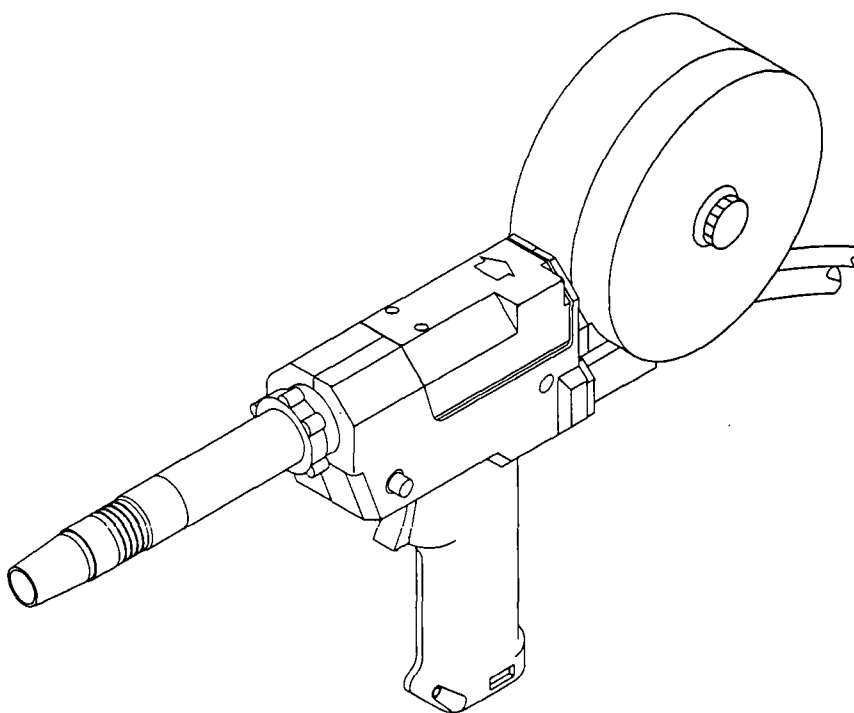




October 1991 FORM: OM-1213A
Effective With Serial No. KB102064

MODEL: SPOOLMATIC® 30A



OWNER'S MANUAL

► **IMPORTANT:** *Read and understand the entire contents of both this manual and the power source manual used with this unit, with special emphasis on the safety material throughout the manual, before installing, operating, or maintaining this equipment. This unit and these instructions are for use only by persons trained and experienced in the safe operation of welding equipment. Do not allow untrained persons to install, operate, or maintain this unit. Contact your distributor if you do not fully understand these instructions.*

MILLER ELECTRIC Mfg. Co.
A Miller Group Ltd., Company

P.O. Box 1079
Appleton, WI 54912 USA
Tel. 414-734-9821

LIMITED WARRANTY

EFFECTIVE: AUGUST 6, 1990

This 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 hereof, MILLER Electric Mfg. Co., Appleton, Wisconsin warrants to its Distributor/Dealer that all new and unused Equipment furnished by MILLER is free from defect in workmanship and material as of the time and place of delivery by MILLER. No warranty is made by MILLER with respect to engines, trade accessories or other items manufactured by others. Such engines, trade accessories and other items are sold subject to the warranties of their respective manufacturers, if any. All engines are warranted by their manufacturer for two years from date of original purchase, except Deutz engines which have a one year, 2000 hour warranty.

Except as specified below, MILLER's warranty does not apply to components having normal useful life of less than one (1) year, such as spot welder tips, relay and contactor points, MILLERMATIC parts that come in contact with the welding wire including nozzles and nozzle insulators where failure does not result from defect in workmanship or material.

MILLER shall be required to honor warranty claims on warranted Equipment in the event of failure resulting from a defect within the following periods from the date of delivery of Equipment to the original user:

1. Arc welders, power sources, robots, and 1 year components
2. Load banks 1 year
3. Original main power rectifiers 3 years (labor – 1 year only)
4. All welding guns, feeder/guns and torches 90 days
5. All other MILLERMATIC Feeders 1 year
6. Replacement or repair parts, exclusive of labor 60 days
7. Batteries 6 months

provided that MILLER is notified in writing within thirty (30) days of the date of such failure.

As a matter of general policy only, MILLER may honor claims submitted by the original user within the foregoing periods.

In the case of MILLER's breach of warranty or any other duty with respect to the quality of any goods, the exclusive remedies therefore 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, therefore, no compensation for transportation costs of any kind will be allowed. Upon receipt of notice of apparent defect or failure, MILLER shall instruct the claimant on the warranty claim procedures to be followed.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY OR REPRESENTATION AS TO PERFORMANCE, AND ANY REMEDY FOR BREACH OF CONTRACT 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 OF FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT TO ANY AND ALL EQUIPMENT FURNISHED BY MILLER IS EXCLUDED AND DISCLAIMED BY MILLER.

EXCEPT AS EXPRESSLY PROVIDED BY MILLER IN WRITING, MILLER PRODUCTS ARE INTENDED FOR ULTIMATE PURCHASE BY COMMERCIAL/INDUSTRIAL USERS AND FOR OPERATION BY PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT AND NOT FOR CONSUMERS OR CONSUMER USE. MILLER'S WARRANTIES DO NOT EXTEND TO, AND NO RESELLER IS AUTHORIZED TO EXTEND MILLER'S WARRANTIES TO, ANY CONSUMER.

RECEIVING-HANDLING

Before unpacking equipment, check carton for any damage that may have occurred during shipment. File any claims for loss or damage **with the delivering carrier**. Assistance for filing or settling claims may be obtained from distributor and/or equipment manufacturer's Transportation Department.

When requesting information about this equipment, always provide Model Designation and Serial or Style Number.

Use the following spaces to record Model Designation and Serial or Style Number of your unit. The information is located on the rating label or nameplate.

Model _____

Serial or Style No. _____

Date of Purchase _____

ARC WELDING SAFETY PRECAUTIONS



WARNING

ARC WELDING can be hazardous.

PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS KEEP AWAY UNTIL CONSULTING YOUR DOCTOR.

In welding, as in most jobs, exposure to certain hazards occurs. Welding is safe when precautions are taken. The safety information given below is only a summary of the more complete safety information that will be found in the Safety Standards listed on the next page. Read and follow all Safety Standards.

HAVE ALL INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR WORK PERFORMED ONLY BY QUALIFIED PEOPLE.



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.
4. Disconnect input power or stop engine before installing or servicing this equipment.

5. Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
6. Turn off all equipment when not in use.
7. Do not use worn, damaged, undersized, or poorly spliced cables.
8. Do not wrap cables around your body.
9. Ground the workpiece to a good electrical (earth) ground.
10. Do not touch electrode while in contact with the work (ground) circuit.
11. Use only well-maintained equipment. Repair or replace damaged parts at once.
12. Wear a safety harness to prevent falling if working above floor level.
13. Keep all panels and covers securely in place.



ARC RAYS can burn eyes and skin; NOISE can damage hearing.

Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin. Noise from some processes can damage hearing.

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



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, and cleaners.

5. Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Shielding gases used for welding can displace air 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.

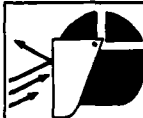


WELDING can cause fire or explosion.

Sparks and spatter fly off from the welding arc. The flying sparks and hot metal, weld spatter, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, or fire.

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.

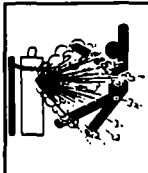
5. Watch for fire, and keep a fire extinguisher nearby.
6. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
7. Do not weld on closed containers such as tanks or drums.
8. Connect work cable to the work as close to the welding area as practical to prevent 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.



FLYING SPARKS AND HOT METAL can cause injury.

Chipping and grinding cause flying metal. As welds cool, they can throw off slag.

1. Wear approved face shield or safety goggles. Side shields recommended.
2. Wear proper body protection to protect skin.



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, and arcs.
2. Install and secure cylinders in an upright position by chaining them to a stationary support or equipment cylinder rack to prevent falling or tipping.

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



WARNING

ENGINES can be hazardous.



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 before checking or adding fuel.
2. Do not add fuel while smoking or if unit is near any sparks or open flames.
3. Allow engine to cool before fueling. If possible, check and add fuel to cold engine before beginning job.
4. Do not overfill tank – allow room for fuel to expand.
5. 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.

The coolant in the radiator can be very hot and under pressure.

1. Do not remove radiator cap when engine is hot. Allow engine to cool.
2. Wear gloves and put a rag over cap area when removing cap.
3. Allow pressure to escape before completely removing cap.

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.

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SECTION 1 – SAFETY SIGNAL WORDS

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The following safety alert symbol and signal words are used throughout this manual to call attention to and identify different levels of hazard and special instructions.



WARNING

WARNING statements identify procedures or practices which must be followed to avoid serious personal injury or loss of life.



CAUTION

CAUTION statements identify procedures or practices which must be followed to avoid minor personal injury or damage to this equipment.

► **IMPORTANT:** *statements identify special instructions necessary for the most efficient operation of this equipment.*

SECTION 2 – SPECIFICATIONS

Table 2-1. Gun/Feeder Specifications

Specification	Description
Input Power	24 Volts AC
Ampere Rating	200 Amperes
Duty Cycle	100% Using Argon Shielding Gas (see Section 2-1)
Approximate Wire Feed Range	70 to 875 ipm (1.7 to 22.2 mpm)
Wire Diameter Range	.025 Thru 1/16 in. (0.6 Thru 1.6 mm) Aluminum Wire .023 Thru .045 in. (0.6 Thru 1.1 mm) Hard Or Cored Wire
Maximum Spool Size	4 in. (102 mm) Diameter
Cooling Method	Air Cooled
Cable Length	30 ft. (9.1 mm)
Overall Dimensions	Length: 15-3/8 in. (390 mm), Width: 2-1/2 in. (64 mm); Height: 10-3/4 in. (273 mm)
Weight	Gun Only 2.9 lbs. (1.3 kg); Gun With Cable Assembly 14 lbs. (6.4 kg)

2-1. Duty Cycle

Duty cycle is how long the gun/feeder can operate within a ten minute period without causing overheating or damage. This gun/feeder is rated at 100% duty cycle allowing continuous operation when using argon shielding gas.

