

# FLUX-135PRO

110V GASLESS FLUX-CORE WELDER 135AMP

Nov.,2023



OPERATOR'S MANUAL

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# SAFETY

## ⚠ WARNING

### ⚠ CALIFORNIA PROPOSITION 65 WARNINGS ⚠

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

#### The Above For Diesel Engines



### FOR ENGINE powered equipment

1.a. Turn the engine off before troubleshooting and maintenance work unless the maintenance work requires it to be running.



1.b. Operate engines in open, well-ventilated areas or vent the engine exhaust fumes outdoors.



1.c. Do not add the fuel near an open flame welding arc or when the engine is running. Stop the engine and allow it to cool before refueling to prevent spilled fuel from vaporizing on contact with hot engine parts and igniting. Do not spill fuel when filling tank. If fuel is spilled, wipe it up and do not start engine until fumes have been eliminated.

1.d. Keep all equipment safety guards, covers and devices in position and in good repair. Keep hands, hair, clothing and tools away from V-belts, gears, fans and all other moving parts when starting, operating or repairing equipment.

1.e. In some cases it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.



1.f. Do not put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.

1.g. To prevent accidentally starting gasoline engines while turning the engine or welding generator during maintenance work, disconnect the spark plug wires, distributor cap or magneto wire as appropriate.

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

#### The Above For Gasoline Engines



1.h. To avoid scalding, do not remove the radiator pressure cap when the engine is hot.



### ELECTRIC AND MAGNETIC FIELDS may be dangerous

2.a. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around welding cables and welding machines.

2.b. EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult their physician before welding.

2.c. Exposure to EMF fields in welding may have other health effects which are now not known.

2.d. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

2.d.1. Route the electrode and work cables together - Secure them with tape when possible.

2.d.2. Never coil the electrode lead around your body.

2.d.3. Do not place your body between the electrode and work cables. If the electrode cable is on your right side, the work cable should also be on your right side.

2.d.4. Connect the work cable to the workpiece as close as possible to the area being welded.

2.d.5. Do not work next to welding power source.



## ELECTRIC SHOCK can kill

- 3.a. The electrode and work (or ground) circuits are electrically "hot" when the welder is on. Do not touch these "hot" parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.
- 3.b. Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and ground.

**In addition to the normal safety precautions, if welding must be performed under electrically hazardous conditions (in damp locations or while wearing wet clothing; on metal structures such as floors, gratings or scaffolds; when in cramped positions such as sitting, kneeling or lying, if there is a high risk of unavoidable or accidental contact with the workpiece or ground) use the following equipment:**

- Semiautomatic DC Constant Voltage (Wire) Welder.
- DC Manual (Stick) Welder.
- AC Welder with Reduced Voltage Control.

- 3.c. In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding torch are also electrically "hot".
- 3.d. Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.
- 3.e. Ground the work or metal to be welded to a good electrical (earth) ground.
- 3.f. Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.
- 3.g. Never dip the electrode in water for cooling.
- 3.h. Never simultaneously touch electrically "hot" parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.
- 3.i. When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.
- 3.j. Also see Items 6.c. and 8.



## ARC RAYS can burn.

- 4.a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87.1 standards.
- 4.b. Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.
- 4.c. Protect other nearby personnel with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.



## FUMES AND GASES can be dangerous

- 5.a. Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone.
- When welding with electrodes which require special ventilation such as stainless or hard facing (see instructions on container or MSDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and below Threshold Limit Values (TLV) using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, outdoors, a respirator may be required. Additional precautions are also required when welding on galvanized steel.**
- 5.b. The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.
- 5.c. Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.
- 5.d. Shielding gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.
- 5.e. Read and understand the manufacturer's instructions for this equipment and the consumables to be used, including the material safety data sheet (MSDS) and follow your employer's safety practices. MSDS forms are available from your welding distributor or from the manufacturer.
- 5.f. Also see item 1.b.

# SAFETY



## WELDING and CUTTING SPARKS can cause fire or explosion.

- 6.a. Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.
- 6.b. Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to "Safety in Welding and Cutting" (ANSI Standard Z49.1) and the operating information for the equipment being used.
- 6.c. When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
- 6.d. Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been "cleaned". For information, purchase "Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances", AWS F4.1 from the American Welding Society (see address above).
- 6.e. Vent hollow castings or containers before heating, cutting or welding. They may explode.
- 6.f. Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.
- 6.g. Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.
- 6.h. Also see item 1.c.
- 6.i. Read and follow NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work", available from NFPA, 1 Batterymarch Park, PO box 9101, Quincy, Ma 022690-9101.
- 6.j. Do not use a welding power source for pipe thawing.



## CYLINDER may explode if damaged.

- 7.a. Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.
- 7.b. Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.
- 7.c. Cylinders should be located:
- way from areas where they may be struck or subjected to physical damage.
  - A safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.
- 7.d. Never allow the electrode, electrode holder or any other electrically "hot" parts to touch a cylinder.
- 7.e. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
- 7.f. Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
- 7.g. Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders," available from the Compressed Gas Association 1235 Jefferson Davis Highway, Arlington, VA 22202.



## FOR ELECTRICALLY powered equipment.

- 8.a. Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer's recommendations.
- 8.b. Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

## ACCESSORIES



1. FLUX-135PRO WELDER
2. MIG TORCH
3. ELECTRODE HOLDER
4. WORK CLAMP
5. CONTACT TIPS (2pcs)
6. W KNURL GROOVE DRIVE ROLLER:  
.030"/.035" (on the machine)

# INSTALLATION

## TECHNICAL SPECIFICATION: FLUX-135PRO

### INPUT-SINGLE PHASE ONLY

Standard Voltage/Frequency	Input Current
110V±10% 50/60Hz	I <sub>1 max</sub> =54A, I <sub>1 eff</sub> =40A

