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2023-11

Processes



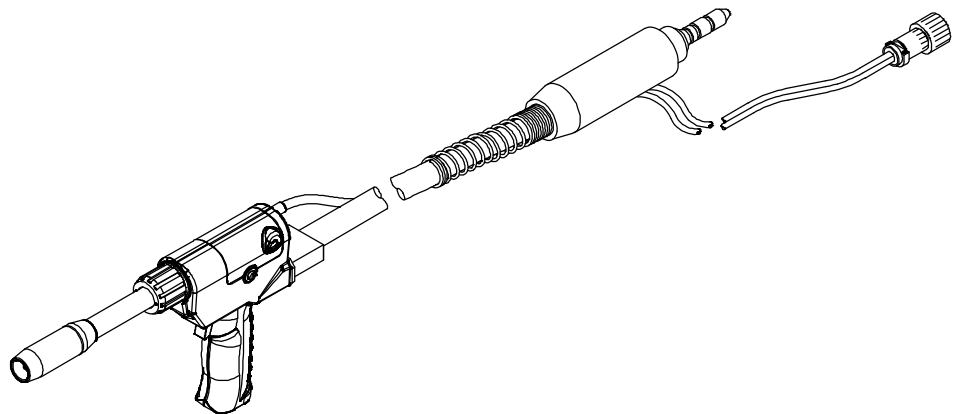
MIG (GMAW) Welding

Description



Semi-Automatic, Air/Water-Cooled, MIG (GMAW) Welding Gun

XRTM - Pistol - Pro (Air And Water-Cooled Guns)



Visit our website at
www.MillerWelds.com

OWNER'S MANUAL

File: MIG (GMAW)



From Miller to You

Thank you and congratulations on choosing Miller. Now you can get the job done and get it done right. We know you don't have time to do it any other way.

That's why when Niels Miller first started building arc welders in 1929, he made sure his products offered long-lasting value and superior quality. Like you, his customers couldn't afford anything less. Miller products had to be more than the best they could be. They had to be the best you could buy.

Today, the people that build and sell Miller products continue the tradition. They're just as committed to providing equipment and service that meets the high standards of quality and value established in 1929.

This Owner's Manual is designed to help you get the most out of your Miller products. Please take time to read the Safety precautions. They will help you protect yourself against potential hazards on the worksite.



Miller is the first welding equipment manufacturer in the U.S.A. to be registered to the ISO 9001 Quality System Standard.

We've made installation and operation quick and easy. With Miller you can count on years of reliable service with proper maintenance. And if for some reason the unit needs repair, there's a Troubleshooting section that will help you figure out what the problem is. The parts list will then help you to decide the exact part you may need to fix the problem. Warranty and service information for your particular model are also provided.



Miller Electric manufactures a full line of welders and welding related equipment. For information on other quality Miller products, contact your local Miller distributor to receive the latest full line catalog or individual specification sheets. **To locate your nearest distributor or service agency call 1-800-4-A-Miller, or visit us at www.MillerWelds.com on the web.**



Working as hard as you do – every power source from Miller is backed by the most hassle-free warranty in the business.



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SECTION 1 –SAFETY PRECAUTIONS FOR GMAW WELDING GUNS – READ BEFORE USING

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 **Protect yourself and others from injury — read, follow, and save these important safety precautions and operating instructions.**

1-1. Symbol Usage



DANGER! – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

NOTICE – Indicates statements not related to personal injury.

 Indicates special instructions.



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

1-2. Arc Welding Hazards



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 Principal Safety Standards, and in welding power source Owner's Manual. Read and follow all Safety Standards.



Only qualified persons should install, operate, maintain, and repair this equipment. A qualified person is defined as one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated ability to solve or resolve problems relating to the subject matter, the work, or the project and has received safety training to recognize and avoid the hazards involved.



During operation, keep everybody, especially children, away.



ELECTRIC SHOCK can kill.

- Always wear dry insulating gloves.
- Insulate yourself from work and ground.
- Do not touch live electrode or electrical parts.
- Replace worn, damaged, or cracked guns or cables.
- Turn off welding power source before changing contact tip or gun parts.
- Keep all covers and handle securely in place.



FUMES AND GASES can be hazardous.

- Keep your head out of the fumes.
- Ventilate area, or use breathing device. The recommended way to determine adequate ventilation is to sample for the composition and quantity of fumes and gases to which personnel are exposed.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.



MOVING PARTS can injure.

- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.



WELDING can cause fire or explosion.

- Do not weld near flammable material.
- Do not weld on containers that have held combustibles, or on closed containers such as tanks, drums, or pipes unless they are properly prepared according to AWS F4.1 (see Safety Standards).
- Watch for fire; keep extinguisher nearby.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.



BUILDUP OF GAS can injure or kill.

- Shut off compressed gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.



ARC RAYS can burn eyes and skin.

Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear an approved welding helmet fitted with a proper shade of filter lenses to protect your face and eyes from arc rays and sparks when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
- Wear approved safety glasses with side shields under your helmet.
- Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.
- Wear body protection made from leather or flame-resistant clothing (FRC). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.



HOT PARTS can burn.

- Allow gun to cool before touching.
- Do not touch hot metal.
- Protect hot metal from contact by others.



NOISE can damage hearing.

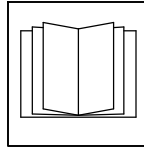
Noise from some processes or equipment can damage hearing.

- Check for noise level limits exceeding those specified by OSHA.
- Use approved ear plugs or ear muffs if noise level is high.
- Warn others nearby about noise hazard.



WELDING WIRE can injure.

- Keep hands and body away from gun tip when trigger is pressed.



READ INSTRUCTIONS.

- Read and follow all labels and the Owner's Manual carefully before installing, operating, or servicing unit. Read the safety information at the beginning of the manual and in each section.
- Use only genuine replacement parts from the manufacturer.
- Perform installation, maintenance, and service according to the Owner's Manuals, industry standards, and national, state, and local codes.

1-3. California Proposition 65 Warnings

⚠ WARNING: This product can expose you to chemicals including lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm.

For more information, go to www.P65Warnings.ca.gov.

1-4. Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, American Welding Society standard ANSI Standard Z49.1. Website: www.aws.org.

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1 from American National Standards Institute. Website: www.ansi.org.

Safe Practices for the Preparation of Containers and Piping for Welding and Cutting, American Welding Society Standard AWS F4.1. Website: www.aws.org.

National Electrical Code, NFPA Standard 70 from National Fire Protection Association. Website: www.nfpa.org.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association. Website: www.cganet.com.

Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2 from Canadian Standards Association. Website: www.csagroup.org.

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B from National Fire Protection Association. Website: www.nfpa.org.

OSHA Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910.177 Subpart N, Part 1910 Subpart Q, and Part 1926, Subpart J. Website: www.osha.gov.

1-5. EMF Information

Electric current flowing through any conductor causes localized electric and magnetic fields (EMF). The current from arc welding (and allied processes including spot welding, gouging, plasma arc cutting, and induction heating operations) creates an EMF field around the welding circuit. EMF fields can interfere with some medical implants, e.g. pacemakers. Protective measures for persons wearing medical implants have to be taken. For example, restrict access for passers-by or conduct individual risk assessment for welders. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

1. Keep cables close together by twisting or taping them, or using a cable cover.
2. Do not place your body between welding cables. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.

4. Keep head and trunk as far away from the equipment in the welding circuit as possible.
5. Connect work clamp to workpiece as close to the weld as possible.
6. Do not work next to, sit or lean on the welding power source.
7. Do not weld whilst carrying the welding power source or wire feeder.

About Implanted Medical Devices:

Implanted Medical Device wearers should consult their doctor and the device manufacturer before performing or going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations. If cleared by your doctor, then following the above procedures is recommended.

SECTION 2 – MESURES DE SÉCURITÉ VISANT LES PISTOLETS DE SOUDAGE GMAW – À LIRE AVANT UTILISATION

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⚠ Pour écarter les risques de blessure pour vous-même et pour autrui — lire, appliquer et ranger en lieu sûr ces consignes relatives aux précautions de sécurité et au mode opératoire.

2-1. Signification des symboles



DANGER! – Indique une situation dangereuse qui si on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.



Indique une situation dangereuse qui si on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.

AVIS – Indique des déclarations pas en relation avec des blessures personnelles.

 Indique des instructions spécifiques.



Ce groupe de symboles veut dire Avertissement! Attention! DANGER DE CHOC ELECTRIQUE, PIECES EN MOUVEMENT, et PIECES CHAUDES. Reportez-vous aux symboles et aux directives ci-dessous afin de connaître les mesures à prendre pour éviter tout danger.

2-2. Dangers relatifs au soudage à l'arc



Les symboles présentés ci-après sont utilisés tout au long du présent manuel pour attirer votre attention et identifier les risques de danger. Lorsque vous voyez un symbole, soyez vigilant et suivez les directives mentionnées afin d'éviter tout danger. Les consignes de sécurité présentées ci-après ne font que résumer les informations contenues dans les principales normes de sécurité et manuel d'utilisation du poste de soudage. Veuillez 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. Une personne qualifiée est définie comme celle qui, par la possession d'un diplôme reconnu, d'un certificat ou d'un statut professionnel, ou qui, par une connaissance, une formation et une expérience approfondies, a démontré avec succès sa capacité à résoudre les problèmes liés à la tâche, le travail ou le projet et a reçu une formation en sécurité afin de reconnaître et d'éviter les risques inhérents.



Au cours de l'utilisation, tenir toute personne à l'écart et plus particulièrement les enfants.



UN CHOC ÉLECTRIQUE peut tuer.

