

FABRICATOR[®]
Fabricator[®] Constant Voltage,
Single Phase MIG Power Source

For the Following Specs:

- 7028-1
- 7028-2
- 7028A-2
- 7028B-1
- 7028B-2



OWNER'S MANUAL Number **430429-239**
Revised June 25, 1998

IMPORTANT: Read these instructions before installing, operating, or servicing this system.

THERMAL ARC INC., TROY, OHIO 45373-1085, U.S.A.

INTRODUCTION	1
How To Use This Manual	1-1
Equipment Identification	1-1
Receipt Of Equipment	1-1
SAFETY INSTRUCTIONS AND WARNINGS	2
DESCRIPTION OF EQUIPMENT	3
General	3-1
Controls And Connections	3-1
Volt Amp Curves	3-6
Duty Cycle	3-7
INSTALLATION	4
Location	4-1
Internal Wiring Check	4-1
Connecting Welding Machine To Line Voltage	4-1
Grounding	4-2
Welding Leads	4-3
Wire Feeder Compatibility	4-4
OPERATION	5
MAINTENANCE	6
Lubrication	6-1
Inspection And Cleaning	6-1
TROUBLESHOOTING	7
PARTS LIST	8
Equipment Identification	8-1
How To Use This Parts List	8-1
How To Select Recommended Spares	8-1
DIAGRAMS	

INTRODUCTION

How To Use This Manual

This Owner's Manual usually applies to just the underlined specification or part numbers listed on the cover. If none are underlined, they are all covered by this manual.

Throughout this manual, the words **WARNING**, **CAUTION**, and **NOTE** may appear. Pay particular attention to the information provided under these headings. These special annotations are easily recognized as follows:

WARNING gives information regarding possible personal injury. Warnings will be enclosed in a box such as this.

CAUTION refers to possible equipment damage. Cautions will be shown in bold type.

NOTE offers helpful information concerning certain operating procedures. Notes will be shown in italics.

Equipment Identification

The unit's identification number (specification or part number), model, and serial number usually appear on a nameplate attached to the control panel. In some cases, the nameplate may be attached to the rear panel. Equipment which does not have a control panel such as gun and cable assemblies are identified only by the specification or part number printed on the shipping container. Record these numbers for future reference.

Receipt Of Equipment

When you receive the equipment, check it against the invoice to make sure it is complete and inspect the equipment for possible damage due to shipping. If there is any damage, notify the carrier immediately to file a claim. Furnish complete information concerning damage claims or shipping errors to Thermal Arc, Order Department, 2200 Corporate Drive, Troy, Ohio 45373-1085. Include all equipment identification numbers as described above along with a full description of the parts in error.

Move the equipment to the installation site before uncrating the unit. A lifting eye extends through the top of the cabinet on most equipment to facilitate handling with a hoist or crane. Use care to avoid damaging the equipment when using bars, hammers, etc., to uncrate the unit.

WARNING: Falling machine due to lifting eye failure may cause death or serious injury.

- Lifting device may fail when overloaded.
- This lifting device is designed to lift the power source **ONLY**. If the machine is equipped with a trailer or accessories over 100 pounds, **DO NOT LIFT** by lifting eyes.
- Avoid sudden jerks, drops, or swinging.
- Check lifting device components visually for looseness and signs of metal fatigue.
- Before changing any hardware, check grade and size of bolts, and replace with bolts of equal or higher size and grade.

Additional copies of this manual may be purchased by contacting Thermal Arc at the address given above. Include the Owner's Manual number and equipment identification numbers.

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DESCRIPTION OF EQUIPMENT

General

The Fabricator[®] machine is a single-phase, constant-voltage welding power source. The power source provides a volt-ampere characteristic which is basically flat, with a slight droop. The power source is used with semiautomatic wire feeders for Gas-Metal Arc Welding (GMAW) process or Flux-Core Arc Welding (FCAW) process.

Controls and Connections

See Figure 3-1

1. CONTROL POWER "ON" INDICATOR Light — Indicates when the power is ON.
2. CONTROL POWER SWITCH — The toggle switch energizes the 115 V AC control circuit in the power source.
3. WIRE FEEDER RECEPTACLE — 5-pin or 19-pin receptacle for connecting wire feeder to power source.
4. FUSE — 115 V, 6.25 AMP — Protects the duplex 115-volt auxiliary outlet and control circuitry.
5. COARSE VOLTAGE CONTROL — This control permits the selection of four welding voltage ranges (MIN-20 volts, 18-25 volts, 23-29 volts, 27-MAX. volts) as marked on the panel.
6. FINE VOLTAGE CONTROL — The nine-position Voltage Control Switch provides selection of welding voltage from MIN. (position 1) to MAX.

(position 9) within each (MIN-20 volts, 18-25 volts, 23-29 volts, 27-MAX. volts) Coarse range.

If the welding is to be performed in the MIN. range, No. 5 position on the fine voltage control setting provides a good starting point. Weld current (determining the amount of penetration) can be adjusted by means of the WIRE FEED SPEED Control on the Wire Feeder attached to the welding machine.

NOTE: The Wire Feed Speed Control (on the Wire Feeder) provides a means of determining the rate of wire feed rate into the puddle. Turning the Wire Feed Speed Control knob in a clockwise direction increases the feed rate of the wire and counterclockwise decreases the feed rate. See the Owner's Manual for the Wire Feeder for details.

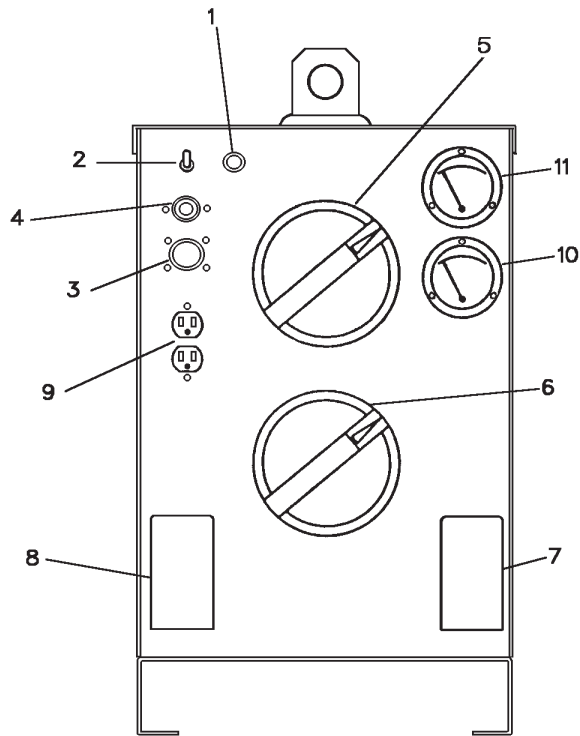
7. POSITIVE TERMINAL (+) — Serves as connection point for the welding lead to the workpiece when straight polarity is used.
8. NEGATIVE TERMINAL (–) — Serves as connection point for the electrode lead when straight polarity is used.
9. WIRE FEEDER 115-VOLT RECEPTACLE — Provides auxiliary power for the Wire Feeder. Fused for 6 amperes.
10. VOLTMETER — Indicates the OCV or welding voltage of the arc, if welding arc is established.
11. AMMETER — Indicates the amperage of the welding arc, when an arc is established.

