

Eastwood

DO THE JOB RIGHT.

Item #20295

ARC 80 WELDER

ASSEMBLY & OPERATING INSTRUCTIONS



The **EASTWOOD ARC 80** provides a convenient method of performing arc or “stick” welding of carbon or stainless steel. Inverter Technology provides the capability of welding thin or heavy gauge steel with precision and ease. When adding the optional #20358 TIG Kit, and a cylinder of shielding gas, the Arc 80 becomes a full-function TIG welder.

STATEMENT OF LIMITED WARRANTY

The Eastwood Company (hereinafter “Eastwood”) warrants to the end user (purchaser) of all new welding and cutting equipment (collectively called the “products”) that it will be free of defects in workmanship and material. This warranty is void if the equipment has been subjected to improper installation, improper care or abnormal operations.

WARRANTY PERIOD:

All warranty periods begin on the date of purchase from Eastwood. Warranty Periods are listed below, along with the products covered during those warranty periods:

3 Year Warranty on Material, Workmanship, and Defects:

- Eastwood Arc 80 Welder

Items not covered under this warranty: Ground clamp and cable.

All other components are covered by the warranty and will be repaired or replaced at the discretion of Eastwood.

2 Years:

- All Welding Helmets.

CONDITIONS OF WARRANTY TO OBTAIN WARRANTY COVERAGE:

Purchaser must first contact Eastwood at 1-800-345-1178 for an RMA# before Eastwood will accept any welder returns.

Final determination of warranty on welding and cutting equipment will be made by Eastwood.

WARRANTY REPAIR:

If Eastwood confirms the existence of a defect covered under this warranty plan, Eastwood will determine whether repair or replacement is the most suitable option to rectify the defect. At Eastwood’s request, the purchaser must return, to Eastwood, any products claimed defective under Eastwood’s warranty.

FREIGHT COSTS:

The purchaser is responsible for shipment to and from Eastwood.

WARRANTY LIMITATIONS:

EASTWOOD WILL NOT ACCEPT RESPONSIBILITY OR LIABILITY FOR REPAIRS UNLESS MADE BY EASTWOOD OR AN EASTWOOD-APPROVED REPAIR FACILITY. EASTWOOD’S LIABILITY UNDER THIS WARRANTY SHALL NOT EXCEED THE COST OF CORRECTING THE DEFECT OF THE EASTWOOD PRODUCT. EASTWOOD WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (SUCH AS LOSS OF BUSINESS, ETC.) CAUSED BY THE DEFECT OR THE TIME INVOLVED TO CORRECT THE DEFECT. THIS WRITTEN WARRANTY IS THE ONLY EXPRESS WARRANTY PROVIDED BY EASTWOOD WITH RESPECT TO ITS PRODUCTS. WARRANTIES IMPLIED BY LAW SUCH AS THE WARRANTY OF MERCHANTABILITY ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY FOR THE EQUIPMENT INVOLVED.

THIS WARRANTY GIVES THE PURCHASER SPECIFIC LEGAL RIGHTS.

THE PURCHASER MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

SPECIFICATIONS

Output Amperage Range	Maximum Input Amperage	Input Voltage	Rated Duty Cycle	Rod Diameter	Rod Material	Weight	Overall Dimensions
20-80 Amps DC	20 Amps	120 VAC, 60Hz	20% @ 80 Amps	1/16” to 3/32”	E6013, E7014, E7018, Stainless Steel	7.5 lbs. [3.4kg]	12.5" [318mm] x 9" [230mm] x 4.7" [120mm]

READ & UNDERSTAND ALL INSTRUCTIONS & PRECAUTIONS BEFORE PROCEEDING

This unit emits a powerful high voltage and extreme heat which can cause severe burns, dismemberment, electrical shock and death. Eastwood shall not be held liable for consequences due to deliberate or unintentional misuse of this product.

SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



⚠ READ INSTRUCTIONS

Thoroughly read and understand this manual before using the welder. Save for future reference.



⚠ DANGER ELECTRIC SHOCK CAN KILL!

