

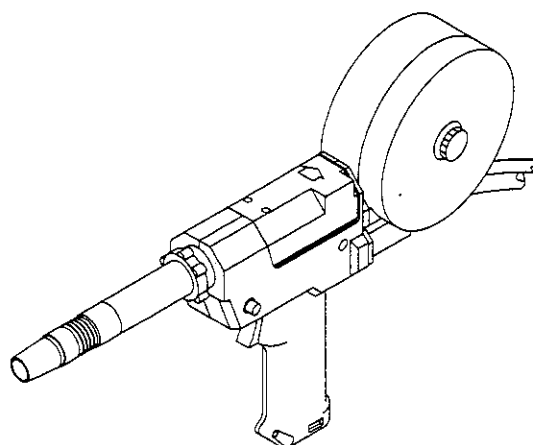


April 1993

Form: OM-1213D

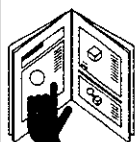
Effective With Serial No. KD389952

OWNER'S MANUAL



SPOOLMATIC® 30A, 30W

- Combination Wire Feeder And Welding Gun
- For GMAW Welding
- For Use With CC Or CV Welding Power Source
- Uses 30 Volts DC Input Power
- Light, Well-Balanced, And Portable
- Includes Cable Assembly, Drive Roll, Contact Tubes, And Liner
- 1 lb, 4 in Diameter Wire Spool Needed



- Read and follow these instructions and all safety blocks carefully.
- Have only trained and qualified persons install, operate, or service this unit.
- Call your distributor if you do not understand the directions.



- Give this manual to the operator.



- For help, call your distributor
- or: MILLER ELECTRIC Mfg. Co., P.O. Box 1079, Appleton, WI 54912 414-734-9821

MILLER'S TRUE BLUE™ LIMITED WARRANTY

Effective January 1, 1992
(Equipment with a serial number preface of "KC" 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, and are as follows:

1. 5 Years Parts - 3 Years Labor
 - Original main power rectifiers
2. 3 Years - Parts and Labor
 - Transformer/Rectifier Power Sources
 - Plasma Arc Cutting Power Sources
 - Semi-Automatic and Automatic Wire Feeders
 - Robots
3. 2 Years - Parts and Labor
 - Engine Driven Welding Generators
(NOTE: Engines are warranted separately by the engine manufacturer.)
4. 1 Year - Parts and Labor
 - Motor Driven Guns
 - Process Controllers
 - Water Coolant Systems
 - HF Units
 - Grids
 - Spot Welders
 - Load Banks
 - SDX Transformers
 - Running Gear/Trailers
 - 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
 - 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.
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.

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 _____

ERRATA SHEET

July 23, 1993

OM-1213D

Use above FORM number when ordering extra manuals.

After this manual was printed, refinements in equipment design occurred. This sheet lists exceptions to data appearing later in this manual.

CHANGES TO SECTION 7 – PARTS LIST

Change Parts List as follows:

**	Part No.	Replaced With	Description	Quantity
. 19-5		+137 472	.. HOSE, gas in (consisting of)	1
. 19-	134 834	164 750	.. HOSE, nprn brd no. 1 x .187 ID (order by ft)	31ft
. 19-19	136 730	164 423	.. ADAPTER, barrel tube (30A model only) (Eff w/KD432881)	1
. 19-23	152 579	164 582	.. HOUSING, wire drive (XR-A model only) (includes items 53 and 67) (Eff w/KD432881)	1
. 19-26	604 612	604 612	.. SCREW, (30A model only) (qty chg)	3
. 19-26	602 169	604 612	.. SCREW, (30W model only) (qty chg)	2
. 19-28	602 066	602 070	.. SCREW, 6-32 x .375 trushd slt stl	1
. 20-58	136 128	164 591	.. CASE, gun LH (Eff w/KD432881)	1
. 20-59		135 646	.. SCREW, mach stl rdhph 8-32 x 1.500 (gun case)	2
. 20-59		602 066	.. SCREW, mach stl trh 6-32 x .250 (trigger)	2
. 20-65	133 373	164 592	.. TRIGGER, (Eff w/KD432881)	1
. 21-97	136 680	164 421	.. ADAPTER, contact tube (30A model only) (Eff w/KD432881)	1
. 21-98	136 681	164 422	.. ADAPTER, head tube (30A model only) (Eff w/KD432881)	1
. 21-104	136 127	164 590	.. CASE, gun RH (Eff w/KD432881)	1
. 21-106	118 774	057 544	.. SPRING, cprsn .240 OD x .026 wire x 1.000 (Eff w/KD432881)	1
. 21-	Added	164 485	.. O-RING, .176 ID x .070 CS (30A models only) (Eff w/KD432881) ..	2

**First digit represents page no – digits following dash represent item no.

+All components remain the same with listed exceptions.

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

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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

Specification	Description
Input Power	30 Volts DC
Ampere Rating	Air-Cooled Models: 200 Amperes; Water-Cooled Models: 400 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 .025 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 (A Models) Or Water Cooled (W Models)
Coolant Requirements (Water-Cooled Models)	1 qt/min Minimum Flowrate Use Only 50% Distilled Water And 50% High Quality Automotive Antifreeze (see Section 3-8)
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	Air-Cooled Models: Gun Only 2.9 lb (1.3 kg); Gun With Cable Assembly 14 lb (6.4 kg) Water-Cooled Models: Gun Only 3.4 lb (1.5 kg); Gun With Cable Assembly 14.5 lb (6.6 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 .025 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 m) Gas Hose With Adapter Fitting	1
10 ft (3 m) Water Hose With Adapter Fitting (Water-Cooled Models Only)	1
10 ft (3 m) Water Hose (Water-Cooled Models Only)	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

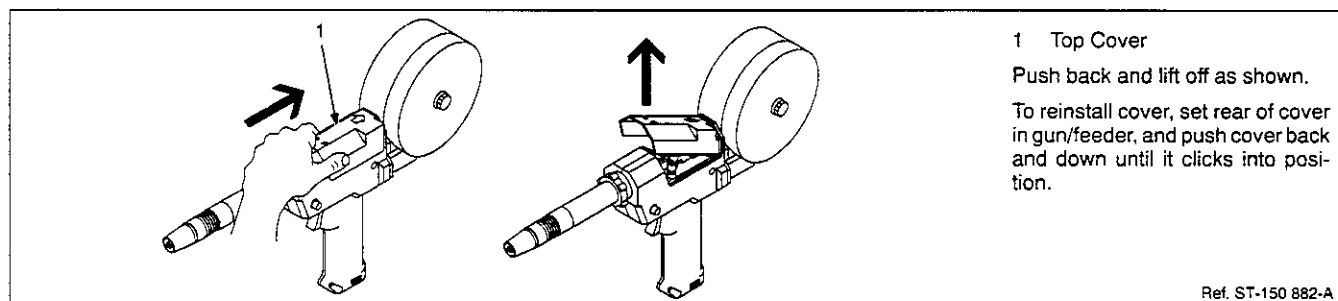


Figure 3-1. Top Cover

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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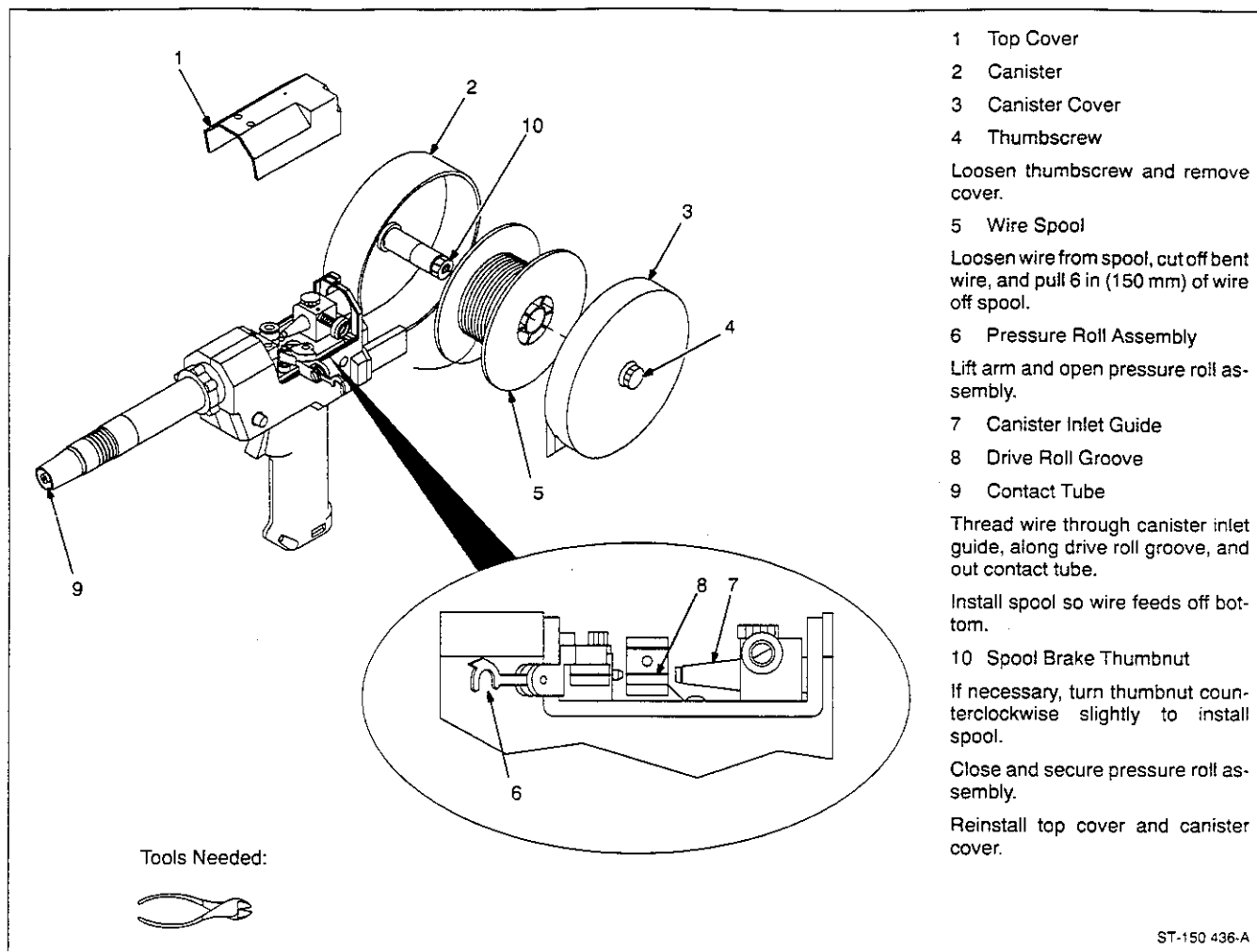


Figure 3-2. Installing Spool And Threading Wire

3-3. Adjusting Shielding Gas Nozzle



WARNING



READ SAFETY BLOCKS at start of Section 3-2 before proceeding.

