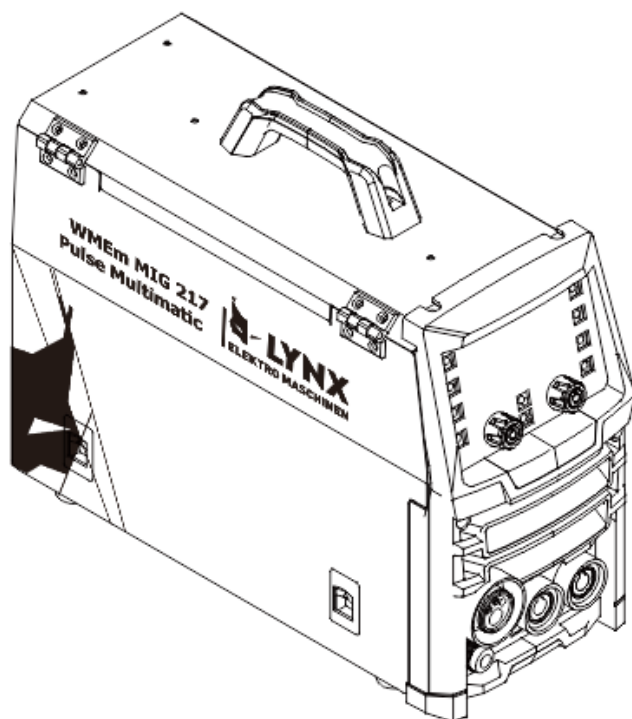
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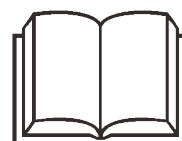


Lesen Sie die
Bedienungsanleitung
gründlich, bevor Sie
den Generator in
Betrieb nehmen.

Read and
understand the
Owner's Manual
before operating the
generator.

Preberite navodila
za uporabo, pred
zagonom
generatorja

Pročitajte upute za
upotrebu, pre
uporabe generatora



Operator's Manual

WMEM MIG 217 Pulse Multimatic

The Respectable User:

The detailed information provided here in below, which contains the installation, trial run, operation and maintenance of “WMEM MIG Pulse Multimatic Series Inverter MIG Welder”, is intended for your kind perusal to help you minimize the operational problems so that the product can work as smoothly as it is expected.



WARNING!

- * ONLY PROFESSIONAL PERSON ARE ALLOWED TO INSTALL, OPERATE, TEST AND MAINTAIN THE MACHINE.
- * ANY OPERATION AND MAINTAINENCE BEFORE READING THIS MANUL IS NOT ALLOWED.

1. Product Description	3		
2. Safety Operation	3		
2.1 Operator's Self-protection	3		
2.2 Attention	4		
2.3 Safety Measures to Assure the Correct	5		
Installation and Position	5		
2.4 Safety Check	5		
3. Technical Specification	5		
3.1 Environment to Which the Product is Subjected	6		
3.2 Requirement for Main Supply	6		
3.3 Welding Principles	6		
3.4 Welder's Structure	7		
3.5 Main Technical Data	7		
3.6 Applying Norm of Welder	7		
3.7 Sign & Picture Illustration	8		
4. Installation	8		
4.1 Welder's Placement	8		
4.2 Connection between Welder and Power Source	9		
4.3 The installation and connection of Flux-cored Welding	10		
		4.4 The installation and connection of STICK welding	10
		5. Operation	11
		5.1 Flux core welding steps	12
		5.2 Aluminium welding steps	12
		5.3 Stick welding steps	12
		5.4 Maintenance and service	13
			14
		6. Trouble Shooting	14
		9. Transport & Storage	15

1. Product Description

“WME MIG Pulse Multimatic Series Inverter MIG/STICK Welder” is designed to be used with the advanced IGBT (Insulated Gate Bipolar Tube) and rapid recovery diode as its main control and transfer components and assisted with the specially developed control circuit. This product, WME MIG 217 Pulse Multimatic, supports MIG welding, MMA welding and Lift-TIG welding.

