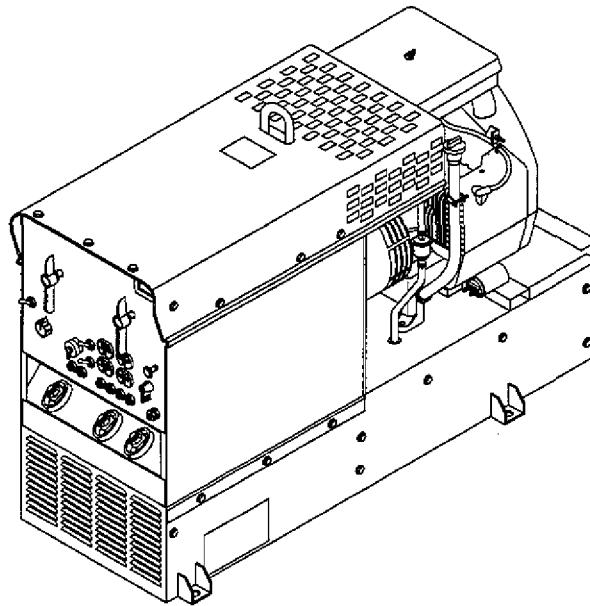




Miller®

January 1996 Form: OM-426K
Effective With Serial No. KG037344

OWNER'S MANUAL



Trailblazer® 250G

CC/CV AC/DC Welding Generator For SMAW, FCAW, GMAW, GTAW Welding

Welding Mode	Rated Welding Output	Maximum Open-Circuit Voltage	Amperage Range In CC Mode	Voltage Range In CC Mode	Auxiliary Power Rating	Fuel Capacity	Engine
CC/AC	200 A, 25 V, 100% Duty Cycle	72	25 – 250 A	14 – 36 V	Single-Phase, 4 kVA/kW, 33/16.5 A, 120/240 V AC, 60 Hz	7.5 gal (28 L) Tank	Onan P220 Air-Cooled, Two-Cylinder, Four-Cycle, Gasoline Engine
CC/DC	200 A, 25 V, 100% Duty Cycle	95					
CV/DC	200 A, 20 V, 100% Duty Cycle	46					

MILLER'S TRUE BLUE® LIMITED WARRANTY

Effective January 1, 1995
(Equipment with a serial number preface of "KD" or newer)

This limited warranty supersedes all previous MILLER warranties and is exclusive with no other guarantees or warranties expressed or implied.

LIMITED WARRANTY — Subject to the terms and conditions below, MILLER Electric Mfg. Co., Appleton, Wisconsin, warrants to its original retail purchaser that new MILLER equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by MILLER. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

Within the warranty periods listed below, MILLER will repair or replace any warranted parts or components that fail due to such defects in material or workmanship. MILLER must be notified in writing within thirty (30) days of such defect or failure, at which time MILLER will provide instructions on the warranty claim procedures to be followed.

MILLER shall honor warranty claims on warranted equipment listed below in the event of such a failure within the warranty time periods. All warranty time periods start on the date that the equipment was delivered to the original retail purchaser, or one year after the equipment is sent to a North American distributor or eighteen months after the equipment is sent to an International distributor.

1. **5 Years Parts — 3 Years Labor**
 - Original main power rectifiers
 - Inverters (input and output rectifiers only)
2. **3 Years — Parts and Labor**
 - Transformer/Rectifier Power Sources
 - Plasma Arc Cutting Power Sources
 - Semi-Automatic and Automatic Wire Feeders
 - Inverter Power Supplies
 - Intelligig
 - Robots
3. **2 Years — Parts and Labor**
 - Engine Driven Welding Generators
(NOTE: Engines are warranted separately by the engine manufacturer.)
 - Air Compressors
4. **1 Year — Parts and Labor**
 - Motor Driven Guns
 - Process Controllers
 - IHPS Power Sources
 - Water Coolant Systems
 - HF Units
 - Grids
 - Spot Welders
 - Load Banks
 - SDX Transformers
 - Running Gear/Trailers
 - Plasma Cutting Torches (except APT, ZIPCUT & PLAZCUT Models)
 - Tecumseh Engines
 - Deutz Engines (outside North America)
 - Field Options
(NOTE: Field options are covered under True Blue® for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)

5. **6 Months — Batteries**
6. **90 Days — Parts and Labor**
 - MIG Guns/TIG Torches
 - APT, ZIPCUT & PLAZCUT Model Plasma Cutting Torches
 - Remote Controls
 - Accessory Kits
 - Replacement Parts

MILLER'S True Blue® Limited Warranty shall not apply to:

1. Items furnished by MILLER, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
2. Consumable components; such as contact tips, cutting nozzles, contactors and relays or parts that fail due to normal wear.
3. Equipment that has been modified by any party other than MILLER, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.

MILLER PRODUCTS ARE INTENDED FOR PURCHASE AND USE BY COMMERCIAL/INDUSTRIAL USERS AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.

In the event of a warranty claim covered by this warranty, the exclusive remedies shall be, at MILLER'S option: (1) repair; or (2) replacement; or, where authorized in writing by MILLER in appropriate cases, (3) the reasonable cost of repair or replacement at an authorized MILLER service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. MILLER'S option of repair or replacement will be F.O.B., Factory at Appleton, Wisconsin, or F.O.B. at a MILLER authorized service facility as determined by MILLER. Therefore no compensation or reimbursement for transportation costs of any kind will be allowed.

TO THE EXTENT PERMITTED BY LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY OR REPRESENTATION AS TO PERFORMANCE, AND ANY REMEDY FOR BREACH OF CONTRACT TORT OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT TO ANY AND ALL EQUIPMENT FURNISHED BY MILLER IS EXCLUDED AND DISCLAIMED BY MILLER.

Some states in the U.S.A. do not allow limitations of how long an implied warranty lasts, or the exclusion of incidental, indirect, special or consequential damages, so the above limitation or exclusion may not apply to you. This warranty provides specific legal rights, and other rights may be available, but may vary from state to state.

In Canada, legislation in some provinces provides for certain additional warranties or remedies other than as stated herein, and to the extent that they may not be waived, the limitations and exclusions set out above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary from province to province.

WHO DO I CONTACT?

For help,

- contact your distributor

For additional information, such as

- Technical Manuals (Service And Parts)
- Engine Manuals
- Circuit And Wiring Diagrams
- Process Handbooks
- User's Guides
- Distributor Directories
- contact your distributor

To file a claim for loss or damage during shipment,

- contact the delivering carrier

For assistance in filing or settling claims,

- contact your distributor and/or equipment manufacturer's Transportation Department



Miller Electric Mfg. Co.

- CALL:
414-735-4505



- FAX:
800-637-2348 (in USA), or
414-735-4136 (outside USA)



- WRITE:
Miller Electric Mfg. Co.
P.O. Box 1079
Appleton, WI 54912 USA

Always provide Model Name and Serial or Style Number

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SECTION 1 – SAFETY PRECAUTIONS FOR ARC WELDING

safety_rom1 4/95

1-1. Symbol Usage



Means Warning! Watch Out! There are possible hazards with this procedure! The possible hazards are shown in the adjoining symbols.

▲ Marks a special safety message.

☞ Means NOTE; not safety related.



This group of symbols means Warning! Watch Out! possible ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

1-2. Arc Welding Hazards



WARNING

The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in the Safety Standards listed in Section 1-5. Read and follow all Safety Standards.

Only qualified persons should install, operate, maintain, and repair this unit.

During operation, keep everybody, especially children, away.



ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

1. Do not touch live electrical parts.
2. Wear dry, hole-free insulating gloves and body protection.
3. Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
4. Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tagout input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
5. Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
6. Always verify the supply ground – check and be sure that input power cord ground wire is properly connected to ground

terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.

7. When making input connections, attach proper grounding conductor first – double-check connections.
8. Frequently inspect input power cord for damage or bare wiring – replace cord immediately if damaged – bare wiring can kill.
9. Turn off all equipment when not in use.
10. Do not use worn, damaged, undersized, or poorly spliced cables.
11. Do not drape cables over your body.
12. If earth grounding of the workpiece is required, ground it directly with a separate cable – do not use work clamp or work cable.
13. Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.
14. Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
15. Wear a safety harness if working above floor level.
16. Keep all panels and covers securely in place.
17. Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.



ARC RAYS can burn eyes and skin; NOISE can damage hearing; FLYING SLAG OR SPARKS can injure eyes.

Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Noise from some processes can damage hearing. Chipping, grinding, and welds cooling throw off pieces of metal or slag.

NOISE

1. Use approved ear plugs or ear muffs if noise level is high.

ARC RAYS

2. Wear a welding helmet fitted with a proper shade of filter to protect your face and eyes when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
3. Wear approved safety glasses with side shields.
4. Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
5. Wear protective clothing made from durable, flame-resistant material (wool and leather) and foot protection.



FUMES AND GASES can be hazardous to your health.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

1. Keep your head out of the fumes. Do not breathe the fumes.
2. If inside, ventilate the area and/or use exhaust at the arc to remove welding fumes and gases.
3. If ventilation is poor, use an approved air-supplied respirator.
4. Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instruction for metals, consumables, coatings, cleaners, and degreasers.

5. Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watchperson nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
6. Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
7. Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and if necessary, while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.



CYLINDERS can explode if damaged.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

1. Protect compressed gas cylinders from excessive heat, mechanical shocks, slag, open flames, sparks, and arcs.
2. Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
3. Keep cylinders away from any welding or other electrical circuits.

4. Never drape a welding torch over a gas cylinder.
5. Never allow a welding electrode to touch any cylinder.
6. Never weld on a pressurized cylinder – explosion will result.
7. Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
8. Turn face away from valve outlet when opening cylinder valve.
9. Keep protective cap in place over valve except when cylinder is in use or connected for use.
10. Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.



WELDING can cause fire or explosion.

Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding arc. The flying sparks, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding.

1. Protect yourself and others from flying sparks and hot metal.
2. Do not weld where flying sparks can strike flammable material.
3. Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
4. Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
5. Watch for fire, and keep a fire extinguisher nearby.

6. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
7. Do not weld on closed containers such as tanks, drums, or pipes, unless they are properly prepared according to AWS F4.1 (see Safety Standards).
8. Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock and fire hazards.
9. Do not use welder to thaw frozen pipes.
10. Remove stick electrode from holder or cut off welding wire at contact tip when not in use.
11. Wear oil-free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.
12. Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding.

1-3. Engine Hazards



WARNING



ENGINE EXHAUST GASES can kill.

Engines produce harmful exhaust gases.

1. Use equipment outside in open, well-ventilated areas.
2. If used in a closed area, vent engine exhaust outside and away from any building air intakes.



ENGINE FUEL can cause fire or explosion.

Engine fuel is highly flammable.

1. Stop engine and let it cool off before checking or adding fuel.

2. Do not add fuel while smoking or if unit is near any sparks or open flames.
3. Do not overfill tank – allow room for fuel to expand.
4. Do not spill fuel. If fuel is spilled, clean up before starting engine.

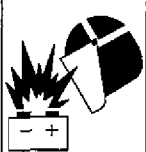


MOVING PARTS can cause injury.

Moving parts, such as fans, rotors, and belts can cut fingers and hands and catch loose clothing.

1. Keep all doors, panels, covers, and guards closed and securely in place.
2. Stop engine before installing or connecting unit.

3. Have only qualified people remove guards or covers for maintenance and troubleshooting as necessary.
4. To prevent accidental starting during servicing, disconnect negative (–) battery cable from battery.
5. Keep hands, hair, loose clothing, and tools away from moving parts.
6. Reinstall panels or guards and close doors when servicing is finished and before starting engine.



SPARKS can cause BATTERY GASES TO EXPLODE; BATTERY ACID can burn eyes and skin.

Batteries contain acid and generate explosive gases.

1. Always wear a face shield when working on a battery.
2. Stop engine before disconnecting or connecting battery cables.
3. Do not allow tools to cause sparks when working on a battery.
4. Do not use welder to charge batteries or jump start vehicles.
5. Observe correct polarity (+ and –) on batteries.

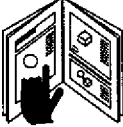
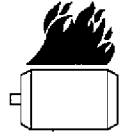
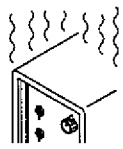


STEAM AND PRESSURIZED HOT COOLANT can burn face, eyes, and skin.

It is best to check coolant level when engine is cold to avoid scalding.

1. If the engine is warm and checking is needed, follow steps 2 and 3.
2. Wear safety glasses and gloves and put a rag over cap.
3. Turn cap slightly and let pressure escape slowly before completely removing cap.

1-4. Additional Installation, Operation, And Maintenance Hazards

 WARNING			
	MOVING PARTS can cause injury. - Before working of generator, remove spark plugs or injectors to keep engine from kicking back or starting. - Block flywheel so that it will not turn while working on generator components.		READ INSTRUCTIONS. - Use only genuine MILLER replacement parts. - Reinstall injectors and bleed air from fuel system according to engine manual.
	FLYING PIECES OF METAL or DIRT can injure eyes. Wear safety glasses with side shields or face shield.		DO NOT LET ENGINE EXHAUST SPARKS CAUSE FIRE. Use approved engine exhaust spark arrestor in required areas – see applicable codes.
	STATIC ELECTRICITY can damage parts on circuit boards. - Put on grounded wrist strap BEFORE handling boards or parts. - Use proper static-proof bags and boxes to store, move, or ship PC boards.		LOW VOLTAGE AND FREQUENCY CAN DAMAGE electrical equipment such as MOTORS. Turn off or unplug equipment before starting or stopping engine.
	MAGNETIC FIELDS FROM HIGH CURRENTS can affect pacemaker operation. - Pacemaker wearers keep away. - Wearers should consult their doctor before going near arc welding, gouging, or spot welding operations.		OVERUSE can cause OVERHEATED EQUIPMENT. - Allow cooling period. - Reduce current or reduce duty cycle before starting to weld again. - Follow rated duty cycle.
	HOT PARTS can cause severe burns. - Allow cooling period before maintaining. - Wear protective gloves and clothing when working on a hot engine.		TILTING OF TRAILER can cause injury. - Use tongue jack or blocks to support weight. - Properly install welding generator onto trailer according to instructions supplied with trailer.
	FALLING EQUIPMENT can cause serious personal injury and equipment damage. - Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories. - Use equipment of adequate capacity to lift unit.		BATTERY ACID can BURN SKIN AND EYES. - Do not tip. - Replace damaged battery. - Flush eyes and skin immediately with water.