- Improper use of an electric welder can cause electric shock, injury and death! Read all precautions described in this manual to reduce the possibility of electric shock.
- Do not touch any electrical components that may be live.
- Separate yourself from the welding circuit by using insulating mats to prevent contact from the work surface.
- The welder power switch is to be in the OFF position and the power supply is to be disconnected when performing any maintenance or consumable changes.
- **Always wear dry, protective clothing and leather welding gloves and insulated footwear.**
- Always operate the welder in a clean, dry, well ventilated area. Do not operate the welder in humid, wet, rainy or poorly ventilated areas.
- Be sure that the work piece is properly supported and grounded prior to beginning an electric welding operation.
- 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.
- **Disconnect from power supply before assembly, disassembly or maintenance of the torch or contact tip or changing wire spools.**
- Always attach the ground clamp to the piece to be welded and as close to the weld area as possible. This will give the least resistance and best weld.



⚠ WARNING FUMES & WELDING GASES CAN BE DANGEROUS!

- Do not breathe fumes that are produced by the welding operation. These fumes are dangerous. Keep your head and face out of welding fumes. Do not breathe the welding fumes
- Always work in a properly ventilated area. Wearing an OSHA-approved respirator when welding is recommended!
- Never weld coated materials including but not limited to: cadmium plated, galvanized, lead based paints.
- Refer to the MSDS (Material Safety Data Sheet) for any consumables or materials used during welding for additional safety instructions.



⚠ WARNING WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION!

- Do not operate electric arc welder in areas where flammable or explosive vapors are present.
- Always keep a fire extinguisher nearby while welding.
- Use welding blankets to protect painted surfaces, dash boards, engines, etc.
- Ensure power supply has properly rated wiring to handle power usage.
- Do not use on or near combustible surfaces.
- Remove all flammable items within 35 feet of the welding area.
- Do not weld frozen pipes.



⚠ WARNING ARC RAYS CAN BURN!

- Use a shield with the proper filter (a minimum of #11) to protect your eyes from sparks and the rays of the arc when welding or when observing open arc welding. (see ANSI Z49.1 and Z87.1 for safety standards)
- Use suitable clothing made from durable flame-resistant material to protect your skin. Protect nearby individuals with a non-flammable barrier.
- Wear safety glasses with side shields under your welding helmet
- If other persons are in the area of welding use welding screens to protect bystanders from sparks and arc rays.



⚠ WARNING HOT METAL WILL BURN!

- Electric welding operations cause sparks and heat metal to temperatures that will cause severe burns!
- Use protective gloves and clothing when performing any welding operations. Always wear long pants, long-sleeved shirts and leather welding gloves.
- Make sure that all persons in the welding area are protected from heat, sparks and ultraviolet rays. Use additional face shields and flame resistant barriers as needed.
- Never touch work piece until it has completely cooled.



⚠ WARNING ELECTROMAGNETIC FIELDS MAY BE DANGEROUS!

- The electromagnetic field that is generated during arc welding may interfere with various electrical and electronic devices such as cardiac pacemakers. Anyone using such devices should consult with their physician prior to performing any electric welding operations.
- Exposure to electromagnetic fields while welding may have other health effects which are not known.



⚠ WARNING FLYING METAL CHIPS CAN CAUSE INJURY!

- Welding, brushing, hammering, chipping, and grinding can cause flying metal chips and sparks.
- To prevent injury wear approved safety glasses.

DUTY CYCLE

The rated Duty Cycle refers to the amount of welding that can be done within an amount of time. The Eastwood Arc 80 has a Duty Cycle of 20% at 80 Amps. It is easiest to look at your welding time in blocks of 10 Minutes and the Duty Cycle being a percentage of that 10 Minutes. If welding at 80 Amps with a 20% Duty Cycle, within a 10 Minute block of time you can weld for 2 Minutes with 8 Minutes of cooling for the welder.

If the Duty Cycle is exceeded, the Welder will automatically shut off however the fan will continue running to cool the overheated components. When a safe temperature has been reached, the Welder will automatically switch the welder output back on. To increase the Duty Cycle you can turn down the Amperage Output control.

INCLUDES

Remove all items from the box. Compare with list below to make sure unit is complete.

- (1) Eastwood Arc 80 DC Welder with 6.5' [2m], 14 Ga. Power Cord
- (1) Ground Clamp with 6.5' [2m] Cable
- (1) Electrode "stick" Holder with 6.5' [2m] Cable
- (1) Instruction Manual
- (1) Hammer/Brush
- (1) Shoulder Strap
- (5) 3/32" Welding Rods

COMPONENTS & CONTROLS

Power Switch

The Power Switch is located on the upper rear panel (FIG A).

Power Indicator LED

Illuminates Green when the unit is plugged in and The Power Switch is set to the ON position (FIG B).