The highlighted characteristics of WME MIG Pulse Multimatic Series Inverter MIG/stick Welder:

- ◆ Supports MMA welding, CO₂ gas shielded welding, single-pulse welding for carbon steel, stainless steel, Al-Mg alloy and Al-Si alloy, as well as dual-pulse welding.
- ◆ Compatible welding wires:
- ◆ - Solid wires and ER308L stainless steel wires: ϕ 0.8 mm, ϕ 1.0 mm, 5 kg spools (spool diameter: ϕ 200 mm);
- ◆ - ER5356 Al-Mg wires and ER4043 Al-Si wires: ϕ 1.0 mm, ϕ 1.2 mm, available in 2 kg spools (ϕ 200 mm) and 7 kg spools (ϕ 300 mm).
- ◆ Equipped with a full digital control system for precise welding process control and stable arc length. The fully digital wire feeding system ensures accurate and smooth wire feeding.
- ◆ Built-in professional welding expert database for automatic intelligent parameter matching.
- ◆ Excellent single-pulse and dual-pulse performance with minimal spatter and attractive weld bead appearance.
- ◆ No notification will be given if the contents or function of the welder in this book change. We reserve the right to update the manual without notification.

2. Safety Operation

2.1 Operator's Self -Protection

- * Please always follow the rules that conform to safety and hygiene. Wear protective garments to avoid injuries to eyes and skins.
- * Use the welding helmet to cover your head while working with the welding machine. Only viewing through the filter lens on the welding helmet can you watch your operation.
- * Prevent the sparks and spatter from harming your body.
- * Under no circumstance can you allow any part of your body to touch the welder's output bipolarity.
- * Do not operate under water or more humid place.

- * Fumes and gases produced when welding are hazardous to health. Make sure to work in places where there are exhaust or ventilation facilities to keep fumes or emissions away from the breathing zone.

2.2 Attention

- * WME MIG Pulse Multimatic Series Inverter MIG Welder is electronic products whose spare parts are very tender, do not change or adjust with a rush otherwise the switch will be damaged.
- * Check the connection to see if it is well connected, **whether the earth (ground) connection is reliable, etc.**
- * Please remember to keep arc rays away from the other nearby people when welding. This is only due to the interference from arc rays.
- * Never allow anybody else other than the operator himself to dislocate or modulate the welding machine.
- * Never allow the people with the cardiac pacemaker or any other things which are susceptible to the electromagnetism to get close to the welding machine, which has interference with the pacemaker's normal function.
- * The welder can not be used for pipeline ice-out.
- * Never using the way of knocking the torch head to remove slag.
- * The torch cable can not be pressed and its folding angle cannot be too small. The liner radius cannot less than 300mm, or it may damage the inner cable and lead to accident.
- * Never allow anybody else other than the operator himself to access the job site.
- * No touching on the live parts such as output connector etc. when welding.
- * The torch is an important part of the welder, it has direct influence on welding quality and it is relatively expensive. It can not be put on the work pieces just finished welding in case of burning out.
- * The inner and outer parts of the nozzle should be daubed with a little anti-stick ointment to prevent splash and spatter sticking on the nozzle which is hard for clearance.
- * The welder should be used within rated duty cycle. Over load using may accelerate the components aging and even lead to burning out.
- * The gas bottle should be fixed in case of toppling over.
- * No touching on the live parts while turning on power. Input power must be cut off after finishing job or leaving the site temporarily.

2.3 Safety Measures to Be Taken to Assure the Correct Installation and Position

- * Precaution must be taken to keep the operator and the machine from the foreign materials falling from up above.
- * The dust, acid and erodible dirt in the air at the job site can not exceed the amount required by the norm (excluding the emission from the welding process).
- * The welder must be installed in the place where it can not be exposed to sun and rain. Also it must be stored in less humid place with the temperature range at -10~40°C.
- * There should be 50 cm space about for the welding machine to have good ventilation.
- * Make sure that there is no metal-like foreign body to enter the welding machine.

