MARQUETTE®

Models 10 - 120 and 10 - 124
180 Amp
Welder

Operating Instructions
Parts List

APPLIED POWER INC

620-69077 H

Your new A.C. Arc Welder is a fine piece of equipment, carefully engineered, constructed of the finest materials and thoroughly tested before being delivered to you. It will provide the ultimate in performance, convenience and reliability.

In order that you may utilize to the fullest extent the capabilities of superior performance that your welder will provide, we ask that you please:

CAREFULLY READ AND FOLLOW THE INSTRUCTIONS OUTLINED IN THIS PAMPHLET

Please fill in the following information so that you will have a complete record of your welder. If you have any occasion to correspond with the dealer or the factory about this welder, please be sure to give all the information that you have filled in.

MODEL	SERIAL NUMBER	DATE OF PURCHASE

WARRANTY, PRODUCT SERVICE AND PARTS

COMMERCIAL WARRANTY: This equipment is warranted by Applied Power Inc. to the original commercial user-owner against defective materials or workmanship for a period of one year from the date of delivery. During the warranty period, equipment found to be defective will be repaired or replaced (at the warrantor's option) without charge. The equipment must be returned, transportation charges prepaid, with proof of delivery date to a Factory Service Center or an Authorized Service Center. The repaired or replaced equipment will be returned with transportation charges prepaid by the Service Center.

This warranty does not cover defects in the equipment caused by ordinary wear and tear, abuse, misuse, accident (including shipping damage), improper maintenance, alteration, or any other cause not the result of defective materials or workmanship.

REPAIR OR REPLACEMENT IS THE EXCLUSIVE REMEDY FOR DEFECTIVE EQUIPMENT UNDER THIS WARRANTY. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ON THIS EQUIPMENT. APPLIED POWER INC. SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS EQUIPMENT.

Service parts, warranty, and regular repair service for products are available through a nationwide system of company owned Factory Service Centers and independently owned Authorized Service Centers which are carefully selected by the Automotive Product Service Division. Your distributor or jobber can provide you with a list of Service Centers in your area.

Should additional assistance be required, please contact:

Automotive Product Service Division
Applied Power Inc.
Post Office Box 22580
Milwaukee, Wisconsin 53222

800-558-0852

DESCRIPTION

A.C. POWER CORD

The a.c. power cord is a 3-conductor cable with 3-prong polarized plug. Two conductors carry power, the third grounds the Welder case for safety. A matching receptacle, part number 638-69460, is available for connection to the power lines.

ELECTRODE AND WORK CABLES

The electrode cable is a heavy-duty flexible type supplied with an insulated, self-adjusting holder that can grip 1/16" to 3/16" electrodes and hold them at various angles.

The work cable is a heavy-duty flexible type equipped with a work clamp at one end and a plug at the other end. The clamp connects to the work to provide a return path for the welding current.

The electrode and work cables plug into jacks on the Welder panel to provide up to 21 different heats.

One cable is plugged into the numbered jack covering the current group desired. The other cable is plugged into the HI, MED or LO jack to give the desired current within this group. The Welder nameplate shows recommended current taps to use for various electrode sizes.

HELMET

The helmet protects against flash and welding spatter. The polished No. 10 filter lens is protected by a cover glass, both of which are replaceable.

ELECTRICAL SPECIFICATIONS

Primary								Secondary			
Model No.	Volts	Amps (Rated)	Cycles	Phase	KW	KVA	Power Factor	Open Circuit Volts	Arc Volts	Arc Amps	Duty Cycle
10-120	230	37	60	Single	7.32	9.55	75%	80 (max)	25	20-180	20%
10-124*	230	32	60	Single	7.32	8.97	82%	80 (max)	25	20-180	20%

*Capacitor Equipped for High Power Factor.

INSTALLATION

LOCATION

Choose a location for the Welder that is dry, well lighted and convenient to the work area. Ventilation around the machine is important since cooling of the unit depends on free circulation of air through the cabinet. Do not cover the ventilating holes.

To minimize arc weld flashing, use a canvas curtain around the immediate welding area. The curtain will also stop flying sparks. Be sure the work area is free of combustible materials.

ELECTRICAL CONNECTIONS

Before making electrical connections, consult a competent electrician for any new wiring required to meet local electric code specifications. This Welder operates on single phase current having two supply wires and a ground wire. See illustration for connections from power lines to receptacle.

