TM-1594E 2007–03

Eff. w/Serial Number KK082113

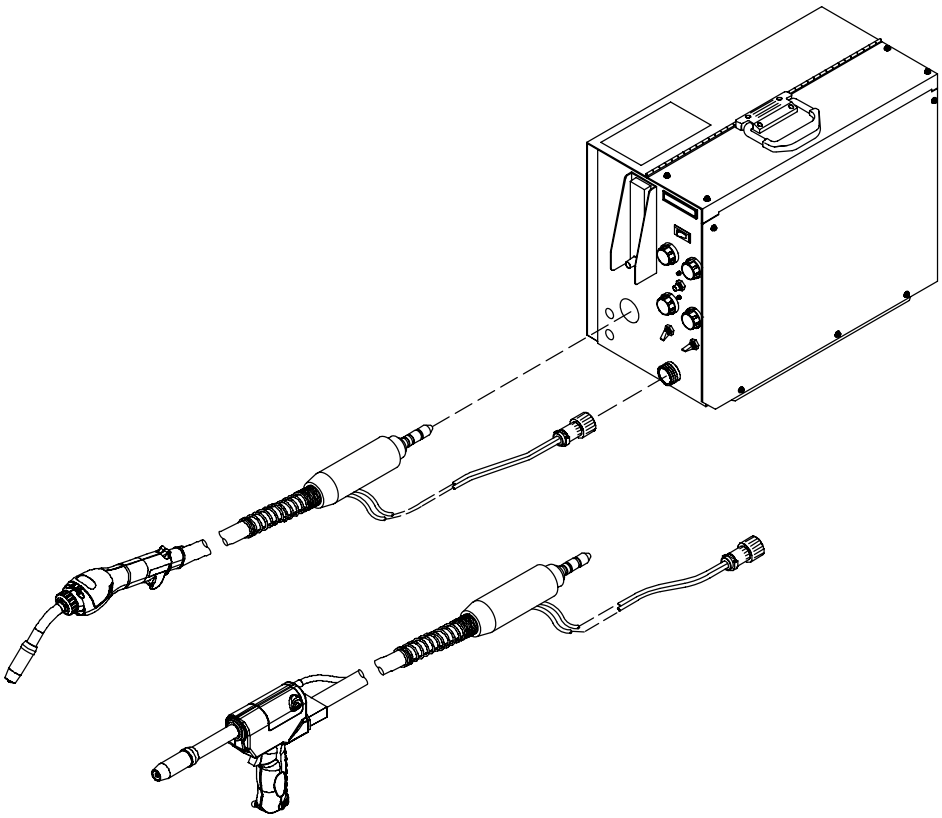
Processes

MIG (GMAW) Welding

Description

Wire Feeder And Feeder Gun

XR™ Control
XR™ Air- And Water-Cooled Guns



TECHNICAL MANUAL

File: MIG (GMAW)

Visit our website at

www.MillerWelds.com

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Declaration of Conformity for European Community (CE) Products

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

Manufacturer:

Miller Electric Mg. Co.
1635 W. Spencer St.
Appleton, WI 54914 USA
Phone: (920) 734-9821

European Contact:

Mr. Danilo Fedolfi,
Managing Director
ITW Welding Products Italy S.r.l.
Via Privata Iseo 6/E
20098 San Giuliano
Milanese, Italy
Phone: 39(02)98290-1
Fax: 39(02)98290203

European Contact Signature: _____

Declares that the product: **XR-Control**

conforms to the following Directives and Standards:

Directives

Low Voltage Directive: 73/23/EEC

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

Machinery Directives: 98/37/EEC, 91/368/EEC, 92/31/EEC, 133/04, 93/68/EEC

Standards

Arc Welding Equipment – Part 5: Wire Feeders. IEC 60974-5 Ed. 1

Arc Welding Equipment – Part 10: Electromagnetic Compatibility (EMC) Requirements. IEC 60974-10 August 2002

Arc Welding Equipment – Part 1: Welding Power Sources. IEC 60974-1 Ed. 2.1

Degrees Of Protection Provided By Enclosure (IP Code) IEC 60529 Ed. 2.1

Insulation Coordination For Equipment Within Low-Voltage Systems – Part 1: Principles, Requirements and Tests: IEC 60664-1 Ed. 1.1

Arc Welding Equipment – Part 7: Torches. IC 60974-7 Ed.1

The product technical file is maintained by the responsible Business Unit(s) located at the manufacturing facility.

SECTION 1 – SAFETY PRECAUTIONS FOR SERVICING

▲ **Warning: Protect yourself and others from injury — read and follow these precautions.**

1-1. Symbol Usage

OM-1594-AF___ - Date, safety_stm 3/06

Means Warning! Watch Out! There are possible hazards with this procedure! The possible hazards are shown in the adjoining symbols.

▲ **Marks a special safety message.**

☞ *Means "Note"; not safety related.*

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

1-2. Servicing 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.**

▲ **Only qualified persons should service, test, maintain, and repair this unit.**

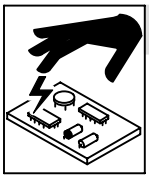
▲ **During servicing, keep everybody, especially children, away.**

ELECTRIC SHOCK can kill.

- Do not touch live electrical parts.
- Turn Off welding power source and wire feeder and disconnect and lockout input power using line disconnect switch, circuit breakers, or by removing plug from receptacle, or stop engine before servicing unless the procedure specifically requires an energized unit.
- Insulate yourself from ground by standing or working on dry insulating mats big enough to prevent contact with the ground.
- Do not leave live unit unattended.
- If this procedure requires an energized unit, have only personnel familiar with and following standard safety practices do the job.
- When testing a live unit, use the one-hand method. Do not put both hands inside unit. Keep one hand free.
- Disconnect input power conductors from deenergized supply line BEFORE moving a welding power source.

SIGNIFICANT DC VOLTAGE exists after removal of input power on inverters.

- Turn Off inverter, disconnect input power, and discharge input capacitors according to instructions in Troubleshooting Section before touching any parts.

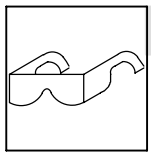


STATIC (ESD) can damage PC boards.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.

FIRE OR EXPLOSION hazard.

- Do not place unit on, over, or near combustible surfaces.
- Do not service unit near flammables.

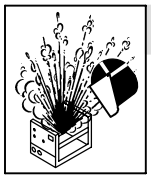


FLYING METAL or DIRT can injure eyes.

- Wear safety glasses with side shields or face shield during servicing.
- Be careful not to short metal tools, parts, or wires together during testing and servicing.

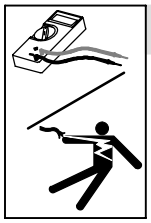
HOT PARTS can cause severe burns.

- Do not touch hot parts bare handed.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.



EXPLODING PARTS can cause injury.

- Failed parts can explode or cause other parts to explode when power is applied to inverters.
- Always wear a face shield and long sleeves when servicing inverters.



SHOCK HAZARD from testing.

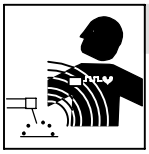
- Turn Off welding power source and wire feeder or stop engine before making or changing meter lead connections.
- Use at least one meter lead that has a self-retaining spring clip such as an alligator clip.
- Read instructions for test equipment.

FALLING UNIT can cause injury.

- Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.

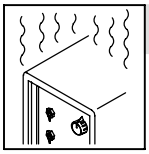
MOVING PARTS can cause injury.

- Keep away from moving parts such as fans.
- Keep away from pinch points such as drive rolls.
- Have only qualified persons remove doors, panels, covers, or guards for maintenance as necessary.
- Keep hands, hair, loose clothing, and tools away from moving parts.
- Reinstall doors, panels, covers, or guards when maintenance is finished and before reconnecting input power.



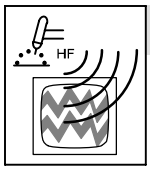
MAGNETIC FIELDS can affect pacemakers.

- Pacemaker wearers keep away from servicing areas until consulting your doctor.



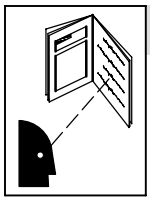
OVERUSE can cause OVERHEATING.

- Allow cooling period; follow rated duty cycle.
- Reduce current or reduce duty cycle before starting to weld again.
- Do not block or filter airflow to unit.



H.F. RADIATION can cause interference.

- High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment.
- Have only qualified persons familiar with electronic equipment install, test, and service H.F. producing units.
- The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
- If notified by the FCC about interference, stop using the equipment at once.
- Have the installation regularly checked and maintained.
- Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.



READ INSTRUCTIONS.

- Use Testing Booklet (Part No. 150 853) when servicing this unit.
- Consult the Owner's Manual for welding safety precautions.
- Use only genuine replacement parts from the manufacturer.

1-3. California 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.)**

▲ **Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.**

For Gasoline Engines:

▲ **Engine exhaust contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.**

For Diesel Engines:

▲ **Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.**

1-4. EMF Information

Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields

Welding current, as it flows through welding cables, will cause electromagnetic fields. There has been and still is some concern about such fields. However, after examining more than 500 studies spanning 17 years of research, a special blue ribbon committee of the National Research Council concluded that: "The body of evidence, in the committee's judgment, has not demonstrated that exposure to power-frequency electric and magnetic fields is a human-health hazard." However, studies are still going forth and evidence continues to be examined. Until the final conclusions of the research are reached, you may wish to minimize your exposure to electromagnetic fields when welding or cutting.