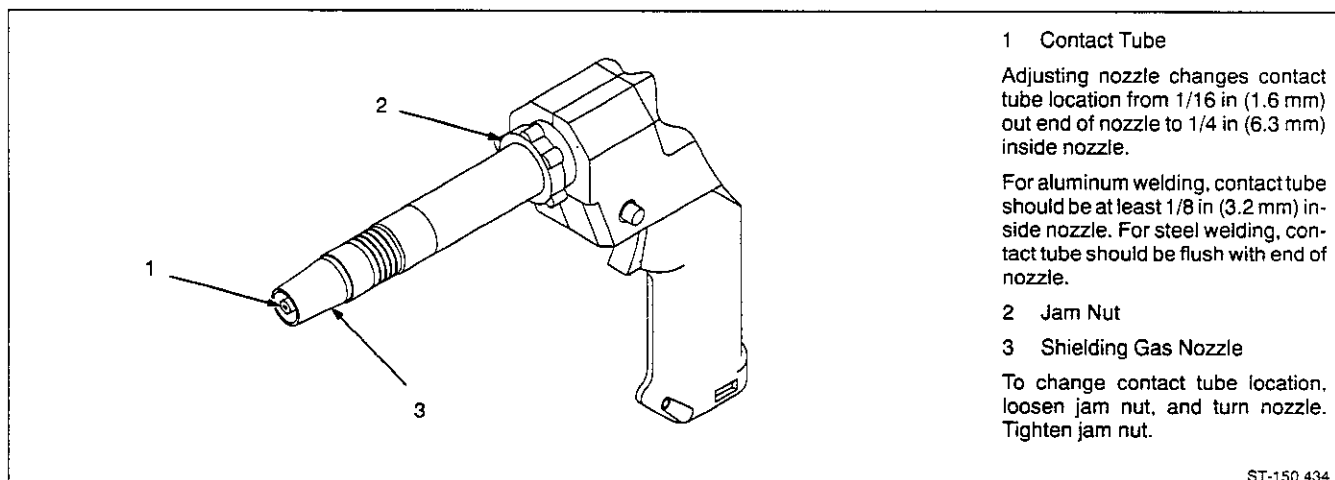


Figure 3-3. Adjusting Gas Nozzle

3-4. Rotating Canister

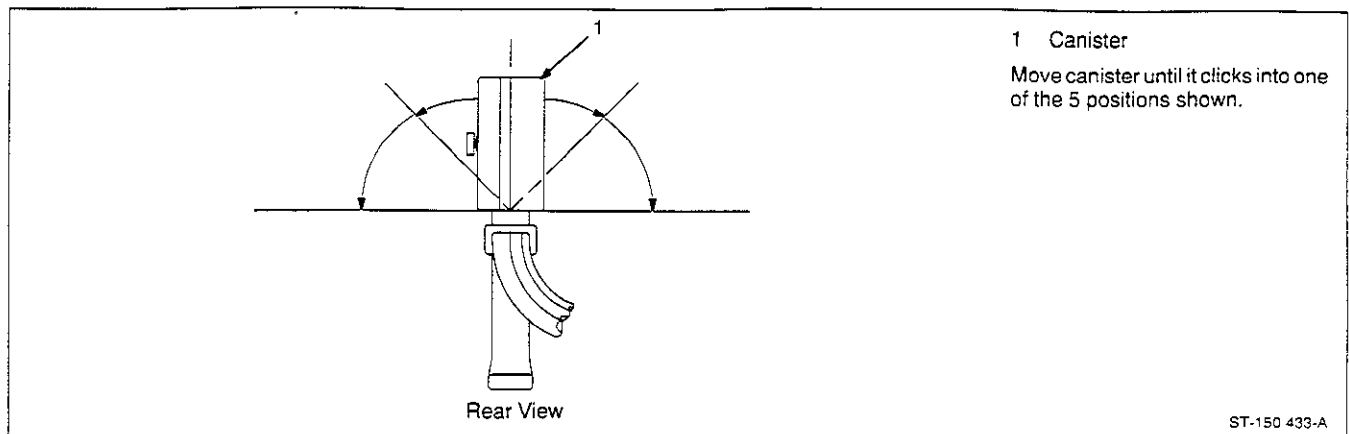


Figure 3-4. Rotating Canister

3-5. Connecting Air-Cooled Model 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

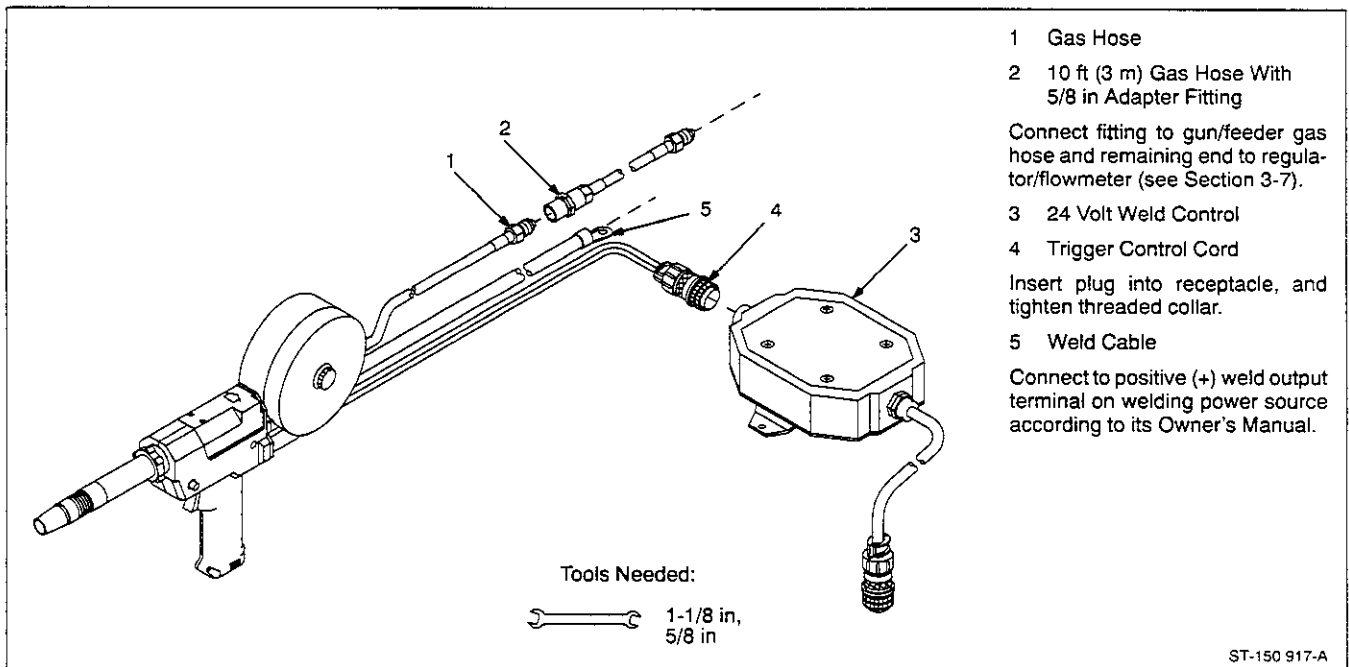


Figure 3-5. Connections To 24 Volt Weld Control

B. Connections To 115 Volt Weld Control

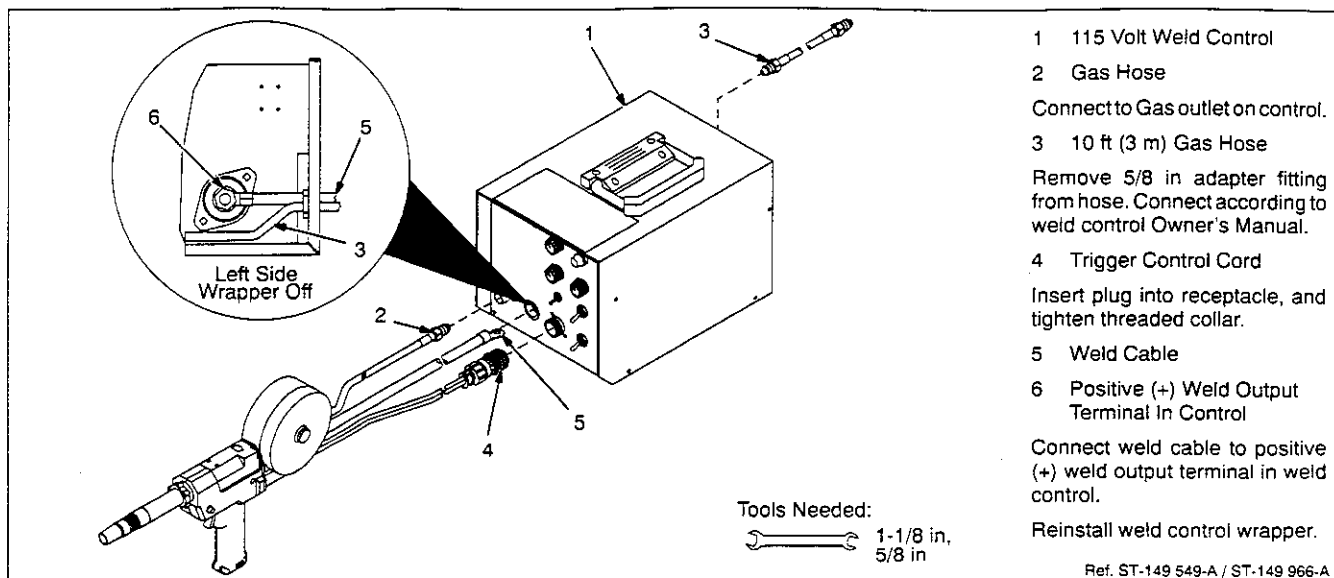


Figure 3-6. Connections To 115 Volt Weld Control

3-6. Connecting Water-Cooled Model 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.		OVERHEATING can damage gun parts. If using recirculating coolant system, do not make connections from coolant system to water valve; instead make connections directly from coolant system to gun hoses.
		INCORRECT COOLANT FLOWRATE can damage gun parts. Maintain minimum 1 qt/min flowrate at all times. swarn 1.1" 9/91

