



HUGONG CARiMIG 200WD

You Can buy this product at our E-shop:

Šią prekę galite įsigyti mūsų el. parduotuvėje:

BUY NOW



www.e-serpantinas.com

INVERTER WELDER OPERATOR'S MANUAL

MODEL: HUGONG CARiMIG 200WD

Operating Instructions and Parts Manual

Please read and save these instructions. Read through this owner's manual carefully before using product. Protect yourself and others by observing all safety information, warnings, and cautions. Failure to comply with instructions could result in personal injury and/or damage to product or property. Please retain instructions for future reference.

MIG/STICK WELDER

Description

The CARiMIG 200WD series is a DC inverter MIG welder . This unit uses 1~Phase 220/230/240V, 50/60HZ AC power. A 20 amp time delay fuse or circuit breaker is recommended. The CARiMIG 200WD series is ideal for Do-It-Yourself projects or for light maintenance. MIG/MAG weld carbon steel, stainless steel .



Unpacking

1.1 Remove cartons, bags or Styrofoam containing the welder and accessories.

1.2 Check the contents with the packing list below.

ITEM	QTY.
DC Inverter MIG Welder	1 unit
MIG gun	1pcs
Grounding cable with clamp	1pcs
Gas hose ϕ 8	4m
Tip ϕ 0.6	1pcs
Tip ϕ 0.9	1pcs
Gas Regulator	1pcs
Operator's Manual	1set

1.3 After unpacking unit, inspect carefully for any

damage that may have occurred during transit. Check for loose, missing, or damaged parts. Shipping damage claim must be filed with carrier.

Operating Instructions and Parts Manual

Operating Instructions and Parts Manual
Specifications and Dimension

Description		Specification		
Model		CARiMIG 200WD		
Input power	V	220	230	240
Frequency	Hz	50/60		
Rated input current	A	36		
Rated input capacitance	KVA	8.7		
No-load voltage	V	65	69	71
Rated working voltage	V	24		
MMA welding current	A	20~170		
LIFT Arc welding current	A	15~200		
MIG welding current	A	30~200		
Rated duty cycle	%	20		
Welding current (10min)	A	20%@200		
10min/100%	A	90		
Efficiency	η	85%		
Power factor	$\text{Cos } \phi$	0.75		
Insulation class		H		
Enclosure protection	IP	21S		
Cooling type		Fan cooled		
Dimension L×W×H	cm	50×22×38		
Weight	kg	14		

