



Operating Manual

For

StickWeld™

IGBT

Stickweld 140 DC ARC Welder

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THANK YOU!

We, at LONGEVITY, want to thank you for purchasing our product. You are almost ready to experience Longevity Welding first hand. Longevity definitely appreciates your business and understand that this equipment may be overwhelming to setup and operate so we have prepared a manual that will assist you in understand your new plasma cutter/welder. If you have any questions during or after reading this manual, please feel to contact us! Please take a moment to register your product on our website at www.longevity-inc.com or www.lweld.com

Once again, thank you for choosing Longevity as your main welding supplier!

Longevity Global, Inc.
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Hayward, CA 94545

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Dealers: dealers@longevity-inc.com

Complaints: complaints@longevity-inc.com

Please join our welding forums to share welding tips and tricks, to receive useful information from customers who also use our products, and to be a part of the Longevity™ welding community at www.freeweldingforum.com

Warranty

A manufacturer's limited warranty covers parts only, unless indicated below, and is furnished for five years from the date of purchase warranting the product to be free of material defect or workmanship as follows:

Plasma Cutters, Welders, and Multi-Purpose Welders (Coverage for Parts and Labor for five years from the purchase date at our facility).

In the event of product failure or malfunction, the purchaser/recipient must contact LONGEVITY™ GLOBAL, INC. to obtain an RMA (return or missing) number and a location of a designated repair facility. The welder, plasma cutter, multi-purpose unit, or any other welding related equipment comes with warranty on all internal components. The torch, cables, power cord, clamps, air regulator, argon regulator, hoses, case, paint, and consumables are not covered under warranty. Packages that are not pre-approved for return, and that do not have an RMA number will be refused and returned to the purchaser/recipient at the purchasers/recipients own cost. The product must be returned in its original packaging, with all accompanying components. Repair or replacement of the defective product will be at our option. The repaired/replaced product will then be returned to the purchaser. LONGEVITY Global, Inc. will cover the return and replacement shipping charges (both ways) for units in need of warranty within and only for the first 30 days from the purchase date. After the 30 days from the purchase date, the purchaser shall be responsible for all shipping and handling costs of returning (both ways) the defective/faulty products for repair or replacement. We are not responsible for lost returns. The labor coverage only applies if the unit is serviced at our facility or one of our authorized dealers. We will not reimburse the labor if your wish to have a third-party or unauthorized repair technicians work on the product.

Shipping Damage

Your machine is insured against damage during shipping. Keep all packing materials and containers in case machine must be returned. We will initiate a claim with the shipping company to cover damage or loss. If there is shipping damage upon opening your package, our customer service team will work with you to get the matter resolved.

In Warranty Service

Customers, who own machines that are in warranty and require service, should contact our Warranty Department by email at help@longevity-inc.com to obtain a return authorization code. In addition to the warranty we offer, we would like for you to register your product on our website at www.longevity-inc.com/resources. Remember, warranty starts from the date of purchase. For your convenience, write your order information below so you can track your order in case you need warranty work.

Order No.: _____

Date of Purchase: _____

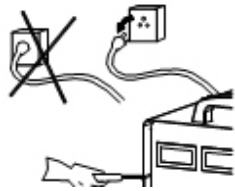



Warranty Period: _____



Out-of-Warranty Service

Customers, who own machines that are out of warranty and require service, should contact us for an estimate. Longevity offers an exchange program on out of warranty units. We also help non LONGEVITY customers with repairs, replacement, and service.

If your unit is not manufactured by Longevity and you cannot receive service from your manufacturer or seller, Longevity will lend out hand. Our warranty policy is also available for all plasma cutters and welders. For more information, please email us at help@longevity-inc.com