DESCRIPTION OF EQUIPMENT

Spec No.	Output Conditions	230/460 Volt Input	200-208 Volt Input
7028-1	Rated Output Amperage	300 A	300 A
	Rated Output Voltage	32 V	32 V
	Rated Output Duty Cycle	60%	60%
	Maximum Open Circuit Voltage	60 V	54 V
	Minimum Output Amperage	40 A	40 A
	Minimum Output Voltage	15 V	15 V
	Maximum Output Amperage	375 A	300 A
	Maximum Output Voltage	34 V	32 V
	Duty Cycle at Maximum	40%	60%
	Auxiliary Power	115 V AC .7 kVA	115 V AC .7 kVA

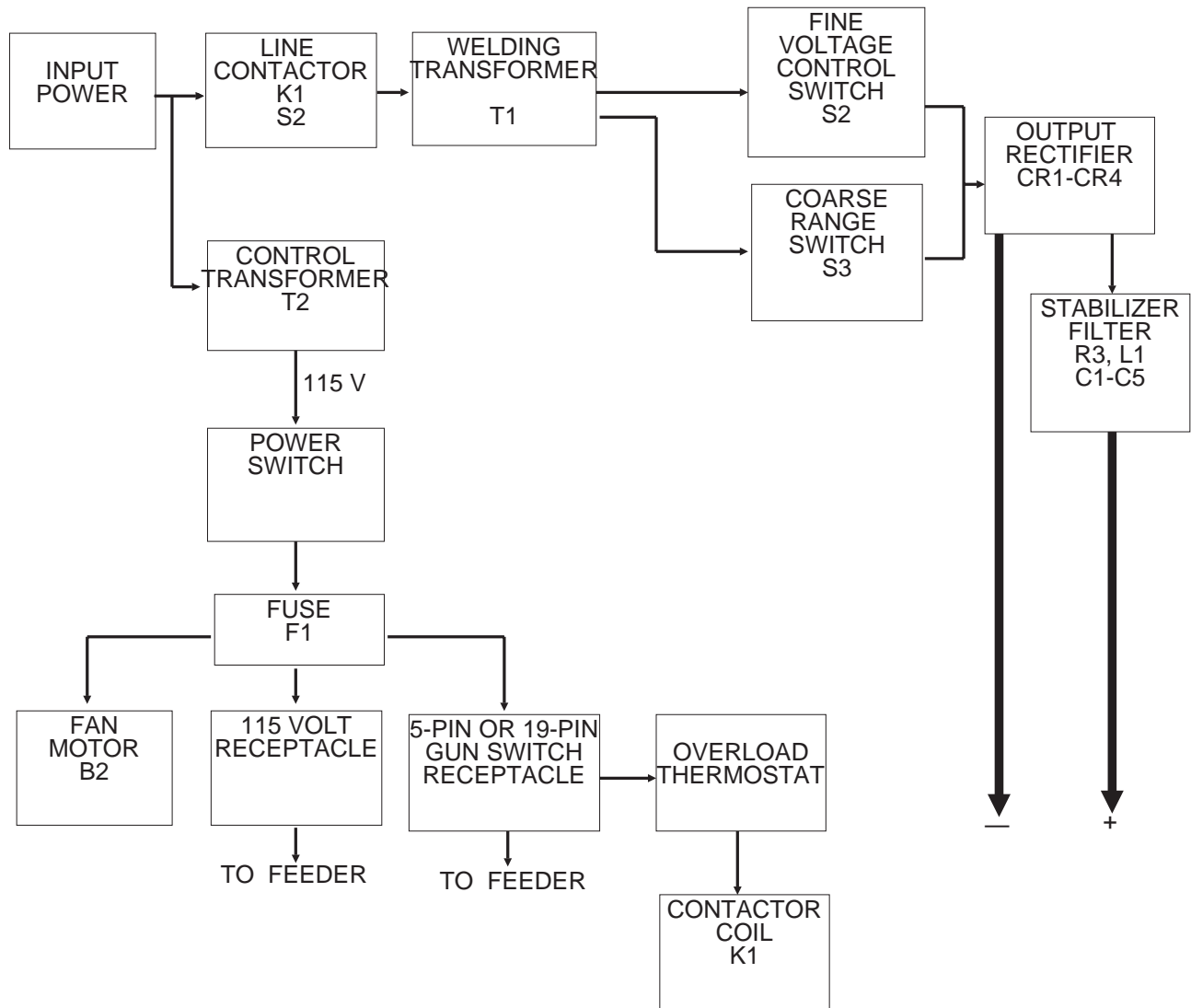
Spec No.	Output Conditions	200/230/460/575 Volt Input
7028-2 & 7028A-2 & 7028B-1 & 7028B-2	Rated Output Amperage	300 A
	Rated Output Voltage	32 V
	Rated Output Duty Cycle	60%
	Maximum Open Circuit Voltage	60 V
	Minimum Output Amperage	40 A
	Minimum Output Voltage	15 V
	Maximum Output Amperage	375 A
	Maximum Output Voltage	34 V
	Duty Cycle at Maximum	40%
	Auxiliary Power	115 V AC .7 kVA