A. Connections To 24 Volt Weld Control

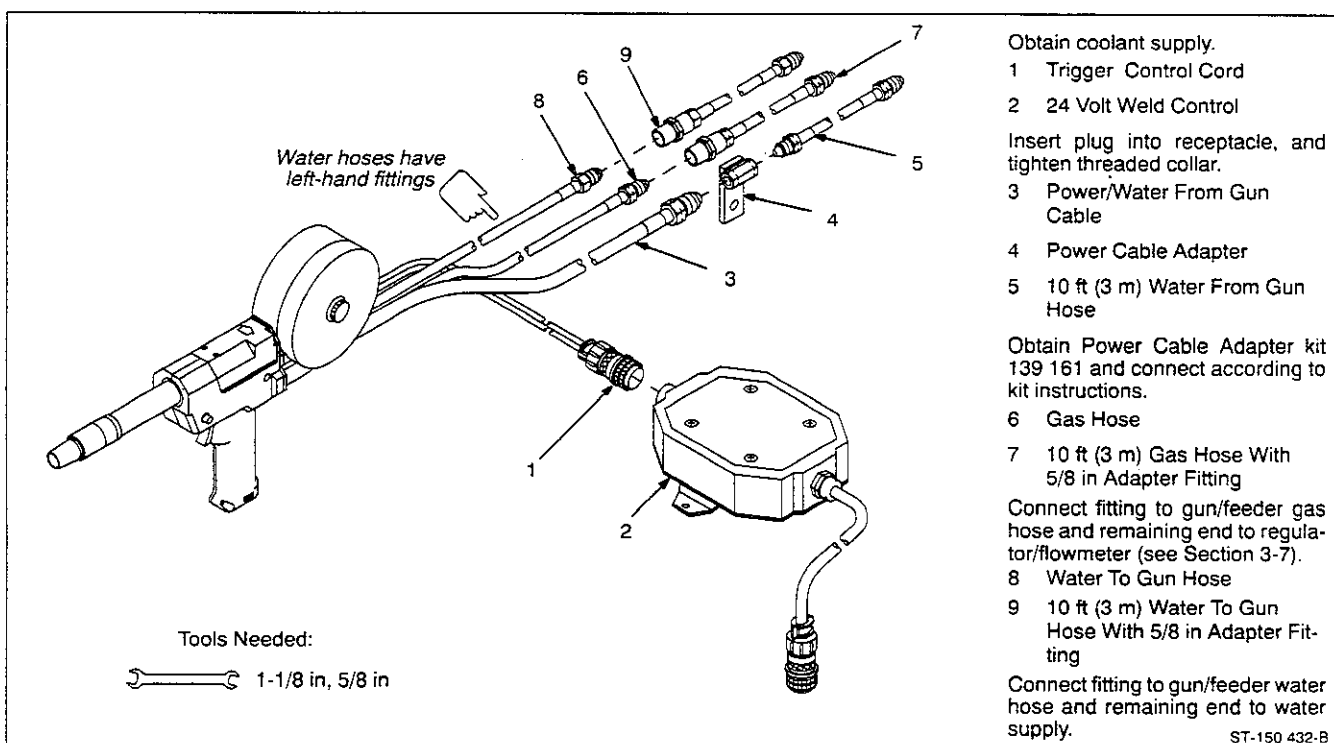


Figure 3-7. Connections To 24 Volt Weld Control

B. Connections To 115 Volt Weld Control

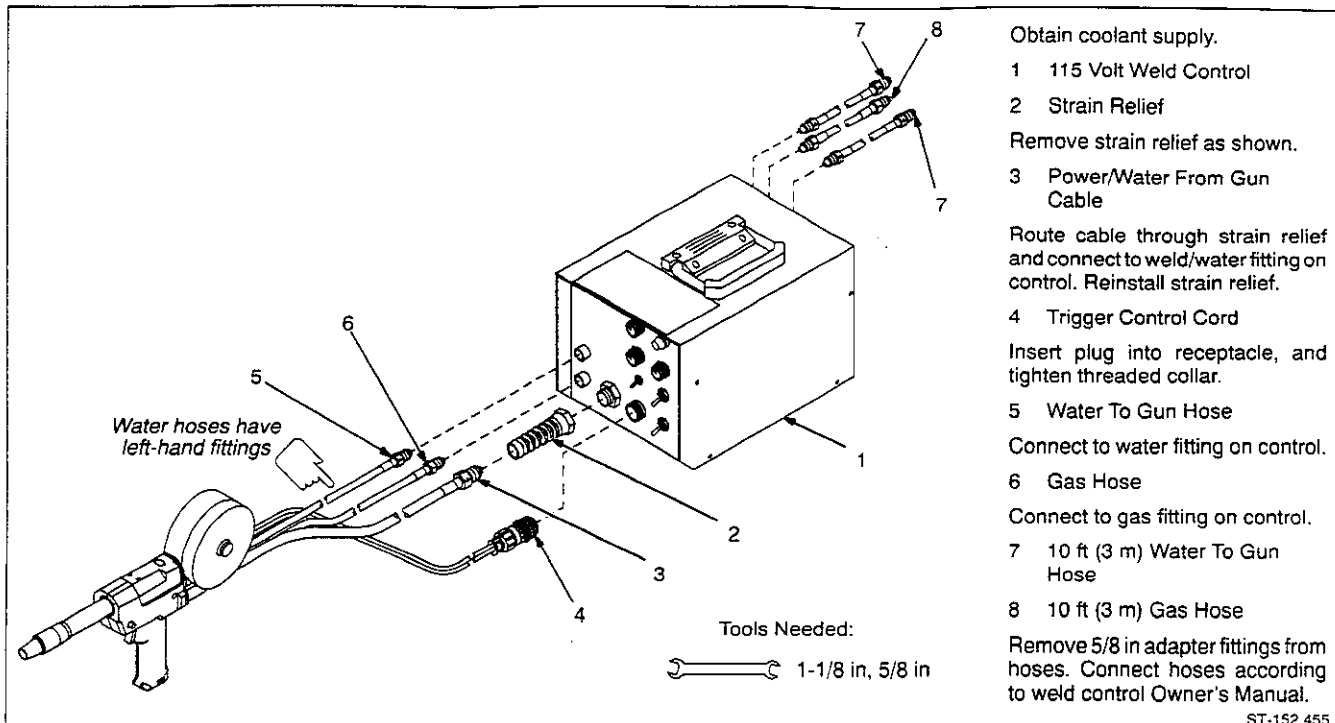


Figure 3-8. Connections To 115 Volt Weld Control

3-7. 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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A. Shielding Gas Connection To Typical Argon Or Mixed Gas Regulator/Flowgauge