Operating Instructions and Parts Manual

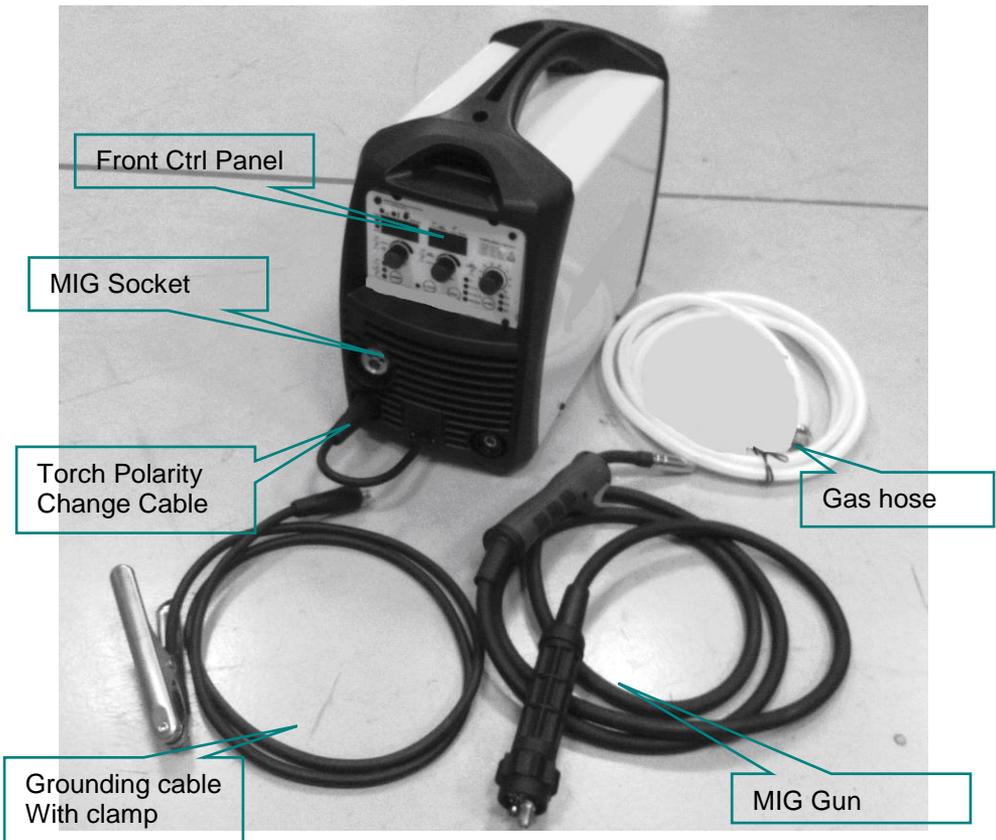
Removing from carton

1.1 Remove cartons, bags or Styrofoam containing the welder and accessories.

1.2 Check the contents with the packing list below.

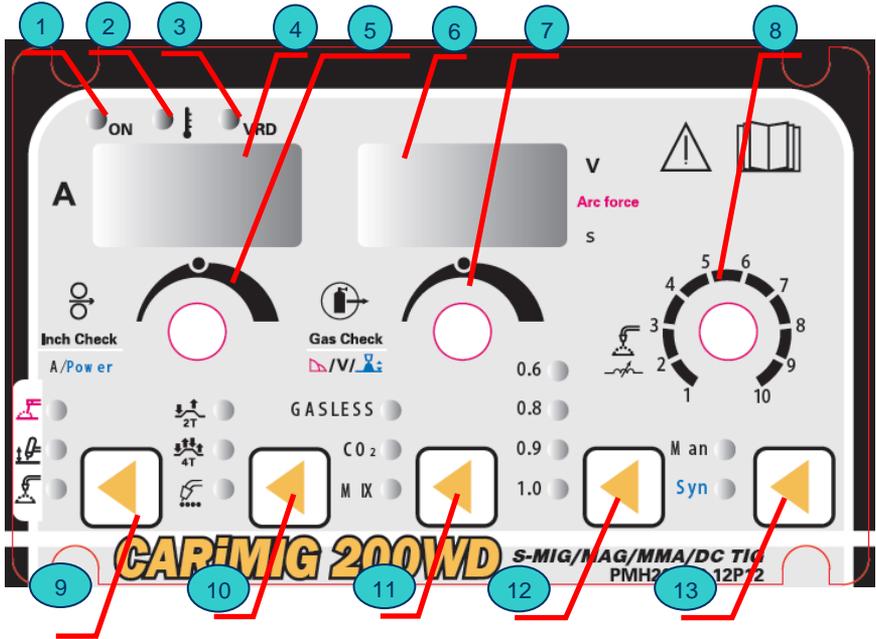
- **Factory standard:** EN60974-1
- **Optional accessories:** Protective mask, tip, welding wire

Know your Welder



Operating Instructions and Parts Manual

● Front Ctrl panel



- 1. POWER INDICATOR:** When the machine is turned on, the power indicator will be on.
- 2. ALARM INDICATOR:** When the thermal indicator is on, it shows the machine is overloaded and the internal temperature is too high. Weld output will turn off automatically but the fan will still be working. When the internal temperature is decreased, the overload light will turn off and the machine will be ready to weld.
- 3. VRD INDICATOR:** When the VRD indicator is on, it means the welder's output voltage is safe ($\leq 13V$), it will be off when the welder is working. The VRD default set is enable, users can turn off it in MMA function when press down '9' + '11' + '13' at same time.
- 4. CURRENT DISPLAY INDICATOR:** It will be display current preset, and display real-current when the welder is working.
- 5. LEFT ADJUST KNOB:** Its main function is adjusting welding current; Users can press down the knob in MIG/MAG then inch-check function will be on at this time.
- 6. VOLTAGE DISPLAY INDICATOR:** It will be display Arc-Force preset in MMA, and display voltage preset in MIG/MAG, and display real-voltage when the welder is working.

Operating Instructions and Parts Manual

7. **MIDDLE ADJUST KNOB:** Its main function is adjusting Arc-Force in MMA, and adjusting welding voltage in MIG/MAG. Users can press down the knob in MIG/MAG, then gas-check function will be on at this time.
 8. **MIG/MAG ELECTRICAL INDUCTOR ADJUST KNOB:** Its main function is adjusting arc's dynamic in MIG/MAG.
 9. **WELD FUNCTION SELECTION BUTTON:** Users can select MMA, LIFT Arc or MIG/MAG function by this button, and the indicators at the left part of button will indicate the selection weld function.
 10. **MIG/MAG TRIGGER BUTTON:** Users can select gun trigger mode in MIG/MAG by this button, and the indicators at the left part of button will indicate the selection mode.
 11. **MIG/MAG GAS SELECTION BUTTON:** Users can select protect gas by this button, and the indicators at the left part of button will indicate the selection gas. When Gasless LED is ON, user can choose $\Phi 0.9$ or $\Phi 1.0$ wire only. In synergic mode, the gasless $\Phi 0.9$ program is available when $\Phi 0.9$ LED is on, and aluminum $\Phi 1.0$ program is available when $\Phi 1.0$ LED is on.
 12. **MIG/MIG WIRE DIAMETER SELECTION BUTTON:** Users can select wire diameter by this button, and the indicators at the left part of button will indicate the selection wire.
 13. **MIG/MAG MANUAL/SYN SELECTION BUTTON:** Users can select manual or synergic mode by this button, and the indicators at the left part of button will indicate the selection mode.
- **GROUNDING CABLE**
Use earth clamp to connect earth cable with work piece
 - **MIG GUN**
The welding wire is driven through the welding cable and MIG gun to the work piece. It is attached to the drive system.
 - **Gas Hose**
Used to connect the machine to the regulator.
 - **POWER SWITCH**
In the "OFF" position no power is being supplied
In the "ON" position power is supplied to the main transformer and control circuit
 - **INPUT POWER CORD**
The power cord connects the welder to the 220/230/240 volt power supply. 16 amp receptacle to supply power to the welder.
 - **Torch Polarity Change Cable**
To change the polarity of gun for kinds of core wire welding.
 - **NAMEPLATE OF WELDER**
The nameplate indicate the main electrical data of welder.
-

Installation

1. Power requirement

AC single phase 220/230/240V, 50/60HZ fused with a 20 amp time delayed fuse or circuit breaker is required.

▲WARNING

•High voltage danger from power source! Consult a qualified electrician for proper installation of receptacle. This welder must be grounded while in use to protect the operator from electrical shock.

• Do not remove grounding prong or alter the plug in any way. Do not use any adapters between the welder's power cord and the power source receptacle. Make sure the POWER switch is OFF when connecting your welder's power cord to a properly grounded 220/230/240Vac, 50/60Hz, single phase, 20 amp power source.

2. Extension cord

During normal use an extension cord is not necessary. It is strongly recommended that an extension cord should not be used because of the voltage drop they produce. This drop in voltage can affect the performance of the welder. If you need to use an extension cord it must be a #12 gauge cord at the smallest.

-Do not use an extension cord over 25 ft. in length.

