



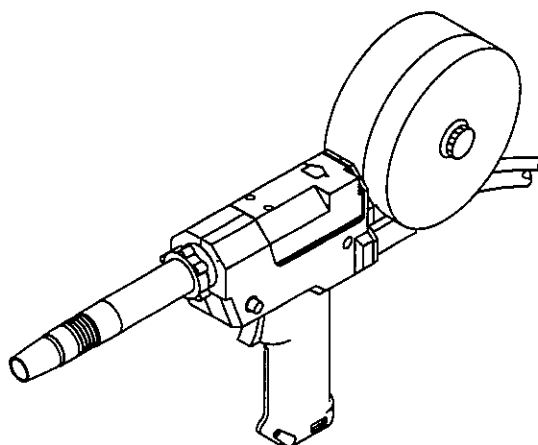
Miller®

May 1996

Form: OM-1213G

Effective With Serial No. KE611306

OWNER'S MANUAL



Spoolmatic® 30A Spoolmatic Wire Feed Gun For GMAW

Wire Diameter Range	Approximate Wire Feed Range	Cooling Method	Maximum Spool Size	Weld Circuit Rating	IP Rating	Overall Dimensions	Weight
.025 Thru 1/16 in (0.6 Thru 1.6 mm) Aluminum Wire	70 To 875 ipm (1.7 To 22.2 mpm)	Air Cooled	4 in (102 mm) Diameter	100 Volts, 200 Amperes, 100% Duty Cycle Using Argon Shielding Gas	IP 23	Length: 15-3/8 in (390 mm) Width: 2-1/2 in (64 mm) Height: 10-3/4 in (273 mm)	2.9 lb (1.3 kg) Gun Only
.025 Thru .045 in (0.6 Thru 1.1 mm) Hard Or Cored Wire							14 lb (6.4 kg) Gun With Cable

MILLER'S TRUE BLUE® LIMITED WARRANTY

Effective February 7, 1996
(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
 - * Intellitig
 - * Robots (1 year labor)
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
 - * Miller Cyclomatic Equipment
 - * 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

Declaration of Conformity for European Community (CE) Products

NOTE

This information is provided for units with CE certification (see rating label on unit).

Manufacturer's Name: **Miller Electric Mfg. Co.**

Manufacturer's Address: 1635 W. Spencer Street
Appleton, WI 54914 USA

Declares that the product: **Spoolmatic® 30A**

conforms to the following Directives and Standards:

Directives

Low Voltage Directive: 73/23/EEC

Electromagnetic Compatibility (EMC) Directive: 89/336/EEC

Machinery Directives: 89/392/EEC, 91/368/EEC, 93/C 133/04, 93/68/EEC

Standards

Arc Welding Equipment Part I: Welding Power Sources: IEC 974-1
(April 1995 – Draft Revision)

Arc Welding Equipment: Wirefeed Systems: IEC 974-4
(May 1995 – Draft Revision)

Degrees of Protection Provided By Enclosures (IP Code): IEC 529:1989

Insulation Coordination For Equipment With Low-Voltage Systems:
Part I: Principles, Requirements and Tests: IEC 664-1: 1992

Electromagnetic Compatibility, (EMC): EN 50199

Torches And Guns For Arc Welding, EN 50078

European Contact: Mr. Luigi Vacchini, Managing Director
MILLER Europe S.P.A.
Via Privata Iseo
20098 San Giuliano
Milanese, Italy

Telephone: 39(02)98290-1
Fax: 39(02)98281-552

SECTION 1 – SAFETY PRECAUTIONS FOR ARC WELDING

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

	FIRE OR EXPLOSION can result from placing unit on, over, or near combustible surfaces. 1. Do not locate unit on, over, or near combustible surfaces. 2. Do not install unit near flammables.		MOVING PARTS can cause injury. 1. Keep away from moving parts. 2. Keep away from pinch points such as drive rolls.
	FALLING EQUIPMENT can cause serious personal injury and equipment damage. 1. Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories. 2. Use equipment of adequate capacity to lift unit. 3. If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.		FLYING PIECES OF METAL or DIRT can injure eyes. 1. Wear safety glasses with side shields or face shield.
	HOT PARTS can cause severe burns. 1. Do not touch hot parts bare handed. 2. Allow cooling period before working on gun or torch.		WELDING WIRE can cause puncture wounds. 1. Do not press gun trigger until instructed to do so. 2. Do not point gun toward any part of the body, other people, or any metal when threading welding wire.
	MOVING PARTS can cause injury. 1. Keep away from moving parts such as fans. 2. Keep all doors, panels, covers, and guards closed and securely in place.		HIGH-FREQUENCY RADIATION can interfere with radio navigation, safety services, computers, and communications equipment. 1. Have only qualified persons familiar with electronic equipment perform this installation. 2. The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation. 3. If notified by the FCC about interference, stop using the equipment at once. 4. Have the installation regularly checked and maintained. 5. Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.
	MAGNETIC FIELDS FROM HIGH CURRENTS can affect pacemaker operation. 1. Pacemaker wearers keep away. 2. Wearers should consult their doctor before going near arc welding, gouging, or spot welding operations.		

	OVERUSE can cause OVERHEATED EQUIPMENT. 1. Allow cooling period. 2. Reduce current or reduce duty cycle before starting to weld again. 3. Follow rated duty cycle.		SIGNIFICANT DC VOLTAGE exists after removal of input power on inverters. 1. Turn Off inverter, disconnect input power, and discharge input capacitors according to instructions in Maintenance Section before touching any parts.
	STATIC ELECTRICITY can damage parts on circuit boards. 1. Put on grounded wrist strap BEFORE handling boards or parts. 2. Use proper static-proof bags and boxes to store, move, or ship PC boards.		BUILDUP OF SHIELDING GAS can harm health or kill. 1. Shut off shielding gas supply when not in use.

1-4. 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.

1-5. 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:

1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around the body.
4. Keep welding power source and cables as far away as practical.
5. 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 1 – CONSIGNES DE SÉCURITÉ POUR LE SOUDAGE À L'ARC

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1-1. Signification des symboles



Signifie Mise en garde! Attention! Ce mode opératoire peut présenter des dangers! Les dangers possibles sont indiqués par les divers symboles.

▲ Indique un message de sécurité spécial.

☞ Signifie NOTA; pas lié à la sécurité



Ce groupe de symboles signifie Mise en garde! Attention!, risque de CHOCS ÉLECTRIQUES, dangers présentés par les PIÈCES MOBILES et les PIÈCES CHAUDES. Voir les symboles et les consignes associées ci-après pour prendre les mesures nécessaires afin de se prémunir contre les dangers.

1-2. Dangers du soudage à l'arc



MISE EN GARDE

Les symboles donnés ci-après sont utilisés dans tout le manuel pour attirer l'attention sur les dangers possibles et pour indiquer le type de danger dont il s'agit. Quand on voit le symbole, prendre garde et suivre les directives correspondantes pour éviter le danger. Les consignes de sécurité données ci-après ne font que résumer l'information contenue dans les normes de sécurité énumérées à la section 1-4. Lire et respecter toutes ces normes de sécurité.

L'installation, l'utilisation, l'entretien et les réparations ne doivent être confiés qu'à des personnes qualifiées.

Aucune personne, et particulièrement les enfants, ne doit se trouver à proximité du poste de soudage.



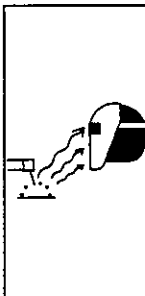
UN CHOC ÉLECTRIQUE peut tuer.

Un simple contact avec des pièces électriques peut provoquer une électrocution ou des blessures graves. L'électrode et le circuit de soudage sont sous tension dès que l'appareil est sur ON. Le circuit d'entrée et les circuits internes de l'appareil sont également sous tension à ce moment-là. En soudage semi-automatique ou automatique, le fil, le dévidoir, le logement des galets d'entraînement et les pièces métalliques en contact avec le fil de soudage sont sous tension. Des matériels mal installés ou mal mis à la terre présentent un danger.

1. Ne jamais toucher les pièces électriques sous tension.
2. Porter des gants et des vêtements de protection secs ne comportant pas de trous.
3. S'isoler de la pièce et de la terre au moyen de tapis ou d'autres moyens isolants suffisamment grands pour empêcher le contact physique éventuel avec la pièce ou la terre.
4. Couper l'alimentation ou arrêter le moteur avant de procéder à l'installation, à la réparation ou à l'entretien de l'appareil. Déverrouiller l'alimentation selon la norme OSHA 29 CFR 1910.147 (voir normes de sécurité).
5. Installer et mettre à la terre correctement cet appareil conformément à son manuel d'utilisation et au codes nationaux, provinciaux et municipaux.
6. Toujours vérifier la terre du cordon d'alimentation – Vérifier et s'assurer que le fil de terre du cordon d'alimentation est bien rac-

cordé à la borne de terre du sectionneur ou que la fiche du cordon est raccordée à une prise correctement mise à la terre.