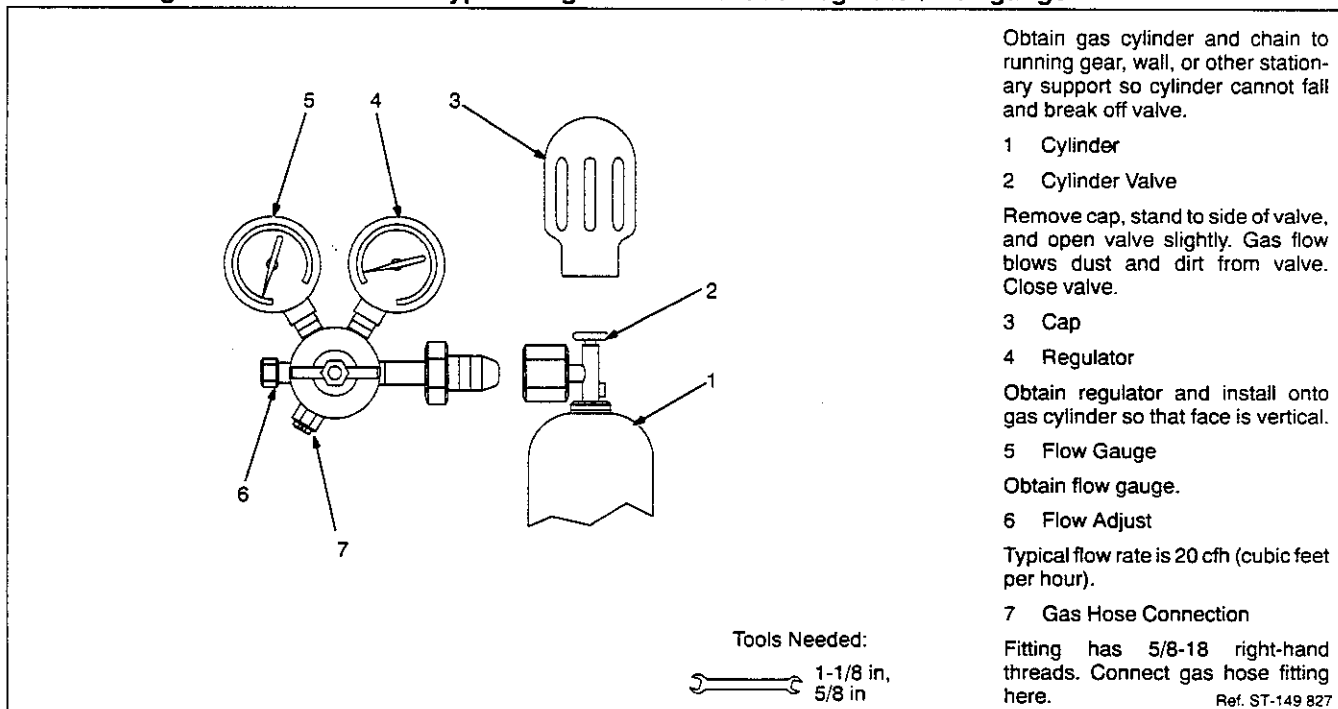


Figure 3-9. Typical Argon Or Mixed Gas Regulator/Flow Gauge Installation

B. Shielding Gas Connections To Typical CO₂ Regulator/Flowmeter

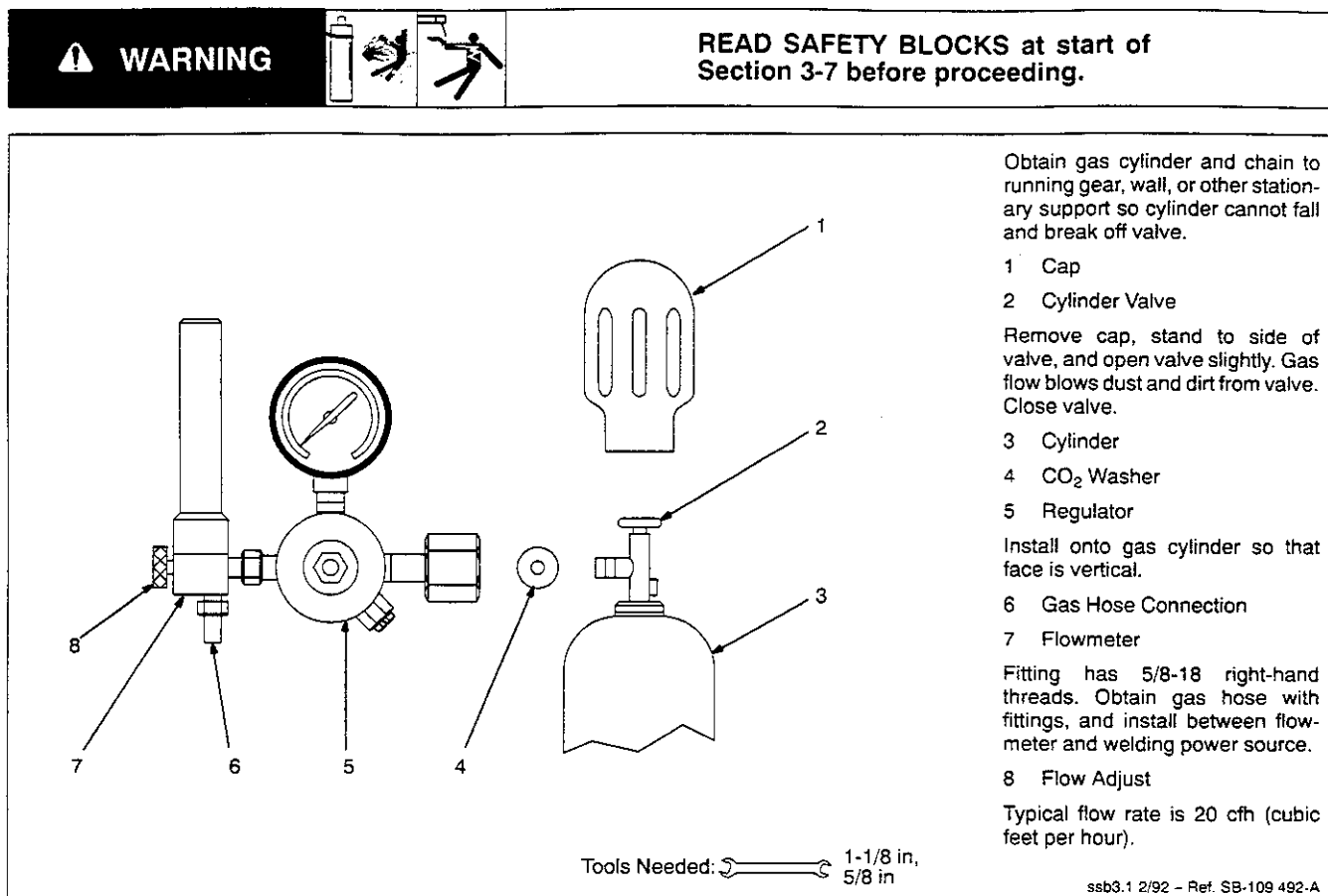


Figure 3-10. Typical CO₂ Regulator/Flowmeter Installation

3-8. Coolant Guidelines

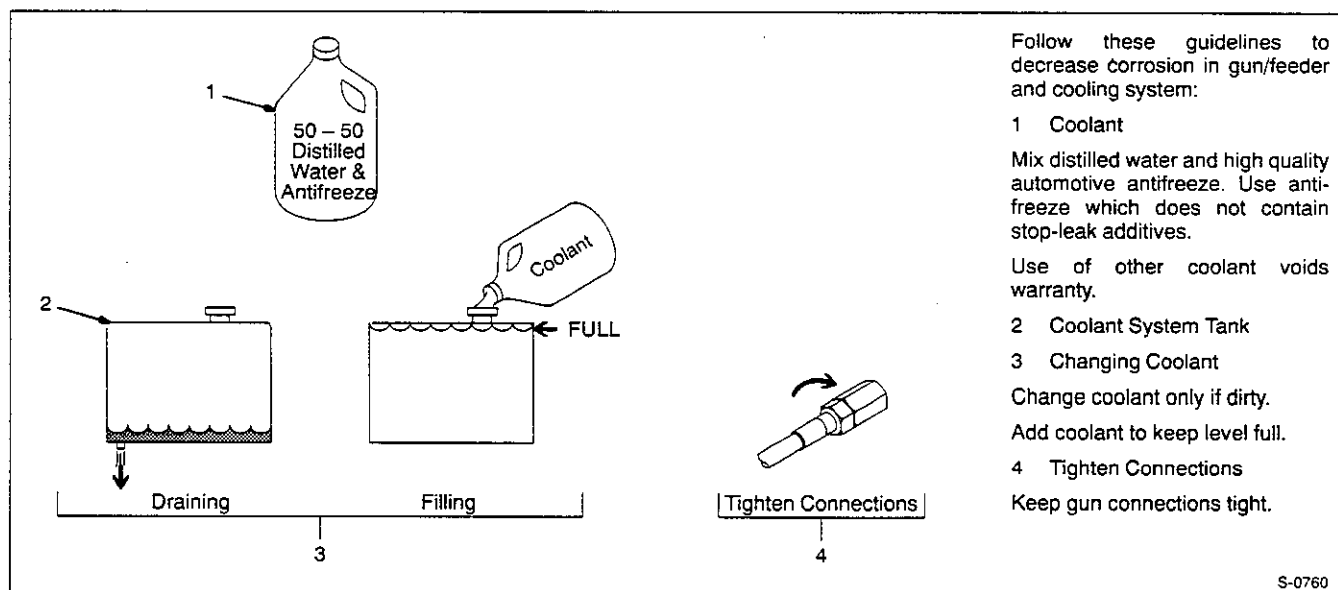


Figure 3-11. Coolant Guidelines

3-9. 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.
wfwarn2.1 9/91	

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 3-12. 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.	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.
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.	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.
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.	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. wfwarn3.1 8/92	

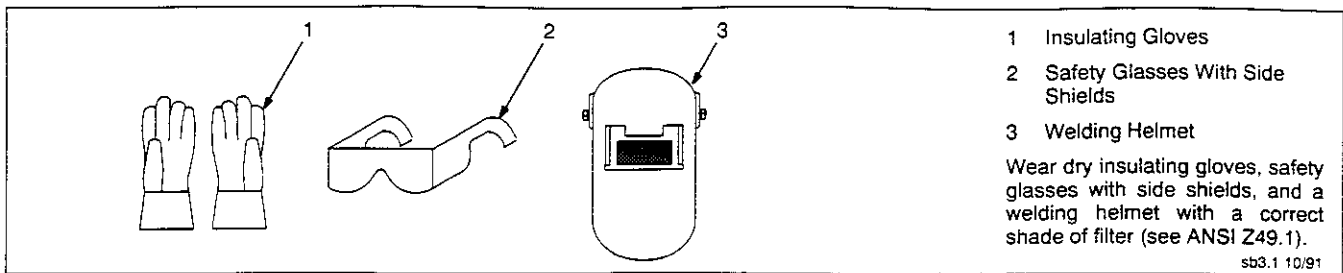


Figure 4-1. Safety Equipment

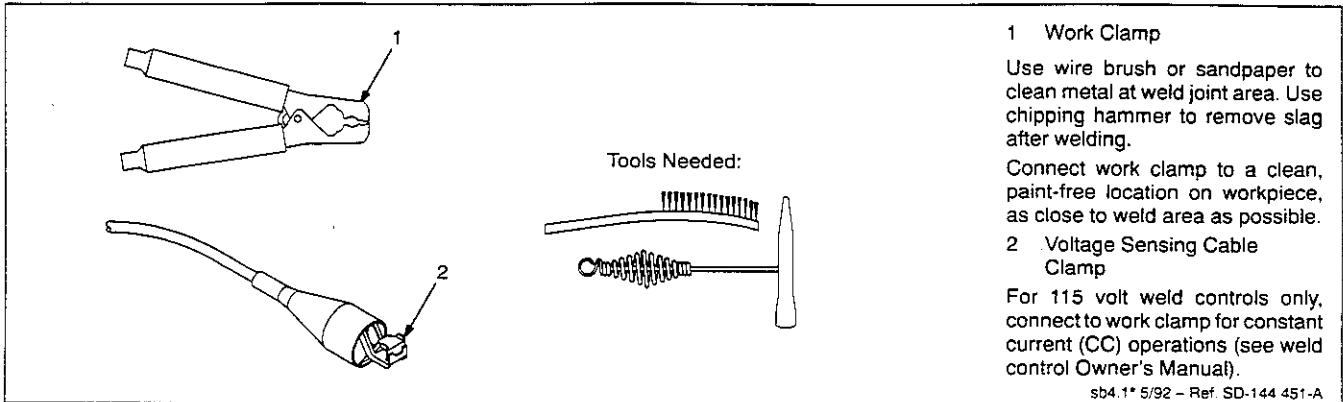


Figure 4-2. Work And Voltage Sensing Cable Clamps

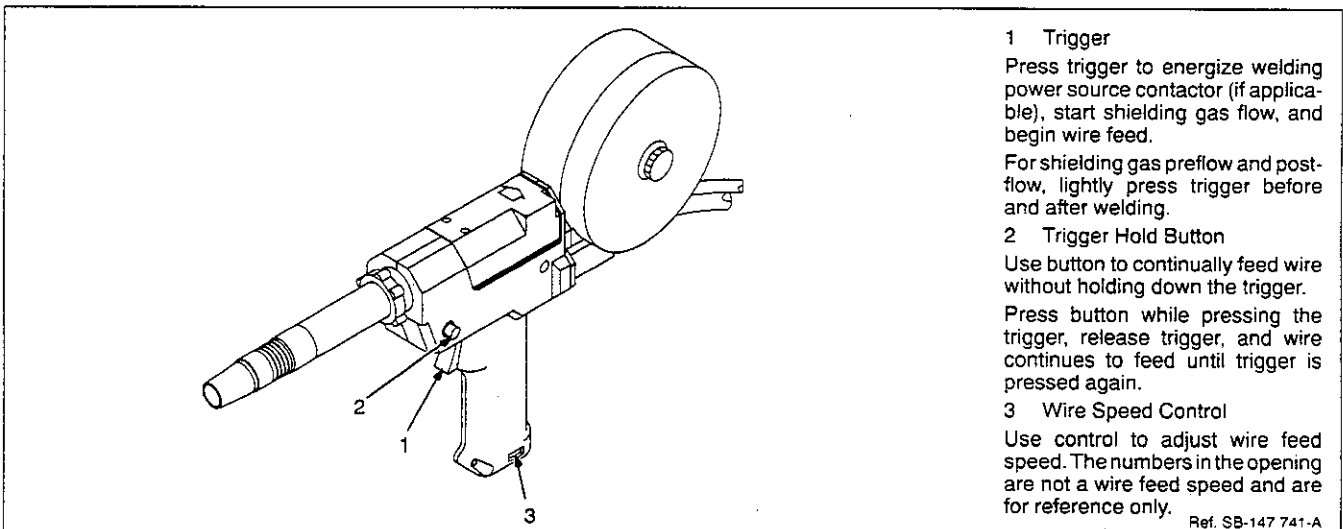


Figure 4-3. Controls

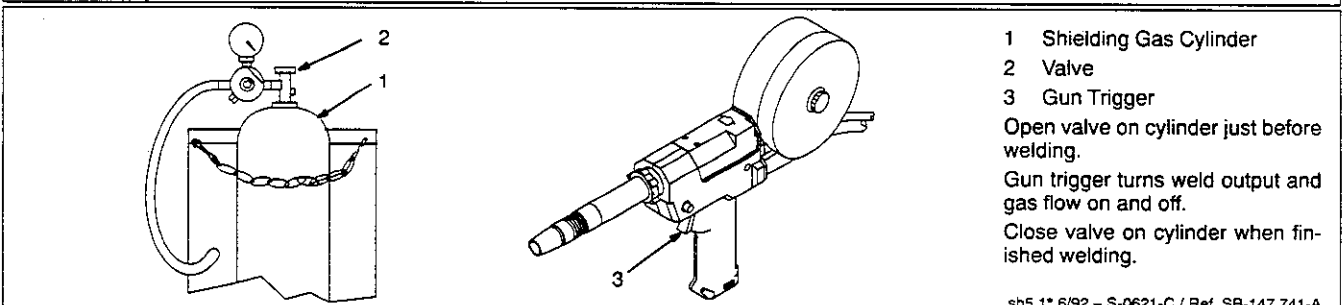
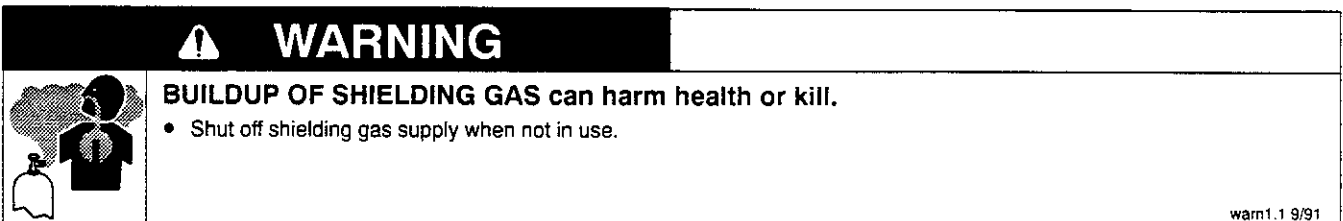