3. Setting up the work piece

3.1 Welding positions

There are two basic positions, for welding: Flat and Horizontal. Flat welding is generally easier, faster, and allows for better penetration. If possible, the work piece should be positioned so that the bead will run on a flat surface.

3.2 Preparing the Joint

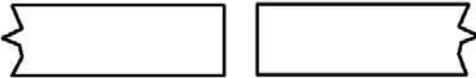
Before welding, the surface of work piece needs to be free of dirt, rust, scale, oil or paint. Or it will create brittle and porous weld. If the base metal pieces to be joined are thick or heavy, it may be necessary to

Operating Instructions and Parts Manual

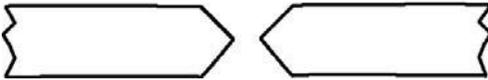
bevel the edges with a metal grinder. The correct bevel should be around 60 degrees.

See following picture:

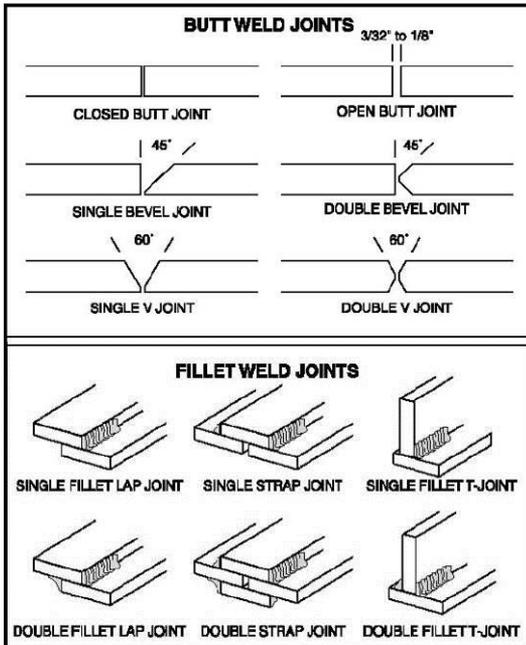
INCORRECT



CORRECT



Based on different welding position, there are different welding joint, see following images for more information



4. Ground clamp connection

Clear any dirt, rust, scale, oil or paint on the ground clamp. Make certain you have a good solid ground connection. A poor connection at the ground clamp will waste power and heat. Make sure the ground clamp touches the metal.

5. Setting the wire tension

▲ WARNING

Arc flash can injure eyes! To reduce the risk of arc flash, make certain that the wire coming out of the end of the torch does not come in contact with work piece, ground clamp or any grounded material during the drive tension setting process or arcing will occur.

5.1. Press the trigger on the torch.

5.2. Turn the drive tension adjustment knob clockwise, increasing the drive tension until the wire seems to feed smoothly without slipping.

6. Gas installation

▲ WARNING

Shielding gas cylinders and high pressure cylinders can explode. if damaged, so treat them carefully.

-Never expose cylinders to high heat, sparks, open flames, mechanical shocks or arcs.

-Do not touch cylinder with MIG gun.

-Do not weld on the cylinder.

-Always secure cylinder upright to a cart or stationary object.

-Keep cylinders away from welding or electrical circuits.

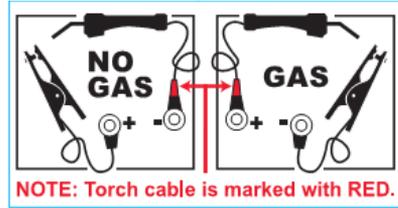
-Use the proper regulators, gas hose and fittings for the specific application.

When MIG (solid) wires are used, the shielding gas is required.

Operating Instructions and Parts Manual

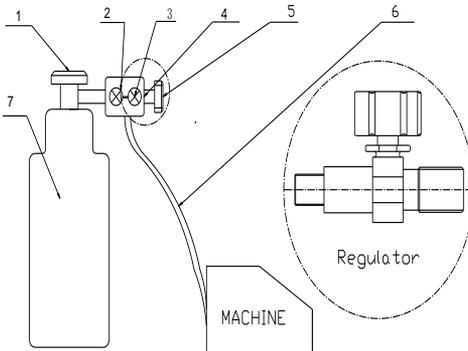
6.1. Polarity changing:

The factory polarity setting is for flux core welding (no shielding gas is required). At this mode, the MIG gun lead is connect to “-” (negative) polarity and ground cable end is to “+” (positive). If MIG welding with shielding gas the MIG gun lead is to “+”, and ground cable is connected to “-”. Secure leads tight with fasteners. See illustrations below.



6.2. The gas hose, regulator and gas cylinder connection

Attach one end of the gas hose to the gas solenoid valve (gas inlet) located on the back panel of the welder. Attach the other end to the gas regulator which is attached to the shielding gas cylinder. See illustration below



1. Cylinder valve: Controls GAS CYLINDER gas flow.
2. Cylinder pressure gauge
3. Gas flow gauge, set at 20 CFM
4. Regulator
5. Adjustment knob controls gas pressure to the welder.
6. Gas hose
7. Gas cylinder

NOTE:

Slowly open the cylinder valve by turning it counterclockwise until the cylinder pressure gauge registers on the first gauge of the regulator. Turn the adjustment knob clockwise (right) slowly to increase gas flow to 20 cfm. To reduce the gas flow turn the adjustment counterclockwise (left). The gas valve is located on the back panel of the welder and activated by the trigger. Gas flow should be heard when the trigger is activated. No gas flow will result in a harsh arc with excessive spatter, a smooth weld bead will be difficult to obtain. Avoid unnecessary gas loss by closing the tank valve when finished welding.

6.3. Gas selection.

Different materials require different shielding gas when MIG welding, refer to the set up chart inside the wire feed compartment.

Operating Instructions and Parts Manual

Mild steel: Use 75% Argon and 25% for reduced spatter and reduced penetration for thinner materials. Do NOT USE Argon gas concentrations higher than 75% on steel. The result will be extremely poor penetration, porosity, and brittleness of weld.