SECTION 3 – INSTALLATION

Table 3-1. Items Included With Gun/Feeder

Item	Quantity
Drive Roll (Small Groove For .023 To .035 in. Wire, Large Groove For .047 To .062 in. Wire) Shipped With Large Groove In Feed Position	1
Contact Tubes* (1 For Each Wire Size – .023/.025, .030, .035, .045/.047, And .062 in.) Shipped With .045/.047 Installed	5
Liner (1 – .023-.035 And 1 – .047-.062 in.) Shipped With .045-.062 Installed	2
10 ft. (3.3 m) Gas Hose With Adapter Fitting	1
Contact Tube Wrench	1

*Contact tubes are marked with wire size and inside diameter (I.D.) of tube. For example, a .035/52 contact tube is used with .035 wire, and the tube has an I.D. of 0.052 in. (1.3 mm).

► **IMPORTANT:** If contact tube, liner, and drive roll groove are not correct for wire size and type, see Section 5 to change parts as needed. See Section 7 for list of other available contact tubes.

3-1. Removing Top Cover

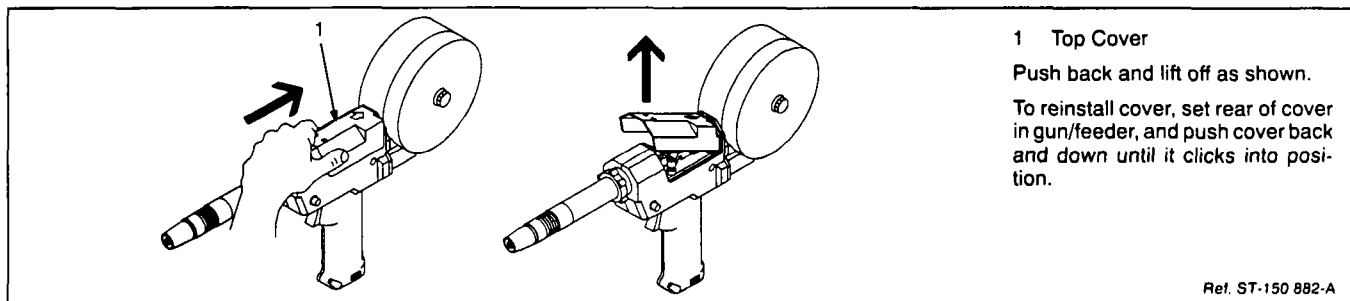


Figure 3-1. Top Cover

3-2. Installing Wire Spool And Threading Welding Wire

 WARNING			
	CYLINDERS can explode if damaged. - Keep cylinders away from welding and other electrical circuits. - Never touch cylinder with welding electrode. - Always secure cylinder to running gear, wall, or other stationary support.		ELECTRIC SHOCK can kill. Do not touch live electrical parts. The welding wire, drive rolls, drive assembly, and all metal parts touching the welding wire are electrically live when welding or feeding wire using gun trigger.
	WELDING WIRE can cause puncture wounds. - Do not press gun trigger until instructed to do so. - Do not point gun toward any part of the body, other people, or any metal when threading welding wire.		 HOT SURFACES can burn skin. Allow gun to cool before touching.

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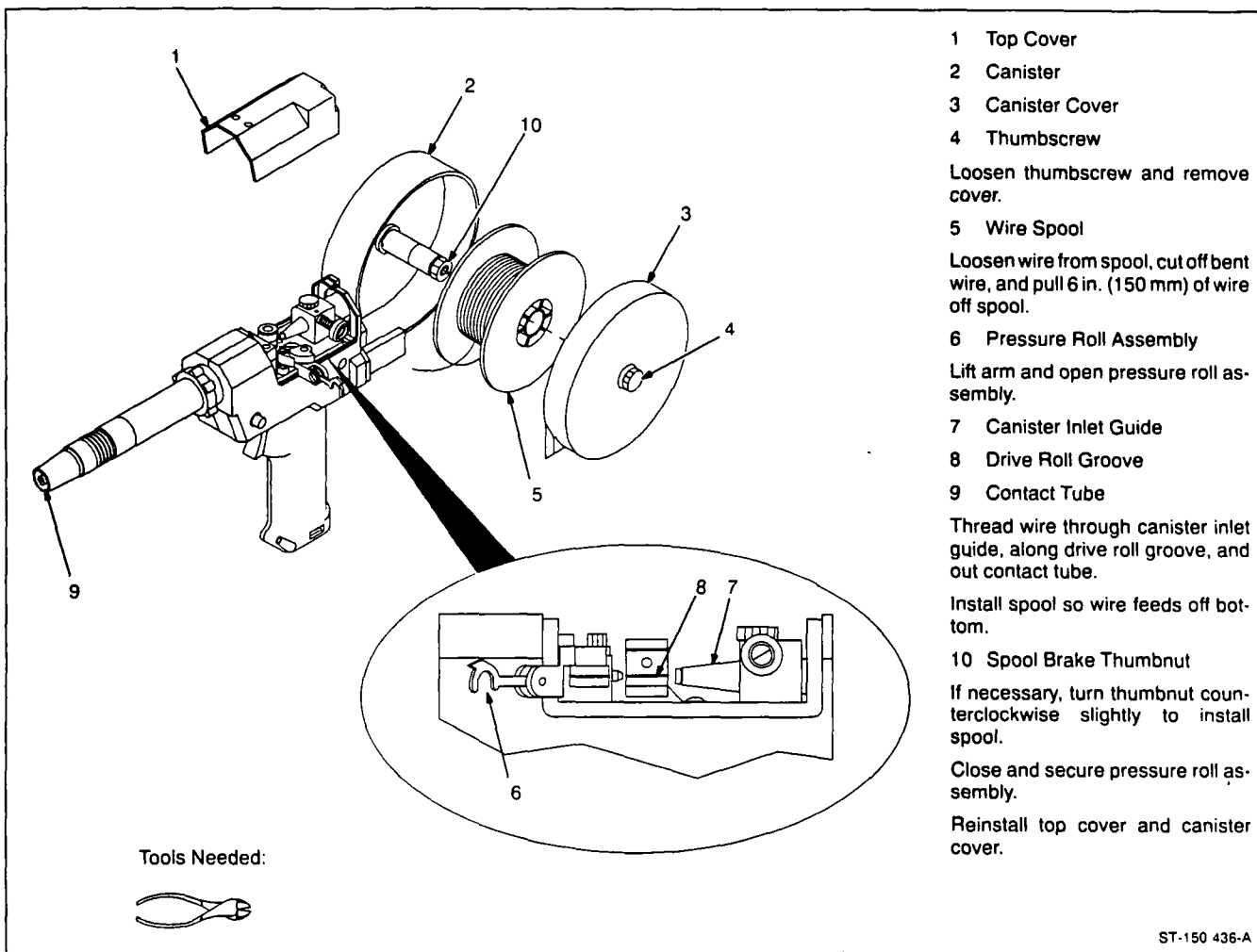


Figure 3-2. Installing Spool And Threading Wire

3-3. Adjusting Shielding Gas Nozzle



WARNING

ELECTRIC SHOCK, WELDING WIRE, AND HOT PARTS HAZARDS. Read safety information at beginning of Section 3-2 before proceeding.