Table 3-1

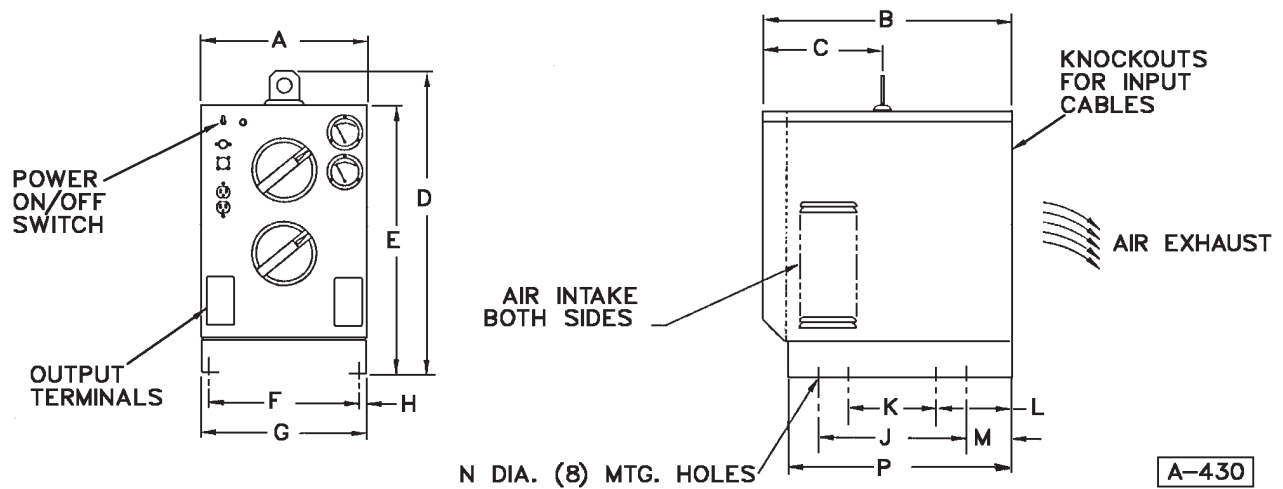


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Figure 3-1 Control Panel



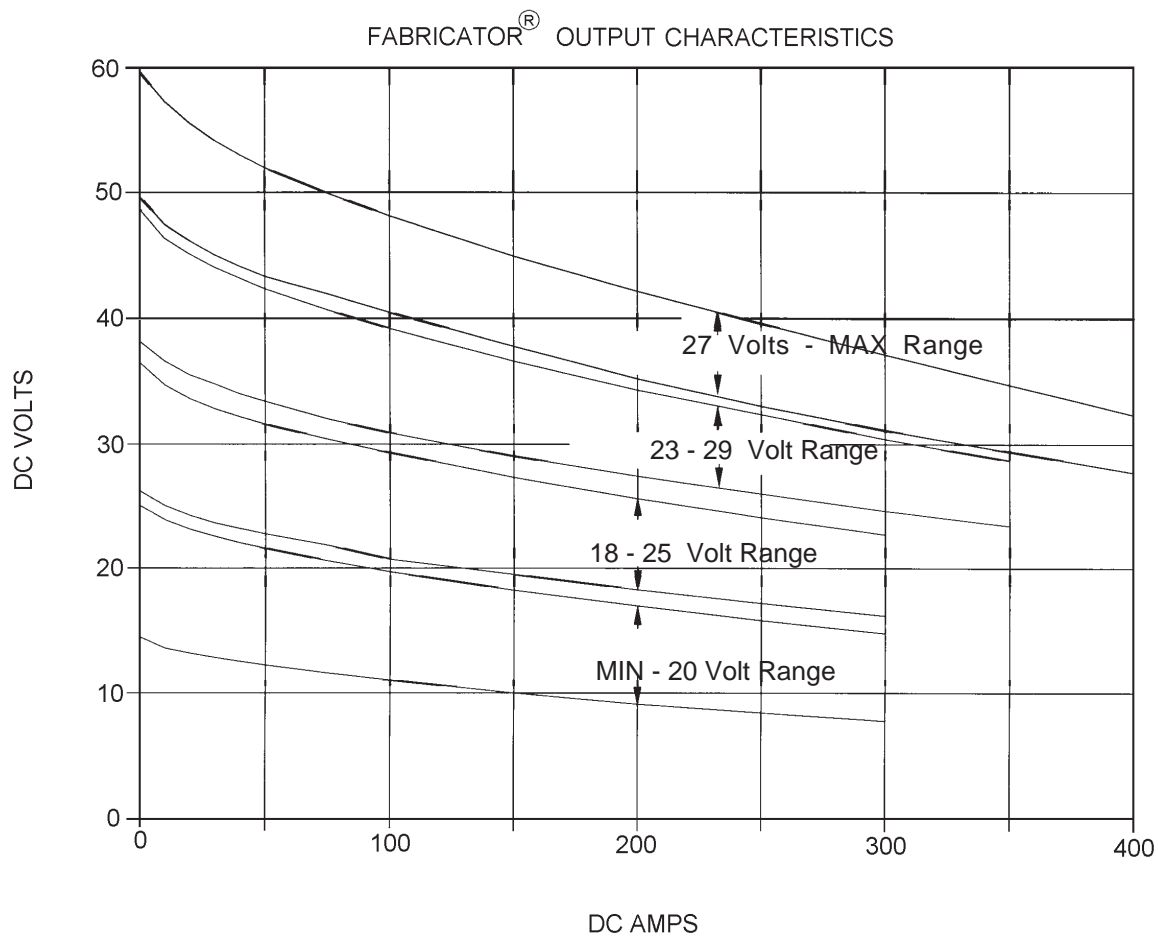
Functional Block Diagram



Net Weight — 265 Lbs. (120 kg.)

A 17 in. (432 mm)	H 3/4 in. (19 mm)
B 26-9/16 in. (675 mm)	J 15 in. (381 mm)
C 13-1/8 in. (333 mm)	K 9 in. (229 mm)
D 30-1/4 in. (768 mm)	L 7-1/2 in. (191 mm)
E 27-1/4 (692 mm)	M 4-1/2 in. (114 mm)
F 15-1/4 in. (387 mm)	N 29/64 in. (12 mm)
G 16-3/4 in. (425 mm)	P 24 in. (610 mm)
	M 29-1/8 in. (738 mm)

Figure 3-2 Outline Dimensions



NOTE: These volt amp curves were taken at input voltage of 230 volts. The DC volts are lower for the input voltage of 200-208 volts (for Spec 7028-1 only). See Table 3-1.

Volt Amp Curves

Volt Amp Curves

Duty Cycle

(Figure 3-3)

Duty cycle is the percentage of each ten-minute period of time that the welding machine may be operated under rated load conditions. For example,

a duty cycle of 60% means that the machine can be operated at rated load for an average of 6 minutes of each 10 minute period of operation. During the remaining 4 minutes, the machine must idle to permit proper cooling. Figure 3-3 enables the operator to determine the duty cycle at various welding amperages.

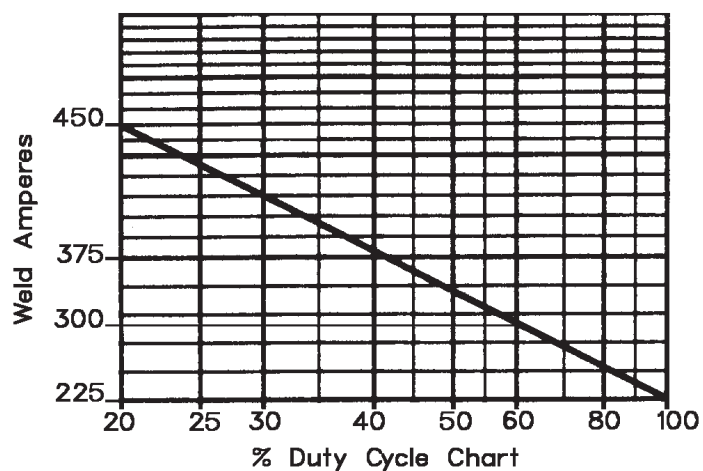


Figure 3-3 Duty Cycle Chart

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INSTALLATION

Location

For best operating characteristics and longest unit life, take care in selecting an installation site. Avoid locations exposed to high humidity, dust, high ambient temperature, or corrosive fumes. Moisture can condense on electrical components, causing corrosion or shorting of circuits. Dirt on components helps retain this moisture.

