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2012-01

Processes



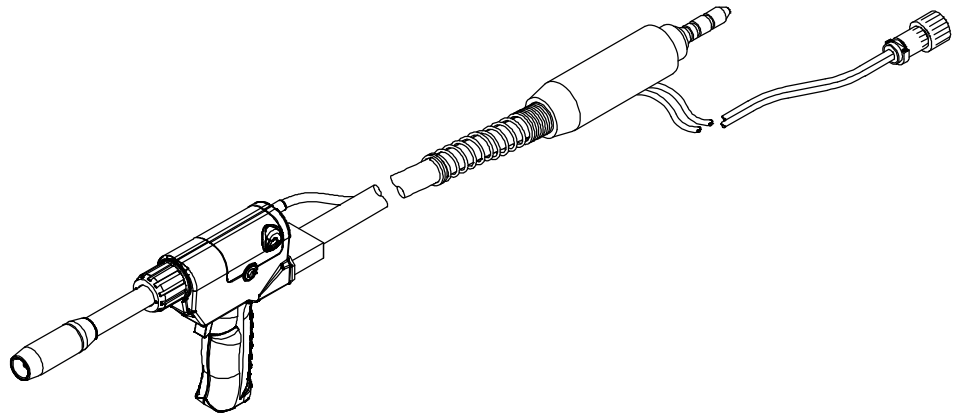
MIG (GMAW) Welding

Description



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

TM **XR - 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.



TABLE OF CONTENTS

SECTION 1 – SAFETY PRECAUTIONS FOR GMAW WELDING GUNS – READ BEFORE USING	1
1-1. Symbol Usage	1
1-2. Arc Welding Hazards	1
1-3. Proposition 65 Warnings	2
1-4. Principal Safety Standards	2
1-5. EMF Information	2
SECTION 2 – MESURES DE SÉCURITÉ VISANT LES PISTOLETS DE SOUDAGE GMAW – À LIRE AVANT UTILISATION	3
2-1. Signification des symboles	3
2-2. Dangers relatifs au soudage à l'arc	3
2-3. Proposition californienne 65 Avertissements	4
2-4. Principales normes de sécurité	4
2-5. Informations relatives aux CEM	4
SECTION 3 – DEFINITIONS	5
3-1. Symbols And Definitions	5
SECTION 4 – INTRODUCTION	5
4-1. Gun Specifications	5
4-2. Duty Cycle And Overheating	5
SECTION 5 – INSTALLATION	6
5-1. Connections With A Constant Current (CC), 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	6
5-2. Air-Cooled Gun Connections	7
5-3. Water-Cooled Gun Connections	8
5-4. Milleromatic 350/350P Water Cooled Gun Connections	9
5-5. Threading Welding Wire Through Milleromatic 350/350P	10
5-6. Threading Welding Wire Through XR-Control Feeder	11
5-7. Adjusting Tension At Feeder	12
5-8. 10-Pin Plug Information	13
5-9. Removing Top Cover Of Pistol Grip Gun	13
5-10. Threading Welding Wire Through Gun	14
SECTION 6 – OPERATION	15
6-1. Gun Controls	15
6-2. Gun Pressure Roll Tension Setting	15
6-3. Shielding Gas	16
6-4. Sequence Of Gas Metal Arc Welding (GMAW) – Continuous Or Spot	16
6-5. Coolant Supply For Water-Cooled Models Only	16
SECTION 7 – MAINTENANCE & TROUBLESHOOTING	17
7-1. Replacing The Liner	17
7-2. Changing Gun Contact Tip	18
7-3. Gun Drive Assembly Maintenance	18
7-4. Replacing Head Tube Liner	19
7-5. Removing Diffuser In Air And Water-Cooled Pistol-Grip Guns	19
7-6. Troubleshooting	20
SECTION 8 – ELECTRICAL DIAGRAMS	21
SECTION 9 – PARTS LIST	22
SECTION 10 – PARTS LIST INCLUDING CONSUMABLES	28
WARRANTY	

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

SR7 (MIG) 2011-10

 **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 the 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 welding power source Owner's Manual. Read and follow all Safety Standards.



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

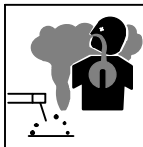


During operation, keep everybody, especially children, away.



ELECTRIC SHOCK can kill.

- Always wear dry insulating gloves.
- Insulate yourself from work and ground.
- Do not touch live electrode or electrical parts.
- Repair or replace worn, damaged, or cracked gun or cable insulation.
- 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.
- Read Material Safety Data Sheets (MSDSs) and manufacturer's instructions for material used.



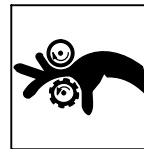
WELDING can cause fire or explosion.

- Do not weld near flammable material.
- 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 and AWS A6.0 (see Safety Standards).
- Watch for fire; keep extinguisher nearby.



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.



MOVING PARTS can injure.

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



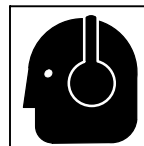
ARC RAYS can burn eyes and skin.

- Wear welding helmet with correct shade of filter.
- Wear correct eye and body protection.
- Cover exposed skin with spatter-resistant clothing.



HOT PARTS can burn.

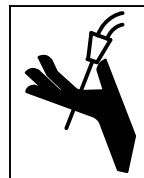
- Allow gun to cool before touching.
- Do not touch hot metal.
- Protect hot metal from contact by others.



NOISE can damage hearing.

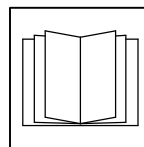
Noise from some processes or equipment can damage hearing.

- 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 maintenance and service according to the Owner's Manuals, industry standards, and national, state, and local codes.

1-3. Proposition 65 Warnings

 **Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)**

 **This product contains chemicals, including lead, known to the state of California to cause cancer, birth defects, or other reproductive harm. Wash hands after use.**

1-4. Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, is available as a free download from the American Welding Society at <http://www.aws.org> or purchased from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihs.com).

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (phone: 212-642-4900, website: www.ansi.org).

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Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 5060 Spectrum Way, Suite 100, Ontario, Canada L4W 5N5 (phone: 800-463-6727, website: www.csa-international.org).

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (phone: 212-642-4900, website: www.ansi.org).

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B, from National Fire Protection Association, Quincy, MA 02269 (phone: 1-800-344-3555, website: www.nfpa.org).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, from U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 (phone: 1-866-512-1800) (there are 10 OSHA Regional Offices—phone for Region 5, Chicago, is 312-353-2220, website: www.osha.gov).

1-5. EMF Information

Electric current flowing through any conductor causes localized electric and magnetic fields (EMF). Welding current creates an EMF field around the welding circuit and welding equipment. EMF fields may 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.

NOTE – 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. Consulter les symboles et les instructions ci-dessous y afférant pour les actions nécessaires afin d'éviter le 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 l'information contenue dans les normes de sécurité énumérées dans le 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.



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



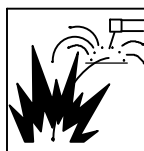
UN CHOC ÉLECTRIQUE peut tuer.

- 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.
- Réparer ou remplacer un pistolet ou la gaine d'isolement d'un câble usée, endommagée ou fissurée.
- 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.
- Consulter les fiches toxicologiques (MSDS) et les notices du fabricant de chaque matériel utilisé.



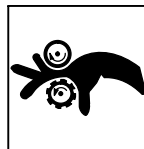
LE SOUDAGE peut causer un incendie ou une explosion.

- Ne pas souder à proximité de matériaux inflammables.
- Ne pas effectuer le soudage sur des contenants fermés tels que des réservoirs, tambours, ou conduites, à moins qu'ils n'aient été préparés correctement conformément à AWS F4.1 et AWS A6.0 (voir les Normes de Sécurité).
- Prendre garde aux incendies et toujours avoir un extincteur à proximité.



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.

- Porter un casque de soudage muni d'un filtre de protection oculaire approprié.
- Porter une protection oculaire et des vêtements de protection appropriés.
- Protéger la peau nue en portant des vêtements anti-éclaboussures.



LES PIÈCES CHAUDES peuvent provoquer des brûlures.

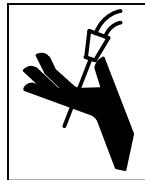
- Laisser refroidir le pistolet avant de le toucher.
- Ne pas toucher d'objets métalliques chauds.
- Abriter les objets métalliques contre tout contact par les personnes à proximité.



Le BRUIT peut endommager l'ouïe.

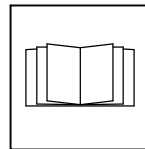
Le bruit des processus et des équipements peut affecter l'ouïe.

- Vérifier si les niveaux de bruit excèdent les limites spécifiées par l'OSHA.
- Utiliser des bouches-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'entretien en respectant les manuels d'utilisation, les normes industrielles et les codes nationaux, d'état et locaux.

2-3. Proposition californienne 65 Avertissements



Les équipements de soudage et de coupage produisent des fumées et des gaz qui contiennent des produits chimiques dont l'État de Californie reconnaît qu'ils provoquent des malformations congénitales et, dans certains cas, des cancers. (Code de santé et de sécurité de Californie, chapitre 25249.5 et suivants)



Ce produit contient des éléments chimiques, dont le plomb, reconnus par l'État de Californie pour leur caractère cancérigène ainsi que provoquant des malformations congénitales ou autres problèmes de procréation. **Se laver les mains après toute manipulation.**

2-4. Principales normes de sécurité

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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. Les CEM peuvent créer des interférences avec certains implants médicaux comme des 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 3 – DEFINITIONS

3-1. Symbols And Definitions

U₁ Primary Voltage	V Volts	I₁ Primary Current	A Amperes
IP Degree Of Protection	U₂ Conventional Load Voltage	I₂ Rated Welding Current	X Duty Cycle
% Percent			

SECTION 4 – INTRODUCTION

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.