Warnings and Safety

<p>Welding and plasma cutting may be dangerous to the operator and to bystanders, if the equipment is not operated properly. Welding or cutting must be performed in accordance with all relevant safety regulations. Carefully read and understand this instruction manual before installing and operating this equipment.</p>	
<p>Changing function modes during welding may damage equipment.</p> <p>Before welding, disconnect the electrode-holder cable from the equipment.</p> <p>A circuit breaker is required to prevent electrical overload of the equipment.</p> <p>Only high quality welding tools should be used.</p>	
<p>Electric Shock can be fatal.</p> <p>Ensure that ground cable is connected in accordance with applicable safety codes.</p> <p>Never touch electrodes, wires, or circuit components with bare hands. Wear dry welding gloves when welding.</p> <p>The operator must be insulated from the work piece.</p>	
<p>Smoke and gas can be harmful to health.</p> <p>Ensure that the working area is well ventilated.</p> <p>Avoid breathing smoke and gas generated during the welding process. Cutting and welding can cause cancer because of the smoke that comes from the welds and cuts.</p>	
<p>Arc-light emission can be harmful to eyes and skin.</p> <p>Always wear a welding helmet, anti-radiation glass, and work clothes while welding.</p> <p>Ensure that people in or near the working area are protected.</p>	

<p>Welding splash is a fire hazard.</p> <p>Keep flammable material away from the work place.</p> <p>Keep a fire extinguisher nearby, and have all personnel trained in its use.</p> <p>Surface noise generated while welding or cutting can be harmful to hearing.</p>	
<p>In the event of a machine fault.</p> <p>Refer to this instruction manual.</p> <p>If the fault cannot be determined, contact your local dealer or supplier for assistance.</p>	

Safety Tips

Consider the following tips to ensure safe operation of your welding/cutting equipment:

- Ensure that this welding equipment is installed in an area free of corrosive chemical gases, flammable gases or materials, and explosive chemicals.
- The area should contain little dust, and have a humidity of no more than 80%.
- Operate the welding equipment in an area sheltered from direct sunlight and precipitation. Work area temperature should be maintained at -10°C to +40°C;
- If, because of an overload, the machine suddenly stops, and it is necessary to restart it, leave the internal fan operating to lower the inside temperature.
- Always wear protective clothing and a welding mask to protect your skin.
- Wear safety goggles designed to darken the arc generated by your machine.
- Wear suitable noise protection to protect your hearing.
- Ensure that machine is grounded through the power cord or on the machine case.
- Never operate the machine in bare feet or on a wet floor.
- Never switch the machine off while it's in use. Doing so will damage the internal circuitry.
- Ensure that your circuit breaker is rated to handle the current requirements of your machine.
- Use a UL approved receptacles and plugs with your machine. Never hard wire the machine to main power.
- Work in a well ventilated area to avoid smoke. Keep your head out of the smoke. Ensure that air is flowing away from you to avoid inhaling smoke.
- Ensure proper ventilation through the machine's louvers. Maintain a distance of at least 12 inches between this cutting equipment and any other objects in the work area.
- Use a screen or curtain designed to keep passer byes from viewing the arc.
- The arc spray and metal spray from machine use may cause nearby fires. Use caution.
- If, after reviewing this manual, you have any problems in setting up or operating your machine, contact us at help@longevity-inc.com.

General Description:

StickWeld™ Series 140AMP Ultra Portable Arc/Stick/MMA Welder is one of the lightest arc welders on the market at this time weighing in at only 13lbs! This DC stick welder comes with everything that you will need to operate this machine except for welding rods and a power supply. This machine is powered By a high speed cooling fan that will keep this welding machine running longer and cooler than any other [ARC welder](#) machine out there on the market. This machine is the ultimate in portability! StickWeld comes with its own suitcase, making traveling from job site to job site simple and easy. An [Auto Darkening Welding Helmet](#) is essential for this kind of welding as it would be for all welding and cutting. Please check out some of the welding helmets that we carry for some great deals and savings. This machine can also operate on either 110v or 220v input power and is a very portable, versatile unit. At 110v, you are still pushing an impressive 100amps of power.

Specifications:

Operating Dual Voltage:

110/220vac 50/60HZ Input Single Phase 1PH

Welder Specs:

Arc

- 140 Amps Arc Welder: Duty Cycle 35% at 140 Amps - 60% at 120amps
- DC welders do not weld aluminum.

Weight: 13Lbs(22LBS Boxed)

Dimensions: 11" Length x 5" width x 8"

Included Accessories:

- StickWeld IGBT ARC welder
- 400amp Rated Stick holder (5ft.)
- 400amp Rated Earth/Ground Clamp (5 ft.)
- 220V Power Plug For Power Cord



400amp Rated Stick holder (10ft.)