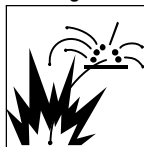
- Porter toujours des gants secs et isolants.
- S'isoler de la pièce et de la terre.
- Ne jamais toucher une électrode ou des pièces électriques sous tension.
- Remplacer les pistolets ou câbles de soudage qui sont endommagés, usés ou craquelés.
- Mettre la soudeuse hors tension avant de remplacer un bec contact ou des pièces de pistolet.
- S'assurer que tous les couvercles et poignées sont fermement assujettis.



LES VAPEURS ET LES FUMÉES peuvent être nocives.

- Éloigner sa tête des endroits renfermant des vapeurs.
- Aérer la zone de travail ou porter un appareil respiratoire. Pour déterminer la bonne ventilation, il est recommandé de procéder à un prélèvement pour la composition et la quantité de fumées et de gaz auxquels est exposé le personnel.
- Lire et comprendre les fiches de données de sécurité et les instructions du fabricant concernant les adhésifs, les revêtements, les net-

toyants, les consommables, les produits de refroidissement, les dégraissants, les flux et les métaux.



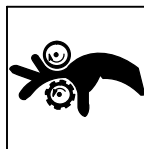
LE SOUDAGE peut causer un incendie ou une explosion.

- Ne pas souder à proximité de matériaux inflammables.
- Ne pas effectuer le soudage sur des conteneurs fermés tels que des réservoirs, tambours, ou conduites, à moins qu'ils n'aient été préparés correctement conformément à AWS F4.1 (voir les Normes de Sécurité).
- Prendre garde aux incendies et toujours avoir un extincteur à proximité.
- Lire et comprendre les fiches de données de sécurité et les instructions du fabricant concernant les adhésifs, les revêtements, les nettoyeurs, les consommables, les produits de refroidissement, les dégraissants, les flux et les métaux.



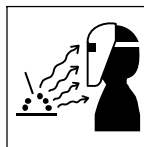
L'ACCUMULATION DE VAPEURS peut causer des lésions ou la mort.

- Quand on n'utilise pas le gaz comprimé de protection, fermer le robinet de la bouteille.
- Assurer toujours la ventilation des zones fermées ou utiliser un appareil respiratoire avec alimentation en air.



Les PIÈCES MOBILES peuvent causer des blessures.

- Ne pas s'approcher des organes mobiles.
- Ne pas s'approcher des points de coincement tels que des rouleaux de commande.



LE RAYONNEMENT DE L'ARC peut brûler les yeux et la peau.

Le rayonnement de l'arc du procédé de soudage génère des rayons visibles et invisibles intenses (ultraviolets et infrarouges) susceptibles de provoquer des brûlures dans les yeux et sur la peau. Des étincelles sont projetées pendant le soudage.

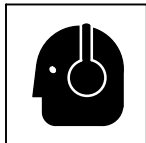
- Porter un casque de soudage approuvé muni de verres filtrants approprié pour protéger visage et yeux pendant le soudage (voir ANSI Z49.1 et Z87.1 énuméré dans les normes de sécurité).
- Porter des lunettes de sécurité avec écrans latéraux même sous votre casque.

- Avoir recours à des écrans protecteurs ou à des rideaux pour protéger les autres contre les rayonnements les éblouissements et les étincelles ; prévenir toute personne sur les lieux de ne pas regarder l'arc.
- Porter une protection corporelle en cuir ou des vêtements ignifuges (FRC). La protection du corps comporte des vêtements sans huile comme par ex. des gants de cuir, une chemise solide, des pantalons sans revers, des chaussures hautes et une casquette.



LES PIÈCES CHAUDES peuvent provoquer des brûlures.

- Laisser refroidir le pistolet avant de le toucher.
- Ne pas toucher d'objets métalliques chauds.
- Abriter les objets métalliques contre tout contact par les personnes à proximité.



Le BRUIT peut endommager l'ouïe.

Le bruit des processus et des équipements peut affecter l'ouïe.

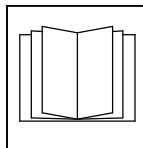
- Vérifier si les niveaux de bruit excèdent les limites spécifiées par l'OSHA.

- Utiliser des bouche-oreilles ou des serre-tête antibruit approuvés si le niveau de bruit est élevé.
- Avertir les personnes à proximité au sujet du danger inhérent au bruit.



LES FILS DE SOUDAGE peuvent provoquer des blessures.

- Éloigner les mains et le corps de la buse du pistolet après avoir appuyé sur la gâchette.



LIRE LES INSTRUCTIONS.

- Lire et appliquer les instructions sur les étiquettes et le Mode d'emploi avant l'installation, l'utilisation ou l'entretien de l'appareil. Lire les informations de sécurité au début du manuel et dans chaque section.
- N'utiliser que les pièces de rechange recommandées par le constructeur.
- Effectuer l'installation, l'entretien et toute intervention selon les manuels d'utilisateurs, les normes nationales, provinciales et de l'industrie, ainsi que les codes municipaux.

2-3. Proposition californienne 65 Avertissements

AVERTISSEMENT : ce produit peut vous exposer à des produits chimiques tels que le plomb, reconnus par l'État de Californie comme cancérigènes et sources de malformations ou d'autres troubles de la reproduction.

Pour plus d'informations, consulter www.P65Warnings.ca.gov.

2-4. Principales normes de sécurité

Safety in Welding, Cutting, and Allied Processes, American Welding Society standard ANSI Standard Z49.1. Website: www.aws.org.

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1 from American National Standards Institute. Website: www.ansi.org.

Safe Practices for the Preparation of Containers and Piping for Welding and Cutting, American Welding Society Standard AWS F4.1 Website: www.aws.org

National Electrical Code, NFPA Standard 70 from National Fire Protection Association. Website: www.nfpa.org.

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Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B from National Fire Protection Association. Website: www.nfpa.org.

OSHA Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910.177 Subpart N, Part 1910 Subpart Q, and Part 1926, Subpart J. Website: www.osha.gov.

2-5. Informations relatives aux CEM

Le courant électrique qui traverse tout conducteur génère des champs électromagnétiques (CEM) à certains endroits. Le courant de soudage crée un CEM autour du circuit et du matériel de soudage. Le courant issu d'un soudage à l'arc (et de procédés connexes, y compris le soudage par points, le gougeage, le découpage plasma et les opérations de chauffage par induction) crée un champ électromagnétique (CEM) autour du circuit de soudage. Les champs électromagnétiques produits peuvent causer interférence à certains implants médicaux, p. ex. les stimulateurs cardiaques. Des mesures de protection pour les porteurs d'implants médicaux doivent être prises: Limiter par exemple tout accès aux passants ou procéder à une évaluation des risques individuels pour les soudeurs. Tous les soudeurs doivent appliquer les procédures suivantes pour minimiser l'exposition aux CEM provenant du circuit de soudage:

- 1 Rassembler les câbles en les torsadant ou en les attachant avec du ruban adhésif ou avec une housse.
- 2 Ne pas se tenir au milieu des câbles de soudage. Disposer les câbles d'un côté et à distance de l'opérateur.

- 3 Ne pas courber et ne pas entourer les câbles autour de votre corps.
- 4 Maintenir la tête et le torse aussi loin que possible du matériel du circuit de soudage.
- 5 Connecter la pince sur la pièce aussi près que possible de la soudure.
- 6 Ne pas travailler à proximité d'une source de soudage, ni s'asseoir ou se pencher dessus.
- 7 Ne pas souder tout en portant la source de soudage ou le dévidoir.

En ce qui concerne les implants médicaux :

Les porteurs d'implants doivent d'abord consulter leur médecin avant de s'approcher des opérations de soudage à l'arc, de soudage par points, de gougeage, du coupage plasma ou de chauffage par induction. Si le médecin approuve, il est recommandé de suivre les procédures précédentes.

SECTION 4 – SPECIFICATIONS

4-1. Gun Specifications

Model	Welding Output Range	Electrode Wire Diameter Capacity	Wire Feed Speed Range	Net Weight (Torch Only)
XR-Pistol-Pro (Air-Cooled)	200 A at 100% Duty Cycle 250 A at 60% Duty Cycle 15ft, 25ft or 35ft (4.6m, 7.6m or 10.7m) guns	.030 To 1/16 in. (0.8 To 1.6 mm) aluminum wire	70 To 900 ipm (1.8 To 23 mpm)	2.2 lb (1 kg) (less cables)
XR-Pistol-Pro (Water-Cooled)	400 A at 100% Duty Cycle 15ft, 25ft or 35ft (4.6m, 7.6m or 10.7m) guns	.030 To 1/16 in. (0.8 To 1.6 mm) aluminum wire	70 To 900 ipm (1.8 To 23 mpm)	2.4 lb (1.08 kg) (less cables)

☞ When using 1/16 in. (1.6 mm) wire, kit 230708 must be installed.

4-2. Duty Cycle And Overheating




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

NOTICE – Exceeding duty cycle can damage unit and void warranty.