### RATED OUTPUT – DC ONLY

Voltage	Mode	Duty Cycle	Current	Feed Wire Speed	Volts at Rated Current
110V	FCAW	60%	135A	420 in/min	20.7V
		100%	104A	320 in/min	19.2V
110V	SMAW	60%	135A	/	25.4V
		100%	104A	/	24.1V
110V	GTAW	60%	135A	/	15.4V
		100%	104A	/	14.1V

### OUTPUT RANGE

Voltage	Mode	Open Circuit Voltage	Welding Current Range	Feed Wire Speed	Welding Voltage Range
110V	FCAW	65V	35A~135A	120~420 in/min	15.8V~20.7V
110V	SMAW	65V	20A~135A	/	20.8V~25.4V
110V	GTAW	65V	15A~135A	/	10.6V~15.4V

### PHYSICAL DIMENSIONS

Machine	Length	Width	Depth	Weight
FLUX-135PRO	14.57in.(370mm)	6.10in.(155mm)	8.66in.(220mm)	Approx. 10.98lbs.(4.98kg)

### TEMPERATURE RANGE

Operating Temperature Range	-10°C~+40°C(14°F~104°F)
Storage Temperature Range	-25°C~+55°C(-13°F~131°F)

# INSTALLATION

Read entire installation section before starting installation.

## SAFETY PRECAUTIONS

### WARNING



**ELECTRIC SHOCK can kill.**

- Only qualified personnel should perform this installation.

- Disconnect input power by removing plug from receptacle before working inside **FLUX-135PRO**. Allow machine to sit for 5 minutes minimum to allow the power capacitors to discharge before working inside this equipment.

fore working inside this equipment.

- Insulate yourself from the work and ground.
- Always wear dry insulating gloves.
- Always connect the **FLUX-135PRO** to a power supply grounded according to the National Electrical Code and local codes.

## SELECT SUITABLE LOCATION

This machine can operate in harsh environments. However, it is important that simple preventative measures are followed to assure long life and reliable operation:

- Do not use this machine for pipe thawing.
- This machine must be located where there is free circulation of clean air without restrictions for air movement to and from the air vents. Do not cover the machine with paper, cloth or rags when switched on.
- Dirt and dust that can be drawn into the machine should be kept to a minimum.
- This machine has a protection rating of IP21S. Keep it dry when possible and do not place it on wet ground or in puddles.
- Locate the machine away from radio controlled machinery. Normal operation may adversely affect the operation of nearby radio controlled machinery, which may result in injury or equipment damage. Read the section on electromagnetic compatibility in this manual.
- Do not operate in areas with an ambient temperature greater than 40°C.

## STACKING

The inverter **FLUX-135PRO** cannot be stacked.

## TILTING

Place the machine directly on a secure, level surface. Do not place or operate this machine on a surface with an incline greater than 15° from horizontal. The machine may topple over if this procedure is not followed.

## INPUT CONNECTIONS

### WARNING



**ELECTRIC SHOCK can kill.**

- Have a qualified electrician install and service this equipment.

- Disconnect input power by removing plug from receptacle before working inside **FLUX-135PRO**. Allow machine to sit for

5 minutes minimum to allow the power capacitors to discharge before working inside this equipment.

- Do not touch electrically live parts.

## GROUND CONNECTION



The frame of the welder must be grounded. A ground terminal marked with the symbol is located on the under panel for this purpose. See your local and national electrical codes for proper grounding methods.

### CAUTION

**A grounding conductor is supplied in the input cord, it is important that the supply receptacle ground is connected.**

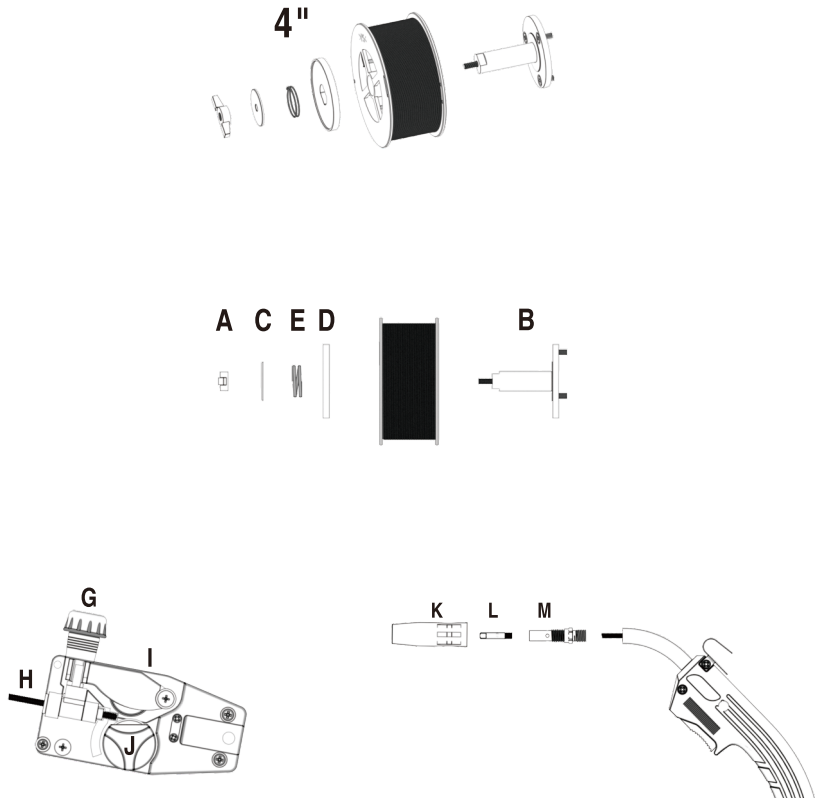
### WARNING

This installation should be performed by a qualified electrician to ensure correct connections of the leads to the plug spades.

- The electrical system must be made by skilled technicians with the specific professional and technical qualifications and in compliance with the regulations in force in the country where the equipment is installed.
- The welding power source supply cable is provided with a green or yellow/green wire that must **ALWAYS** be earthed. This green or yellow/green wire must **NEVER** be used with other voltage conductors.
- Install only plugs that confirm with safety regulations.