Mild Steel: Use CO2 for deeper penetration but increased spatter.

Stainless steel: Use a mixed gas consisting of Helium, Argon and CO2.

Aluminum or bronze: Use 100% Argon

Operation

▲ WARNING

High voltage danger from power source! Consult a qualified electrician for proper installation of receptacle at the power source. This welder must be grounded while in use to protect the operator from electrical shock. If you are not sure if your outlet is properly grounded, have it checked by a qualified electrician. Do not cut off the grounding prong or alter the plug in any way and do not use any adapters between the welder's power cord and the power source receptacle. Make sure the POWER switch is OFF before connecting your welder's power cord to a properly grounded 220/230/240VAC(220v-240v), 50/60Hz, single phase,20 amp power source.

Part1 The MIG welding operation

1. Main control component

Power switch - The power switch supplies electrical current to the welder.

Whenever the power switch is in the ON position, the welding circuit is activated. ALWAYS turn the power switch to the OFF position and unplug the welder before performing any maintenance.

Voltage selector - The voltage selector controls the welding heat. This unit has infinite voltage control. Refer to the label inside the welder side door for recommended voltage selector settings for your welding job.

Wire speed control - The wire speed control adjusts the speed at which the wire is fed out of the welding torch. The wire speed needs to be closely matched (tuned-in) to the rate at which it is being melted off. Some things that affect wire speed selection are the type and diameter of the wire being used, the heat setting selected, and the welding position to be used.

Note: The wire will feed faster without an arc. When an arc is being drawn, the wire speed will slow down.

2. Hold the torch

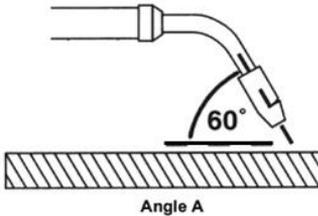
The best way to hold the welding torch is the way that feels most comfortable to you. While practicing to use your new welder, experiment holding the torch in different positions until you find the one that seems to work best for you.

Operating Instructions and Parts Manual

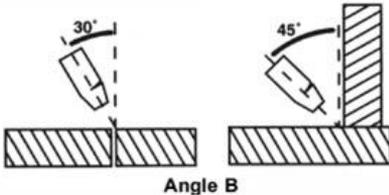
3. Position the torch to the work piece

There are two angles of the torch nozzle in relation to the work piece that must be considered when welding.

3.1. Angle A can be varied, but in most cases the optimum angle will be 60 degrees, the point at which the torch handle is parallel to the work piece. If angle A is increased, penetration will increase. If angle A is decreased, penetration will decrease also.



3.2. Angle B can be varied for two reasons: to improve the ability to see the arc in relation to the weld puddle and to direct the force of the arc.

**4. Distance from the work piece**

If the nozzle is held off the work piece, the distance between the nozzle and the work piece should be kept constant and should not exceed 1/4 inch or the arc may begin sputtering, signaling a loss in welding performance.

5. Tuning in the wire speed

This is one of the most important parts of MIG welder operation and must be done before starting each welding job or whenever any of the following variables are changed: heat setting, wire diameter, or wire type.

▲ WARNING

EXPOSURE TO A WELDING ARC IS EXTREMELY HARMFUL TO THE EYES AND SKIN!

Prolonged exposure to the welding arc can cause blindness and burns.

Never strike an arc or begin welding until you are adequately protected.

Wear flameproof welding gloves, a heavy long sleeved shirt, trousers with no cuffs, high topped shoes, and an ANSI approved welding helmet.

5.1. Connect the Ground Clamp to a scrap piece of the same type of material which you will be welding. It should be equal to or greater than the thickness of the actual work piece, and free of oil, paint, rust, etc.

Operating Instructions and Parts Manual

5.2. Select a heat setting. Refer to set up chart

5.3. Hold the torch in one hand, allowing the nozzle to rest on the edge of the work piece farthest away from you, and at an angle similar to that which will be used when welding. (See HOLDING THE TORCH if you are uncertain of the angle at which you will be welding).

5.4. With your free hand, turn the Wire Speed Dial to maximum and continue to hold onto the knob.

5.5. Lower your welding helmet and pull the trigger on the torch to start an arc, then begin to drag the torch toward you while simultaneously turning the Wire Speed Dial counter-clockwise.

5.6. LISTEN! As you decrease the wire speed, the sound that the arc makes will change from a sputtering to a high-pitched buzzing sound and then will begin sputtering again if you decrease the wire speed too much. The point on the wire speed adjustment where the high-pitched buzzing sound is achieved is the correct setting. You can use the wire speed control to slightly increase or decrease the heat and penetration for a given heat setting by selecting higher or lower wire speed settings. Repeat this tune-in procedure if you select a new heat setting, a different diameter wire, or a different type of welding wire.

6. Welding Techniques

▲ WARNING

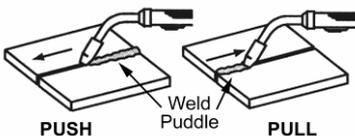
EXPOSURE TO A WELDING ARC IS EXTREMELY HARMFUL TO THE EYES AND SKIN! Prolonged exposure to the welding arc can cause blindness and burns. Never strike an arc or begin welding until you are adequately protected. Wear flameproof welding gloves, a heavy long sleeved shirt, trousers with out cuffs, high topped shoes and an ANSI approved welding helmet.

ELECTRIC SHOCK CAN KILL! To prevent ELECTRIC SHOCK, do not perform any welding while standing, kneeling, or lying directly on the grounded work.

6.1 Moving the torch

Torch travel refers to the movement of the torch along the weld joint and is broken into two elements: Direction and Speed. A solid weld bead requires that the welding torch be moved steadily and at the right speed along the weld joint. Moving the torch too fast, too slow, or erratically will prevent proper fusion or create a lumpy, uneven bead.