Air-Cooled Models

100% Duty Cycle At 200 Amperes Using Argon



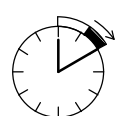

Continuous Welding

60% Duty Cycle At 250 Amperes Using Argon




6 Minutes Welding

→




4 Minutes Resting

Water-Cooled Models

100% Duty Cycle At 400 Amperes Using Argon



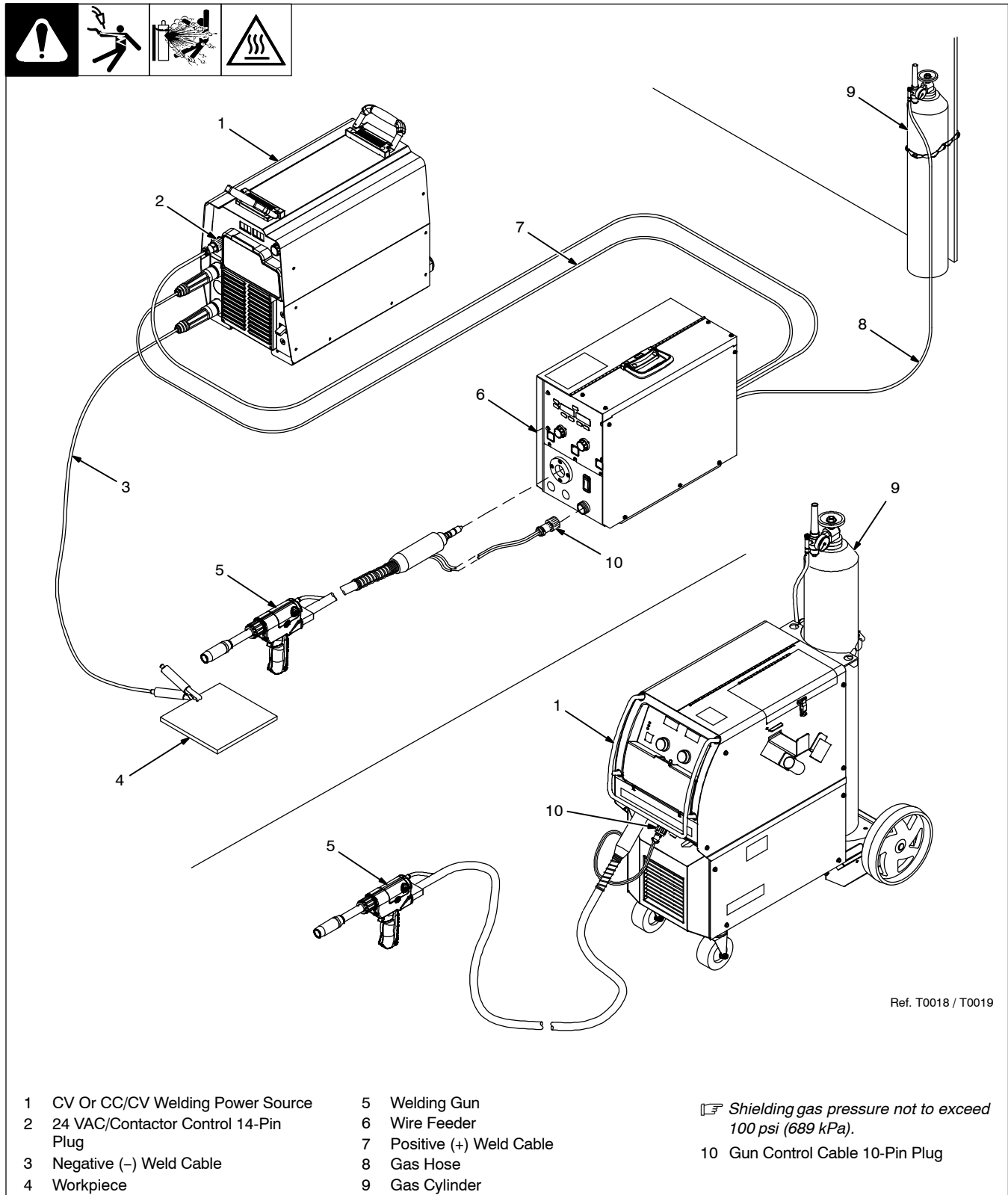

Continuous Welding

sduty1 5/95

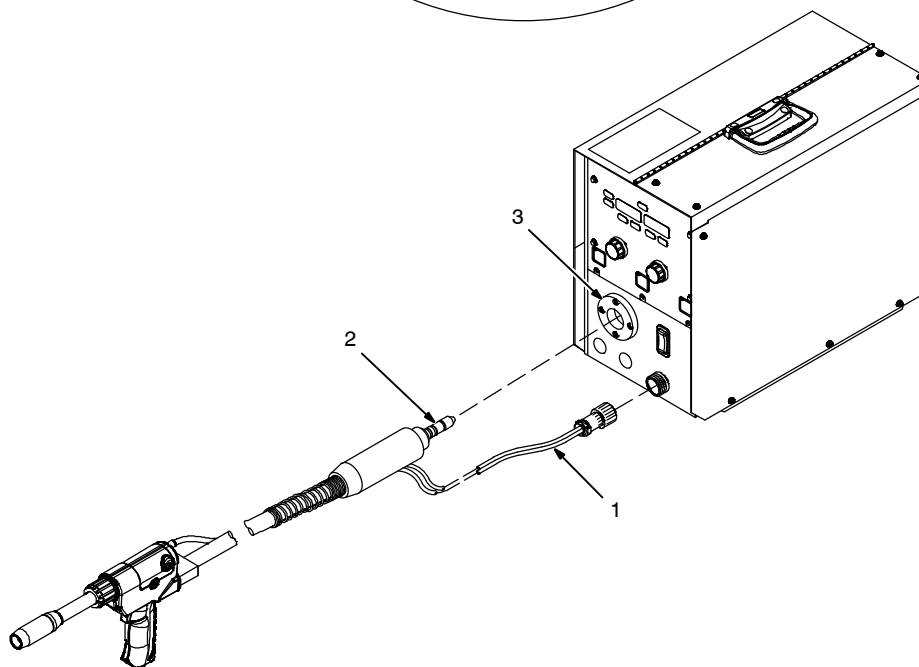
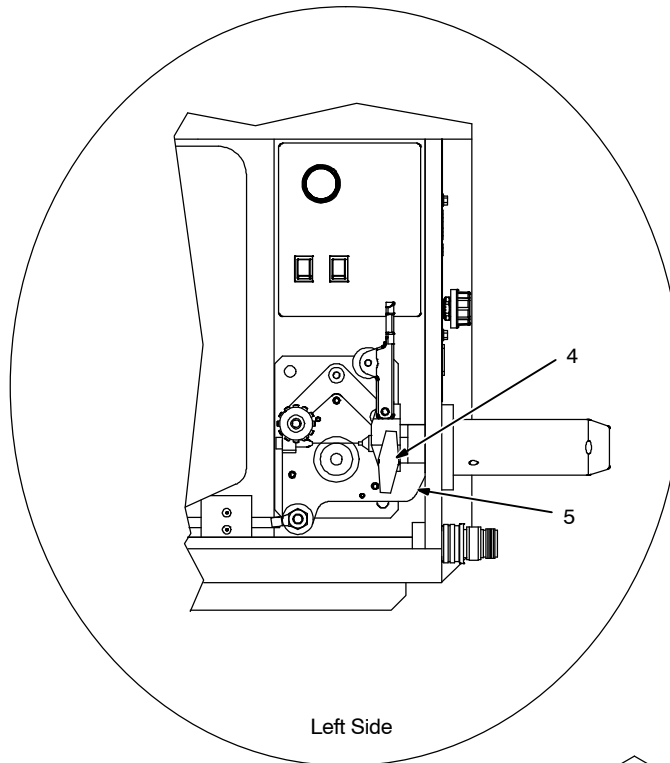
SECTION 5 – INSTALLATION

 Be sure that contact tip, liner, and drive rolls are correct for wire size and type. See Parts List to change parts as needed.

5-1. Connections With A Constant Voltage (CV) Or Constant Current/Constant Voltage (CC/CV) Welding Power Source Having A 14-Socket Receptacle Or A Integrated Welding Power Source Having A 10-Socket Receptacle



