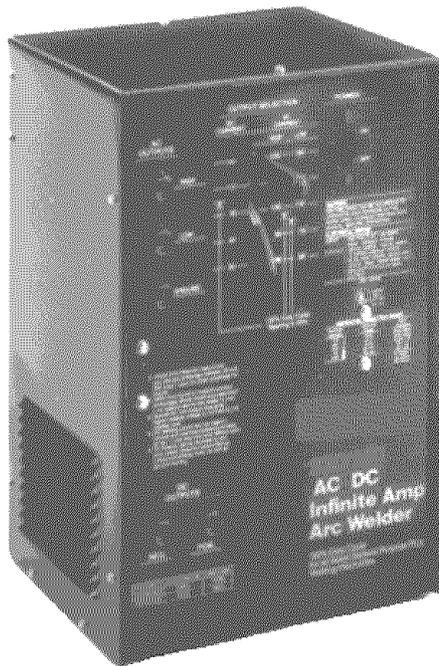


User's Guide Manual

230 AMP AC / 140 AMP DC ARC WELDER



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INTRODUCTION

This User's Guide manual provides specific welder information for the 230 amp ac/140 amp dc arc welder. This manual contains information such as the specific assembly information, welder duty cycle, welder open circuit voltage, heat control adjustments, recommended electrodes, etc. that are related to this welder only. Table 1 lists the welder specifications.

General welder information such as safety information, general installation or assembly instructions, preparation for welding, general operation instructions and welding techniques, etc are in the WELDER'S INSTRUCTION MANUAL, ARC WELDERS.

DO NOT ATTEMPT TO OPERATE THIS WELDER until you have read and understand both manuals. Make certain you have removed all documentation from the shipping carton.

Additional information on your welder is available through the place of purchase or from the manufacturer.

Read **SAFETY SUMMARY** in the **WELDER'S INSTRUCTION MANUAL, ARC WELDERS** before unpacking the welder and before proceeding with any procedures or making any attempts to do any welding.

Table 1. Welder Specifications

DESCRIPTION:	230 amp ac / 140 amp dc Arc Welder
INPUT:	230 Vac, 48 amp, 60 Hz, 1Ø
ac High Output:	60–230 amps
ac Low Output:	minimum–180 amps
dc Straight/Reverse	20–140 amps
MAX O. C. VOLTS:	72
DUTY CYCLE:	20% @ max. rated amperage
MODEL:	110-114

DUTY CYCLE

The duty cycle rating of a welder defines how long the operator can weld and how long the welder must be rested and cooled. Duty cycle is expressed as a percentage of 10 minutes and represents the maximum welding time allowed. The balance of the 10 minute cycle is required for cooling. Your new welder has a duty cycle rating of 20% at maximum rated output at either output tap.

SELECTING AC OR DC WELDING

The proper type of welding current is determined by the work that needs to be done.

ALTERNATING CURRENT WELDING

- Alternating current (ac) welding is performed when the welding cables are connected to the AC OUTPUT jacks. This kind of welding current is ideal for Heavy Plate (flat position) welding.

This welder has three plug in AC OUTPUTS and two DC OUTPUTS, on the front of the welder. The ac jacks are marked HIGH AMPERAGE, LOW AMPERAGE, and GROUND. The dc jacks are marked, POS and NEG. Connect the electrode output cable to the HIGH AMPERAGE jack for high current (230 amp maximum), low voltage ac operation or to the LOW AMPERAGE jack for low current (180 amp maximum), high voltage ac operation.

Most ac welding operations will be performed using the LOW AMPERAGE jack. This output tap, because it has a higher open circuit voltage (OCV), provides a deep penetrating arc for welding rusty or thicker metals. American Welding Society (AWS) rated rods 6011 and 7018 type are formulated to work well with the higher OCV of the LOW AMPERAGE jack.

The HIGH AMPERAGE jack is better suited for welding thinner pieces because the OCV at this tap is much lower. This tap delivers a shallow penetrating arc and smooth, non-stick welding, preferred for welding thinner metals. AWS rated 6013 and 7014 type rods work well at this tap, since they do not require a very high open circuit voltage to start.

- a. LOW/180 amp. jack = Approx. 71.6 OCV
- b. HIGH/230 amp. jack = Approx. 44.7 OCV

DIRECT CURRENT WELDING

Direct current (dc) welding is performed when the welding cables are connected to the DC OUTPUT receptacles. The welder has two dc welding options, straight polarity and reverse polarity welding.

Straight Polarity

Straight polarity dc current flows from the welding rod (negative) into the work piece (positive). Straight polarity dc welding is ideal for:

- Cutting Steel,
- Hardfacing work,
- Single Carbon Brazing,
- and Build up work for heavy deposits.

To weld with straight polarity dc, place the electrode cable in the plug marked NEG (negative) and the ground cable in the plug marked POS (positive.).