1-5. Principal Safety Standards

Safety in Welding and Cutting, ANSI Standard Z49.1, from American Welding Society, 550 N.W. LeJeune Rd, Miami FL 33126

Safety and Health Standards, OSHA 29 CFR 1910, from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, American Welding Society Standard AWS F4.1, from American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202.

Code for Safety in Welding and Cutting, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.

Safe Practices For Occupation And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 1430 Broadway, New York, NY 10018.

Cutting And Welding Processes, NFPA Standard 51B, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

1-6. EMF Information

Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields

The following is a quotation from the General Conclusions Section of the U.S. Congress, Office of Technology Assessment, *Biological Effects of Power Frequency Electric & Magnetic Fields – Background Paper*, OTA-BP-E-53 (Washington, DC: U.S. Government Printing Office, May 1989): "... there is now a very large volume of scientific findings based on experiments at the cellular level and from studies with animals and people which clearly establish that low frequency magnetic fields can interact with, and produce changes in, biological systems. While most of this work is of very high quality, the results are complex. Current scientific understanding does not yet allow us to interpret the evidence in a single coherent framework. Even more frustrating, it does not yet allow us to draw definite conclusions about questions of possible risk or to offer clear science-based advice on strategies to minimize or avoid potential risks."

To reduce magnetic fields in the workplace, use the following procedures:

- Keep cables close together by twisting or taping them.
- Arrange cables to one side and away from the operator.
- Do not coil or drape cables around the body.
- Keep welding power source and cables as far away as practical.
- Connect work clamp to workpiece as close to the weld as possible.

About Pacemakers:

The above procedures are also recommended for pacemaker wearers. Consult your doctor for complete information.

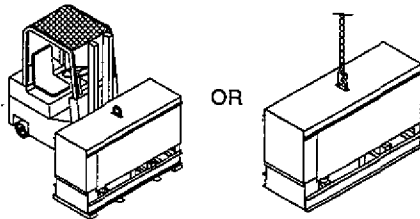
SECTION 2 – INSTALLATION

2-1. Installing Welding Generator

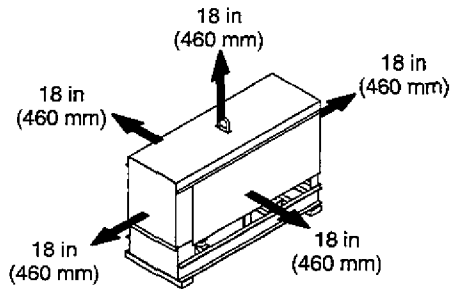


Movement

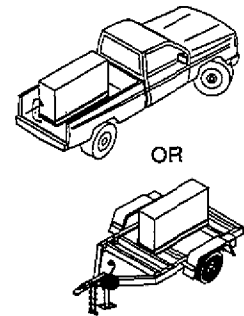
▲ Do Not Lift Unit From End



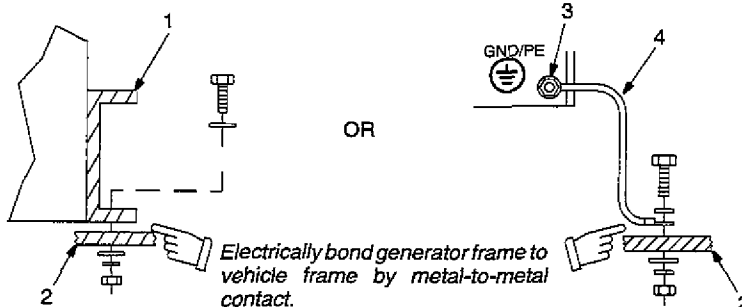
Airflow



Location



Grounding



Electrically bond generator frame to vehicle frame by metal-to-metal contact.

- 1 Generator Base
- 2 Metal Vehicle Frame
- 3 Equipment Grounding Terminal
- 4 Grounding Cable

Use #10 AWG or larger insulated copper wire.

▲ If unit does not have GFCI receptacles, use GFCI-protected extension cord.

install1 10/95 – Ref. ST-800 652 / Ref. ST-800 477-A / ST-158 936-A / S-0854

2-2. Dimensions, Weights, And Operating Angles

Diagram of the engine unit showing dimensions A, B, and C. Dimension A is the width, B is the height, and C is the diameter of the mounting holes. The unit is labeled "Engine End" at the bottom.

Engine End

Dimensions

Height 31-5/8 in (803 mm)

Width 18 in (457 mm)

Depth 45 in (1143 mm)

A 16-1/2 in (419 mm)

B 32-3/4 in (832 mm)

C 13/16 in (21 mm) Dia.

Weight

Net 550 lb (249 kg)

Ship 591 lb (268 kg)

▲ Do not exceed operating angles while running or engine damage will occur.

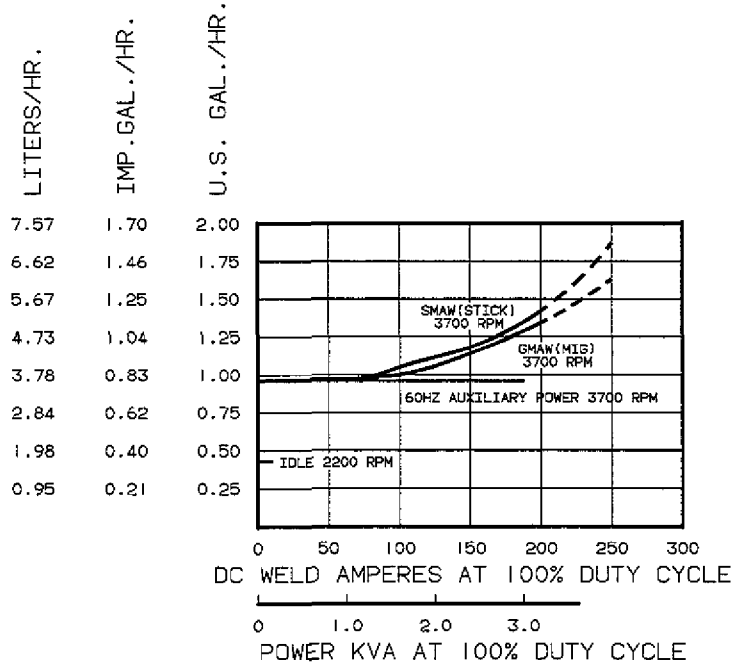
▲ Do not move or operate unit where it could tip.

Diagram showing the unit tilted at 25 degrees. The unit is shown from a side perspective, tilted at 25 degrees from the horizontal. The angle is indicated by a dashed line and a 25-degree arc.

angles_1 11/95

angles_1 11/95

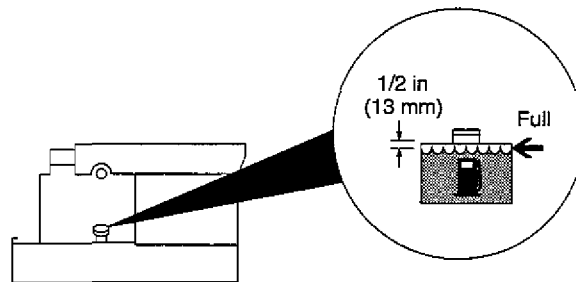
2-3. Fuel Consumption



--- SINCE THE WELD OUTPUT MUST BE LESS THAN 100% DUTY CYCLE IN THIS RANGE, ACTUAL FUEL CONSUMPTION WILL BE LESS THAN INDICATED HERE.

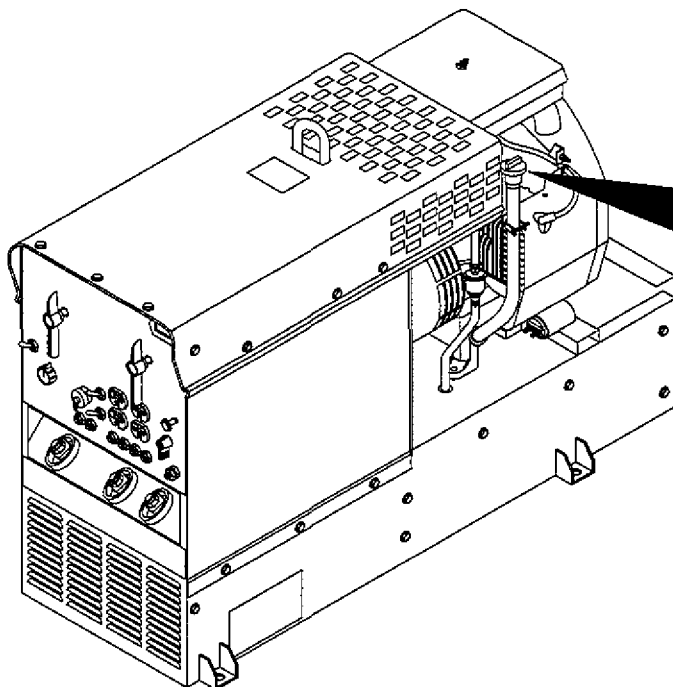
SB-110 337

2-4. Engine Prestart Checks



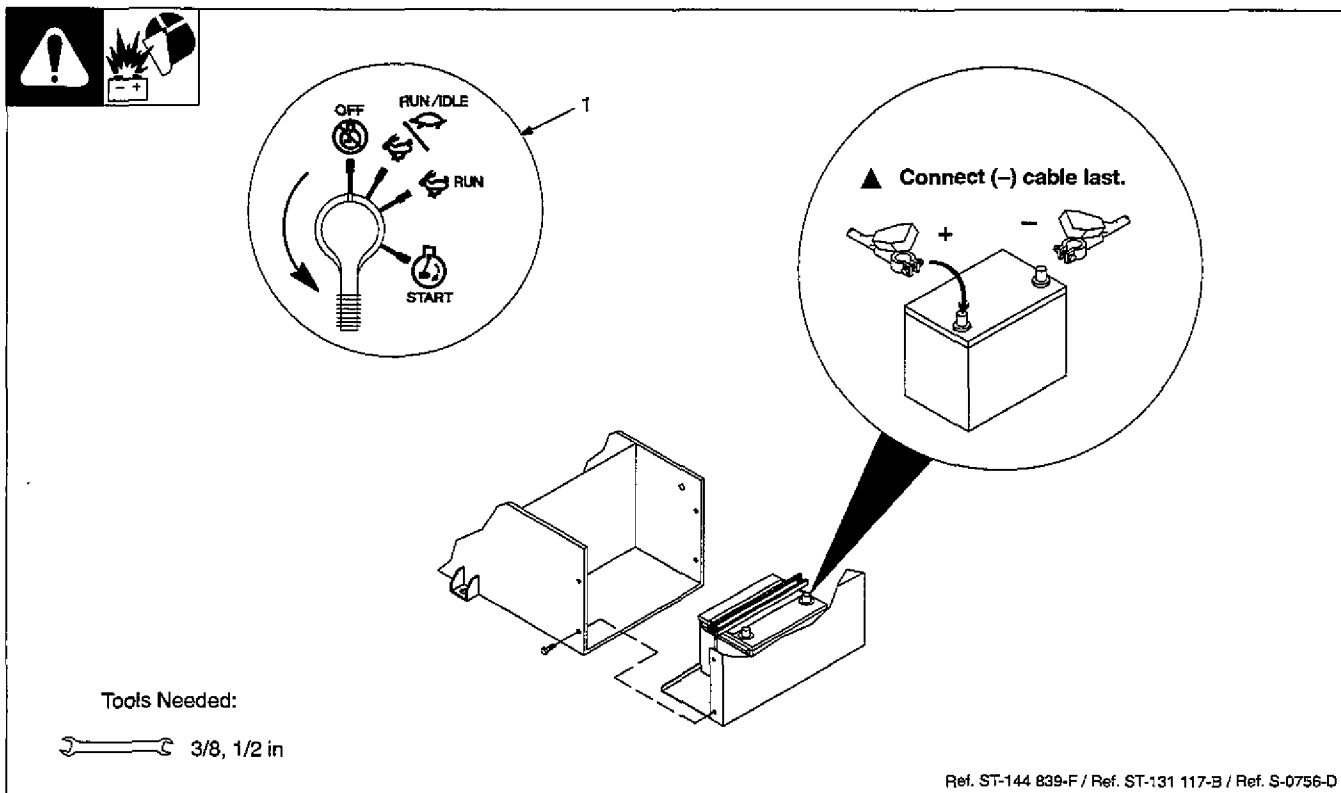
Check all fluids daily. Engine must be cold and on a level surface.

Engine stops if oil pressure gets too low.