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.
4. Keep welding power source and cables as far away from operator as practical.
5. Connect work clamp to workpiece as close to the weld as possible.

About Pacemakers:

Pacemaker wearers consult your doctor before welding or going near welding operations. If cleared by your doctor, then following the above procedures is recommended.

SECTION 2 – DEFINITIONS

2-1. Warning Label Definitions

A. Warning! Watch Out! There are possible hazards as shown by the symbols.

B. Drive rolls can injure fingers.

C. Welding wire and drive parts are at welding voltage during operation – keep hands and metal objects clear.

1 Electric shock can kill.

1.1 Wear dry insulating gloves. Do not touch electrode with bare hand. Do not wear wet or damaged gloves.

1.2 Protect yourself from electric shock by insulating yourself from work and ground.

1.3 Disconnect input plug or power before working on machine.

2 Breathing welding fumes can be hazardous to your health.

2.1 Keep your head out of the fumes.

2.2 Use forced ventilation or local exhaust to remove the fumes.

2.3 Use ventilating fan to remove fumes.

3 Welding sparks can cause explosion or fire.

3.1 Keep flammables away from welding. Don't weld near flammables.

3.2 Welding sparks can cause fires. Have a fire extinguisher nearby and have a watch person ready to use it.

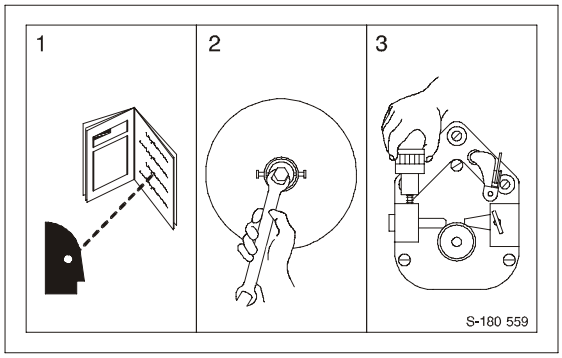
3.3 Do not weld on drums or any closed containers.

4 Arc rays can burn eyes and injure skin.

4.1 Wear hat and safety glasses. Use ear protection and button shirt collar. Use welding helmet with correct shade of filter. Wear complete body protection.

5 Become trained and read the instructions before working on the machine or welding.

6 Do not remove or paint over (cover) the label.

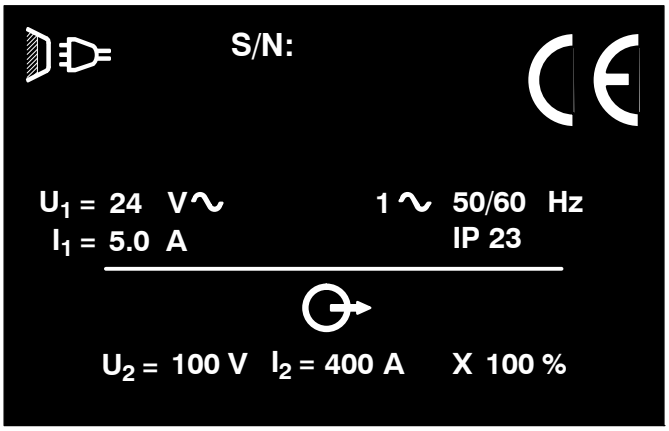


1 Read the Owner's Manual.

2 Do not overtighten wire spool brake pressure. Tighten only until wire does not overspool from wire supply spool.

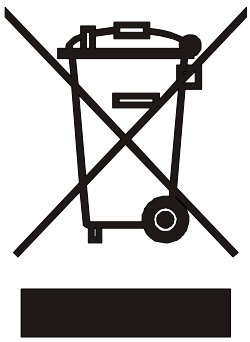
3 Do not overtighten drive roll pressure. Tighten only until drive roll will not slip (motor will not stall) on a stationary wire.

2-2. Rating Label For CE Products



ST-178 794-A

2-3. WEEE Label



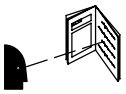
Do not discard this product with general waste.

Reuse or recycle Waste Electrical and Electronic Equipment (WEEE) by disposing at a designated collection facility.

Contact your local recycling office or your local distributor for further information.

2-4. Symbols And Definitions

Note ☞ *Some symbols are found only on CE products.*

A	Amperes	V	Volts	~	Alternating Current	X	Duty Cycle
IP	Degree Of Protection	Hz	Hertz		Circuit Breaker		Wire Feed
	Jog		Output		Trigger		Gun
	Press To Set		Increase		Trigger Hold On		Trigger Hold Off
	Purge	••••t	Spot Weld Time	%	Percent		Run-In
t	Burnback Time	U_1	Primary Voltage	U_2	Load Voltage		Read Instructions
I_1	Primary Current	I_2	Rated Current		Line Connection		Water (Coolant) In-put
	Water (Coolant) Output		Fuse		Continuous Spot Welding		

SECTION 3 – INTRODUCTION

3-1. Specifications

Type of Input Power	Welding Power Source Type	Wire Feed Speed Range	Wire Diameter Range	Welding Circuit Rating	Overall Dimensions	Weight
24 Volts AC Single-Phase 5 Amperes 50/60 Hertz	Constant Voltage (CV) DC For GMAW Or Constant Voltage(CV) / Constant Current (CC) DC For GMAW-P All Need 14-Pin And Contactor Control	70 To 875 ipm (1.8 To 22.2 mpm)	.030 To .062 in (0.8 To 1.6 mm) Max Spool Capacity: 12 in (305 mm)	All Models: 100% Duty Cycle, 100 Volts; Water-Cooled Models: 400 Amperes, Air-Cooled Models: 200 Amperes	Length: 21-1/4 in (540 mm) Width: 9-1/2 in (241 mm) Height: 16 in (406 mm)	38 lb (17.2 kg)

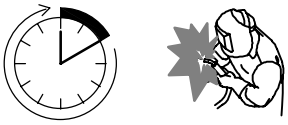
3-2. Duty Cycle And Overheating

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

▲ **Exceeding duty cycle can damage unit and void warranty.**

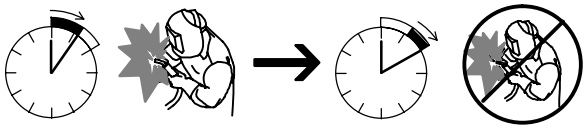
Air-Cooled Models

100% Duty Cycle At 200 Amperes Using Argon



Continuous Welding

60% Duty Cycle At 250 Amperes Using Argon

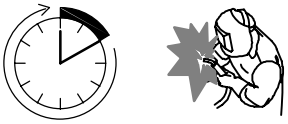


6 Minutes Welding

4 Minutes Resting

Water-Cooled Models

100% Duty Cycle At 400 Amperes Using Argon



Continuous Welding

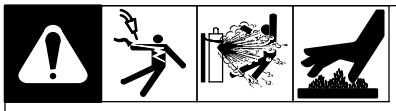
sduty1 5/95

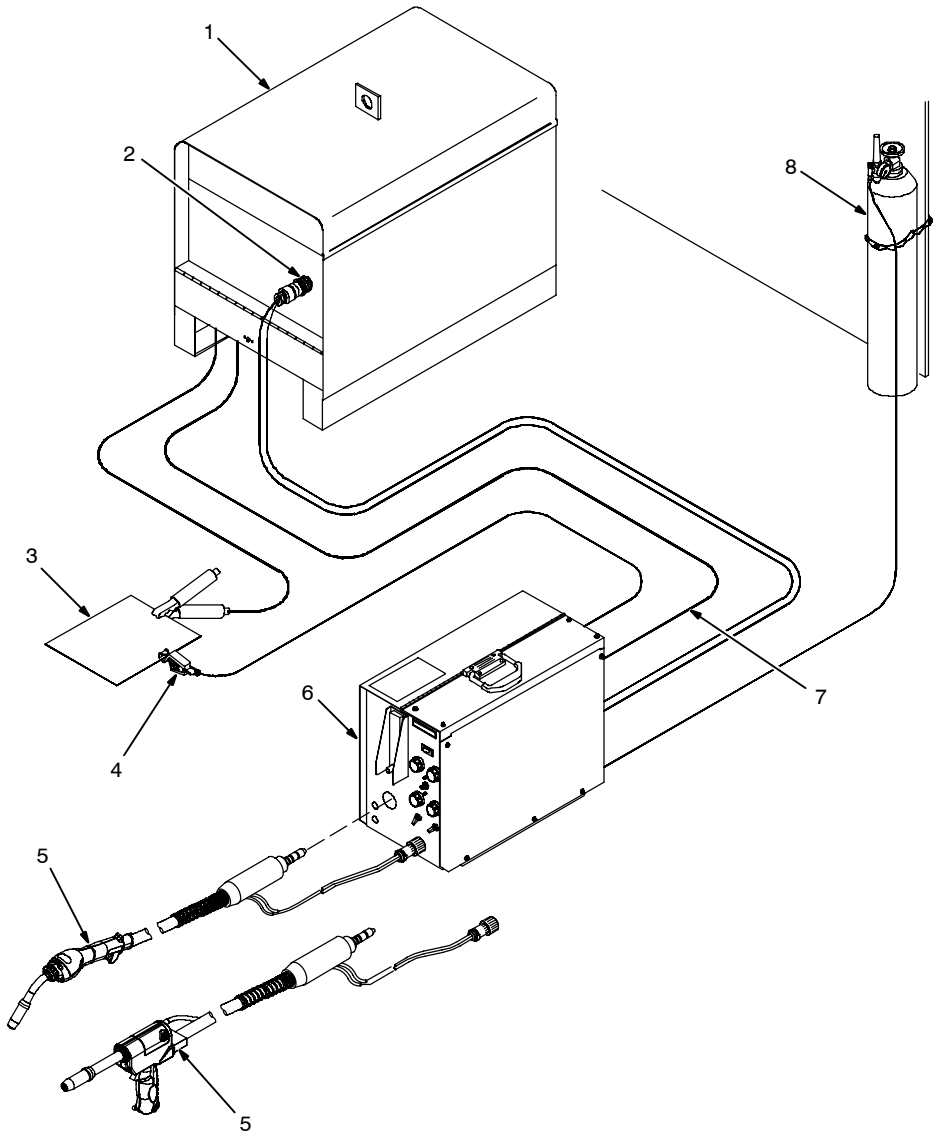
SECTION 4 – INSTALLATION

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

NOTE ☞	*Many procedures apply to both guns covered in this manual. Where procedures differ, separate instructions are given.*