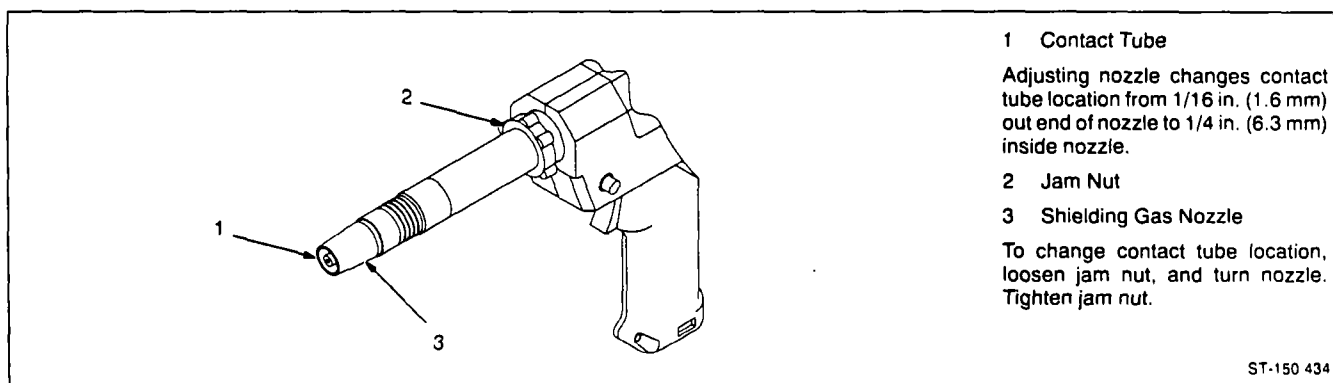


Figure 3-3. Adjusting Gas Nozzle

3-4. Rotating Canister

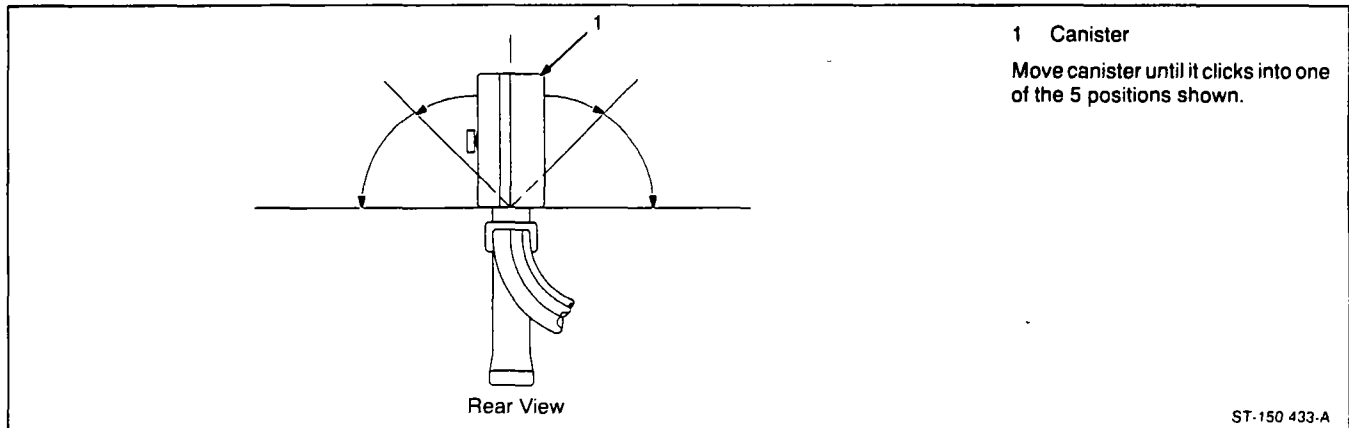


Figure 3-4. Rotating Canister

3-5. Connecting To Weld Control



⚠ WARNING

ELECTRIC SHOCK can kill.

- Do not touch live electrical parts.
- Turn OFF welding power source, and disconnect input power before inspecting or installing. Stop engine on welding generators.

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A. Connections To 24 Volt Weld Control

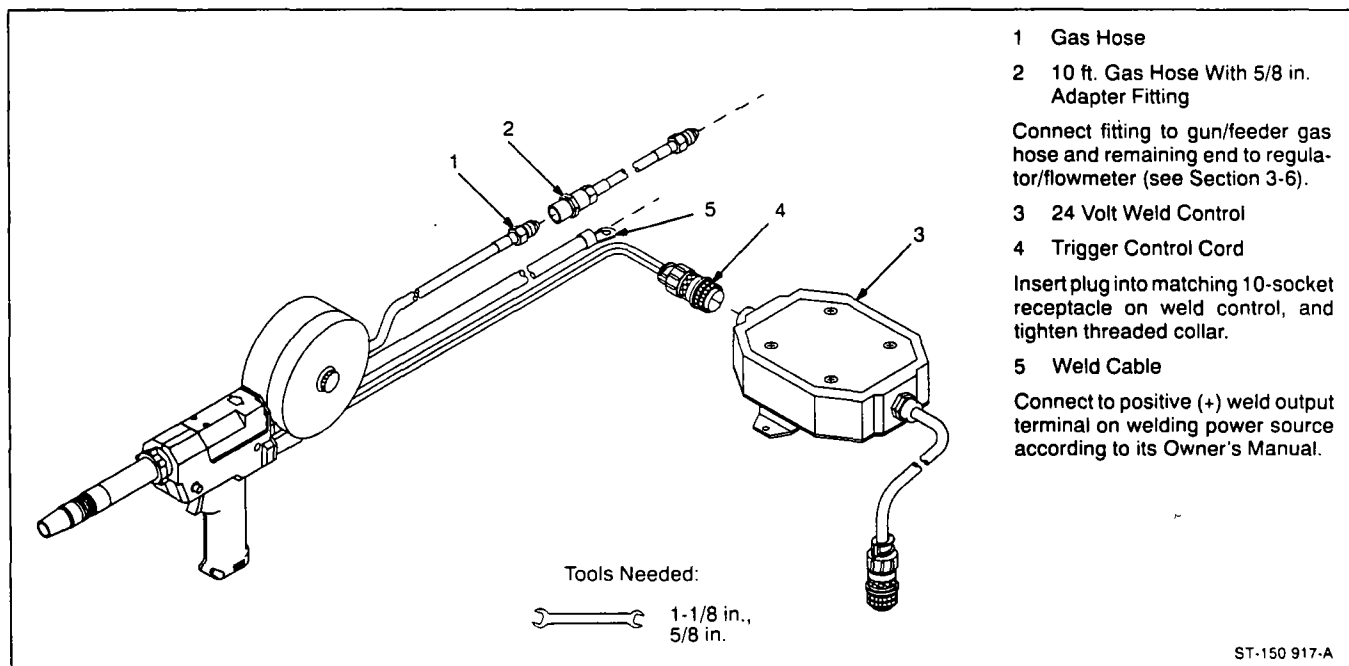


Figure 3-5. Connections To 24 Volt Weld Control

B. Connections To 115 Volt Weld Control

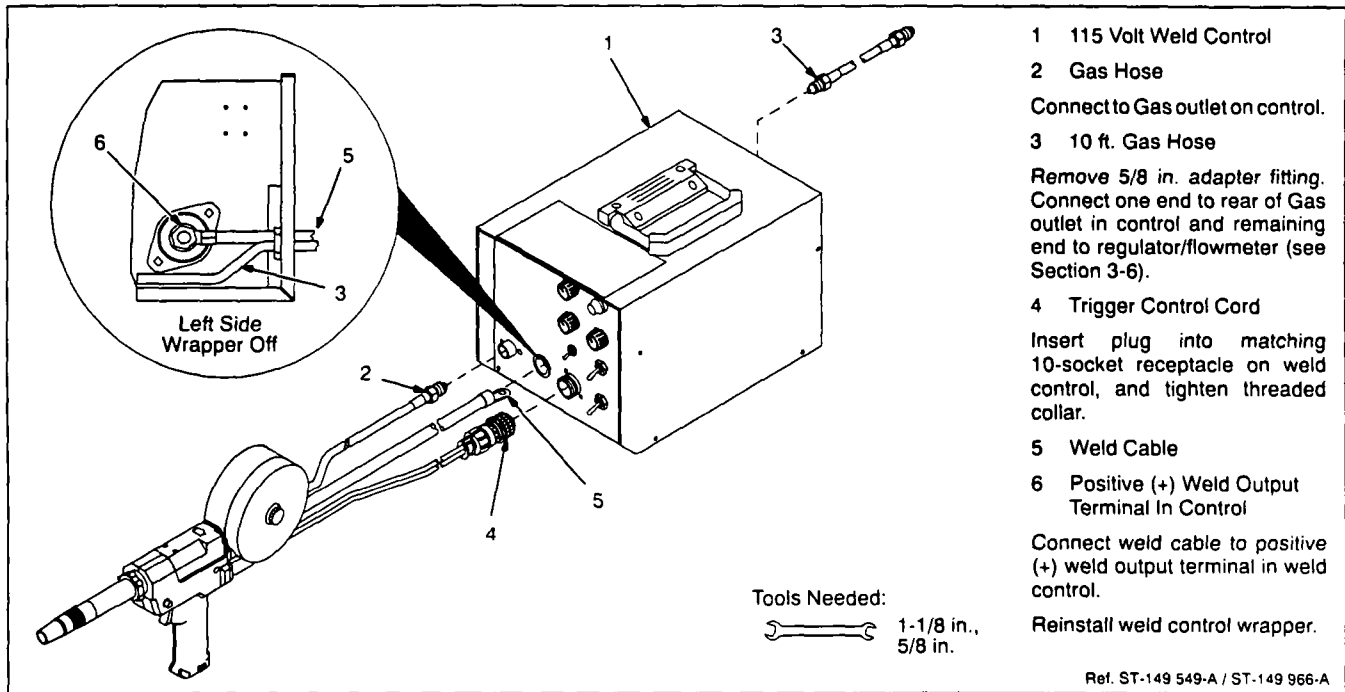


Figure 3-6. Connections To 115 Volt Weld Control

3-6. Installing Gas Supply

 WARNING		
 CYLINDERS can explode if damaged. - Keep cylinders away from welding and other electrical circuits. - Never touch cylinder with welding electrode. - Always secure cylinder to running gear, wall, or other stationary support.	 ELECTRIC SHOCK can kill. Do not touch live electrical parts. The welding wire, drive rolls, drive assembly, and all metal parts touching the welding wire are electrically live when welding or feeding wire using gun trigger.	
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Tools Needed:
1-1/8 in., 5/8 in.

Obtain gas cylinder and chain to running gear, wall, or other stationary support so cylinder cannot fall and break off valve.

1 Cylinder

2 Cylinder Valve

Remove cap, stand to side of valve, and open valve slightly. Gas flow blows dust and dirt from valve. Close valve.

3 Cap

4 Regulator

Obtain regulator and install onto gas cylinder so that face is vertical.

5 Flow Gauge

Obtain flow gauge.

6 Flow Adjust

Typical flow rate is 20 cfh (cubic feet per hour).

7 Gas Hose Connection

Fitting has 5/8-18 right-hand threads. Connect gas hose fitting here.

Ref. ST 149 827

Figure 3-7. Typical Argon Regulator/Flow Gauge Installation

3-7. Adjusting Drive Roll And Spool Brake Pressure

CAUTION	
WELDING WIRE can cause puncture wounds. - Do not press gun trigger until instructed to do so. - Do not point gun toward any part of the body, other people, or any metal when threading welding wire.	HOT SURFACES can burn skin. Allow gun to cool before touching.

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Tools Needed:

1 Top Cover

2 Canister Cover

3 Thumbscrew

Loosen thumbscrew and remove cover.

4 Spool

Cut welding wire off at contact tube. Retract wire onto spool and secure.

5 Spool Brake Thumbnut

Grasp spool in one hand and turn while adjusting spool brake thumbnut. When a slight force is needed to turn spool, tension is set. Do not overtighten.