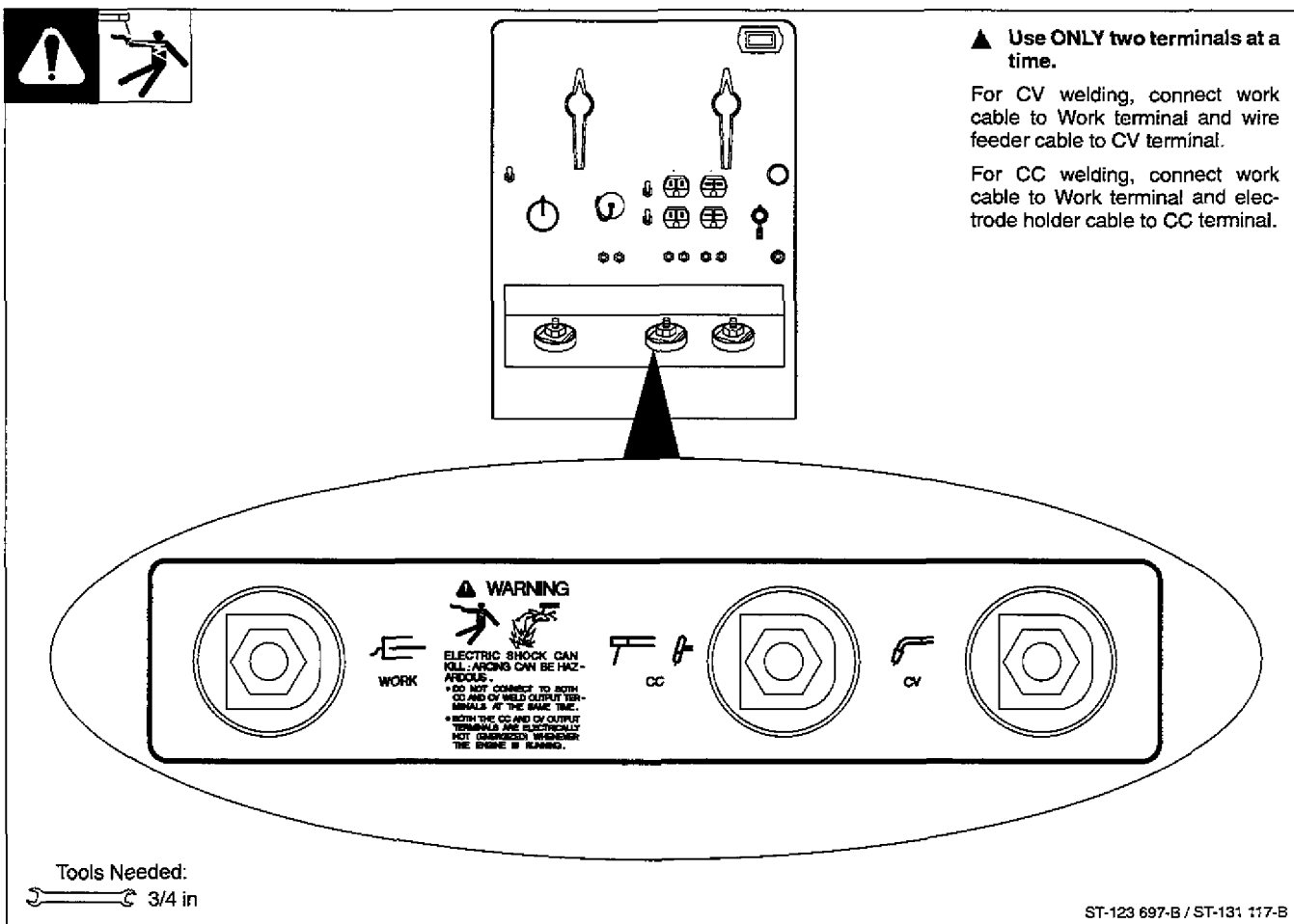


Ref. ST-123 740-D / Ref. ST-151 983

2-5. Connecting The Battery



2-6. Connecting To Weld Output Terminals



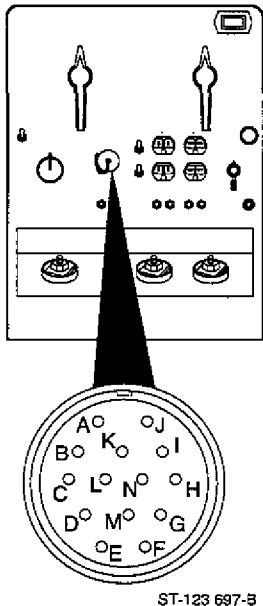
2-7. Selecting Weld Cable Sizes

Welding Amperes	Total Cable (Copper) Length In Weld Circuit Not Exceeding							
	100 ft (30 m) Or Less		150 ft (45 m)	200 ft (60 m)	250 ft (70 m)	300 ft (90 m)	350 ft (105 m)	400 ft (120 m)
	10 – 60% Duty Cycle	60 – 100% Duty Cycle	10 – 100% Duty Cycle					
100	4	4	4	3	2	1	1/0	1/0
150	3	3	2	1	1/0	2/0	3/0	3/0
200	3	2	1	1/0	2/0	3/0	4/0	4/0
250	2	1	1/0	2/0	3/0	4/0	2-2/0	2-2/0
300	1	1/0	2/0	3/0	4/0	2-2/0	2-3/0	2-3/0
350	1/0	2/0	3/0	4/0	2-2/0	2-3/0	2-3/0	2-4/0

Weld cable size (AWG) is based on either a 4 volts or less drop or a current density of at least 300 circular mils per ampere.

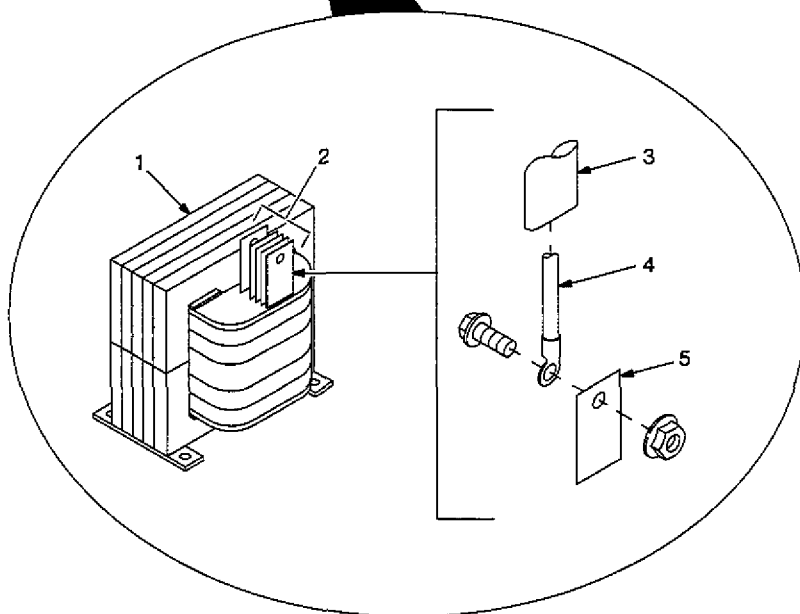
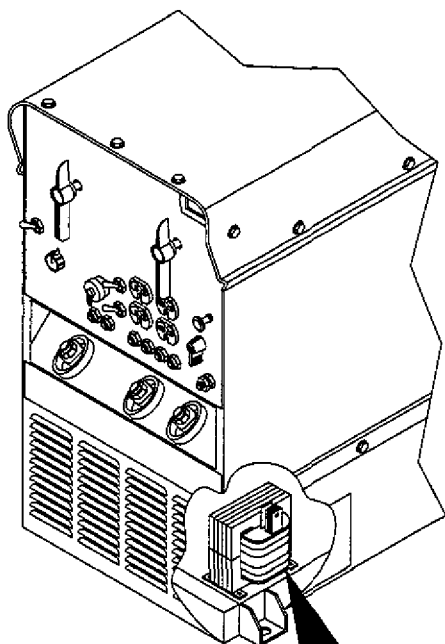
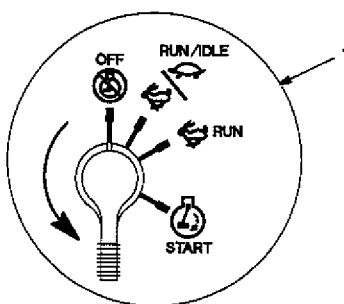
S-0007-D

2-8. Remote 14 Receptacle RC1 Information

	REMOTE 14	Socket*	Socket Information
		A	24 volts ac.
A		B	Contact closure to A completes 24 volts dc contactor control circuit.
		G	Circuit common for 24 and 115 volt ac circuits.
		I	115 volts ac.
		J	Contact closure to I completes contactor control circuit.
		C	+10 volts dc output to remote control.
		D	Remote control circuit common.
		E	0 to +10 volts dc input command signal from remote control.
		K	Chassis common.

*The remaining sockets are not used.

2-9. Adjusting GMAW Weld Puddle Consistency



Stop engine.

Stabilizer DC-Z is factory connected to suit most GMAW applications.

To change GMAW weld puddle consistency, proceed as follows:

Stop engine. Remove right side panel.

1 Stabilizer DC-Z

2 Taps 1 Thru 5

Starting from center of DC-Z, taps will be referred to as 1 through 5.

3 Insulation Sleeve

4 Lead 4

5 Tap

Lead 4 is connected to tap 3. Cut cables ties as necessary to get to lead 4.

Slide sleeve up on lead 4, and remove hardware to disconnect lead 4 from tap.

To wet out weld puddle:

Connect lead 4 to tap 2, reusing hardware.

To stiffen weld puddle:

Connect lead 4 to tap 4, reusing hardware.

Install insulation over new lead connection, and secure with cable ties. Install side panel.

Tools Needed:

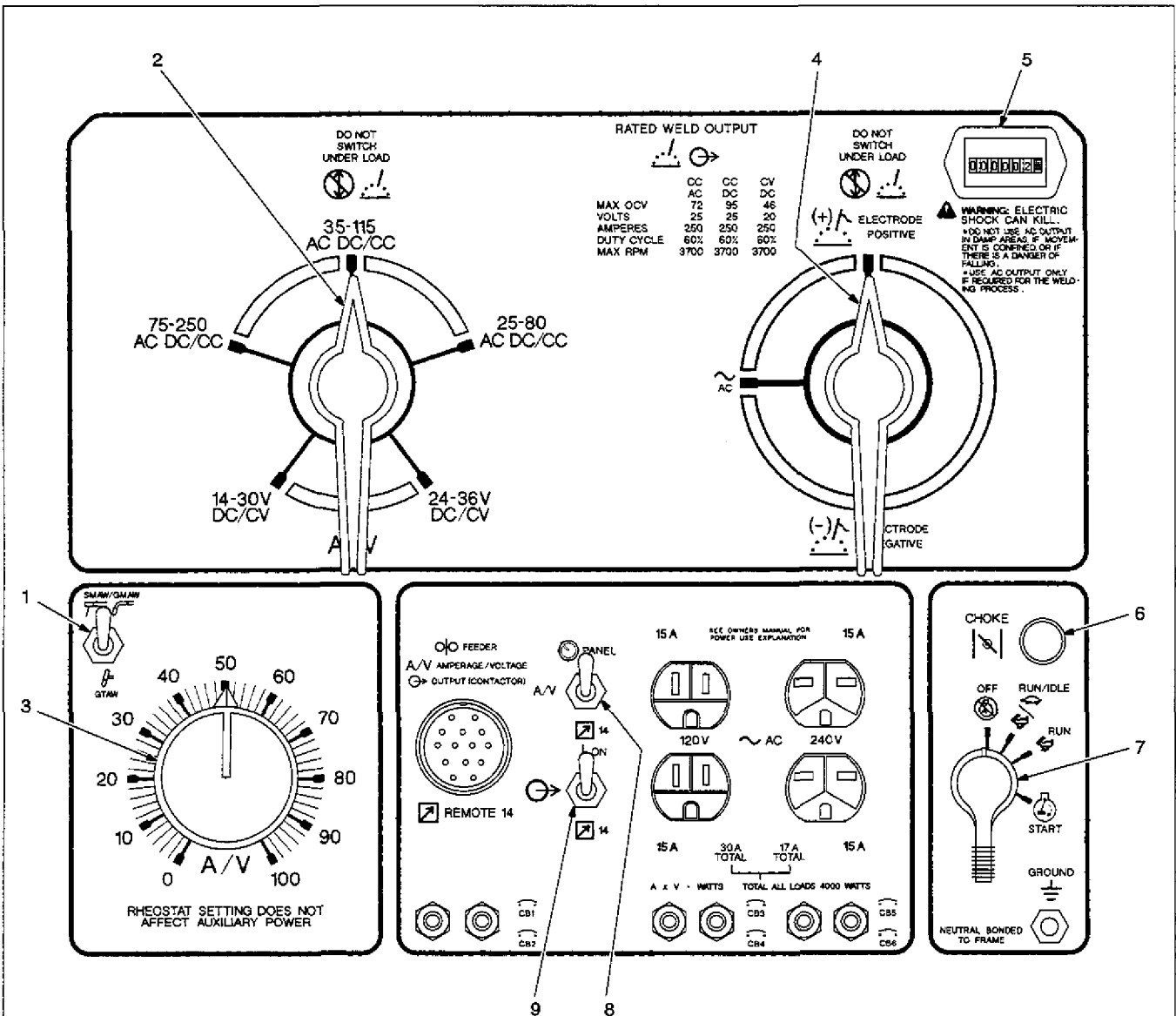


3/8, 7/16 in

ST-136 106--A / Ref. ST-131 117-B

SECTION 3 – OPERATING WELDING GENERATOR

3-1. Front Panel Controls



1 Process Selector Switch S4

Use switch to select output for weld process.

Use SMAW/GMAW position for FCAW.

2 Range Switch S1

Use switch to select weld amperage or voltage range.

For best arc starts, use lowest amperage range possible.

3 Amperage/Voltage Control R1

Use control to select weld amperage or voltage within the range selected by the Range switch. Control may be adjusted while welding. Scale is for reference only. Weld output would be 75 A CC/DC with control settings

as shown (50% of 35 to 115 A).

4 AC/DC Polarity Switch S6

Use switch to select polarity of weld output.

5 Engine Hour Meter HM

6 Engine Choke Control

Use control to change engine air-fuel mix.