Adequate air circulation is needed at all times in order to assure proper operation. Provide a minimum of 12 inches (305 mm) of free air space at both front and rear of the unit. Make sure that the ventilator openings are not obstructed.

Internal Wiring Check

Refer to the product identification plate (nameplate) on the welding machine's control panel to determine the power input voltages and frequency at which it will be operated.

Remove cabinet top for access to LINE VOLTAGE CHANGEOVER circuitry. Check line voltage connections against instructions on VOLTAGE CHANGEOVER DIAGRAM supplied with this manual. If necessary, rearrange internal wiring and/or link connections.

Connecting Welding Machine to Line Voltage

The input power should be connected to the unit through a fused disconnect switch, or other suitable disconnecting means furnished by the user. A hole is provided in the rear panel of the machine, near to the input connections, for the entry of the input conductors.

Connect the single-phase line leads to terminals L1 and L2 on the line contactor inside the welding machine cabinet.

Connect the ground wire to the grounding stud provided on the chassis near the input terminals.

WARNING: It is of the utmost importance that the chassis be connected to an approved electrical ground to prevent accidental shocking. Take care not to connect the ground wire to any of the primary leads.

Recheck all connections to make sure that they are tight, well insulated, and that the proper connection has been made.

CAUTION: When the machine is in operation, make sure that the top is in place, and all panels securely fastened. Proper flow of cooling air must be directed through the unit to avoid overheating. Make no changes or adjustments not covered in this manual, as modification might void the manufacturer's warranty.

DANGER: ELECTRIC SHOCK CAN KILL. Open the disconnect switch, or breaker, and determine that no voltage is present, before connecting wires between welding machine and power supply.

Spec. No.	Line Volts	Line Amps	Phase	Hz.	kW
7028-1	200/230/460	77.5/70.2/34.5	1	50/60	16.1
7028-2	200/230/460/575	77.5/70.2/34.5/28.5	1	50/60	16.1
7028A-2	200/230/460/575	77.5/70.2/34.5/28.5	1	50/60	16.1
7028B-1	200/230/460/575	77.5/70.2/34.5/28.5	1	50/60	16.1
7028B-2	200/230/460/575	77.5/70.2/34.5/28.5	1	50/60	16.1

Table 4-1 Input Voltage Data

430429-239
INSTALLATION

Line Volts	Full Load Amps	Approx. Line Fuse Rating	Copper Line Wire Size*		Copper Grounding Conductor Min. Size
			In Conduit	Flexible Cable	
200	77.5	110	#6	#6	#6
230	70.2	110	#6	#6	#6
460	34.5	60	#8	#8	#8
575	28.5	50	#8	#8	#8

*Input conductor sizes are based on allowable ampacities of insulated copper conductors, with not more than three conductors in a raceway or cable.

*Wire size calculated for 60% duty cycle.

Table 4-2 Recommended Wire and Fuse Size Table

CAUTION: The method of installation, conductor size, and overcurrent protection shall conform to the requirements of the local electrical code, the National Electrical Code, or other national codes, as applicable. All installation wiring and machine reconnection shall be done by qualified persons.

Table 4-2 provides minimal information for selection of line conductors, fuses, and the equipment grounding conductor. This information is from the National Electrical Code NFPA 70-1981 Edition. Install this equipment per the latest edition, available from the National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210. See CAUTION above.

Grounding

The frame of this welding machine should be grounded for personnel safety. Where grounding is mandatory under state or local codes, it is the responsibility of the user to comply with all applicable rules and regulations. Where no state or local codes exist, it is recommended that the National Electrical Code be followed. Refer to Table 4-2 for wire sizes.

The work or work table must also be grounded by using a conductor attached to a driven ground or water pipe as described below. See Figures 4-1, 4-2, and 4-3.

The requirements and recommendations for grounding apply to rubber tire mounted equipment.

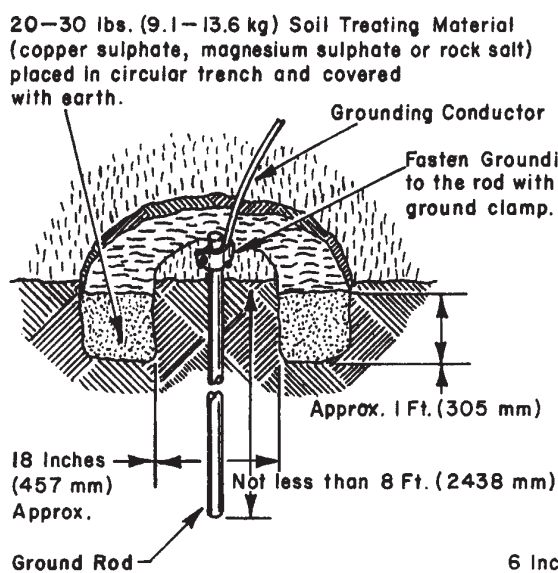


Figure 4-1

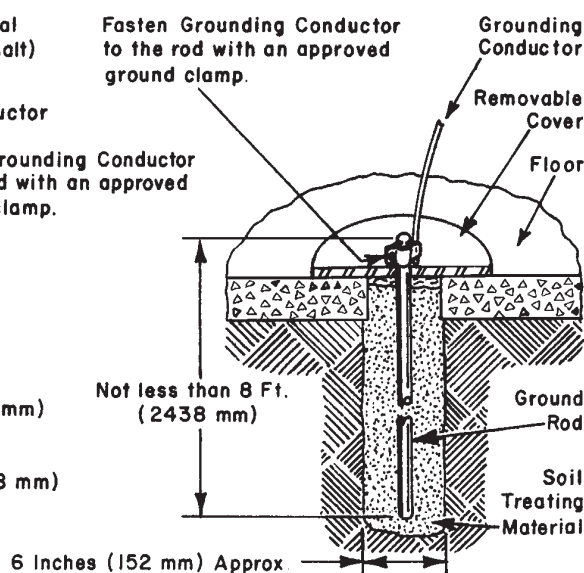


Figure 4-2

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In addition to the usual function of protecting personnel against the hazard of electrical shock due to fault in the equipment, grounding serves to discharge the static electrical charges which tend to build up on the surfaces of tire mounted equipment. These static charges sometimes cause painful shock to personnel, and in some instances, lead to the erroneous conclusion that an electrical fault exists in the equipment.

Use an input-power cable assembly which includes a grounding conductor to connect this equipment to the input power supply. When included in the cable assembly, the grounding conductor will be green or green with a yellow stripe, or bare. Connect the grounding conductor to the equipment grounding terminal, if provided, and if not, to the equipment frame, taking care to see that good electrical contact

is made between conductor and frame. Connect the other end of the grounding conductor to the system ground.

