

ARC200 Stick Welder Assembly & Operating Instructions



READ ALL INSTRUCTIONS AND WARNINGS BEFORE USING THIS PRODUCT.

This manual provides important information on proper operation & maintenance. Every effort has been made to ensure the accuracy of this manual. These instructions are not meant to cover every possible condition and situation that may occur. **We reserve the right to change this product at any time without prior notice.**

IF THERE IS ANY QUESTION ABOUT A CONDITION BEING SAFE OR UNSAFE, DO NOT OPERATE THIS PRODUCT!

HAVE QUESTIONS OR PROBLEMS? DO NOT RETURN THIS PRODUCT TO THE RETAILER - CONTACT CUSTOMER SERVICE.

If you experience a problem or need parts for this product, visit our website <http://www.buffalotools.com> or call our customer help line at **1-888-287-6981**, Monday-Friday, 8 AM - 4 PM Central Time. A copy of the sales receipt is required.

FOR CONSUMER USE ONLY - NOT FOR PROFESSIONAL USE.

KEEP THIS MANUAL, SALES RECEIPT & APPLICABLE WARRANTY FOR FUTURE REFERENCE.

GENERAL PRODUCT SPECIFICATIONS

SPECIFICATIONS

Includes 10-ft. Welding Cable & Electrode Holder
6 1/2-Ft. Ground Cable & Clamp

FEATURES:

Handles 1/16 in.–5/32 in. Dia. Electrodes
65–200 Amp Welding Range
Amperage Indicator
Thermal Overload Protection Light
Output 25.2V Ac
180A @ 10% Duty Cycle
OCV50V Ac Max
Input 230V, 60HZ
41A Max
Draws Approximately 41 Amps At 230V
Welds Mild Steel Up To 3/8" In A Single Pass



⚠ WARNING

This product contains chemicals known to the State of California to cause cancer and birth effects or other reproductive harm.

KEEP THIS MANUAL, SALES RECEIPT & APPLICABLE WARRANTY FOR FUTURE REFERENCE.

READ ALL INSTRUCTIONS AND WARNINGS BEFORE USING THIS PRODUCT.

When unpacking, check to make sure all parts listed are included. If any parts are missing or broken, please call Customer Service at 1-888-287-6981.

FOR CONSUMER USE ONLY – NOT FOR PROFESSIONAL USE

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

This manual contains important information regarding safety, operation, maintenance and storage of this product. Before use, read carefully and understand all warnings, cautions, instructions and labels. Failure to do so could result in serious personal injury, property damage or even death.

IMPORTANT SAFETY RULES

COMMON SENSE AND CAUTION ARE FACTORS WHICH CANNOT BE BUILT INTO ANY PRODUCT. THESE FACTORS MUST BE SUPPLIED BY THE OPERATOR.

⚠ WARNING

Keep your work area clean and well lit. Cluttered work benches and dark work areas may cause accidents or injury.

Keep bystanders, children and visitors away while operating the compressor. Distractions can cause you to lose control.

⚠ CAUTION

Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.

Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.

⚠ WARNING

Use common sense while operating this welder.

Do not use this tool if you are:

- Feeling tired or are under the influence of alcohol or drugs.
- Wearing loose clothing or jewelry. Keep long hair pulled back and away from moving parts.
- Overreaching or have improper footing. Handling the tool in this way could cause serious injury.
- Wear the proper safety equipment, such as safety goggles, dust masks, non-skid shoes, etc.
- Check to be sure all adjusting keys or wrenches have been removed before use.

⚠ WARNING

Safety glasses and ear protection must be worn during operation. Wear eye protection (see ANSI Z49.1 safety standard) while cutting to protect your eyes from harmful UV and IR ray's.

Read the manual carefully. Learn the tool's applications and limitations, as well as specific potential hazards peculiar to it.

Ground all tools. If the tool is equipped with three-pin plug, it should be plugged into a three-pin electrical socket. Never remove the ground pin.

Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increased risk of electric shock if your body is grounded.

Do not expose tool to moisture. Don't use this tool in damp or wet locations: Keep out of rain.