Figure 4-4. Shielding Gas

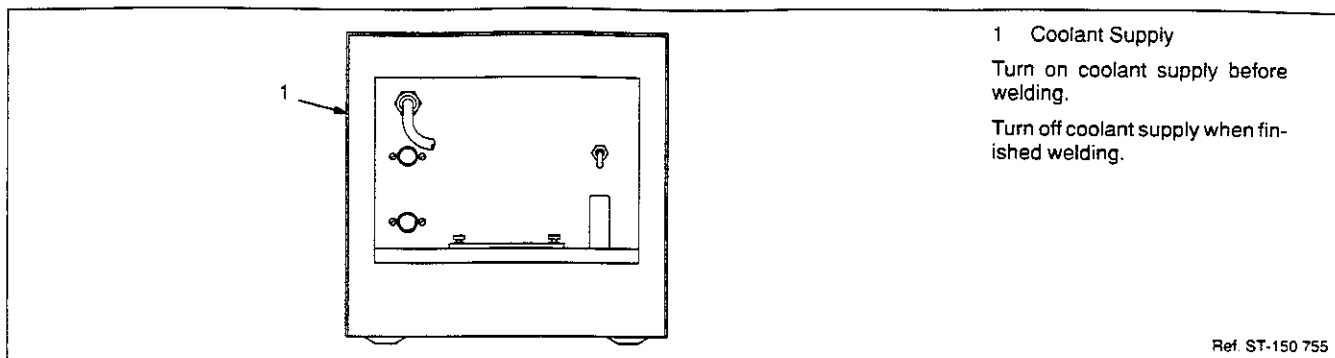


Figure 4-5. Coolant Supply For Water-Cooled Models Only

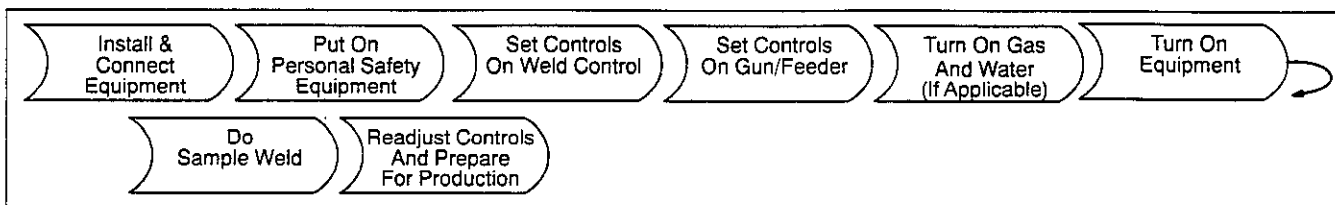


Figure 4-6. Sequence Of Gas Metal Arc Welding (GMAW) - Continuous Or Spot

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. wfwm4.1* 8/92	

5-1. Routine Maintenance

Turn OFF all power before maintaining.		3 Months		6 Months	
See Section 7	Replace Unreadable Labels	Tape Or Replace Cracked Weld Cable	Replace Cracked Parts	Blow Out Or Vacuum Inside	Clean Drive Rolls
	Clean And Tighten Weld Terminals				5-3
3-5, 3-6		Gas Hose	14-Pin Cord	Gun Cable	

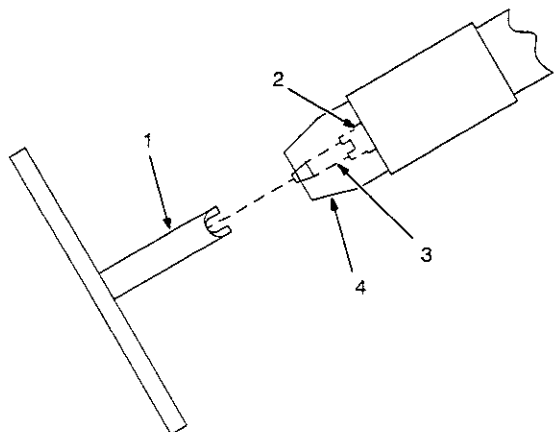
Figure 5-1. Maintenance

5-2. Changing Contact Tube And Liner

WARNING



READ SAFETY BLOCKS at start 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 5-3.

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.

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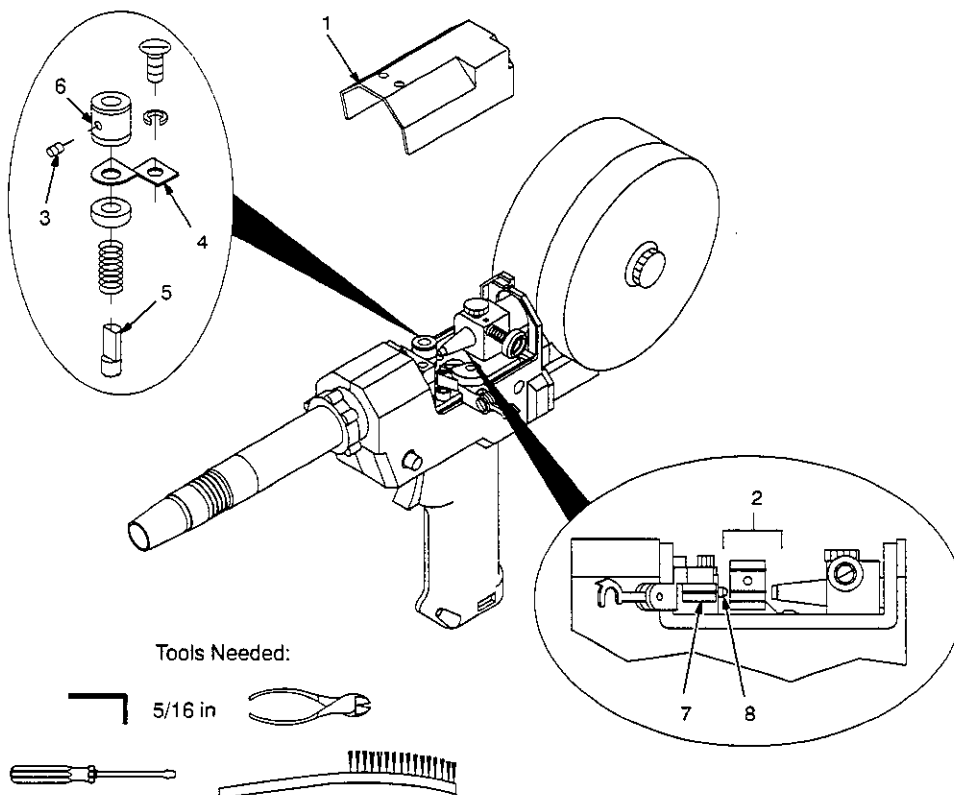
Figure 5-2. Changing Contact Tube And Liner

5-3. Changing Or Cleaning Drive Roll

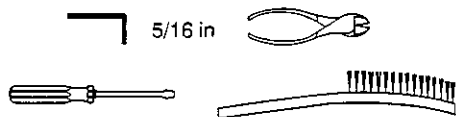
WARNING



READ SAFETY BLOCKS at start 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. (If tab is removed, a smaller diameter contact tube is recommended. See options in Parts List.) 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 3-9). Close and secure pressure roll assembly. Reinstall top cover.

Ref. ST-149 967-A

Figure 5-3. Removing Drive Roll

5-4. Replacing Or Cleaning Drive Roll Bearing

⚠ WARNING



READ SAFETY BLOCKS at start of Section 5 before proceeding.

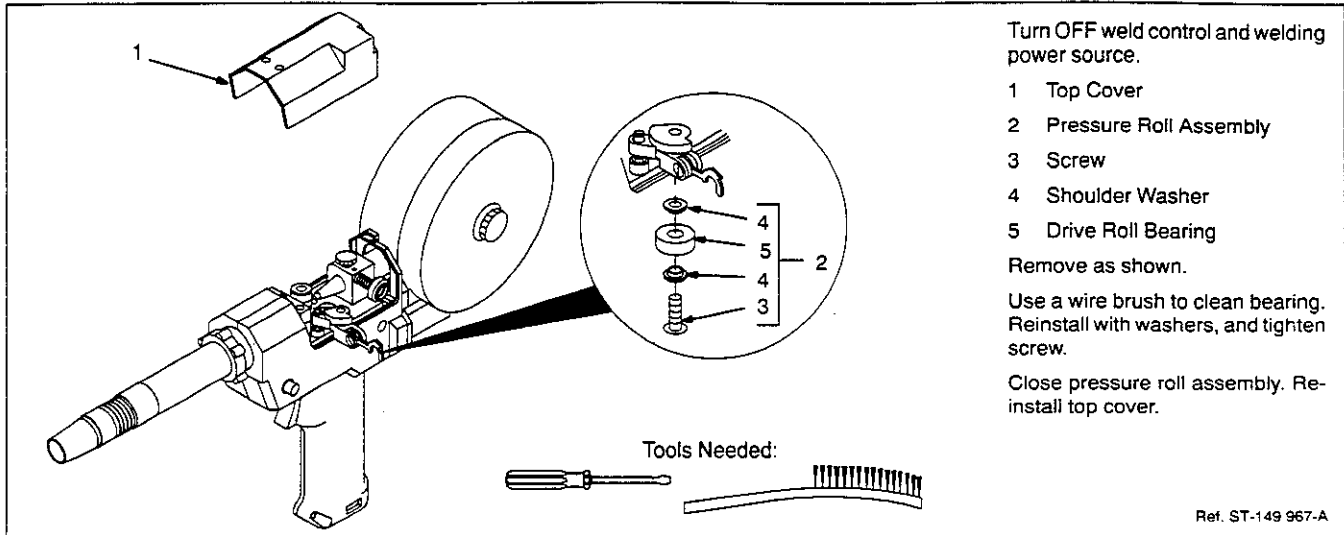


Figure 5-4. Removing Drive Roll Bearing

5-5. Replacing Canister Inlet Guide

⚠ WARNING



READ SAFETY BLOCKS at start of Section 5 before proceeding.