7. En effectuant les raccordements d'entrée fixer d'abord le conducteur de mise à la terre approprié et contre-vérifier les connexions.
8. Vérifier fréquemment le cordon d'alimentation pour voir s'il n'est pas endommagé ou dénudé – remplacer le cordon immédiatement s'il est endommagé – un câble dénudé peut provoquer une électrocution.
9. Mettre l'appareil hors tension quand on ne l'utilise pas.
10. Ne pas utiliser des câbles usés, endommagés, de grosseur insuffisante ou mal épluchés.
11. Ne pas enrouler les câbles autour du corps.
12. Si la pièce soudée doit être mise à la terre, le faire directement avec un câble distinct – ne pas utiliser le connecteur de pièce ou le câble de retour.
13. Ne pas toucher l'électrode quand on est en contact avec la pièce, la terre ou une électrode provenant d'une autre machine.
14. N'utiliser qu'un matériel en bon état. Réparer ou remplacer sur-le-champ les pièces endommagées. Entretenir l'appareil conformément à ce manuel.
15. Porter un harnais de sécurité quand on travaille en hauteur.
16. Maintenir solidement en place tous les panneaux et capots.
17. Fixer le câble de retour de façon à obtenir un bon contact métal-métal avec la pièce à souder ou la table de travail, le plus près possible de la soudure.



LE RAYONNEMENT DE L'ARC peut brûler les yeux et la peau. Le BRUIT peut endommager l'ouïe; les PROJECTIONS DE LAITIÈRE OU LES ÉTINCELLES peuvent blesser les yeux.

L'arc de soudage produit des rayons visibles et invisibles intenses (ultraviolets et infrarouges) qui peuvent brûler les yeux et la peau. Le bruit produit par certains procédés peut endommager l'ouïe. Des projections de métal ou de laitier sont produites par le piquage, le meulage ou le refroidissement des soudures.

BRUIT

1. Utiliser des bouches-oreilles ou des serre-tête antibruit approuvés si le niveau de bruit est élevé.

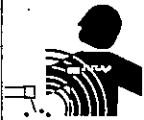
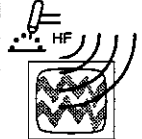
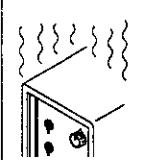
RAYONNEMENT DE L'ARC

2. Porter un masque à serre-tête muni d'un verre filtrant de nuance appropriée pour protéger le visage et les yeux quand on soude ou observe la travail de soudage (voir les normes ANSI Z49.1 et Z87.1 données sous la rubrique Principales normes de sécurité).
3. Porter des lunettes de sécurité approuvées avec écrans latéraux.
4. Utiliser des paravents ou des barrières de protection pour protéger les personnes à proximité contre les coups d'arc et l'éblouissement; avertir les autres personnes de ne pas regarder l'arc.
5. Porter des vêtements de protection en tissu ignifuge durable (laine et cuir) et des chaussures de sécurité.

	LES VAPEURS ET LES FUMÉES peuvent être dangereuses pour la santé. Le soudage produit des vapeurs et des fumées qu'il est dangereux de respirer. 1. Garder la tête à l'extérieur des vapeurs et des fumées et ne pas les respirer. 2. À l'intérieur, ventiler le poste de travail ou utiliser un dispositif placé au niveau de l'arc pour évacuer les vapeurs et fumées de soudage. 3. Si la ventilation est mauvaise, utiliser un appareil respiratoire à adduction d'air pur approuvé. 4. Consulter les fiches signalétiques et les consignes du fabricant relatives aux métaux, produits d'apport, revêtements, nettoyants et dégraissants.	5. Ne travailler dans un espace confiné que s'il est bien ventilé, ou en portant un appareil respiratoire à adduction d'air pur. Demander à un observateur ayant reçu la bonne formation de toujours se tenir à proximité. Les vapeurs et fumées de soudage peuvent déplacer l'air et abaisser le niveau d'oxygène et causer des blessures graves voire mortelles. S'assurer que l'air est propre à la respiration. 6. Ne pas souder à proximité d'opérations de dégraissage, de nettoyage ou de pulvérisation. La chaleur et les rayons de l'arc peuvent réagir avec les vapeurs pour former des gaz hautement toxiques et irritants. 7. Ne pas souder sur des métaux revêtus comme l'acier galvanisé, au plomb ou cadmié à moins que la pièce n'ait été entièrement décapée, que le poste de travail soit bien ventilé. S'il y a lieu, porter un appareil respiratoire à adduction d'air pur. Les revêtements et les métaux qui contiennent de tels éléments peuvent dégager des vapeurs toxiques lors du soudage.
	LES BOUTEILLES peuvent exploser si elles sont endommagées. Les bouteilles contenant des gaz de protection sont à haute pression. Une bouteille endommagée peut exploser. Étant donné que les bouteilles de gaz font normalement partie du matériel de soudage, les traiter avec le plus grand soin. 1. Protéger les bouteilles de gaz comprimé contre la chaleur intense, les chocs, le laitier, les flammes nues, les étincelles et l'arc. 2. Placer les bouteilles à la verticale en les fixant à un support fixe ou à un chariot pour éviter qu'elles ne tombent ou ne basculent. 3. Tenir les bouteilles à l'écart du poste de soudage ou d'autres circuits électriques.	4. Ne jamais poser un chalumeau soudeur sur une bouteille de gaz. 5. Ne jamais laisser une électrode de soudage toucher une bouteille. 6. Ne jamais souder sur une bouteille sous pression : elle exploserait. 7. N'utiliser que des bouteilles de gaz de protection, des détendeurs, des tuyaux souples et des raccords appropriés conçus pour l'application particulière; conserver ces matériels et leurs pièces en bon état. 8. Éloigner le visage de la sortie du robinet de la bouteille quand on l'ouvre. 9. Replacer le chapeau sur la bouteille après utilisation. 10. Lire et suivre les consignes relatives aux bouteilles de gaz comprimé, au matériel connexe ainsi que la publication P-1 de la CGA donnée sous la rubrique Principales normes de sécurité.
	LE SOUDAGE peut causer un incendie ou une explosion. Ne pas souder sur des récipients fermés comme des réservoirs, des fûts ou des tuyaux : ils peuvent exploser. L'arc de soudage peut produire des étincelles. Des étincelles, une pièce chaude et un matériel chaud peuvent provoquer des incendies et des blessures. Le contact accidentel de l'électrode sur des objets métalliques peut produire des étincelles, l'explosion, la surchauffe ou un incendie. S'assurer que le lieu ne présente pas de danger avant d'effectuer le soudage. 1. Se protéger et protéger les personnes à proximité des étincelles et du métal chaud. 2. Ne pas souder dans un endroit où les étincelles peuvent atteindre des matériaux inflammables. 3. Enlever toutes les matières inflammables dans un rayon de moins de 10 m de l'arc. Si cela n'est pas possible, bien les recouvrir en utilisant des bâches approuvées. 4. Prendre garde que les étincelles et les projections ne pénètrent dans des zones adjacentes en s'infiltrant dans des petites fissures et ouvertures.	5. Prendre garde aux incendies et toujours avoir un extincteur à proximité. 6. Se rappeler que si l'on soude sur un plafond, un plancher, une cloison ou autre, le feu peut prendre de l'autre côté. 7. Ne pas souder sur des récipients fermés comme des réservoirs, des fûts ou des tuyaux à moins qu'ils ne soient préparés de façon appropriée conformément à la norme F4.1 de l'AWS (voir la rubrique Principales normes de sécurité). 8. Raccorder le câble de retour à la pièce, le plus près possible de la zone de soudage, pour empêcher que le courant de soudage ne suive une trajectoire longue et éventuellement inconnue et qu'il ne provoque des risques d'électrocution et d'incendie. 9. Ne pas utiliser le chalumeau soudeur pour dégeler des tuyaux. 10. Enlever l'électrode enrobée du porte-électrode ou couper le fil de soudage au ras du bec contact quand on ne l'utilise pas. 11. Porter des vêtements de protection non huileux comme des gants en cuir, une chemise épaisse, des pantalons sans revers, des chaussures montantes et un casque. 12. Ne pas porter des matières combustibles sur soi comme un briquet à gaz ou des allumettes quand on soude.