7 Engine Control Switch S2

Use switch to start engine, select speed, and stop engine. In Run/Idle position, engine runs at idle rpm at no load, and weld/power rpm under weld. In Run position, engine runs at weld rpm.

Place switch in Run position to operate most GMAW equipment.

To Start: pull out choke and turn Engine Control switch to Start position. Release switch and slowly push choke in when engine starts. Do not crank engine while flywheel is turning.

To Stop: turn Engine Control switch to Off position.

8 Remote Amperage/Voltage Switch S8

Use switch to select front panel or remote amperage/voltage control (see Section 3-3).

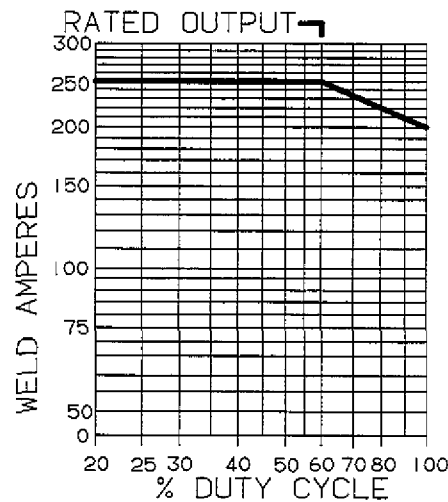
9 Output (Contactor) Switch S7

Use switch to control remote contactor if connected to remote 14 receptacle RC1.

Weld output terminals are energized when Output (Contactor) switch is On and engine is running.

Ref. ST-131 117-C

3-2. Duty Cycle



Duty cycle is the percentage of 10 minutes that unit can weld at rated load without overheating.

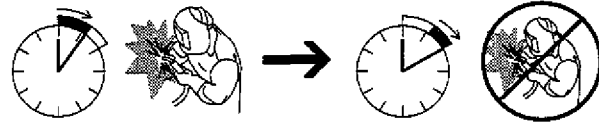
▲ Exceeding duty cycle can damage unit and void warranty.

100% Duty Cycle at 200 Amperes



Continuous Welding

60% Duty Cycle at 250 Amperes

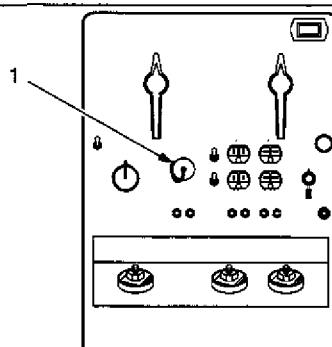


6 Minutes Welding

4 Minutes Resting

SA-108 888

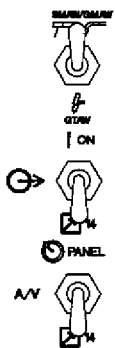
3-3. Remote Amperage/Voltage Control



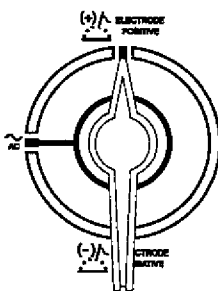
1 Remote 14 Receptacle RC1
Connect optional remote control to RC1 (see Section 2-8).

2 Remote Amperage Control (Optional)

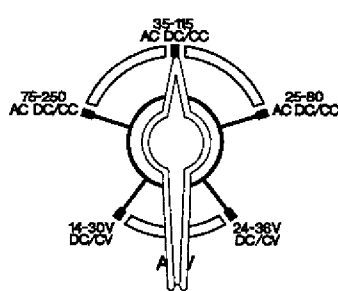
In Example:
Process = SMAW
Range = 35 to 115 A DC/CC
Min = 35 A DC/CC
Percentage Of Range = 50%
Max = 75 A DC/CC (50% of 35 to 115)



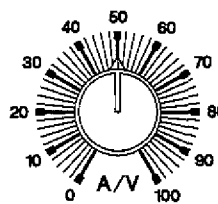
Set Switches



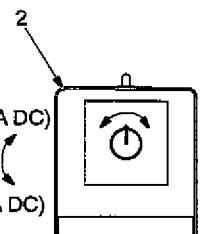
Set Polarity



Set Range



Set Percentage

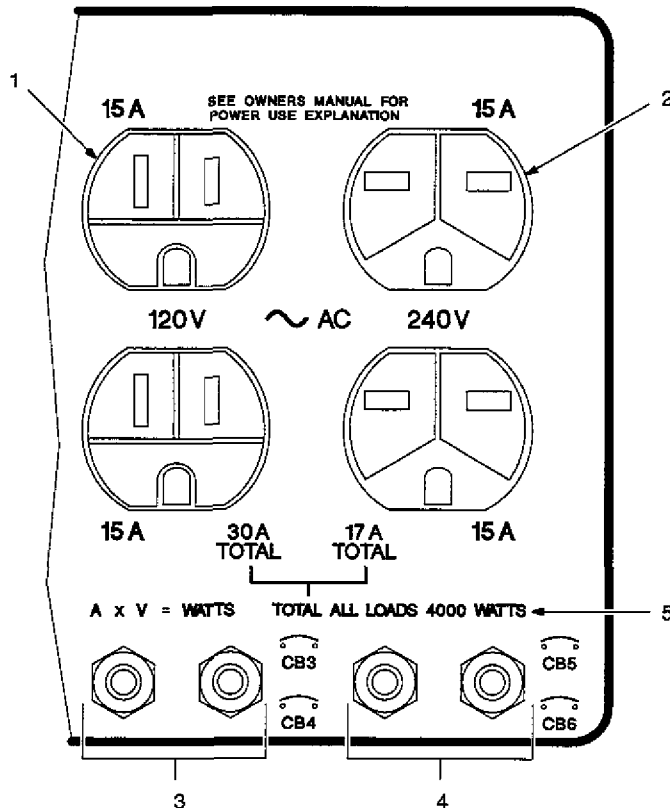


Adjust Remote Control (SMAW Only)

Ref. ST-131 117-B / ST-123 697-B / S-0769 / S-0774

SECTION 4 – OPERATING AUXILIARY EQUIPMENT

4-1. Auxiliary Power Receptacles And Circuit Breakers



▲ Use GFCI-protected extension cord.

- 1 120 V 15 A AC Duplex Receptacle RC1
- 2 240 V 15 A AC Duplex Receptacle RC2

RC1 and RC2 supply 60 Hz single-phase power at weld/power speed. Maximum output from RC1 is 3.6 kVA/kW. Maximum output from RC2 is 4.0 kVA/kW.

- 3 Circuit Breakers CB3 And CB4

CB3 and CB4 protect RC1 from overload. If CB3 or CB4 opens, half of RC1 does not work. Press button to reset breaker.

- 4 Circuit Breaker CB5 And CB6

CB5 and CB6 protect RC2 from overload. If CB5 or CB6 opens, RC2 does not work. 120 volts may still be present at RC2.

- 5 Total Auxiliary Power Output

Combined output of all receptacles limited to 4 kVA/kW output of the generator.

EXAMPLE: If 15 A is drawn from RC1, only 9 A is available at RC2:

$$(120 \text{ V} \times 15 \text{ A}) + (240 \text{ V} \times 9 \text{ A}) = 4.0 \text{ kVA/kW}$$

- 6 Auxiliary Power While Welding Label

SIMULTANEOUS WELDING AND POWER

Weld Current CV/CC	Watts	Current In Amperes	
		120V	240V
250	2200	18.5	9
225	2750	23	11.5
200	3250	27	13.5
150	3300	27.5	14
100	3800	32	16
50	4000	33.3	16.7
0	4000	33.3	16.7

See Owner's Manual for additional information.

S-135 048-B

SECTION 5 – MAINTENANCE AND TROUBLESHOOTING

5-1. Routine Maintenance

						 Recycle engine fluids.		▲ Stop engine before maintaining. See also Engine Manual and maintenance label. Service engine more often during severe conditions.	
8 Hours									
 Wipe Up Spills					 OIL Full Check Fluid Levels, See Section 2-4				
20 Hours									
 Check And Clean Spark Arrestor Screen									
25 Hours									
 Clean And Check Air Cleaner									
50 Hours									
 Change Oil. See Section 5-4 And Maintenance Label			 Change Oil Filter. See Section 5-4 And Maintenance Label			 Clean And Tighten Weld Terminals			
100 Hours									
 Clean Cooling System, See Engine Manual					 Clean And Tighten Battery Connections				
200 Hours									
 Check Valve Clearance			 Replace Fuel Filter. See Section 5-4.			 Replace Unreadable Labels			
500 Hours									
 Repair Or Replace Cracked Cables					 Check Spark Plugs				
1000 Hours									
OR					Blow Out Or Vacuum Inside. During Heavy Service, Clean Monthly				

5-2. Maintenance Label

ONAN P216/P220 GAS ENGINE

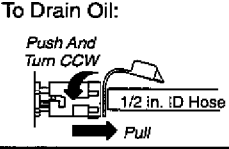


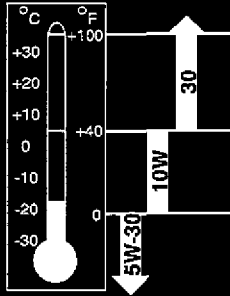
See Engine Manual for complete engine care. Give engine Specification and Serial Number when ordering parts.



Check daily.

To Drain Oil:





Recommended Oil . . .	API Service Classification SF, SG, SF/CC, SG/CE
Oil & Filter Change – Normal Conditions	
P216	100 hours
P220	50 hours
Oil Filter	MILLER 065 251, Onan 122-0645
Oil Capacity	1.5 qt (1.4 L) or 1.75 qt (1.6 L) with filter change



Gasoline

Fuel Grade	Regular or Unleaded
Fuel Filter	MILLER 066 113, Onan 149-2206-01, Fram G10E1



Air Filter Service	100 hours or less – see Owner's Manual
Air Filter Element	MILLER 064 617, Onan 140-2628-01
Air Filter Wrapper	MILLER 065 653, Onan 140-1496



12 Volt Battery	BCI Group 58
Cranking Performance at 0°F (-18°C)	430 Amps min.



Engine RPM – No Load	
Weld/	
Power	3700
Idle	2200



Valve Clearance – Cold	
In.	0.005 in (0.13 mm)
Ex.	0.013 in (0.33 mm)



Spark Plug Gap	0.025 in. (0.6 mm)
Spark Plug	Champion RS17YX Preferred or RS14YC

Use only resistor spark plugs and wires.



Spark Arrester Inspection And Service	20 operating hours - see Owner's Manual
---	--

Optional

S-165 623-C

OM-426 Page 13

5-3. Servicing Air Cleaner

▲ Do not run engine without air cleaner or with dirty element.

Stop engine.

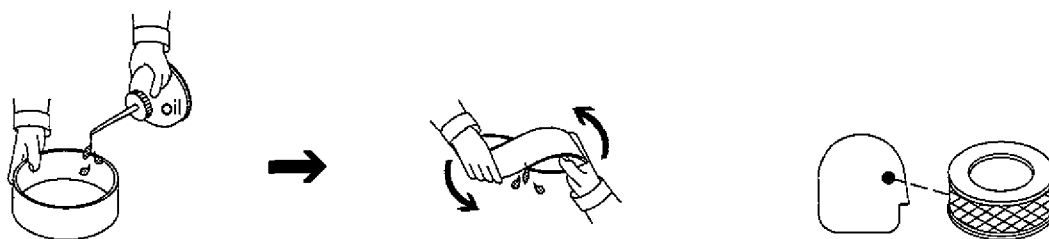
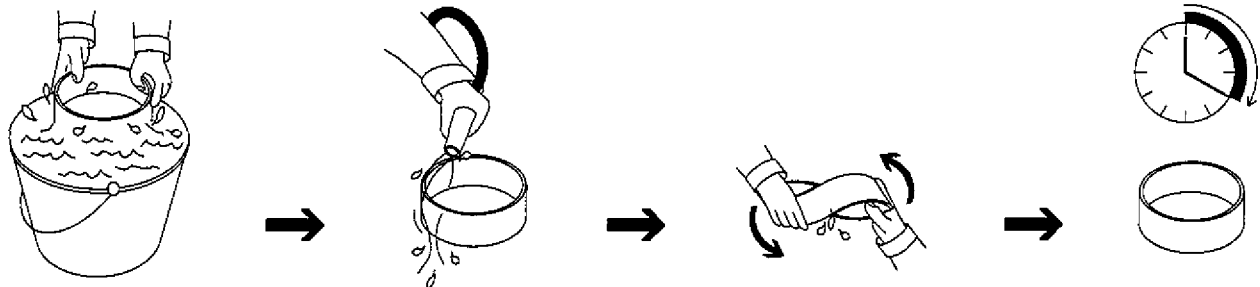
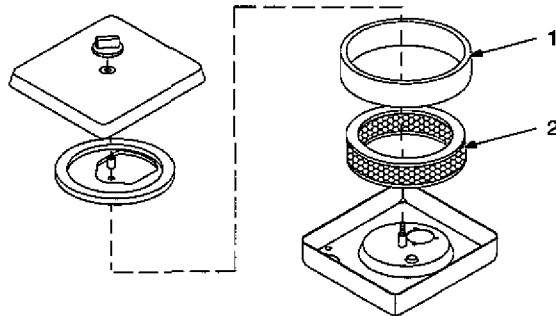
1 Precleaner

Wash precleaner with soap and water solution. Allow precleaner to air dry completely.