# INSTALLATION



## INSTALLING 4-INCH SPOOL (SEE FIGURE FOR PART IDENTIFICATION)

- Open the access panel.
- Remove the nut (A), nut washer (C), spring (E), and spool spacer (D).
- Remove the outer wrapping from the spool of wire and then find the leading end of the wire (it goes through a hole in the outer edge of the spool and is bent over the spool edge to prevent the wire from unspooling) but do not unhook it yet.
- Place the spool on the WIRE SPOOL SPINDLE so that the wire unspools from the bottom, and the spool will rotate counterclockwise.
- Place the spool spacer, spring, nut washer and nut back.
- Proceed to the "FEEDING WIRE THROUGH THE MIG TORCH" instructions below.

# INSTALLATION

## FEEDING WIRE THROUGH THE MIG TORCH

- Unhook the wire and hold the wire end and the spool in one hand. Use the other hand to tighten the nut (A) to some extent so that when the spool is released, it does not spin freely and uncoils the wire. Tightening the nut too much may cause inconsistent wire feeding. Leaving it too loose will allow the wire to straighten freely from the spool, leaving a mess of wire in the cabinet.
- While holding the wire in place, use a wire cutter to cut the bent end of the wire so that only a straight end remains.
- Hold the wire end in one hand and release the drive roller pressure arm (I) by pulling the pressure arm adjustment knob (G) toward you. Hold the drive roller pressure arm up off of the drive roller and insert the leading end of the wire into the inlet guide tube (H). Push the wire across the drive roller (J) and into the torch assembly approximately six inches.
- Align the wire up in the inner groove of the drive roller and allow the drive pressure arm to drop onto the drive roller. Pull the pressure arm adjustment knob back over the pressure arm and tighten (turn clockwise) the pressure adjusting knob until the pressure roller applies enough force on the wire to prevent it from slipping out of the drive assembly.

**NOTE: Too much pressure will cause wire feeding problems and may burn out the wire feed motor.**

- Let go of the wire.
- Remove the nozzle (K) and contact tip (L) from the end of the torch assembly (M).
- Plug the welder's INPUT POWER CABLE into the AC power source. Adjust the settings at the front panel per the setup chart on the welding machine's inside door according to the wire and workpiece size.
- Pull the trigger on the MIG torch to feed the wire through the torch assembly. Check if the drive roller is slipping on the wire and increase pressure on the pressure arm adjustment knob if necessary.
- When at least an inch of wire sticks out past the end of the torch, release the trigger.
- Slide the contact tip (L) over the wire protruding from the end of the torch (M). Screw the contact tip into the end of the torch and hand tighten securely.
- Install the nozzle (K) on the torch assembly.
- Cut off the excess wire that extends past the end of the nozzle.
- Fine-tune the wire drive pressure with the pressure arm adjustment knob (G).
- Turn the pressure adjustment knob clockwise to increase the driving pressure until the wire seems to feed smoothly without slipping.

**Note: If TOO MUCH pressure is applied, the wire will be crushed and the wire feeding problems will occur. If TOO LITTLE pressure is applied, the wire will slip on the drive rolls, and no wire will be fed.**

- When the driving pressure is set correctly, there should be no slippage between the wire and the drive roller. But if an obstruction occurs along the wire feed path, the wire should slip on the drive roller. You can check it by squeezing the wire between two fingers with moderate force as it comes out of the torch. If this stops the wire from feeding, increase the pressure until the wire feeds through your fingers without issue.
- Double-check your spool tension: When wire feeding stops, the wire comes off the spool with some curvatures while it should not relax so much that the wire loosens on the spool. e of the curvature the coiled wire naturally reverts to. It should also not relax so much that the wire begins to loosen on the spool.

# INSTALLATION

## INPUT POWER CONNECTION

Check the input voltage, phase, and frequency supplied to this machine before turning it on. The allowable input voltage of this machine is 110V, which is indicated in the technical specification section of this manual and on the rating plate of the machine. Be sure that the machine is grounded.

Make sure the power available at the input connection is adequate for normal operation of the machine.

## OUTPUT CONNECTIONS

A quick disconnect system using quick cable plugs is used for the welding cable connections. Refer to the following sections for more information on connecting the machine for operation of flux-core welding, stick welding or TIG welding.

## ⚠ WARNING



### ELECTRIC SHOCK can kill.

- Keep the electrode holder and cable insulation in good condition.
- Do not touch electrically live parts or electrode with skin or wet clothing.
- Insulate yourself from work and ground.
- Turn the input line Switch on the FLUX-135PRO "off" before connecting or disconnecting output cables or other equipment.

## FLUX-CORE WELDING

Select a suitable filler wire according to process being used (W type drive roll for gasless flux cored welding). The wire diameter must be matched to the drive roll, the liner and contact tip.

Open the side panel of wire feeder and mount the wire spool post. The end of the wire must be at the bottom of the wire spool, opposite wire feeder inlet guide tube.

The spool post is fitted with a brake, the wing nut in the centre of the spool post adjusts the brake tension. Pull the wire from the reel by hand and adjust the tension to provide some drag clockwise will increase the braking and anticlockwise reduces it.