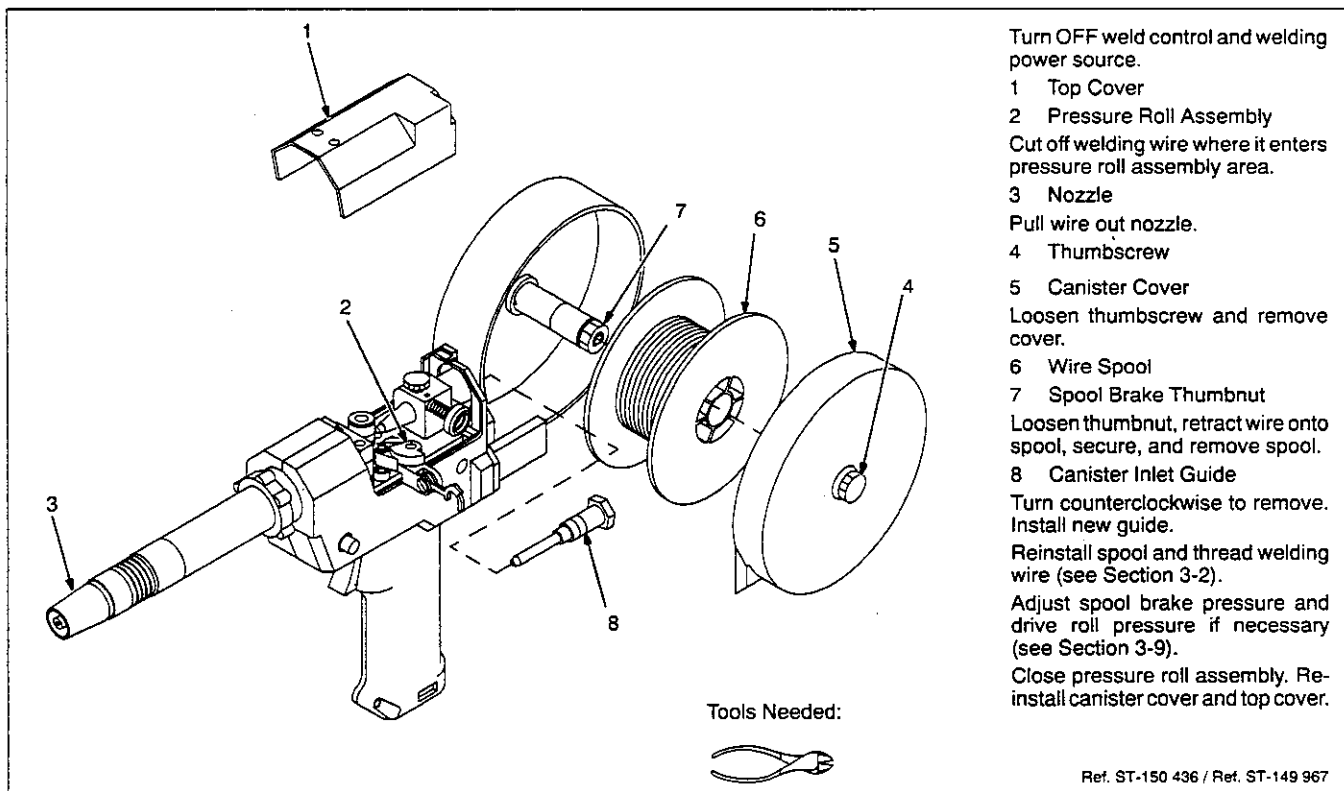


Figure 5-5. Removing Canister Inlet Guide

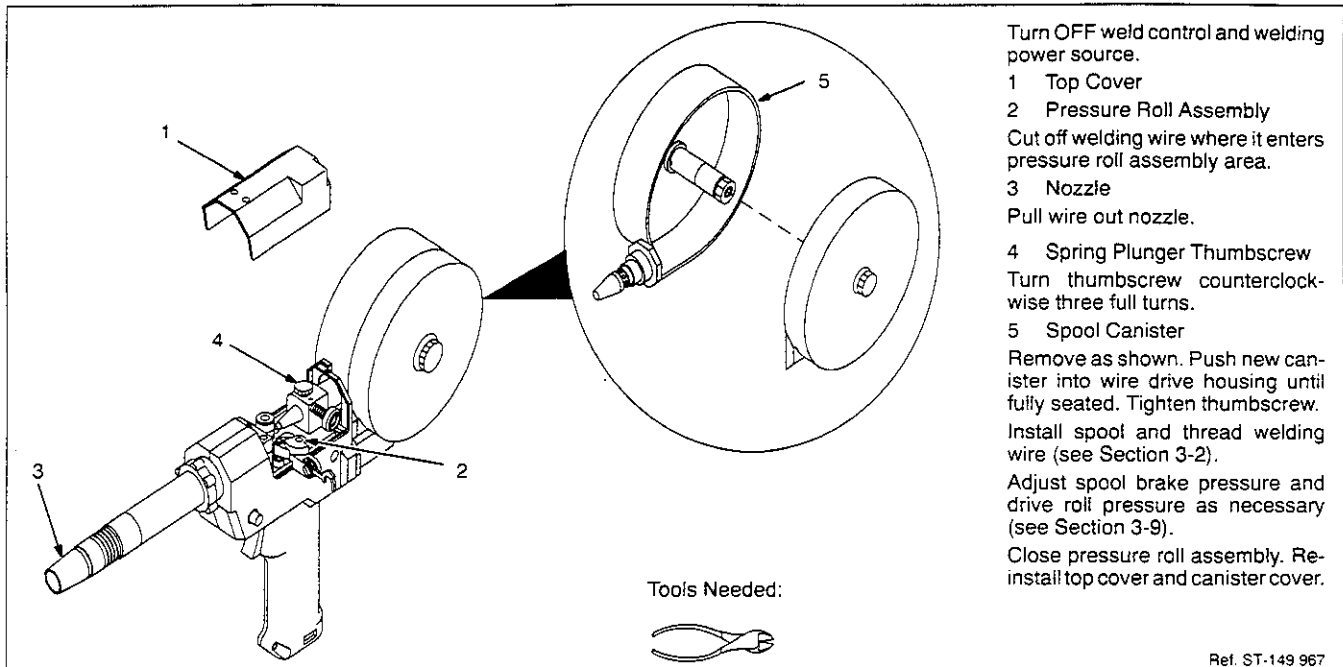
5-6. Replacing Spool Canister



WARNING



READ SAFETY BLOCKS at start of Section 5 before proceeding.



Ref. ST-149 967

Figure 5-6. Removing Canister

5-7. Replacing Contact Tube Adapter

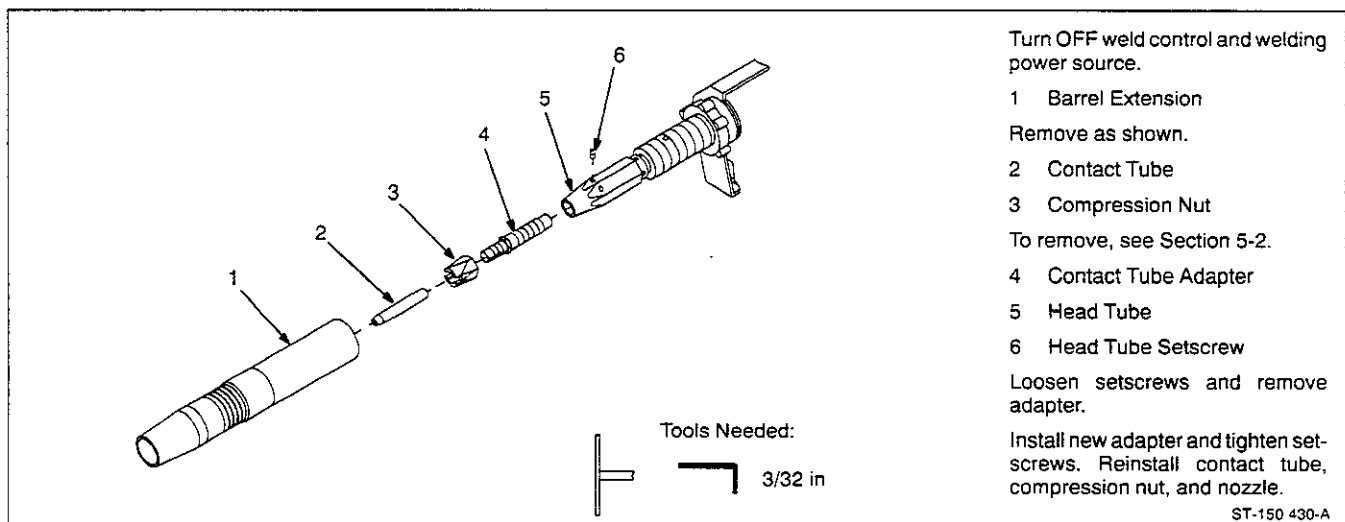
A. Air-Cooled Models



WARNING



READ SAFETY BLOCKS at start of Section 5 before proceeding.



ST-150 430-A

Figure 5-7. Removing Contact Tube Adapter

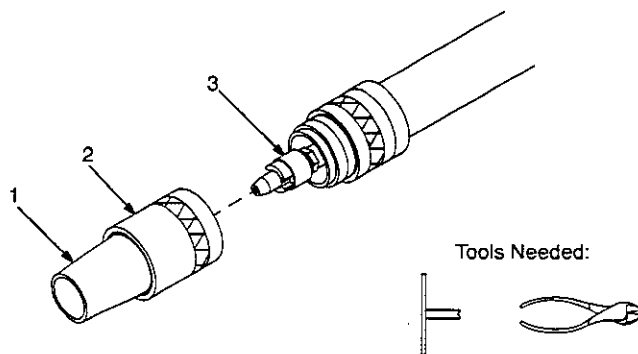
B. Water-Cooled Models



WARNING

WATER IN GUN PARTS can cause ELECTRIC SHOCK and can lower weld quality.

- Turn OFF welding power source and water supply before working on gun. Stop engine on welding generators.
- Always point gun downward when removing water-cooled barrel to keep water out of gun parts.
- Wipe gun dry before putting it back together.



Turn OFF weld control and welding power source.

1 Nozzle

2 Nozzle Adapter

Remove as shown.

3 Contact Tube Adapter

Use wrench to remove adapter.

Coat new adapter with threadlocking compound (such as Loctite No. 242), and install.

ST-150 431

Figure 5-8. Removing Contact Tube Adapter

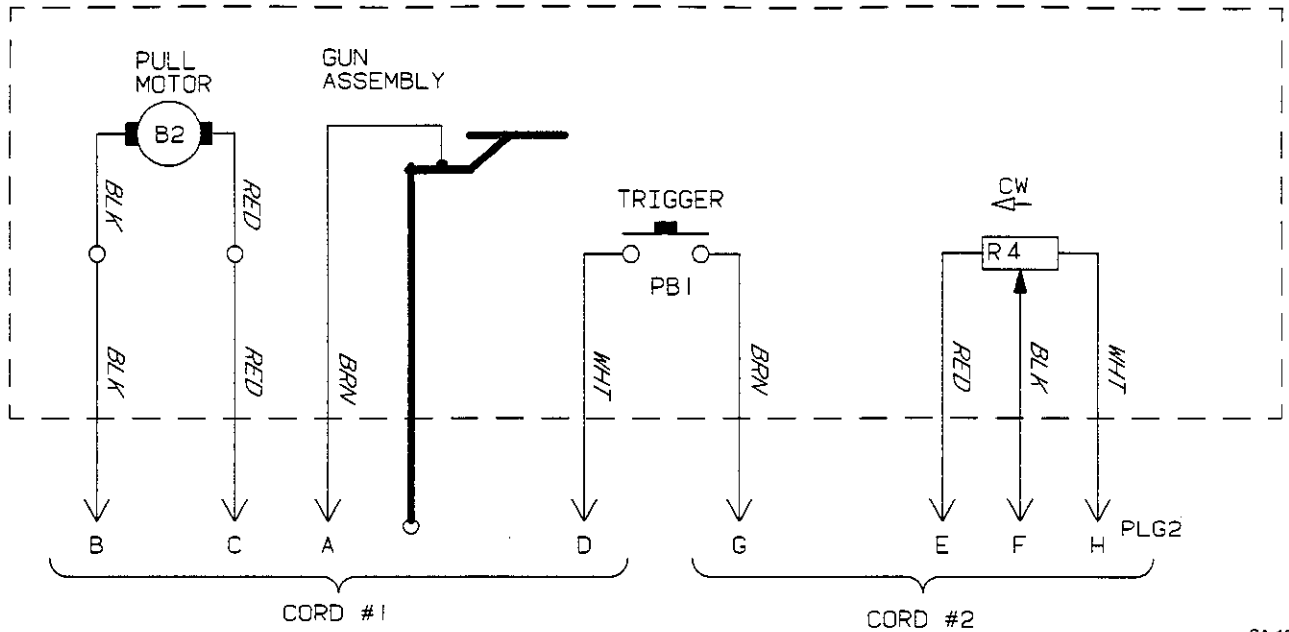
5-8. Troubleshooting

 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.
			