220V Power Plug



Earth/Ground Clamp (10 ft.)

The LONGEVITY® StickWeld 140 ARC welders may or may not be dual voltage varying by machine of purchase. Please check the back of your machine for the noted input requirement or contact your LONGEVITY dealer for specifications.

Installation and Setup Instructions:

The item numbers referenced in the following paragraphs, refer to the numbered parts display in the diagrams shown below. LONGEVITY® has an instructional setup installation video on our website at www.longevity-inc.com, which we ask that you view prior installing the unit. The video shows the complete assembly of the machine. The video is located in the Resources section of the website under manuals and installation/set-up videos.

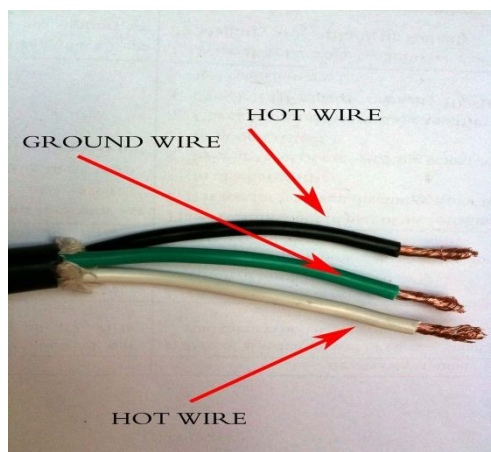
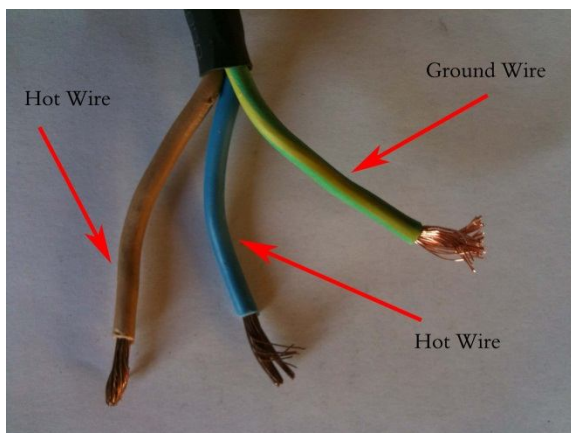
Connecting the electrical plug to the unit

Connecting the power plug to the unit is important. Please view the proper connection instructions below:

Wiring Introduction for 220 Volt

Danger: Read this manual completely before having your electrician attempt to wire up or connect your machine to an electrical power source. LONGEVITY® units should be wired by a certified electrician to insure your safety and a proper 110/220v plug match at your operating facility. Remember 220v plugs come with 3 or 4 prongs on them. Have the electrician check your existing receptacle.

Note: The power cord on single-phase machines has one ground wire and two hot wires when connecting to 220vac. Connecting these wires properly is extremely important. Improperly connected wires will void the warranty, affect personnel safety, and possibly damage your machine and electrical power outlet.



Identifying the Ground wire

Caution: The machine may appear to operate with an incorrectly connected ground wire, but it will not operate properly. Selecting the correct ground wire is important for proper machine operation and personnel safety.

Ground wires on LONGEVITY® Welding machines are usually one of the following colors:

- The ground wire is a dark green with a yellow stripe. The wire may also be just SOLID GREEN.

Clean the ends of the wires to more easily distinguish the colors. The best and safest way to determine which wire is ground is to measure the resistance between the machine chassis and the selected wire, using an ohmmeter. Another method is to check the continuity between the chassis and the wire, using a continuity meter. If the selected wire is ground, the connection between the chassis and the wire will cause the meter to illuminate. If, for any reason, you cannot visually detect the ground wire or do not feel comfortable with your selection, ask an electrician for help.

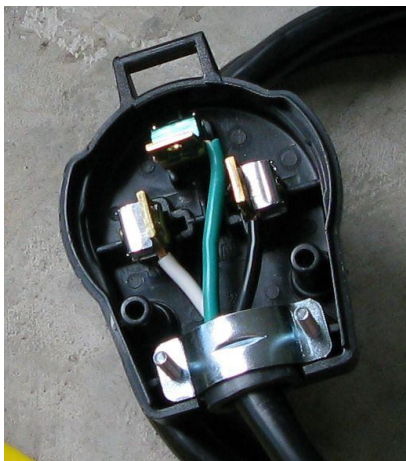
Identifying the hot wires

For 220vac service, both the brown and blue wire are positive wires. As you may know, 220vac features two hot wires. If you are wiring to 220vac, your blue and brown wires are both hot. The green with yellow or SOLID GREEN is the ground. Remember, any hot wire can be attached to either hot leg on the plug.