1-3. Autres dangers relatifs à l'installation, l'utilisation et l'entretien

	UN INCENDIE OU UNE EXPLOSION peut être causé par un appareil placé au contact, au-dessus ou à côté de surfaces combustibles. 1. Ne pas placer l'appareil au contact, au-dessus, ou à côté d'une surface combustible. 2. Ne pas installer l'appareil à côté d'un objet ou d'un produit inflammable.	LES PIÈCES CHAUDES peuvent provoquer des brûlures graves. 1. Ne pas toucher les pièces chaudes les mains nues. 2. Laisser une période de refroidissement avant de toucher le pistolet ou la torche.
	EN TOMBANT, LE MATÉRIEL peut s'endommager ou causer des blessures graves. 1. N'utiliser l'anneau de levage que pour soulever l'appareil; NE PAS l'utiliser pour soulever les chariots, les bouteilles de gaz ou autres accessoires. 2. Pour soulever la source de courant, utiliser des appareils de puissance suffisante. 3. Si l'on utilise un élévateur à fourche pour déplacer l'appareil, s'assurer que la fourche est suffisamment longue et dépasse de l'autre côté de l'appareil.	LES PIÈCES MOBILES peuvent causer des blessures. 1. Se tenir à l'écart des pièces en mouvement comme les ventilateurs. 2. S'assurer que tous les capots, panneaux, portes et protecteurs sont bien fermés et fermement maintenus. LES ÉCLATS DE MÉTAL ou LES SALETÉS peuvent provoquer des lésions aux yeux. 1. Porter des lunettes de sécurité avec écrans latéraux ou écran facial.

	LES CHAMPS MAGNÉTIQUES PRODUITS PAR LES COURANTS ÉLEVÉS peuvent nuire au fonctionnement du stimulateur cardiaque 1. Les personnes qui portent un stimulateur cardiaque doivent se tenir éloignées du poste de soudage. 2. Les personnes qui portent un stimulateur cardiaque devraient consulter leur médecin avant de s'approcher d'un poste de soudage ou de gougeage à l'arc ou de soudage par points.		L'ÉLECTRICITÉ STATIQUE peut endommager les pièces des circuits imprimés. 1. Mettre un bracelet antistatique AVANT de manipuler les cartes de circuits imprimés ou les pièces. 2. Utiliser des sacs et boîtes antistatiques adéquats pour ranger, déplacer ou expédier les cartes de circuits imprimés.
	LES PIÈCES MOBILES peuvent provoquer des blessures. 1. Se tenir à l'écart des pièces mobiles. 2. Se tenir à l'écart des points de pincement, ex. : gâchettes d'entraînement.		LA HAUTE FRÉQUENCE peut créer des interférences dans les systèmes de radionavigation, les services de sécurité, les ordinateurs et le matériel de télécommunications. 1. Ne confier cette installation qu'à un personnel qualifié et connaissant bien l'équipement électronique. 2. L'utilisateur a la responsabilité de faire corriger rapidement par un électricien qualifié les problèmes d'interférences résultant de l'installation. 3. Dans le cas d'un avertissement d'interférence donné par le Conseil fédéral des communications, arrêter d'utiliser immédiatement l'équipement. 4. Faire vérifier et entretenir régulièrement l'installation. 5. Tenir les portes et panneaux de la source de haute fréquence bien fermés, maintenir les éclateurs au bon réglage et utiliser une mise à la terre et un écran de protection afin de réduire au minimum la possibilité d'interférences.
	LE FIL DE SOUDAGE peut percer la peau. 1. Attendre les instructions avant d'appuyer sur la gâchette. 2. Ne pas pointer le pistolet sur une partie du corps, sur d'autres personnes, ou sur une pièce métallique lorsqu'on enfle le fil de soudage.		
	UNE UTILISATION EXCESSIVE peut se traduire par une SURCHAUFFE DU MATÉRIEL. 1. Laisser une période de refroidissement. 2. Réduire le courant ou le facteur de marche avant de recommencer à souder. 3. Utiliser le facteur de marche nominal.		
	L'ACCUMULATION DE GAZ DE PROTECTION peut être nuisible à la santé voire mortel. 1. Quand on n'utilise pas le gaz de protection, fermer le robinet de la bouteille.		UNE TENSION C.C. IMPORTANTE est présente sur les onduleurs après que l'on ait coupé l'alimentation. 1. Avant de toucher les pièces, mettre l'onduleur hors tension, couper l'alimentation et décharger les condensateurs d'entrée conformément aux directives de la section Entretien.

1-4. Principales normes de sécurité

Safety in Welding and Cutting, norme ANSI Z49.1, de l'American Welding Society, 550 N.W. Lejeune Rd, Miami FL 33126

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

Recommended Safe Practice for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, norme AWS F4.1, de l'American Welding Society, 550 N.W. Lejeune Rd, Miami FL 33126

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

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

Règles de sécurité en soudage, coupage et procédés connexes, norme CSA W117.2, de l'Association canadienne de normalisation, vente de normes, 178 Rexdale Boulevard, Rexdale (Ontario) Canada M9W 1R3.

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

Cutting and Welding Processes, norme NFPA 51B, de la National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

1-5. Informations sur les champs électromagnétiques

NOTA Données sur le soudage et sur les effets des champs électriques et magnétiques basse fréquence.

Voici une citation tirée des conclusions générales du document Biological Effects of Power Frequency Electric & Magnetic Fields - Background Paper (Effets biologiques des champs électriques et magnétiques aux fréquences d'utilisation - Document de base), OTA-BP-E-53 (Washington, DC : U.S. Government Printing Office, mai 1989) publié par l'Office of Technology Assessment (Congrès des États-Unis): «... des expériences au niveau cellulaire et des études sur l'homme et l'animal nous ont apporté une foule de renseignements : il est maintenant clair que les champs magnétiques basse fréquence peuvent influencer les systèmes biologiques et les modifier. Ces travaux sont généralement d'excellente qualité, mais les résultats obtenus sont complexes. Dans l'état actuel de nos connaissances dans le domaine scientifique, nous ne sommes pas en mesure d'interpréter nos observations à la lumière d'une théorie générale. Et, ce qui est encore plus regrettable, nous ne pouvons rien affirmer de définitif au sujet des risques éventuels, ni proposer des méthodes scientifiques précises pour réduire ces risques ou pour les éviter.»

Pour réduire l'intensité des champs magnétiques au poste de travail :

1. Grouper solidement les câbles en les entrelaçant ou en les serrant avec un ruban adhésif.
2. Disposer les câbles sur un seul côté et à l'écart de l'opérateur.
3. Éviter d'enrouler les câbles ou de les poser sur l'épaule.
4. Éloigner le plus possible la source de courant et les câbles de soudage.
5. Raccorder le connecteur de pièce à la pièce à souder, le plus près possible de la soudure.

Stimulateurs cardiaques :

Les recommandations ci-avant s'adressent aussi, normalement, aux personnes qui utilisent un stimulateur cardiaque. Pour de plus amples renseignements, consultez votre médecin.

SECTION 2 – DEFINITIONS

2-1. Manufacturer's Rating Label For CE Products



$U_1 = 30V$
 $I_1 = 1A$

IP 23

$U_2 = 100V$
 $I_2 = 200A$
 $X 100\%$

MILLER ELECTRIC MFG. CO., APPLETON, WI USA
S-180 481



*For label location
see Section 4-1.*

S-180 481

2-2. Symbols And Definitions

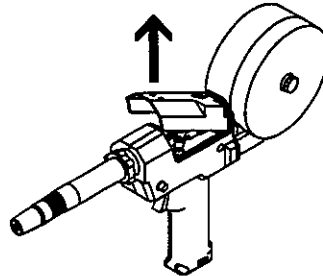
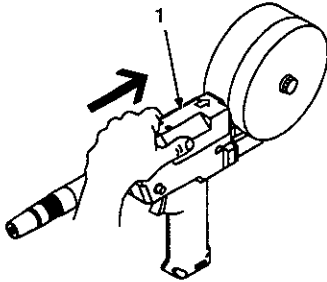
NOTE 		Some symbols are found only on CE products.					
U_1	Primary Voltage	V	Volts	I_1	Primary Current	A	Amperes
IP	Degree Of Protection	U_2	Conventional Load Voltage	I_2	Rated Welding Current	X	Duty Cycle
$\%$	Percent						

SECTION 3 – INSTALLATION

NOTE

Use weld control or welding power source Owner's Manual during gun installation. If contact tip, liner, and drive roll groove are not correct for wire size and type, see Section 5 to change parts as needed. See Parts List for other available contact tips.

3-1. Removing Top Cover



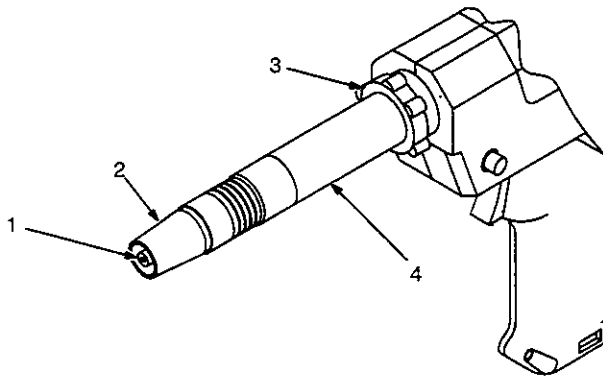
1 Top Cover

Push back and lift off as shown.