Do not abuse cord. Never use the cord to carry tools or pull the plug from an outlet. Keep cord away from heat, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.

Don't overreach. Keep proper footing and balance at all times when operating this tool.

Disconnect the tool from power source before making any adjustments, storing, servicing, or changing accessories. This will reduce the risk of starting the tool accidentally.

Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it was designed.

⚠ WARNING

Do not use the tool if the switch does not turn it on and off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.

Check for damage. Check your tool regularly. If part of the tool is damaged it should be carefully inspected to make sure that it can perform its' intended function correctly. If in doubt, the part should be repaired. Refer all servicing to a qualified technician. Consult your dealer for advice.

Keep away from flammables. Do not attempt to operate this tool near flammable materials or combustibles. Failure to comply may cause serious injury or death.

Store idle tools out of the reach of children and untrained persons. Tools may be dangerous in the hands of untrained users.

Maintain tools with care. Keep tools sharp and clean. Properly maintained tools, with sharp cutting edges, are less likely to bind and are easier to control.

Never exceed the pressure rating of any component in system.

Protect material and air lines from damage or puncture. Keep hose and power cable away from sharp objects, moisture, chemicals, oil, etc.

Check condition of hoses before each use. Do not use a damaged hose. If hose is damaged, replace immediately.

Read, understand and comply with all warning labels on unit.

Keep harmful arc rays shielded from the view of others.

Mount the plasma cutter on a secure bench or cart that will keep the welder secure and prevent it from tipping over or falling.

Check all cables, power cord and torch to be sure the insulation is not damaged. Always replace or repair damaged components before using the plasma cutter.

Check all components to ensure they are clean and in good operating condition before use.

Do not operate the plasma cutter if the torch is wet. Do not immerse the plasma torch. Do not stand in water while using this plasma cutter. These components and the plasma cutter must be completely dry before attempting to use it.

Keep the plasma cutter in the off position when not in use.

Connect ground lead as close to the area being cut as possible to ensure a good ground.

Do not allow any body part to come in contact with the material being cut, or to the ground or electrode from another plasma cutter or welder.

Do not cut if you are in an awkward position. Always have a secure stance while cutting to prevent accidents. Wear a safety harness if working above ground.

Do not drape cables over or around your body.

Wear eye protection (see ANSI Z49.1 safety standard) while cutting to protect your eyes from harmful UV and IR ray's.

WARNING

Wear proper gloves and protective clothing to prevent your skin from being exposed to hot metals, UV and IR rays.

Do not overuse or overheat your plasma cutter. Allow proper cooling time between duty cycles.

Keep hands and fingers away from moving parts.

Do not point the Plasma torch at any body part or at anyone else.

Always use this plasma cutter in the rated duty cycle to prevent excessive heat and failure.

DESCRIPTION

WARNING

Plasma cutting equipment produces fumes or gases which contain chemicals known to the state of California to cause birth defects and, in some cases, cancer. (California Health & Safety code section 25249.5 et seq.)

ON/OFF Switch

In the “off” position no power is being supplied to the electrode holder. In the “ON” position power is supplied to the main transformer and control circuit

Indicator Lights

There are two indicator lights: 1) Power and 2) Thermal Overload. When the machine is turned on, the power indicator will be on. When the thermal overload indicator is on, it indicates the machine has exceeded the duty cycle and the internal temperature is too high. The machine will turn off automatically but the fan will remain on to cool down the internal components. When the internal temperature has decreased, the machine will turn on automatically.

Ground Cable and Clamp

The ground cable and clamp are attached to the work piece to complete the flow of current needed to weld.

Welding Cable and Electrode Holder

One end of the cable is connected to output connector of the welder. The electrode is held in the electrode holder for welding.

Current Adjustment

Current adjustment is on the front panel of machine. It has infinite current output adjustment from 60 to 180 amps.

Power Cord

The power cord connects the welder to the 230 volt power supply. A 50 amp plug is supplied.