Reinstall canister cover. Thread welding wire (see Section 3-2).

6 Drive Roll Tension Thumbnut

7 Adjusting Pressure

Turn ON unit and check drive roll pressure by feeding wire against a wood board or concrete surface; wire should feed steadily without slipping.

Adjust drive roll tension thumbnut if necessary. Do not overtighten.

Turn OFF unit. Reinstall top cover.

Ref. ST-151 112 / S-0651

Figure 3-8. Adjusting Drive Roll And Spool Brake Pressure

SECTION 4 – OPERATION

WARNING	
	ELECTRIC SHOCK can kill. - Do not touch live electrical parts. - Always wear dry insulating gloves. - Insulate yourself from work and ground. - Keep all panels and covers securely in place.
	FUMES AND GASES can be hazardous to your health. - Keep your head out of the fumes. - Ventilate area, or use breathing device. - Read Material Safety Data Sheets (MSDSs) and manufacturer's instructions for material used.
	WELDING can cause fire or explosion. - Do not weld near flammable material. - Watch for fire; keep extinguisher nearby. - Do not locate unit over combustible surfaces. - Do not weld on closed containers. - Allow work and equipment to cool before handling.
	ARC RAYS can burn eyes and skin; NOISE can damage hearing. - Wear welding helmet with correct shade of filter. - Wear correct eye, ear, and body protection.
	MOVING PARTS can cause injury. - Keep away from pinch points such as drive rolls. - Keep all doors, panels, covers, and guards closed and securely in place.
	MAGNETIC FIELDS FROM HIGH CURRENTS can affect pacemaker operation. - Pacemaker wearers keep away. - Wearers should consult their doctor before going near any welding operations.
See Safety Precautions at beginning of manual for basic welding safety information.	

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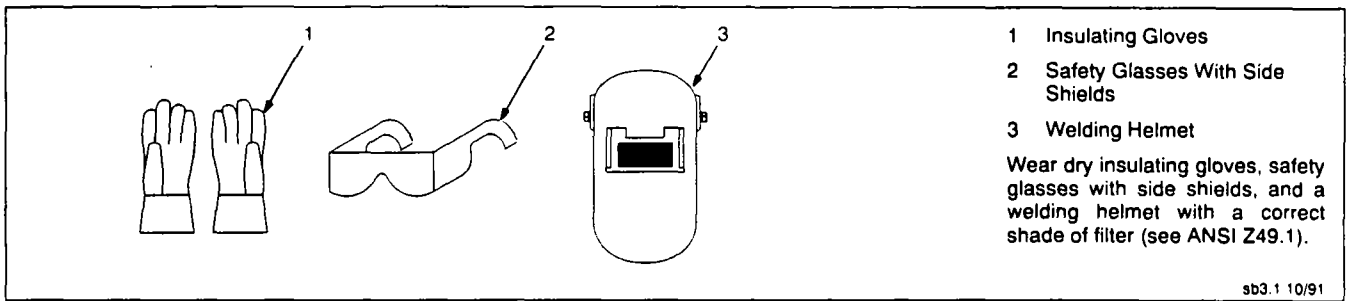


Figure 4-1. Safety Equipment

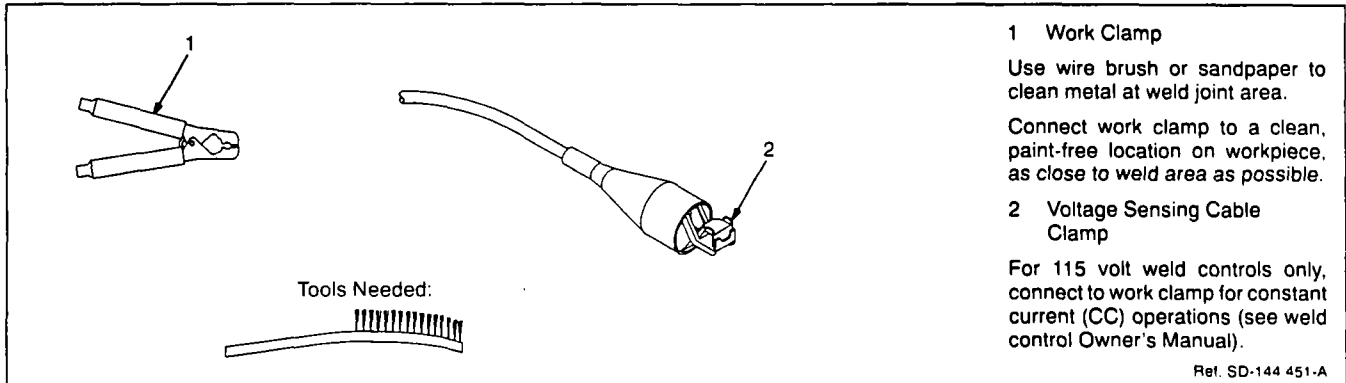


Figure 4-2. Work And Voltage Sensing Cable Clamps

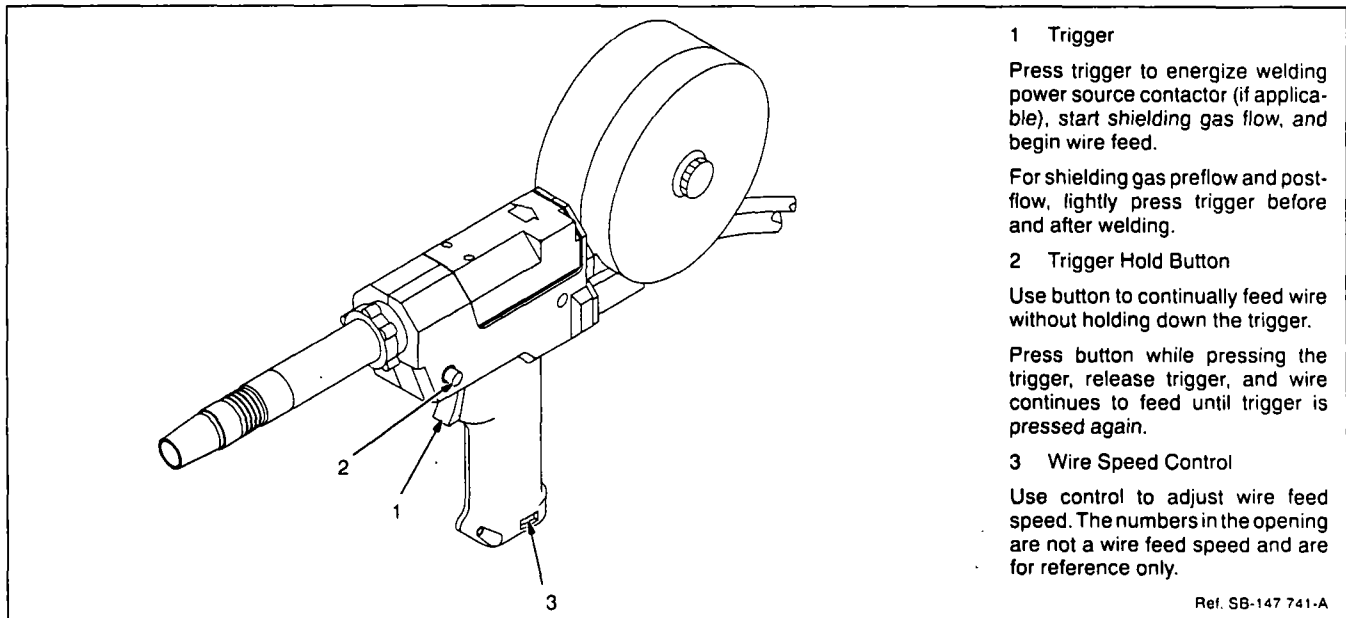


Figure 4-3. Controls

WARNING

BUILDUP OF SHIELDING GAS can harm health or kill.

- Shut off shielding gas supply when not in use.

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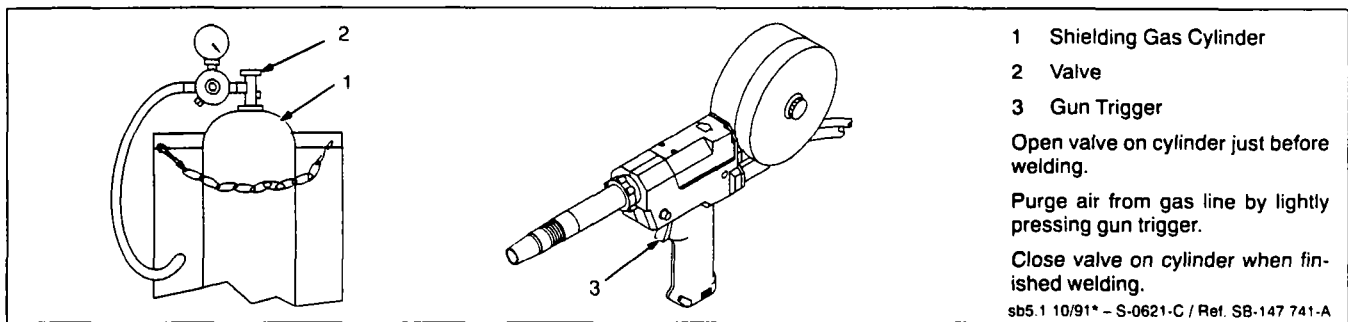