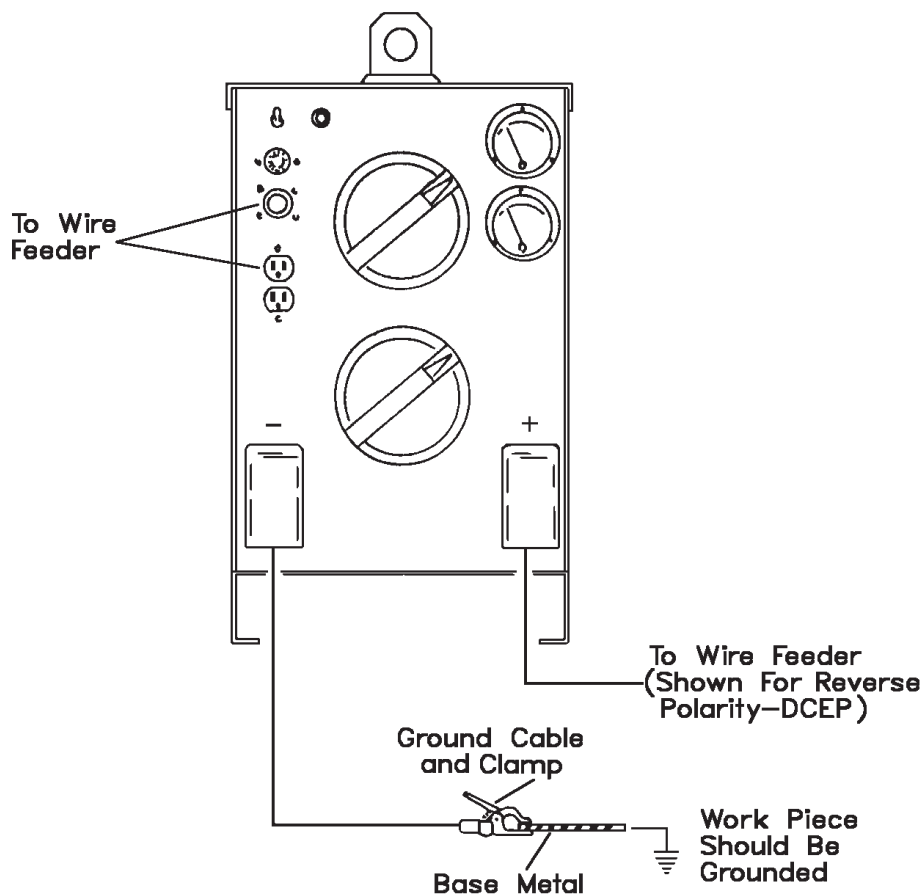
If, for any reason, an input cable which does not include a grounding conductor is used, the equipment may be grounded with a separate conductor if permitted under applicable code, or by special permission of the jurisdictional body responsible for enforcement of the code. Minimum size and color coding requirements must be in accordance with any applicable state or local code, or the National Electrical Code.

If metallic armored cable or conduit is used, the metal sheathing or conduit must be effectively grounded as required by state or local code, or the National Electrical Code.

Welding Current Amperes	TOTAL LENGTH OF LEAD CIRCUIT IN FEET (AND METERS) (ELECTRODE LEAD PLUS WORK LEAD)				
	50 Feet (15.2 M)				
100	#4	#4	#2	#1	#1
150	#4	#2	#1	#1/0	#2/0
200	#2	#1	#1/0	#2/0	#3/0
250	#1	#1	#2/0	#3/0	#4/0
300	#1/0	#1/0	#3/0	#4/0	-
350	#1/0	#2/0	#3/0	#4/0	-
400	#2/0	#2/0	#4/0	-	-
450	#2/0	#2/0	#4/0	-	-

Table shows welding lead sizes recommended for various lengths of leads. Footage shown includes complete welding (secondary) circuit, both electrode and work leads. Lead size shown is for 90°C insulation, 30°C (86°F) ambient, and not over 4.5 volts lead drop.

Table 4-3 Welding Leads



A-435

NOTE: To change polarity, reverse connections on power output terminals on power

Figure 4-3 Installation Diagram

Welding Leads

Use Table 4-3 for selection of the proper size copper welding leads.

Wire Feeder Compatibility

This power source is compatible with the following wire feeders:

1. Model 2400
2. Model 2410

3. Model 2200
4. Model 2210
5. Model 17
6. Model Hefty[®] (CC/CV Feeder)
7. Porta-Feed[®] 17

Follow the instructions in the wire feeder operational manuals for correct operation and installation.

OPERATION

Before operating this unit, be sure that all installation instructions have been accomplished. A thorough knowledge of system cleaning as instructed in Maintenance chapter is required for consistently satisfactory results. Also observe all applicable safety warnings listed in the Safety Instructions and Warnings chapter included in this manual and related instruction manual.

The operating instructions in this manual pertain only to the Fabricator® welding machine, but reference is made to other items of equipment not included as part of the Fabricator®. Before operating, consult technical manuals related to specific wire (electrode) feeders and welding guns usually used with this unit.

1. Perform all preset operations on welding gun and wire feeder.

10. Readjust any controls as necessary.

CAUTION: Once a welding arc is established, power should not be removed from the welding machine, and the CON-

11. To terminate welding, proceed in the following manner:

a. Deactivate the gun switch. Gas will stop flowing.

b. Turn off the gas at source.

2. Check installation (refer to Installation Diagram, Figure 4-3) to be certain all connections are tight and proper controls, gas, and torches are installed.

3. Set Coarse Voltage Control on the unit to the desired welding voltage range.

4. Set Fine Voltage Control to mid-range, if position is not known.

5. Turn on gas supply at gas cylinder.

6. Turn control power switch to ON position. The cooling fan should now start.

7. Adjust the gas supply to the desired flow rate.

8. Place the welding gun in proximity of the work.

9. Activate the gun switch. Open circuit voltage will appear, welding gas will flow, and the arc will initiate.

TROL POWER ON/OFF SWITCH should not be turned OFF.

c. Turn the CONTROL POWER Switch to OFF position.

d. Place the fused disconnect switch in the OPEN or OFF position.

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MAINTENANCE

Lubrication

The fan motor incorporates sleeve bearings. You can expect the life of this motor to exceed 50,000 hours without relubrication. Periodically cleaning the motor and lubricating the bearings will extend the life of the motor. The following table will furnish a recommended guide as to the frequency of this lubrication if desired.

Type of Duty	Lubrication Interval
Light (up to 6 hrs./day)	Every 12 mo.
Moderate (7 to 15 hrs./day)	Every 6 mo.
Heavy (16 to 24 hrs./day)	Every 3 mo.

NOTE: Apply 1-12 drops of 20W non-detergent oil at each end of bearing.

Inspection and Cleaning

For uninterrupted, satisfactory service from this welding machine, it is necessary to keep the machine clean, dry, and well ventilated. At least every three months, or more often as necessary, wipe and

blow out all dirt from the machine's internal components, with air pressure of not over 25 psi (172 kPa). Be sure to wipe the fan blades clean.