- * No violent vibration in the welder's surrounding area.
- * Make sure that there is no interference with the surrounding area at the installation site.
- * Make sure whether there is enough power supply to make the welding machine work properly. Any power source required to access the welder must be installed with some protective equipments.
- * The welder should be installed on the horizontal surface and if it over 15°, there should be added some anti-dump set.
- * Take measures to prevent wind while operating in the strong wind since the welder is gas shielded. The wind speed is limited below 1.0m/s, or the wind shield device must be loaded.

2.4 Safety Check

Each item listed below must be carefully checked before operation:

- * Make sure that the welding machine has reliable earth wire connection;
- * Make sure that there is no short circuit connection with welder's both outputs;
- * Make sure that there is always sound output and input wire connection instead of exposing it outside.

Regular check needs to be conducted by the qualified personnel after the welder has been installed over a period of six months, which involves as follows:

- * Routine cleaning needs to be done to make sure that there is no such abnormal condition as loose connection happening in the welding machine.
- * The external parts installed with the welder must guarantee that the welder works properly.
- * Check the welding cable to see if it can continue to be used before it is worn out.
- * Replace the welder's input cable as soon as it is found to be broken or damaged.

ATTENTION: Cut off power supply before open the case.

Please do not hesitate to contact us for technical assistance whenever you come across the problems you can not work out or you may deem difficult to fix.

3. Technical Specification

3.1 Environment to Which the Product Is Subject

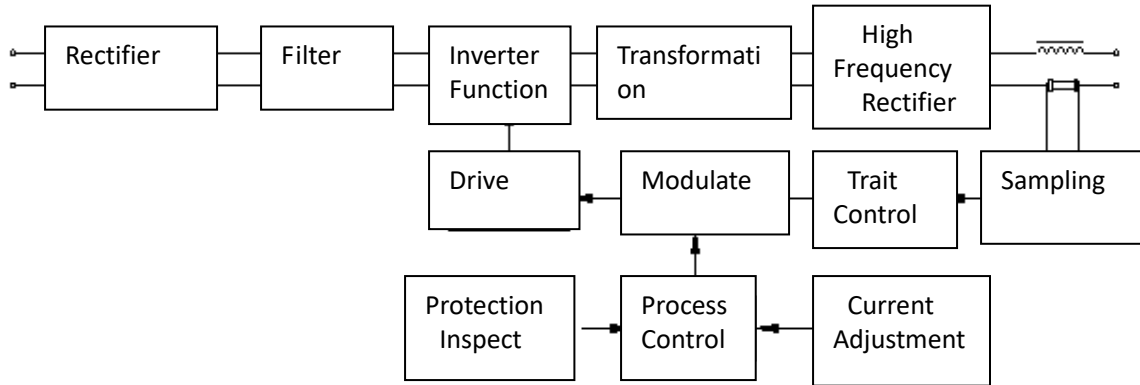
- * The surrounding temperature range: when welding: $-10 \sim +40^{\circ}\text{C}$,
During transport or in storage: $-25 \sim +55^{\circ}\text{C}$.
- * Relative humidity: when at 40°C : $\leq 50\%$,
when at 20°C : $\leq 90\%$.
- * The dust, acid and erodible materials in the air can not exceed the amount required by the norm (apart from the emissions from the welding process). No violent vibration at the job site.
- * Altitude no more than 1,000m.
- * Keep from raining when it is used outdoor.

3.2 Requirement for Main Supply

* The voltage oscillogram should display actual sine wave, which must have enough capacity.

* The oscillation of the supplied voltage should not exceed $\pm 10\%$ of the rated value.