		Troubleshooting to be performed only by qualified persons. swarn9.2* 8/92	

Table 5-1. Welding Trouble

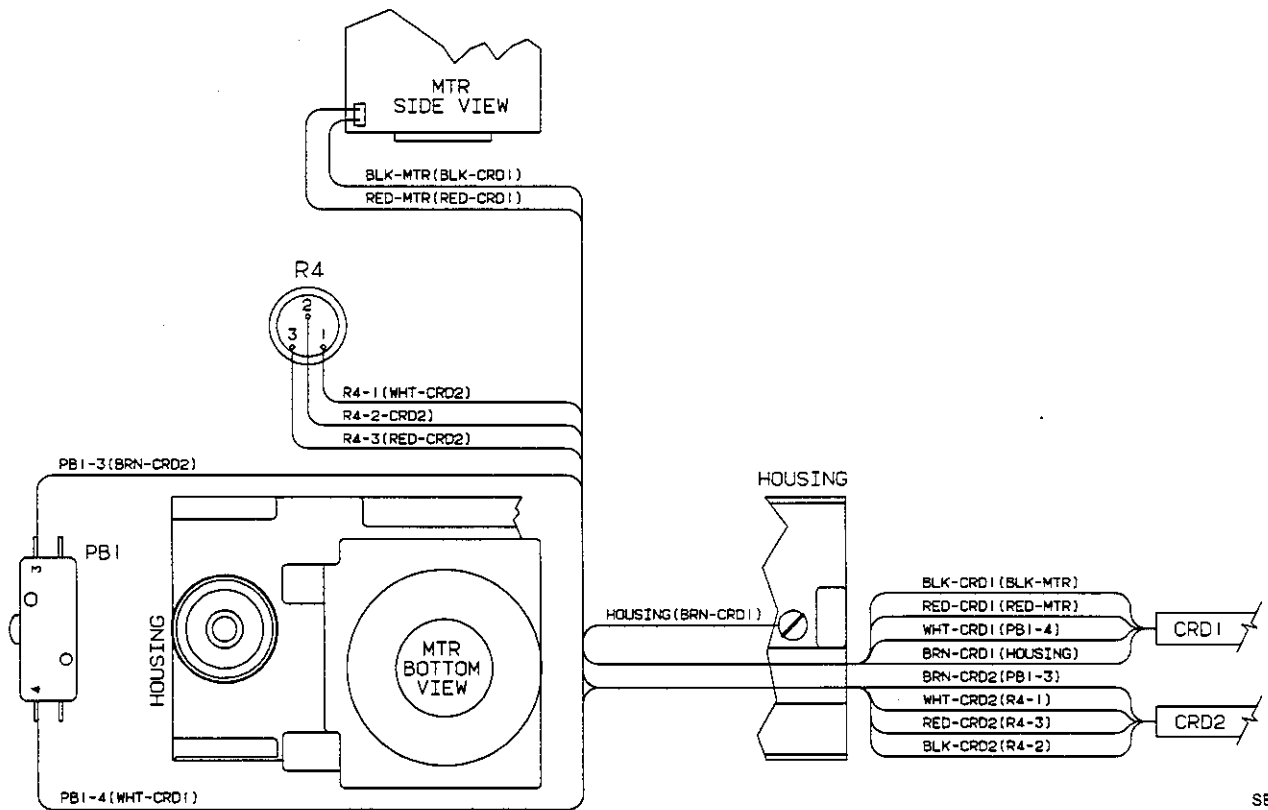
Trouble	Remedy	Section
No weld output; gun/feeder does not work.	Secure weld control plug in 115 volts ac receptacle. Place POWER switch on welding power source in the ON position.	-- --
Erratic weld output.	Tighten and clean all connections.	--
Pressing gun/feeder trigger does not energize weld control; 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. Clean drive roll or replace drive roll. Decrease spool brake pressure.	3-9 5-3 3-9
Gun overheating (Water-Cooled Models).	Be sure coolant flowrate is at least 1 qt/min Corrosion buildup in gun/feeder decreasing coolant flowrate. Backflush coolant system, clean coolant system filter, and clean fittings.	-- 3-8

SECTION 6 – ELECTRICAL DIAGRAMS



SA-138 956-A

Figure 6-1. Circuit Diagram For Gun/Feeder

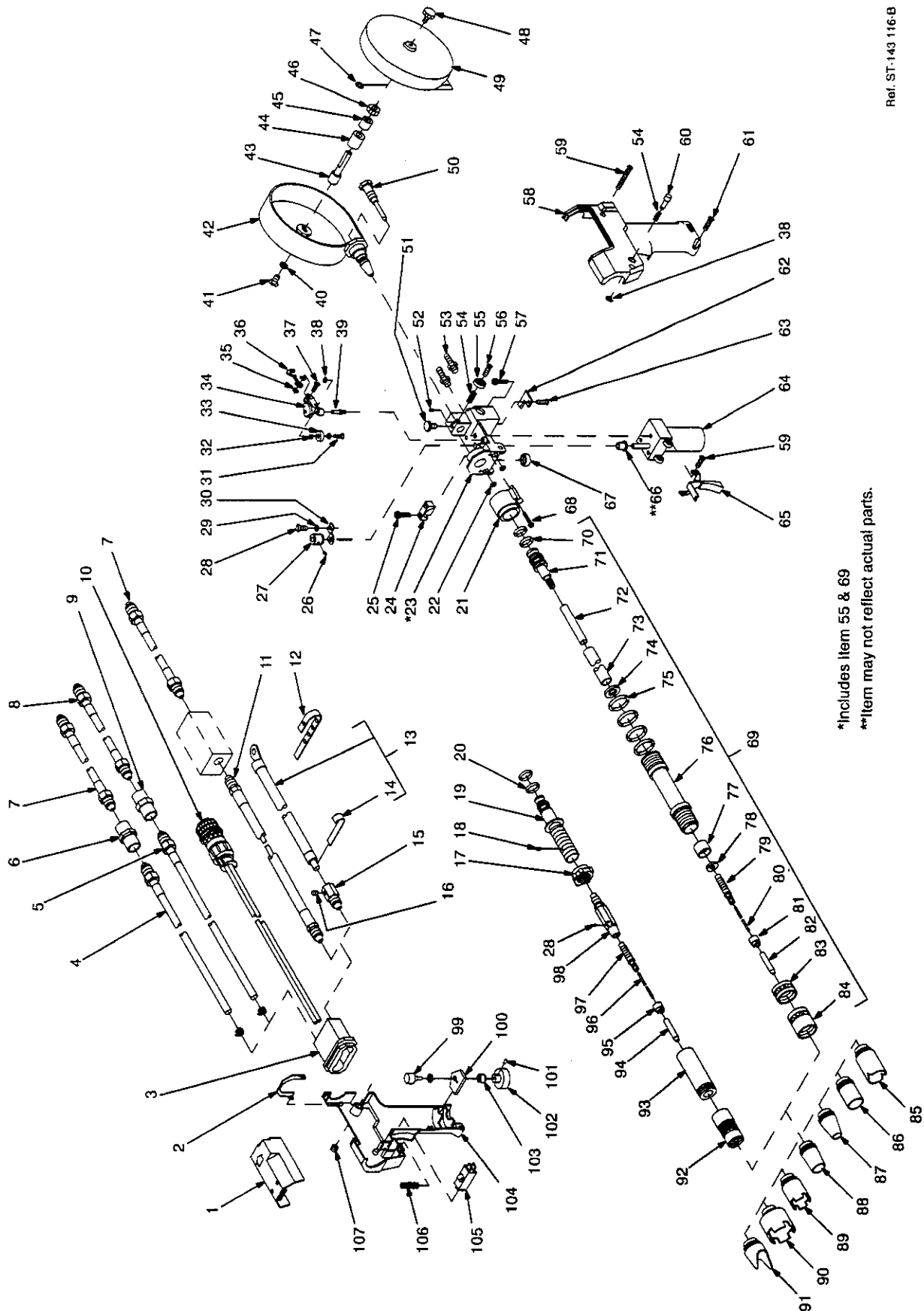


SB-139 060-A

Figure 6-2. Wiring Diagram For Gun/Feeder

NOTES

SECTION 7 – PARTS LIST



*Includes Item 55 & 69
 **Item may not reflect actual parts.

Ref. ST-143 116-B

Figure 7-1. Main Assembly

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 7-1. Main Assembly				
1		133 479	COVER	1
2		135 196	SPRING, closure cover	1
3		133 362	STRAIN RELIEF, cable	1
4		137 475	HOSE, water in (30W model only) (consisting of)	1
5		137 472	HOSE, gas in (consisting of)	1
		056 851	FITTING, hose brs barbed nipple 3/16tbg	1
		010 607	FITTING, hose brs nut .625-18LH (water hose)	1
		010 606	FITTING, hose brs nut .625-18RH (gas hose)	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 slfing	1
6		057 020	FITTING, hose brs coupler .625-18LH/.625-18RH (30W model only)	1
7		000 571	HOSE, water (30W model only) (consisting of)	2
		056 851	FITTING, hose brs barbed nipple 3/16tbg	2
		010 607	FITTING, hose brs nut .625-18LH	2
		056 108	FITTING, hose brs ferrule .425 ID x .718 lg	2
		134 834	HOSE, SAE .187 ID x .410 OD (order by ft)	10ft
8		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
9		000 950	FITTING, hose brs coupler .625-18RH/.625-18RH	1
10		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
11		137 477	CABLE, power/water out 30ft (30W model only)	1
12		073 476	CLAMP, strap rbr 5 holes .375 wide x 4.625 lg	13
13		137 479	CABLE, power (30A model only) (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
14		152 577	STRIP, cop .010 x 2.000 x .750	1
15		137 495	FITTING, connection power weld (30A model only)	1
16		141 694	SCREW, set stl sch .312-18 x .375 cone point (30A model only)	1
17		058 685	NUT, jam nozzle extension (30A model only)	1
18		602 172	SCREW, set stl sch 10-32 x .187 cup point (30A model only)	1
19		136 730	ADAPTER, tube head (30A model only)	1
20		134 800	O-RING, .614 ID x .070 CS	2
21		132 985	MANIFOLD, water (30W model only)	1
22		134 799	O-RING, .176 ID x .070 CS (30W model only)	2
22		134 799	O-RING, .176 ID x .070 CS (used w/thumbscrew)	1
23		152 579	HOUSING, wire drive (XR-A models only) (Includes Items 55 & 69)	1
23		152 578	HOUSING, wire drive (XR-W models only) (Includes Items 55 & 69)	1
24		133 365	CLAMP, head tube	1
25		000 417	SCREW, cap stl sch 10-24 x1.000	2
26		604 612	SCREW, set stl sch 8-32 x .125 cup point (30A model)	4
26		602 169	SCREW, set stl sch 8-32 x .187 cup point (30W model)	1
27		136 135	ROLL, drive VK groove .023-1/16 wire	1
28		602 066	SCREW, mach stl trh 6-32 x .250	2
		602 070	SCREW, 6-32 x .375 trushd slit stl	1
29		602 198	WASHER, lock stl split No. 6	1
30		162 042	CONTACT, current pick-up	1
31		132 270	SCREW, mach stl rdhph 6-32 x .500	1
32		134 624	BEARING, flg nyl .140 ID x .187 OD x .375flg x .031thk	2
33		134 623	BEARING	1
34		132 852	ARM, pressure	1