5-2. Air-Cooled Gun Connections



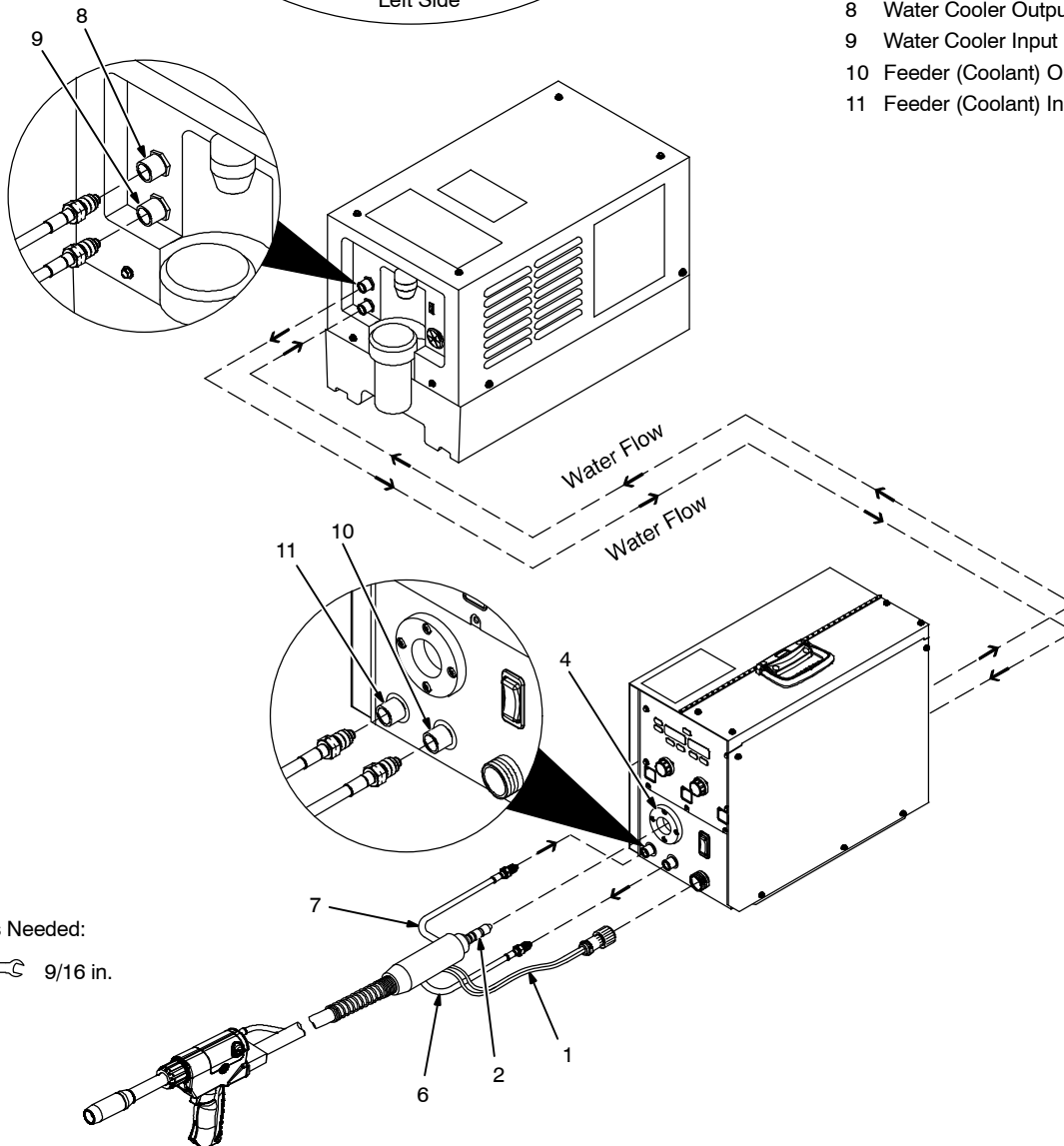
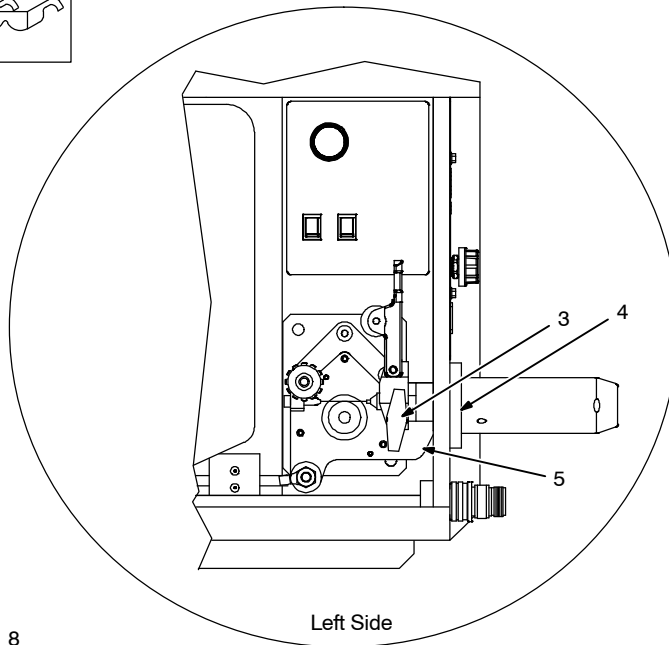
Ref. T0017 / 246 218-A

- 1 Gun Control Cable
Insert plug into Gun Control receptacle, and tighten threaded collar.
- 2 Gun Power Pin

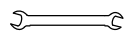
- 3 Gun Bushing
- 4 Gun Securing Knob
- 5 Drive Casting

Loosen gun securing knob and insert gun power pin through gun bushing until it bottoms against drive casting. Tighten knob.

5-3. Water-Cooled Gun Connections



Tools Needed:

 9/16 in.

 Turn on coolant supply before welding or gun will be damaged.

1 Gun Control Cable

Insert plug into Gun Control receptacle, and tighten threaded collar.

2 Gun Power Pin

3 Gun Securing Knob

4 Gun Bushing

5 Drive Casting

Loosen gun securing knob, and insert gun power pin through gun bushing until it bottoms against drive casting. Tighten knob. Close and latch door.

6 Gun (Coolant) "In" Hose

Connect to Water "Out" fitting on feeder (left-hand threads).

7 Gun (Coolant) "Out" Hose

Connect to Water "In" fitting on feeder (left-hand threads)

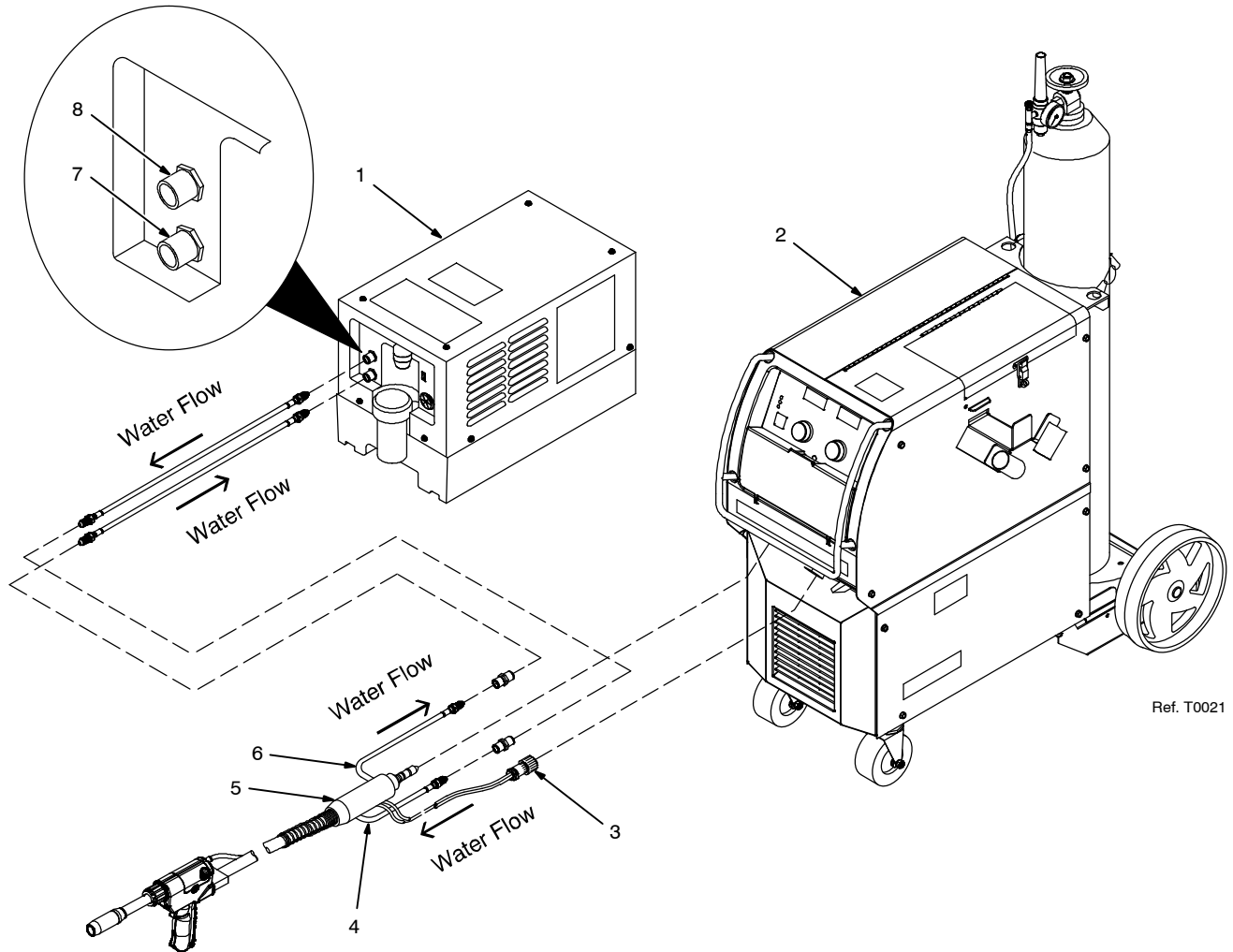
8 Water Cooler Output

9 Water Cooler Input

10 Feeder (Coolant) Output

11 Feeder (Coolant) Input

5-4. Millermatic 350/350P Water Cooled Gun Connections



Ref. T0021

Tools Needed:

 9/16 in.

 Turn on coolant supply before welding or gun will be damaged.

- 1 Coolant Supply
- 2 Millermatic 350P
- 3 Gun Control Cable

Insert plug into gun control receptacle and tighten threaded collar.

4 Water In Hose

Connect to coolant supply with supplied coupler and water hose (left-hand threads).

5 Gun Connector

Loosen gun securing knob, and insert gun connector through Wire opening until it

bottoms against block. Tighten knob. Close and latch door.

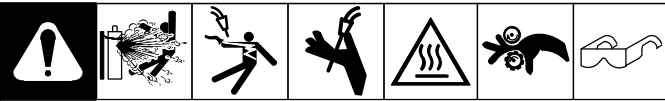
6 Water Out Hose

Connect to coolant supply with supplied coupler and water hose (left-hand threads).