Travel direction is the direction the torch is moved along the weld joint in relation to the weld puddle. The torch is either PUSHED into the weld puddle or PULLED away from the weld puddle.



For most welding jobs you will pull the torch along the weld joint to take advantage of the greater weld puddle visibility.

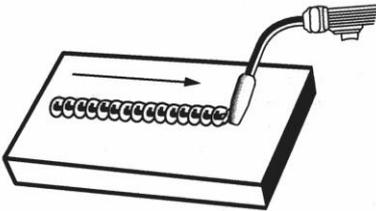
Operating Instructions and Parts Manual

Travel speed is the rate at which the torch is being pushed or pulled along the weld joint. For a fixed heat setting, the faster the travel speed, the lower the penetration and the lower and narrower the finished weld bead. Likewise, the slower the travel speed, the deeper the penetration and the higher and wider the finished weld bead.

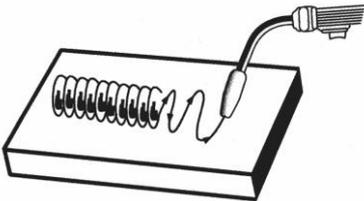
6.2 Types of welding beads

As you become more familiar with your new welder and better at laying some simple weld beads, you can begin to try some different weld bead types.

The **STRINGER BEAD** is formed by traveling with the torch in a straight line while keeping the wire and nozzle centered over the weld joint (See following figure)

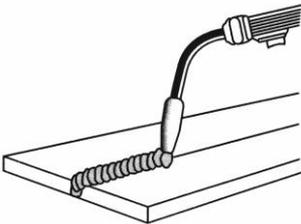


The **WEAVE BEAD** is used when you want to deposit metal over a wider space than would be possible with a stringer bead. It is made by weaving from side to side while moving with the torch. It is best to hesitate momentarily at each side before weaving back the other way.



6.3 Welding position

FLAT POSITION is easiest of the welding positions and is most commonly used. It is best if you can weld in the flat position if at all possible as good results are easier to achieve.



Operating Instructions and Parts Manual

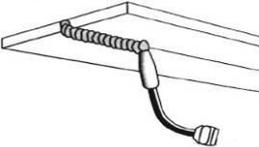
HORIZONTAL POSITION Is performed very much the same as the flat weld except that angle B (see **HOLDING THE TORCH**) is such that the wire, Directed more toward the metal above the weld joint is to help prevent the weld puddle from running downward while still allowing slow enough travel speed .A good starting point for angle B is about 30 degrees **DOWN** from being perpendicular to the work piece.



VERTICAL POSITION Is easier for many people to Pull the torch from top to bottom. It can be difficult to prevent the puddle from running downward. Pushing the torch from bottom to top may provide better

puddle control and allow slower rates of travel speed to achieve deeper penetration. When vertical welding, angle B (see **HOLDING THE TORCH**) is usually always kept at zero, but angle A will generally range from 45 to 60 degrees to provide better puddle control.

OVERHEAD POSITION Is the most difficult welding position. Angle A (see **HOLDING THE TORCH**) should be maintained at 60 degrees. Maintaining this angle will reduce the chances of molten metal falling into the nozzle. Angle B should be held at zero degrees so that the wire is aiming directly into the weld joint. If you experience excessive dripping of the weld puddle, select a lower heat setting. Also, the weave bead tends to work better than the stringer.



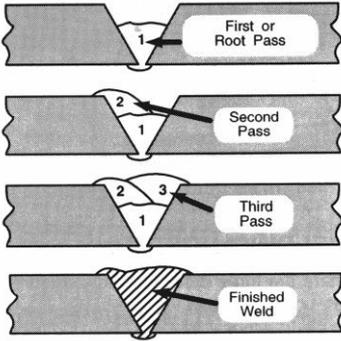
6.4 Multiple pass welding

Butt Weld Joints When butt welding thicker materials you will need to prepare the edges of the material to be joined by grinding a bevel on the edge of one or both pieces of the metal being joined. When this is done, a “**V**” is created between the two pieces of metal that will have to be welded closed. In most cases more than one pass or bead will need to be laid into the joint to close the “**V**”.

Laying more than one bead into the same weld joint is known as a multiple-pass weld.

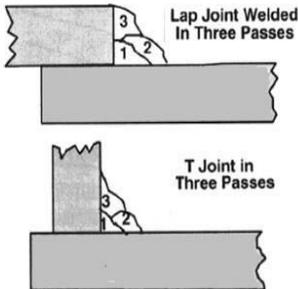
The illustrations in following figure show the sequence for laying multiple pass beads into a single “**V**” butt joint.

Operating Instructions and Parts Manual

**NOTE:**

WHEN USING SELF-SHIELDING FLUX-CORE WIRE it is very important to thoroughly chip and brush the slag off each completed weld bead before making another pass or the next pass will be of poor quality.

Fillet Weld Joints. Most fillet weld joints, on metals of moderate to heavy thickness, will require multiple pass welds to produce strong joint. The illustrations in Figure 19 show the sequence of laying multiple pass beads into a T fillet joint and a lap fillet joint.

**6.5 Spot welding**

There are three methods of spot welding: Burn-Through, Punch and Fill, and Lap. Each has advantages and disadvantages depending on the specific application as well as personal preference.