INSTALLATION

WARNING

Power requirement AC single phase 230 (220-240V) 60HZ fused with a 50 amp time delayed fuse or circuit breaker is required. DO NOT OPERATE THIS UNIT if the ACTUAL power source voltage is less than 170 volts AC or greater than 250 volts AC.

High voltage danger from power source! Consult a qualified electrician for proper installation of receptacle. This cutter 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 cutter’s power cord and the power source receptacle. Make sure the POWER switch is OFF when connecting your cutter’s power cord to a properly grounded 230 VAC, 60Hz, 1 phase, 50 amp input power supply.

Tools required for assembly: Open-end wrenches 8 and 10mm.

Lay the machine side panel on a flat surface. Install the metal bracket support on the bottom using two sets of screws and washers from the hardware bag.

Install the axle tube/bracket for the axles and wheels on the axle. Stand the machine up and install the axle tube/bracket onto the back of panel using the screws and washers provided. (You may want to use a wooded block to hold the welder up for this step.)

Finally, install the handle using four sets of screw and washers. Make sure the welder is disconnected to the power supply when assembling

When machine is laid on it's side do it gently or the impact could damage internal components.

Installation

Power requirement AC single phase 230v, 60HZ with a 50 amp circuit breaker. **DO NOT OPERATE THIS UNIT** if the ACTUAL power source voltage is less than 207 volts AC or greater than 253 volts AC.

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 230 VAC, 60Hz, single phase, 50 amp power source.

Extension cord

It is strongly recommended that an extension cord should not be used because of the voltage drop it produces. This drop in voltage can affect the performance of the welder. If you use an extension cord it must be a #12 gauge cord or larger. Do not use an extension cord over 25 ft. in length.

Setting up the work piece

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.

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 welds. If the base metal pieces to be joined are thick or heavy, it may be necessary to bevel the edges with a metal grinder, the correct bevel should be around 60 degree.

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.

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.

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 & fast travel speeds with light penetration
- E7018AC 70,000 PSI tensile strength, Used for out of position and tacking

OPERATION

⚠ WARNING

High voltage danger from power source! Consult a qualified electrician for proper installation of receptacle at the power source. This cutter 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 cutter's power cord and the power source receptacle. Make sure the POWER switch is OFF then connect your welder's power cord to a properly grounded 230 Vac (220v-240v), 60Hz, single phase, 50 amp power source.

Setting the amperage control

The welder has an infinite current control. It is capable of welding with electrodes up to 5/32" diameter. There 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. Heavier and thicker metals require more voltage (amperage), whereas lighter and thinner metals require less voltage (amperage).

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.

Holding the electrode

The best way to grip the electrode holder is the way that feels most comfortable to you. 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.

Striking the arc

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.

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. The beginners may usually get sticker or arc extinguishing. When the rod is stick to the work piece, gently rock it back and forth to make them separate. If not, the circuit is short connection, it will break 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.

Welding Position

Flat position It 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.

The horizontal position it 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.

Judge the 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. 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.

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 using a chipping hammer.

WARNING

For thin materials reduce the amperage setting to get the best cutting quality, reduce excessive warping and to extend the life of the electrode and nozzle.

Do not rapidly switch the torch trigger on and off; this will damage the pilot arc system and work piece.

Never allow a person with a cardiac pacemaker close to the working area without the permission of a doctor. The magnetic field produced by plasma cutters during operation can disrupt pacemakers and similar devices.

Never clean the slag off the torch head by hitting it against a hard object.

SERVICE

Tool service must be performed only by qualified repair personnel. Service or maintenance by unqualified personnel could result in a risk of injury.

When servicing a tool, use only identical replacement parts and follow instructions in the manual. Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of shock or injury.

WARNING

Before using this tool, you need to become familiar with its operation. If you are unsure about the operation of the tool, or have any questions about its proper use, call the Customer Service Department at 1-888-287-6981. Follow these instructions for safe handling of the tool:

- **Be sure your work area is clean and secure.** Be sure the area is free from all foreign material, nails, staples, or any other material.
- **Always use the appropriate safety gear when operating.** Including but not limited to, goggles, dust mask or respirator.