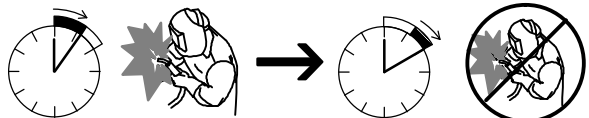
Air-Cooled Models

100% Duty Cycle At 200 Amperes Using Argon



Continuous Welding

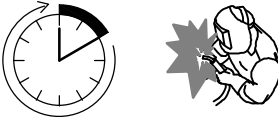
60% Duty Cycle At 250 Amperes Using Argon



6 Minutes Welding 4 Minutes Resting

Water-Cooled Models

100% Duty Cycle At 400 Amperes Using Argon



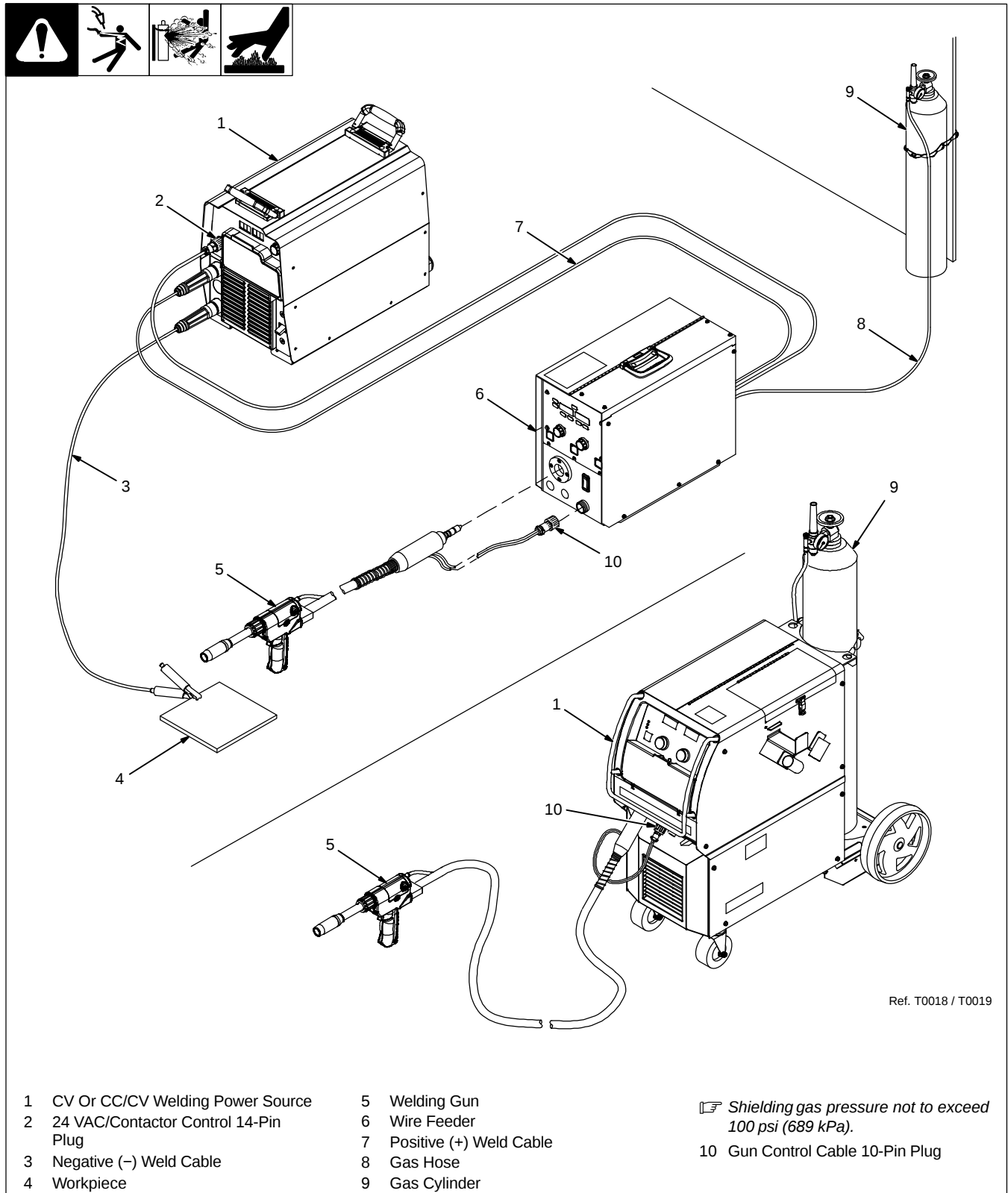
Continuous Welding

sduty1 5/95

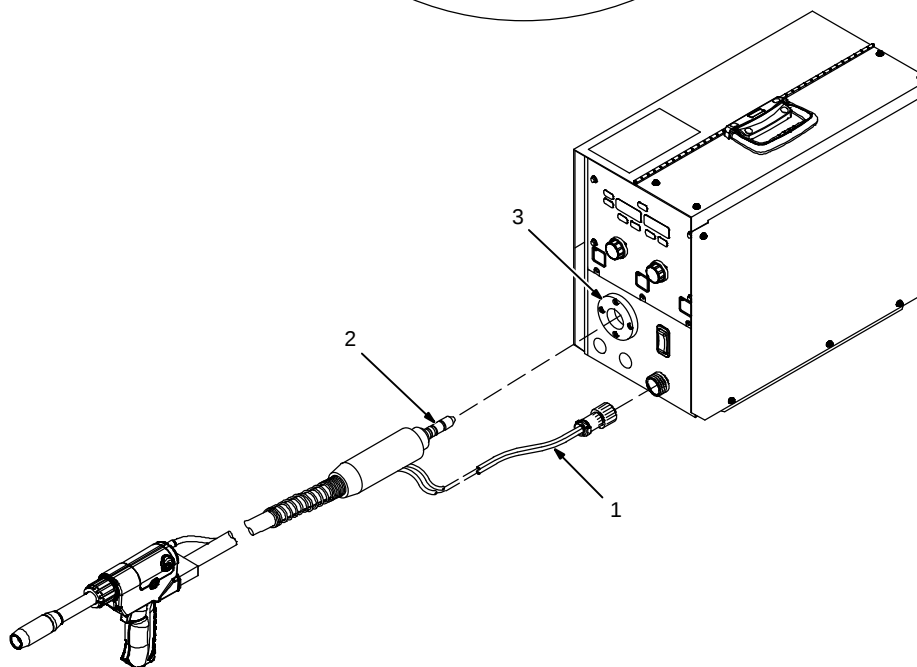
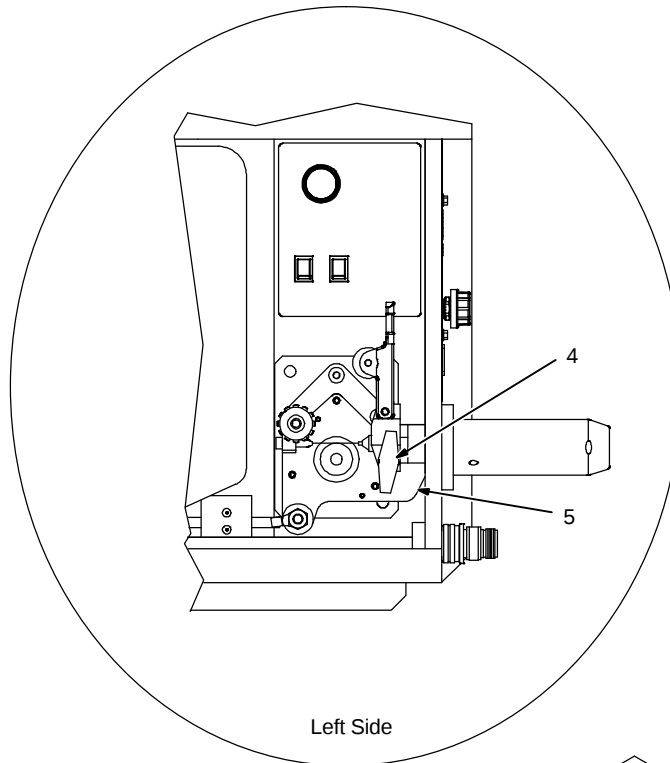
SECTION 5 – INSTALLATION

 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



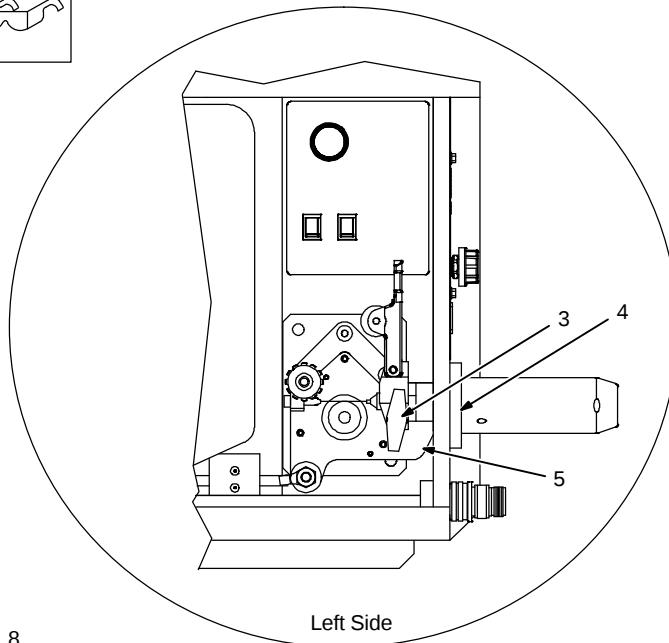
Ref. T0017 / 246 218-A

- 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



☞ 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

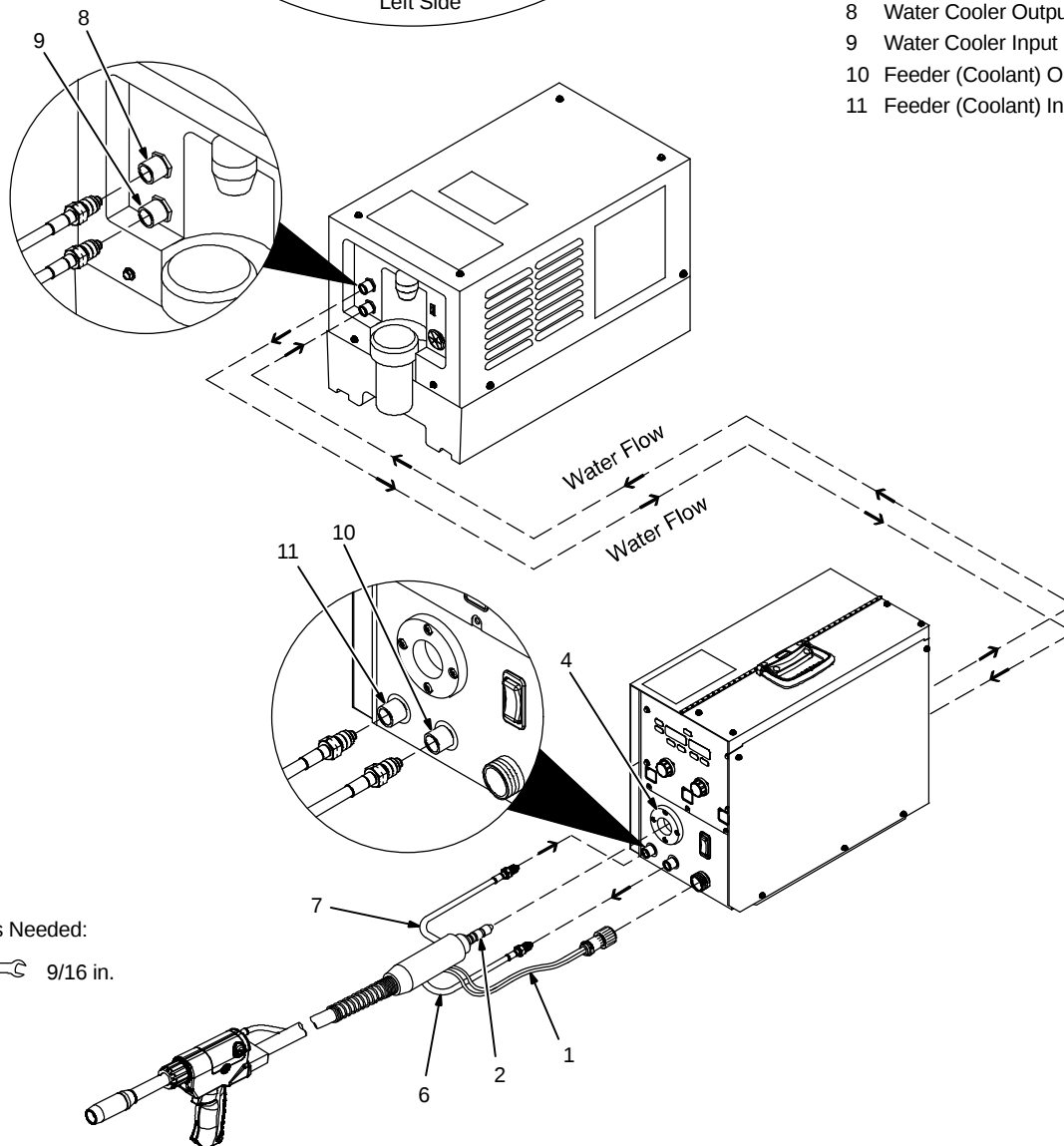
Connect to Water "In" fitting on feeder (left-hand threads)