4-1. Connections With A Constant Current (CC), Constant Voltage (CV) Or Constant Current/Constant Voltage (CC/CV) Welding Power Source Having A 14-Socket Receptacle





1 CC, CV Or CC/CV Welding Power Source

2 24 VAC/Contactor Control 14-Pin Plug

3 Workpiece

4 Voltage Sensing Lead (Optional)

Connect lead to workpiece for CC welding only.

5 Gun

6 Wire Feeder

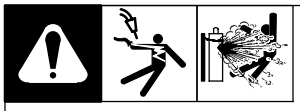
7 24 VAC/Contactor Control Cord

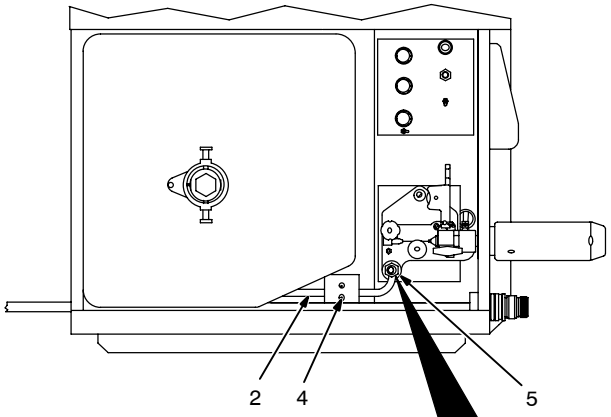
8 Gas Cylinder

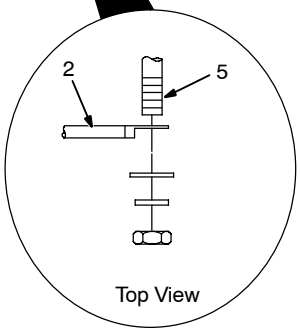
☞ *Shielding gas pressure not to exceed 100 psi (689 kPa).*

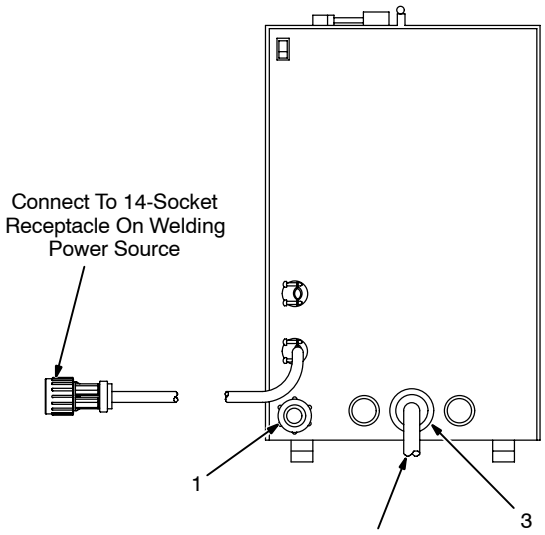
801 559-D / Ref. 151 666-G

4-2. Air-Cooled Feeder Connections









1 Gas Fitting

Route one end of 10 ft (3 m) gas hose to rear of unit, and connect hose to gas solenoid fitting. Connect remaining end of hose to regulator/flowmeter.

2 Weld Cable To Welding Power Source

Select and prepare weld cable according to welding power source manual.

3 Weld Cable Grommet

4 Current Sensing (Reed) Relay

5 Weld Cable Terminal In Feeder

Route one end of weld cable through grommet, through reed relay, and connect to weld cable terminal in feeder. Connect remaining end of cable to positive (+) weld output terminal on welding power source.

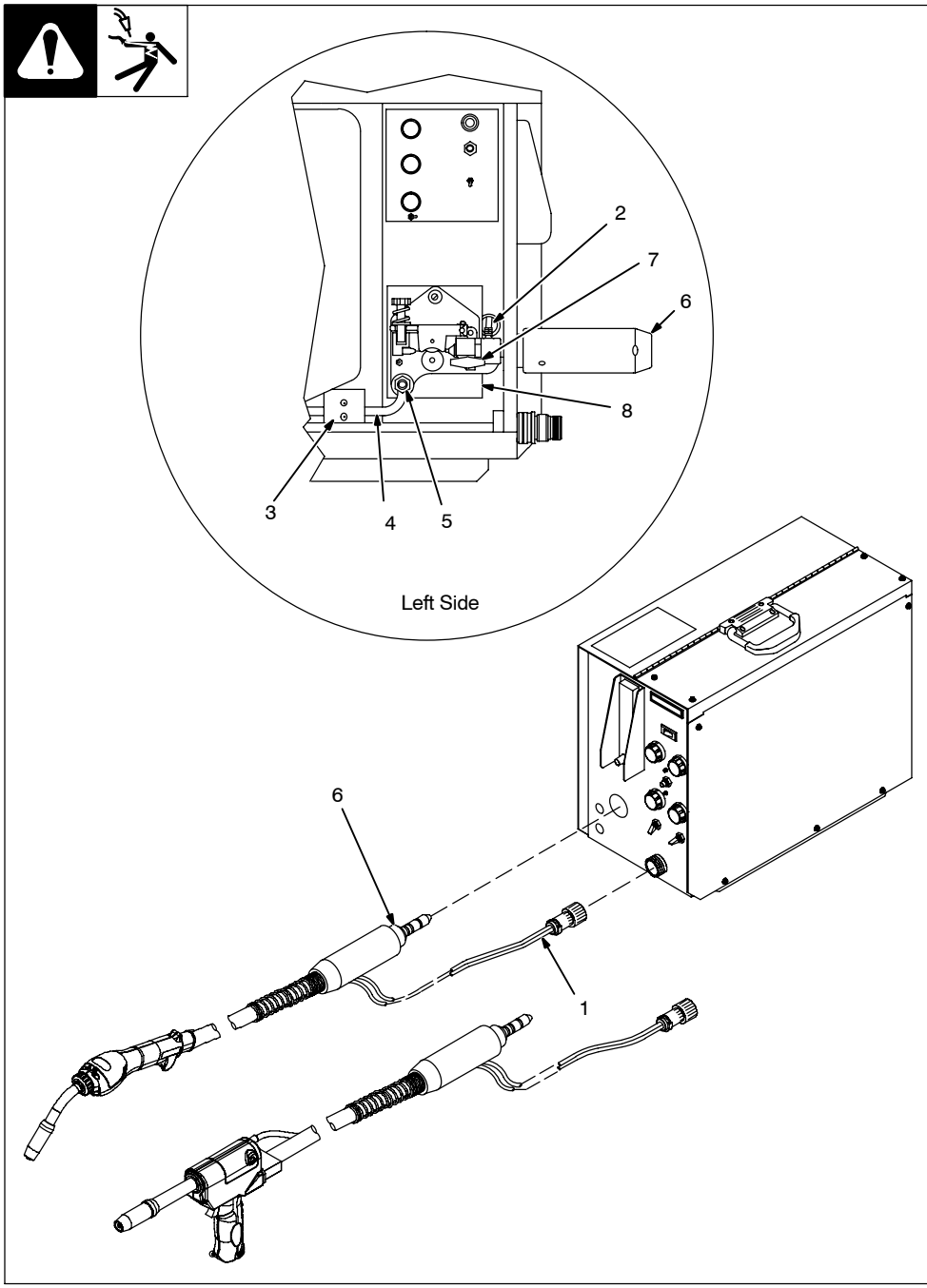
Close and latch door.

Tools Needed:

9/16 in

Ref. 801 578-A

4-3. Air-Cooled Gun Connections



1 Gun Control Cable

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

2 Gas Hose

3 Reed Relay

4 Weld Cable

5 Weld Cable Terminal In Feeder

Route weld cable from welding power source through reed relay to weld cable terminal in feeder and connect to weld cable terminal.

6 Gun Connector

7 Gun Securing Knob

8 Gun Connector Block

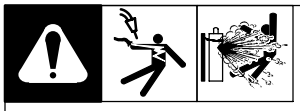
Loosen gun securing knob, and insert gun connector through Wire opening until it bottoms against block. Tighten knob. Close and latch door.