3.3 Welder's Principle



The welder acquires 230V single phase industrial frequency AC power source through the power switch SW 101 and rectify through single phase rectifier bridge B1 and then filtered through capacitor C1, C2 to get the DC current. The 42 KHz AC current is got through the IGBT (IGBT1, IGBT2, IGBT3, IGBT4) all-bridge inverter. Then this alternating current, transformed by the intermediate frequency transformer and rectified by quick recovery diode (2D1, 2D2, 2D3, 2D4), outputs the stable direct current for the welder immediately after it has been filtered by the reactor L2. The wire feed speed can be stepless adjusted through the speed adjust knob. The welding current is easily influenced from the wire feed speed, usually the faster the wire feed speed the bigger the Amp value under the same voltage.

3.4 Welder's Structures

WME MIG Pulse Multimatic Series use the movable carton like structures: The upper part in the front is equipped with a welding current regulation knob, power indicator light (green), abnormal indicator light (yellow), while the lower part is furnished with the torch quick connector and "-" quick connector. The back side is installed with power switch, gas valve connection, cooling fan, power source lead-in wire, breaker. On the top there is a handle for the convenient of easy transport. When you open the cover, there is one primary transformer, one piece of printed circuit board. The bottom part is supplied with output reactor, primary transformer and etc. Installed in the middle part is a radiator with power elements.

3.5 Main Technical Data

Model		WME MIG 217 Pulse Multimatic
Input power	V	230
Frequency	Hz	50/60
Rated input current	A	MIG:35 MMA:32.5 TIG:20.2
Rated input capacitance	KVA	8.05/7.48/5.06
No-load voltage	V	MIG/MMA/TIG:70
Rated working voltage	V	MIG:24 MMA:27.2 TIG:17.2
MIG welding current	A	50~200
MMA welding current	A	20~180
TIG welding current	A	20~180
Rated duty cycle	%	60
Duty cycle 100% in 10min	A	MIG:155 MMA/TIG:139
Efficiency	η	82%
Power factor	$\cos\phi$	0.7
Insulation class		H
Enclosure protection	IP	21S
Cooling type		Fan cooled
Dimension L×W×H	mm	465X200X375
Weight KG	Kg	11

No notification if the above data changes.

3.6 Applying Norm of Welder

WME MIG Pulse Multimatic Series Inverter MIG Welder conforms with the following standard to perform EN 60974-1.

3.7 Torch Illustration

The torch is composed by torch stand, connecting cable and handle.

Torch stand is the interface of torch and wire feeding device.

Connecting cable: covered by nylon pipe the liner is loaded in the center of coreless cable. The inner part of liner is the passage for wire feeding. The space between liner and coreless cable is the passage for shielded gas. Coreless cable is the passage for current.

There is a gooseneck installed in the handle of the torch. In the back part of the torch there is a connecting with the coreless cable and in the front part is a shunt. The shielded gas distributes via the shunt and forms

well-proportioned air current in the nozzle, and then spurt out in a form of air hanging. Set with a sensitive switch on the handle to control the welding current.

3.7 Sign & Pictures Illustration

 Ground

 Descending

 arc welder

 single phases AC power source

 Single phase stillness transducer---transformer---rectifier

 MIG

 DC current

+: “+” electrode

—: “—” electrode

X: Duty Cycle

I_1 : Rated Input Current

I_2 : Rated Welding Current

P_1 : Rated Input Power

U_0 : Rated Open Circuit Voltage

U_1 : Rated Input Voltage

U_2 : Rated Load V

~50/60 Hz: AC, Rated frequency 50 Hz, workable frequency 60 Hz.

...V: Voltage (V)

...A: Current (A)

...KVA: Power (KVA)

...%: Duty cycle

...A/...V~...A/...V: Output range. Rated minimum and rated maximum welding current and related load voltage.