Operating Instructions and Parts Manual

1. The BURN-THROUGH METHOD welds two overlapped pieces of metal together by burning through the top piece and into the bottom piece. With the burn-through method, larger wire diameters tend to work better than smaller diameters. Wire diameters that tend to work best, with the burn-through method are 0.035 inch self-shielding flux-core wire. Do not use .030 inch self-shielding flux core wires when using the burn-through method unless the metal is VERY thin or excessive filler metal build-up and minimal penetration is acceptable. Always select the HIGH heat setting with the burn-through method and tune in the wire speed prior to making a spot weld.
2. The PUNCH AND FILL METHOD produces a weld with the most finished appearance of the three spot weld methods. In this method, a hole is punched or drilled into the top piece of metal and the arc is directed through the hole to penetrate into the bottom piece. The puddle is allowed to fill up the hole leaving a spot weld that is smooth and flush with the surface of the top piece. Select the wire diameter, heat setting, and tune in the wire speed as if you were welding the same thickness material with a continuous bead.
3. The LAP SPOT METHOD directs the welding arc to penetrate the bottom and top pieces, at the same time, right along each side of the lap joint seam. Select the wire diameter, heat setting, and tune in the wire speed as if you were welding the same thickness material with a continuous bead.

6.6 SPOT WELDING INSTRUCTIONS

1. Select the wire diameter and heat setting recommended above for the method of spot welding you intend to use.
2. Tune in the wire speed as if you were going to make a continuous weld.
3. Hold the nozzle piece completely perpendicular to and about 1/4 inch off the work piece.
4. Pull the trigger on the torch and release it when it appears that the desired penetration has been achieved.
5. Make practice spot welds on scrap metal, varying the length of time you hold the trigger, until a desired spot weld is made.
6. Make spot welds on the actual work piece at desired locations.

7. Electrode

The welding electrode is a rod coated with a layer of flux. When welding, electrical current flows between the electrode (rod) and the grounded metal work piece. The intense heat of the arc between the rod and the grounded metal melts the electrode and the flux. The most popular electrodes are:

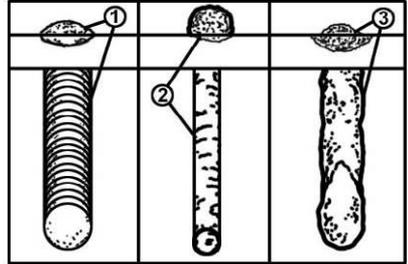
- E6011 60,000 PSI tensile strength deep penetrating applications.
- E6013 60,000 PSI tensile strength used for poor fit up applications
- E7014 70,000 PSI tensile strength used for high deposition and fast travel speeds with light penetration
- E7018 70,000 PSI tensile strength,
Used for out of position and tacking.

Operating Instructions and Parts Manual

8. Selecting the proper electrode

There is no golden rule that determine the exact rod or heat setting required for every situation. The type and thickness of metal and the position of the work piece determine the electrode type and the amount of heat needed in the welding process.

Heavier and thicker metals required more amperage. It is best to practice your welds on scrap metal which matches the metal you intend to work with to determine correct heat setting and electrode choice. See following some helpful trouble shooting tips to determine if you are using a correct electrode

**1. When proper rod is used:**

- The bead will lay smoothly over the work without ragged edges
- The base metal puddle will be as deep as the bead that rises above it
- The welding operation will make a crackling sound similar to the sound of eggs frying

2. When a rod too small is used

- The bead will be high and irregular
- The arc will be difficult to maintain

3. When the rod is too large

- The arc will burn through light metals
- The bead will undercut the work
- The bead will be flat and porous
- Rod may freeze or stick to work piece

Note: Rate of travel over the work also affects the weld. To ensure proper penetration and enough deposit of rod, the arc must be moved slowly and evenly along the weld seam.

Operation**1. Setting the amperage control**

The welder has an infinite output current control. It is capable of welding with 1/16" and 5/64" and 3/32" electrodes.

here is no golden rule that determines the exact amperage required for every situation. It is best to practice your welds on scrap metal which matches the metals you intend to work with to determine correct setting for your job. The electrode type and the thickness of the work piece metal determine the amount of heat needed in the welding process.

Operating Instructions and Parts Manual

Heavier and thicker metals require more voltage (amperage), whereas lighter and thinner metals require less voltage (amperage).

2. Welding techniques

The best way to teach yourself how to weld is with short periods of practice at regular intervals. All practice welds should be done on scrap metal that can be discarded. Do not attempt to make any repairs on valuable equipment until you have satisfied yourself that your practice welds are of good appearance and free of slag or gas inclusions.

2.1 Holding the electrode

The best way to grip the electrode holder is the way that feels most comfortable to you. To Position the Electrode to the work piece when striking the initial arc it may be necessary to hold the electrode perpendicular to the work piece. Once the arc is started the angle of the electrode in relation to the work piece should be between 10 and 30 degrees. This will allow for good penetration, with minimal spatter.

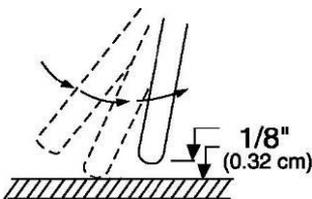
2.2 Striking the arc

▲ WARNING

EXPOSURE TO A WELDING ARC IS EXTREMELY HARMFUL TO THE EYES AND SKIN.

- Never strike an arc or begin welding until you have adequate protection.
- Wear flameproof welding gloves, heavy long-sleeved shirt, cuffless trousers, high-topped shoes and a welding helmet or shield.

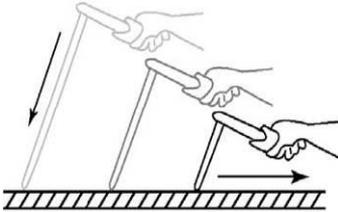
Scratch the work piece with the end of electrode to start arc and then raise it quickly about 1/8 inch gap between the rod and the work piece. See following picture



It is important that the gap be maintained during the welding process and it should be neither too wide or too narrow. If too narrow, the rod will stick to the work piece. If too wide, the arc will be extinguished. It needs much practice to maintain the gap. Beginners may usually get sticking or arc extinguishing. When the rod sticks to the work piece, gently rock it back and forth to make them separate. If not, the circuit is short connection,

Operating Instructions and Parts Manual

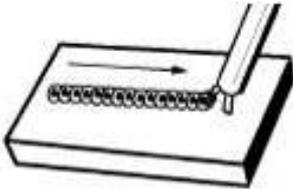
and it will overload the welder. A good arc is accompanied by a crisp, cracking sound. The sound is similar to that made by eggs frying. To lay a weld bead, only 2 movements are required; downward and in the direction the weld is to be laid, as in following figure:



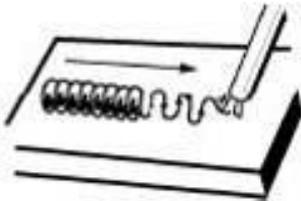
2.3 Types of weld bead

The following paragraphs discuss the most commonly used arc welding beads.