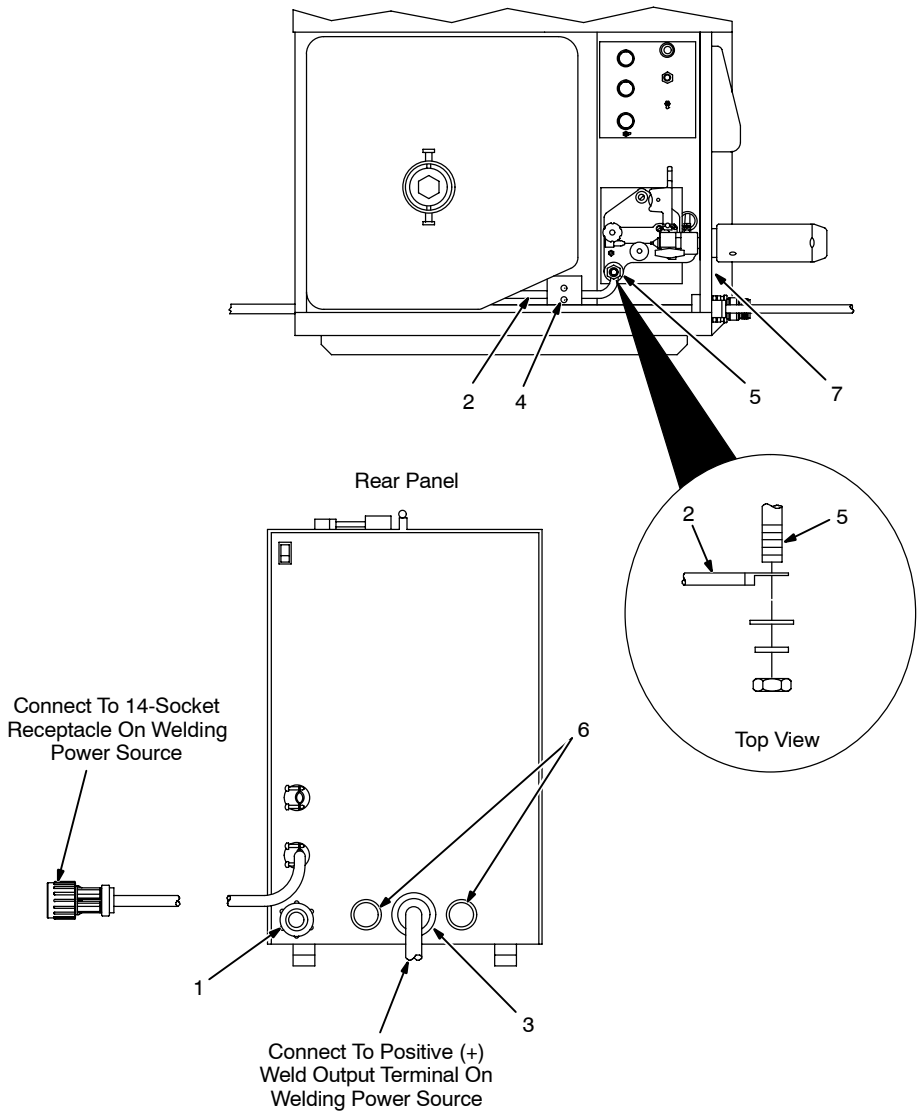
Tools Needed:

9/16, 3/4 in

Ref. 801 577-A / 801 564-E / Ref. 151 666-G

4-4. Water-Cooled Feeder Connections





Obtain coolant supply.

1 Gas Fitting

Route one end of 10 ft (3 m) gas hose to rear of unit, and connect hose to gas solenoid fitting. Connect remaining end of hose to regulator/flowmeter

☞ *Shielding gas pressure not to exceed 100 psi (689 kPa).*

2 Weld Cable To Welding Power Source

Select and prepare weld cable according to welding power source manual.

3 Weld Cable Grommet

4 Current Sensing (Reed) Relay

5 Weld Cable Terminal In Feeder

Route one end of weld cable through grommet, through reed relay, and connect to weld cable terminal in feeder. Connect remaining end of cable to positive (+) weld output terminal on welding power source.

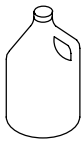
6 Coolant Hose Grommet

7 Location Of Coolant Fittings On Front Panel

Route one end of a coolant hose through grommet, and connect to rear of Coolant Out fitting in feeder. Connect remaining end to supply fitting on coolant supply.

Route one end of remaining coolant hose through grommet, and connect to rear of Coolant In fitting in feeder. Connect remaining end of hose to return fitting on coolant supply.

Close and latch door.

Application	GTAW Or Where HF* Is Used	GMAW Or Where Coolant Contacts Aluminum Parts Or Where HF* Not Used
 Coolant	MILLER Low Conductivity Coolant No. 043 810**	MILLER Aluminum Protecting Coolant No. 043 809**; Distilled Or Deionized Water OK Above 32° F (0° C)

Tools Needed:

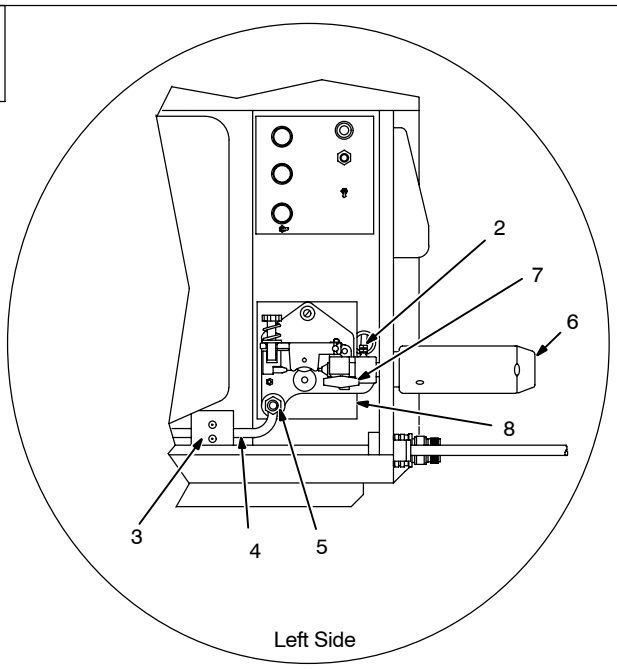
 9/16 in

*HF: High Frequency Current

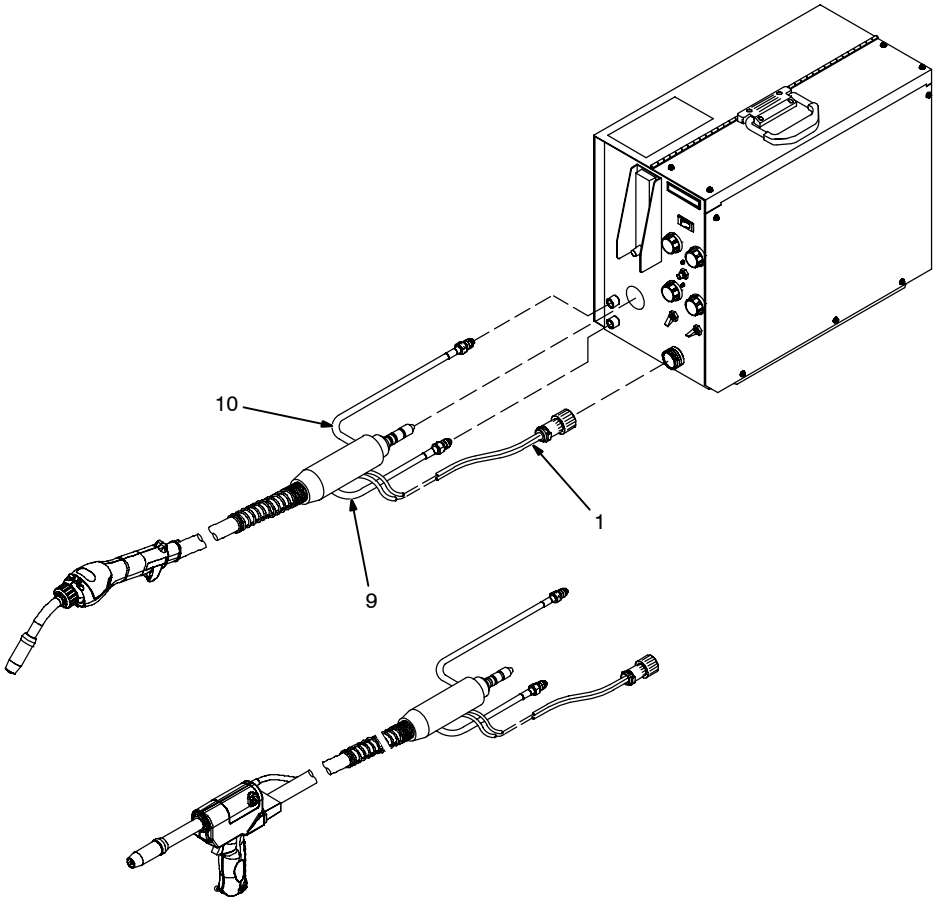
**MILLER coolants protect to -37° F (-38°C) and resist algae growth.

Ref. 152 431-A / Ref. 801 578-A

4-5. Water-Cooled Gun Connections



Left Side



1 Gun Control Cable

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

2 Gas Hose

3 Reed Relay

4 Weld Cable

5 Weld Cable Terminal In Feeder

Route weld cable from welding power source through reed relay to weld cable terminal in feeder and connect to weld cable terminal.

6 Gun Connector

7 Gun Securing Knob

8 Gun Connector Block

Loosen gun securing knob, and insert gun connector through Wire opening until it bottoms against block. Tighten knob. Close and latch door.