Check and tighten all electrical connections as necessary to eliminate unnecessary losses and to avoid subsequent trouble from overheating or open circuits. Check for broken wiring or damaged insulation on wiring.

WARNING: Disconnect line voltage from the unit before attempting any servicing inside unit. Turn off fused disconnect switch that supplies power to welding machine, and remove its fuses.

CAUTION: The flow of air through the welding machine is carefully directed by baffles. Never operate the welding machine with any of the side or top panels removed or open, as serious damage to the rectifiers might result.

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TROUBLESHOOTING

The following chart contains information which can be used to diagnose and correct unsatisfactory operation or failure of the various components of the welding machine. Each symptom of trouble is followed by a list of probable causes

and the procedure necessary to correct the problem.

See Wire Feeder or Welding Gun Manual for troubleshooting information on the Wire Feeder or the Welding Gun.

WARNING: Be sure that all primary power to the machine has been externally disconnected. Open the wall disconnect switch or circuit breaker before attempting inspection or work inside of the power supply.

Troubleshooting Guide

Welding machine will not start.

Power switch OFF

Place power switch in ON position.

Power lines dead

Check voltage.

Broken power lead

Repair.

Wrong line voltage

Check power supply.

Incorrect input power connections at welding machine

Check connections against wiring diagram.

Open circuit to power switch or control transformer

Repair. Check for broken wire or loose connections at terminals.

Fuse blown — NOTE: Pilot light stays ON if fuse blows.

Remedy cause. Replace fuse.

Line contactor fails to close.

Defective coil

Replace.

Mechanical obstruction on contactor

Remove.

Broken leads at line contactor

Repair.

Contactors chatters.

Line leads too small

Use larger leads.

Low line voltage

Check line voltage.

Contactor operates and blows link fuses.

Wrong line voltage

Check nameplate of welding machine for line voltage to use; check line voltage.

Links on voltage changeover board incorrectly connected

Check wiring diagrams for link positions; connect links correctly.

Line fuse too small

Install proper size fuse.

Short circuit in primary connections

Remove short circuit.

Transformer failed

Replace transformer.

Unit delivers welding voltage but soon shuts down.

Welding machine overloaded

Reduce load, overload can be carried only for a short time.

Duty cycle too high

Do not operate continually at overload currents.

Power leads too long or too small in cross section

Replace with larger diameter cable.

Ambient temperature too high

Operate at reduced loads when temperature exceeds 104°F (40°C).

Ventilation blocked

Check air intake and exhaust openings to be unobstructed.

Fan not operating

Check bearings, disconnect leads and apply motor nameplate voltage to test.

Contactor operates, but welding machine will not deliver welding current, and open circuit voltage is present at the output when gun switch is depressed.

No ground connections at work

Make connections.

Welding leads not connected

Make connections.

Fan not operating.

Motor failed

Replace or repair.

Broken lead or connection to fan motor

Repair wiring.

Blown fuse on front panel of welding machine

Replace; 115-volt circuit may be overloaded.

Operator gets shock when welding machine case is touched.

Case of welding machine not grounded

Ground welding machine case.

Operator gets shock when work is touched.

Workpiece is not grounded

Ground workpiece.

Contactors fails to open.

Contactors contacts sticking

Clean contacts or replace contactor.

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PARTS LIST

Equipment Identification

All identification numbers as described in the Introduction chapter must be furnished when ordering parts or making inquiries. This information is usually found on the nameplate attached to the equipment. Be sure to include any dash numbers following the Specification or Assembly numbers.

How To Use This Parts List

The Parts List is a combination of an illustration (Figure Number) and a corresponding list of parts which contains a breakdown of the equipment into assemblies, subassemblies, and detail parts. All parts of the equipment are listed except for commercially available hardware, bulk items such as wire, cable, sleeving, tubing, etc., and permanently attached items which are soldered, riveted, or welded to another part. The part descriptions may be indented to show part relationships.

To determine the part number, description, quantity, or application of an item, simply locate the item in question from the illustration and refer to that item number in the corresponding Parts List.

An "Application Code" is used to distinguish parts that are applicable only to certain Specifications and/or Assemblies. This code is found in the rightmost column of the Parts List. If an item in the Parts

List applies to all Specifications or Assemblies, the word "ALL" will be in the Application Code column. Refer to the following list to determine the appropriate Application Codes for the Specifications or Assemblies covered by this manual. If only the assembly or specification number is listed, the use of an Application Code does not apply to this manual.

How To Select Recommended Spares

The first two columns of the Parts List are used to show the recommended quantity of parts which are typically required for spares or replacement purposes. The quantities under Class 1 are for parts that are consumed or that may need replacement in two years or less depending on operating hours. Class 2 quantities are for parts that may need replacement under unusual service conditions or additional operating hours. These are suggested quantities based on expected usage or the minimum package quantity. Class 1 spares are repeated under Class 2 but the quantities may be larger to allow for additional operating hours. Contact your equipment dealer for assistance in establishing the spare parts program best suited for your needs.