The stringer bead Formed by traveling with the electrode in a straight line while keeping it centered over the weld joint.



The weave bead Used when you want to deposit metal over a wider space than would be possible with a stringer bead. It is made by weaving from side to side while moving with the electrode. It is best to hesitate momentarily at each side before weaving back the other way to improve penetration.

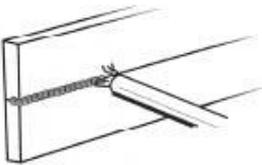


2.4 Welding position

Flat position is the easiest of the welding positions and is most commonly used. It is best if you can weld in the flat position if at all possible as good results are easier to achieve.



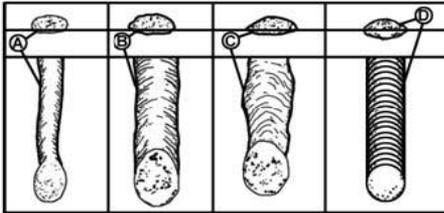
The horizontal position is performed very much the same as the flat weld except that the angle is different such that the electrode, and therefore the arc force, is directed more toward the metal above the weld joint. This more direct angle helps prevent the weld puddle from running downward while still allowing slow enough travel speed to achieve good penetration. A good starting point for your electrode angle is about 30 degrees DOWN from being perpendicular to the work piece.



2.5 Judge a good weld bead

When the trick of establishing and holding an arc has been learned, the next step is learning how to run a good bead. The first attempts in practice will probably fall short of acceptable weld beads. Too long of an arc will be held or the travel speed will vary from slow to fast (see following)

Operating Instructions and Parts Manual



- A. Weld speed is too fast.
- B. Weld speed is too slow.
- C. Arc is too long.
- D. Ideal weld.

A solid weld bead requires that the electrode be moved slowly and steadily along the weld seam. Moving the electrode rapidly or erratically will prevent proper fusion or create a lumpy, uneven bead. To prevent ELECTRIC SHOCK, do not perform any welding while standing, kneeling, or lying directly on the grounded work.

2.6 Finish the bead

As the coating on the outside of the electrode burns off, it forms an envelope of protective gasses around the weld. This prevents air from reaching the molten metal and creating an undesirable chemical reaction. The burning coating, however, forms slag. The slag formation appears as an accumulation of dirty metal scale on the finished weld. Slag should be removed by striking the weld with a chipping hammer.

Trouble shooting Chart

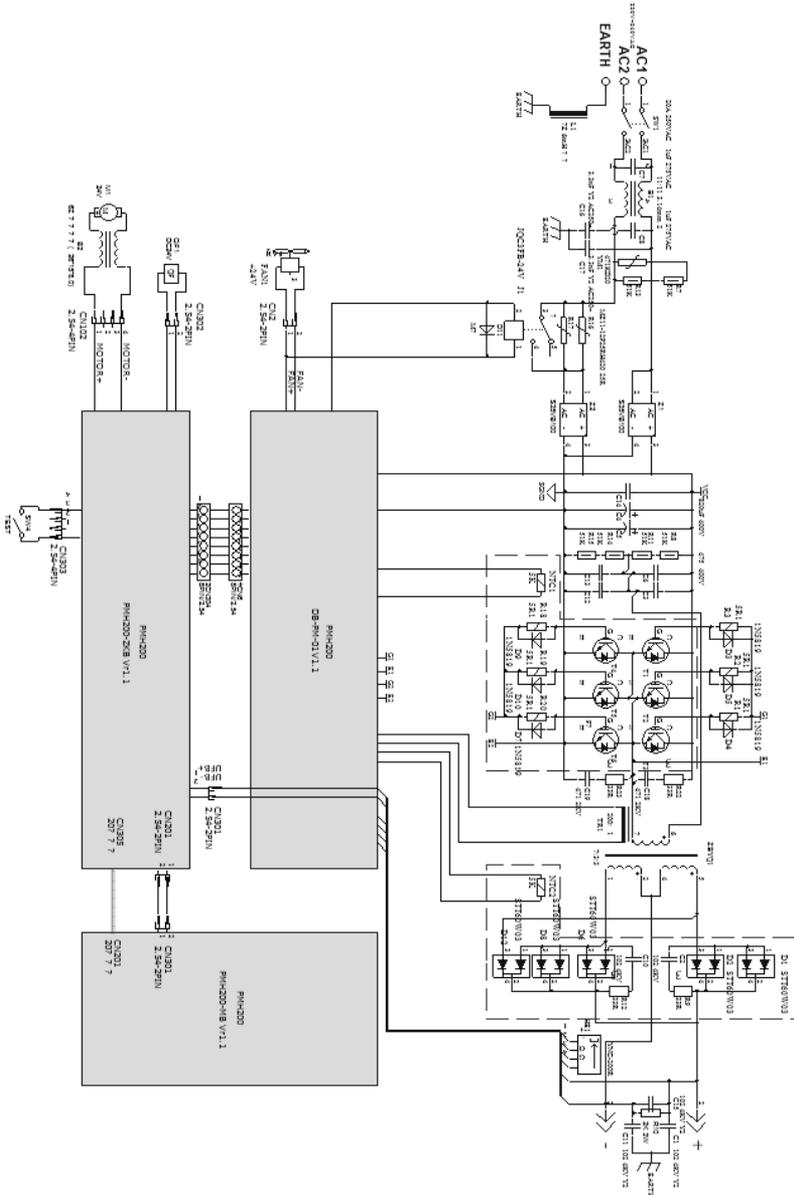
NO	Breakdown	Analysis	Solutions
1	Yellow Indicator is on	Voltage is too high ($\geq 15\%$)	Switch off power source; Check the main supply; Restart welder when power recovers to normal state.
		Voltage is too low ($\leq 15\%$)	
		Bad power ventilation lead to over-heat protection	Improve the ventilation 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