Figure 4-4. Shielding Gas

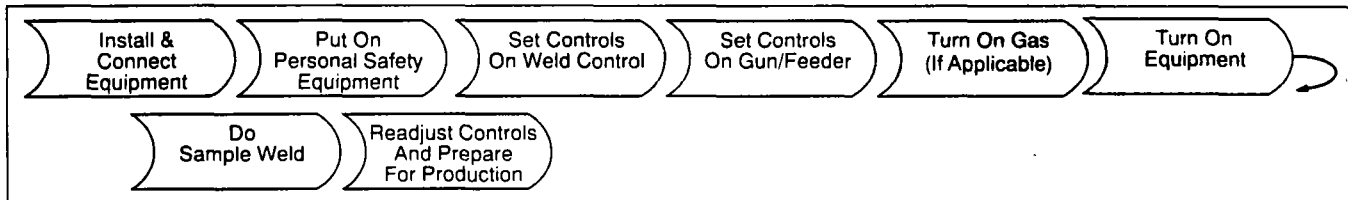


Figure 4-5. Sequence Of Gas Metal Arc Welding (GMAW) - Continuous Or Spot

SECTION 5 – MAINTENANCE & TROUBLESHOOTING

WARNING			
	ELECTRIC SHOCK can kill. - Do not touch live electrical parts. - Turn OFF wire feeder and welding power source, and disconnect input power before inspecting, maintaining, or servicing. Stop engine on welding generators.		HOT PARTS can cause severe burns. Allow cooling period before servicing gun or unit.
			MOVING PARTS can cause injury. - Keep away from moving parts. - Keep away from pinch points such as drive rolls.
		Maintenance to be performed only by qualified persons. wtwarn4 1* 9/91	

5-1. Routine Maintenance

Table 5-1. Maintenance Schedule

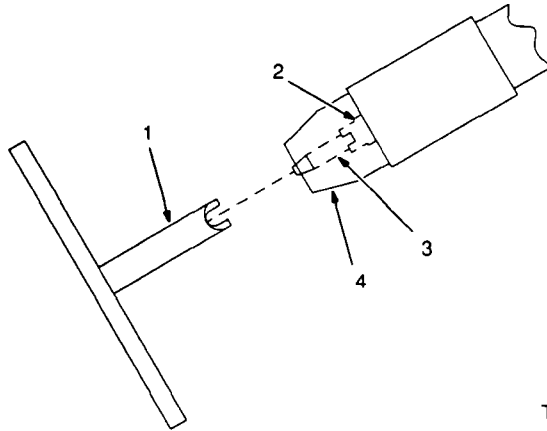
Time	Maintenance
Before each use.	Check gun parts for looseness, cracks, and breaks; tighten, repair, and replace parts as required. Carefully clean weld spatter or dirt from around nozzle opening using a hardwood stick, never a metal tool.
Every month.	Above normal equipment use: Repair any damaged insulation or replace gun cable or work cable, clean internal parts (see 6 month entry), clean and tighten connections at gun cable and work clamp.
Every 3 months.	Repair cable insulation damage or replace gun cable or work cable. Clean and tighten gun cable and work clamp connections.
Every 6 months.	Remove unit outer enclosure to blow out or vacuum dust and dirt from inside using a clean, dry airstream or vacuum suction.

5-2. Changing Contact Tube And Liner



WARNING

ELECTRIC SHOCK, MOVING PARTS, AND HOT PARTS HAZARDS. Read safety information at beginning of Section 5 before proceeding.



Tools Needed:



Turn OFF weld control and welding power source. Remove top cover and open pressure roll assembly as shown in Figure 5-2.

1 Contact Tube Wrench

Insert wrench into nozzle over contact tube.

2 Compression Nut

Loosen nut. Pull out contact tube.

3 Contact Tube

4 Nozzle

Pull wire out nozzle and liner should slide out. If necessary, tilt nozzle down to remove liner.

Close pressure roll assembly. Reinstall top cover.

Install new liner and contact tube over wire. Cut off wire at end of contact tube.

Tighten nut just until contact tube is secure. Overtightening nut will damage adapter.

ST-150 437

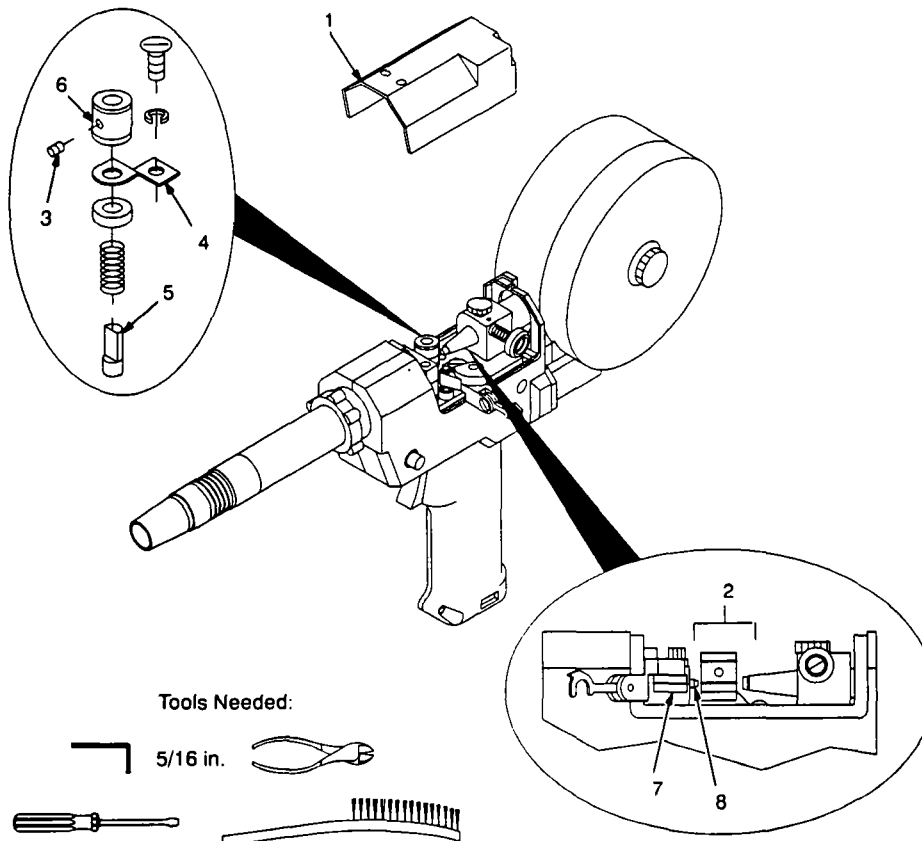
Figure 5-1. Changing Contact Tube And Liner

5-3. Changing Or Cleaning Drive Roll

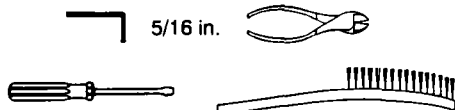


WARNING

ELECTRIC SHOCK, MOVING PARTS, AND HOT PARTS HAZARDS. Read safety information at beginning of Section 5 before proceeding.



Tools Needed:



Turn OFF weld control and welding power source.

1 Top Cover

2 Pressure Roll Assembly

Cut off wire where it enters pressure roll assembly area.

3 Setscrew

4 Current Pick-Up Tab

This tab helps prevent burnback caused by welding arcs inside the contact tube. This tab may be removed to provide an insulated drive roll. Lightly grease top of tab before reinstalling.

5 Motor Shaft

6 Drive Roll

Use wire brush to clean drive roll. Install drive roll with desired groove down, and turn drive roll so one setscrew faces flat side of shaft.

7 Bearing

8 Liner

Line up drive roll groove with bearing groove and liner opening. Tighten setscrews.

Thread welding wire (see Section 3-2). Adjust drive roll pressure, if necessary (see Section 3-7). Close and secure pressure roll assembly. Reinstall top cover.

Ref. ST-149 967-A

Figure 5-2. Removing Drive Roll

5-4. Replacing Or Cleaning Drive Roll Bearing



WARNING

ELECTRIC SHOCK, MOVING PARTS, AND HOT PARTS HAZARDS. Read safety information at beginning of Section 5 before proceeding.

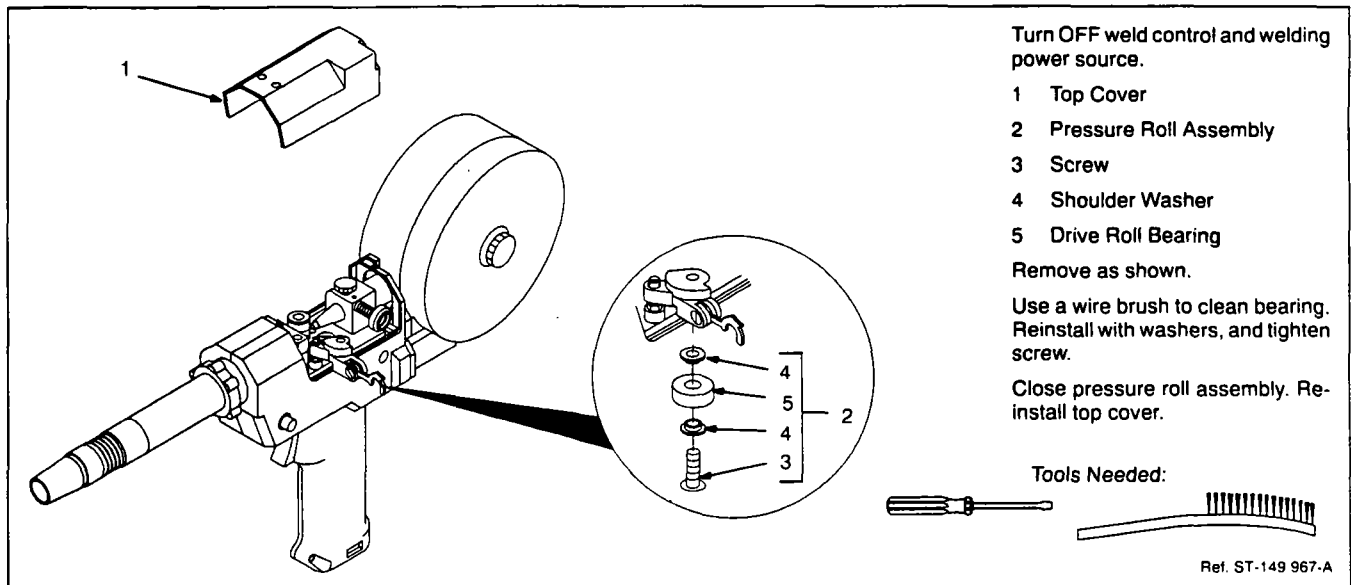


Figure 5-3. Removing Drive Roll Bearing

5-5. Replacing Canister Inlet Guide



WARNING

ELECTRIC SHOCK, MOVING PARTS, AND HOT PARTS HAZARDS. Read safety information at beginning of Section 5 before proceeding.