9 Water In Hose

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

10 Water Out Hose

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

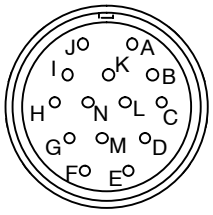
Close and latch door.

Tools Needed:

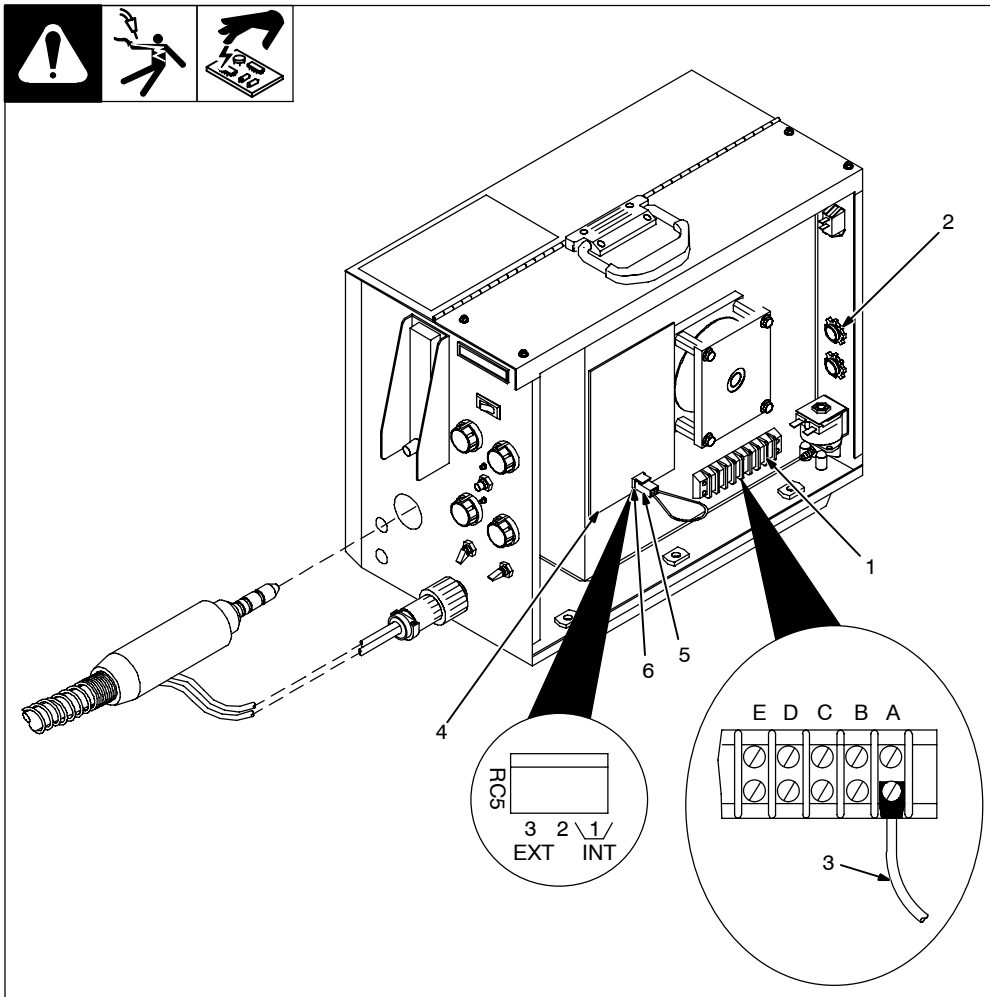
9/16 in

Ref. 801 577-A / 801 563-D / Ref. 151 666-G

4-6. 14-Pin Plug Information

REMOTE 14	Pin*	Pin Information
	A	24 volts ac with respect to socket G.
	B	Contact closure to A completes 24 volts ac contactor control circuit.
	G	Circuit common for 24 volts AC circuit.
	C	+10 volts dc output to remote control with respect to socket D.
	D	Remote control circuit common.
	E	0 to +10 volts dc input command signal from remote control with respect to socket D.
	H	Voltage feedback; 0 to +10 volts dc, 1 volt per 10 arc volts.
	F	Current feedback; 0 to +10 volts dc, 1 volt per 100 amperes.
*The remaining pins are not used.		

4-7. (Optional) Voltage Sensing Lead Connections And CC/CV Jumper Plug Settings



Installing voltage sensing lead

1 Terminal Strip 2T

2 Strain Relief

Loosen screws of strain relief.

3 Voltage Sensing Lead

Route ring terminal end of lead through strain relief, and connect ring terminal to terminal A of terminal strip 2T. Tighten screws on strain relief.

4 Motor Speed Control Board PC1

5 Jumper Plug

6 Receptacle RC5

CC/CV Jumper Plug Settings

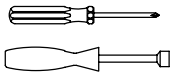
Unit is factory set for constant voltage (CV) welding. To set unit for constant current (CC) welding. Volt sensing lead kit must be installed in feeder. Volt sensing lead kit 209867

For constant voltage (CV) welding, place jumper plug in INT. position. Voltage sensing lead clamp does not need to be connected to workpiece.

For constant current (CC) welding, place plug in EXT. position. Connect clamp end of voltage sensing lead to workpiece.

Reinstall right side panel.

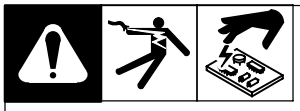
Tools Needed:

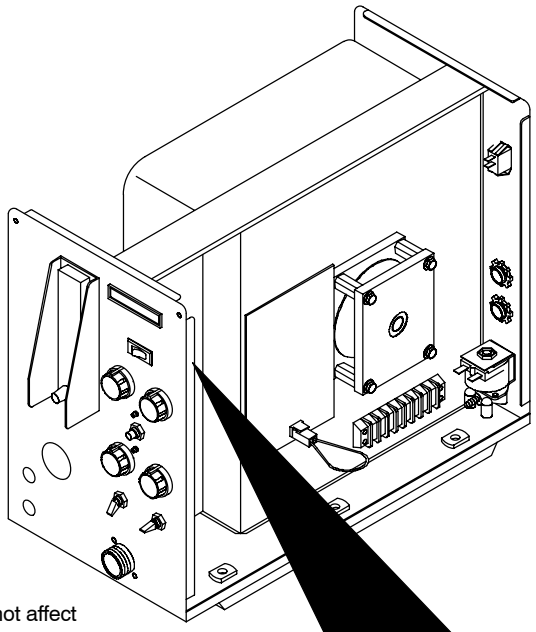


1/4 in

801 557-B

4-8. Meter Circuit Board Settings





1 Meter Board PC2

2 DIP Switch S2

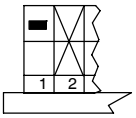
Set DIP switch S2 for type of welding power source, and desired wire feed speed display.

Unit is factory set to use voltage feedback through the 14-pin cable to display voltage on the meter. If welding power source does not support voltage feedback through 14−pin cable, Voltage Sensing kit (209867) must be installed in feeder to display voltage on the meter.

☞ *To display voltage using voltage sense lead, connect plug PLG51 to plug PLG50.*

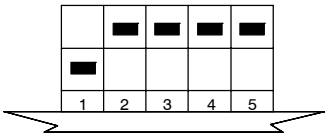
☞ *To display voltage using 14-pin feedback, connect plug PLG51 to plug PLG52.*

Reinstall hinged door and side panel.

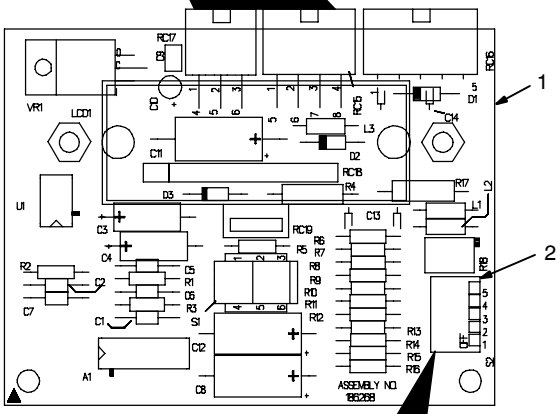


X Means switch position does not affect specified function.

▮ Means switch must be in this position.

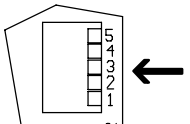


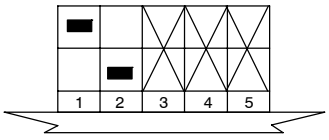
Switch settings from the factory.