Operating Instructions and Parts Manual

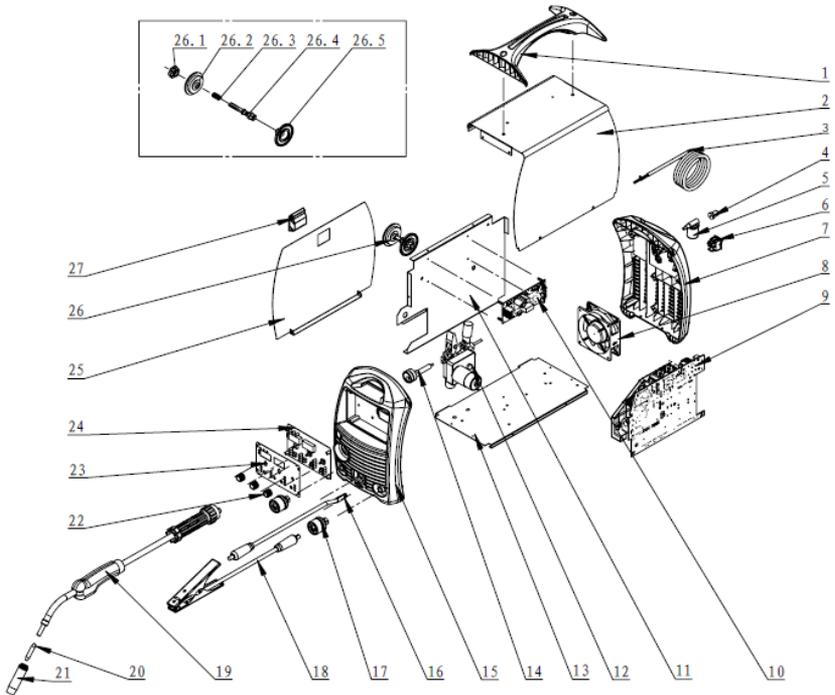
4	Arc is not stable and splash is large	Too large contact tip makes the current unsteady	Change the proper contact tip or roller
		Too thin power cable makes the power astaticism	Change the power cable
		Too low input voltage	Enhance the input voltage
		Wire feeding resistance is too large	Clean or replace 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	No shielded gas	Torch is not connected well	Connect the torch again
		Gas pipe is pressed or blocked up	Check gas system
		Gas system rubber pipe break	Connect gas system and bind firmly
7	Others		Please connect with our company

Operating Instructions and Parts Manual

Main Circuit chart



Spare Part List



Operating Instructions and Parts Manual

Repair Parts List

NO	CODE	DESCRIPTION	QTY
1	2.05.08.126	HANDLE	1
2	1.1.01.01.0151	ENCLOSURE	1
3	1.2.07.01.0351	POWER CORD	1
4	2.02.02.034	GAS CONNECTOR	1
5	1.2.07.02.3866	GAS VALVE	1
6	2.07.80.001	POWER SWITCH	1
7	1.1.01.03.1663	BACK PANEL	1
8	2.07.89.857	FAN	1
9	1.1.05.02.0510	MAIN PC BOARD	1
10	1.1.05.02.0191	CONTROL PC BOARD	1
11	1.1.02.01.8831	MIDDLE BOARD	1
12	2.07.40.735	WIRE FEEDER	1
13	1.1.01.04.1358	BOTTOM	1
14	2.02.02.027	MIG CONNECTOR	1
15	2.05.05.154	FRONT PANEL	1
16	2.07.57.963	WELD POWER CABLE	1
17	2.07.57.967	WELD POWER CONNECTOR	1
18	1.2.07.03.0793	GROUND CABLE AND CLAMP	1
19	2.20.08.861	MIG TORCH	1
20	2.30.08.188	CONTACT TIP	1
21	2.20.04.501	MIG NOZZLE	1
22	2.07.11.021	POTENTIOMETER KNOB	3
23	1.1.01.05.3073	FRONT PANEL	1
24	1.1.05.07.0107	FRONT PANEL PC BOARD	1
25	1.1.01.02.8783	DOOR	1
26	1.2.01.01.5139	SPOOL HOLDER	1
26.1	2.05.05.307	ADJUSTING NUT	1
26.2	2.05.05.306	HOLDER END, LOOSE	1
26.3	2.06.29.037	SPRING	1
26.4	2.05.05.308	BOLT	1
26.5	2.05.05.305	HOLDER END, FIXED	1
27	2.08.07.001	LATCH	1

Service, Maintenance, Transportation and Storage

The welder needs regular maintenance as following: Periodically clean dust, dirt, grease, etc. from your welder. Every six months, or as necessary, remove the cover panel from the welder and air-blow any dust and dirt that may have accumulated inside the welder. Replace power cord, ground cable, ground clamp, or electrode assembly when damaged or worn.

MINOR AND ROUTINE MAINTENANCE Store in a clean dry

Store in a clean dry

facility free from corrosive gas, excess dust and high humidity.

Temperature range from 10°F~120°F and the relative humidity not more than 90%.

When transporting or storing the welder after use, it is recommended to repack the product as it was received for

protection. (Cleaning is required before storage and you must seal the plastic bag in the box for storage