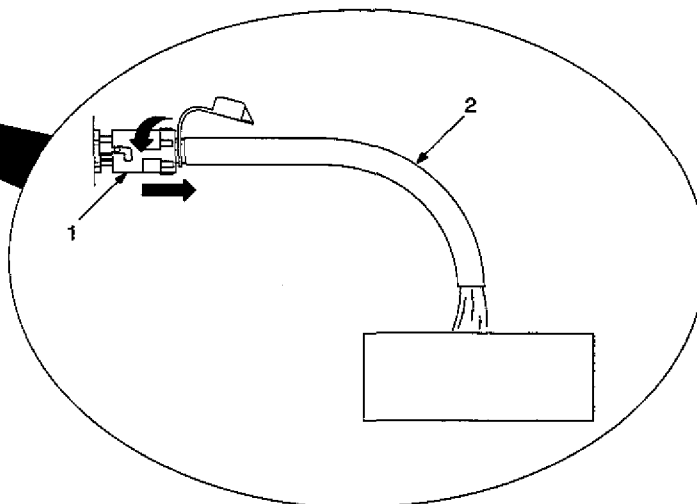
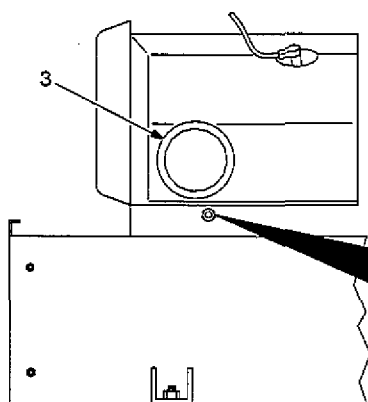
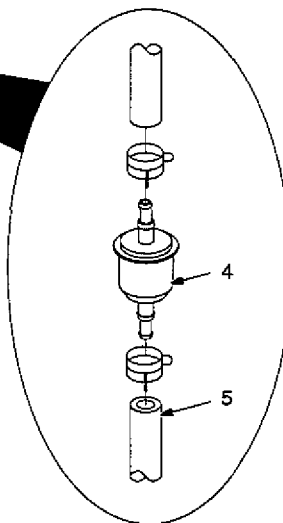
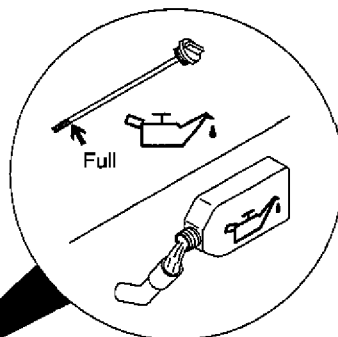
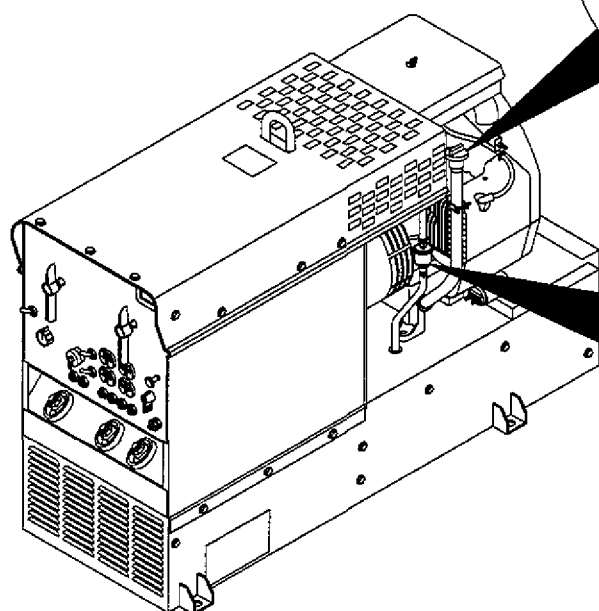
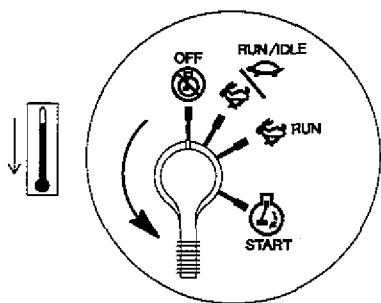
Spread 1 tablespoon SAE 30 oil evenly into precleaner. Squeeze out excess oil.

2 Element

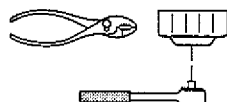
Replace element if dirty or oily.



5-4. Changing Engine Oil, Oil Filter, And Fuel Filter



Tools Needed:



Stop engine and allow to cool.

- 1 Oil Drain Valve
- 2 1/2 ID x 12 in Hose
- 3 Oil Filter

Change engine oil and filter according to engine owner's manual.

▲ **Close valve and valve cap before adding oil and running engine.**

Fill crankcase with new oil to full mark on dipstick (see Section 5-2).

- 4 Fuel Filter
- 5 Fuel Line

Replace line if cracked or worn. Install new filter. Wipe up any spilled fuel.

Start engine, and check for fuel leaks.

Stop engine, tighten connections as necessary, and wipe up fuel.

5-5. Adjusting Engine Speed



	2200 ± 100 rpm
	3700 ± 50 rpm

After tuning engine, check engine speeds with a tachometer (see table). If necessary, adjust speeds as follows:

Start engine and run until warm. Turn Amperage/Voltage Control to Max.

Idle Speed Adjustment

1 Throttle Solenoid

2 Mounting Screw

Loosen two mounting screws.

3 Governor Arm

4 Carburetor

5 Idle Speed Screw

Pull governor arm away from carburetor and hold while making the following adjustment:

Turn idle speed screw until engine runs at idle speed (see table).

Release governor arm. Place Engine Control switch in Run/Idle position.

6 Carburetor Stop

With solenoid energized, slide solenoid until idle speed screw just touches carburetor stop. Tighten solenoid mounting screws.

7 Governor Arm Extension

Check for smooth operation, and readjust solenoid position if necessary.

Weld/Power Speed Adjustment

Place Engine Control switch in Run position.

8 Weld/Power Speed Rod

9 Locking Nut

Loosen nut.

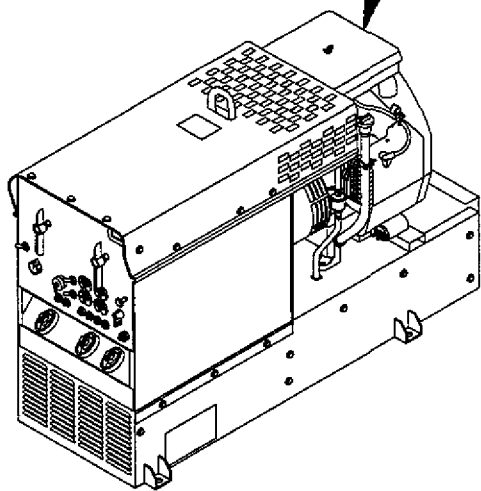
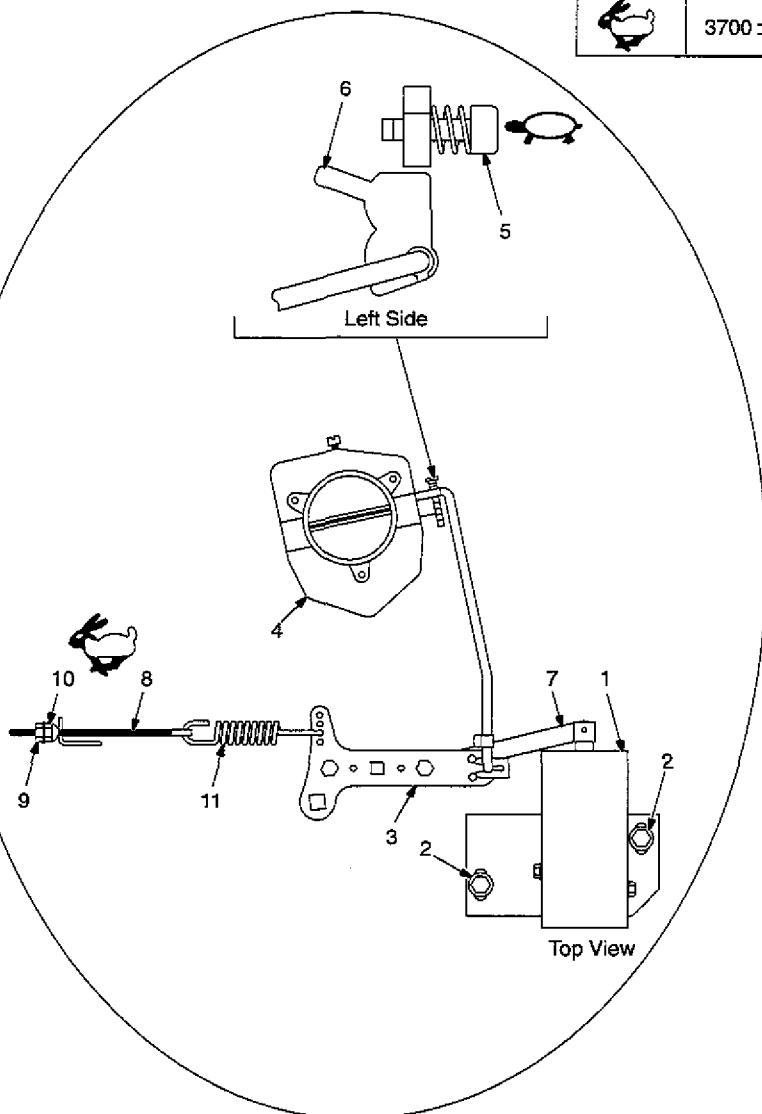
10 Adjustment Nut

Turn adjustment nut until engine runs at weld/power speed. Tighten locking nut.

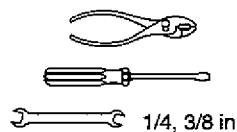
Stop engine.

11 Sensitivity Spring

See engine manual for governor sensitivity adjustment.

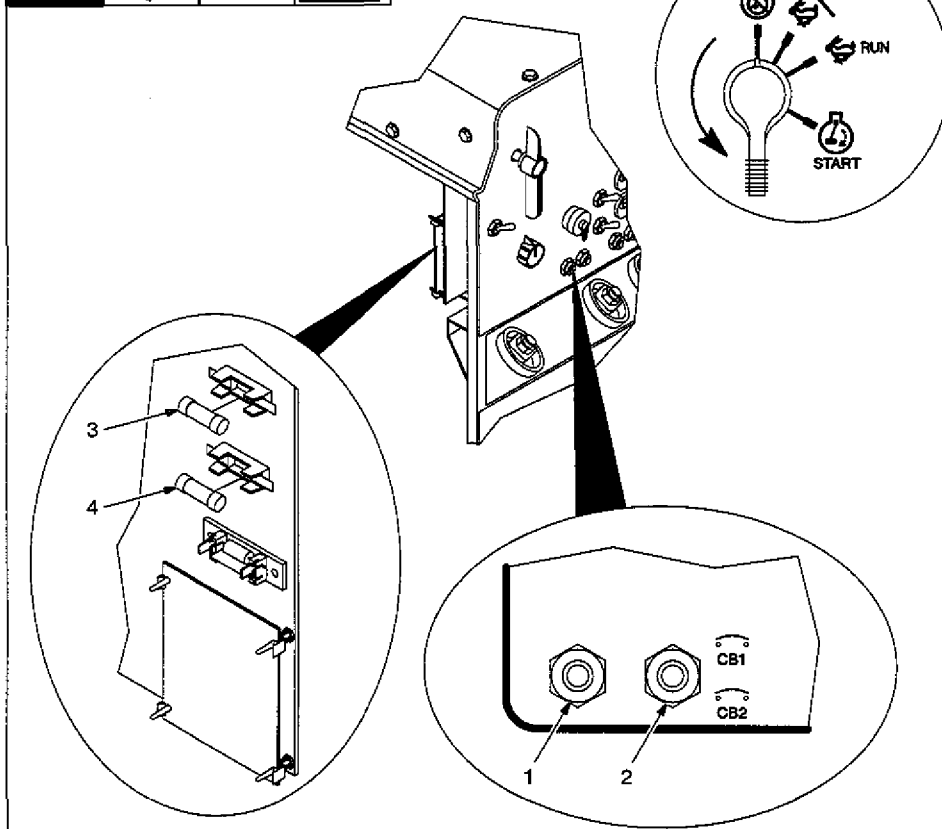


Tools Needed:



1/4, 3/8 in

5-6. Overload Protection



Stop engine.

1 Circuit Breaker CB1

CB1 protects the 115 volts ac output to Remote 14 receptacle RC1.

2 Circuit Breaker CB2

CB2 protects the 24 volts ac output to Remote 14 receptacle RC1.

Press button to reset breaker.

3 Fuse F1 (See Parts List For Rating)

4 Fuse F2 (See Parts List For Rating)

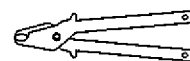
F1 protects the exciter excitation winding from overload.

F2 protects the ac main field winding from overload.

Replace open fuses and reinstall panel before operating unit.

⚠ If circuit breaker or fuse continues to open, contact Factory Authorized Service Agent.