Release the wire tensioning device on the drive rolls, insert the filler wire and into the inlet guide tube of wire feeder, align wire with the drive roll groove and feed a short length into the torch connector so that it protrudes out of the front panel, then replace the tensioner over the wire. (The filler wire can be feed through the torch cable once the input power is switched on pressing the trigger of MIG torch.) (SEE FIGURE A.1 And FIGURE A.2)

FIGURE A.1

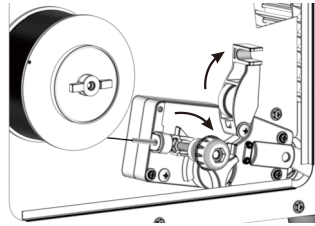
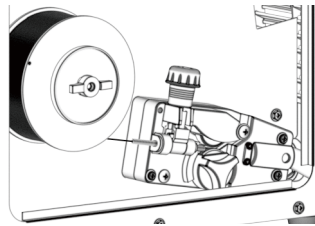
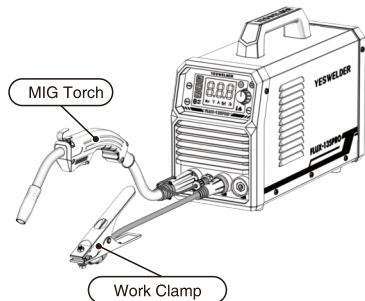


FIGURE A.2



Install the torch control switch on control switch socket. Connect the MIG torch cable to the (+) terminal of the machine and the work clamp to the (+) terminal. Inset the connector with the key lining up with the keyway and turn clockwise. Do not over tighten. ) (SEE FIGURE A.3)

FIGURE A.3



# INSTALLATION

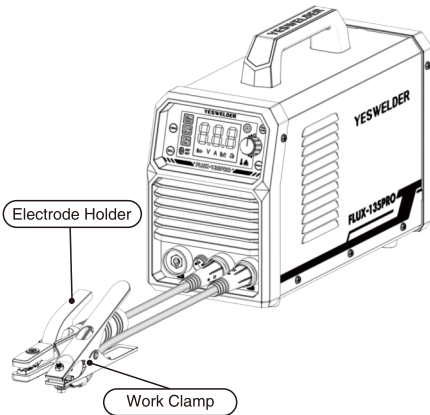
## STICK WELDING

First, determine the proper electrode polarity for the electrode to be used. Consult the electrode data for this information. Then connect the output cables to the output terminals of the machine for the selected polarity. Shown here is the connection method for DC (+) welding. (SEE FIGURE A.4)

Connect the electrode cable to the (+) terminal and the work clamp to the (-) terminal. Insert the connector with the key lining up with the keyway turn clockwise. Do not over tighten.

For DC (-) welding, switch the cable connections at the machine so that the electrode cable is connected to (-) and the work clamp is connected to (+).

FIGURE A.4

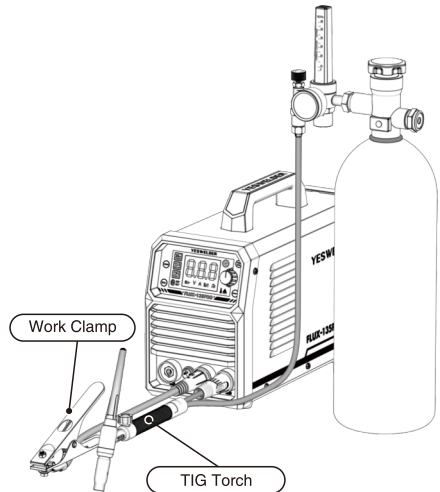


## TIG WELDING

This machine does not have a built-in gas solenoid, so a one piece gas valve TIG Torch is required. Most TIG welding is done with DC (-) polarity shown here. (SEE FIGURE A.5)

Connect the torch cable to the (-) terminal of the machine and the work clamp to the (+) terminal. Insert the connector with the key lining up with the keyway and turn clockwise. Do not over tighten.

FIGURE A.5



# OPERATION

## SAFETY PRECAUTIONS

Read entire operation section before operating the WIRE FEEDER WELDER.

### WARNING

#### ELECTRIC SHOCK can kill.

- Do not touch electrically live parts such as output terminals or internal wiring.
- Insulate yourself from the work and ground.
- Always wear dry insulating gloves.



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#### FUMES AND GASES can be dangerous.

- Keep your head out of fumes.
- Use ventilation or exhaust to remove fumes from breathing zone.



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#### WELDING SPARKS can cause fire or explosion

- Keep flammable material away.
- Do not weld on closed containers.



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#### ARC RAYS can burn eyes and skin.

- Wear eye, ear and body protection.



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**Observe all safety information throughout this manual.**

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## PRODUCT DESCRIPTION (PRODUCT CAPABILITIES)

This small portable wire feed welder is capable of flux-cored (FCAW) welding on steel, mild steel, stainless steel. The wire feed welder is also capable of STICK welding (SMAW) and DC lift TIG welding (GTAW).

Self Shielding Flux-cored Welding does not require a separate shielding gas to protect the weld since the welding wire has special additives known as flux to protect the weld until it cools. Flux-cored welding is ideal for medium to thicker material and if welding on painted or rusty steel. Flux-cored welding is also ideal in outdoor applications. Flux-cored welding produces a good looking weld but does not produce an excellent weld appearance as MIG welding does.

This machine does not have a built in Gas Solenoid so a one piece gas valve TIG Torch is required, The gas valve must be opened manually before welding and closed manually when welding is completed. The arc is activated using a lift arc technique.

# OPERATION

## CONTROLS AND OPERATIONAL FEATURES



1. Welding Mode Button
2. Diameter Button
3. Feed Wire Button
4. Parameter Button
5. Digital Display
6. Value Knob
7. MIG Torch Socket
8. Control Switch Socket

9. Positive Output Terminal
10. Negative Output Terminal
11. Input Power Cable
12. Power Switch
13. Ground Screw
14. Rating Plate
15. Fan

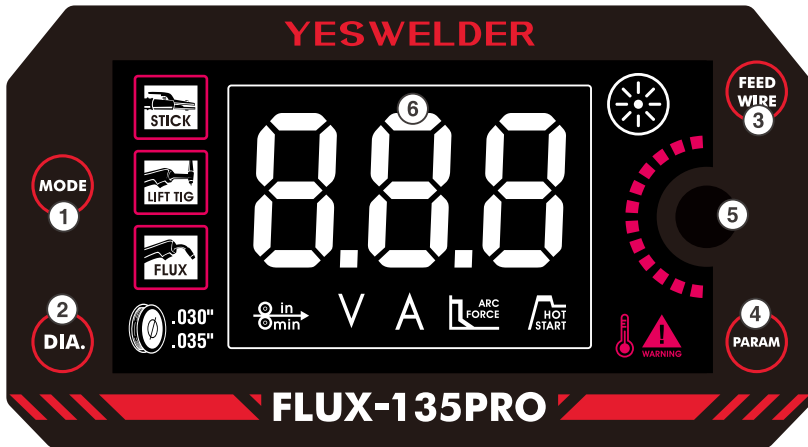
### Note:

- The 'protection indicator light' will come on if the duty cycle is exceeded. It shows that the inner temperature is over the permitted level, the machine should be stopped being used to allow it cool down. Welding can be continued after the 'protection indicator light' is off.
- The power source should be switched off when not in use.
- Welders should wear protective clothing and welding helmet to prevent injury from arc and thermal radiation.
- Care should be taken so as not to expose others to the welding arc.
- Do not weld near inflammable or explosive materials.