CAUTION: This Welder operates on alternating current only. Connection to a power source of direct current, or other than specified on the nameplate, can result in serious damage to the transformer windings.

INSTALLATION (cont.)

FUSE REQUIREMENTS

This Welder draws an intermittent load from the power supply and is fused to permit these momentary heavy currents. Recommended fuse sizes are listed in the Fuse Chart below.

FUSE CHART		
	Fuse Size	
Line Voltage	10-120	10-124
220-230 V	60 Amp	50 Amp
440-460 V	30 Amp	25 Amp

CONNECTIONS TO POWER LINE

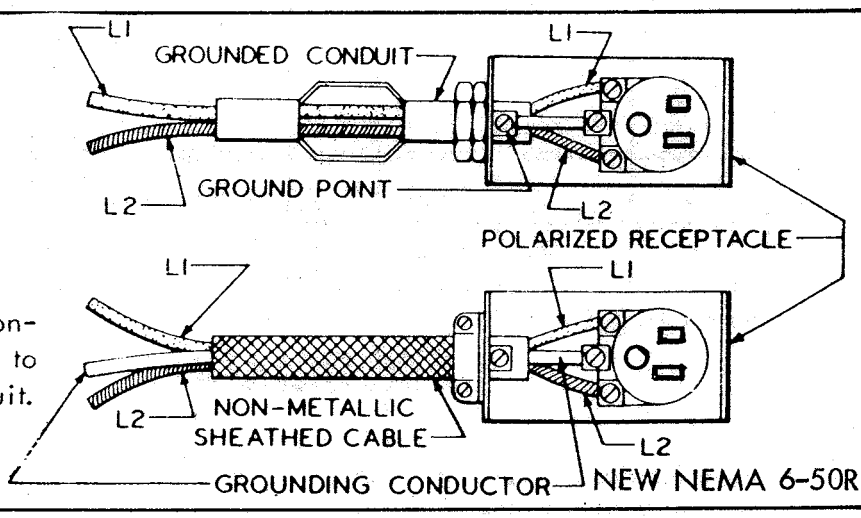
Connect single phase power lines L1 and L2 to the outside terminals of the receptacle as shown in the illustration. Connect the center terminal to a good ground (cold water pipe or ground rod). This grounds the Welder cabinet and prevents electric shock.

CAUTION: If the Welder is connected to one phase of a three phase line, do not connect the third phase wire to the ground terminal on the receptacle as this would result in a "live" cabinet. Recommended power line sizes are listed in the chart below.

POWER LINE SIZE CHART		
	Wire Size	
Line Voltage	10-120	10-124
220-230 V	8 AWG	10 AWG
440-460 V	10 AWG	12 AWG

NOTE: These welders are "UL", "CSA" approved, and meet all "NEMA" requirements for "Limited Input" type arc welders.

CONNECTIONS TO POWER LINE



NOTE: Line Leads L1 & L2 connect to single phase power or to one phase of a 2 or 3 phase circuit.

CARE OF WELDER

Dust and dirt should not be allowed to accumulate on the transformer winding as it will cause excessive heating. Use an air hose to blow accumulation from windings.

Plugs and taps are normally kept clean by the wiping action created when they are coupled together in Welder operation. However, if not used for extended periods, the plugs and taps could corrode and become dirty. In such an event, wipe surfaces with extra fine sandpaper or steel wool.

Welder cabinet surfaces may be cleaned with auto wax.

Every 6 months the cabinet should be removed and the fan motor bearings oiled with a fine grade of motor oil.

CABINET HEATING

While the Welder is in use and especially under heavy load, the strong magnetic field within the cabinet will cause it to heat up. This is a natural effect and does not necessarily mean trouble.

OPERATION

CONNECTING THE WELDER

1. Turn Welder power switch OFF, then plug power cord into the 3-wire receptacle.
2. Turn power switch ON. (Fan should be operating.)
3. Connect the electrode and work cable plugs to desired taps on the Welder panel.
4. Attach work clamp to a clean area on the work and grip the uncoated end of the welding rod in the electrode holder.

GETTING READY TO WELD

Be familiar with the basic principles of arc welding.