Voltage Sensing Function

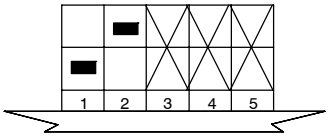
Arc Voltage Sensing Using Voltage Sensing Lead For Welding Power Source That Does Not Support Pin H





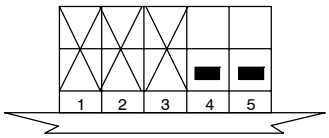
Or

Arc Voltage Sensing Using Feedback From Welding Power Source That Does Support Pin H



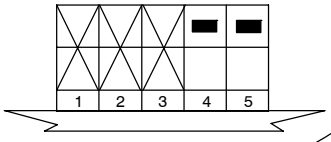
Digital Meter Display

Meters/Minute

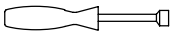


Or

Inches/Minute



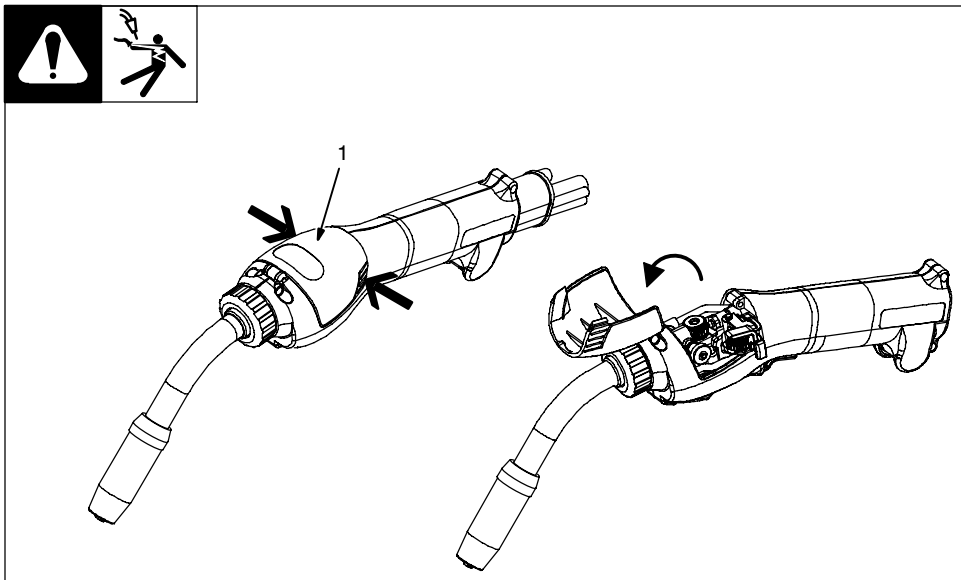
Tools Needed:



1/4 in

Ref. 802 359 / Ref. 186 266

4-9. Opening Top Cover Of XR-Edge Gun



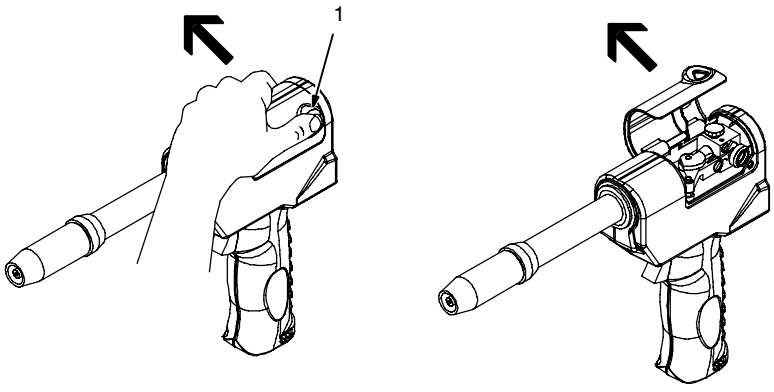
1 Top Cover

Squeeze sides of cover to release clips and lift up as shown.

To close cover, pivot cover closed on gun, and push cover down until clips lock tight.

Ref. 801 556-C

4-10. Removing Top Cover Of Pistol Grip Gun



1 Top Cover Triangular Boss

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

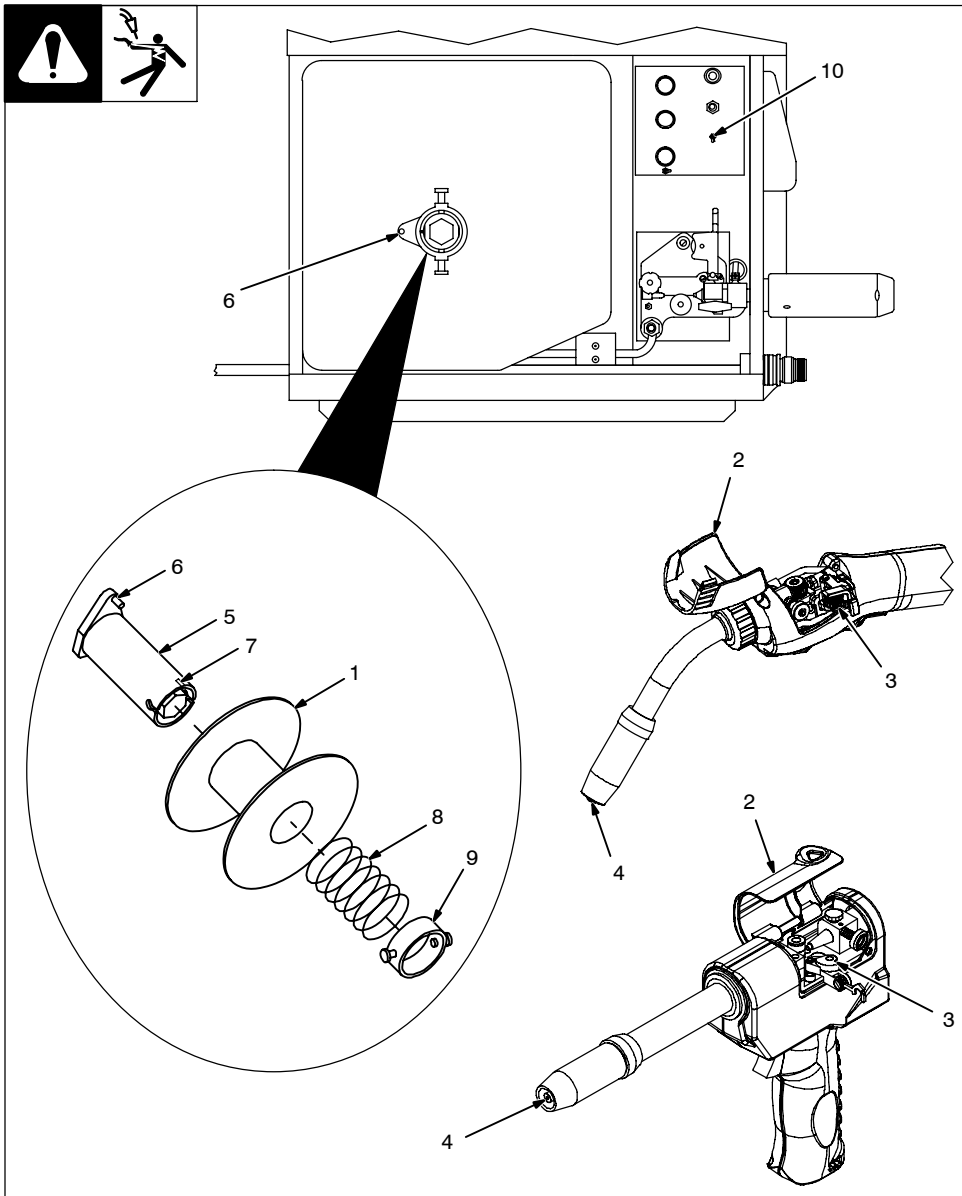
To open door fully, push up on door until it clicks into position.

☞ *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.

802 528-C

4-11. Installing Wire Spool



1 Wire Spool
2 Top Cover
3 Pressure Roll Assembly
4 Gun Contact Tip

If wire spool is being replaced, open top cover, open pressure roll assembly in gun, and cut welding wire off at contact tip.

Retract wire onto spool.

5 Hub
6 Hub Pin
7 Notch
8 Compression Spring (Optional For 8 Inch Spool)
9 Retaining Ring

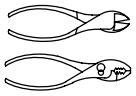
Slide spool onto hub so wire feeds off bottom. Turn spool until hub pin fits hole in back of spool (notch on hub aligns with hub pin for guidance). Reinstall retaining ring.

10 Motor Torque Switch

Place motor torque switch in appropriate position for wire type and size (see Section 5-2).

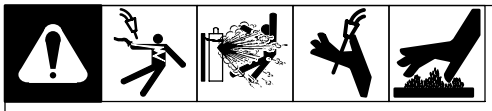
Thread welding wire (see Section 4-12).

Tools Needed:

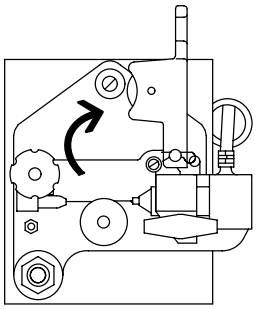


Ref. 801 578-A / Ref. 072 573-B / Ref. 801 556-C / Ref. 151 599-F

4-12. Threading Welding Wire Through Feeder

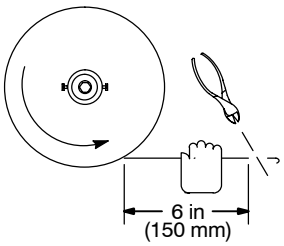


Tools Needed:

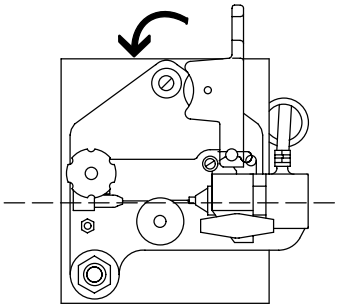


Open tension arm.

Hold wire tightly to keep it from unraveling.



Pull and hold wire; cut off end.

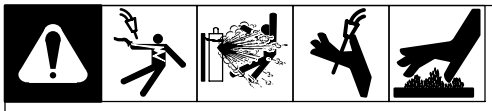


Thread wire thru inlet guide, along drive roll groove, and into wire conduit. Close tension arm. **Adjust tension as follows:** grasp spool with one hand, press Jog switch, and turn thumb nut clockwise until motor stalls when Jog switch is pressed. Back thumb nut off slightly.