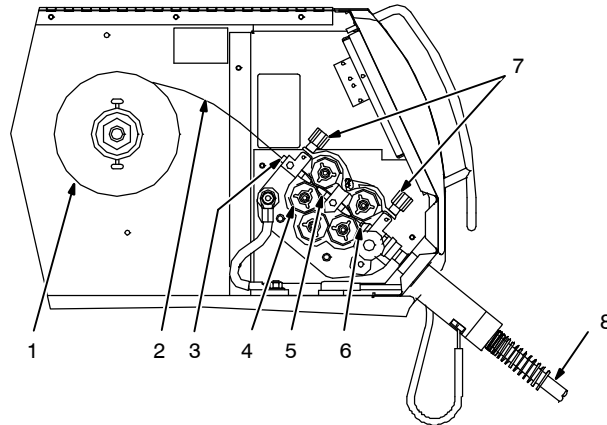
7 Coolant "In"

8 Coolant "Out"

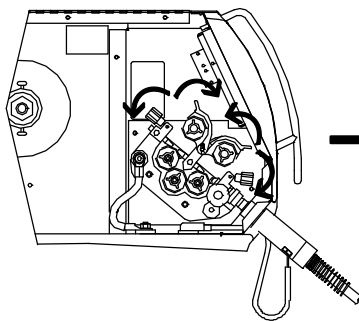
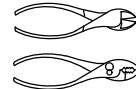
5-5. Threading Welding Wire Through Millermatic 350/350P



- 1 Wire Spool
 - 2 Welding Wire
 - 3 Inlet Wire Guide
 - 4 Drive Roll
 - 5 Intermediate Wire Guide
 - 6 Outlet Wire Guide
 - 7 Pressure Adjustment Knob
 - 8 Gun Conduit Cable
- Lay gun cable out straight.



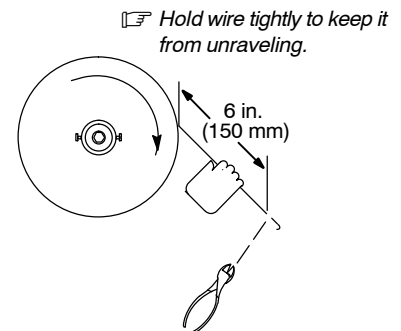
Tools Needed:



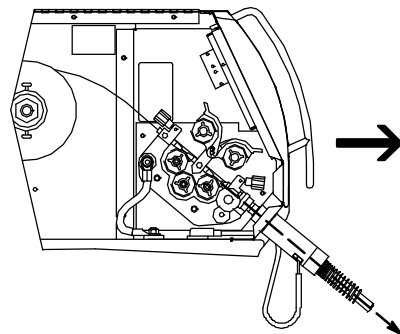
Open pressure assembly.



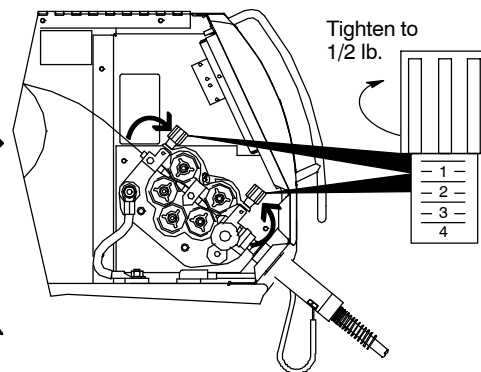
3/4 in.



Pull and hold wire; cut off end.



Push wire thru guides into gun;
continue to hold wire.



Close and tighten pressure
assembly, and let go of wire.

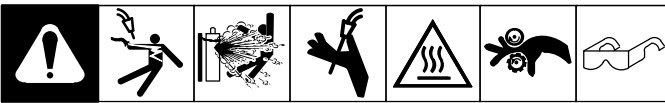
Set pressure indicator
scale to 1/2 lb.

Pressure
Indicator
Scale

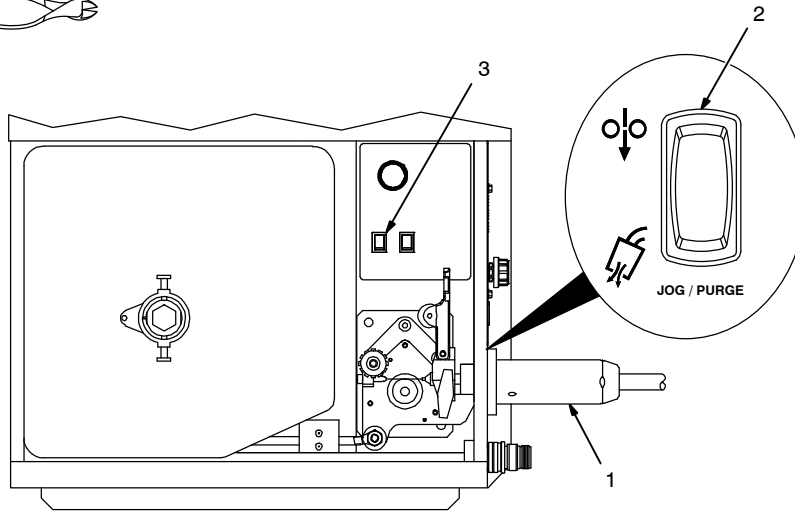


See Section 5-10 for threading weld-
ing wire through XR guns.

5-6. Threading Welding Wire Through XR-Control Feeder



Tools Needed:



1 Cable Assembly

Lay cable assembly out straight.

2 Jog Switch

Push Jog switch up to feed wire through cable assembly.

3 Torque Switch

 Select proper push feeder torque setting for wire size being used. Use low torque for .030 in. (0.8mm) wire. Use high torque for all other wire sizes.

 XR-AlumaFeed torque setting is automatically set internally for wire sizes.

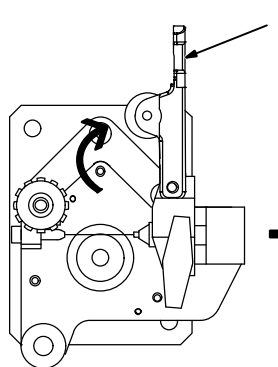
Ref. 246 218-A / 805 354

Notes

5-7. Adjusting Tension At Feeder

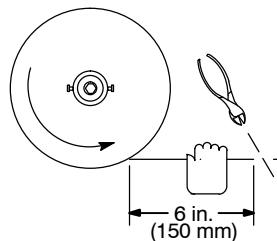


Tools Needed:

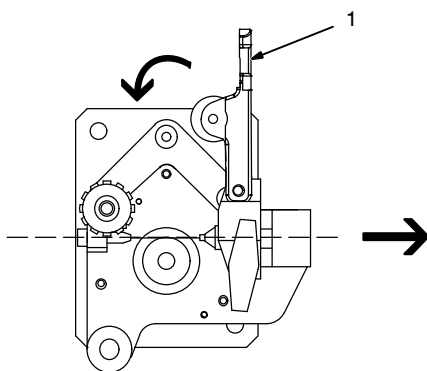


1 Tension Arm
Open tension arm.

Hold wire tightly to keep it from unraveling.



Pull and hold wire; cut off end.

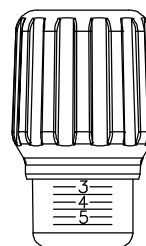


Install proper size drive rolls.

Thread wire thru inlet guide, along drive roll groove, and into wire conduit. Close tension arm. **Adjust tension as follows:**

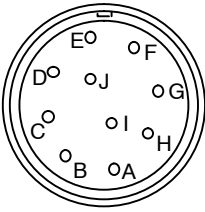
Tension Settings

Wire Size	Welding	Gun Calibration
0.030 - 0.035 in.	1-2	3-4
0.040 in.	3-4	
3/64 in.		
1/16 in.		

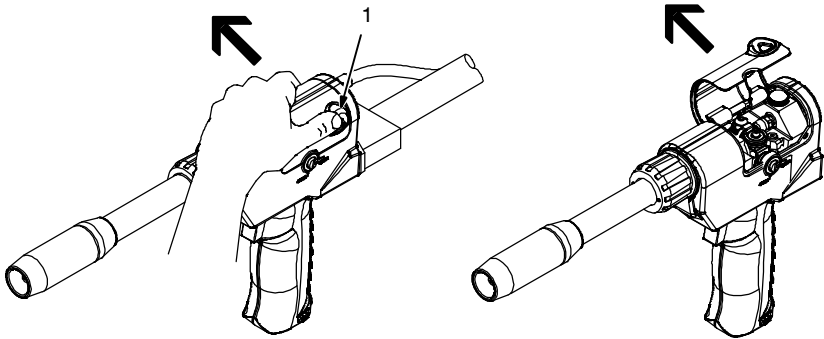


Ref. 805 350-A / 242 517-A

5-8. 10-Pin Plug Information

 REMOTE 10	Pin*	Pin Information
	A	Electrode sense lead
	B	Motor 0 to +24 volts DC with respect to pin C
	G	Trigger
	C	Motor Common
	D	Trigger
	E	Wire speed Ref. +9 volts DC
	H	Wire speed com
	F	Wire speed 0 to +9 volts DC with respect to pin H
	J	Gun sensing resistor with respect to pin H
	I	Not used

5-9. Removing Top Cover Of Pistol Grip Gun



1 Top Cover Triangular Boss

Push up on triangular boss to open door. Door hinges on handle.

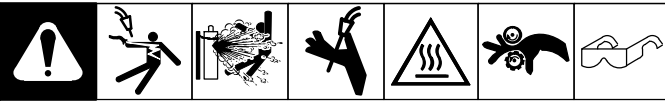
To open door fully, push up on door until it clicks into position.

 If door is pushed too far it will separate from handle. If this happens the door can be reinstalled.

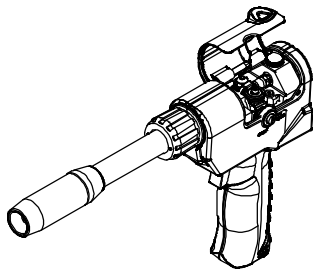
Push door back into original position to close.