To reinstall cover, set rear of cover in gun/feeder, and push cover back, down, and forward until it clicks into position.

Ref. ST-150 882-A

3-2. Adjusting Contact Tip Position



1 Contact Tip

2 Nozzle

Adjusting barrel changes contact tip location from 1/16 in (1.6 mm) out end of nozzle to 1/4 in (6.3 mm) inside nozzle.

For aluminum welding, contact tip should be at least 1/8 in (3.2 mm) inside nozzle. For steel welding, contact tip should be flush with end of nozzle.

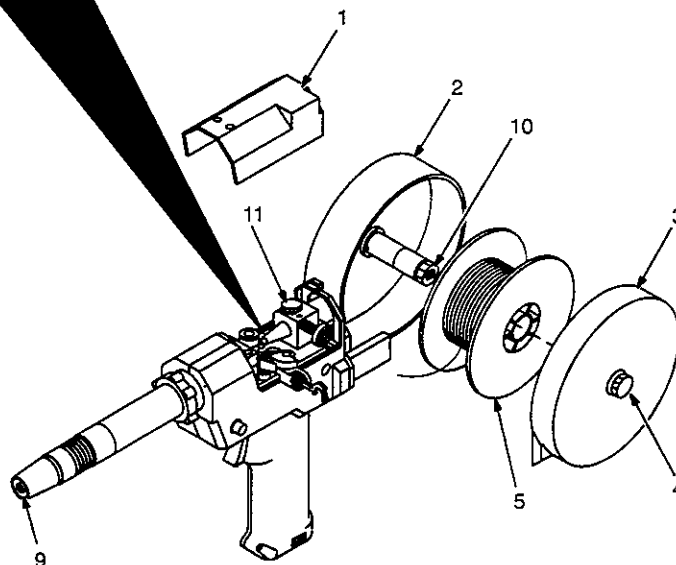
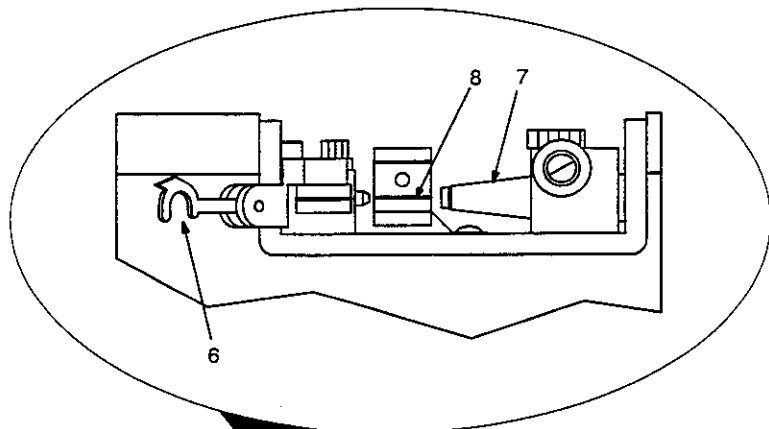
3 Jam Nut

4 Barrel

To change contact tip location, loosen jam nut, and turn barrel. Tighten jam nut.

ST-150 434

3-3. Installing Wire Spool And Threading Welding Wire



Tools Needed:



- 1 Top Cover
- 2 Canister
- 3 Canister Cover
- 4 Thumbscrew (Canister Cover)

Loosen thumbscrew and remove cover.

- 5 Wire Spool

Loosen wire from spool, cut off bent wire, and pull 6 in (150 mm) of wire off spool.

- 6 Pressure Roll Assembly

Lift arm and open pressure roll assembly.

- 7 Canister Inlet Guide

- 8 Drive Roll Groove

- 9 Contact Tip

Thread wire through canister inlet guide, along drive roll groove, and out contact tip.

Install spool so wire feeds off bottom.

- 10 Spool Brake Thumbnut

If necessary, turn thumbnut counterclockwise slightly to install spool.

- 11 Thumbscrew (Canister Rotation)

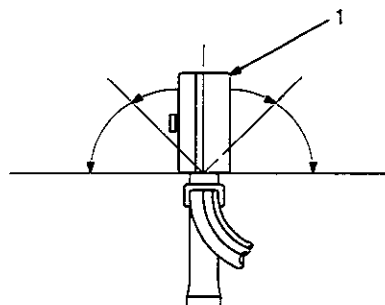
Loosen thumbscrew to rotate canister (see Section 3-4).

Close and secure pressure roll assembly.

Reinstall top cover and canister cover.

ST-150 436

3-4. Rotating Canister



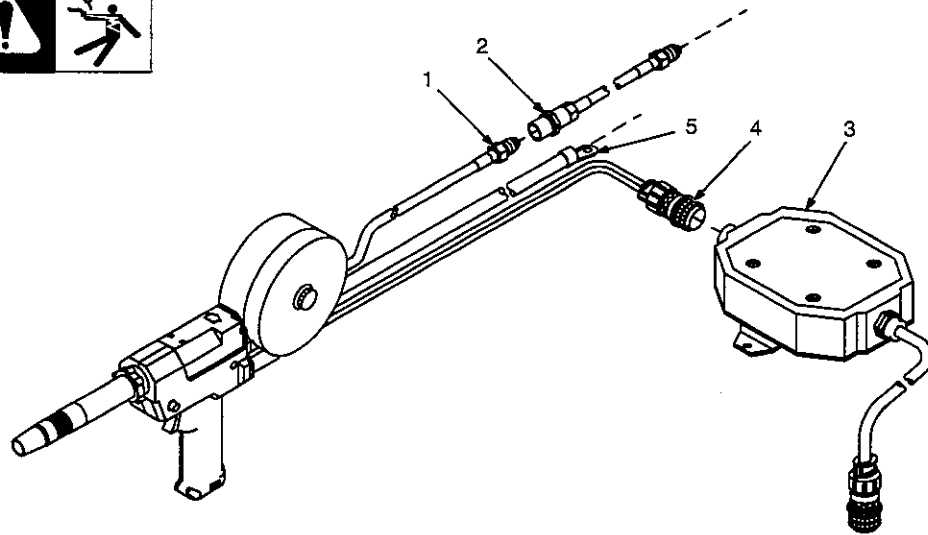
Rear View

- 1 Canister

Loosen canister rotation thumbscrew (see Section 3-3). Move canister to desired position. Tighten thumbscrew.

ST-150 433-A

3-5. Connecting To 24 Volt Weld Control



- 1 Gas Hose
- 2 10 ft (3 m) Gas Hose With 5/8 in Adapter Fitting

Connect fitting to gun/feeder gas hose and remaining end to regulator/flowmeter (see Section 3-7).

- 3 24 Volt Weld Control
- 4 Trigger Control Cord

Insert plug into receptacle, and tighten threaded collar.

- 5 Weld Cable

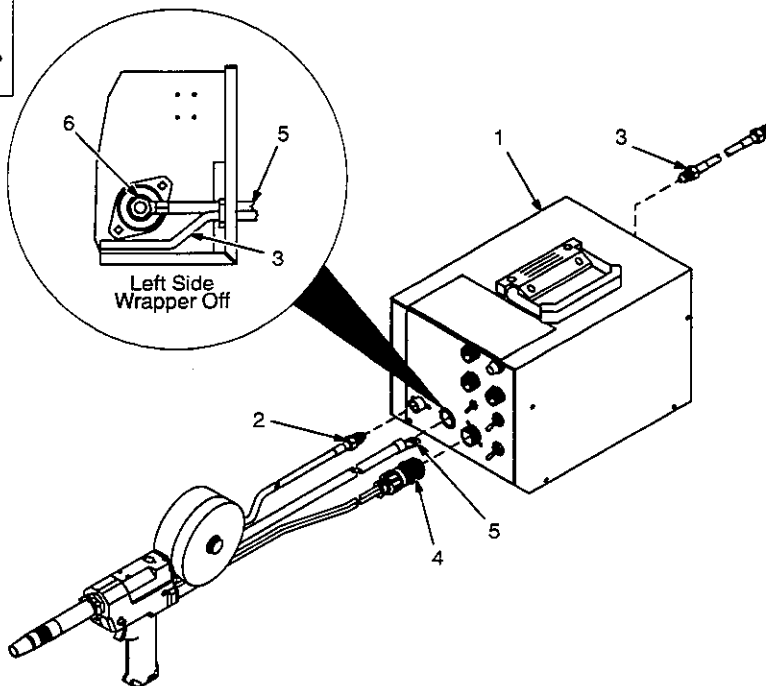
Connect to positive (+) weld output terminal on welding power source according to its Owner's Manual.

Tools Needed:



ST-150 917-A

3-6. Connecting To 115 Volt Weld Control



- 1 115 Volt Weld Control

- 2 Gas Hose

Connect to Gas outlet on control.

- 3 10 ft (3 m) Gas Hose

Remove 5/8 in adapter fitting from hose. Connect according to weld control Owner's Manual.