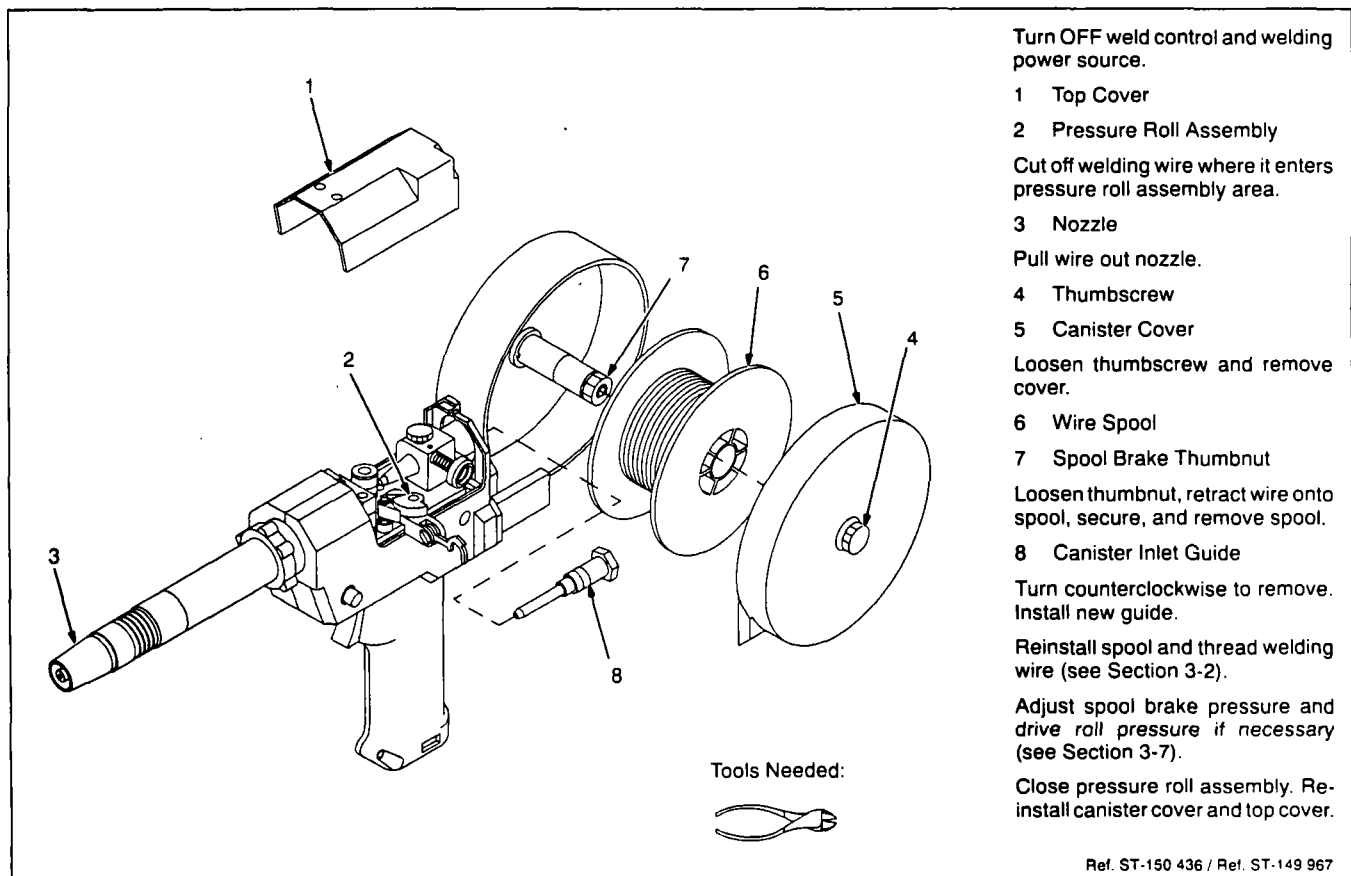


Figure 5-4. Removing Canister Inlet Guide

5-6. Replacing Spool Canister



WARNING

ELECTRIC SHOCK, MOVING PARTS, AND HOT PARTS HAZARDS. Read safety information at beginning of Section 5 before proceeding.

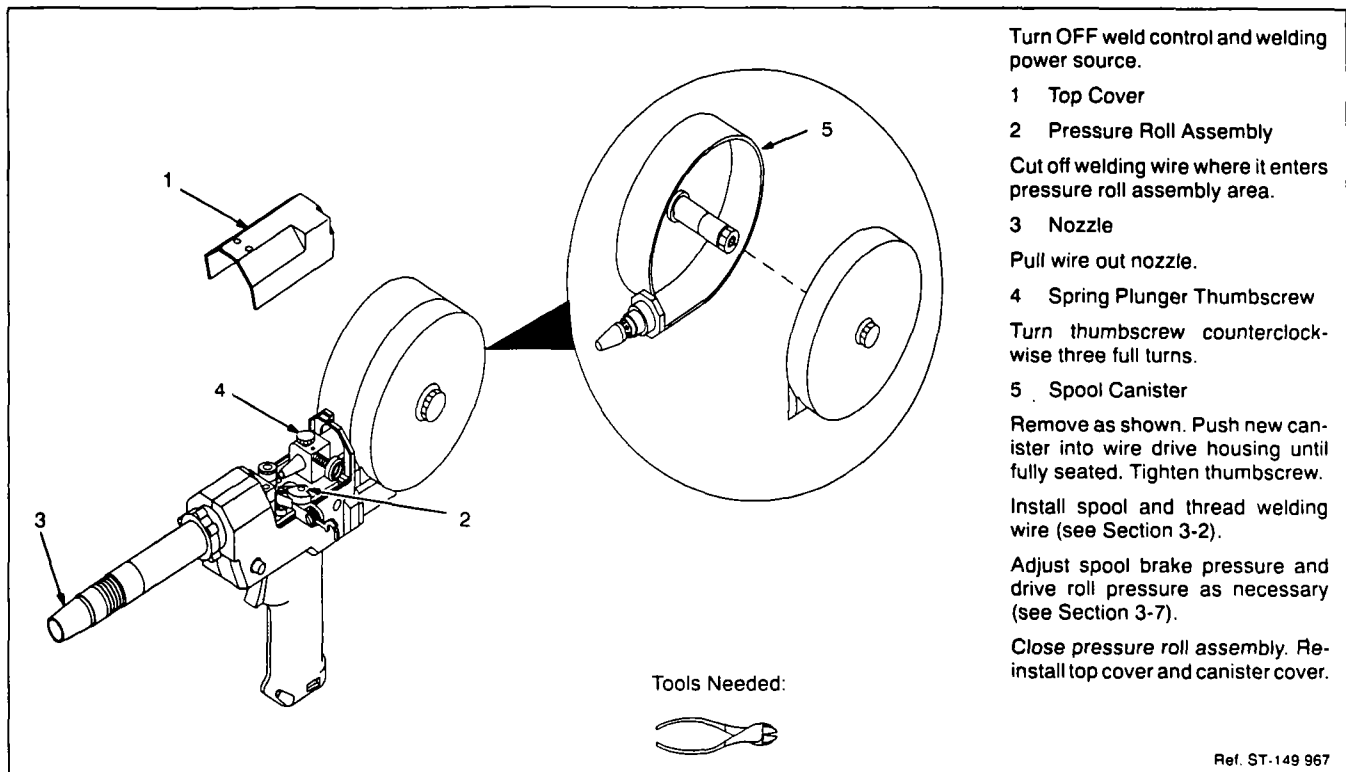


Figure 5-5. Removing Canister

5-7. Replacing Contact Tube Adapter



WARNING

ELECTRIC SHOCK, MOVING PARTS, AND HOT PARTS HAZARDS. Read safety information at beginning of Section 5 before proceeding.