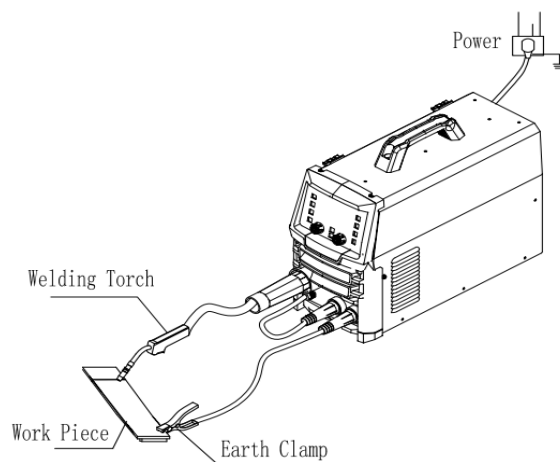
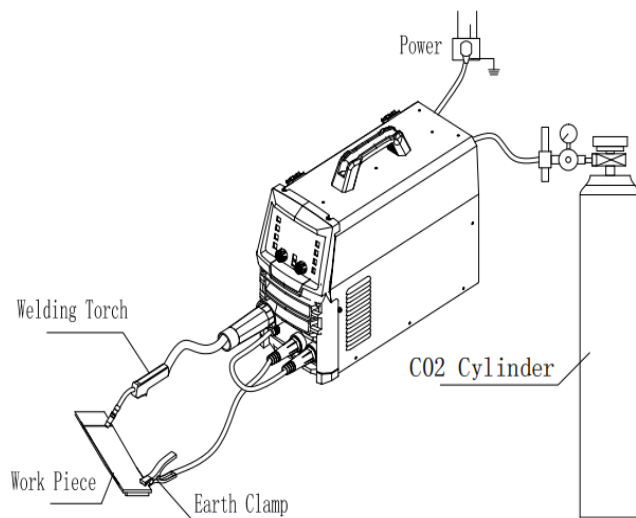
IP21S: Case protection class. IP is the code of International Protection. 2 mean preventing user's finger from the dangerous parts; preventing the solid material with the diameter no less than 12.5 mm into the box. 1 means preventing water dropping vertically which is harmless. S means water proof test is conducting while the movable parts are standstill.

H: H insulation grade.

4. Installation

4.1 Welder's Placement

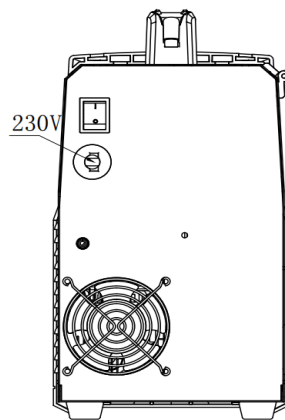
- * The dust, acid and erodible dirt in the air at the job site can not exceed the amount required by the norm.
- * The welder must be installed in the place where it can not be exposed to sun and rain. Also it must be stored in less humid place with the temperature range at -10°C ~ 40°C .
- * There should be 50 cm space about for the welding machine to have good ventilation.
- * Apparatus to exclude wind and smoke should be equipped if the inside aeration is not sound.



4.2 Connection between Welder and Power Source (See the Input Connection Sketch)

Connect the power source cable at the back board of the welder into the single phase 220Vltage power network

with breaker; 380 voltage power sources is strictly prohibited to the welder which will severely damage the welder, otherwise the user should take the consequences for it.



Back of the welder

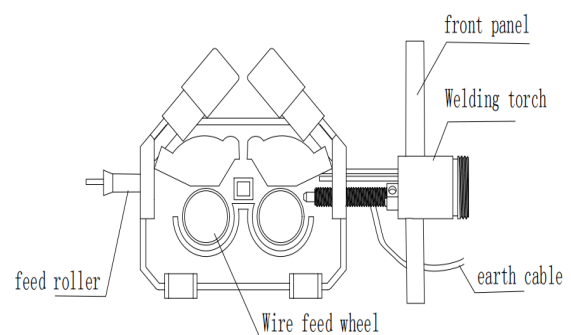
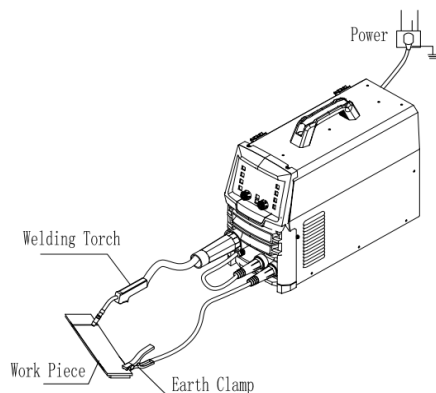
Power supply configure of a welder:

Notice: The melting current of the fuse is 1.2~1.5 times of its rated current.