Use the right electrode and current

1. For general purpose welding, use AWS E-6011 Mild Steel, AC-DC welding rod.
2. The Electrode Size chart below is a guide showing which electrode sizes to use for various plate thicknesses.
3. The recommended currents for various electrode sizes are listed on the Welder nameplate.

Be Safe

1. Wear welding helmet to protect eyes and face from arc flash.
2. Wear gloves and apron to prevent burns due to welding spatter.
3. Provide adequate ventilation.
4. Be sure there is no combustible material in the work area.

WELDING

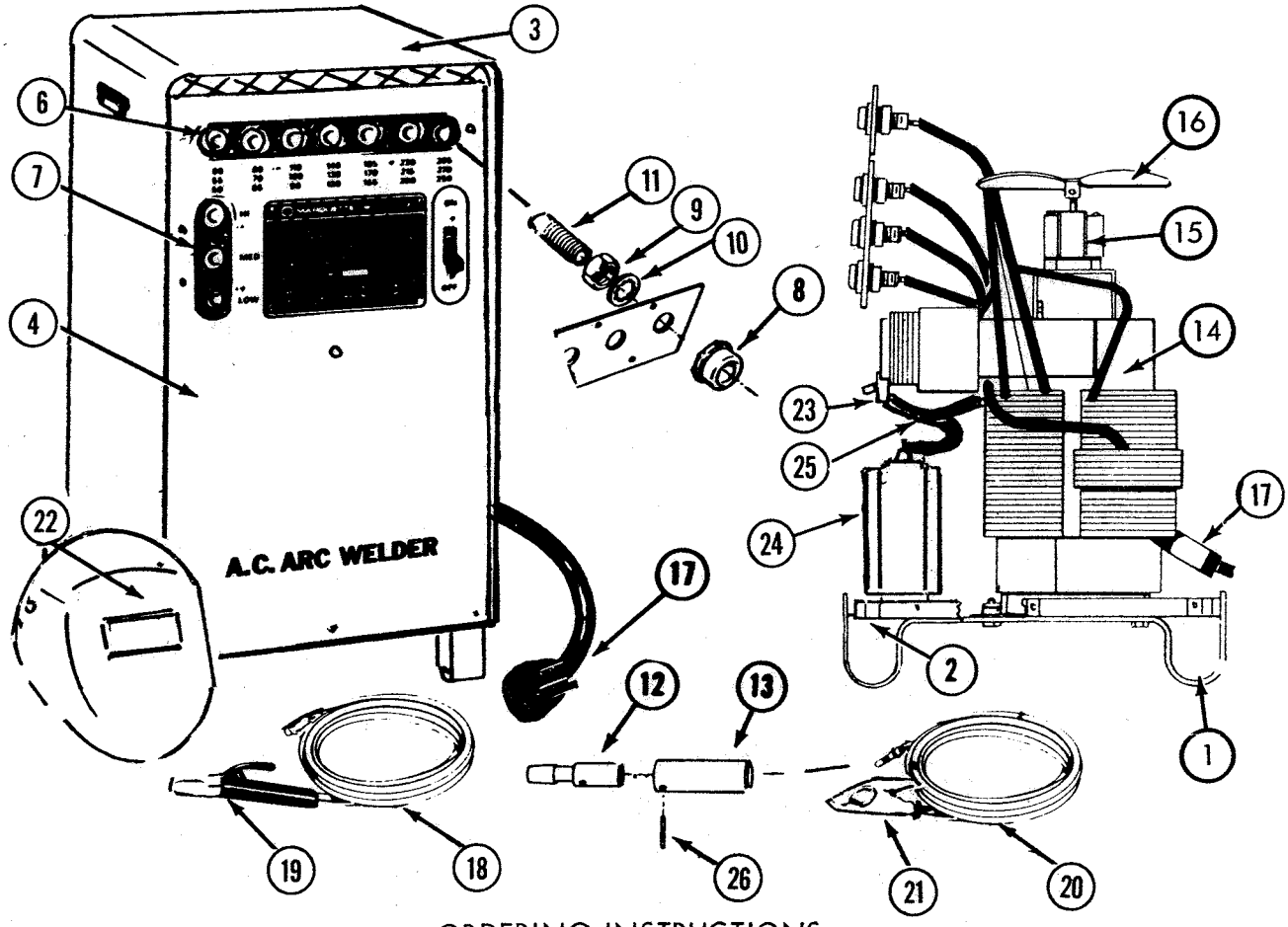
After connecting Welder and getting ready to weld, the following should be observed:

1. Never operate welder if fan motor is not running.
2. Taps should never be changed while drawing an arc or with exposed parts of the welding leads accidently touching each other. Electrode stubs left in holder can short to the work. Remove stubs and hang up electrode holder to be safe.
3. Leave welder on between short idle periods to provide proper cooling. Make sure air vents are not obstructed.