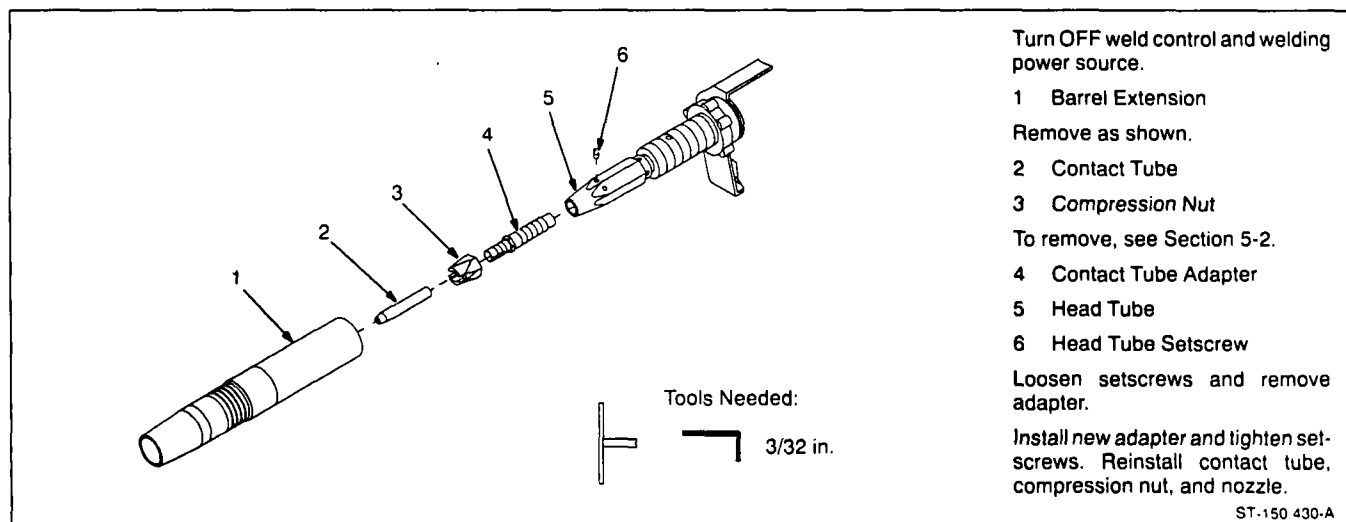


Figure 5-6. Removing Contact Tube Adapter

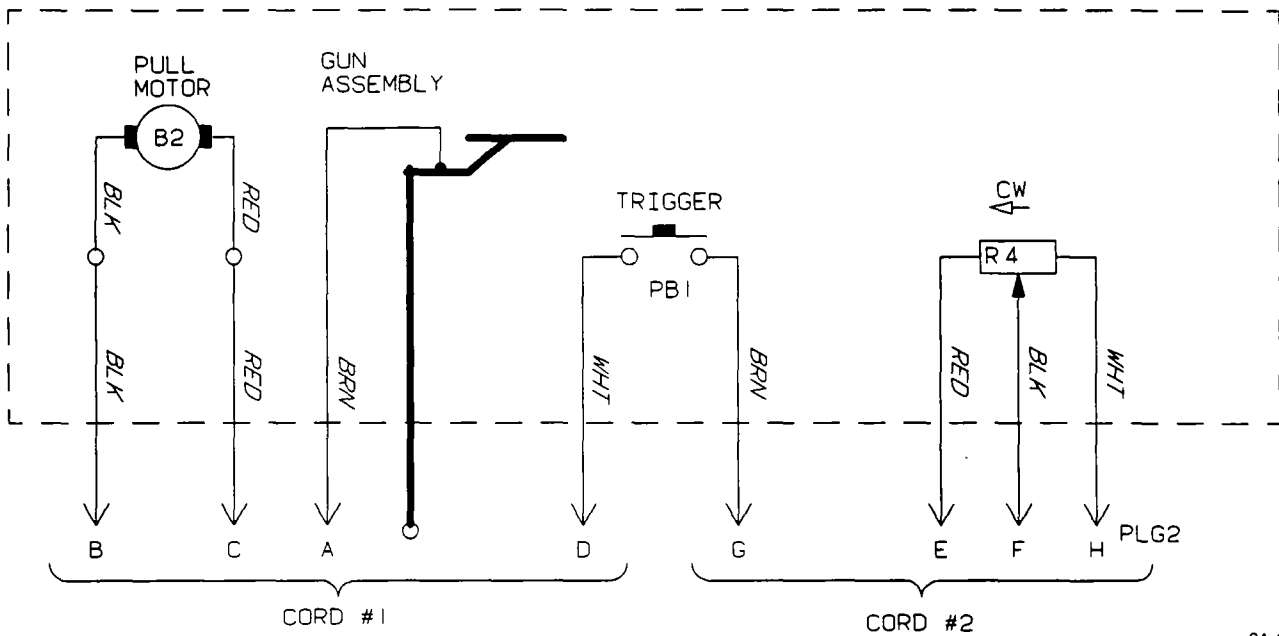
5-8. Troubleshooting

 WARNING			
	ELECTRIC SHOCK can kill. • Do not touch live electrical parts. • Turn OFF welding power source, and disconnect input power before inspecting, maintaining, or servicing. Stop engine on welding generators.		MOVING PARTS can cause injury. • Keep away from moving parts. • Keep away from pinch points such as drive rolls.
			HOT PARTS can cause severe burns. • Allow cooling period before servicing gun or unit.
			swarn9.2* 10/91

Table 5-2. Welding Trouble

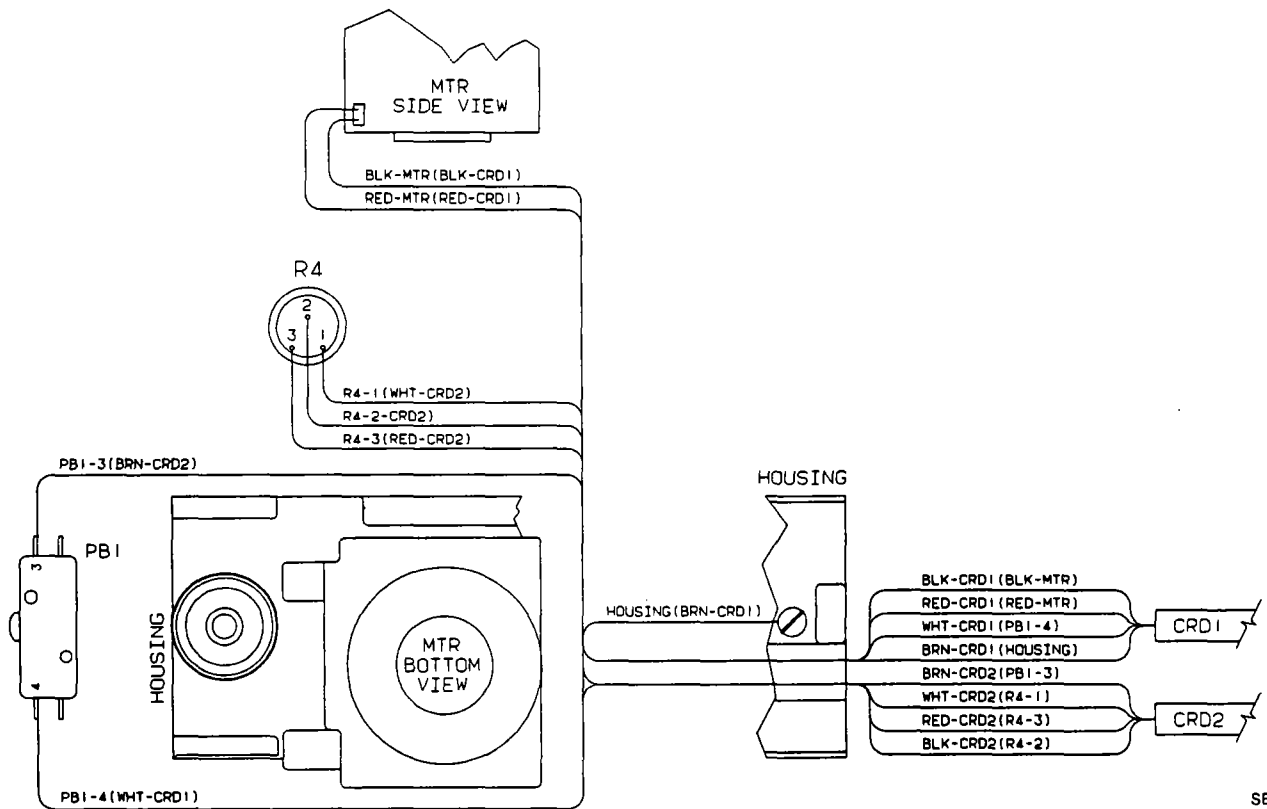
Trouble	Remedy	Section
No weld output; gun/feeder does not work.	Secure weld control plug in 115 volts ac receptacle. Place POWER switch on welding power source in the ON position.	
Erratic weld output.	Tighten and clean all connections.	
Pressing gun/feeder trigger does not energize weld control; welding wire is not energized; shielding gas does not flow.	Secure plug from gun/feeder trigger cord into 10-socket receptacle on weld control.	3-5
Wire does not feed; burnback in contact tube.	Reinstall current pick-up tab if applicable.	5-3
Wire feeds, shielding gas flows, but welding wire is not energized.	Secure contact control cable leads in weld control (see weld control Owner's Manual). See Troubleshooting section in welding power source Owner's Manual.	
Wire feeds erratically.	Check and correct drive roll pressure.	3-7
	Clean drive roll or replace drive roll.	5-3
	Decrease spool brake pressure.	3-7