T0022

5-10. Threading Welding Wire Through Gun

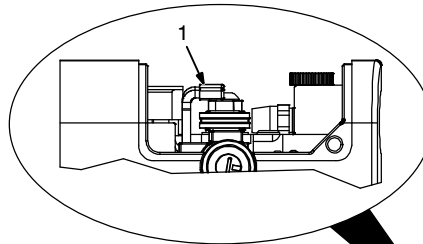


Refer to wire feeder manual for instructions on feeding wire through feeder.



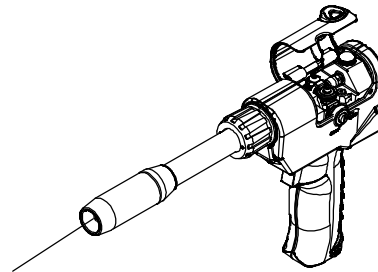
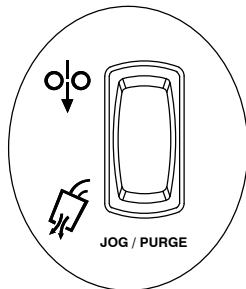
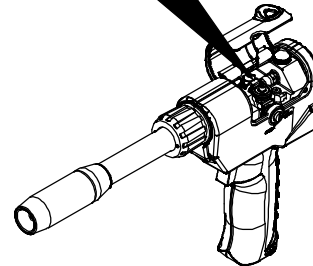
⚠ Welding wire is electrically live when gun trigger is used to jog wire.

ℹ Turn OFF coolant supply before removing head tube on water-cooled gun.

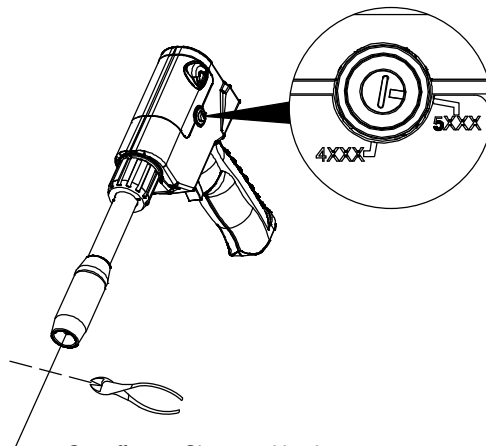


1 Pressure Arm Lever

ℹ To release drive roll pressure, pull back on pressure arm lever. While pulled back, shift to left onto shoulder to lock into place.



Lay gun cable out straight. Press Jog switch until about 6 in. (152 mm) of wire is sticking out end of contact tip.



Cut off wire. Close and latch wire feeder door.

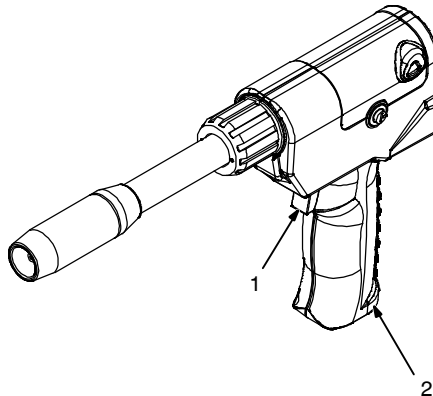
ℹ Verify pressure adjustment on handle matches the wire type. See Section 6-2.

Tools Needed:



SECTION 6 – OPERATION

6-1. Gun Controls



1 Trigger

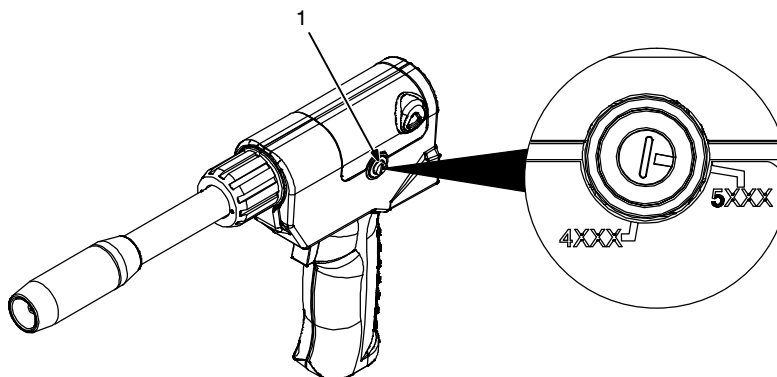
Press trigger to energize welding power source contactor (if applicable), start shielding gas flow, and begin wire feed.

2 Wire Speed Control

Use control to fine adjust wire feed speed set on wire feeder Weld Speed control. The numbers around the control are for reference only.

Ref. T0023

6-2. Gun Pressure Roll Tension Setting



 *Aluminum series specific - Pressure roll tension setting ensures smooth wire feeding action.*

 *Gun Pressure Roll Tension is factory set to 4XXX.*

1 Pressure Roll Adjustment Screw

Wire tension should be set to 4XXX for 4000 series aluminum wire.

Rotate Pressure Roll Adjustment Screw fully counterclockwise until indicator line on adjustment knob lines up with indicator line on handle in the 4XXX position.

Wire tension should be set to 5XXX for 5000 series aluminum and stainless wire.

Rotate Pressure Roll Adjustment Screw fully clockwise until indicator line on adjustment knob lines up with indicator line on handle in the 5XXX position.

 *Small diameter (.035) 5000 series wire may run better on the 4XXX setting.*

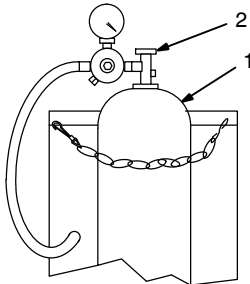
Tools Needed:

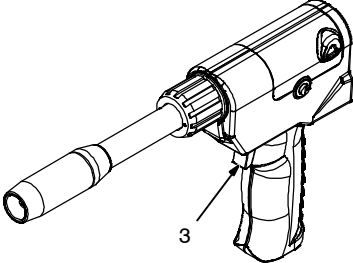


Ref. T0023

6-3. Shielding Gas







1 Shielding Gas Cylinder

2 Valve

3 Gun Trigger

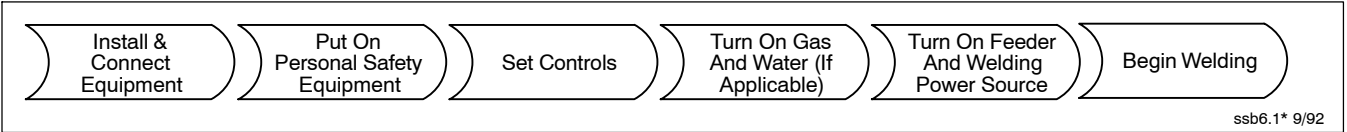
Open valve on cylinder just before welding.

Gun trigger turns weld output and gas flow on and off (see Section 6-1).

Close valve on cylinder when finished welding.

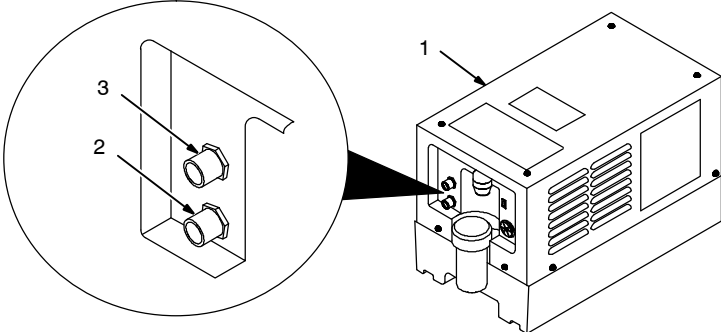
sb5.1 6/92 – S-0621-C / Ref. 151 666-F

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



6-5. Coolant Supply For Water-Cooled Models Only





1 Coolant Supply

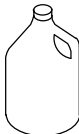
2 Coolant "In"

3 Coolant "Out"

See table below for coolant guidelines.

Turn On coolant supply before welding.

Turn Off coolant supply when finished welding.

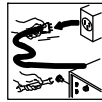
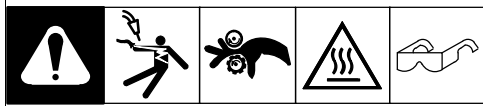
Application	GMAW Or Where Coolant Contacts Aluminum Parts Or Where HF* Not Used
 Coolant	MILLER Aluminum Protecting Coolant No. 043 809**, Distilled Or Deionized Water OK Above 32° F (0° C)

*HF: High Frequency Current

**MILLER coolants protect to -37° F (-38°C) and resist algae growth.

Ref. 150 755-A

SECTION 7 – MAINTENANCE & TROUBLESHOOTING



⚠ Disconnect power before maintaining.

🔧 Maintain more often during severe conditions.



3 Months



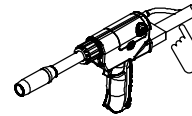
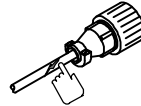
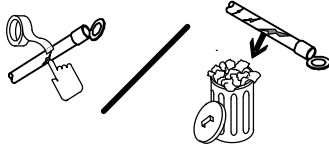
Replace Damaged Or Unreadable Labels



Replace Damage Gas Hose



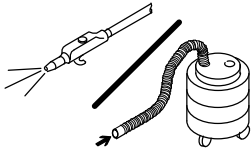
Clean And Tighten Weld Terminals



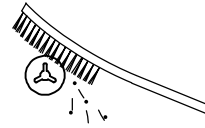
Repair Or Replace Cracked Cables And Cords



6 Months



Blow Out Or Vacuum Inside



Clean Drive Rolls

7-1. Replacing The Liner



⚠ Turn Off wire feeder and welding power source.

- 1 Thumb Screw
- 2 Cone Guide
- 3 Collet Guide
- 4 Brass Guide Cap

Unscrew thumb screw.