Item	WME m MIG 217 Pulse Multimatic
Circuit breaker (A)	≥50
Fuse(Rated current) A	50
Knife Switch (A)	≥50
Power cord (mm ²)	≥2.5

4.3 The installation and connection of MIG Welding

Connection and installation of the wire feeder



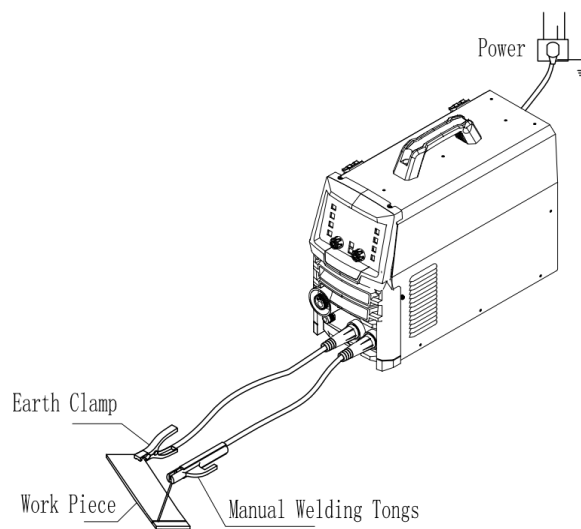
- * Select suitable wire according to welding technology. The wire diameter must be matched with drive roll, wire guide pipe liner and contact tip.。
 - * Open the lid of wire reel on the wire feeder put “Wire Coil” into “Wire Reel” on the wire feeder. Attention: Wire end under the “Wire Reel”, opposite wire feeder.
 - * There is damping screw device in the “Wire Reel” (hex head screw will be seen when open the lid). Pull the wire reel with hand when adjust. If resistance is over large, may adjust damping bolt: screw clockwise will enlarge the value and vice versa.
 - * Lead wire into “Wire Guide Pipe” of wire feeder, align wire with roll groove through “Drive Roll”, re-lead “Socket Tip” and press “Drive Roll”. (If more welding wire is needed, it will be done after switching on the power.)
- Connection between Welder and Torch**
- * Insert the connector of torch into “Torch Access Hole” on the front panel of the welder and rotate the screw cap firmly.

Connection of the Connection Cable

- * Connect the copper tip of the earth clamp which thread through the wire access hole on the panel with “-“of the “connecting tip”. The connecting cable must be reliable, or the connecting tip will burn out.
- * In order to reach sound performance when welding with flux-cord wire, it’s available that connect the “+”, “-” in an opposite way, that’s the wire feed motor with “-“and the connecting cable with “+”.

Notice: Do not use steel plate or the materials alike which are ill conductor to connect between welder and work piece.