Thermal Protection LED

Illuminates Amber when the unit has reached the maximum internal component temperature (FIG B). This occurs when the Duty Cycle has been exceeded. The Welder will automatically shut off however the fan will continue running to cool the overheated components. When a safe temperature has been reached, the Welder will automatically switch the welder output back on.

Amperage Adjustment Knob

The Amperage Adjustment Knob (FIG B) allows the output amperage to be adjusted from 20 to 80 Amps.

"Stick"/TIG Switch

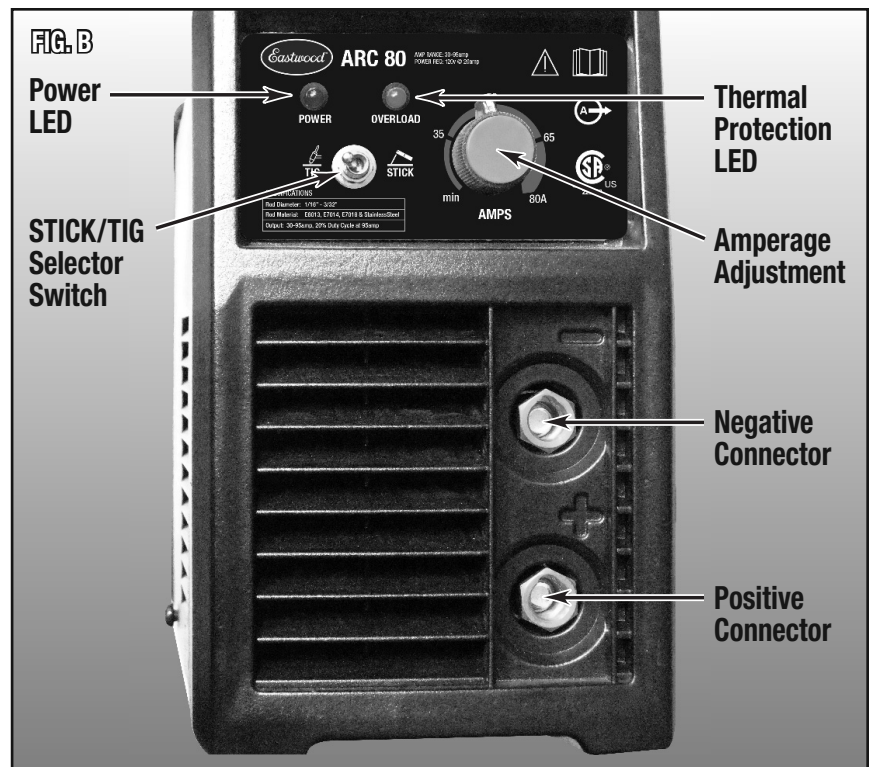
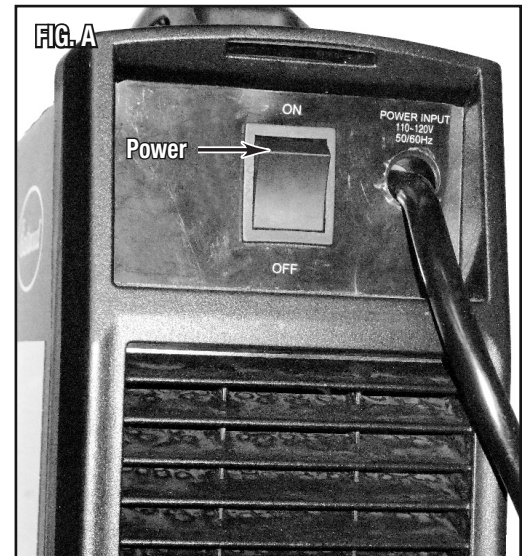
Located at the upper left of the Front Panel (FIG B). To operate the unit for "Stick" Welding, position the switch to the right. For using with the optional TIG Torch Kit, position switch to the left.

Positive (+) Connector

Located at the lower right front of the Control panel (FIG B). When "Stick" welding, the GROUND Clamp Cable is plugged in here. If using the optional TIG Torch Kit, the GROUND Clamp Cable is plugged in here.