Reverse Polarity

Reverse polarity dc current flows from the work piece (negative) to the electrode (positive). Reverse polarity dc welding is ideal for:

- Overhead welding.
- Vertical Welding,
- Cast Iron Welding,
- Heavy Aluminum Welding.
- Rivet Welding,
- Sheet Metal Welding,
- Low Hydrogen Rod Welding,
- and Arc Bronze Rod Welding.

To weld with reverse polarity dc, place the electrode cable in the plug marked POS (positive) and the ground cable in the plug marked NEG (negative).

As you can see, most of the dc current welding is done in the dc reverse polarity mode of operation.

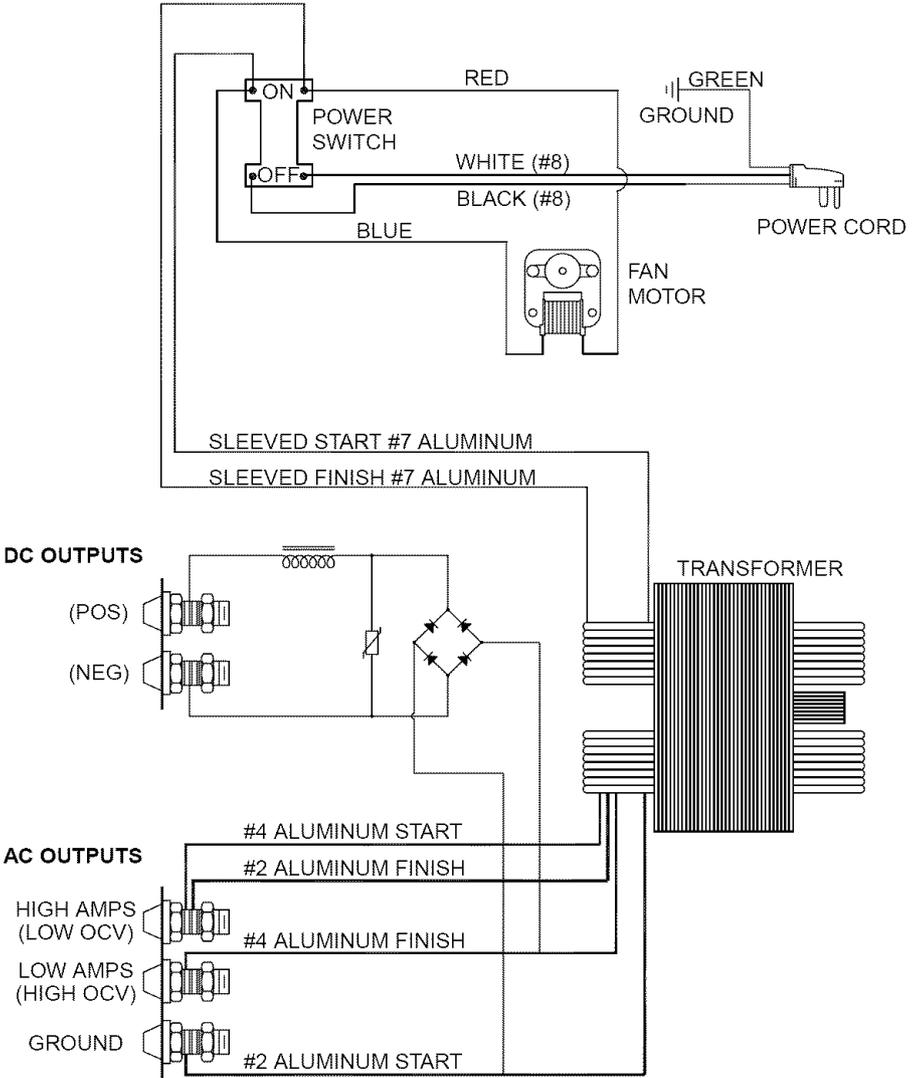
SETTING THE AMPERAGE CONTROL

This welder has a unique OUTPUT AMPERAGE SELECTION (current) control lever for faster, more efficient heat adjustments than plug in style, clicker switch, and crank type designs commonly used in other welders. The OUTPUT AMPERAGE SELECTION control provides amperage control (current adjustment) for both, ac and dc welding operations.

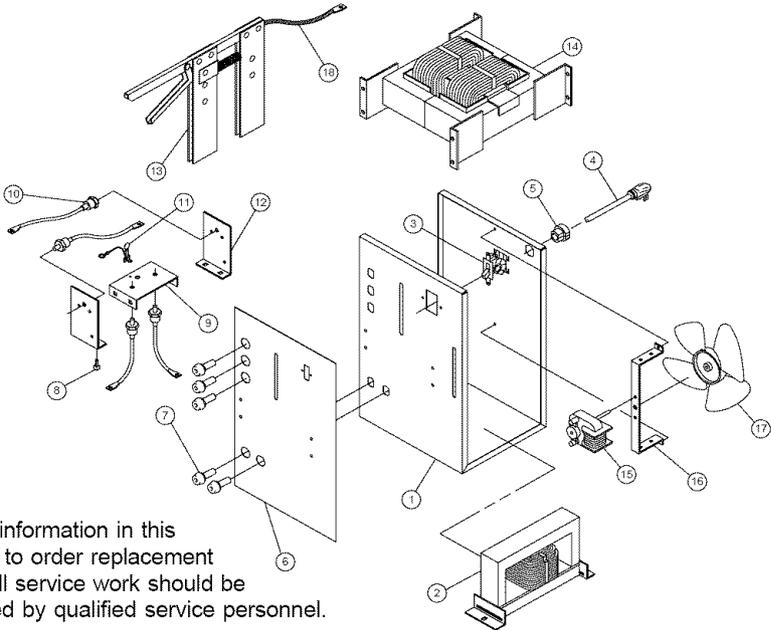
To reduce the amperage: Squeeze the OUTPUT AMPERAGE SELECTION control lever (on the front of the welder), push in lightly, and push the lever downward.