- 4 Trigger Control Cord

Insert plug into receptacle, and tighten threaded collar.

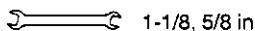
- 5 Weld Cable

- 6 Positive (+) Weld Output Terminal In Control

Connect weld cable to positive (+) weld output terminal in weld control.

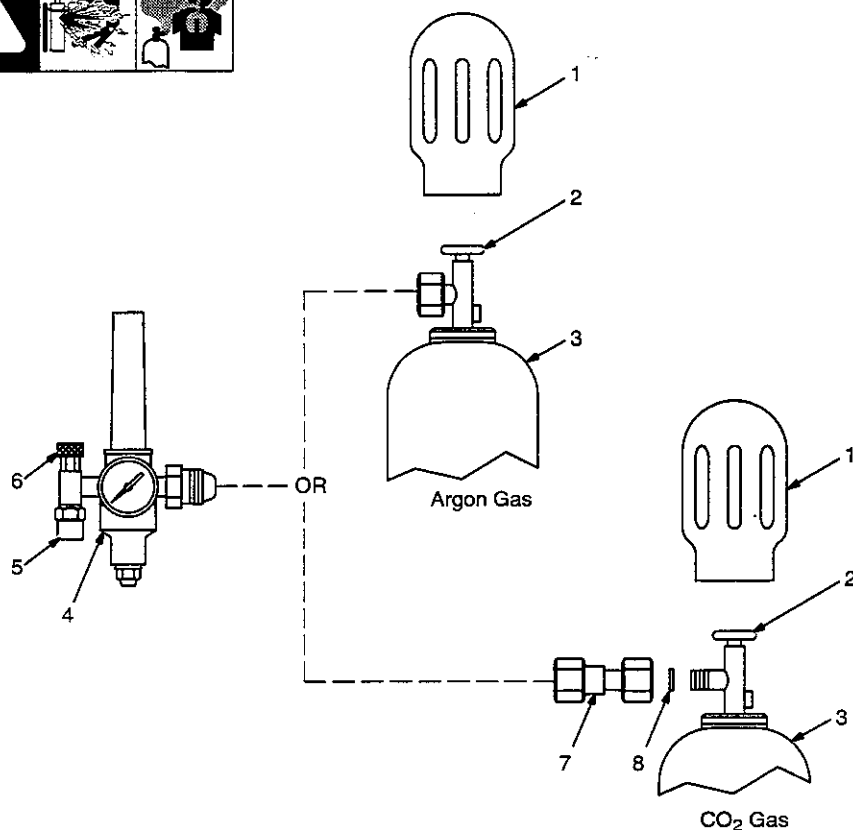
Reinstall weld control wrapper.

Tools Needed:

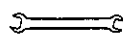


Ref. ST-149 549-A / ST-149 966-A

3-7. Installing Gas Supply



Tools Needed:

 1-1/8, 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 Cap
- 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 Cylinder
 - 4 Regulator/Flowmeter
- Install so face is vertical.

- 5 Gas Hose Connection
- Fitting has 5/8-18 right-hand threads.

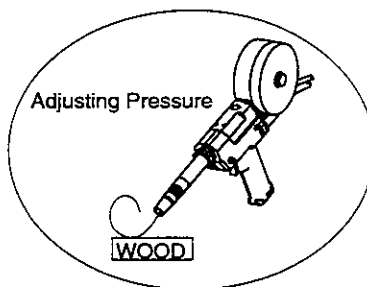
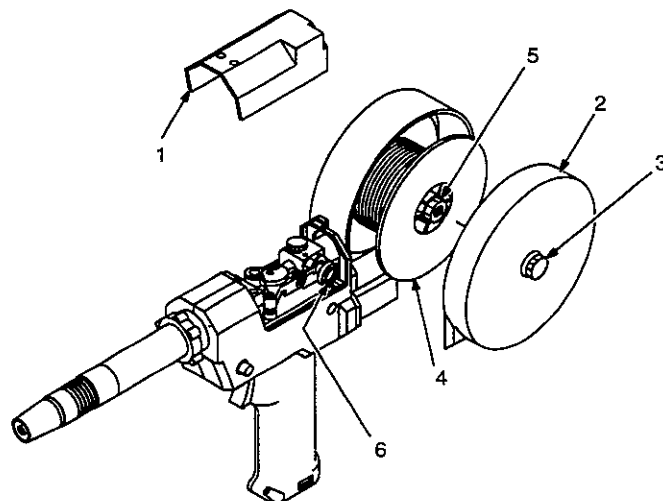
- 6 Flow Adjust
- Typical flow rate is 20 cfh (cubic feet per hour). Check wire manufacturer's recommended flow rate.

Make sure flow adjust is closed when opening cylinder to avoid damage to the flowmeter.

- 7 CO₂ Adapter
- 8 O-Ring

Install adapter with O-ring between regulator/flowmeter and CO₂ cylinder.

3-8. Adjusting Drive Roll And Spool Brake Pressure



Tools Needed:



- 1 Top Cover
- 2 Canister Cover
- 3 Thumbscrew

Loosen thumbscrew and remove cover.

- 4 Spool

Cut welding wire off at contact tip. 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 3-3).

- 6 Drive Roll Tension Thumbnut

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

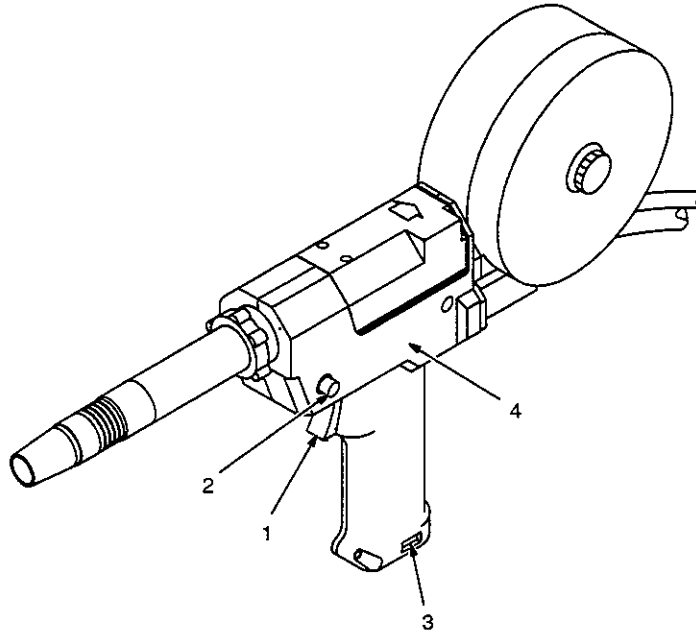
Adjust drive roll tension thumbnut if necessary. Do not overtighten.

Turn Off unit. Reinstall top cover.

Ref. ST-151 112 / S-0651

SECTION 4 – OPERATION

4-1. Controls



1 Trigger

Press trigger to energize welding power source contactor (if applicable), start shielding gas flow, and begin wire feed.

For shielding gas preflow and post-flow, lightly press trigger before and after welding.

2 Trigger Hold Button

Use button to continually feed wire without holding down the trigger.

Press button while pressing the trigger, release trigger, and wire continues to feed until trigger is pressed again.

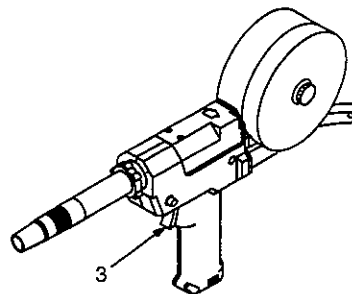
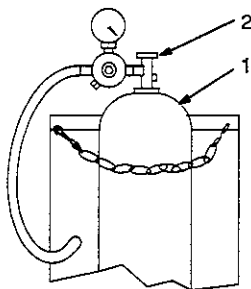
3 Wire Speed Control

Use control to adjust wire feed speed. The numbers in the opening are not a wire feed speed and are for reference only.

4 Rating Label Location

Ref. SB-147 741-A

4-2. Shielding Gas



1 Shielding Gas Cylinder

2 Valve

3 Gun Trigger

Open valve on cylinder just before welding.

Gun trigger turns weld output and gas flow on and off. For shielding gas preflow and postflow, lightly press trigger before and after welding.