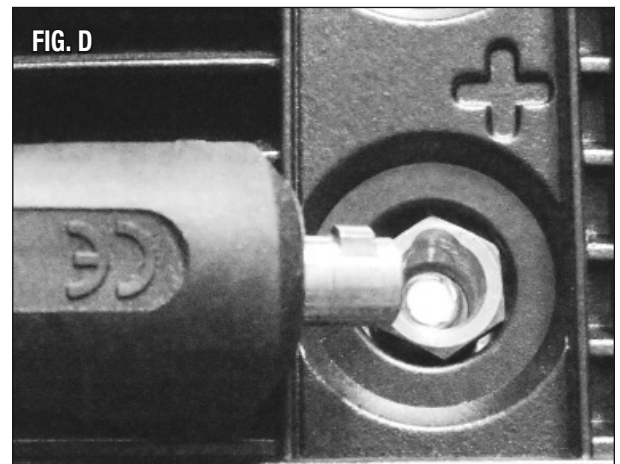
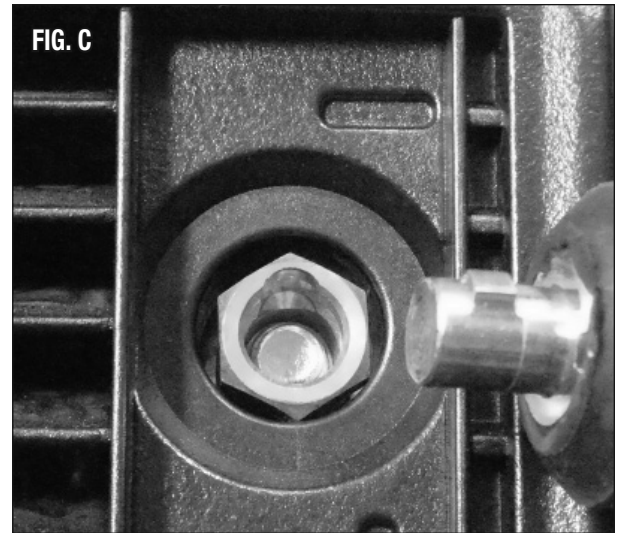
Negative (-) Connector

Located at the mid right front of the Control panel (FIG B). When "Stick" welding, the ELECTRODE Cable is plugged in here. If using the optional TIG Torch Kit, the TIG TORCH Cable is plugged in here.



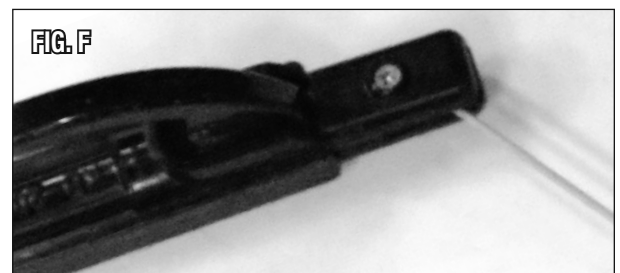
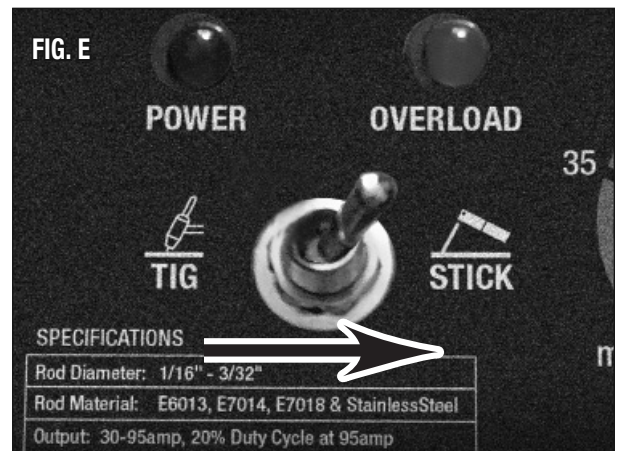
WELDER SET-UP FOR ARC OR “STICK” WELDING

1. Be sure the power cord is unplugged and the power switch is in the “Off” position.
2. Insert the Brass Connector of the Electrode Cable into the Negative (-) Brass Receptacle on the Front Panel. Note that the Keyed Tab of the Brass Connector fits into the Keyed Slot at the top of the Negative (-) Brass Receptacle (FIG C). Seat fully and turn 180 Clockwise to lock in place.
3. Insert the Brass Connector of the Ground Cable into the Positive (+) Brass Receptacle on the Front Panel. Note that the Keyed Tab of the Brass Connector fits into the Keyed Slot at the top of the Positive (+) Brass Receptacle (FIG D). Seat fully and turn 180 Clockwise to lock in place.
4. Move the Stick/TIG Switch to the right position (FIG E).
5. Attach the Ground Clamp to the workpiece as close to the welding area as possible. To ensure good ground, clean the grounded area of any rust, grease, oils or paint.
6. Place a Welding Rod between the spring-loaded Jaws of the Electrode or “Stick” Holder (FIG F).