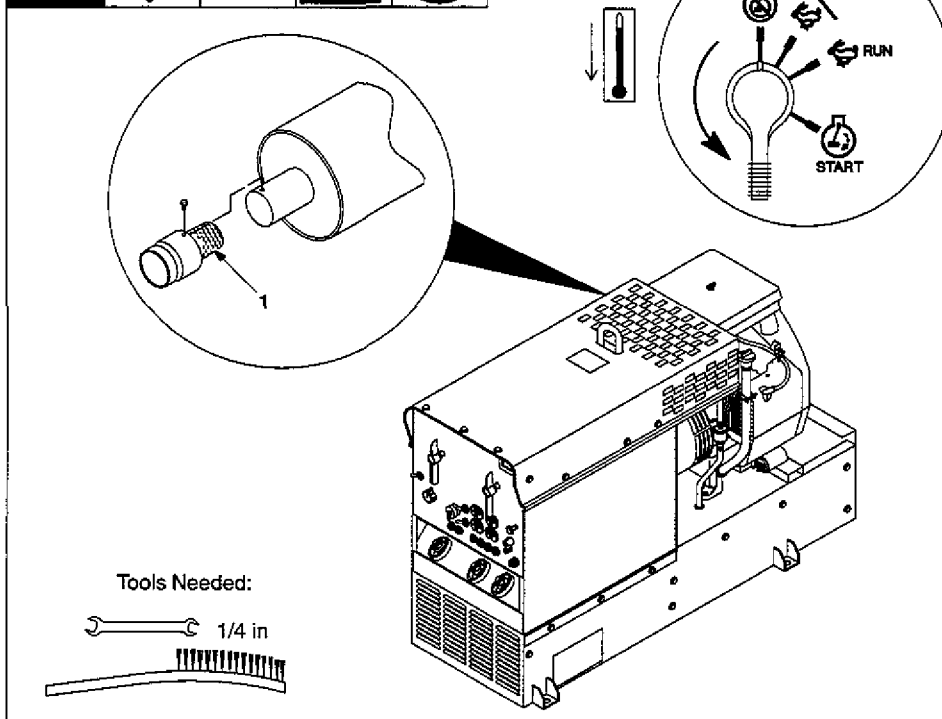
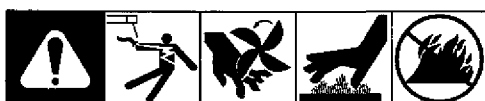
Tools Needed:



3/8 in

ST-156 412 / Ref. ST-131 117-C

5-7. Inspecting And Cleaning Optional Spark Arrestor

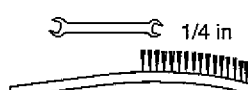


Stop engine and allow to cool.

1 Spark Arrestor Screen

Clean and inspect screen. Replace spark arrestor if screen wires are broken or missing.

Tools Needed:



Ref. ST-123 740-D / ST-801 206 / Ref. ST-131 117-C

5-8. Troubleshooting

A. Welding



Trouble	Remedy
No weld output.	Check control settings. Check weld connections. Place Output (Contactor) switch S7 in On position, or move switch to Remote 14 position and connect remote contactor to Remote 14 receptacle RC1 (see Sections 3-1 and 3-3). Check fuses F1 and F2, and replace if necessary (see Section 5-6). Have Factory Authorized Service Agent check brushes and slip rings, and field current regulator board PC2.
Low weld output.	Check control settings. Place Remote Amperage/Voltage switch S8 in Panel position, or move switch to Remote 14 position and connect remote amperage/voltage control to Remote 14 receptacle RC1. Check and clean air cleaner as necessary (see Section 5-3). Check and adjust engine speed (see Section 5-5). Have Factory Authorized Service Agent check brushes and slip rings, and field current regulator board PC2. See engine manual.
High weld voltage with Range switch in 25-80 AC DC/CC or 35-115 AC DC/CC position while welding SMAW.	Check and secure lead connections to Range switch S1. Check for obstructed movement of solenoid linkage (see Section 5-5). Have Factory Authorized Service Agent check field current regulator board PC2.
Weld output cannot be adjusted.	Check position of Remote Amperage/Voltage switch S8 (see Section 3-1). Have Factory Authorized Service Agent check field current regulator board PC2.
Erratic weld output.	Check control settings. Clean and tighten connections both inside and outside unit. Check and secure lead connections to Range switch S1. Be sure connection to work piece is clean and tight. Use dry, properly stored electrodes. Check and adjust engine speed (see Section 5-5). Have Factory Authorized Service Agent check brushes and slip rings.
Remote contactor control does not activate contactor.	Place Remote Output (Contactor) switch S7 in Remote 14 position (see Section 3-1). Check and tighten connections to Remote 14 receptacle RC1 (see Section 3-2).
No power output at Remote 14 receptacle RC1.	Reset circuit breaker CB1 and/or CB2 (see Section 5-6).
Lack of high frequency; difficulty in establishing Gas Tungsten Arc Welding arc.	Use proper size tungsten for welding amperage. Leakage of high frequency from torch or work cable.

Trouble	Remedy
	Check cables and torch for cracked or deteriorated insulation or bad connections. Repair or replace necessary parts.
Wandering arc – poor control of arc direction.	Reduce gas flow rate.
	Select proper size tungsten. Properly prepare tungsten.
Tungsten electrode oxidizing and not remaining bright after conclusion of weld.	Shield weld zone from drafts.
	Increase postflow time.
	Check and tighten all gas fittings.
	Properly prepare tungsten.

B. Auxiliary Power



Trouble	Remedy
No power output.	Reset circuit breakers CB3, CB4, CB5 and/or CB6 (see Section 4-1).
	Check fuse F1, and replace if necessary (see Section 5-6).
	Have Factory Authorized Service Agent check brushes and slip rings.
Low power output.	Increase Fine Amperage/Voltage control R1 setting (see Section 3-1).
	Check and clean air cleaner as necessary.
	Check and adjust engine speed (see Section 5-5).
	See engine manual.
High power output.	Check and adjust engine speed (see Section 5-5).
Erratic power output.	Check fuel level.
	Have Factory Authorized Service Agent check brushes and slip rings.
	Check receptacle wiring and connections.
	Check governor according to engine manual.

C. Engine



Trouble	Remedy
Engine does not start.	Check fuel level (see Section 2-4).
	Check battery and replace if necessary.
	Check engine charging system according to engine manual.
	See engine manual.
Engine starts but stops as soon as Engine Control switch S2 returns to Run position.	Check oil level. Have Factory Authorized Service Agent check low oil pressure shutdown switch S5 (see Section 2-4).
	Check and refill crankcase with proper viscosity oil for operating temperature, if necessary (see Section 5-2).
Battery discharges between uses.	Clean top of battery with baking soda and water solution; rinse with clear water.
	Periodically recharge battery (approximately every 3 months).
	Replace battery.
	Check voltage regulator according to engine manual.
Engine stopped during normal operation.	Check fuel level (see Section 2-4).
	Check oil level. Have Factory Authorized Service Agent check low oil pressure shutdown switch S5 (see Section 2-4).
Engine does not return to idle speed.	Be sure Engine Control switch S2 is in Run/Idle position.
	Remove all weld and auxiliary power loads.
	Turn off remote device connected to Remote 14 receptacle RC1 (see Section 3-3).
	Check for obstructed movement of solenoid linkage (see Section 5-5).
	Have Factory Authorized Service Agent check idle module PC1 and current transformer CT1.
Engine does not remain at weld/power speed when power or weld load is applied with Engine Control switch S2 in Run/Idle position.	Place Engine Control switch S2 in the Run position for small loads.

SECTION 6 – ELECTRICAL DIAGRAM

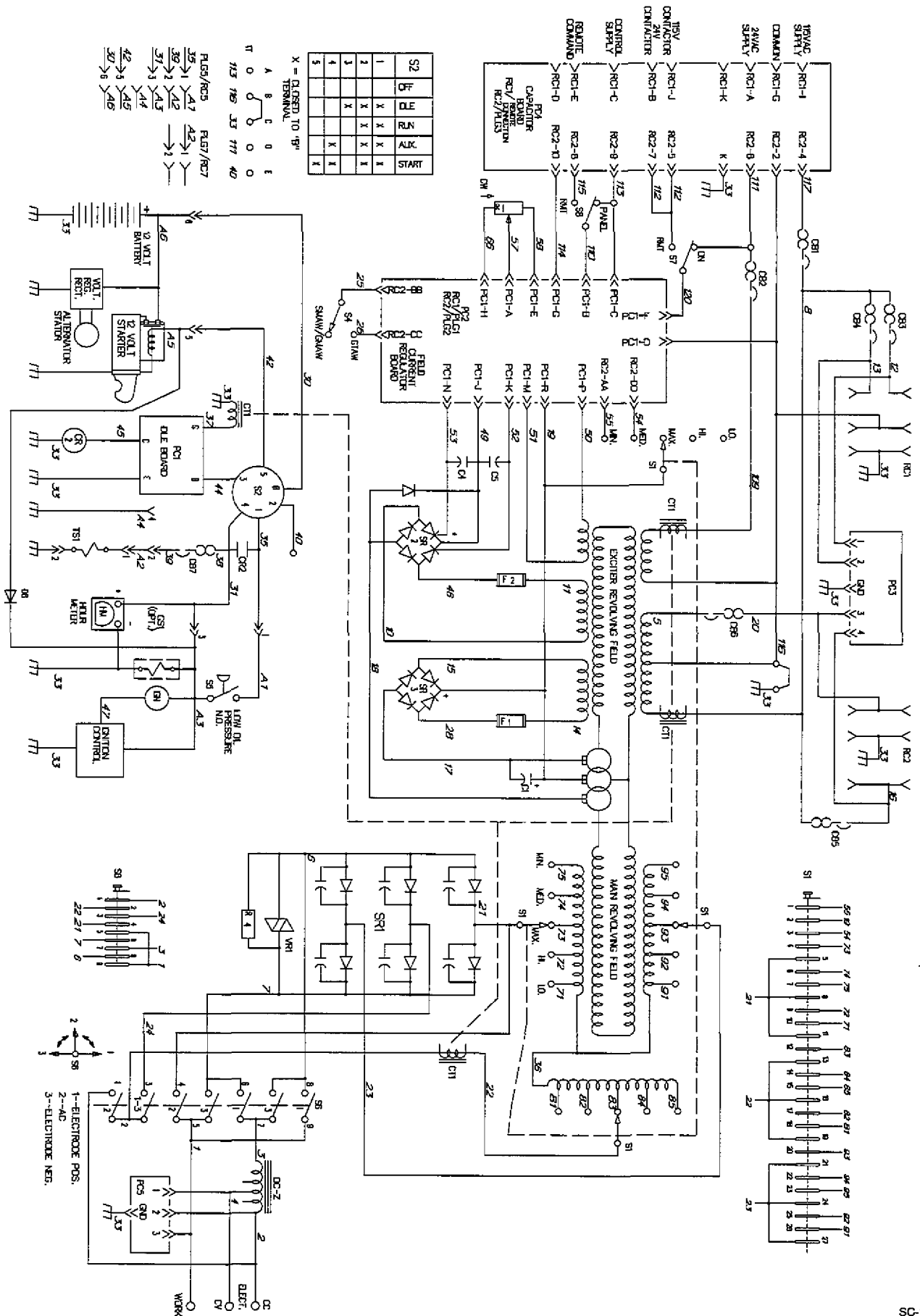
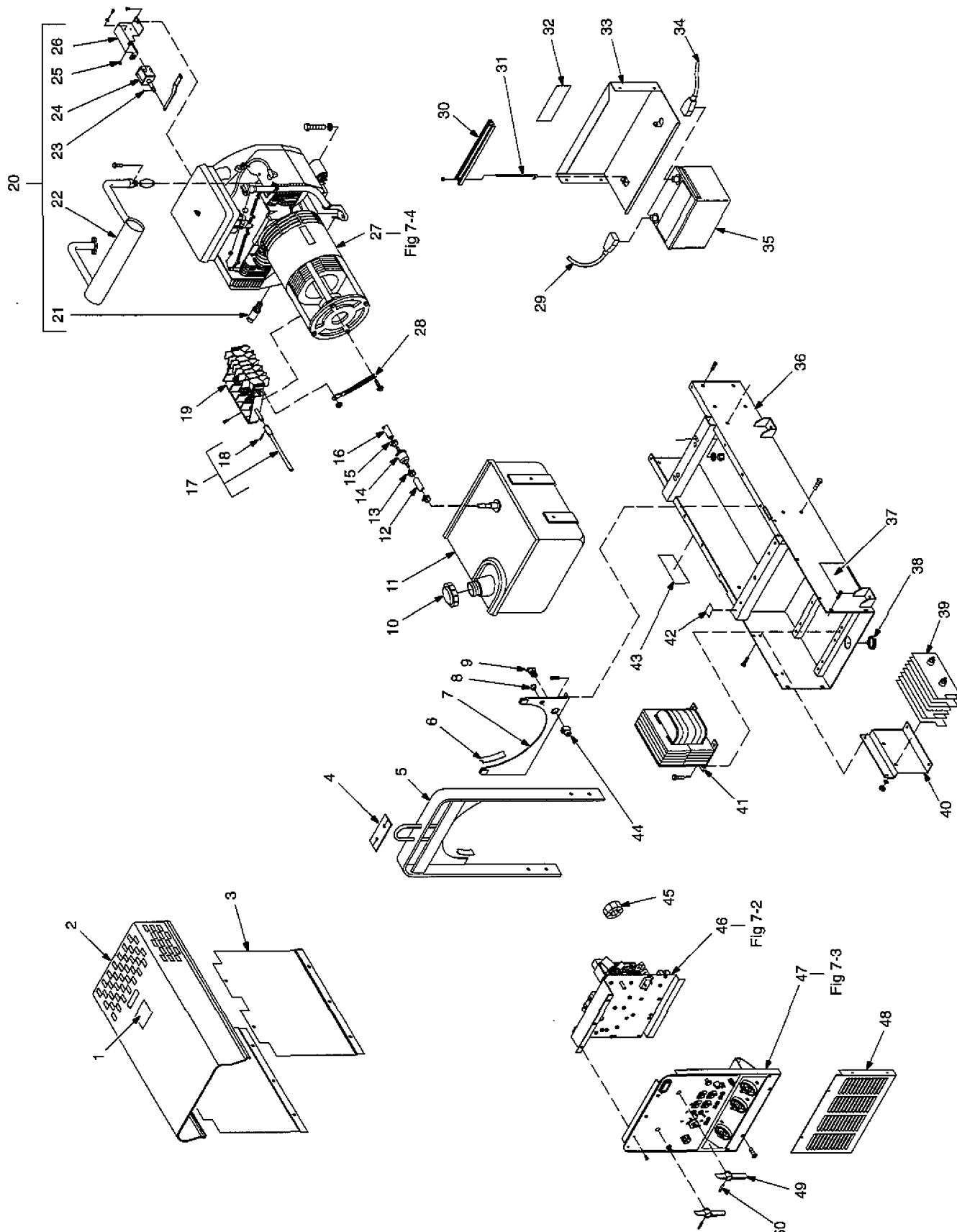