SPECIFICATION NUMBER

7028-1

7028-2

7028A-2

7028B-1

7028B-2

APPLICATION CODE

A

B

C

D

E

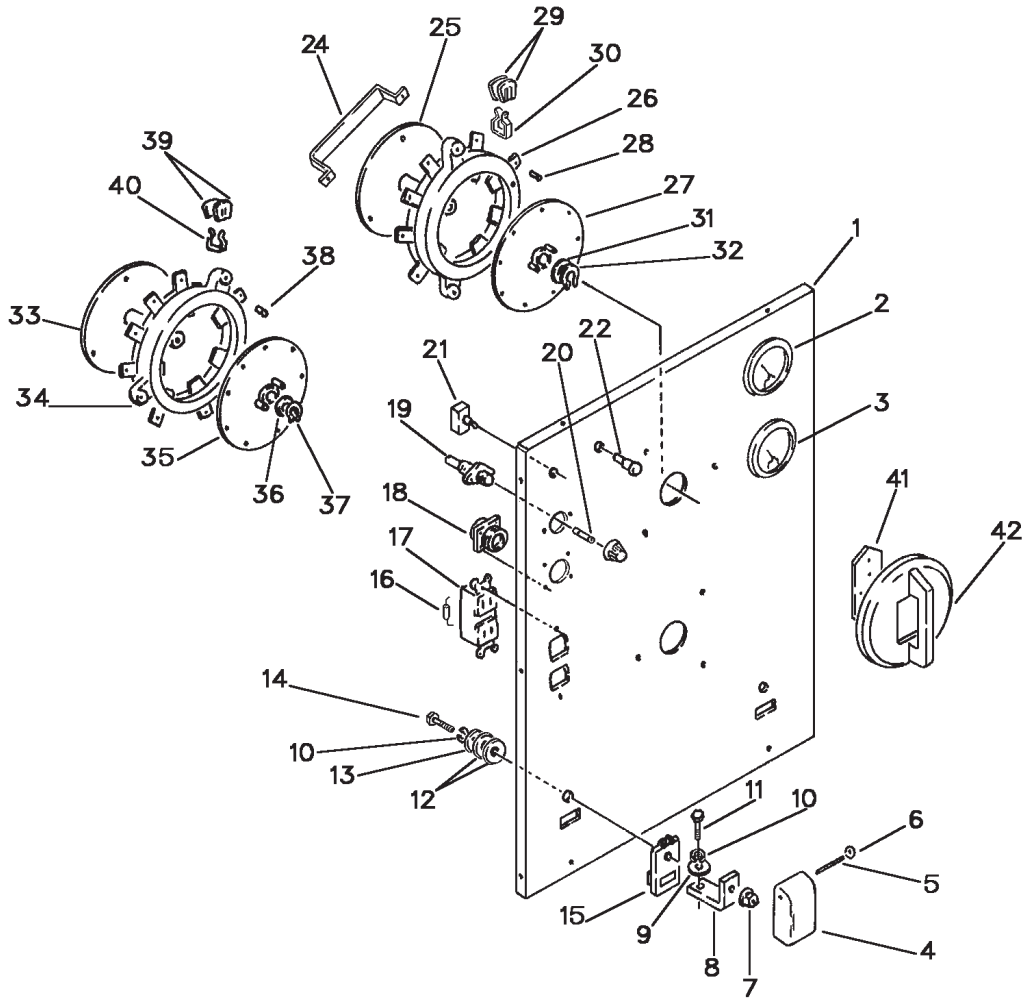


Figure 8-1 Control Panel

Parts List for Figure 8-1

Quantity	Item	Part	Description	Qty	Application	
Recomm.	No	Number		per	Code	
Spares				Assy		
Class 1	Class 2					
		203065-1	Panel - Front, Assembly	1	AB	
		203065-3	Panel - Front, Assembly	1	C	
		830144-1	Panel - Front, Assembly	1	D	
	1	203064	. Panel - Control, Front	1	AB	
		203064-1	. Panel - Control, Front	1	C	
		830145-1	. Panel - Control, Front	1	D	
1	2	400641-6	. Ammeter - 0-400	1	All	
1	3	400642-3	. Voltmeter	1	All	
	4	357655	. Cover - Cable Stud	2	All	
	5	No Number	. Pin - 1/8 x 2-1/4	2	All	
	6	No Number	. Nut - Push, Steel	4	All	
	7	No Number	. Nut - 1/2-13, Hex, Flg., ST.	2	All	
	8	5CW-974	. Bus - Cable Stud	2	All	
	9	No Number	. Washer - ST. 1/2	2	All	
	10	No Number	. Washer - LK, ST. 1/2	4	All	
	11	No Number	. Screw - 1/2-13 x 1, HHC, ST.	2	All	
	12	No Number	. Washer - Insulator	4	All	
	13	No Number	. Washer - FL. ST. 1/2	2	All	
	14	No Number	. Screw - 1/2-13 x 1-3/4, HHC, ST.	2	All	
	15	357654	. Bushing - Insulator	2	All	
	1	16	366826-1	. Suppressor - Receptacle	1	All
		17	402670	. Receptacle - Duplex, 3 Wire	1	All
		18	16DA-4107	. Receptacle - 5 Pin	1	ABC
			400254	. Receptacle - 19 Pin	1	D
	1	19	402151	. Holder - Fuse	1	All
3	5	20	W-10502-11	. Fuse - Dual Element, 6-1/4 Amp	1	All
	1	21	405365-1	. Switch - Toggle, SPST	1	All
	1	22	402421-2	. Light - Indicator	1	All
		23		Deleted		
		*	369991-10	. Range Switch - Assembly	1	All
		24	203130	. . Bar - Bus	1	All
		25	SW-223	. . Plate - Back, Mounting	1	All
		26	430548-6	. . Ring - Contact	1	All
		27	203098	. . Plate - Front, Assembly	1	All
		28	494839	. . Catch - Friction Ball	2	All
			366798	. . Contact - Movable, Assembly	1	All
		29	SW-218A	. . . Contact	2	All
		30	410541	. . . Spring	1	All
		*	For replacement, order 369991-11 Switch Without Cables and Bus			
		—	Not Illustrated			

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Parts List for Figure 8-1

Quantity		Item	Part	Description	Qty	Application
Recomm.	Spares					
Class 1	Class 2	No	Number		per	Code
					Assy	
		31	SW-167-1	. . Washer - Thrust	1	All
		32	16DA-4249-8	. . Ring - Snap	1	All
		—	203089	. . Summary - Cable	1	All
			369991	Switch - Range Assembly (Fine Range)	1	All
		33	SW-223	. Plate - Back Mounting	1	All
		34	430548-3	. Ring - Contact, Assembly	1	All
		35	369992	. Plate - Front, Assembly	1	All
		36	SW-167-1	. Washer - Thrust	1	All
		37	16DA-4249-8	. Ring - Snap, External	1	All
		38	494839	. Catch - Friction Ball	3	All
			366798	. Contact - Movable Assembly	1	All
		39	SW-218A	. . Contact	2	All
		40	410541	. . Spring	1	All
		—	903914-1	. Cap - Connector	1	ABC
		—	903914-2	. Cap - Connector	1	D
		41	493332	Plate - Handle, Range Switch	2	AB
			493332-1	Plate - Handle, Range Switch	2	CD
		42	408811	Handle - Range Switch	2	All