“STICK” WELDING

1. Plug the power cord into a properly grounded, 120 Volt AC, 60hz, 20 Amp outlet.
2. Make sure the Electrode or “Stick” is **not making contact with the grounded workpiece**.
3. Switch the Power Switch to “On”.
4. While wearing a properly functioning Auto Darkening Welding Helmet, Lightly drag the tip of the Welding Rod along the workpiece surface to start an arc.
5. Feed the Welding Rod into the workpiece joint at a 15 angle.
6. Lift rod from workpiece when weld bead is completed.
7. Turn off Welder Power Switch.
8. Set the Electrode or “Stick” Holder on a safe, non-flammable, surface.



TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Contamination in weld bead	Contaminated Electrode Rod	Make sure that Electrodes are clean and dry before use.
	Contaminated Base Metal	Clean base metal of any oil, debris, coatings, or moisture. If base metal is cold rolled steel make sure to remove any mill scale.
Poor Weld Appearance	Incorrect positioning	The angle of the electrode should be at 45° and drag away from the weld arc. Failing to do so may cause poor weld appearance.
Weld Bead is Cracking	Too much heat in material	Reduce heat & allow more time between passes.
	Base Metal is absorbing too much heat	Preheat base metal (consult welding codes for requirements)
	Incorrect Filler Wire	Use correct filler wire type & diameter for the joint being welded.
Material is Warping	Insufficient Clamping	Clamp work piece tightly & weld while clamps are in place.
	Insufficient Tack Welds	Add more tack welds until rigidity and stiffness is developed.
	Too Much Heat in Material	To reduce heat it is best to spread the welding out around the area. This can be done by using stitch welding techniques, alternating sides, and/or taking your time and allowing the pieces to cool between passes.
Porosity in weld bead	Contaminated Electrode Rod	Make sure that Electrodes are clean and dry before use.
	Contaminated base metal	Clean base metal making sure to remove any oil, debris, coatings, or moisture.
Difficulty Starting Arc	Incomplete Circuit	Check Ground connection. Make sure that the ground is on a freshly cleaned surface and close to the welding area. It is suggested to weld toward the ground connection
	Amperage Too Low	Based on the material welding & size/material of the electrode, pick an appropriate amperage to perform the desired weld.
	Contaminated Base Metal	Clean base metal of any oil, debris, coatings, or moisture. If base metal is cold rolled steel make sure to remove any mill scale.
Arc Wander	Electrode too far from welding surface	Move electrode so that it is contacting the weld puddle and feed rod into the puddle as needed.
Difficulty Holding Arc	Amperage Too Low	Based on the material welding and size/material of the electrode, pick an appropriate amperage to perform the desired weld.
	Electrode too far from welding surface	Move electrode so that it is contacting the weld puddle and feed rod into the puddle as needed.
	Incomplete Circuit	Check Ground connection. Make sure that the ground is on a freshly cleaned surface and close to the welding area. It is suggested to weld toward the ground connection.
	Contaminated Electrode Rod	Make sure that Electrodes are clean and dry before use.
	Contaminated Base Metal	Clean base metal of any oil, debris, coatings, or moisture.

ACCESSORIES

#11947	Zirconia Flap Disc, 4.5" Dia., 7/8" Arbor,
#12590	Welding Gloves Large
#12589	Welding Gloves Medium
#13203	Auto Darken Welding Helmet
#13212	Large View Auto Darken Welding Helmet
#20038	Set of 3 Stainless Steel Brushes
#51139	Copper 3 x 3 Welders Helper Set
#50739	Master Welder's Helper Panel Holding Kit
#12762L, XL, XXL	Welding Jacket
#19001	Welding Rod 1/16" Diameter, 3 lbs.
#20358	ARC 80 TIG Welding Kit

See our complete line of consumables and parts at www.eastwood.com

If you have any questions about the use of this product, please contact

The Eastwood Technical Assistance Service Department: 800.544.5118 >> email: techelp@eastwood.com
PDF version of this manual is available online >> eastwood.com/20295manual

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