Figure 6-1. Circuit Diagram For Welding Generator

SECTION 7 – PARTS LIST

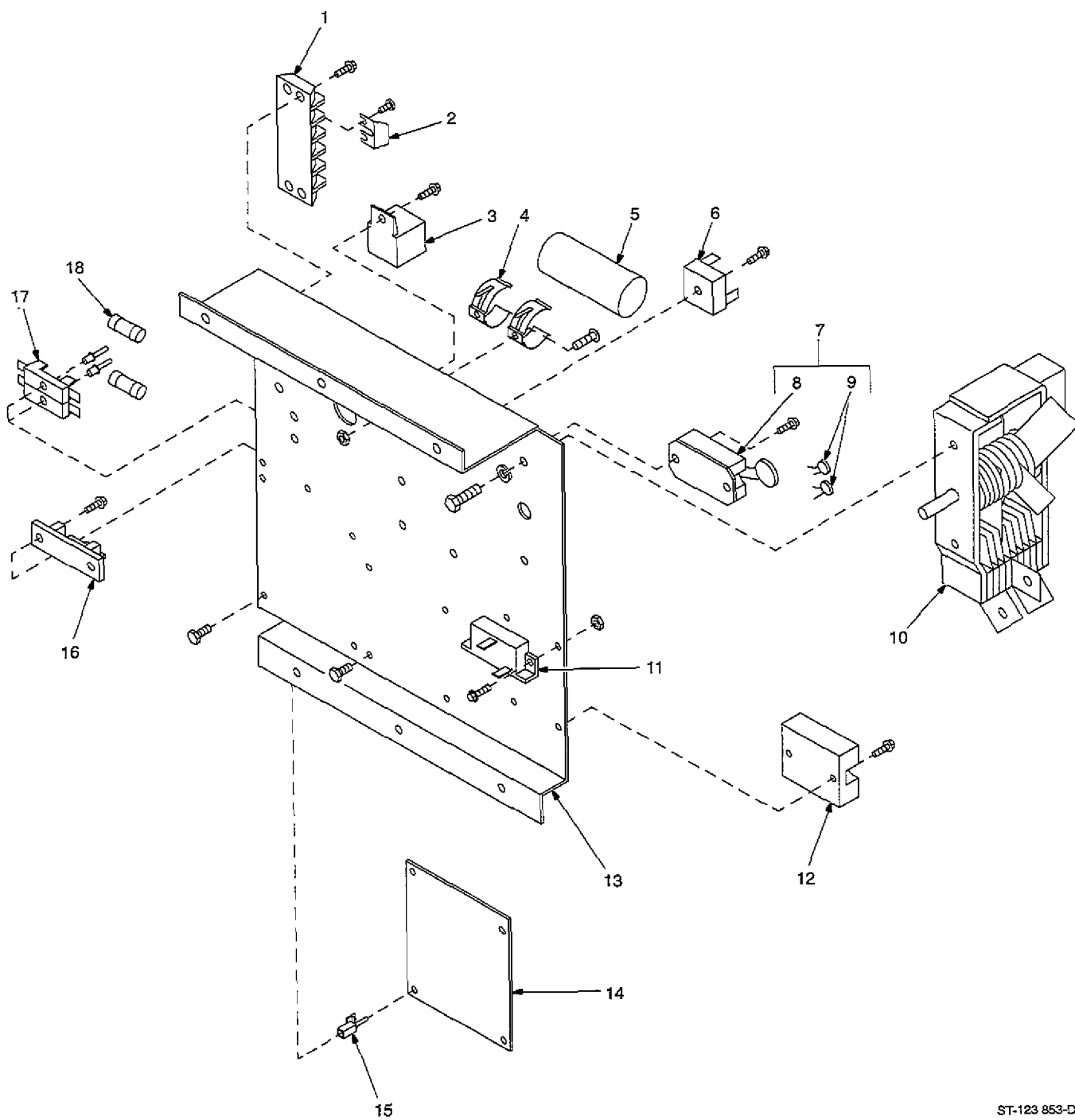


ST-123 695-J

Figure 7-1. Main Assembly

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 7-1. Main Assembly				
1		108 487	LABEL, warning falling equipment etc	1
2		+173 209	COVER, top	1
3		113 303	PANEL, side	2
4		107 342	SEAL, lift eye	1
5		136 057	UPRIGHT, base	1
6		095 970	STRIP, nprn wsl eng firewall 18.000 lg	2
7		136 059	PANEL, rear lower	2
8		088 731	BUSHING, snap-in nyl .375 ID x .500mtg hole	1
9			CONNECTOR, included w/engine - see engine parts list	
10		147 601	CAP, tank screw-on	1
11		177 606	TANK, fuel 7.5gal	1
12		145 976	HOSE, SAE .250 ID x .500 OD x 4.500	1
13		084 173	CLAMP, hose .460-.545dia	2
14		066 113	FILTER, fuel in-line (included w/engine)	1
15			CLAMP, hose .460-.545clp dia (included w/engine)	2
16			HOSE, SAE .250 ID x .500 OD (included w/engine)	1
17		124 630	SHAFT & COUPLER, (consisting of)	1
18		010 651	PIN, spring CS .156 x 1.000	1
19	S1	122 465	SWITCH, range/changeover	1
20		178 487	ENGINE, gas (consisting of)	1
21		165 271	VALVE, oil drain 3/8-18NPTF	1
22		164 353	MUFFLER, exhaust engine	1
23		059 926	PIN, spring CS .093 x 1.000	1
24		165 810	SOLENOID, 14VDC .53A	1
25		057 084	BUSHING, snap-in nyl .250 ID x .375mtg hole	1
26		165 522	BRACKET, mtg solenoid	1
		137 046	TUNE-UP & FILTER KIT, (consisting of)	1
		064 617	ELEMENT, air cleaner	1
		065 251	OIL FILTER	1
		121 652	FILTER/CLAMPS, fuel	1
		065 709	SPARK PLUG	2
27		Fig 7-4	GENERATOR	1
28		070 217	STRIP, mtg switch	1
29		167 730	CABLE, bat neg 29.000 lg	1
30		165 631	HOLD DOWN, bat	1
		108 081	TERMINAL PROTECTOR, bat	1
		020 279	CLAMP, stl cush .750dia x .281mtg hole	1
31		165 630	BOLT, J stl .250-20 x 6.125	2
32		168 385	LABEL, warning battery explosion can blind	1
33		+175 887	DOOR, access bat	1
34		167 731	CABLE, bat pos 19.500 lg (included w/engine)	1
35	Batt	167 677	BATTERY, stor 12V 415crk 95rsv	1
36		+146 710	BASE	1
37		134 792	LABEL, warning general precautionary	2
38		057 360	BLANK, snap in-nyl 1.375mtg hole	1
39	SR1	145 396	RECTIFIER, si 3ph 300A	1
40		126 890	BRACKET, mtg rect	1
41	DC-Z	122 353	STABILIZER	1
42		013 367	LABEL, warning moving parts can cause serious injury	1
43		109 994	LABEL, warning engine fuel can cause fire	1
44		116 045	CONNECTOR & PINS, (consisting of)	1
		113 633	CONNECTOR, rect pin 20-14ga	6
45	CT1	105 370	TRANSFORMER, current	1
46		Fig 7-2	CONTROL PANEL	1
47		Fig 7-3	PANEL, front w/components	1
48		114 544	PANEL, lower front	1
49		115 493	HANDLE, switch	2
50		010 647	PIN, spring CS .156 x 1.250	2
		176 907	KIT, label	1

+When ordering a component originally displaying a precautionary label, the label should also be ordered.
BE SURE TO PROVIDE MODEL AND SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.



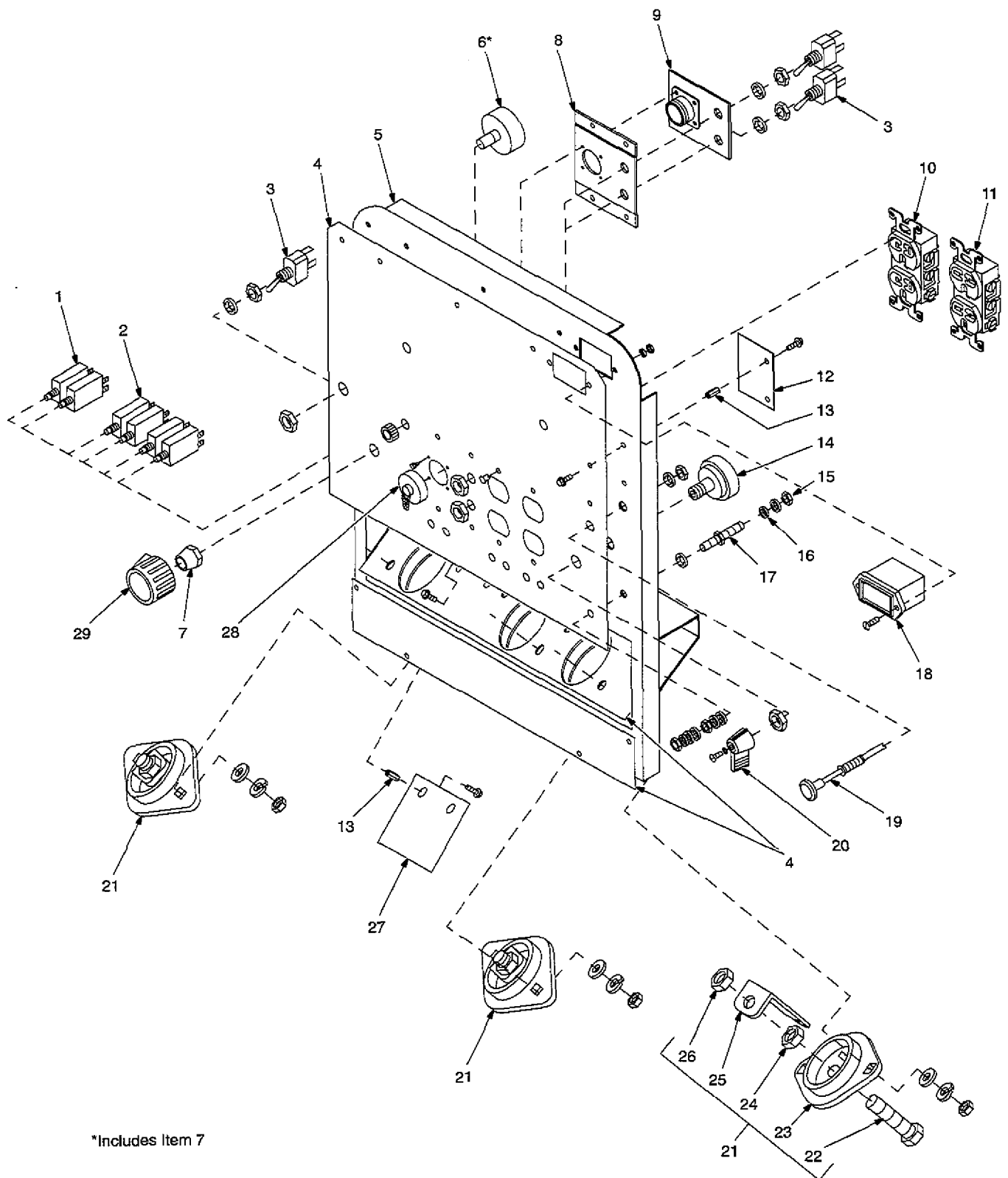
ST-123 853-D

Figure 7-2. Control Panel

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 7-2. Control Panel (Fig 7-1 Item 46)				
1	1T	124 887	BLOCK, term 30A 5P	1
2		038 620	LINK, jumper	1
3	CR2	173 069	RELAY, encl 12VDC SPDT	1
4		087 111	CLAMP, capacitor	2
5	C1	156 289	CAPACITOR, elctlt 240uf 250VDC	1
6	SR3	035 704	RECTIFIER, integ 40A 800V	1
7		110 174	DIODE/SCR/CAPACITOR, (consisting of)	1
8	SR2	097 353	DIODE/SCR, bridge	1
9	C4,5	109 955	CAPACITOR	1
10	S6	121 965	SWITCH, changeover	1
11	CB7	045 061	CIRCUIT BREAKER, auto reset 24VDC 7A	1
12	PC1	142 724	MODULE, pull to idle 5 pin	1
13		122 649	PANEL, control	1
14	PC2	159 150	CIRCUIT CARD, field current	1
	PLG1	135 275	CONNECTOR & SOCKETS, (consisting of)	1
		114 066	CONNECTOR, rect skt 20-14ga	15
	PLG2	136 810	CONNECTOR & SOCKETS, (consisting of)	1
		114 066	CONNECTOR, rect skt 20-14ga	4
15		110 375	STAND-OFF SUPPORT, PC card No. 6 screw	4
16	R4,VR1	046 819	SUPPRESSOR	1
17		098 376	HOLDER, fuse mintr	1
18	F1,2	*012 655	FUSE, mintr cer 10A 250V	2

*Recommended Spare Parts.

BE SURE TO PROVIDE MODEL AND SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.