# OPERATION

## FRONT PANEL CONTROLS

Model: FLUX-135PRO Flux-core welder



### 1. Mode Switch

For switching welding mode: Stick welding, Lift TIG welding, Flux core welding.

### 2. Wire Diameter Switch

For switching the diameter of welding wire: .030\"/>

### 3. Feed Wire Button

For manual wire feeding, the longer you press the button, the faster the speed is.

### 4. Parameter Switch

Stick mode: For switching amperage/arc force/hot start preset.

Lift TIG: For amperage preset.

Flux core: For switching the wire feeding speed preset/voltage trimming.

### 5. Value Knob

For adjusting the value of the wire feeding speed/voltage/amperage/arc force level/hot start level.

### 6. Digital Display

- When switching the welding mode, the corresponding indicator will light up.
- When switching the wire diameter, the corresponding indicator will light up.
- When pressing the feed wire button, the indicator will flash.
- When switching the parameter, the corresponding indicator will light up. (On Stick mode, only the indicator of amperage, arc force and hot start can light up; On Lift TIG mode, only the indicator of amperage can light up; On Flux core mode, only the indicator of wire feeding speed and voltage can light up.)
- When adjusting amperage/wire feed speed, the degree indicator near synergic knob will gradually light up/off to indicate an increase or decrease in degree.
- The protection indicator will turn on when the machine is overheated or over-current/low voltage. When the indicator turns off, the machine will work normally again.

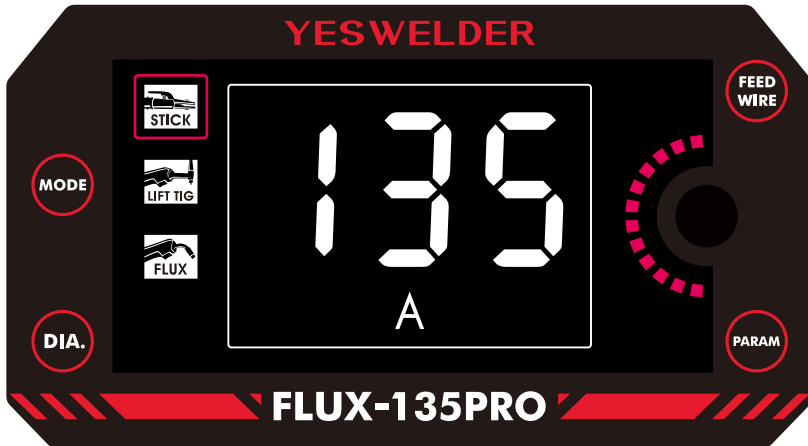
## OPERATION

### WORK PIECE CLEANING BEFORE WELDING

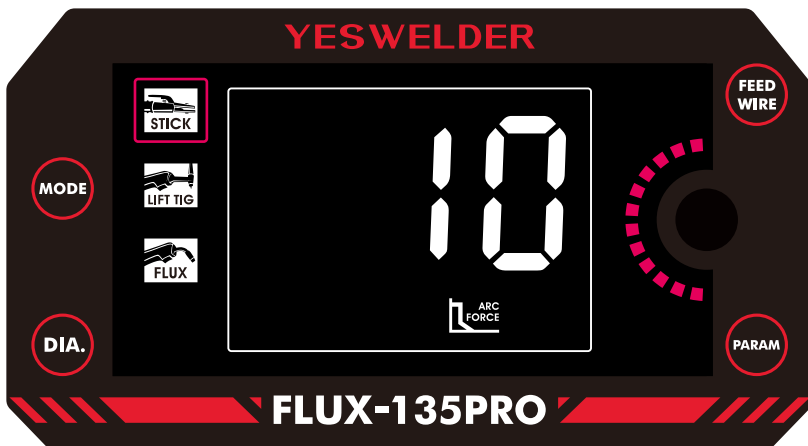
Please keep the workpiece clean, remove existing rust, greasy dirt, water and paint, etc.

#### Stick Welding Steps

- Connect the electrode lead to the positive (+) output terminal on the front of the machine.
- Connect the work clamp lead to the negative (-) output terminal on the front of the machine.
- Turn on the power switch, and the fan will work.
- Set the welding mode button on "STICK".
- Set the welding amperage (20~135A) with the knob.



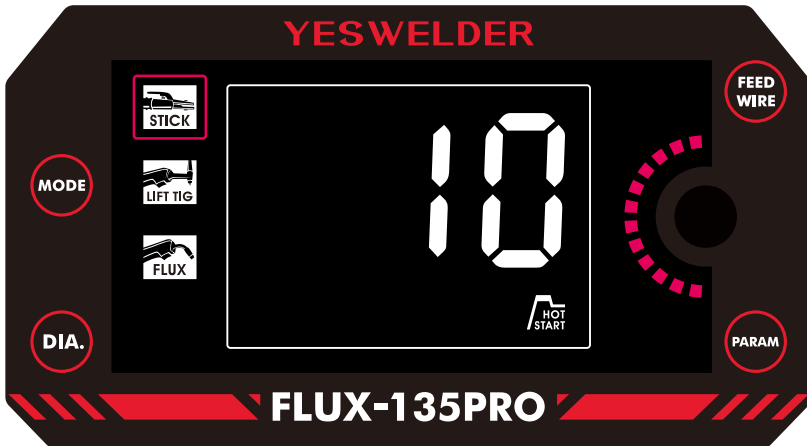
- If necessary, set the "PARAM" button on "ARC FORCE" to adjust the arc force level (0~10). The arc force function can maintain arc stability, control potential arcs, increase welding depth, etc.