ELECTRODE SIZE CHART

Plate Thickness	Electrode Diameter (Inches)		
	Horizontal	Vertical	Overhead
20 Ga.	1/16-3/32	3/32	3/32
18 Ga.	3/32	3/32-1/8	3/32-1/8
1/16"	3/32-1/8	1/8	1/8
1/8"	1/8"	1/8	1/8
3/16"	1/8-5/32	5/32	1/8
1/4"	1/8-5/32	5/32	1/8
5/16"	5/32-3/16	3/16	5/32
3/8" & Up	3/16-1/4	3/16-1/4	5/32

PARTS LIST



ORDERING INSTRUCTIONS

To avoid delay and assure correct replacement parts, always include the following information with the parts order :

1. Model and Serial Number. 2. Part Number and Description . 3. Quantity of Parts desired.

NOTE: Do not use Item Number when ordering replacement parts.

Optional Wheel Kit 15-996 same for both Models 10 120 & 10-124.

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	617-40553	Foot Assembly	14	617-40187	Transformer & Reactor Ass'y. (Includes Terminal Posts)
2	617-40555	Base Assembly			
3	617-40554	Cabinet Wrap Assembly	15	617-46861	Fan Motor
4	619-68911	Front Panel Assembly	16	626-59883	Fan Blade
5	619-68910	Nameplate (10-120)	17	633-58232	Power Cord Set
5	619-58366	Nameplate (10-124)	18	634-67109	Electrode Cable Ass'y.
6	613-40046	Terminal Panel (7-taps)	19	685-40705	Electrode Holder
7	613-40222	Terminal Panel (3-taps)	20	634-67108	Work Cable Ass'y.
8	699-40529	Terminal Nut	21	651-58847	Work Clamp
9	699-50763	Terminal Post Nut	22	50-132	Helmet
10	699-50976	Terminal Post Lockwasher	23	627-42233	Line Switch
11	611-50765	Terminal Post	24	637-47879	Capacitor w/brkts (10-124)
12	611-71219	Cable Plug	25	634-58352	Jumper -2 required (10-124)
13	649-71222	Cable Plug Insulator	26	613-71223	Pin

WELDING
ELECTRODE CHART

Marquette	ASTM-AWS Specification No.	Description	Welding Position & Current
MILD STEEL ELECTRODES			
POSITIVE-ROD No. 105	E-6010	All-Position, General Purpose electrode for fast, D.C. welding.	F, V, OH, H DCR
RED-ROD No. 130	E-6011	Special All-Purpose electrode for all repair and maintenance welding. Best results even on dirty rusty metal . . . poor fit ups.	F, V, OH, H AC or DC
CODE-ROD No. 120	E-6012	HANDLES EASILY . . . on light sheet metal or heavy steel structures. Features Shallow Penetration with Good Fusion, and readily bridges the gaps on poor fit-up jobs.	F, V, OH, H DCS or AC
PRODUCTION-ROD No. 140	E-6013	All Purpose, All Position for fast, high quality production. GOOD APPEARING WELDS . . . work, has that "professional look", with closely rippled deposit.	F, V, OH, H AC or DC
HY-PRO ROD No. 146	E-6014	All-position high speed production electrode with good penetration and easy slag removal.	F, V, OH, H AC or DC
*MARQ-ROD No. 24	E-6024	High speed powdered metal coated contact type electrode for production welding. Self starting, permits "drag" technique for fast flawless welds of excellent appearance.	F, H Fillets AC or DC
PRESTO-ARC No. 15	None	A self starting, with easy re-starting powdered iron electrode. Smooth beads with ideal slag control.	F, H Fillets AC or DC
*PREST-ARC No. 16	None	Stainless type electrode, 19-9 used for chrome plated, stainless, high carbon or galvanized steels. Also designed for Spot Gun.	F AC or DC
LOW ALLOY STEEL ELECTRODES			
*MARQ-ROD No. 7018	Iron Powder E-7018	Powdered iron coated, General Purpose, LOW HYDROGEN electrode for welding High Sulphur Steels, Hardenable Low Alloy, High Tensile Steels, Medium and High Carbon Steels, Cold Rolled Steels and Free Machining Steels.	F, V, OH, H AC or DC
HY-TEST ROD No. 85	E-8011	All-Position Shielded-Arc electrode for welding alloy steels. High Tensile Strength 80,000 to 90,000 psi with extraordinary toughness.	F, V, OH, H AC or DC
HY-TEST ROD No. 110	E-10013	All-Position electrode for Welding High Tensile Steels. BUILD UP for HARD SURFACING . . . makes extremely strong base for hard-surfacing weld metal.	F, V, OH, H AC or DC
STAINLESS STEEL ARC WELDING ELECTRODES			
STAIN-ROD No. 308	E-308-16	A.C. or D.C. All position use on 18-8 Stainless and on 11-14% Manganese Steels.	F, V, OH, H AC or DC