8 Water Cooler Output

9 Water Cooler Input

10 Feeder (Coolant) Output

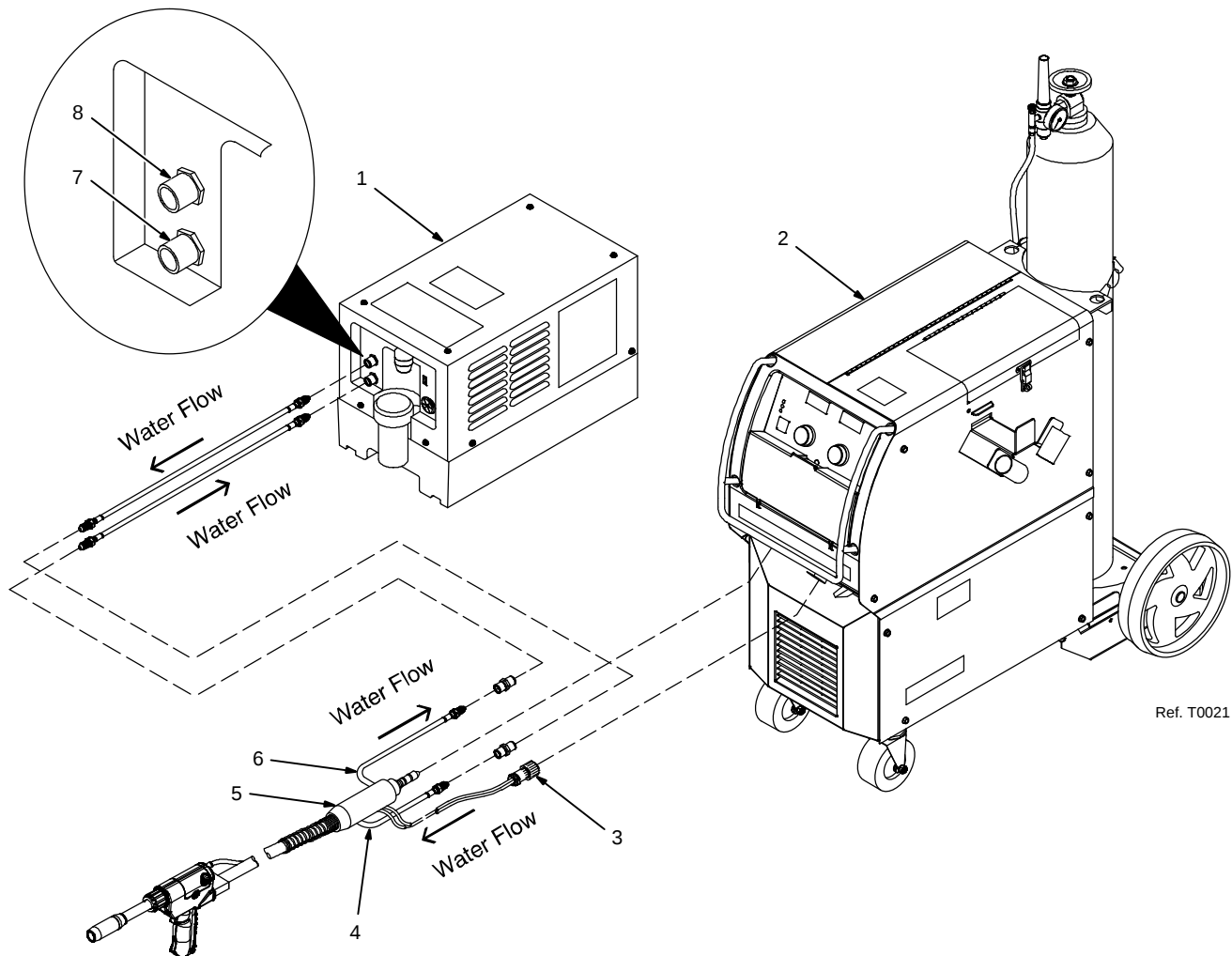
11 Feeder (Coolant) Input



Tools Needed:

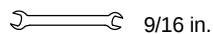
9/16 in.

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



Ref. T0021

Tools Needed:



☞ 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.

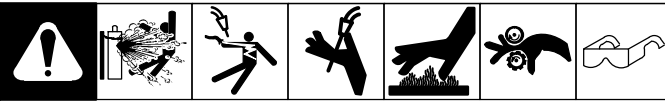
6 Water Out Hose

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

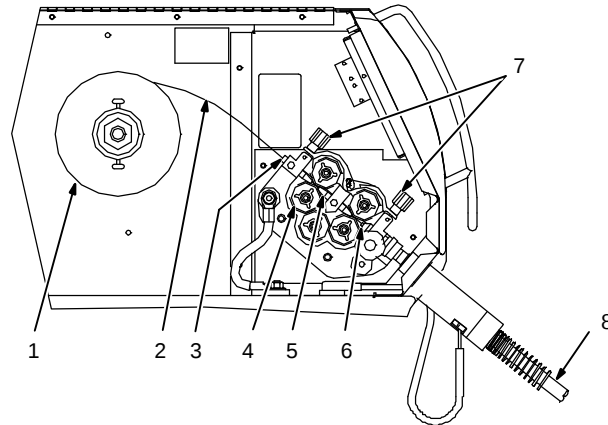
7 Coolant "In"

8 Coolant "Out"

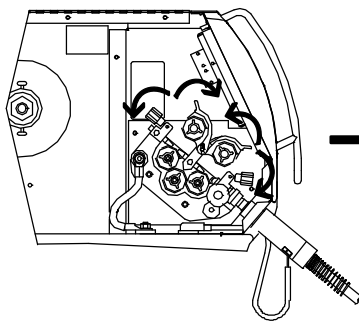
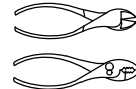
5-5. Threading Welding Wire Through Millermatic 350/350P



- 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.



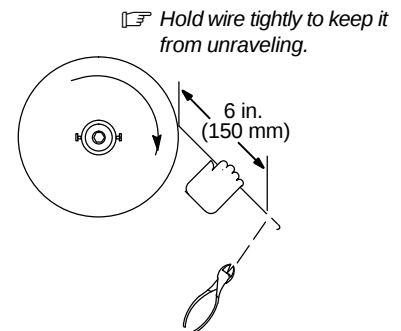
Tools Needed:



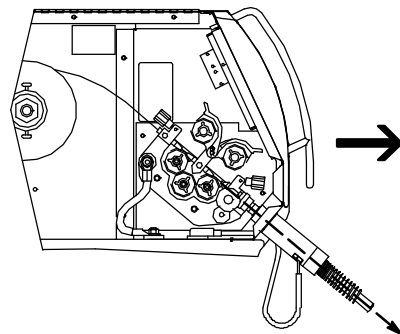
Open pressure assembly.



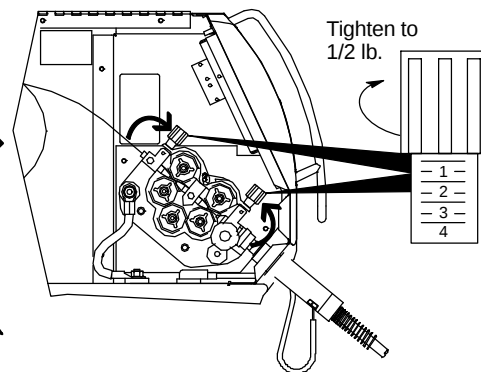
3/4 in.



Pull and hold wire; cut off end.



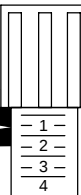
Push wire thru guides into gun;
continue to hold wire.



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

Set pressure indicator
scale to 1/2 lb.

Tighten to
1/2 lb.



Pressure
Indicator
Scale



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

Tools Needed:

- 1 Cable Assembly
- 2 Jog Switch
- 3 Torque Switch

Lay cable assembly out straight.

Push Jog switch up to feed wire through cable assembly.

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.

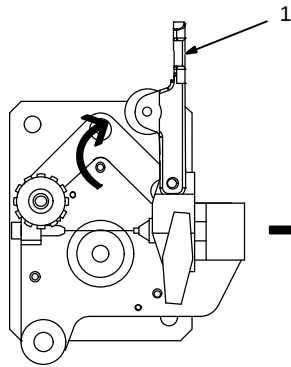
XR-AlumaFeed torque setting is automatically set internally for wire sizes.

This image shows a single 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.

5-7. Adjusting Tension At Feeder

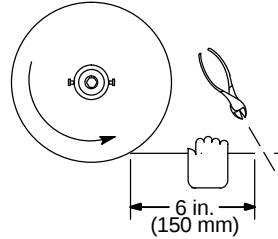


Tools Needed:

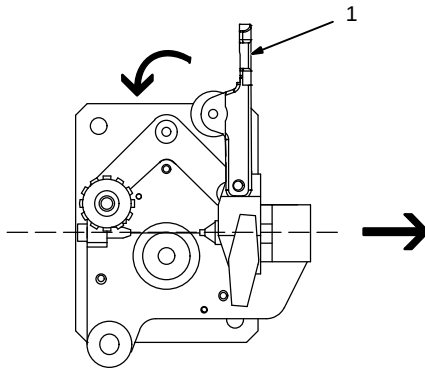


1 Tension Arm
Open tension arm.

Hold wire tightly to keep it from unraveling.



Pull and hold wire; cut off end.

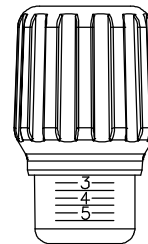


Install proper size drive rolls.

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

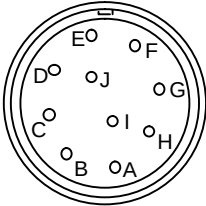
Tension Settings

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.		