Remove the following items:

- Liner conduit assembly from handle.
- Cone guide (rear of torch) and collet guide.
- Brass guide cap from conduit assembly.
- Old liner – pull from front of torch/conduit.

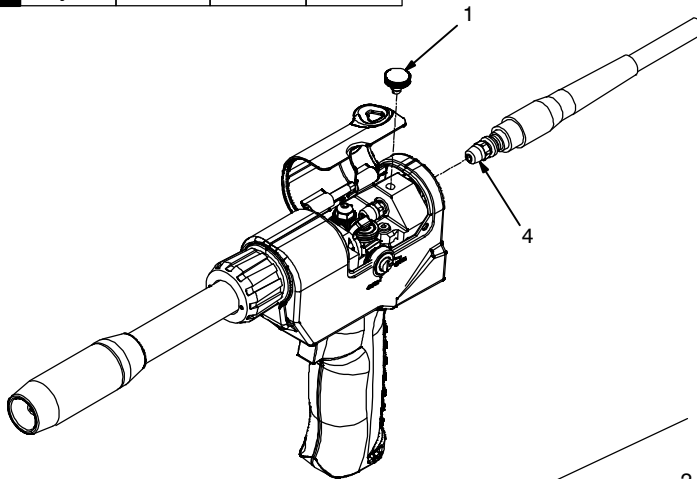
Insert new liner in same direction as one removed (knurled ring towards front).

Tighten Brass guide cap onto conduit.

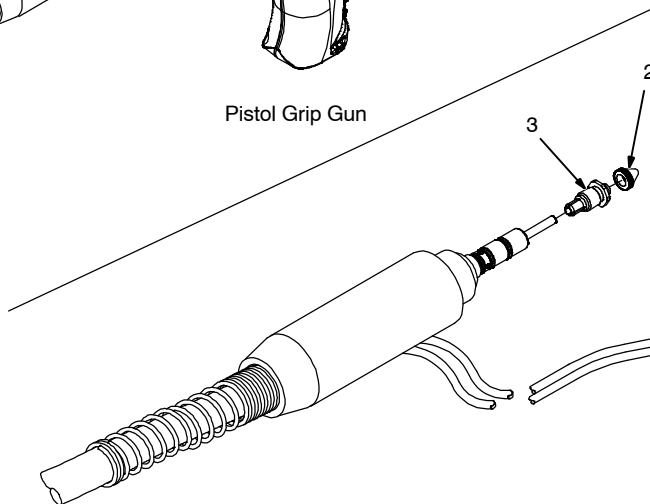
Torque collet guide to 50 in. lbs.

Cut liner flush with front surface of collet guide.

Reinstall guide cone, conduit and thumb screw.

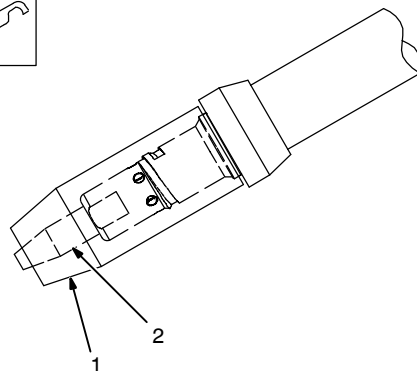


Pistol Grip Gun



Ref. T0024

7-2. Changing Gun Contact Tip



Remove nozzle

1 Nozzle

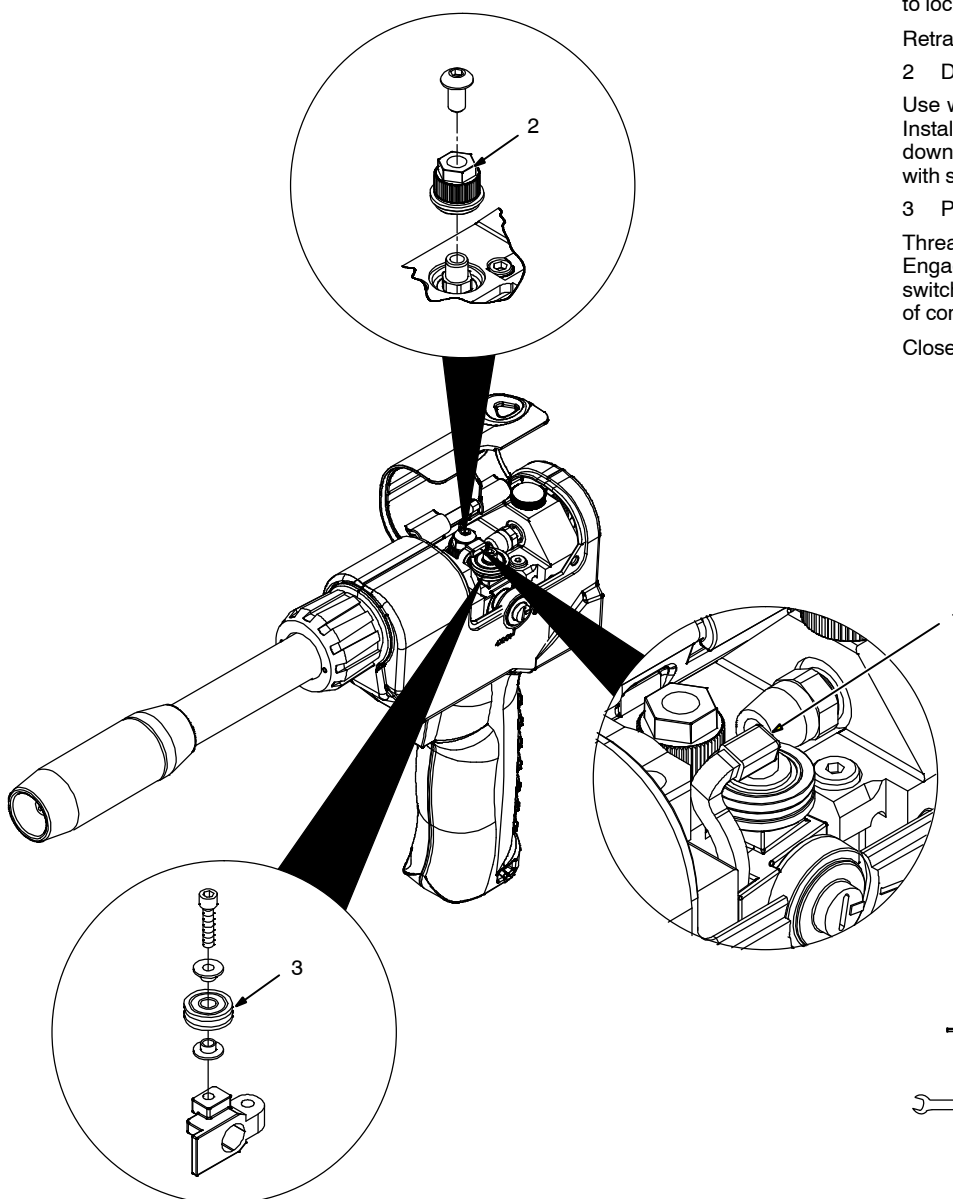
2 FasTip

Unscrew FasTip.

Install new FasTip.

Ref. 150 437-A

7-3. Gun Drive Assembly Maintenance



1 Lever Arm

Remove pressure on wire by pulling lever arm forward. Pull to left to lock into place.

Retract wire onto spool.

2 Drive Roll

Use wire brush to clean drive roll. Install drive roll with hex opening down toward shaft hex, and secure with screw.

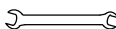
3 Pressure Roll

Thread welding wire through gun. Engage feeder drive rolls. Press jog switch until wire is sticking out end of contact tip.

Close top cover.

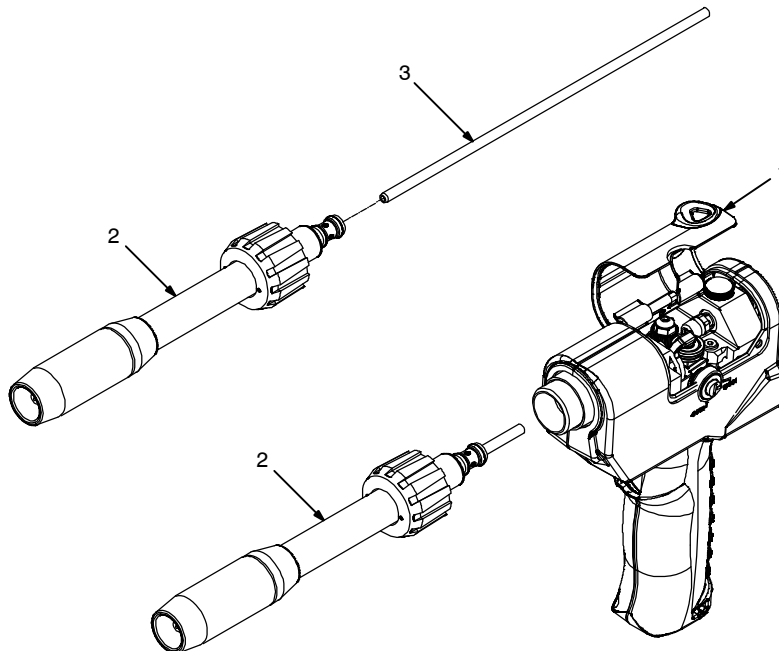
Tools Needed:

 7/64, 1/16 in.

 3/8 in.

Ref. T0008 / T0025

7-4. Replacing Head Tube Liner



☞ Turn Off coolant supply before removing head tube on water-cooled gun.

The standard head tube liner (yellow) will accommodate wire diameters from 3/64 in. - 1/16 in. wire size.

When changing wire size, change gun drive roll.

1 Cover

2 Head Tube

Remove head tube from gun.