SECTION 6 – ELECTRICAL DIAGRAMS



SA-138 956-A

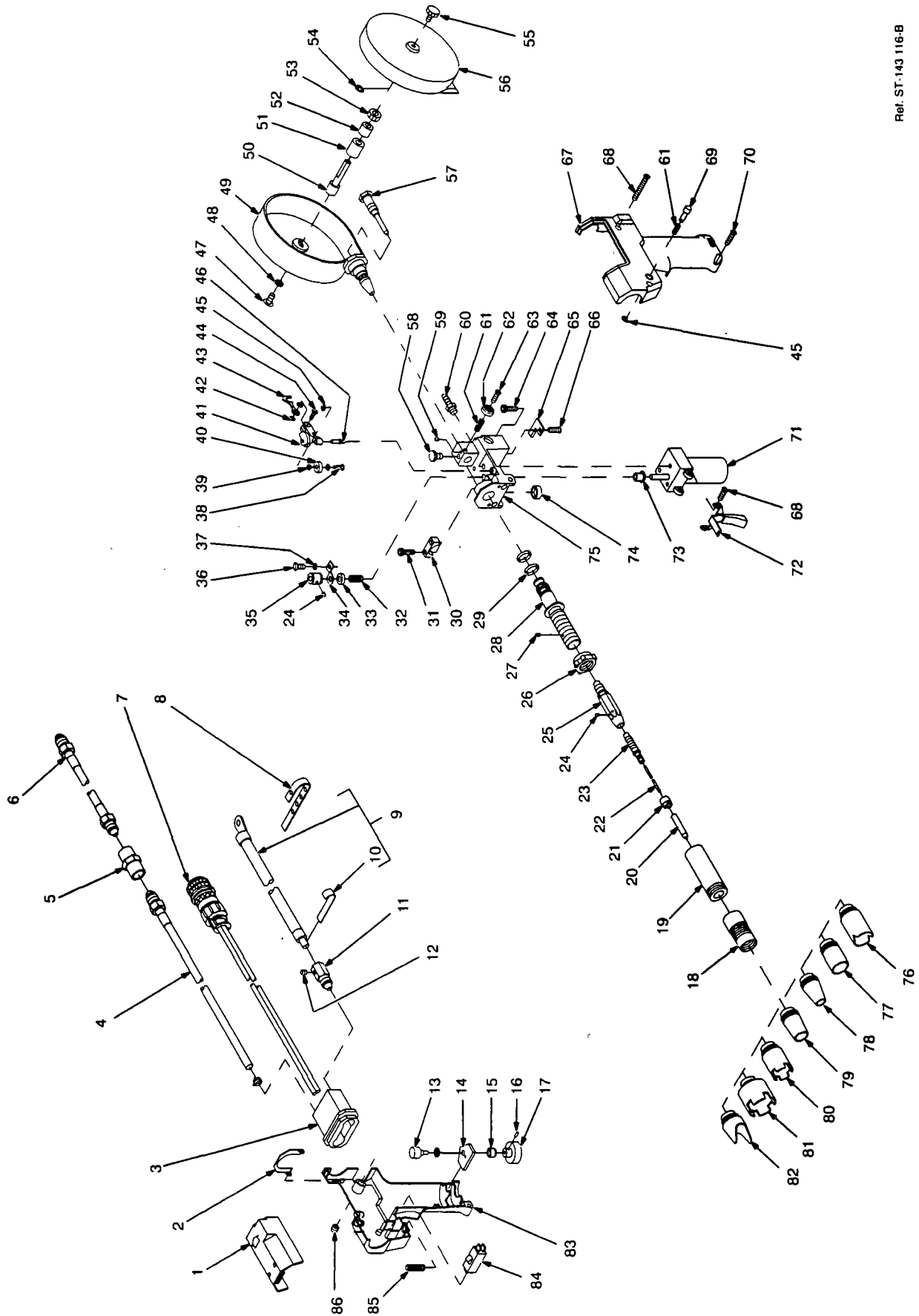
Figure 6-1. Circuit Diagram For Gun/Feeder



SB-139 060-A

Figure 6-2. Wiring Diagram For Gun/Feeder

SECTION 7 - PARTS LIST



Ref. ST-143 116-B

Figure 7-1. Complete Assembly

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 7-1. Complete Assembly				
1		133 479	COVER	1
2		135 196	SPRING, closure cover	1
3		133 362	STRAIN RELIEF, cable	1
4		137 472	HOSE, gas in (consisting of)	1
		056 851	FITTING, hose brs barbed nipple 3/16tbg	1
		010 606	FITTING, hose brs nut .625-18RH	1
		056 108	FITTING, hose brs ferrule .425 ID x .718 lg	1
		134 834	HOSE, SAE .187 ID x .410 OD (order by ft)	31ft
		089 120	CLAMP, hose .375-.450clp dia slftng	1
5		000 950	FITTING, hose brs coupler .625-18RH/.625-18RH	1
6		048 837	HOSE, gas (consisting of)	1
		010 603	FITTING, hose brs barbed nipple 1/4tbg	2
		010 606	FITTING, hose brs nut .625-18RH	2
		056 112	FITTING, hose brs ferrule .475 ID x .718 lg	2
		603 106	HOSE, nprn brd No. 1 x .250 ID (order by ft)	10ft
7		138 459	CABLE, control (consisting of)	1
	PLG2	146 212	PLUG, 10 pin MS-3106A-18-1PX	1
		138 033	CLAMP, cable 97-3057-1010	1
		053 212	CABLE, port No. 18 4/c (order by ft)	63ft
8		073 476	CLAMP, strap rbr 5 holes .375 wide x 4.625 lg	13
9		137 479	CABLE, power (consisting of)	1
		600 722	TERMINAL, ring tng .500 stud No. 4 cable	1
		600 318	CABLE, weld cop strd No.3 (order by ft)	31ft
		127 893	RING, crimp cable	1
10		019 833	STRIP, cop .010 x 2.500 x .750	1
11		137 495	FITTING, connection power weld	1
12		141 694	SCREW, set stl sch .312-18 x .375 cone point	1
13	R4	137 854	POTENTIOMETER, C sltd sft 1/T .5W 10K ohm	1
14		144 861	WASHER, anti-turn	1
15		135 127	LOCK, shaft pot .250-32 x .125dia shaft	1
16		602 169	SCREW, set stl sch 8-32 x .187 cup pt	1
17		134 856	KNOB, speed control 1-10 .140 shaft x 1.125 OD	1
18		144 862	EXTENSION, nozzle	1
19		053 785	EXTENSION, barrel 2.875 lg	1
20		136 171	TUBE, contact .025/31 wire	1
20		◆135 427	TUBE, contact .030/36 wire	1
20		135 428	TUBE, contact .030/41 wire	1
20		◆147 314	TUBE, contact .035/41 wire	1
20		135 430	TUBE, contact .035/52 wire	1
20		◆135 429	TUBE, contact .047/52 wire	1
20		135 424	TUBE, contact .047/61 wire	1
20		◆135 426	TUBE, contact .062/73 wire	1
20		135 425	TUBE, contact .062/81 wire	1
		136 821	WRENCH, nut tube contact	1
21		136 748	NUT, compression .375-24	1
22		136 683	LINER, teflon .045-1/16 wire x 6.875 lg	1
22		136 682	LINER, teflon .023-.035 wire x 6.875 lg	1
23		136 680	ADAPTER, contact tube	1
24		604 612	SCREW, set stl sch 8-32 x .125 cup point	4
25		136 681	TUBE, head	1
26		058 685	NUT, jam nozzle extension	1
27		602 172	SCREW, set stl sch 10-32 x .187 cup point	1
28		136 730	ADAPTER, tube head	1
29		134 800	O-RING, .614 ID x .070 CS	2
30		133 365	CLAMP, head tube	1
31		000 417	SCREW, cap stl sch 10-24 x1.000	2
32		143 836	SPRING, cprsn .445 OD x .023 wire x .370	1
33		008 033	WASHER, flat felt .234 ID x .500 OD x .093thk	1

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 7-1. Complete Assembly (Continued)				
34		146 558	KIT, current pick-up contact	1
35		136 135	ROLL, drive VK groove .023-1/16 wire	1
36		602 066	SCREW, mach stl trh 6-32 x .250	3
37		602 198	WASHER, lock stl split No. 6	1
38		132 270	SCREW, mach stl rdhph 6-32 x .500	1
39		134 624	BEARING, flg nyl .140 ID x .187 OD x .375flg x .031thk	2
40		134 623	BEARING	1
41		132 852	ARM, pressure	1
42		605 798	WASHER, shldr nyl .375 OD x .168 ID x .080	2
43		133 083	SPRING, tension adj drive roll	1
44		144 860	SCREW, mach stl flh 8-32 x .437	1
45		058 968	RING, retainer E	2
46		135 474	PIN, hinge	1
47		132 530	SCREW, mach stl phtrh .250-20 x .500	1
48		602 209	WASHER, lock stl intl tooth .250	1
49		132 527	CANISTER, spool	1
50		148 488	POST, support spool	1
51		132 529	PAD, brake	1
52		148 489	WASHER, anti-turn	1
53		132 524	NUT, thumb brake	1
54		000 364	RING, retainer ext .188 shaft x .025thk	1
55		132 528	SCREW, thumb canister	1
56		132 526	COVER, spool	1
57		132 521	GUIDE, inlet canister	1
58		135 498	SCREW, thumb spring plunger	1
59		135 126	SCREW, set stl sch 6-32 x .125 cup point	1
60		135 580	FITTING, gas	1
61		112 896	SPRING, cprsn .240 OD x .020 wire x .437	2
62		135 773	NUT, thumb tension adjusting 8-32	1
63		602 082	SCREW, mach stl rdh 8-32 x .500	1
64		604 638	SCREW, cap stl sch 6-32 x .375	3
65		136 679	CLAMP, strain relief	1
66		132 269	SCREW, mach stl rdhph 8-32 x .375	1
67		136 128	CASE, gun LH	1
68		135 646	SCREW, mach stl rdhph 8-32 x 1.500	2
69		135 896	PLUNGER, trigger hold	1
70		135 645	SCREW, mach stl rdhph 8-32 x .875	1
71	B2	134 248	MOTOR, gear PM 24VDC 420RPH 10.2:1 ratio	1
72		133 373	TRIGGER	1
73		135 473	BUSHING, shaft motor	1
74		058 262	CAP	1
75		133 363	HOUSING, wire drive components	1
76		◆009 925	NOZZLE, spot outside corner .937 ID x 2.375	1
77		◆050 116	NOZZLE, 13/16 orf x 1-5/8 lg	1
78		◆050 115	NOZZLE, 1/2 orf x 1-5/8 lg	1
79		050 622	NOZZLE, 5/8 orf x 1-5/8 lg	1
80		◆000 442	NOZZLE, spot	1
81		◆004 466	NOZZLE, spot	1
82		◆000 443	NOZZLE, spot inside corner	1
83		136 127	CASE, gun RH	1
84	PB1	000 369	SWITCH, lim 10A 125/250VAC DPST plgr	1
85		118 774	SPRING, cprsn .240 OD x .024 wire x 1.000	1
86		135 647	NUT, stl 8-32	3

◆OPTIONAL

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