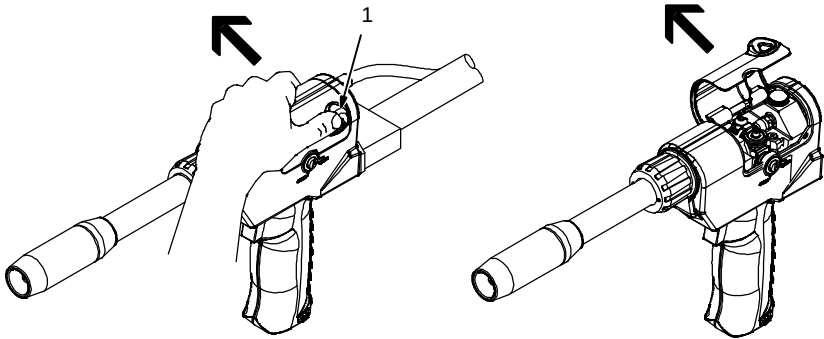


Ref. 805 350-A / 242 517-A

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.

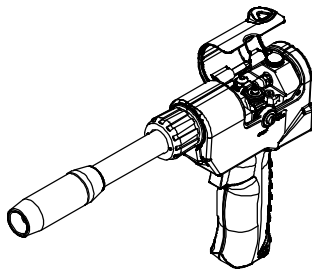
Push door back into original position to close.

T0022

5-10. Threading Welding Wire Through Gun

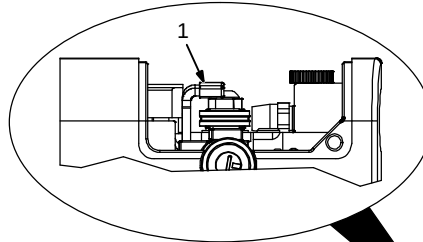


Refer to wire feeder manual for instructions on feeding wire through feeder.



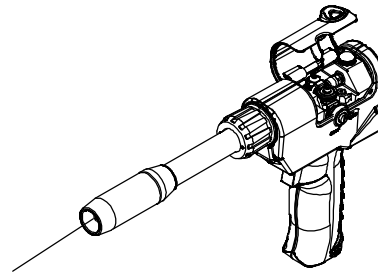
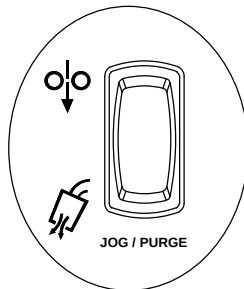
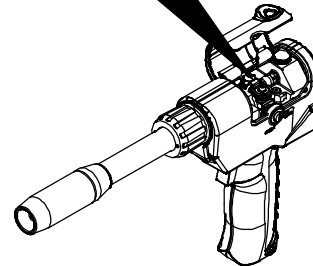
⚠ Welding wire is electrically live when gun trigger is used to jog wire.

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

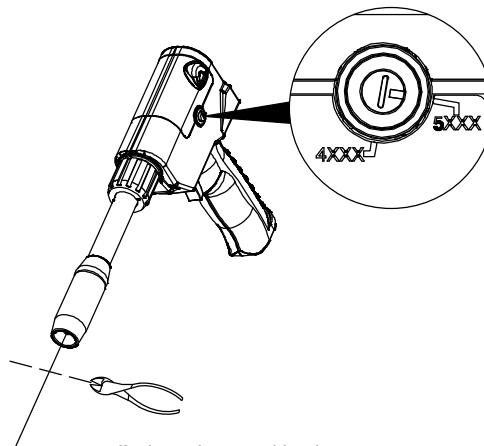


1 Pressure Arm Lever

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.



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

Tools Needed:

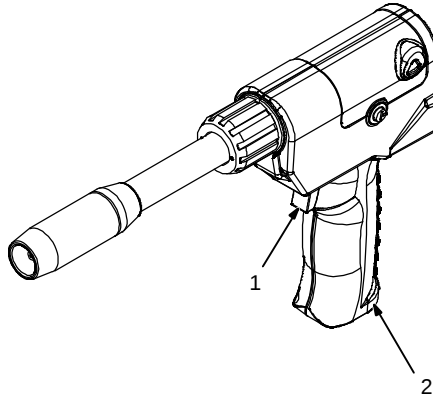


Cut off wire. Close and latch wire feeder door.

Ref. T0006 / T0022 / T0023

SECTION 6 – OPERATION

6-1. Gun Controls



1 Trigger

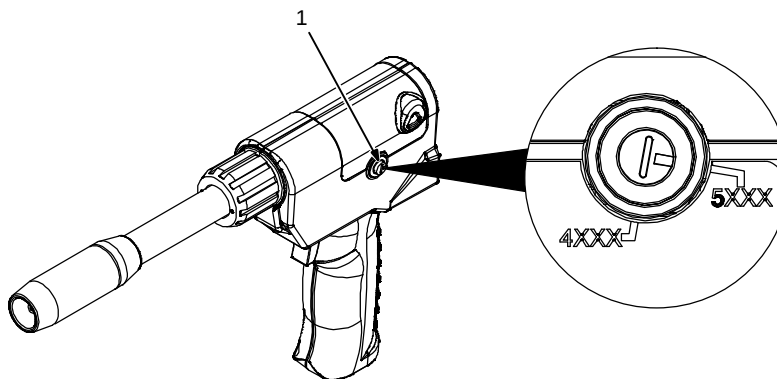
Press trigger to energize welding power source contactor (if applicable), start shielding gas flow, and begin wire feed.

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.

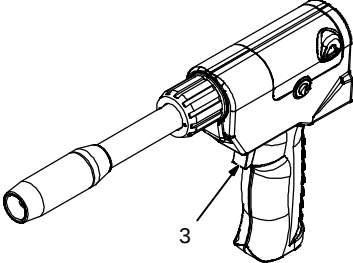
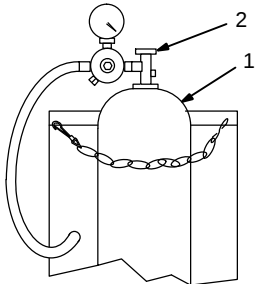
Tools Needed:



Ref. T0023

6-3. Shielding Gas





1 Shielding Gas Cylinder

2 Valve

3 Gun Trigger

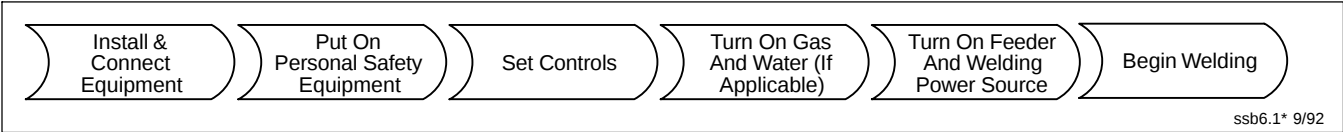
Open valve on cylinder just before welding.

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

Close valve on cylinder when finished welding.

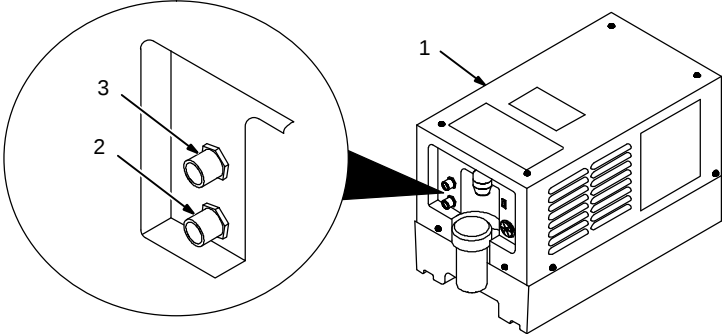
sb5.1 6/92 – S-0621-C / Ref. 151 666-F

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



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





1 Coolant Supply

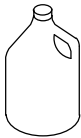
2 Coolant "In"

3 Coolant "Out"

See table below for coolant guidelines.

Turn On coolant supply before welding.

Turn Off coolant supply when finished welding.

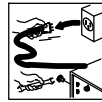
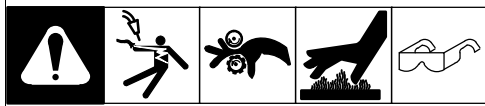
Application	GMAW Or Where Coolant Contacts Aluminum Parts Or Where HF* Not Used
 Coolant	MILLER Aluminum Protecting Coolant No. 043 809**; Distilled Or Deionized Water OK Above 32° F (0° C)

*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.



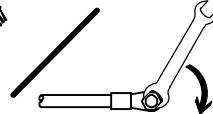
3 Months



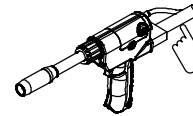
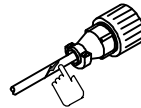
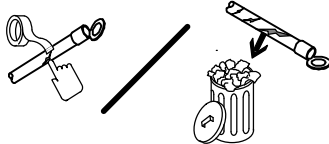
Replace Damaged Or Unreadable Labels



Replace Damage Gas Hose



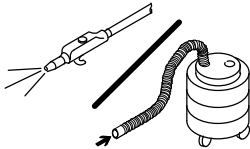
Clean And Tighten Weld Terminals



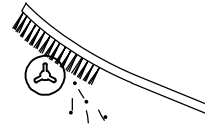
Repair Or Replace Cracked Cables And Cords



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.

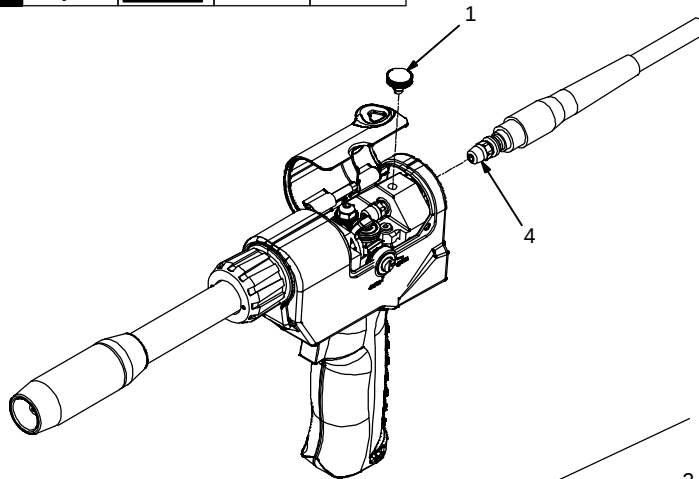
Insert new liner in same direction as one removed (knurled ring towards front).

Tighten Brass guide cap onto conduit.

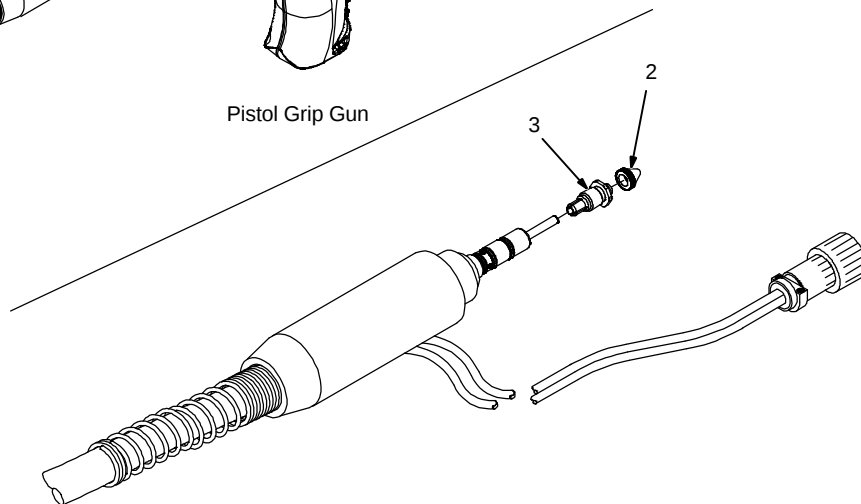
Torque collet guide to 50 in lbs.