Close valve on cylinder when finished welding.

sb5.1* 6/92 – S-0621-C / Ref. SB-147 741-A

SECTION 5 – MAINTENANCE & TROUBLESHOOTING

5-1. Routine Maintenance

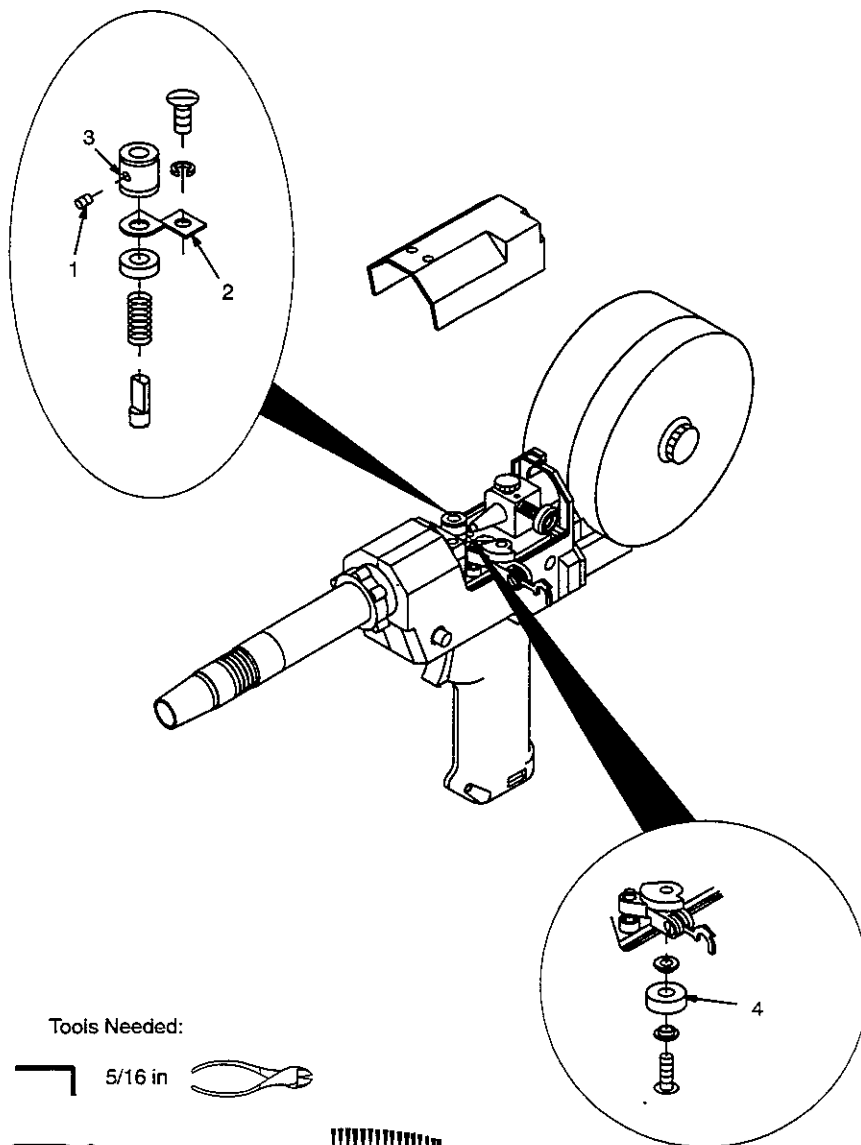
					Disconnect power before maintaining.		<i>Maintain more often during severe conditions.</i>	
3 Months								
Replace Damaged Or Unreadable Labels			Replace Damage Gas Hose		Clean And Tighten Weld Terminals			
Repair Or Replace Cracked Cables And Cords								
6 Months								
Blow Out Or Vacuum Inside					Clean Drive Rolls			

5-2. Changing Contact Tip And Liner

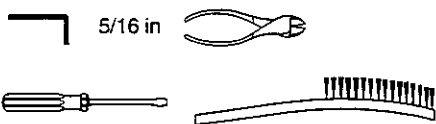
					Remove top cover and open pressure roll assembly as shown in Section 5-3. 1 Contact Tip Wrench 2 Compression Nut 3 Contact Tip 4 Nozzle Insert wrench into nozzle over contact tip. Loosen nut. Pull out contact tip. Pull wire out nozzle and liner should slide out. If necessary, tilt nozzle down to remove liner. Close pressure roll assembly. Reinstall top cover. Install new liner and contact tip over wire. Cut off wire at end of contact tip. Tighten nut just until contact tip is secure. Overtightening nut will damage adapter.	
Tools Needed:						

ST-150 437

5-3. Gun Drive Assembly Maintenance



Tools Needed:



Cut off wire where it enters drive roll assembly area.

1 Setscrew

2 Current Pick-Up Tab

This tab helps prevent burnback caused by welding arcs inside the contact tip. This tab may be removed to provide an insulated drive roll. (If tab is removed, a smaller diameter contact tip is recommended. See options in Parts List.) Lightly grease top of tab before reinstalling.

3 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.

4 Bearing

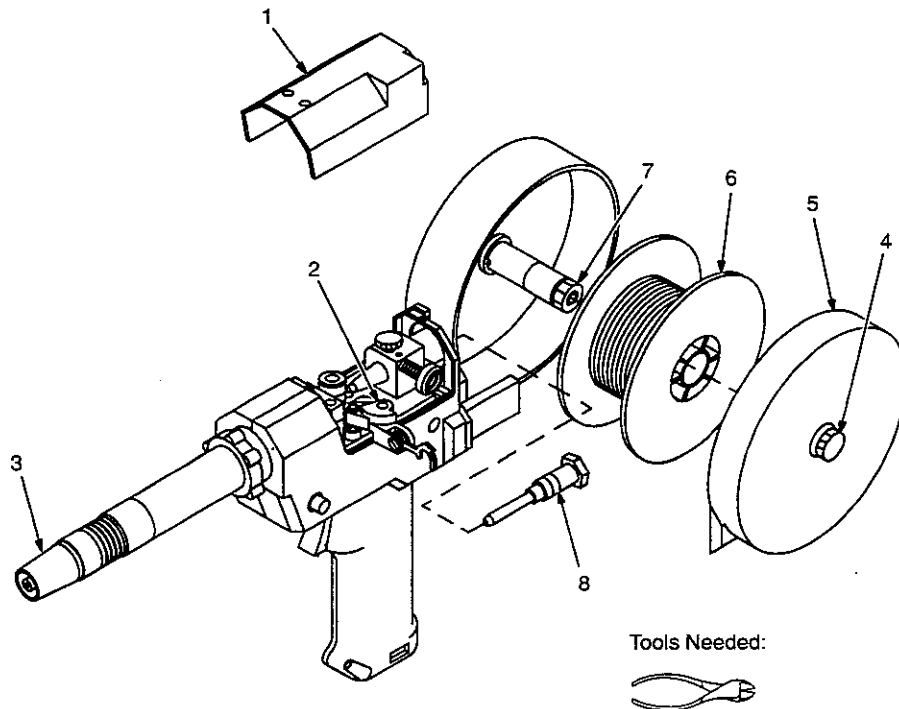
Use wire brush to clean bearing.

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

Thread welding wire (see Section 3-3). Close and secure pressure roll assembly. Adjust drive roll pressure, if necessary (see Section 3-8). Reinstall top cover.

Ref. ST-149 967-B

5-4. Replacing Canister Inlet Guide



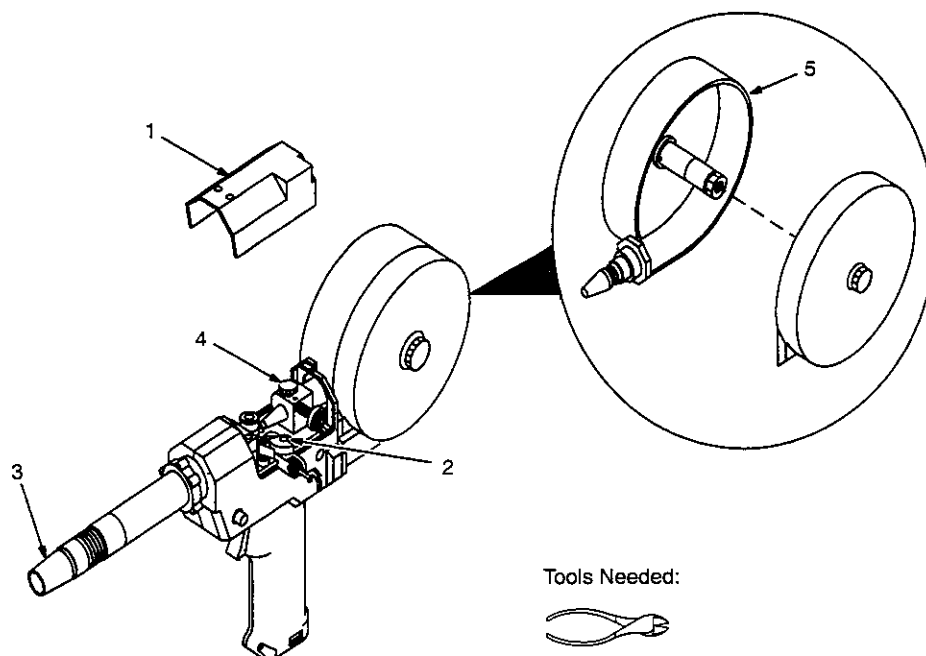
Tools Needed:



- 1 Top Cover
- 2 Pressure Roll Assembly
Cut off welding wire where it enters pressure roll assembly area.
- 3 Nozzle
Pull wire out nozzle.
- 4 Thumbscrew
- 5 Canister Cover
Loosen thumbscrew and remove cover.
- 6 Wire Spool
- 7 Spool Brake Thumbnut
Loosen thumbnut, retract wire onto spool, secure, and remove spool.
- 8 Canister Inlet Guide
Turn counterclockwise to remove. Install new guide.
Reinstall spool and thread welding wire (see Section 3-3).
Close pressure roll assembly. Adjust spool brake pressure and drive roll pressure if necessary (see Section 3-8).
Reinstall covers.