Note: Hot Wires May also be WHITE and BLACK if a GREEN WIRE is one of the three wires. Therefore, GREEN is ALWAYS GROUND.

NOTE: LONGEVITY® recommends a 30 AMP breaker on 220v, but you can operate on a larger AMP breaker.

Finished Plug:



Wiring Introduction for 110 Volt - 20amp Breaker

Caution: The machine may appear to operate with an incorrectly connected ground wire, but it will not operate properly. Selecting the correct ground wire is important for proper machine operation and personnel safety.

Ground wires on LONGEVITY® Welding machines are usually one of the following colors:

The ground wire is a dark green with a yellow stripe. The wire may also be just SOLID GREEN.

Clean the ends of the wires to more easily distinguish the colors. The best and safest way to determine which wire is ground is to measure the resistance between the machine chassis and the selected wire, using an ohmmeter. Another method is to check the continuity between the chassis and the wire, using a continuity meter. If the selected wire is ground, the connection between the chassis and the wire will cause the meter to illuminate. If, for any reason, you cannot visually detect the ground wire or do not feel comfortable with your selection, ask an electrician for help.

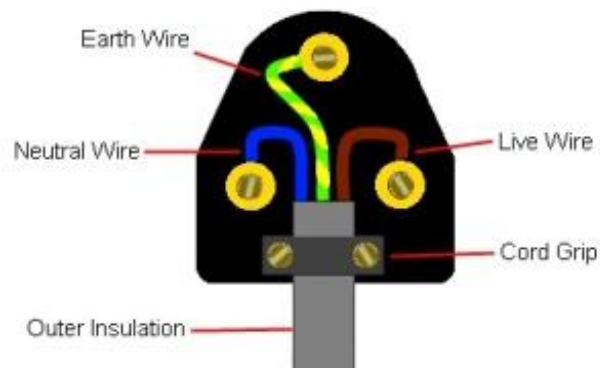
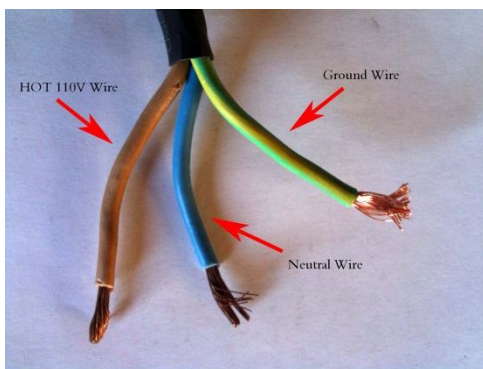
Identifying the Neutral Wire

For 110vac service, the brown wire is is a hot wire. As you may know, 110vac features one hot wire, a neutral wire, and a ground wire. If you are wiring to 110vac, your blue wire is neutral, brown is hot and the green with yellow or SOLID GREEN is the ground.

Note: Hot Wires May also be WHITE and BLACK if a GREEN WIRE is one of the three wires. Therefore, GREEN is ALWAYS GROUND. In this case one of the wires is neutral and one is hot.

NOTE: LONGEVITY® recommends a 20 AMP breaker on 110v

110V Plug Diagram:



Basic Diagram Pictured Model StickWeld™ 140

Front (Note: All IGBT StickWeld series machines have same function adjustment knobs and settings at different amperage ratings and positions on front panel.)