— Not Illustrated

430429-239
PARTS LIST

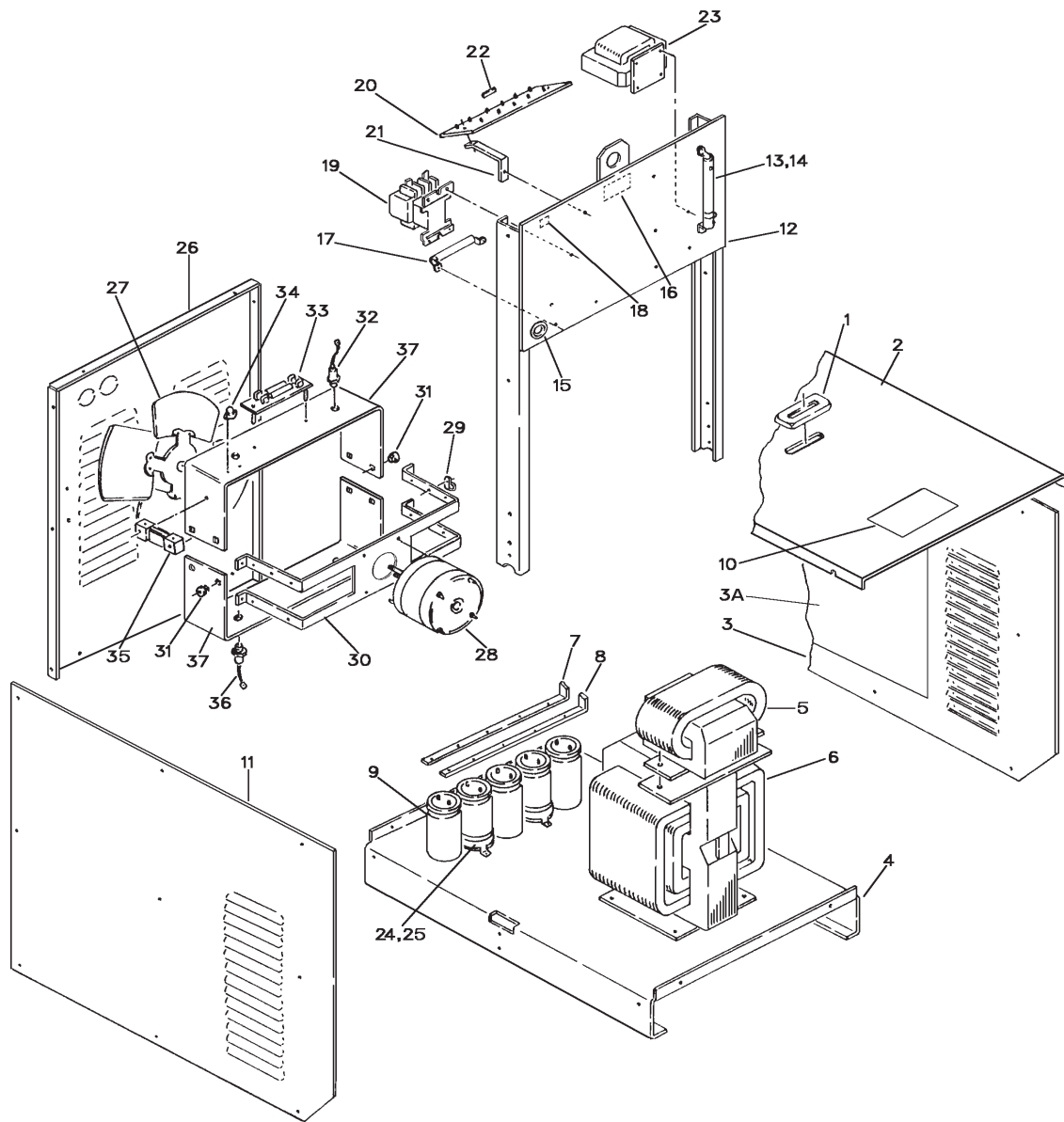


Figure 8-2 Frame Section

Parts List for Figure 8-2

Quantity		Item No	Part Number	Description	Qty per Assy	Application Code
Recomm. Spares	Class 2					
		1	12CW-2170	Grommet - Lifting Yoke	1	All
		2	203061	Top	1	AB
			203061-1	Top	1	CD
			203061-2	Top	1	E
		3	203062	Panel - Side, Right	1	AB
			203062-1	Panel - Side, Right	1	CD
			203062-3	Panel - Side, Right	1	E
		3A	830124	. Label - Voltage Changeover	1	All
		4	203066	Base	1	AB
			203066-1	Base	1	CDE
		5	203082	Reactor - Filter	1	All
		6	203093	Transformer	1	A
			203153	Transformer	1	BCDE
			203131-1	Capacitor - Assembly	1	All
		7	203095-1	. Bus - Capacitor, Positive	1	All
		8	203095-2	. Bus - Capacitor, Negative	1	All
		9	407622-1	. Capacitor	5	All
		10	204036	Label - Precautionary	1	All
		11	203063	Panel - Side, Left	1	AB
			203063-1	Panel - Side, Left	1	CD
			203063-3	Panel - Side, Left	1	E
			203071	Yoke - Lifting, Assembly	1	A
			203071-3	Yoke - Lifting, Assembly	1	CDE
			203071-1	Yoke - Lifting, Assembly	1	B
			830142-1	Yoke - Lifting, Assembly	1	DE
		12	203070	. Yoke - Lifting Assembly	1	AB
			203070-1	. Yoke - Lifting Assembly	1	CDE
	1	13	W-2974A	. Resistor - Variable, 100 W (1/2 Ohm)	1	All
		14	400078	. Bracket - Mounting Resistor	2	All
		15	405362-2	. Bushing - Snap	1	All
		16	408891	. Label - Ground	1	All
	1	17	AW-1651-7	. Resistor - Fixed, 50 W (25 Ohm)	1	All
		18	405548	. Label - Ground	1	ABC
			830116	. Label - Ground	1	DE
1	2	19	405363-1	. Contactor - Line, 60 Amp, 2 Pole	1	All
		20	203076	. Board - Voltage Changeover	1	A
			203189	. Board - Voltage Changeover	1	BCDE
		21	203119	. Bracket - Mounting V.C. Board	2	All
		22	CW-811	Link - Voltage Changeover Board	5	A
			CW-811	Link - Voltage Changeover Board	4	BCDE
		23	203099	Transformer - Control	1	A
			203099-1	Transformer - Control	1	BCDE

430429-239
PARTS LIST

Parts List for Figure 8-2

Quantity		Item	Part	Description	Qty	Application
Recomm.	Spares					
Class 1	Class 2	No	Number		per	Code
					Assy	
		24	361052-3	Clamp - Capacitor	2	All
		25	350488-94	Insulator - Capacitor	2	All
			203060	Panel - Rear Assembly	1	AB
			203060-1	Panel - Rear Assembly	1	CDE
		26	203059	. Panel - Rear	1	AB
			203059-1	. Panel - Rear	1	CDE
		27	8RT-609	. Fan - Trans. Welder	1	All
1		28	12TW-595-1	. Motor - Fan	1	All
		29	No Number	. Clamp - Cable	2	All
			203075	. Rectifier - Output Assembly	1	AB
			203075-1	. Rectifier - Output Assembly	1	CDE
		30	204384	. . Bracket - Motor Mount	1	AB
			204384-1	. . Bracket - Motor Mount	1	CDE
		31	406319-1	. . Grommet - Mounting	8	All
1		32	W-10932-3	. . Diode - Silicon, Negative Base	2	All
1		33	367906-1	. . Suppressor - Surge Assembly	1	All
1		34	404044-4	. . Thermostat - Overload	1	All
		35	390265	. . Shunt - 50 MV. 400 Amp	1	All
1		36	W-10930-3	. . Diode - Silicon, Positive Base	2	All
		37	203074	. . Heat Sink - Rect.	2	All

— Not Illustrated

DIAGRAMS

- Note the model and specification number shown on the equipment nameplate.
- Locate these numbers in the model and specification number columns below.
- Use only those diagrams and instructions that are applicable.

MODEL NUMBER	SPEC NUMBER	CONNECTION DIAGRAM	VOLTAGE CHANGEOVER DIAGRAM
THE FABRICATOR	7028-1	203072	203073
	7028-2	203151	203152
	7028A-2	203151	203152
	7028B-1	830143	203152
	7028B-2	830143	203152