Ref. ST-150 436 / Ref. ST-149 967-B

5-5. Replacing Spool Canister



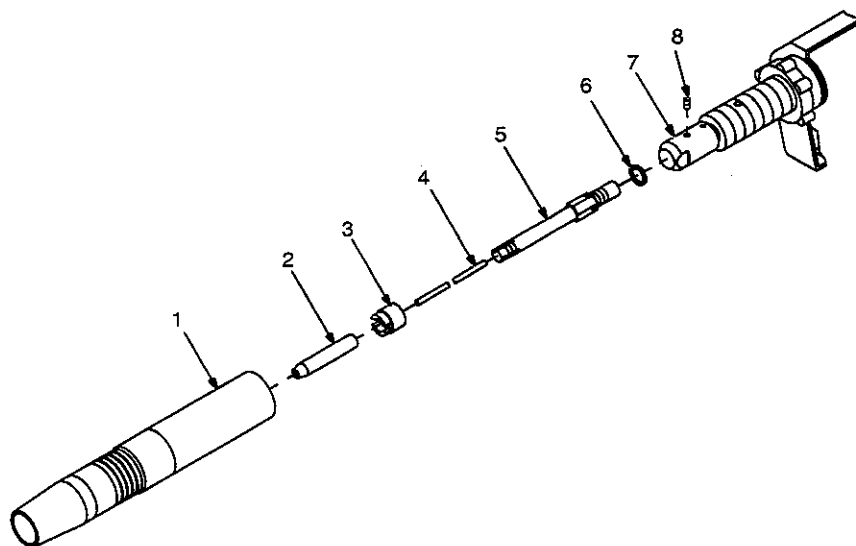
Tools Needed:



- 1 Top Cover
- 2 Pressure Roll Assembly
Cut off welding wire where it enters pressure roll assembly area.
- 3 Nozzle
Pull wire out nozzle.
- 4 Thumbscrew (Canister Rotation)
Turn thumbscrew counterclockwise three full turns.
- 5 Spool Canister
Remove as shown. Push new canister into wire drive housing until fully seated. Tighten thumbscrew.
Install spool and thread welding wire (see Section 3-3).
Close pressure roll assembly. Adjust spool brake pressure and drive roll pressure as necessary (see Section 3-8).
Reinstall covers.

Ref. ST-149 967-B

5-6. Replacing Contact Tip Adapter



1 Barrel Extension

Remove as shown.

2 Contact Tip

3 Compression Nut

To remove, see Section 5-2.

4 Liner

5 Contact Tip Adapter

6 O-Ring

7 Head Tube

8 Head Tube Setscrew

Loosen setscrews and remove adapter.

Install new o-ring and adapter, and tighten setscrews. Reinstall contact tip, compression nut, and nozzle.

Tools Needed:



ST-150 430-B

5-7. Troubleshooting

Trouble	Remedy
No weld output; gun/feeder does not work.	Secure weld control plug in 115 volts ac receptacle (see weld control Owner's Manual).
	Place Power switch on welding power source in the On position (see welding power source Owner's Manual).
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 (see Sections 3-5 and 3-6).
Wire does not feed; burnback in contact tip.	Reinstall current pick-up tab if applicable (see Section 5-3).
Wire feeds, shielding gas flows, but welding wire is not energized.	Secure 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 (see Section 3-8).
	Clean drive roll or replace drive roll (see Section 5-3).
	Decrease spool brake pressure (see Section 3-8).