ST-123 696-C

Figure 7-3. Panel, Front w/Components

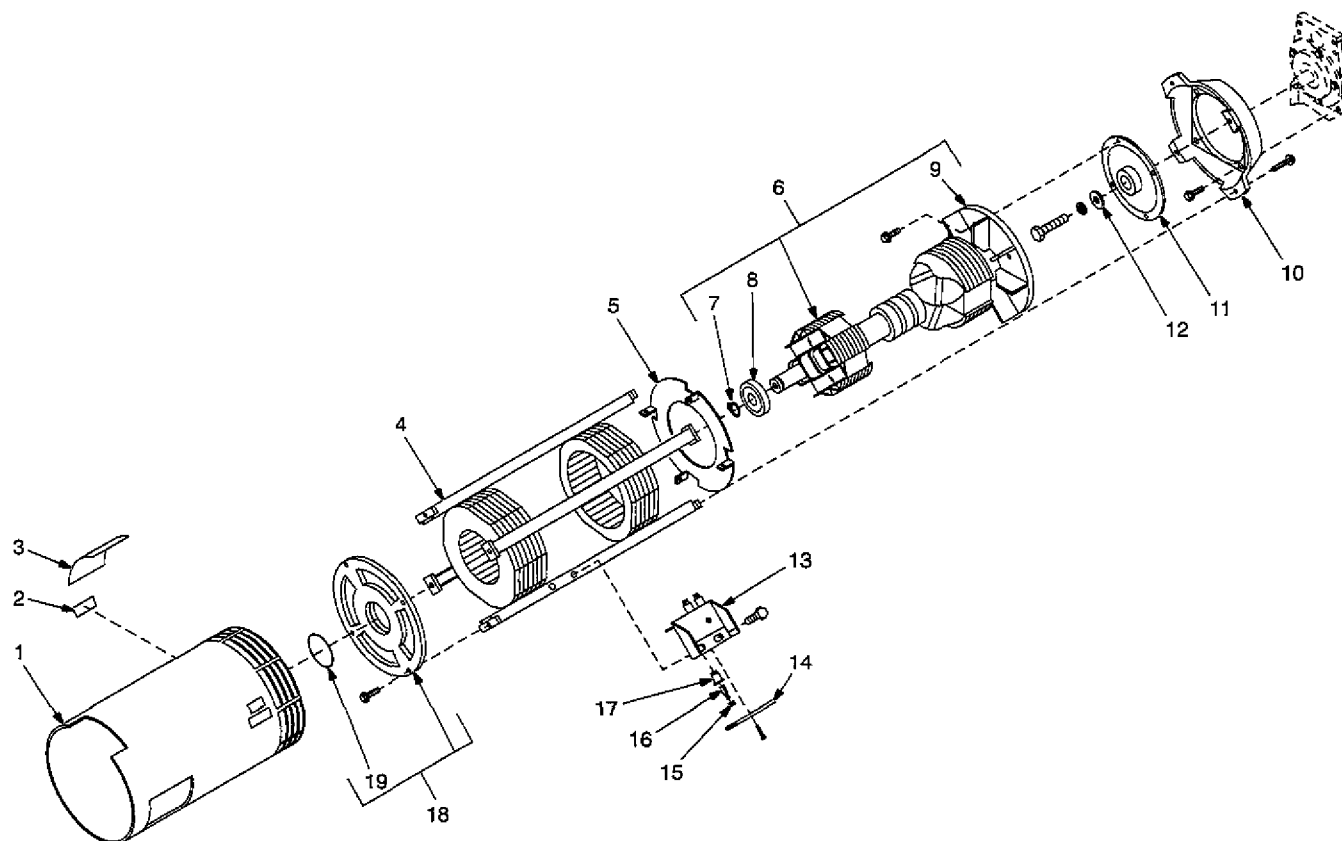
Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 7-3. Panel, Front w/Components (Fig 7-1 Item 47)				
... 1	... CB1,2	... 083 432	... CIRCUIT BREAKER, man reset 1P 10A 250V	2
... 2	... CB3-6	... 093 995	... CIRCUIT BREAKER, man reset 1P 15A 250V	4
... 3	... S4,7,8	... 011 609	... SWITCH, tgl SPDT 15A 125V	3
... 4			... NAMEPLATE, (order by model and serial number)	1
... 5		143 395	... PANEL, front	1
... 6	... R1	... 072 462	... POTENTIOMETER, w/shaft lock (consisting of)	1
... 7		072 590	... LOCK, shaft .375-32 x .250dia shaft	1
... 8		122 351	... BRACKET, panel control remote	1
... 9	... PC4,RC1	... 147 554	... CIRCUIT CARD, connector/receptacle	1
	... PLG3	... 165 668	... CONNECTOR & SOCKETS, (consisting of)	1
		079 534	... CONNECTOR, circ skt push-in 14-18ga	10
... 10	... RC1	... 604 176	... RECEPTACLE, str dx grd 2P3W 15A 125V	1
... 11	... RC2	... 604 103	... RECEPTACLE, str dx grd 2P3W 15A 250V	1
... 12	... PC3	... 148 021	... CIRCUIT CARD, filter HF	1
... 13		073 756	... STAND OFF, 6-32 x .625 lg	4
... 14	... S2	... 172 070	... SWITCH, ign 5 posn	1
... 15		601 836	... NUT, brs hex jam .250-20	3
... 16		010 915	... WASHER, flat brs .250	2
... 17		083 030	... STUD, brs .250-20 x 1.750	1
... 18	... HM	... 145 247	... METER, hour 10-32VDC	1
... 19		116 813	... CONTROL, push pull	1
... 20		119 014	... LEVER, switch black	1
... 21		099 255	... TERMINAL, pwr output (consisting of)	3
... 22		601 976	... SCREW, cap stl hexhd .500-13 x 1.500	1
... 23		039 040	... TERMINAL BOARD, neutral	1
... 24		601 880	... NUT, stl hex jam .500-13	1
... 25		039 044	... BUS BAR, term bd	1
... 26		601 879	... NUT, stl hex full .500-13	1
... 27	... PC5	... 148 030	... CIRCUIT CARD, filter HF	1
... 28		109 993	... CAP, dust connector 9760-20	1
... 29		097 924	... KNOB, pointer	1

BE SURE TO PROVIDE MODEL AND SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.

Item No.	Part No.	Description	Quantity
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Figure 7-4. Generator (Fig 7-1 Item 27)

1	+131 047	SHROUD, generator	1
2	013 367	LABEL, warning moving parts can cause serious injury	3
3	165 623	LABEL, engine maintenance	1
4	+122 252	STATOR	1
5	107 313	BAFFLE, air	1
6	107 283	ROTOR ASSEMBLY, (consisting of)	1
7	024 617	RING, retaining external	1
8	053 390	BEARING, ball	1
9	107 417	FAN, rotor	1
10	017 702	ADAPTER, engine	1
	086 863	SCREW, cap stl hexhd slflkg .375-16 x 1.000	5
11	134 981	ADAPTER, fan rotor	1
12	008 917	WASHER, flat stl .343 ID x 2.250 OD x .187thk (included w/engine)	1
13	007 250	BRACKET, mtg brushholder	1
14	047 878	BAR, retaining brushholder	1
15	047 885	CAP, brushholder	3
16	*126 984	BRUSH, w/spring	3
17	005 614	HOLDER, brush	3
18	153 297	ENDBELL, (consisting of)	1
19	143 220	O-RING, 2.859 ID x .139CS	1



ST-108 953-E

Figure 7-4. Generator

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Recommended Spare Parts.

BE SURE TO PROVIDE MODEL AND SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.

OPTIONS AND ACCESSORIES

FUEL GAUGE

(#140 843 Field only)

Handy and convenient accessory designed for the 7.5 gal. fuel tank.

FA-7.5 FLAME ARRESTOR FUEL CAP – GASOLINE RED

(#042 632 Field only)

Lockable for added protection.

LP GAS CONVERSION KIT

(#042 583 Factory)

(#042 584 Field)

Liquid withdrawal with vaporizer and regulator. Does not include tanks, brackets, or hose from tank to regulator.

SPARK ARRESTOR KIT (SCREEN-TYPE)

(#043 241 Field only)

Mandatory when operating on California grasslands, brush or forest-covered land, and all National Forests. For other areas, check your state and local laws.

HF-251 SERIES

High Frequency Arc Starter and Stabilizer

(#042 388) HF-251D-1, 115 VAC

(#042 387) HF-251-2, 230 VAC

A portable 250 Amp high frequency arc starter and stabilizer. Operates on 50, 60, and 100 Hz input.

S-22P12 WIRE FEEDER

(#125 616)

Compact, lightweight 24 VAC constant speed semi-automatic wire feeder provides portability and access for those difficult to reach welding jobs. Accommodates .023 through 5/64 in. (0.6 – 2.0 mm) hard and flux-cored wires. Plugs into 14-pin receptacle on Trailblazer 250G. For detailed information, see S-22P12 literature, Index No. M/7.0.

XR WIRE FEEDERS

(#131 342) Air-cooled

feeder/control

(#137 551) XR-15A gun

(#137 550) XR-30A gun

Push-pull system designed to handle difficult-to-feed soft alloy wires such as aluminum. Accepts 12 in. (305 mm) spools of .030 in. (0.8 mm) through 1.16 in. (1.6 mm)

aluminum wire. For detailed information, see Miller XR and Spoolmatic literature, Index No. M/1.2.

SPOOLMATIC 30A SPOOL GUN

(#130 831) Air-cooled

200 Amp, 100% duty cycle, 1 lb. spool gun with 30 ft. (9.1 m) cable assembly. WC Control required. For detailed information, see Miller XR and Spoolmatic literature, Index No. M/1.2.

WC-24 CONTROL

(#137 549)

Can be mounted directly to the Trailblazer 250G welding generator. Weighs only 2 lbs. (0.9 kg).

REMOTE CONTROLS AND SWITCHES

RFC-14 FOOT CONTROL

(#129 339)

Foot current and contactor control. 20 ft. (6 m) cord and 14-pin Amphenol plug.

RHC-14 HAND CONTROL

(#129 340)

Remote hand current and contactor control with 20 ft. (6 m) cord and plug.

RMLS-14 SWITCH

(#129 337)

Momentary- and maintained- contact rocker switch for contactor control. Push forward for maintained contact and push back for momentary contact. Includes 20 ft. (6 m) cord and plug.

RCC-14 REMOTE CONTACTOR AND CURRENT CONTROL

(#151 086)

This rotary motion fingertip control fastens to TIG torch handle using two Velcro strips. Includes 28 ft. (8.5 m) cord and current plug. Allows complete current contactor control.

EXTENSION CORDS FOR 14-PIN REMOTE CONTROLS

(#122 973) 25 ft. (7.6 m)

(#122 974) 50 ft. (15.2 m)

(#122 975) 75 ft. (23 m)

GAS METAL ARC (MIG) GUNS

Lit. Index Nos. M/9.10 to M/10.0

Select rugged Miller GMAW/FCAW (MIG) guns for reliability and value. Miller produces a complete line of dependable MIG guns. Check individual product literature for complete details.

EDT 1000-2B TWO-WHEEL TRAILER

(#042 878)

Rugged 1000 lb. capacity trailer designed to transport welders and equipment. Features adjustable bed for easy mounting of Miller and competitive welders and other similar construction equipment. Permits user to achieve desired tongue weight. Torsional axle, leveling jack, improved fenders with skirt and safety chains. Optional easy-to-install fender and light kit (#042 897) required for highway operation. Meets or exceeds DOT standards.

NOTE: Hitches must be ordered separately.

Specifications:

GAWR: 1300 lbs. (590 kg)

GVWR: 1300 lbs. (590 kg)

Net Payload: 1000 lbs. (454 kg)

Road Clearance: 8-1/2 in. (216 mm)

Track: 47-1/2 in. (1.2 m)

Tire Size: 4.80-12

Net Wt. 250 lbs. (113 kg)

Ship Wt. 370 lbs. (168 kg)

NOTE: When equipped with fender and light kit and 2 in. (50 mm) ball hitch, this trailer conforms to all applicable U.S. Federal motor vehicle safety standards in effect on date of manufacture.

When ordering trailers without the fender and light kit and ball hitch, the purchase order must include the statement, "For off-the-road use only."

FENDER AND LIGHT KIT FOR EDT-1000-2B

(#042 897)

Includes fenders, lights, wiring harness, mounting hardware, and easy-to-use instructions. Shipping weight: 37 lbs. (17 kg)

HITCHES

2 in. (50 mm) BALL

(#042 705)

Shipping weight: 5 lbs. (2 kg)

OPTIONS AND ACCESSORIES

CLEVIS (Not for highway use) (#042 707)

Shipping weight: 11 lbs.(5 kg)

2-1/2 in. (64 mm) LUNETTE EYE (#042 706)

Shipping weight: 9 lbs. (4 kg)

NO. 4B RUNNING GEAR (#041 930)

Two rear wheels with 480/400x8 pneumatic tires. Two 8 in. (203 mm) solid rubber tired front wheels and 30 in. (762 mm) towing handle.

CR-4B CYLINDER RACK (#041 968)

For use with No. 4B running gear.

NO. 25 HAND RUNNING GEAR (#042 503)

Constructed of lightweight, tubular steel and large, 480/400x8 pneumatic tires, this running gear

is designed for maneuverability and convenience. The weld cables can be wrapped around the handles. Protective cover can be used with this running gear.

NO. 2WA WELDING ACCESSORY PACKAGE (#040 039)

Consists of 35 ft. (10.6 m) No. 2/0 electrode cable with insulated electrode holder and lug, 30 ft. (9.1 m) No. 2/0 work cable with work clamp and lug, welding helmet, and wire scratch brush.

CC-1 SERIES CANVAS COVERS

CC-1A (#040 252) Blue

CC-1C (#042 360) Gray

Attractive, waterproof canvas covers resist stains and mildew, and protect the finish of your welder. CC-1A has Miller logo and name across side.

MILLER INDUSTRIAL SUPREME MOTOR OIL

(#150 872) SAE 10W-30

(#150 873) SAE 30W

Custom-blended to Miller specifications, Miller Industrial Supreme Motor Oil features the highest quality base stocks available today. This oil meets and exceeds all engine manufacturers' requirements as specified in the American Petroleum Institute service grade SG/CE, CD, CDII. Supplied in quart containers.

WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.