Proceed to Section 4-13.

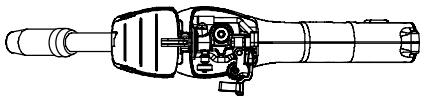
Ref. 802 193-A

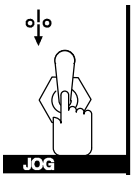
4-13. Threading Welding Wire Through Gun



Refer to Section 4-12 for instructions on feeding wire through feeder.

For XR-Edge Gun:

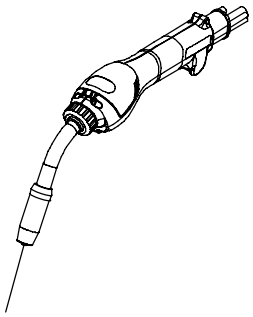




Welding wire is electrically live when gun trigger is used to jog wire.

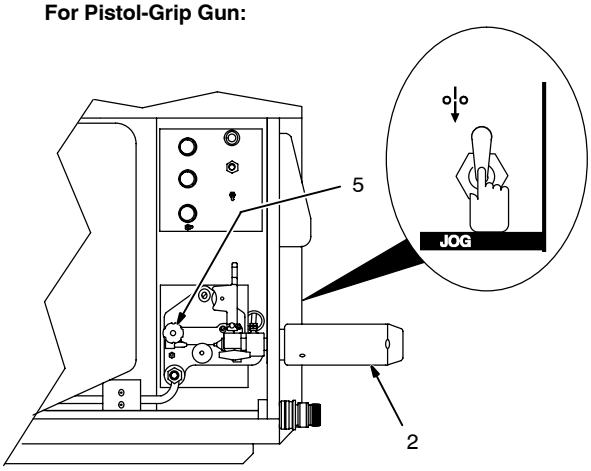
☞ *Turn OFF coolant supply before removing head tube on water-cooled gun.*

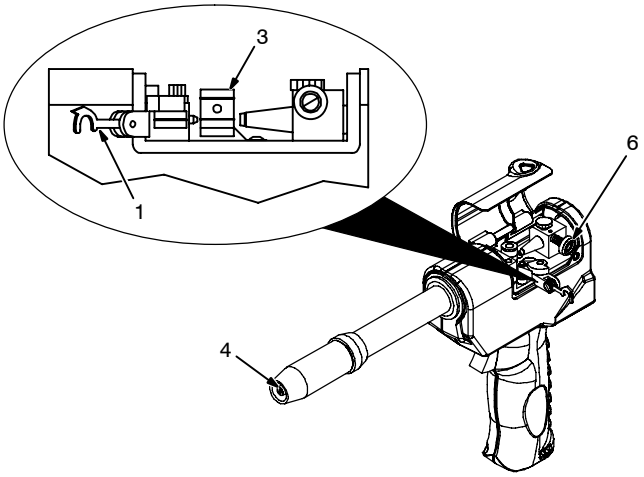
Lay gun cable out straight. Open top cover, and open pressure roll assembly. Remove head tube from gun. Press Jog switch until about 2 in (51 mm) of wire is sticking out front of gun. Insert wire into head tube liner and secure head tube to gun.



Close top cover on gun. Press Jog switch until about 6 in (152 mm) of wire is sticking out end of contact tip. See final pressure adjustment at bottom of page.

For Pistol-Grip Gun:





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

1 Pressure Roll Assembly

Lift arm and open pressure roll assembly.

2 Cable Assembly

Lay cable assembly out straight.

Push Jog switch up to feed wire through cable assembly.

3 Drive Roll

For wire sizes .035 in (0.9 mm) and smaller use small groove, and .047 in (1.2 mm) and 1/16 in (1.6 mm) use large groove.

4 Contact Tip

Manually thread wire along drive roll groove and out contact tip 2 in (51 mm). Close pressure roll assembly.

5 Tension Thumbnut

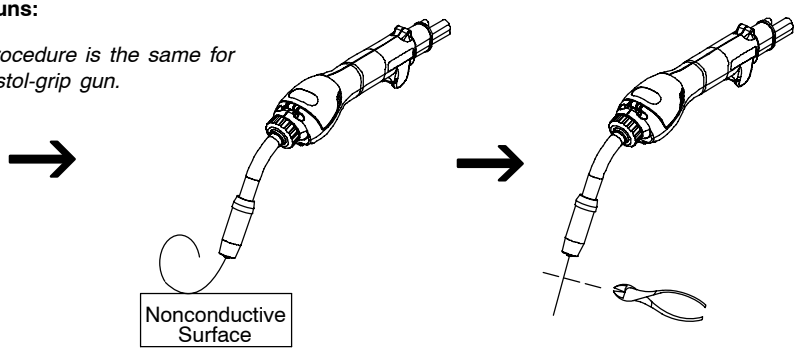
6 Pressure Adjustment Knob

7 Final Pressure Adjustment

See procedure at bottom of page. Reinstall gun cover.

For Both Guns:

☞ *Procedure is the same for pistol-grip gun.*



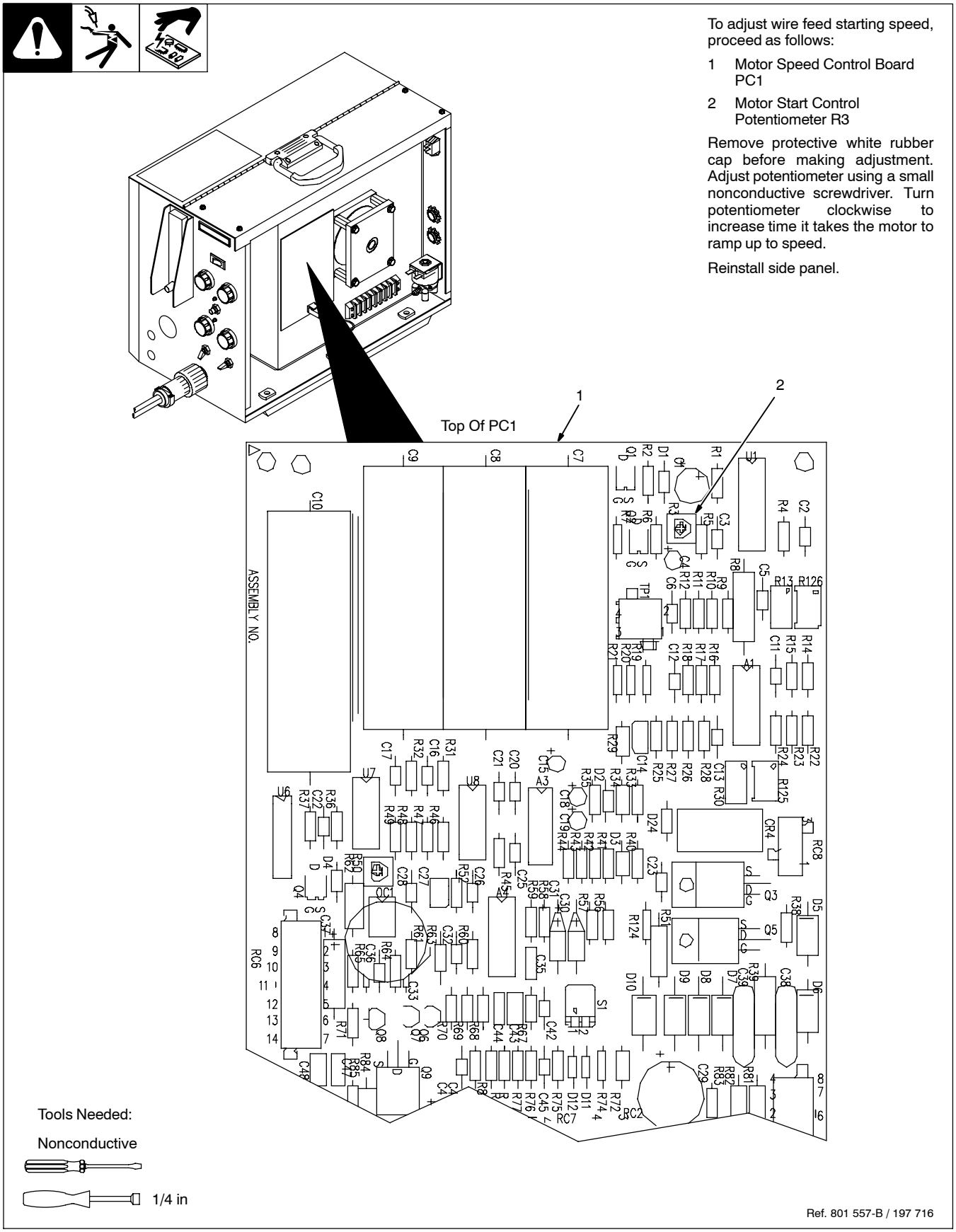
Tools Needed:

Feed wire to check drive roll pressure. If necessary, slightly tighten thumb nut inside gun.

Cut off wire. Close and latch wire feeder door.

Ref. 802 193-A / 801 556-B / 151 599-F

4-14. Adjusting Wire Feed Starting Speed



To adjust wire feed starting speed, proceed as follows:

1 Motor Speed Control Board PC1

2 Motor Start Control Potentiometer R3

Remove protective white rubber cap before making adjustment. Adjust potentiometer using a small nonconductive screwdriver. Turn potentiometer clockwise to increase time it takes the motor to ramp up to speed.