Cut liner flush with front surface of collet guide.

Reinstall guide cone, conduit and thumb screw.

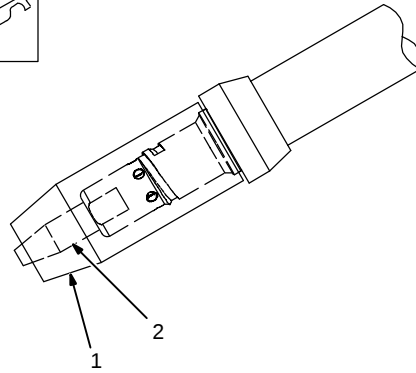


Pistol Grip Gun



Ref. T0024

7-2. Changing Gun Contact Tip



Remove nozzle

1 Nozzle

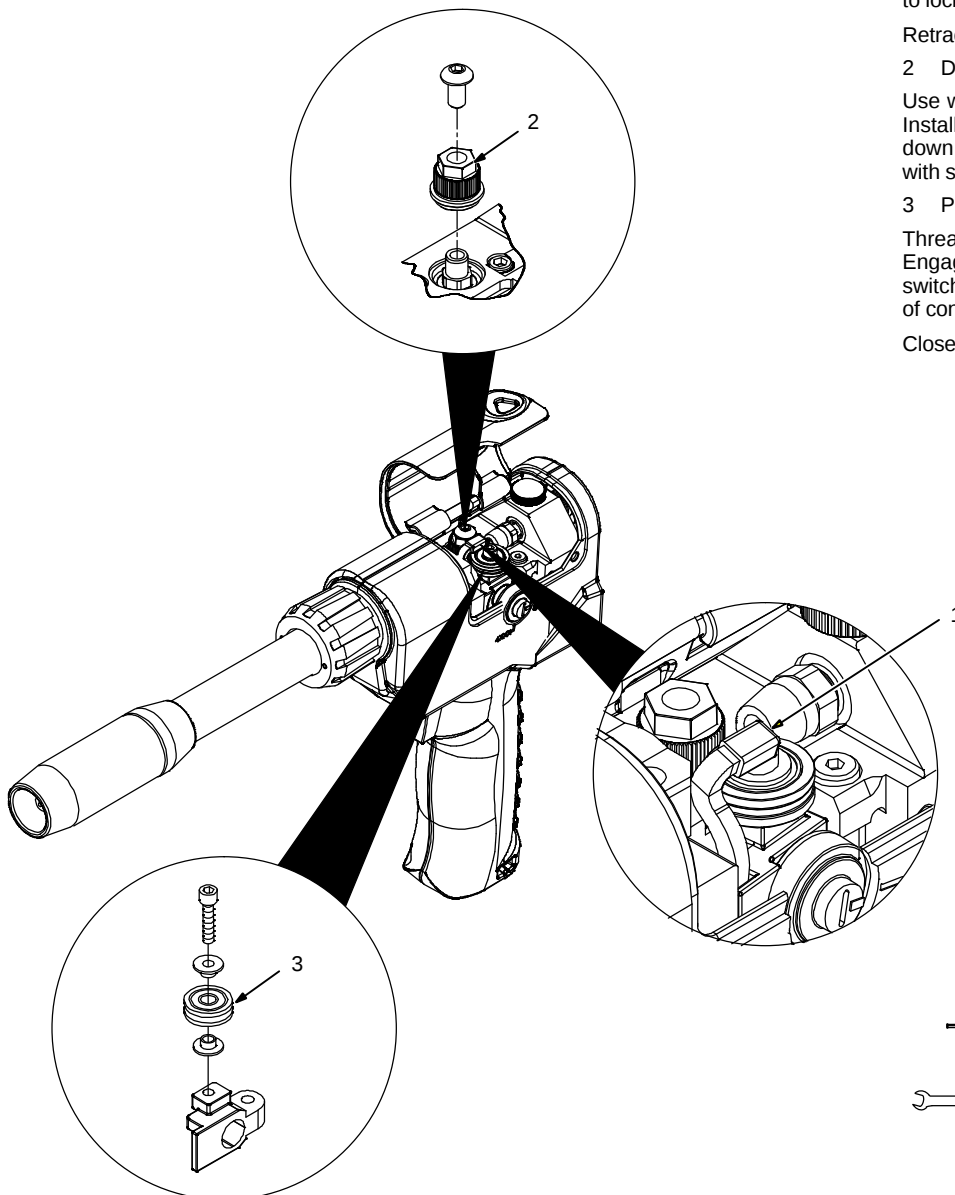
2 FasTip

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

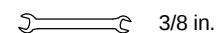
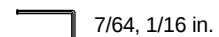
Use wire brush to clean drive roll. Install drive roll with hex opening down toward shaft hex, and secure with screw.

3 Pressure Roll

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

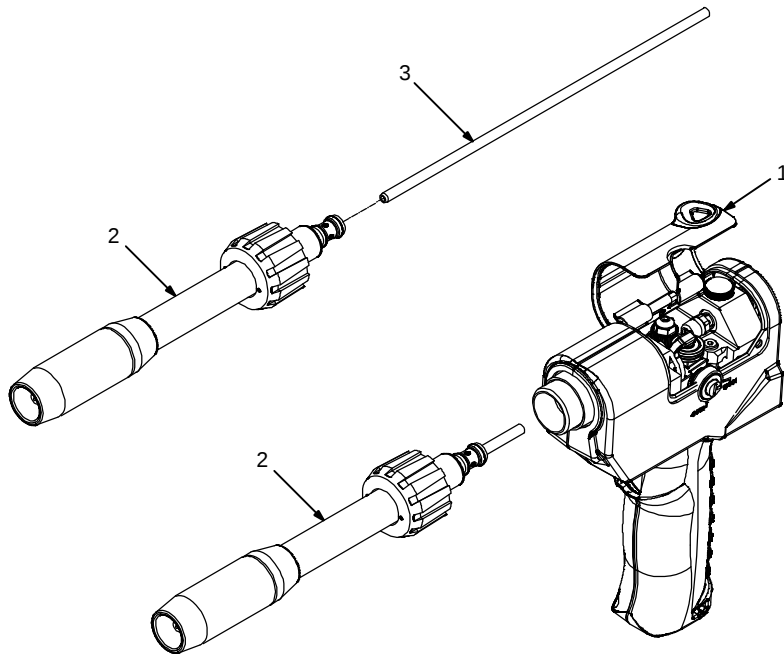
Close top cover.

Tools Needed:



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

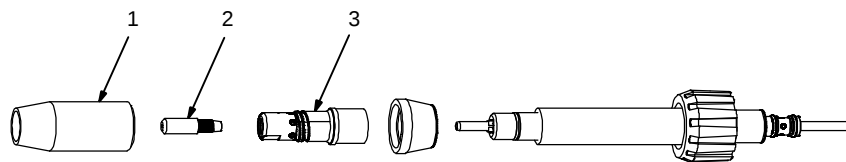
Pull liner out of head tube.

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

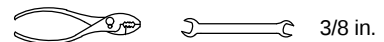
7-5. Removing Diffuser In Air And Water-Cooled Pistol-Grip Guns



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

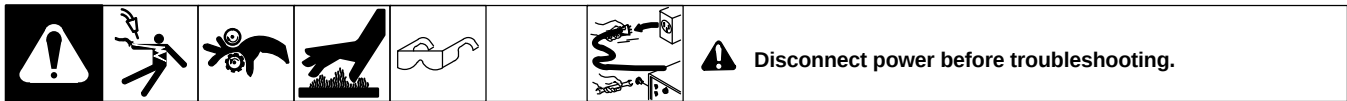
2 FasTip

To remove, see Section 7-2.

3 Diffuser

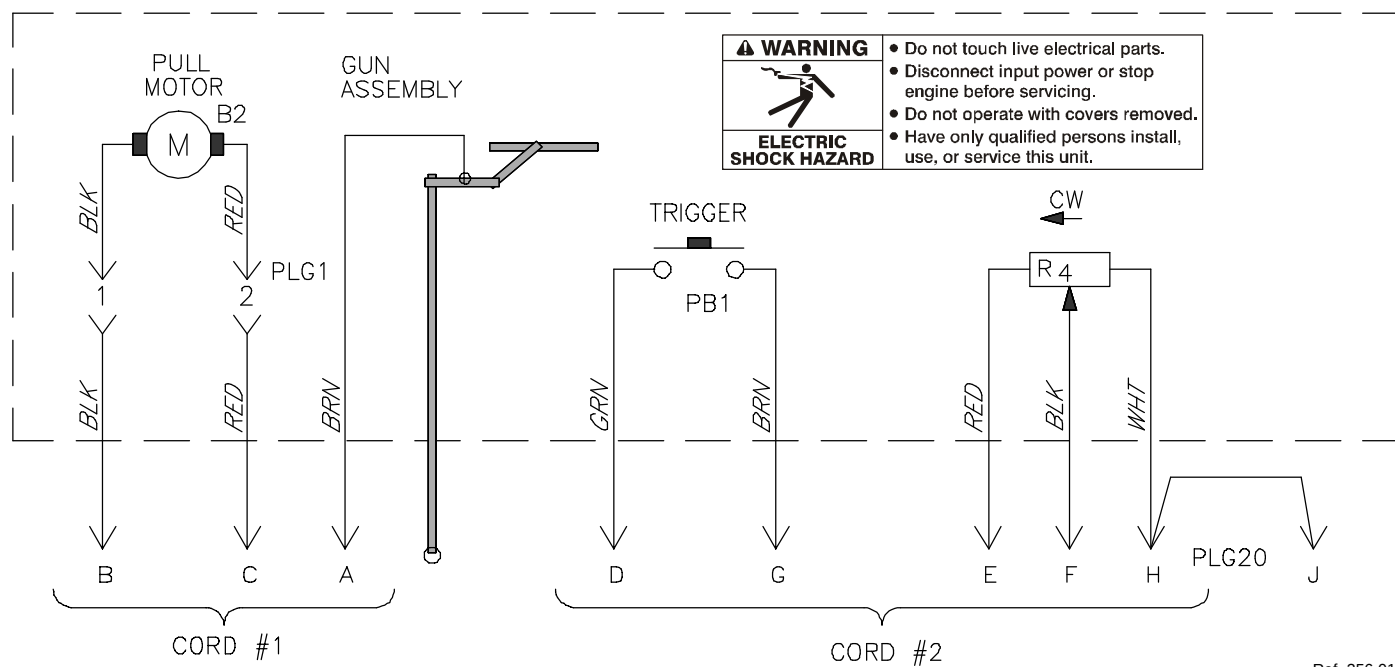
Remove diffuser and replace.

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.