ON/OFF POWER SWITCH

POWER CORD FOR INSTALLATION TO POWER SUPPLY (CHECK MACHINE SPECIFICATIONS FOR PROPER INPUT VOLTAGE)

HIGH SPEED COOLING FAN FOR KEEPING INTERNAL COMPONENTS AT A VERY LOW OPERATING TEMPERATURE FOR EXTENDED MACHINE LIFE

Main Unit Knob/Button/Function:

- 1. On/Off Breaker or Switch:** Either breaker or switch located on the back or front of the unit will control the unit to be turned on or off.
- 2 Power Indicator:** Shows unit is powered on. Indicator is present in some models with a green LED bulb.
- 3 Warning indicator:** Illuminates when the duty cycle has been exceeded or the machine has overheated due to improper ventilation. Discontinue use until lamp goes out. Allow the fan to continue to run. Once lamp goes out, you may resume using the unit.
- 4 O.T. Indicator:** Illuminates when the internal circuit boards are at too high of an operating temperature.
- 5 + / – Connections:** Polarity and ground selection lugs. Correct use of polarity is the key to weld quality. Follow the electrode and wire manufacturers recommendations for polarity. Ground connection will be inserted into the negative post for straight polarity.
- 6 Digital Current Meter:** Indicates Current setting while operating machine.
- 7 Arc Force Adjustment Knob:** This adjustment will allow you to adjust the ARC quality of a weld. Using this function will allow you to adjust the sharpness of your ARC. Setting experimentation may be required to find a perfect setting for an individual welder.
- 8 Welding Current Adjustment Knob:** This adjustment will control the amperage output while welding.
- 9 External Ground Lug:** This may be used in some circumstances where extra grounding is necessary for local electrical code compliance. This will allow you to ground the machine separately with a separate wire connection. (Note: machine is grounded through power cord.)

STICK/ARC Welding

(Also known as MMA-Manual Metal Arc or Shielded Metal Arc Welding-SMAW)

Connect the Stick torch to the - terminal and Torch Control receptacles.

Connect the ground clamp to the + terminal and clamp the metal to be welded. Reverse the torch and ground connections for DCEP (Direct Current Electrode Positive).

DC Stick - Select Stick, DC, desired amps using Base cur knob, Pulse Mode off.

1. Insert electrode into electrode holder. Position the electrode for the most comfortable position so that the electrode can be held directly over the work piece with a slight angle.
2. Set Amperage to the recommended amperage by the electrode manufacturer. Strike an arc by swiping it briskly across the work piece in the same manner as one would strike a match. Alternatively, you may strike an arc with firm tapping motion against the work piece. Either method is acceptable. An arc should initiate. Continue to keep the arc going by holding the electrode off the work piece no more than the electrode width.
3. Continue the arc by feeding the electrode into the weld puddle while moving the electrode forward. This will take some coordination, but will be fairly easy to do after practice. Do not allow the arc to become too long, because air and slag can become entrapped in the metal. The sound of a proper arc will be similar to a gentle frying sound. A long arc will emit a humming sound. An arc that is too short may be extinguished and the electrode may stick to the work piece. If the electrode sticks, immediately release the electrode from the electrode holder and break the electrode loose by hand. If the flux breaks off, simply trim off the excess rod until flux and bare metal meet. A welding rod must have flux to shield the weld from the atmosphere or the weld will fail.
4. Use the Current control to change arc qualities. Adjust the amperage according to the recommendations of the electrode (welding rod) manufacturer for the type and size of the electrode used. Experimentation will be required to find the optimal setting desired. It is an excellent tool for out of position welding.
5. Electrode selection. Electrodes are usually given performance and characteristic ratings using a system of letters and numbers determined by the American Welding Society (AWS). The rating system includes the minimum tensile strength of the finished weld, the weld position (flat, vertical, horizontal, or overhead or a combination of two or more positions) and the flux type. Additional information may be given. Each manufacturer has their individual name and terminology as well.

As there is no general recommendation that can be made about a particular electrode selection, except for practice welds, an electrode designated by the AWS as E 6011, E 6013, E 7014, or E 7018 may be used, each having its own distinct features and purpose. These are among the most common electrodes used in the industry and are not difficult to find. E 6011 electrodes are not as smooth running as some of the other electrodes, but offer the advantage of being able to weld on rusty metal and contaminated surfaces. It is widely used and requires very little skill to begin using. This is not a particular endorsement of an E6011, rather a simple example of what may be used in developing proficient technique. It is recommended that a variety of electrodes be used and practiced with. Consultation with an experienced local welding supplier will help greatly in determining what welding electrode is the best for your given situation. Many times, samples or small packages of electrodes are available at relatively low cost.