To raise the amperage: Squeeze the OUTPUT AMPERAGE SELECTION control lever (on the front of the welder), pull out lightly, and move the lever upward.

WIRING DIAGRAM



REPLACEMENT PARTS LIST



Use the information in this parts list to order replacement parts. All service work should be performed by qualified service personnel.

ITEM	DESCRIPTION	PART NUMBER
1	Base	410-182-730
2	Reactor	860-986-888
3	Switch	246-371-000
4	Power Cord	248-301-000
5	Strain Relief	541-019-000
6	Faceplate (U.S.)	711-133-170
	Faceplate (Canada)	711-133-300
7	Receptacle Assembly	312-028-100
8	Insulator	512-072-000
9	Heat Sink Channel	412-433-000
10	Diode	860-476-666
11	Transient Voltage Protector	860-189-666
12	Heat Sink Angle	412-436-000
13	Shunt Assembly	860-402-666
14	Transformer Assembly	860-431-888
15	Fan Motor	216-086-666
16	Fan Mounting Bracket	411-072-000
17	Fan Blade	316-007-666
18	Ground Strap (Canada only)	218-235-000
§	Cover	410-164-100
§	Ground Cable W/Clamp	4018
§	Electrode Cable W/Holder	4017
§	Not Shown	

LIMITED WARRANTY

The manufacturer warrants that it will repair, at no charge for parts or labor, the Welder or Welding Gun or Cables, proven defective in material or workmanship, during the following time period(s) after date of original retail purchase:

For 5 Years: The Welders Transformer and Rectifier

For 2 Years: The Entire Welder (excluding accessories packed with the welder)

For 1 Year: The Welders MIG Welding Gun or Arc Welding Cables (as applicable)

If after reasonable efforts by the manufacturer, the Welder or Welding Gun or Cables is/are deemed unrepairable, the manufacturer will, at its option, refund the original purchase price or supply a replacement welder, or welding gun or cables (which ever is defective).

This warranty extends to the Welder, the Welder's Transformer and Rectifier, and Welding Gun or Cables only and does not apply to any accessory items included with the product which are subject to wear from usage; the replacement or repair of these items shall be at the expense of the owner.

THE TERMS OF THE MANUFACTURER'S LIMITED WARRANTY CONSTITUTE THE BUYER'S SOLE AND EXCLUSIVE REMEDY. THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THIS EXPRESS WARRANTY. AFTER 2 YEARS FROM DATE OF PURCHASE FOR THE WELDER, 5 YEARS FROM DATE OF PURCHASE FOR THE WELDER'S TRANSFORMER AND RECTIFIER, AND 1 YEAR FROM DATE OF PURCHASE FOR THE WELDING GUN OR CABLES, ALL RISK OF LOSS, FROM WHATEVER REASON, SHALL BE UPON THE PURCHASER.

THE MANUFACTURER SHALL NOT BE LIABLE FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES UNDER ANY CIRCUMSTANCES: THE MANUFACTURER'S LIABILITY, IF ANY, SHALL NEVER EXCEED THE PURCHASE PRICE OF THIS PRODUCT, REGARDLESS OF WHETHER LIABILITY IS PREDICATED UPON BREACH OF WARRANTY (EXPRESS OR IMPLIED), NEGLIGENCE, STRICT TORT OR ANY OTHER THEORY.

This warranty extends to each person who acquires lawful ownership within two years of the original retail purchase for the Welder, within five years of the original retail purchase for the Welder's Transformer and Rectifier, and within one year of the original retail purchase for the Welding Gun or Cables, but is void if either has been abused, altered, misused, or improperly packaged and damaged when returned for repair.

Some states do not permit the limitation of warranties or limitation of consequential or incidental damages, so the above disclaimer and limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TO OBTAIN SERVICES UNDER THIS WARRANTY:

Owner pays transportation charges to the closest service center.

Owner may avoid transportation charges, if he wishes, by calling WELDER SERVICE, at the telephone number listed below, for free diagnosis and immediate shipment of replacement parts. The owner, in this case, assumes the responsibility for installation of parts.

Welder Service

866-236-0044