## OPERATION

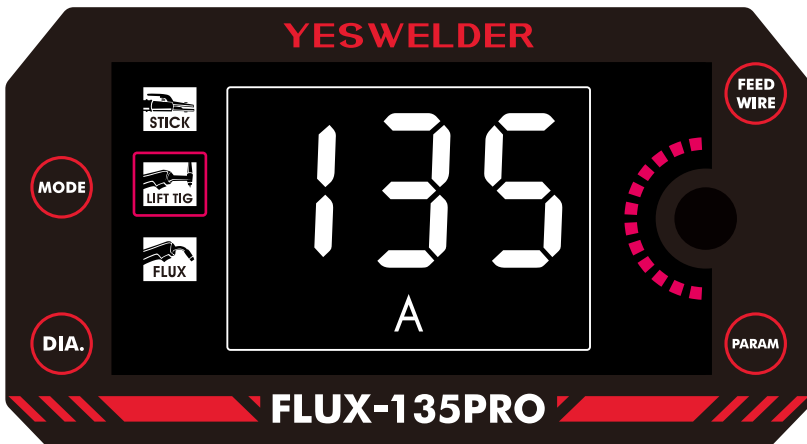
- If necessary, set the "PARAM" button on "HOT START" to adjust the hot start level (0-10). The hot start function can increase the success rate of arc initiation, making it easier to start the arc.



- Take up the electrode holder, install the welding rod and point the rod into the joint to be welded, scratch the work piece to start the arc.

### Lift TIG Welding Steps (Optional TIG Torch Required)

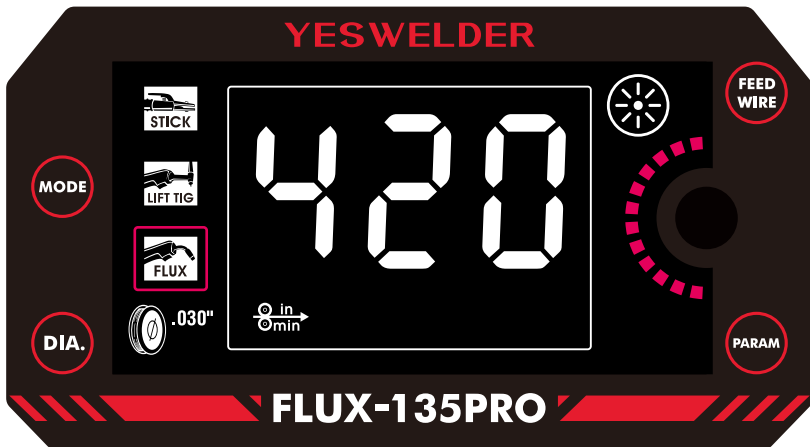
- The TIG welding torch should be connected to the negative (-) output terminal, and the work clamp lead to the positive (+) output terminal.
- Turn on the power switch, and the fan will work.
- Turn on the gas regulator on the gas cylinder, the gas pressure is shown on the gauge.
- Set the welding mode button on "LIFT TIG".
- Set the welding amperage (15-135A) with the knob.



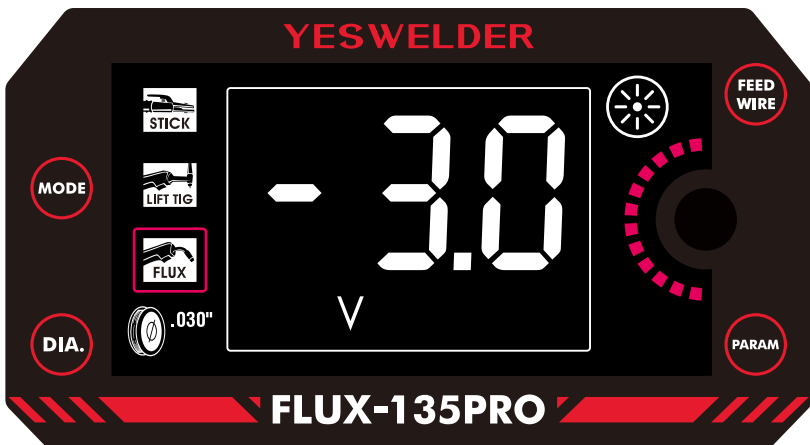
## OPERATION

### Flux Core (Gasless) Welding Steps

- Insert the MIG torch into the MIG torch socket and screw in clockwise. Install the torch control switch onto the panel switch socket.
- Connect the work clamp cord to positive (+) terminal.
- Install the welding wire, then turn on the power switch, and the fan will work.
- Set the welding mode button on "FLUX".
- Press the "wire feed" button on the panel, the wire will feed automatically, the longer you press the button, the faster the speed (0-320 in/min) will be. Or you can press the torch trigger till the wire extends to the nozzle. (The nozzle may need to be removed from the torch to allow this function.)
- When wire feeding, keep the cable straight and make sure the wire is located on the drive roll groove and the feeding speed should be smooth. If the wire feeding speed is not smooth, adjust the tension of the drive roll.
- Set the welding wire diameter button on .030"/.035".
- Set the wire feeding speed (.030": 120-420 in/min; .035": 120-308 in/min) with the knob.



- The wire feeding speed and voltage are matched in a synergic manner. If you are not satisfied with the matching, you can set the "PARAM" button on "V" to adjust the voltage (-3V-3V) to achieve satisfactory welding results.



- Point the wire into the joint to be welded. Press the torch trigger, the wire will feed automatically. And the arc will start once the wire touches the work piece.