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 7-1. Main Assembly (Continued)				
35		605 798	WASHER, shldr nyl .375 OD x .168 ID x .080	2
36		154 307	SPRING, tension adj drive roll	1
37		144 860	SCREW, mach stl flh 8-32 x .437	1
38		058 968	RING, retainer E	2
39		135 474	PIN, hinge	1
40		602 209	WASHER, lock stl intl tooth .250	1
41		132 530	SCREW, mach stl phtrh .250-20 x .500	1
42		132 527	CANISTER, spool	1
43		148 488	POST, support spool	1
44		132 529	PAD, brake	1
45		148 489	WASHER, anti-turn	1
46		132 524	NUT, thumb brake	1
47		000 364	RING, retainer ext .188 shaft x .025thk	1
48		132 528	SCREW, thumb canister	1
49		132 526	COVER, spool	1
50		132 521	GUIDE, inlet canister	1
51		155 565	SCREW, thumb spring plunger	1
52		135 126	SCREW, set stl sch 6-32 x .125 cup point	1
53		135 580	FITTING, gas (30A model)	1
53		135 580	FITTING, gas (30W model)	2
54		112 896	SPRING, cprsn .240 OD x .020 wire x .437	2
55		135 773	NUT, thumb tension adjusting 8-32	1
56		602 082	SCREW, mach stl rdh 8-32 x .500	1
57		604 638	SCREW, cap stl sch 6-32 x .375	3
58		136 128	CASE, gun LH	1
59		135 646	SCREW, mach stl rdhph 8-32 x 1.500	2
60		135 896	PLUNGER, trigger hold	1
61		135 645	SCREW, mach stl rdhph 8-32 x .875	1
62		136 679	CLAMP, strain relief	1
63		132 269	SCREW, mach stl rdhph 8-32 x .375	1
64	B2	161 813	MOTOR, gear PM 24VDC 420RPM 10.2:1 ratio	1
65		133 373	TRIGGER	1
66		162 041	BEARING BLOCK ASSEMBLY, (consisting of)	1
		162 040	BLOCK, bearing	1
		162 039	BUSHING, nyatron .252 ID x .315 OD x .250 lg	1
		162 038	BEARING, rdl sgl row 8mm x 16mm x 4mm	1
		143 480	SCREW, 6-32 x .625 soc hd-hex stl	1
67		058 262	CAP	1
68		135 128	SCREW, cap stl sch 6-32 x 1.000 (30W model only)	2
69		137 042	BARREL ASSEMBLY, water cooled (30W model only) (consisting of)	1
70		134 800	O-RING, .614 ID x .070 CS	2
71		136 955	FITTING, end tube head	1
72		136 956	TUBE, head	1
73		136 943	TUBING, teflon	1
74		136 834	WASHER, fbr .594 ID x .875 OD x .125thk	1
75		134 801	O-RING, .926 ID x .070 CS	4
76		137 041	BARREL, outer	1
77		136 836	INSULATOR, head tube from adapter	1
78		136 835	WASHER, flat brs .390 ID x .687 OD x .125thk	1
79		136 680	ADAPTER, contact tube	1
80		136 683	LINER, telfon .045-1/6 wire x 6.875 lg	1
81		136 748	NUT, compression .375-24	1
82		135 424	TUBE, contact .047-.061 wire	1
83		136 833	NUT, jam adapter 1.000-8	1
84		136 832	ADAPTER, nozzle	1
		050 622	NOZZLE, 5/8 orf x 1-5/8 lg	1
85		◆009 925	NOZZLE, spot outside corner .937 ID x 2.375	1
86		◆050 116	NOZZLE, 13/16 orf x 1-5/8 lg	1

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 7-1. Main Assembly (Continued)				
87		◆050 115	NOZZLE, 1/2 orf x 1-5/8 lg	1
88		050 622	NOZZLE, 5/8 orf x 1-5/8 lg	1
89		◆000 442	NOZZLE, spot	1
90		◆004 466	NOZZLE, spot	1
91		◆000 443	NOZZLE, spot inside corner	1
92		144 862	EXTENSION, nozzle (30A model only)	1
93		156 821	EXTENSION, barrel 2.875 lg (30A model only)	1
94		136 171	TUBE, contact .025/31 wire	1
94		◆135 427	TUBE, contact .030/36 wire	1
94		135 428	TUBE, contact .030/41 wire	1
94		◆147 314	TUBE, contact .035/41 wire	1
94		135 430	TUBE, contact .035/52 wire	1
94		◆135 429	TUBE, contact .047/52 wire	1
94		135 424	TUBE, contact .047/61 wire	1
94		◆135 426	TUBE, contact .062/73 wire	1
94		135 425	TUBE, contact .062/81 wire	1
		136 821	WRENCH, nut tube contact	1
		010 287	WRENCH, hex .093 across the flat	1
95		136 748	NUT, compression .375-24	1
96		136 683	LINER, teflon .045-1/16 wire x 6.875 lg	1
96		136 682	LINER, teflon .023-.035 wire x 6.875 lg	1
97		136 680	ADAPTER, contact tube (30A model only)	1
98		136 681	TUBE, head (30A model only)	1
99	R4	137 854	POTENTIOMETER, C sltd sft 1/T .5W 10K ohm	1
100		144 861	WASHER, anti-turn	1
101		602 169	SCREW, set stl sch 8-32 x .187 cup pt	1
102		134 856	KNOB, speed control 1-10 .140 shaft x 1.125 OD	1
103		135 127	LOCK, shaft pot .250-32 x .125dia shaft	1
104		136 127	CASE, gun RH	1
105	PB1	000 369	SWITCH, lim 10A 125/250VAC DPST plgr	1
106		118 774	SPRING, cprsn .240 OD x .024 wire x 1.000	1
107		135 647	NUT, stl 8-32	3

◆OPTIONAL

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

OPTIONS AND ACCESSORIES

FOR AIR-COOLED MODELS

SX FLEX HEAD KIT

(#131 104)

For .030 in. through 1/16 in. (0.8 mm through 1.6 mm) wire.

Used in place of the standard straight barrel, this uniquely designed flexible head tube allows the operator to bend the flex head 60 degrees in any direction for easier joint access and improved operator comfort. The SX Flex Head is supplied with two Teflon liners and one contact tube for each wire size listed.

REPLACEMENT LINERS FOR FLEX HEAD

(#138 255) .030 and .035 in. (0.8 and 0.9 mm) wire

(#132 682) 3/64 and 1/16 in. (1.2 and 1.6 mm) wire

NOTE: The flex head uses standard contact tubes.

SX-A 50 DEGREE CURVED BARRELS

(#147 175) 6 in. (152 mm)

(#147 176) 10 in. (254 mm)

Used with .030 through 1/16 in. (0.8 through 1.6 mm) wire. Kits supplied with two liners that accommodate all wire sizes. Uses standard contact tubes.

REPLACEMENT TEFLON LINERS FOR CURVED BARRELS

For 6 in. Barrel

(#144 858)

.030 and .035 in. (0.8 and 0.9 mm) wire

(#144 859)

.047 and 1/16 in. (1.2 and 1.6 mm) wire

For 10 in. Barrel

(#144 854)

.030 and .035 in. (0.8 and 0.9 mm) wire

(#144 855)

.047 and 1/16 in. (1.2 and 1.6 mm) wire

SX-A 50 DEGREE CURVED NOZZLE KIT

(#147 174)

Attaches to standard gun barrel assembly and is ideal for access to confined weld joint areas. Used with .030 through 1/16 in. (0.8 through 1/6 mm) wire.

Kit includes two of each size contact tubes to accommodate all wire sizes. Uses standard straight barrel head tube liner.

REPLACEMENT CONTACT TUBES FOR CURVED NOZZLE

(#148 155)

.030 and .035 in. (0.8 and 0.9 mm) wire

(#148 154)

.047 in. (1.2 mm) wire

(#148 156)

1/16 in. (1.6 mm) wire

3 IN. HEAD TUBE EXTENSION (#137 787)

Used to extend the standard gun barrel 3 in. (72 mm) when a longer reach is required. The head tube extension is supplied with two liners to accommodate all wire sizes.

REPLACEMENT LINERS FOR HEAD TUBE EXTENSION

(#138 223) .030 and .035 in.

(0.8 and 0.9 mm) wire

(#138 224) 3/64 and 1/16 in.

(1.2 and 1.6 mm) wire

NOTE: The 3 in. head tube uses standard contact tubes.

FOR WATER-COOLED MODELS

SX-W

50 DEGREE CURVED BARRELS

(#130 843) 6 in. (152 mm)

(#130 842) 10 in. (254 mm)

Used with .030 through 1/16 in. (0.8 through 1.6 mm) wire. Kits supplied with two liners that accommodate all wire sizes. Uses standard contact tubes.

SX-W 10 IN. STRAIGHT BARREL (#130 841)

Used with .030 through 1/16 in. (0.8 through 1.6 mm) wire. Kits supplied with two liners that accommodate all wire sizes. Uses standard contact tubes.

CABLE COVER

(#118 678)

Protects gun hose and cable assembly from wear and abrasion. Features a full-length zipper. Cover can be removed if cable service is required.

SX HEAT SHIELD

(#131 103)

Helps protect operator's hand from spatter and reflected heat.

XR REPLACEMENT FEED CABLE WITH NYLON LINER

(#112 715) 15 ft. (4.6 m)

(#112 716) 30 ft. (9.1 m)

OPTIONAL FEED CABLE WITH STEEL LINER

(#121 001) 15 ft. (4.6 m)

(#121 002) 30 ft. (9.1 m)

Recommended when using .030 through .045 in. (0.8 to 1.1 mm) mild steel, flux-cored, or stainless steel electrode wire.

SPOOLMATIC HOSE AND CABLE EXTENSION KITS

For Spoolmatic-30A, Air-Cooled Model

(#132 228) 25 ft. (7.6 m)

(#132 229) 50 ft. (15.2 m)

For Spoolmatic-30W, Water-Cooled Model

(#132 226) 25 ft. (7.6 m)

(#132 227) 50 ft. (15.2 m)

Attaches to the standard 30 ft. (9.1 m) hose and cable assembly to extend the Spoolmatic gun farther from the WC weld control.

Convenient plug-in connections. Includes gas hose, control cord, and weld power cable with International style insulated connector. (Kits for water-cooled guns include water in/out hoses.)