4.4 The installation and connection of STICK welding



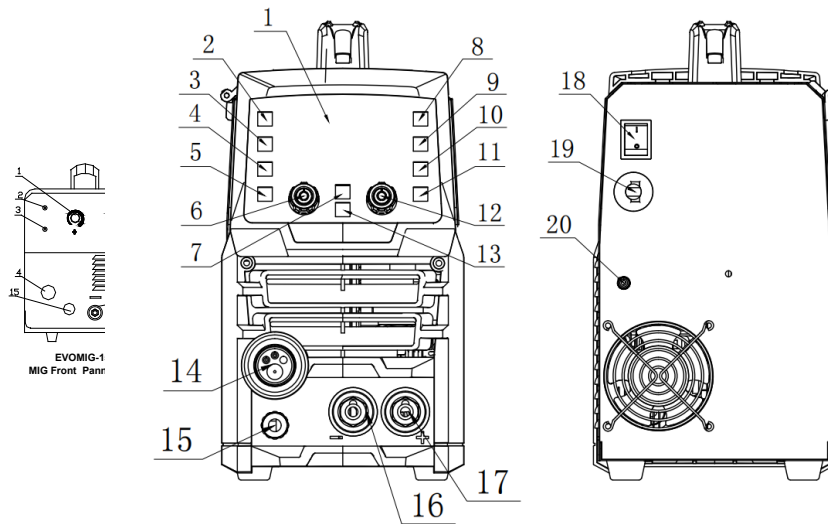


Notice: Do not use steel plate or the materials alike which are ill conductor to connect between welder and work piece

5. Operation (See the front panel)



ATTENTION: The protection class of WEm MIG Pulse Multimatic Series Inverter MIG/STICK Welder is IP21S. It is forbidden to put in a finger or insert a round bar less than 12.5 mm (metal bar in particular) into the welder. No heavy force can be employed on the welder.



WEm MIG 217 Pulse Multimatic

1.LED	2.Mode selection	3. Wire diameter selection
4.MATERIAL button	5.Select right button	6.Current Regulation
7.Silk inspection button	8.Gas selection	9.2T / 4T selection
10.Front gas/rear gas button	11.Left selection button	12. Voltage Regulation
13.Gas detection	14.Welding gun interface	15.Output cable
16.Negative output	17.Positive output	18.power switch
19.Power input	20.Gas input	

Attention:

- * The 'protection indicator light' will be on after a long time operation, it shows that the inner temperature is over the permitted data, then the machine should be stopped using for some time to let it cool down. It can continue using after the 'protection indicator light' is off.
- * The power source should be switched off after the operation or while temporarily leaving job site.
- * Welders should dress canvas work cloth and wear welding mask to prevent the hurt from arc and thermal radiation.
- * Light separating screen should be put in the job site to prevent the arc will hurt other people.
- * Inflammable or explosive materials are prohibited to access the job site.
- * Each connection of the welder should be connected correctly and creditably.

Work Piece cleaning Before Welding

Wire, groove and surrounding 10-20mm site must be cleaned, no existing rust, greasy dirt, water and paint etc.

5. 1 Flux welding steps**a) Debugging before welding**

- * Change the polarity on the vertical board, it is, connect MIG torch lead to “-”, the ground cable lead to “+”
- * Install the torch, gas and welding wire, and then turn on the power switch. The power indicator is on and fan works.
- * Press the torch switch till the wire extends to the nozzle
- * When wire feeding, make the cable straight.
- * When wire feeding, make sure the wire is located on the wire roller groove reliably and the feeding speed should be smooth. If the wire feeding speed is not smooth, please adjust the tension of the wire roller.
- * When using flux wire, the gear type groove wire roller should be used.

b) Welding

- * When welding, please adjust the welding current and welding voltage matchable according to the set-up
- * Aim at the welding line, press down the torch switch, the wire feeds automatically. The arc is started once the wire is touched the work piece. When welding, the “working indicator” is on

5.2 Sticking welding steps**a) Debugging before welding**

- * Set the “welding mode switch” on “stick”, it means the Stick welding can be used.
- * Set the welding current via welding current adjuster

b) Welding

- * Take up the electrode holder, install the electrode, aim at the welding line, scratch the work piece to start the arc. The “working” indicator is on

5.5 Maintenance and Service

Unlike the traditional welder, the reversible welder belongs to the scientifically sophisticated product which uses the modern electronic component parts combined with high technology. Therefore the trained personnels are

required for its maintenance. However, due to the fact that there are very few components to be easily worn out, it doesn't need regular service apart from usual cleaning work. Only the qualified people are allowed to be in charge of the repair job. It is strongly recommended that customers contact our company for the technical back-up or service when they feel unable to work out the technical hitch or problems.