# MAINTENANCE

## SAFETY PRECAUTIONS

### WARNING



#### **ELECTRIC SHOCK can kill.**

- Have an electrician install and service this equipment.
- Turn the input power off at the fuse box, disconnect supply lines and allow machine to sit for five minutes minimum to allow the power capacitors to discharge before working inside this equipment.
- Do not touch electrically hot parts.

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## INPUT FILTER CAPACITOR DISCHARGE PROCEDURE

### WARNING

For any maintenance or repair operations it is recommended to contact YESWELDER, [support@yeswelder.com](mailto:support@yeswelder.com) or personnel will null and void the manufacturers warranty.

### WARNING

The machine has internal capacitors which are charged to a high voltage during power-on conditions. This voltage is dangerous and must be discharged before the machine can be serviced. Discharging is done automatically by the machine each time the power is switched off. However, you must allow the machine to sit for at least 5 minutes to allow time for the process to take place.

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## ROUTINE MAINTENANCE

The frequency of the maintenance operations may vary in accordance with the working environment. Any noticeable damage should be reported immediately.

- Check cables and connections integrity. Replace, if necessary.
- Clean the power source inside by means of low - pressure compressed air.
- Keep the machine clean. Use a soft dry cloth to clean the external case, especially the airflow inlet/outlet louvers.

### WARNING

Do not open this machine and do not introduce anything into its openings. Power supply must be disconnected from the machine before each maintenance and service. After each repair, perform proper tests to ensure safety.

### CAUTION

Power supply must be disconnected from the machine before each maintenance and service. Always use gloves in compliance with the safety standards.

# TROUBLESHOOTING

## HOW TO USE TROUBLESHOOTING GUIDE

This Troubleshooting Guide is provided to help you locate and repair possible machine malfunctions. Simply follow the three-step procedure listed below.

### Step 1. LOCATE PROBLEM (SYMPTOM).

Look under the column labeled "PROBLEM (SYMPTOM)". This column describes possible symptoms that the machine may exhibit. Find the listing that best describes the symptom that the machine is exhibiting.

### Step 2. POSSIBLE CAUSE.

The second column labeled "POSSIBLE CAUSE" lists the obvious external possibilities that may contribute to the machine symptom.

### Step 3. RECOMMENDED COURSE OF ACTION.

The third column labeled "POSSIBLE SOLUTION" provides a course of action for the Possible Cause.

If you do not understand or are unable to perform the Recommended Course of Action safely, Contact **YESWELDER**, [support@yeswelder.com](mailto:support@yeswelder.com).

## TROUBLESHOOTING GUIDE

PROBLEM (SYMPTOM)	POSSIBLE CAUSE	POSSIBLE SOLUTION
Wire feeds but no arc.	Bad ground or loose ground connection.	Check connection of the ground cable to the ground clamp. Tighten cable connection to ground clamp if needed. Ensure that the connection between the ground clamp and workpiece is good and is on clean, bare (not painted or rusted) metal.
	Trigger not pulled while wire is in contact with workpiece.	Pull the trigger while in contact with the workpiece. The machine does not arc unless the trigger is pulled.
Arc works but not feeding wire.	No pressure on the drive roller; insufficient or excessive pressure on the drive roller.	Adjust the drive pressure.
	Wire spool is empty.	Check if wire is in place and replace if necessary.
No arc or wire feed. Fan operates normally (can be heard).	Torch trigger is not being pulled or is not making contact.	Pull the trigger while in contact with the workpiece. The machine does not arc unless the trigger is pulled. Depress the trigger ALL THE WAY until the trigger stops moving into the torch.
	Exceeded duty cycle; thermal protector engaged.	Allow welder to cool at least 10 minutes with machine ON (observe and maintain proper duty cycle).
	Insufficient air flow causing machine to overheat before reaching duty cycle.	Check for obstructions blocking air flow and ensure that there are 12 inches of clearance between any obstacles and the vents on all sides of the machine.
No arc or wire feed. Fan does NOT operate (cannot be heard).	No voltage or incorrect voltage supplied to welder.	Make sure the INPUT VOLTAGE is 110V and make sure the machine is plugged in.
	ON/OFF SWITCH is in the OFF position.	Turn the ON/OFF SWITCH to the ON position.
	Circuit breaker has been tripped.	Make sure the circuit breaker has been reset. Do not use the machine on a GFI outlet.

# TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Low output or non-penetrating weld.	Weld parameters too low.	Adjust welding parameters.
	Too long or improper extension cord.	Use a proper extension cord.
	Wrong type or size wire.	Use correct size wire
	Poor ground connection or torch connection.	Reposition clamp and check cable to clamp connection. Check connection of ground cable and torch.
	Wrong size or worn contact tip.	Use correct size contact tip
	Input power too low.	Have a qualified electrician verify the voltage at your outlet. If the voltage is appropriate, verify that the circuit wiring is sufficient for the circuit breaker size.
	Stick-out too long.	Decrease stick-out (the amount the wire extends past the contact tip).
Feed motor operates but wire will not feed.	Insufficient feed drive roller pressure.	Adjust drive roller pressure.
	Burr on end of wire.	Re-cut wire so it is square with no burr.
	Liner blocked or damaged.	Clear with compressed air or replace liner.
Wire is "bird-nesting" at the drive roller or jamming.	Too much pressure on drive roller.	Adjust the drive pressure.
	Contact tip is clogged or damaged.	Replace contact tip.
Wire burns back to contact tip.	Wire feed speed is set too low for voltage setting being used.	Increase wire feed speed.
	Stick-out too short.	Increase stick-out (the amount the wire extends past the contact tip).
	Wrong size contact tip.	Use correct size contact tip.
	Contact tip is clogged or damaged.	Replace contact tip.
Ground clamp, ground cable, and/or welding cable get hot.	Bad ground or loose ground connection.	Check the connection of the ground clamp and torch to the machine. Check connection of the ground cable to the ground clamp. Tighten cable connection to ground clamp if needed. Ensure the connection between the ground clamp and workpiece is good and on clean, bare (not painted or rusted) metal.
Torch nozzle arcs to work surface.	Slag build-up inside nozzle or nozzle is clogged.	Clean or replace nozzle as needed.