SECTION 8 – ELECTRICAL DIAGRAMS



Ref. 256 014

Figure 8-1. Circuit Diagram For XR Pistol Pro Gun

SECTION 9 – PARTS LIST

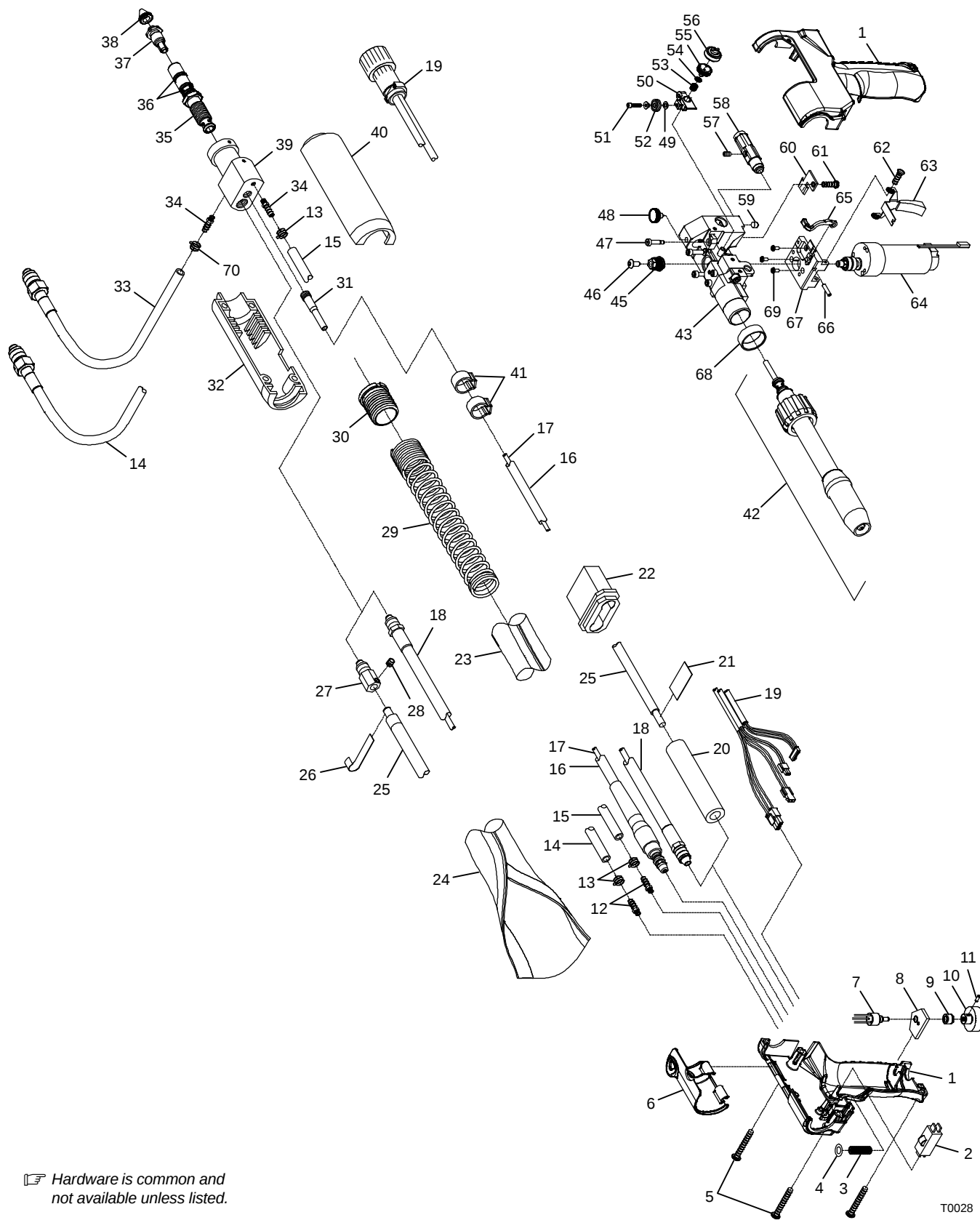


Figure 9-1. Exploded View Of XR - Pistol - Pro Gun

Item No.	Part No.	Description	Quantity
Figure 9-1. Exploded View Of XR - Pistol - Pro Gun			
1	248 332	Case, Gun Pistol Plus/Pro (Molded Halves)	1
2	000 369	Limit Switch 10A	1
3	183 884	Spring, Cprsn .300 Od X .026 Wire X 1.250	1
4	184 101	Washer, Shldr.140ld 0.250Odx.047T .340Odx.078T Nyl	1
5	217 934	Screw, K40x 20 Pan Hd-Trx Stl Pld Pt Thread Forming	3
6	248 333	Pistol Plus/Pro Cover	1
7	200 096	Potentiometer, C Sltd Sft 1/T .5W 10K Ohm	1
8	175 731	Washer, Anti-turn	1
9	135 127	Lock, Shaft Pot .250-32 X .125Dia Shaft	1
10	134 856	Knob, Speed Control 1-10 .140 Shaft X 1.125 Od	1
11	602 169	Screw, Set Stl Sch 8-32 X .187	2
12	135 580	Fitting, Gas	1 A/C, 2 W/C
13	149 332	Clamp, Hose .405 - .485 Clp Dia	2 A/C, 3 W/C
14	191 072	Hose, Water In 15Ft	1
14	248 361	Hose, Water In 25Ft	1
14	248 376	Hose, Water In 35Ft	1
15	191 058	Hose, Gas In 15Ft	1
15	248 356	Hose, Gas In 25Ft	1
15	248 371	Hose, Gas In 35Ft	1
16	M1114	Conduit/Liner Assembly, 15 Ft	1
16	248 357	Conduit/Liner Assembly, 25 Ft	1
16	248 372	Conduit/Liner Assembly, 35 Ft	1
17	M1115	Liner,.175-.180 Od X .120 Id Hi Lube 15' Gun W/Rng	1
17	248 359	Liner,.175-.180 Od X .120 Id Hi Lube 25' Gun W/Rng	1
17	248 375	Liner,.175-.180 Od X .120 Id Hi Lube 35' Gun W/Rng	1
18	191 052	Cable, Power/Water Out 15Ft	1
18	228 696	Cable, Power/Water Out 25Ft	1
18	232 055	Cable, Power/Water Out 35Ft	1
19	M1269	Cable, Control 15Ft - Pistol Pro	1
19	M1245	Cable, Control 25Ft - Pistol Pro	1
19	M1246	Cable, Control 35Ft - Pistol Pro	1
20	235 751	Tubing, Silicone Rbr .500 Id X Spool Black	1
21	235 225	Strip, Cop .010 X 1.500 X .750	1
22	133 362	Strain Relief, Cable (Air)	1
22	238 875	Strain Relief, Molded (Water)	1
23	227 449	Jacket, Cable 2 Ft 4 In (Power Pin)	1
24	236 764	Cable Cover, Leather W/Velcro 15Ft	1
24	248 355	Cable Cover, Leather W/Velcro 25Ft	1
24	248 377	Cable Cover, Leather W/Velcro 35Ft	1
25	235 831	Cable, Power 15Ft (Air) - Pistol Plus	1
25	248 381	Cable, Power 25Ft (Air) - Pistol Plus	1
25	248 386	Cable, Power 35Ft (Air) - Pistol Plus	1
26	152 577	Strip, Copper .010 X 2.000 X .750	1
27	137 495	Fitting, Connection Power Weld	1
28	141 694	Screw, Set 312-18 X .37 Conept Sch Stl Pln	1
29	246 119	Spring, Strain Relief	1
30	203 560	Strain Relief, Spring Retainer	1
31	203 539	Fitting, Liner Double Wound Adapter	1
32	189 812	Housing, Power Pin Rh	1
33	196 177	Hose, Water Out 10 in.	1
34	202 513	Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20	1 A/C, 2 W/C
35	193 896	Pin, Power Assembly	1
36	079 974	O-ring, .500 Id X .103 Cs Rbr	2
37	229 852	Guide, Collet Outlet .030-1/16	1
38	M1102	Guide, Cone Outlet	1
39	187 029	Connector, Power/Gas	1
40	189 811	Housing, Power Pin Lh	1
41	203 557	Clamp, 1-Ear Type Nom Dim .391 X .236 Wide Special	2

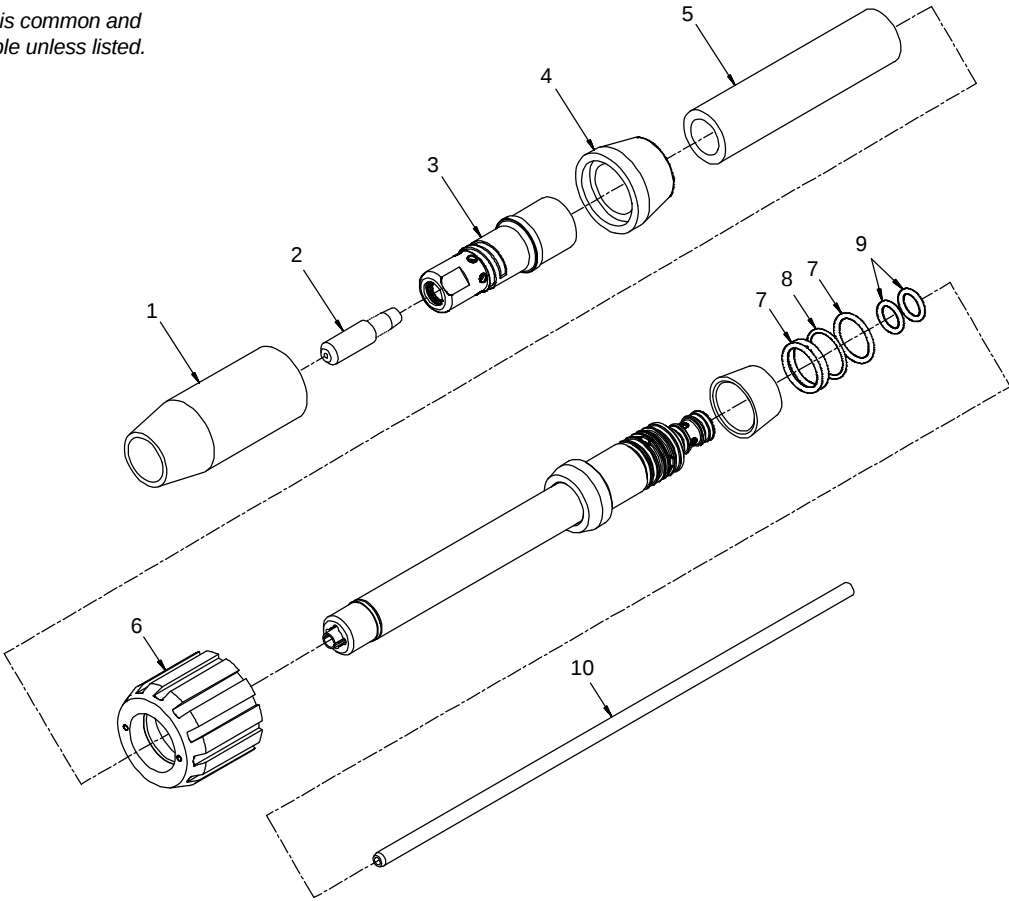
Item No.	Diagram marking	Part No.	Description	Quantity
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Figure 9-1. Exploded View Of XR - Pistol - Pro Gun (Continued)