- * The newly installed welder or which haven't been in use for some time need s to be surveyed the insulation resistances between each winding and every winding to case with millimeter, which can not be less than 2.5MΩ.

- * Keep from the rain, snow and long term exposing to sunlight when welder is used outdoor.

- * If the welder is not in use either for a long time or temperature ranges from -25 ~ +55 °C, and the relative humidity can not be more than 90%.

- * The professional maintenance personnel should use dry compressed air (use air compressor or bellows) to remove the dust inside the machine. The part adhering to grease must be cleaned with cloth while make sure there are no loosing parts existed in the tightened places and connected cable. Usually the machine should be cleaned once a year if the dust accumulation problem is not very serious, while it needs cleaning once or even twice every quarter if the dust accumulation problem is serious.

- * Regularly check the input & output cables of welder to guarantee them right and firmly connected and avoid them being exposed. Check should be taken once every month when fixed using and every check taken when removing.

- * Regularly check the seal performance of gas system, whether the fan and feeder motor having abnormal sound and whether every joint being loose.

- * Keep torch cable direct when welding.

- * Regularly clean the splash of nozzle (cannot use the way similar to knocking the torch head) and stick to using splash ointment. Don't remove the feeder device by means of pulling he torch cable.

- * Use qualified wire, no using inferior or rusty wire.

- * Clean the dust of liner with compressed air after the welder using some time (the dust is accumulated by friction between wire and liner roll if find it wear and tear to prevent wire uneven feeding.

- * The pressed roll can not be pressed too firm to guarantee smooth wire feeding. (It will lead to wire deformation, adding the feeding resistance and accelerating the friction of gear if pressed over firmly.)



WARNING:

- *The main loop voltage happens to be a bit higher, so safety precaution should be taken before repair to avoid accidental shock. The untrained people are forbidden to open the case !

- * Power source needs to be cut off before dust removal;

- * Never tamper with wire or damage the component parts when cleaning.

6. Troubleshooting

No.	Breakdown	Analysis	Solutions
1	Yellow Indicator is on	Voltage is too high ($\geq 15\%$)	Switch off power source; Check the main supply;
		Voltage is too low ($\leq 15\%$)	Restart welder when power recovers to normal state.
		Bad power ventilation lead to over-heat protection	Improve the ventilation condition.
		Circumstance temperature is too high.	It will automatically recover when the temperature low down.
		Using over the rated duty-cycle.	It will automatically recover when the temperature low down.
2	Wire feeding motor don't work	Potentiometer not in the proper status	Change potentiometer
		Nozzle is blocked up	Change nozzle
		Feed roller is loosen	Firm the bolts
3	Cooling Fan not working or turning very slowly	Switch broken	Replace the switch
		Fan broken	Replace or repair the fan
		Wire broken or falling off	Check the connection
4	Arc is not stable and splash is large	Too large contact tip makes the current unsteady	Change the proper contact tip or roller
		Too thin power cable makes the power astaticism	Change the power cable
		Too low input voltage	Enhance the input voltage
		Wire feeding resistance is too large	Clean or replace the liner and the torch cable had better in the line direction.
5	arc can't be pilot	Earth cable break	Connect earth cable
		Work piece has much greasy dirty or rusty stain	Clean greasy dirty or rusty stain
6	Others		Please connect with our company

7. Transport & Storage

- * The machines should be free from rain and snow during transportation and storage. Keep notice of the warning sign on the packing box when load and unload. The warehouse should keep dry & ventilation and free from corrosive gas or dust. The tolerable temperature ranges from $-25 \sim +55^{\circ}\text{C}$ and the relative humidity can not be more than 90%.
- * After the package has been opened, it is suggested to repack the product as per prior requirement for future storage and transport. (Cleaning job is required before storage and you must seal the plastic bag in the box for storage.)
- * Users should keep the packing materials with the machine to keep well storage during the long transportation. If the machine need transfer, the wooden case is required. The sign such as 'Lift' and 'Free of rain' should be labeled on the case.