Stick Electrode Chart Example: E 60 1 3

Strength

60--60,000 psi,

70--70,000 psi

Weld Position

1--All positions: Flat, Vertical, Horizontal, & Overhead

2--Flat Position or Horizontal Fillets Only

3--Flat Position Only

Weld Characteristics

0--Non-low hydrogen, DC Reverse polarity

1--Non-low hydrogen, AC or DC Reverse polarity

2--Non-low hydrogen, AC or DC Straight polarity

3--Non-low hydrogen, AC or DC Either polarity

4--Non-low hydrogen, iron powder coating, AC or DC Reverse polarity

5--Low-hydrogen, DC Reverse polarity

6--Low-hydrogen, AC or DC Reverse polarity

7--Non-low hydrogen, iron powder coating, AC or DC Reverse polarity

8--Low hydrogen, iron powder coating, AC or DC Reverse polarity

Polarity Definition

electrode negative =straight polarity (typical stock machine setup)

electrode positive = reverse polarity

Be sure to observe the electrode manufacturer recommendations regarding polarity. If the weld appears lumpy, porous or otherwise malformed, change the polarity of the ground cable and the electrode holder cable. Many electrodes run with in reverse polarity, (DCEP) setting. A few run with a straight polarity (DCEN). Some will run either way. For reverse polarity (DCEP) stick welding, swap the electrode holder and ground cable connections.

Proper weld identification: Overlap and undercutting are two main causes of weld failure. Proper washing of the weld bead into the sides or “toes” of the weld is important. Keep the welding electrode or the TIG tungsten and welding arc within the weld joint to prevent overlap. Pausing on the sides of the welds to wait for the sides to fill reduces the chance of undercutting, even if the current is a little too high. If it is possible, with any practice weld, cut the joint down the middle, lengthwise, or place the weld in a vice and use a hammer to bend the metal over the weld area until it is either broken or bent 90 degrees. This destructive testing method will help you improve your skill by revealing faults and flaws in your welds.

Stick (SMAW) Electrode Welding

Stick, the most basic of welding processes, offers the easiest option for joining steel and other metals. Although it produces the least pretties or cleanest welds, ARC/STICK welding gets the job done! Stick welding power sources deliver inexpensive options for welding versatility, portability and reliability. Stick joins metals when an arc is struck between the electrode and the work piece, creating a weld pool and depositing a consumable metal electrode into the joint. The electrode's protective coating also acts as a shielding gas, protecting the weld and ensuring its purity and strength. Best for windy conditions and adverse environments.

If you're not familiar with Stick (SMAW) welding basics, the following information can make choosing an electrode easier.

AWS Class	Position	Polarity	Usage
E6010	All	DCEP	A great choice for welding on dirty, rusty, greasy or painted steel - especially in vertical or overhead applications.
E6011	All	AC,DCEP	All-purpose stick electrode; used for carbon and galvanized steel; 60,000 PSI tensile strength; deep penetration and ideal for welding light to medium amounts of dirty, rusty or painted materials.
E6013	All	AC,DCEN,DCEP	Light to medium penetrating all-purpose stick electrode; for use on carbon steel; 60,000 PSI tensile strength; good for general all-purpose applications and joints with poor fit-up.
E7014	All	AC,DCEN,DCEP	For higher-deposition requirements; 70,000 PSI tensile strength; ideal for applications requiring light penetration and faster travel speeds.
E7018	All	DCEP	Low-hydrogen electrode; for low, medium and high-carbon steels; 70,000 PSI tensile strength; ideal for out-of-position welding and tacking; not recommended for low-voltage AC Welders.
E7018AC	All	AC,DCEP	Low-hydrogen electrode; for low, medium and high-carbon steels; 70,000 PSI tensile strength; ideal for out-of-position welding and tacking; specially formulated to operate with small 208/230 volt AC welders.