.. 42	..	M1239	.. A/C Head Tube Assy, 180 Degree	1
.. 42	..	M1254	.. W/C Head Tube Assy, 180 Degree	1
.. 43	..	248 329	.. W/C Pistol Block Assy	1
.. 43	..	248 388	.. A/C Pistol Block Assy	1
.. 44	..	M1154	.. Screw, 008-32 X .625 Soc Hd-Hex Stl Pld Lkg Patch	2
.. 45	..	227 434	.. Drive Roll Knurled	1
.. 46	..	226 588	.. Screw, 010-32 X .37 Btn Hd-Soc Sst Lkg Patch	1
.. 47	..	248 466	.. Screw, 18-8 Hex Socket Shld 6-32 Thread	1
.. 48	..	155 565	.. Screw, Thumb	1
..	..	134 799	.. O-ring, .176 Id X .070 Cs (Used W/Thumbscrew)	1
.. 49	..	134 624	.. Washer Shldr .141 Id 0.187 Od X .094T .375 Od X .031T Nyl	2
.. 50	..	227 435	.. Arm, Pressure (Machined)	1
.. 51	..	231 443	.. Screw, 006-32 X .44 Soc Hd-Hex Grd 8 Pld Lkg Patch	1
.. 52	..	227 439	.. Drive Roll Assy, Idler .645 Od	1
.. 53	..	227 421	.. Spring, Crspn .360 Od X .059 Wire X .440 Free	1
.. 54	..	229 850	.. Washer, Pressure Arm Precision	1
.. 55	..	248 326	.. Knob, Tension Adjust	1
.. 56	..	229 851	.. Nut, Pressure Arm Plastic	1
.. 57	..	005 464	.. Screw, Set 250-20x .37 Ovl Pt Sch Stl Pln Nylok	1
.. 58	..	235 753	.. Ftg, Connection Power Weld	1
.. 59	..	234 971	.. Screw, Set 250-20x .31 Conept Sch Stl W/Nyl Patch (Air)	1
.. 59	..	078 753	.. Screw, Set 250-20x .31 Cup Pt Sch Stl Pln	1
.. 60	..	136 679	.. Clamp, Strain Relief	1
.. 61	..	129 351	.. Screw, 008-32 X .50 Hexwhd .34D W/Spl Gndrng Stl Pld	1
.. 62	..	191 121	.. Screw, 006-32 X .37 Btn Hd-Soc Stl Pld	2
.. 63	..	164 592	.. Trigger	1
.. 64	..	M1223	.. Motor Assembly - Pistol Pro	1
.. 65	..	M1358	.. Lever, Arm Assy Pistol Plus/Pro	1
.. 66	..	M1124	.. Set Screw 6-32 X .625	1
.. 67	..	248 328	.. Motor Top Plate	1
.. 68	..	M1106	.. Pistol Plus Manifold Insulator	1
.. 69	..	227 429	.. Screw, 004-40 X .25 Rnd Hd-Phl Stl Pld Lkkg Patch	3
.. 70	..	089 120	.. Clamp, Hose .375 - .450 Clp Dia Slftng Green	1

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

☞ Hardware is common and not available unless listed.



T0030

Figure 9-2. (Water) Head Tube Assembly Of XR - Pistol - Pro Gun

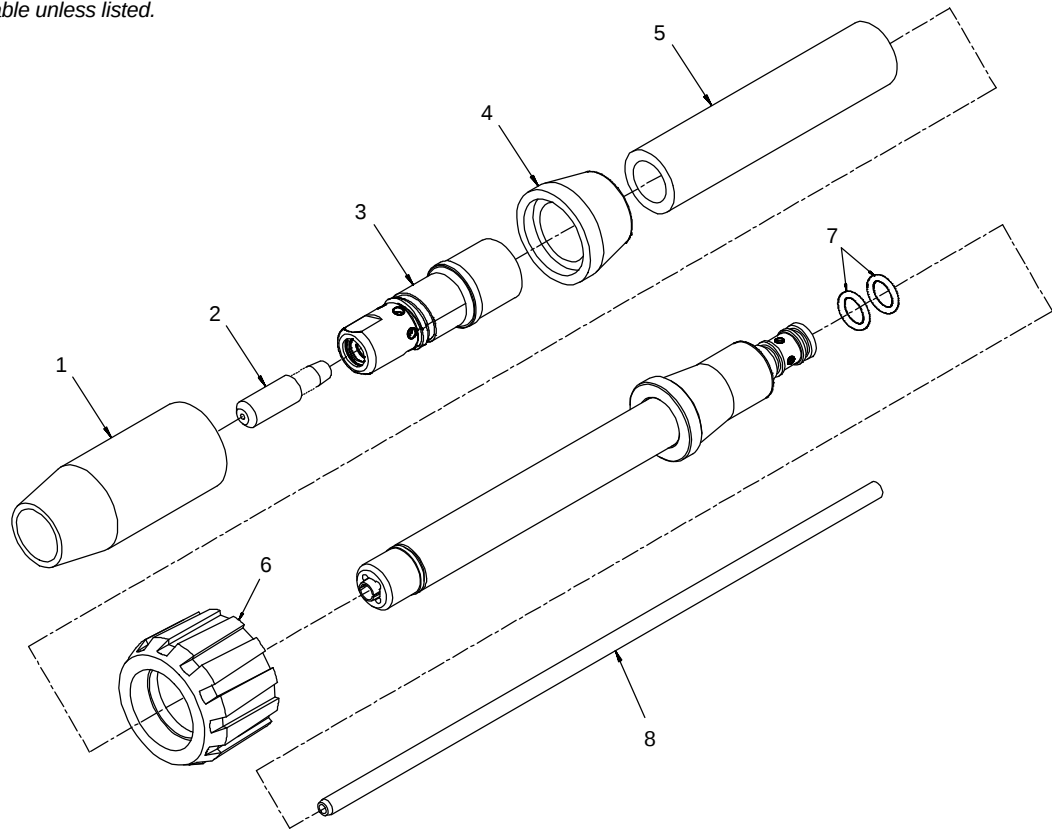
Item No.	Part No.	Description	Quantity
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**Figure 9-2. (Water) Head Tube Assembly Of XR - Pistol - Pro Gun
(Figure 9-1 Item 42)**

...	1	198 855	.. Nozzle, Copper 5/8in. Orifice Tapered	1
...	2	206 189	.. Tip, Fastip .312 Od .052 And 3/64Al Wires	1
...	3	229 670	.. Diffuser, .281/.312 Od Collar Fastip 1/8 Rec Aluma	1
...	4	232 284	.. Insulator, Nozzle Collared	1
...	5	M1369	.. Jacket Outer Insulating W/C Pistol Pro	1
...	6	229 889	.. Nut, Head Tube Rotation Water	1
...	7	194 261	.. O-Ring, .551 Id X .070 Cs 70 Duro Buna-n	3
...	8	210 771	.. O-Ring, 14.99mm Id X 1.27mm Cs 70 Duro Buna-n	1
...	9	191 191	.. O-Ring, .312 Id X .070 Cs 70 Duro Buna-n	2
...	10	M1273	.. Liner, Teflon .047-.062 Wire Pistol Pro	1
...		230 970	.. Kit, Replacement O-Rings Head Tube Water	1

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

 Hardware is common and not available unless listed.



T0029

Figure 9-3. (Air) Head Tube Assembly Of XR - Pistol - Pro Gun

Item No.	Part No.	Description	Quantity
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**Figure 9-3. (Air) Head Tube Assembly Of XR - Pistol - Pro Gun
(Figure 9-1 Item 42)**

... 1	198 855	.. Nozzle, Copper 5/8in. Orifice Tapered	1
... 2	206 189	.. Tip, Fastip .312 Od .052 And 3/64Al Wires	1
... 3	229 670	.. Diffuser, .281/.312 Od Collar Fastip 1/8 Rec Aluma	1
... 4	232 284	.. Insulator, Nozzle Collared	1
... 5	M1366	.. Jacket Outer Insulating A/C Pistol Pro	1
... 6	227 168	.. Nut, Head Tube Rotation	1
... 7	191 191	.. O-Ring, .312 Id X .070 Cs 70 Duro Buna-n	2
... 8	M1273	.. Liner, Teflon .047-.062 Wire Pistol Pro	1
...	230 969	.. Kit, Replacement O-Rings Head Tube Air	1

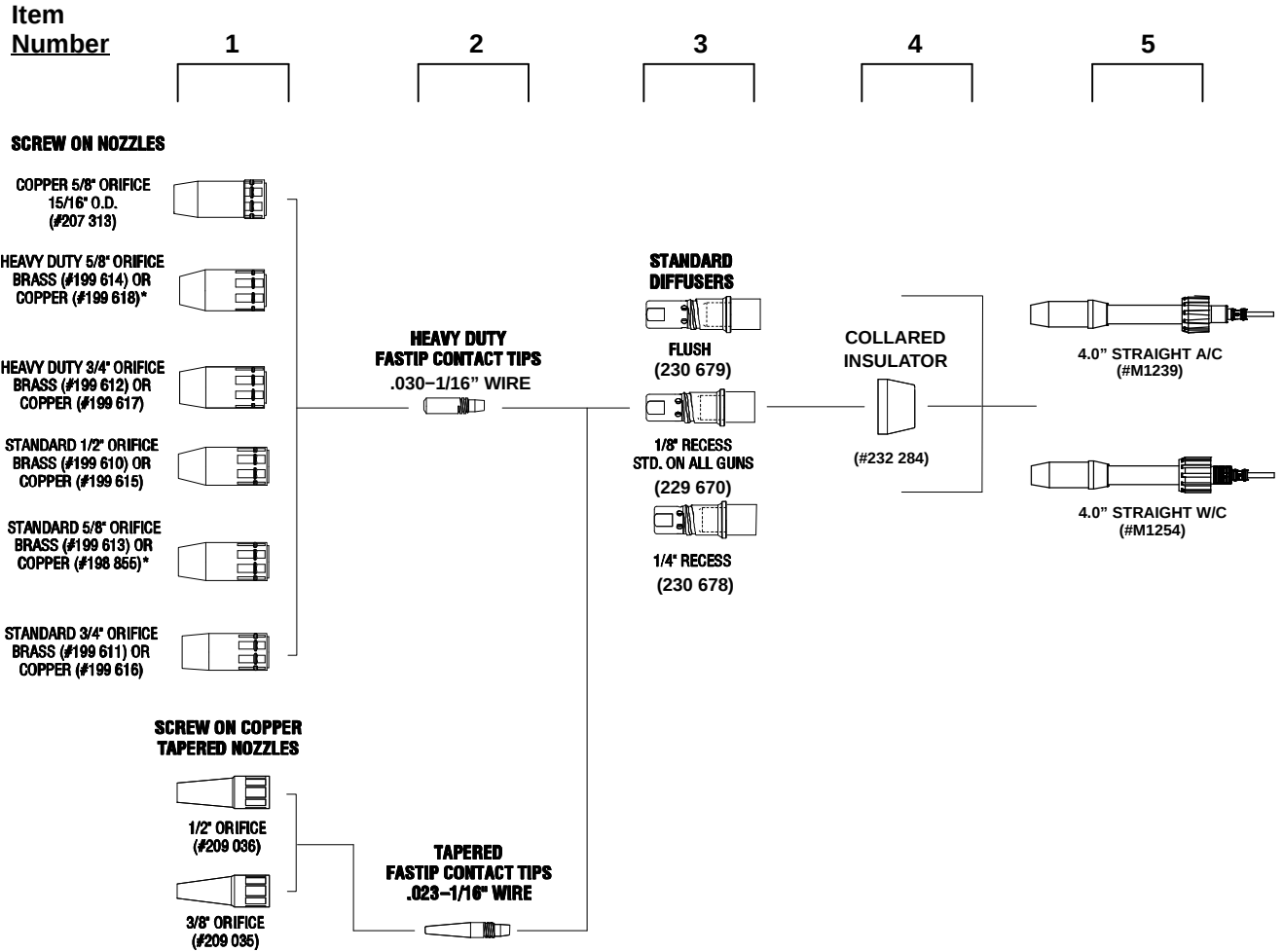
To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