3 Liner

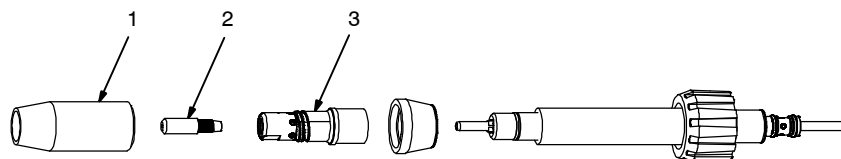
Pull liner out of head tube.

Insert new liner into head tube and reinstall head tube onto gun.

☞ A twisting motion may be needed to feed liner thru head tube.

Ref. T0026

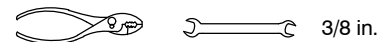
7-5. Removing Diffuser In Air And Water-Cooled Pistol-Grip Guns



Ref. T0027

Air Cooled Head Tube Assembly

Tools Needed:



⚠ Turn Off welding power source and water supply.

⚠ Water in gun parts can cause electric shock and can lower weld quality.

Always point gun downward when removing water-cooled barrel to keep water out of gun parts.

Wipe gun dry before putting it back together.

1 Nozzle

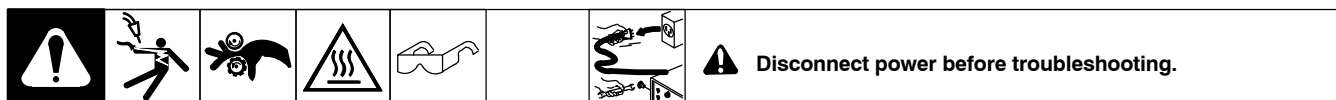
2 FasTip

To remove, see Section 7-2.

3 Diffuser

Remove diffuser and replace.

7-6. Troubleshooting



Trouble	Remedy
Pressing gun trigger does not energize feeder. Welding wire is not energized. Shielding gas does not flow.	Secure plug from gun control cable into Gun Control receptacle on feeder (see Section 5-2 or 5-3 as applicable). Have nearest Factory Authorized Service Agent check optional water flow switch, if applicable.
Wire feeds, shielding gas flows, but welding wire is not energized.	See Troubleshooting section in welding power source manual.
Wire feeds erratically.	Adjust drive roll pressure if necessary (see Section 5-6). Clean or replace drive rolls as necessary (see Section 7-3). Check and replace liner if necessary (see Section 7-4).
No weld output; gun/feeder does not work.	Check gun trigger plug connection on wire feeder front panel (see Sections 5-2 and 5-3). Place Power switch on welding power source in the On position.
Erratic weld output.	Tighten and clean all connections. Check drive roll pressure in wire feeder and gun (see Section 5-6). Check and replace liner if necessary (see Section 7-4).
Wire does not feed; burnback in contact tip.	Check drive roll pressure in wire feeder and gun (see Section 5-6). Check and replace liner if necessary (see Section 7-4). Reinstall voltage sensing lead (see Section 5-1).
Gun overheating (water-cooled models).	Be sure coolant flow rate is at least 1 qt/min. Corrosion buildup in gun decreasing coolant flow rate. Backflush coolant system, clean coolant system filter, and clean fittings.



This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

TRUE BLUE[®]

WARRANTY

Effective January 1, 2023

(Equipment with a serial number preface of ND or newer)

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

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parts can be in your
hands in 24 hours.

Support

Need fast answers to the
tough welding questions?
Contact your distributor.
The expertise of the
distributor and Miller is
there to help you, every
step of the way.

LIMITED WARRANTY – Subject to the terms and conditions below, Miller Electric Mfg. LLC, Appleton, Wisconsin, warrants to authorized distributors 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. Notifications submitted as online warranty claims must provide detailed descriptions of the fault and troubleshooting steps taken to diagnose failed parts. Warranty claims that lack the required information as defined in the Miller Service Operation Guide (SOG) may be denied by Miller.

Miller shall honor warranty claims on warranted equipment listed below in the event of a defect within the warranty coverage time periods listed below. Warranty time periods start on the delivery date of the equipment to the end-user purchaser.

1. 5 Years Parts — 3 Years Labor
 - * Original Main Power Rectifiers Only to Include SCRs, Diodes, and Discrete Rectifier Modules in non-inverter products
2. 4 Years Parts (No Labor)
 - * Auto-Darkening ClearLight 2.0 Helmet Lenses
3. 3 Years — Parts and Labor Unless Specified
 - * Auto-Darkening Helmet Lenses (No Labor)
 - * Engine Driven Welder/Generators (Including EnPak) **(NOTE: Engines are Warranted Separately by the Engine Manufacturer.)**
 - * Insight Welding Intelligence Products (Except External Sensors)
 - * Inverter Power Sources
 - * Plasma Arc Cutting Power Sources
 - * Process Controllers
 - * Semi-Automatic and Automatic Wire Feeders
 - * Transformer/Rectifier Power Sources
4. 2 Years — Parts and Labor
 - * Auto-Darkening Weld Masks (No Labor)
 - * Fume Extractors – Filtair 215, Capture 5, and Industrial Collector Series
5. 1 Year — Parts and Labor Unless Specified
 - * ArcReach Heater
 - * AugmentedArc, LiveArc, and MobileArc Welding Systems
 - * Automatic Motion Devices
 - * Bernard BTB Air-Cooled MIG Guns (No Labor)
 - * CoolBelt, PAPR Blower, and PAPR Face Shield (No Labor)
 - * Desiccant Air Dryer System
 - * Field Options **(NOTE: Field options are covered for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)**
 - * RFCS Foot Controls (Except RFCS-RJ45)
 - * Fume Extractors – Filtair 130, MWX and SWX Series, ZoneFlow Extraction Arms and Motor Control Box
 - * HF Units
 - * ICE/XT Plasma Cutting Torches (No Labor)
 - * Induction Heating Power Sources, Coolers **(NOTE: Digital Recorders are Warranted Separately by the Manufacturer.)**
 - * Insight Sensors
 - * Load Banks
 - * Motor-Driven Guns (except Spoolmate Spoolguns)
 - * Positioners and Controllers
 - * Racks (For Housing Multiple Power Sources)
 - * Running Gear/Trailers
 - * Subarc Wire Drive Assemblies
 - * Supplied Air Respirator (SAR) Boxes and Panels
 - * TIG Torches (No Labor)

- * Tregaskiss Guns (No Labor)
 - * Water Cooling Systems
 - * Wireless Remote Foot/Hand Controls and Receivers
 - * Work Stations/Weld Tables (No Labor)
6. 6 Months — Parts
 - * 12 Volt Automotive-Style Batteries
 7. 90 Days — Parts
 - * Accessories (Kits)
 - * ArcReach Heater Quick Wrap and Air Cooled Cables
 - * Canvas Covers
 - * Induction Heating Coils and Blankets, Cables, and Non-Electronic Controls
 - * MDX Series MIG Guns
 - * M-Guns
 - * MIG Guns, Subarc (SAW) Torches, and External Cladding Heads
 - * Remote Controls and RFCS-RJ45
 - * Replacement Parts (No labor)
 - * Spoolmate Spoolguns

Miller's True Blue[®] Limited Warranty shall not apply to:

1. **Consumable components; such as contact tips, cutting nozzles, contactors, brushes, relays, work station table tops and welding curtains, or parts that fail due to normal wear. (Exception: brushes and relays are covered on all engine-driven products.)**
2. 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.
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.
4. Defects caused by accident, unauthorized repair, or improper testing.

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

The exclusive remedies for warranty claims are, at Miller's option, either: (1) repair; or (2) replacement; or, if approved in writing by Miller, (3) the pre-approved 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 use). Products may not be returned without Miller's written approval. Return shipment shall be at customer's risk and expense.

The above remedies are F.O.B. Appleton, WI, or Miller's authorized service facility. Transportation and freight are the customer's responsibility. TO THE EXTENT PERMITTED BY LAW, THE REMEDIES HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES REGARDLESS OF THE LEGAL THEORY. IN NO EVENT SHALL MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT) REGARDLESS OF THE LEGAL THEORY. ANY WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY, OR REPRESENTATION, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, ARE EXCLUDED AND DISCLAIMED BY MILLER.

Some US states do not allow limiting the duration of an implied warranty or the exclusion of certain damages, so the above limitations may not apply to you. This warranty provides specific legal rights, and other rights may be available depending on your state. In Canada, some provinces provide additional warranties or remedies, and to the extent the law prohibits their waiver, the limitations set out above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary by province.





Owner's Record

Please complete and retain with your personal records.

Model Name

Serial/Style Number

Purchase Date

(Date which equipment was delivered to original customer.)

Distributor

Address

City

State

Zip



For Service

Contact a *DISTRIBUTOR* or *SERVICE AGENCY* near you.

Always provide Model Name and Serial/Style Number.

Contact your Distributor for:

Welding Supplies and Consumables

Options and Accessories

Personal Safety Equipment

Service and Repair

Replacement Parts

Training (Schools, Videos, Books)

Technical Manuals (Servicing Information and Parts)

Circuit Diagrams

Welding Process Handbooks

To locate a Distributor or Service Agency visit
www.millerwelds.com or call 1-800-4-A-Miller

Contact the Delivering Carrier to:

File a claim for loss or damage during shipment.

For assistance in filing or settling claims, contact your distributor and/or equipment manufacturer's Transportation Department.

Miller Electric Mfg. Co.

An Illinois Tool Works Company
1635 West Spencer Street
Appleton, WI 54914 USA

International Headquarters-USA

USA Phone: 920-735-4505 Auto-Attended
USA & Canada FAX: 920-735-4134
International FAX: 920-735-4125

For International Locations Visit
www.MillerWelds.com