Electrode Polarity Chart

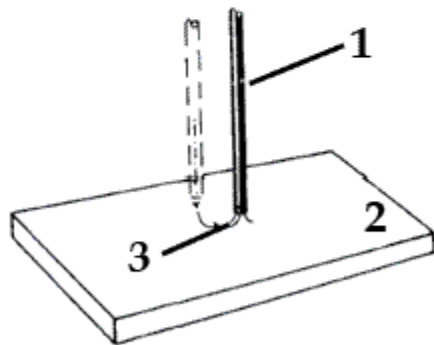
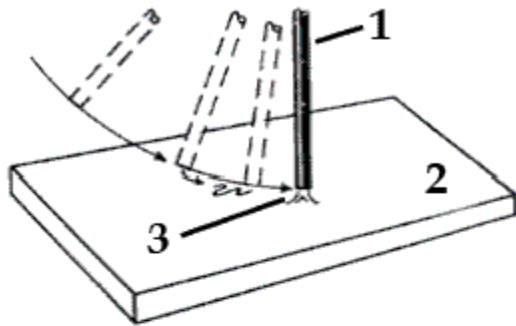
Electrode	DC*	AC	Position	Penetration	Usage
6010	EP	—	All	Deep	Min. Prep, Rough, High Spatter
6011	EP	✓	All	Deep	
6013	EP, EN	✓	All	Low	General
7014	EP, EN	✓	All	Medium	Smooth, Easy, Fast
7018	EP	✓	All	Low	Low Hydrogen, Strong
7024	EP, EN	✓	Flat, Horz. Fillet	Low	Smooth, Easy, Faster
308L	EP	✓	All	Low	Stainless Steel

*EP = Electrode Positive (Reverse Polarity); EN = Electrode Negative (Straight Polarity)

Electrode Amperage Chart

Elect.	Dia. (in.)	Amperage Range				
		MIN.	50A	100A	150A	200A MAX.
6010 & 6011	3/32					
	1/8					
	5/32					
	3/16					
6013	5/64					
	3/32					
	1/8					
	5/32					
7014	3/32					
	1/8					
	5/32					
7018	3/32					
	1/8					
	5/32					
308L	3/32					
	1/8					
	5/32					

Striking an Arc



1 Electrode; 2 Workpiece; 3 Arc

Helpful Hints

- Use a drag technique for most applications.
- Take precautions with flying materials when chipping slag.
- Keep electrodes clean and dry - follow manufacturer instructions.
- Common steel electrodes (refer to chart above).
- Penetration: DCEN- Less penetration; AC - Medium (can be more spatter also); DCEP - Most penetration

Catalog and Capabilities

LONGEVITY has what you need for stick welding, from welders to welding supplies and protective clothing. Stick welders come in two basic classifications; 115V stick welders and 230/460V stick welders. Stick Electrodes or welding rod for stick welding are available in stainless steel, carbon steel, low alloy steel, maintenance alloy, hard facing, nickel alloy, and magnesium

Routine Maintenance

The life of your machine and the quality of the work performed using your machine, will be enhanced by practicing periodic routine maintenance.

- At regular intervals, clear dust that may accumulate in the machine using clean and dry compressed air. If the working condition has heavy smoke and pollution, the welding machine should be cleaned once a month.
- Keep the machine exterior clean with mild soap and water.
- Do not walk on or store items on the cables or cords.
- Do not jar, drop, or stack items on top of the machine.
- Always connect the machine to a proper grounded electrical outlet.
- Always check the torch consumables before and after use and ensure that they are clear of obstructions, and that no parts are damaged.
- Replace any worn or damaged consumables before using machine.
- For periods of prolonged non-use, remove cables and store them in their original boxes in a cool dry place, free of bug infestation.

LONGEVITY® Global, Inc. thanks you for your purchase and the opportunity to be able to serve you. If, after reviewing this manual, you have any problems in setting up or operating your machine, contact us at help@longevity-inc.com.

LONGEVITY® Global, Inc.

Toll-Free 1-877-LONG-INC / 1-877-566-4462

Website: www.longevity-inc.com

Sales: sales@longevity-inc.com

Customer Service: help@longevity-inc.com

Dealers: dealers@longevity-inc.com

Please join our welding forums to share welding tips and tricks, to receive useful information from customers who also use our products, and to be a part of the LONGEVITY® welding community at www.freeweldingforum.com

For the coolest LONGEVITY sponsored race teams plus a complete racing forum that covers everything from Drag Racing to RC Car Racing, please check out www.longevity-racing.com!

Enjoy your new welding machine from LONGEVITY! Thanks again!