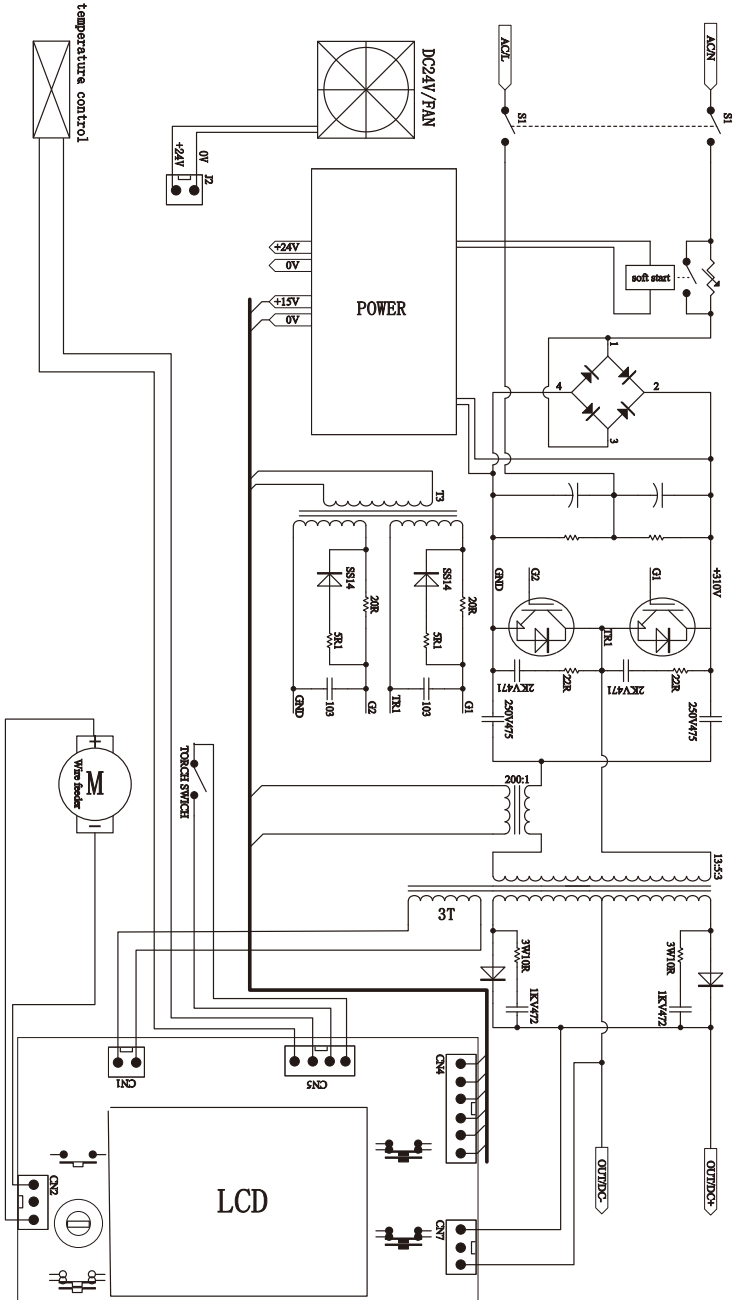
# TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Frequent circuit breaker trips.	Machine is drawing too much amperage due to use of larger size wire.	Use the smallest wire possible for this welder. 0.030-inch wire is strongly recommended.
	Machine is not the only piece of electrical equipment on the circuit.	Make sure the welder is on a dedicated circuit or is the only thing plugged on a circuit.
	Circuit breaker is incorrect/insufficient for use with this machine.	Verify that the circuit breaker for the circuit is a 50A time-delay (slow-blow) breaker. If it is not, have a qualified electrician install the proper breakers.
Poor quality welds.	Rusty, painted, oily or greasy workpiece.	Ensure workpiece is clean and dry.
	Rusty or dirty wire.	Ensure wire is clean and dry.
	Poor ground or torch contact.	Check ground clamp/workpiece connection and all connections to the machine.
Weld deposit "stringy" and incomplete.	Torch moved over workpiece too quickly.	Move the torch slower.
Weld deposit too thick.	Torch moved over workpiece too slowly.	Move the torch faster.
	Welding voltage/amperage too low.	Increase welding voltage/amperage.
All indicator LEDs are not illuminated and there is no work on the welding machine.	Machine is not turned ON.	Turn machine ON with ON/OFF SWITCH.
	No input power present.	Make sure machine is plugged in. Verify that circuit breaker has not been tripped. Reset if needed. Verify output power from the outlet.
All indicator LEDs are illuminated and there is no output power from the welder.	Exceeded duty cycle; thermal protector engaged.	Allow welder to cool at least 10 minutes with machine ON (observe and maintain proper duty cycle). FAULT/THERMAL OVERLOAD INDICATOR LED should turn off after the machine has cooled.
	Insufficient air flow causing machine to overheat before reaching duty cycle.	Check for obstructions blocking air flow and ensure that there are 12 inches of clearance between any obstacles and the vents on all sides of the machine.

## ERROR CODES AND SOLUTIONS

<b>E-1</b>	When the protection indicator illuminates and the digital display reads "E-1", it indicates that overcurrent occurs. Restart the machine, then the welding can be continued.
<b>E-2</b>	When the overheating indicator illuminates and the digital display reads "E-2", it indicates that welding is forced to stop because the main circuit of the machine gets overheated. In this condition, it is unnecessary to turn off the machine, just wait a few minutes till the indicator turns off and the error code disappears, then the welding can be continued.
<b>E-4</b>	When the protection indicator illuminates and the digital display reads "E-4", it indicates that the control voltage is too low. Please check the control voltage and make sure it is stable. When the indicator turns off and the error code disappears, then the welding can be continued.

# WIRING DIAGRAM



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Toll Free (855) 937-4567