Notes

DECIMAL EQUIVALENTS

	$\frac{1}{64}$	.015625
	$\frac{1}{32}$	.03125
	$\frac{3}{64}$	.046875
$\frac{1}{16}$	$\frac{5}{64}$	.0625
	$\frac{7}{64}$	.078125
$\frac{3}{32}$	$\frac{9}{64}$	.09375
	$\frac{11}{64}$	.109375
$\frac{1}{8}$	$\frac{13}{64}$	.125
	$\frac{15}{64}$	.140625
$\frac{5}{32}$	$\frac{17}{64}$	.15625
	$\frac{19}{64}$	.171875
$\frac{3}{16}$	$\frac{21}{64}$	.1875
	$\frac{23}{64}$	.203125
$\frac{7}{32}$	$\frac{25}{64}$	.21875
	$\frac{27}{64}$	.234375
$\frac{1}{4}$	$\frac{29}{64}$	.25
	$\frac{31}{64}$	.265625
$\frac{9}{32}$	$\frac{33}{64}$	.28125
	$\frac{35}{64}$	.296875
$\frac{5}{16}$	$\frac{37}{64}$	.3125
	$\frac{39}{64}$	.328125
$\frac{11}{32}$	$\frac{41}{64}$	.34375
	$\frac{43}{64}$	.359375
$\frac{3}{8}$	$\frac{45}{64}$	.375
	$\frac{47}{64}$	.390625
$\frac{13}{32}$	$\frac{49}{64}$	.40625
	$\frac{51}{64}$	.421875
$\frac{7}{16}$	$\frac{53}{64}$	.4375
	$\frac{55}{64}$	.453125
$\frac{15}{32}$	$\frac{57}{64}$	.46875
	$\frac{59}{64}$	.484375
$\frac{1}{2}$	$\frac{61}{64}$	.5
	$\frac{63}{64}$	.515625
$\frac{17}{32}$		.53125
		.546875
$\frac{9}{16}$		.5625
		.578125
$\frac{19}{32}$		.59375
		.609375
$\frac{5}{8}$		.625
		.640625
$\frac{21}{32}$		.65625
		.671875
$\frac{11}{16}$		.6875
		.703125
$\frac{23}{32}$		.71875
		.734375
$\frac{3}{4}$		.75
		.765625
$\frac{25}{32}$		.78125
		.796875
$\frac{13}{16}$		.8125
		.828125
$\frac{27}{32}$		.84375
		.859375
$\frac{7}{8}$		.875
		.890625
$\frac{29}{32}$		.90625
		.921875
$\frac{15}{16}$		.9375
		.953125
$\frac{31}{32}$		.96875
		.984375
1		1.

SECTION 10 – PARTS LIST INCLUDING CONSUMABLES



Ref. T0031

Figure 10-1. Consumables Flowchart

Item No.	Part No.	Description	Quantity
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Consumables Flowchart

Table 10-1. Nozzles

... 1	◆199 610	.. Nozzle, Screw On Brass 1/2 In. Orifice	1
... 1	◆199 611	.. Nozzle, Screw On Brass 3/4 In. Orifice Straight	1
... 1	◆199 612	.. Nozzle, Screw On Brass 3/4 In. Orifice Straight Heavy Duty	1
... 1	◆199 613	.. Nozzle, Screw On Brass 5/8 In. Orifice	1
... 1	◆199 614	.. Nozzle, Screw On Brass 5/8 In. Orifice Heavy Duty	1
... 1	◆199 615	.. Nozzle, Screw On Copper 1/2 In. Orifice	1
... 1	◆199 616	.. Nozzle, Screw On Copper 3/4 In. Orifice	1
... 1	◆199 617	.. Nozzle, Screw On Copper 3/4 In. Orifice Heavy Duty	1
... 1	198 855	.. Nozzle, Screw On Copper 5/8 In. Orifice	1
... 1	199 618	.. Nozzle, Screw On Copper 5/8 In. Orifice Heavy Duty	1
... 1	◆207 313	.. Nozzle, Screw On Copper 5/8 In. Orifice 15/16 OD	1
... 1	◆209 035	.. Nozzle, Screw On Copper 3/8 In. Orifice Tapered (Requires Diffuser 229 670, 230 678 Or 230 679, Used With Any Tapered FasTip™ Contact Tip)	1
... 1	◆209 036	.. Nozzle, Screw On Copper 1/2 In. Orifice Tapered (Requires Diffuser 229 670, 230 678 Or 230 679, Used With Any Tapered FasTip™ Contact Tip)	1

Item No.	Part No.	Description	Quantity
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Consumables Flowchart (Continued)

Table 10-2. Heavy Duty FasTip™ Contact Tips*

... 2	♦206 185	.. .030 in. (0.8 mm)	1
... 2	♦206 186	.. .035 in. (0.9 mm)	1
... 2	♦206 187	.. .040 in. (1.0 mm) or .035 in (0.9 mm) Aluminum Wire	1
... 2	206 188	.. .045 in. (1.2 mm)	1
... 2	♦206 189	.. .052 in. (1.3 mm) or 3/64 in (1.2 mm) Aluminum Wire	1
... 2	206 190	.. 1/16 in. (1.6 mm)	1
... 2	♦206 191	.. .068 in. (1.7 mm) or 1/16 in (1.6 mm) Aluminum Wire	1

Table 10-2. Tapered FasTip™ Contact Tips*

... 2	♦209025	.. .030 in. (0.8 mm)	1
... 2	♦209026	.. .035 in. (0.9 mm)	1
... 2	♦209027	.. .045 in. (1.2 mm)	1
... 2	♦209028	.. 3/64 in. (1.2 mm)	1
... 2	♦209029	.. .052 in. (1.3 mm)	1
... 2	♦209030	.. 1/16 in. (1.6 mm)	1

Table 10-3. Gas Diffusers

... 3	229 670	.. 1/8 in. Tip Recess – For Heavy Duty FasTip Contact Tips (Standard On All Guns)	1
... 3	♦230 678	.. 1/4 in. Tip Recess – For Heavy Duty FasTip Contact Tips	1
... 3	♦230 679	.. Flush Tip – For Heavy Duty FasTip Contact Tips	1

Table 10-4. Insulators

... 4	232 284	.. Insulator, Nozzle Collared Diffuser	1
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Table 10-5. Barrel Assemblies

... 5	M1239	.. Head Tube, AP/PP, 180 Deg 4 In. Air	1
... 5	M1254	.. Head Tube, AP/PP, 180 Deg 4 In. Water	1

Head Tube Assemblies

...	255 716	.. Kit, Head Tube Assy (A) AP/PP 180Deg 4In.	1
...	255 717	.. Kit, Head Tube Assy (W) AP/PP 180Deg 4In.	1

Wire Kit (Not Shown)

...	♦230 708	.. Kit, Idler Roll 1/16 (.062)	1
...	♦198 377	.. Hardwire Liner Kit, 30W For Steel&Stainless	1

♦OPTIONAL

*All contact tips are packaged in bags of 25.

BE SURE TO PROVIDE MODEL WHEN ORDERING REPLACEMENT PARTS.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model is required when ordering parts from your local distributor.

Notes

TRUE BLUE[®]

WARRANTY

Effective January 1, 2012

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

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

Warranty Questions?

Call
1-800-4-A-MILLER
for your local
Miller distributor.

Your distributor also gives
you ...

Service

You always get the fast,
reliable response you
need. Most replacement
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. 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 delivery date of the equipment to the original end-user purchaser, and not to exceed one year after the equipment is shipped to a North American distributor or eighteen months after the equipment is shipped to an International distributor.

1. 5 Years Parts — 3 Years Labor
 - * Original Main Power Rectifiers Only to Include SCRs, Diodes, and Discrete Rectifier Modules
2. 3 Years — Parts and Labor
 - * Engine Driven Welding Generators
(NOTE: Engines are Warranted Separately by the Engine Manufacturer.)
 - * Inverter Power Sources (Unless Otherwise Stated)
 - * Plasma Arc Cutting Power Sources
 - * Process Controllers
 - * Semi-Automatic and Automatic Wire Feeders
 - * Smith 30 Series Flowgauge and Flowmeter Regulators (No Labor)
 - * Transformer/Rectifier Power Sources
 - * Water Coolant Systems (Integrated)
3. 2 Years — Parts
 - * Auto-Darkening Helmet Lenses (No Labor)
4. 1 Year — Parts and Labor Unless Specified
 - * Automatic Motion Devices
 - * CoolBelt and CoolBand Blower Unit (No Labor)
 - * External Monitoring Equipment and Sensors
 - * 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.)
 - * Flowgauge and Flowmeter Regulators (No Labor)
 - * RFCS Foot Controls (Except RFCS-RJ45)
 - * Fume Extractors
 - * HF Units
 - * ICE/XT Plasma Cutting Torches (No Labor)
 - * Induction Heating Power Sources, Coolers
(NOTE: Digital Recorders are Warranted Separately by the Manufacturer.)
 - * Load Banks
 - * Motor Driven Guns (w/exception of Spoolmate Spoolguns)
 - * PAPR Blower Unit (No Labor)
 - * Positioners and Controllers
 - * Racks
 - * Running Gear/Trailers
 - * Spot Welders
 - * Subarc Wire Drive Assemblies
 - * Water Coolant Systems (Non-Integrated)
 - * Weldcraft-Branded TIG Torches (No Labor)
 - * Wireless Remote Foot/Hand Controls and Receivers
 - * Work Stations/Weld Tables (No Labor)
5. 6 Months — Parts
 - * Batteries
 - * Bernard Guns (No Labor)
 - * Tregaskiss Guns (No Labor)

6. 90 Days — Parts
 - * Accessory (Kits)
 - * Canvas Covers
 - * Induction Heating Coils and Blankets, Cables, and Non-Electronic Controls
 - * M-Guns
 - * MIG Guns and Subarc (SAW) Guns
 - * Remote Controls and RFCS-RJ45
 - * Replacement Parts (No labor)
 - * Roughneck Guns
 - * 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.

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.





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