Marquette	ASTM-AWS Specification No.	Description	Welding Position & Current
HARD SURFACING ELECTRODES			
BILD-UP-ROD No. 175	None	Brinell 300-435 as welded contact type electrode.	F, V, H AC or DC
MANG-ROD No. 250	None	Brinell 190-250 As Welded. Work Hardens to 500-600.	F AC or DC
*MANG-NICOL-ROD No. 255	None	Brinell 250-285 As Welded. Work Hardens to over 500.	F AC or DC
*HARD-ROD No. 285	None	Brinell 185-320 As Welded. Work Hardens to 485-500.	F AC or DC
HARD-ROD No. 450	None	Brinell 450-500 As Welded. Work Hardens to 550. For impact and abrasion.	F, V, H AC or DC
*HARD-ROD No. 455	None	Brinell 500 as Welded. Work Hardens to 575.	F, V, H AC or DC
HARD-ROD No. 550	None	Brinell 550-600 as welded. Work Hardens to 625. Excellent for high abrasion.	F, V, H AC or DC
*HARD-ROD No. 555	None	Brinell 550 as Welded. Contact type electrode.	F, V, H AC or DC
HARD-ROD No. 650	None	Rockwell C60-63 As Welded. Increase by liquid quenching.	F, V, H AC or DC
FOR WELDING CAST IRON			
BLU-ROD No. 40	STEEL CORE WIRE	All-Position, low cost, easy-to-use Cast Iron electrode for non machineable welding of cast iron.	F, V, OH, H AC or DCR
NICOL-ROD No. 44	MONEL CORE WIRE	All-Position Machineable Cast or Malleable iron electrode that may also be used for welding Cast Iron or Steel . . .	F, V, OH, H AC or DC
*NICOL-ROD No. 99	NICKEL CORE WIRE	Contact-type electrode for machineable welds in case and malleable irons. New Powdered metal coating increases arc stability. Requires less pre-weld and post-weld cleaning.	F, V, OH, H AC or DC
BRONZ-ROD No. 61	BRONZE CORE WIRE	"Arc Brazing" electrode for Brazing Cast Iron, Malleable Iron, Steel, Copper, Silicon Bronze, etc. FOR DIFFICULT JOBS . . . oil-soaked, dirty, rusty or burned cast.	F, V, OH, H AC or DCR
ALUMINUM-BRONZE No. 62	None	Use when high strength, tough ductile, corrosion resistance is needed. Welds alum. bronze, silicon bronze, malleable iron, gray cast.	F, V, H AC or DC
FOR ALUMINUM WELDING			
ALUMINUM-ROD No. 71	None	Ideal for all aluminum repairs, and fabrications. Core wire 95% alum. and 5% silicon. Produces smooth weld beads on flat, fillet or vertical jobs.	F, V, H DC (Rev. Pol.)
FOR CUTTING			
ARCUT-ROD No. 111	None	Cutting Electrode for Cutting, Gouging, Beveling, Scarfing and Piercing. Cuts through all metals.	F, V AC or DCS

* Metal powder coating, drag or contact type.