SECTION 6 – ELECTRICAL DIAGRAMS

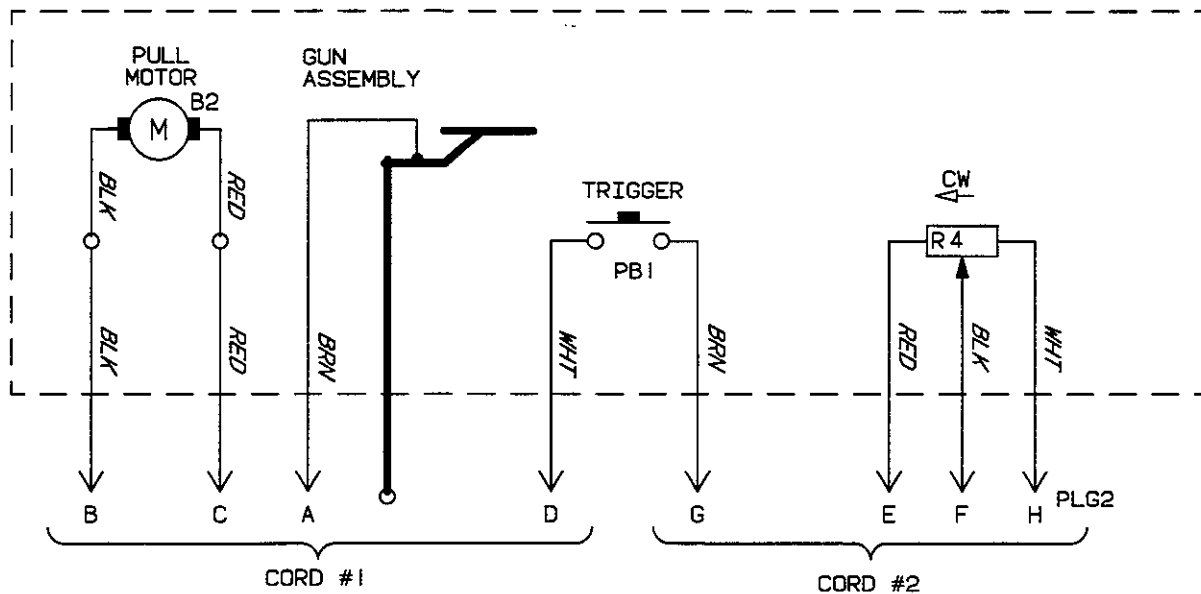


Figure 6-1. Circuit Diagram For Gun/Feeder

SA-138 956-B

NOTES

SECTION 7 – PARTS LIST

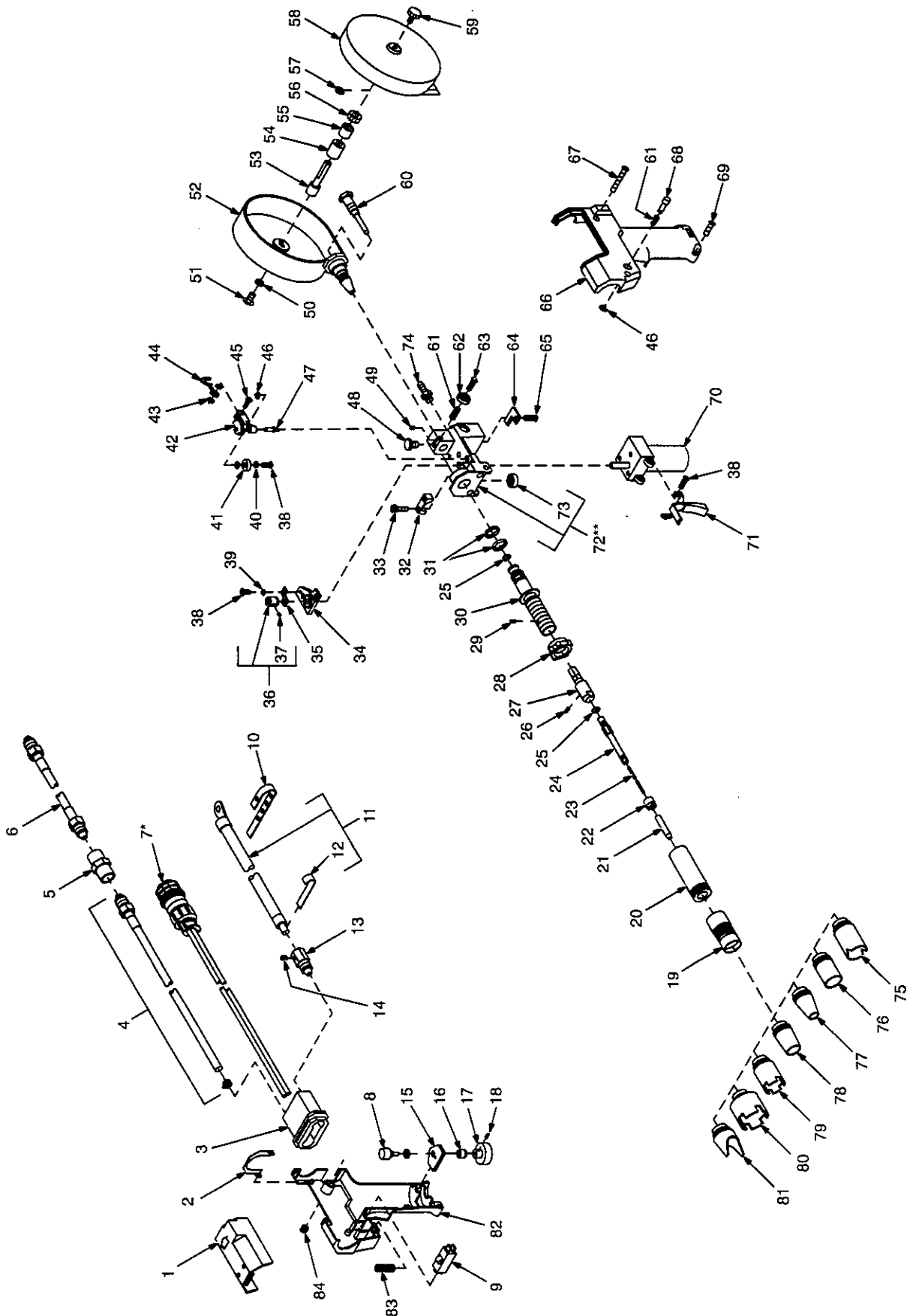


Figure 7-1. Complete Assembly

*Includes Items 8 & 9
 **Includes Item 74

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	1
5		000 950	FITTING, hose brs coupler .625-18RH/.625-18RH	1
6		048 837	HOSE, gas	1
7		138 459	CABLE, control	1
8	R4	137 854	POTENTIOMETER, C sltd sft 1/T .5W 10K ohm	1
9	PB1	000 369	SWITCH, lim 10A 125/250VAC DPST pigr	1
10		073 476	CLAMP, strap rbr 5 holes .375 wide x 4.625 lg	13
11		137 479	CABLE, power	1
12		152 577	STRIP, cop .010 x 2.000 x .750	1
13		137 495	FITTING, connection power weld	1
14		141 694	SCREW, set .312-18 x .375sch stl	1
15		144 861	WASHER, anti-turn	1
16		135 127	LOCK, shaft pot .250-32 x .125dia shaft	1
17		134 856	KNOB, speed control 1-10 .140 shaft x 1.125 OD	1
18		602 169	SCREW, set stl sch 8-32 x .187 cup pt	1
19		144 862	EXTENSION, nozzle	1
20		156 821	EXTENSION, barrel 2.875 lg	1
21		136 171	TIP, contact .025/31 wire	1
21		◆135 427	TIP, contact .030/36 wire	1
21		135 428	TIP, contact .030/41 wire	1
21		◆147 314	TIP, contact .035/41 wire	1
21		135 430	TIP, contact .035/52 wire	1
21		◆135 429	TIP, contact .047/52 wire	1
21		135 424	TIP, contact .047/61 wire	1
21		◆135 426	TIP, contact .062/73 wire	1
21		135 425	TIP, contact .062/81 wire	1
		136 821	WRENCH, nut tip contact	1
		166 575	WRENCH, hex .078 across the flat	1
22		136 748	NUT, .375-24 .41dia stl	1
23		136 683	LINER, teflon .045-1/16 wire x 6.875 lg	1
23		136 682	LINER, teflon .023-.035 wire x 6.875 lg	1
24		164 421	ADAPTER, contact tip	1
25		164 485	O-RING .176 ID x .070CS	2
26		604 612	SCREW, set 8-32 x .125 cup pt sch stl	1
27		164 422	TUBE, head	1
28		058 685	NUT, 1.000-8 1.5knrl nyl	1
29		602 172	SCREW, set 10-32 x .187 cup point sch stl	1
30		164 423	ADAPTER, tip head	1
31		134 800	O-RING, .614 ID x .070CS	2
32		133 365	CLAMP, head tube	1
33		000 417	SCREW, 10-24 x1.000sochd hex	2
34		162 041	BEARING BLOCK ASSEMBLY	1
		604 638	SCREW, 6-32 x .375sochd hex	3
		143 480	SCREW, 6-32 x .625sochd hex stl	1
35		162 042	CONTACT, current pick-up	1
36		136 135	ROLL, drive VK groove .023-1/16 wire (consisting of)	1
37		604 612	SCREW, set stl sch 8-32 x .125 cup point	2
38		114 045	SCREW, 6-32 x .500hexwhd slt stl slffmg	3
39		602 198	WASHER, lock .141 ID stl split	1
40		134 624	BEARING, flg nyl .140 ID x .187 OD x .375flg x .031thk	2
41		134 623	BEARING	1
42		132 852	ARM, pressure	1
43		605 798	WASHER, shldr nyl .375 OD x .168 ID x .080	2
44		133 083	SPRING, tension adj drive roll	1

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 7-1. Complete Assembly (Continued)				
45		144 860	SCREW, 8-32 x .437 flat hd slt stl	1
46		058 968	RING, retainer E	2
47		135 474	PIN, hinge	1
48		155 565	SCREW, thumb	1
		134 799	O-RING, .176 ID x .070 CS (used w/thumb screw)	1
49		135 126	SCREW, set 6-32 x .125 cup point sch stl	1
50		602 209	WASHER, tooth .256 ID stl intl	1
51		602 154	SCREW, .250-20 x .500 hex hd stl slfmg	1
52		132 527	CANISTER, spool	1
53		148 488	POST, support spool	1
54		132 529	PAD, brake	1
55		148 489	WASHER, anti-turn .380 ID	1
56		132 524	NUT, .375-24 .56 knrl alum	1
57		000 364	RING, retainer ext .145 shaft grv x .025 thk	1
58		132 526	COVER, spool	1
59		132 528	SCREW, thumb canister	1
60		132 521	GUIDE, inlet canister	1
61		112 896	SPRING, cprsn .240 OD x .020 wire x .437	2
62		135 773	NUT, 8-32 .56 knrl stl	1
63		143 360	SCREW, 8-32 x .500 pan hd phl stl	1
64		136 679	CLAMP, strain relief	1
65		129 351	SCREW, 8-32 x .500 hex whd slt stl slfmg	1
66		164 591	CASE, gun LH	1
67		173 527	SCREW, 8-32 x 1.500	2
68		135 896	PLUNGER, trigger hold	1
69		173 528	SCREW, 8-32 x .875	1
70	B2	161 813	MOTOR, gear PM 24VDC 420RPM 10.2:1 ratio	1
71		164 592	TRIGGER	1
72		164 582	HOUSING, wire drive (consisting of)	1
73		058 262	CAP, valve	1
74		135 580	FITTING, gas	1
		146 555	SCREW, set 8-32 x .125 cup sch	2
75		♦009 925	NOZZLE, spot outside corner .937 ID x 2.375	1
76		♦050 116	NOZZLE, 13/16 orf x 1-5/8 lg	1
77		♦050 115	NOZZLE, 1/2 orf x 1-5/8 lg	1
78		050 622	NOZZLE, 5/8 orf x 1-5/8 lg	1
79		♦000 442	NOZZLE, spot	1
80		♦004 466	NOZZLE, spot	1
81		♦000 443	NOZZLE, spot inside corner	1
82		164 590	CASE, gun RH	1
83		057 544	SPRING, cprsn .240 OD x .026 wire x 1.000	1
84		135 647	NUT, 8-32 .33 knrl brs	3

♦OPTIONAL

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

OPTIONS AND ACCESSORIES

SX FLEX HEAD KIT

(#131 104)

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

Used in place of the standard straight barrel. Flexible head tube bends 60 degrees in any direction for easier joint access and improved operator comfort.

Supplied with two Teflon liners and one contact tip 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

SX-A 50 DEGREE CURVED BARRELS*

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

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

Used with .030–1/16 in. (0.8–1.6 mm) wire. Kits supplied with two liners that accommodate all wire sizes.

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 .030–1/16 in. (0.8–1/6 mm) wire.

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

REPLACEMENT CONTACT TIPS 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)

Extends 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: Uses standard Spoolmatic contact tips. (Refer to Spoolmatic Gun Consumables chart for contact tips.)*

GUN OPTIONS AND ACCESSORIES

CABLE COVER

(#118 678)

Protects gun hose and cable assembly from wear and abrasion. Features a full-length zipper.

SX HEAT SHIELD

(#131 103)

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

SPARE SPOOL CANISTER

(#132 230)

Canister accommodates 4 in. (102 mm) spools of wire. Can be loaded with other popular wires to save time in changeover.

HOSE AND CABLE EXTENSION KITS

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

(#132 229) 50 ft. (15 m)

Extends the standard 30 ft. (9 m) hose and cable assembly. Convenient plug-in connections. Includes gas hose, control cord, and weld power cable with International style insulated connector.