Reinstall side panel.

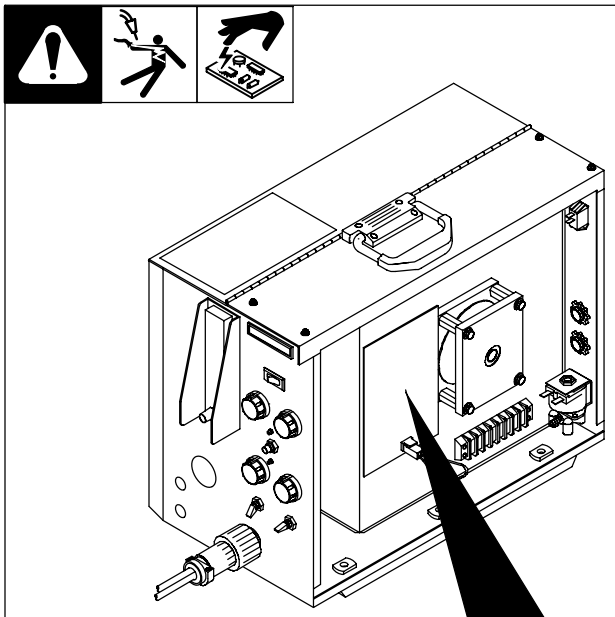
Tools Needed:

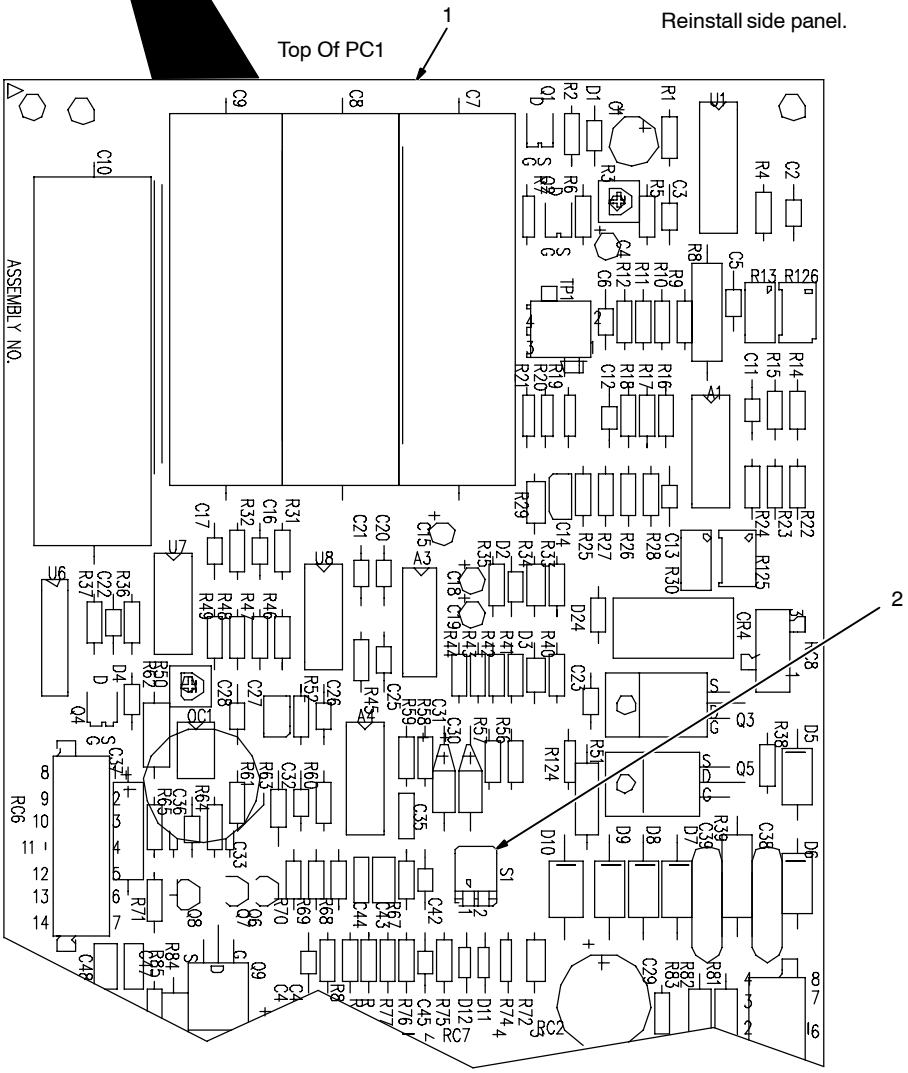
Nonconductive

1/4 in

Ref. 801 557-B / 197 716

4-15. Setting Switches For Preflow And Postflow





☞ *Unit arrives from the factory with preflow Off and postflow turned On.*

To set switches for preflow and postflow, proceed as follows:

1 Motor Speed Control Board PC1

2 DIP Switch S1

☞ *Preflow and postflow have preset time values and cannot be changed.*

To provide a 0.5 second preflow time, use a small nonconductive screwdriver to set switch S1-1 in the up position. To turn preflow time off, set S1-1 in the down position.

To provide a 3.5 second postflow time, use a small nonconductive screwdriver to set switch S1-2 in the up position. To turn postflow time off, set S1-2 in the down position.

Reinstall side panel.

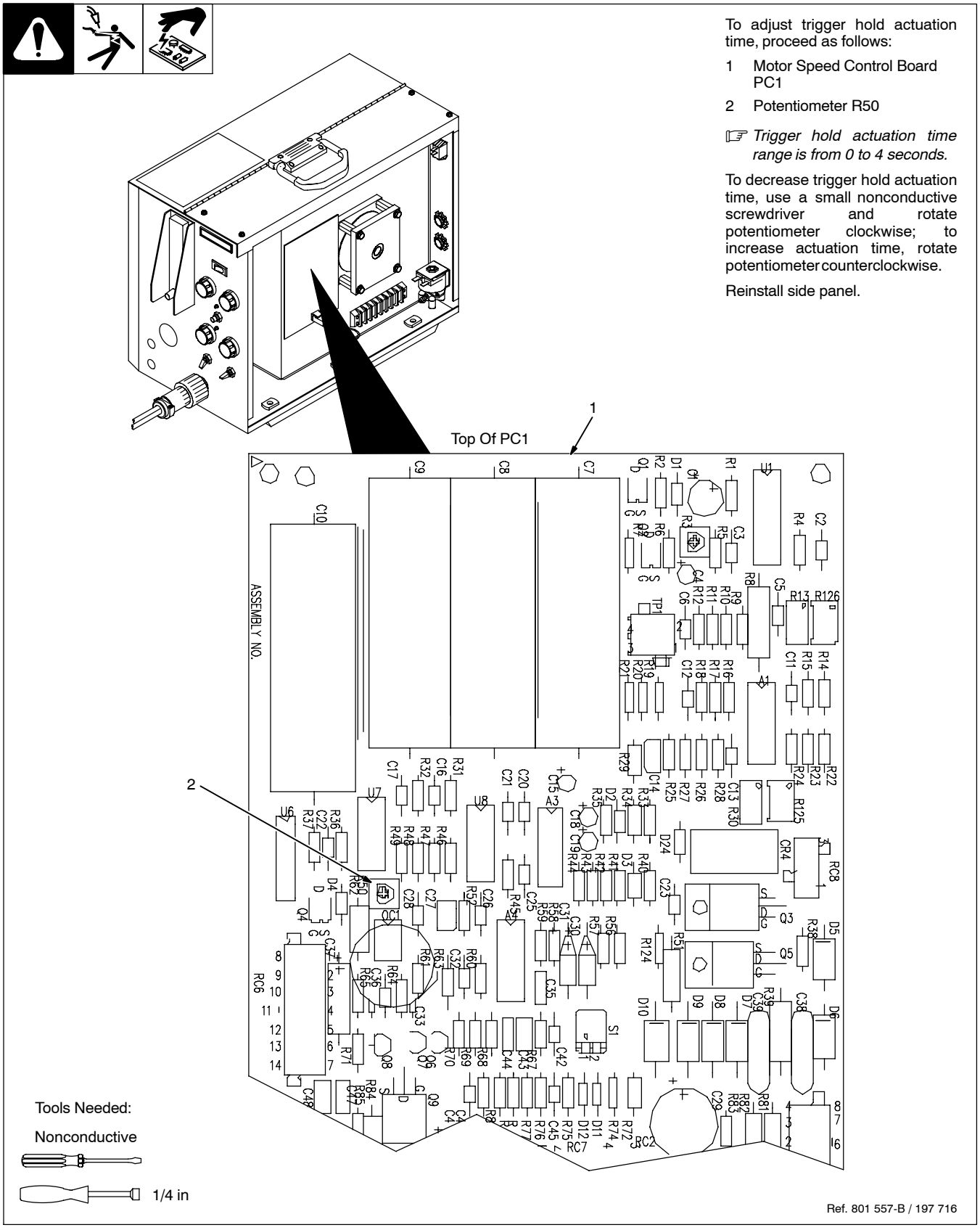
Tools Needed:

Nonconductive

1/4 in

Ref. 801 557-B / 197 716

4-16. Adjusting Trigger Hold Actuation Time



To adjust trigger hold actuation time, proceed as follows:

1 Motor Speed Control Board PC1

2 Potentiometer R50

☞ *Trigger hold actuation time range is from 0 to 4 seconds.*

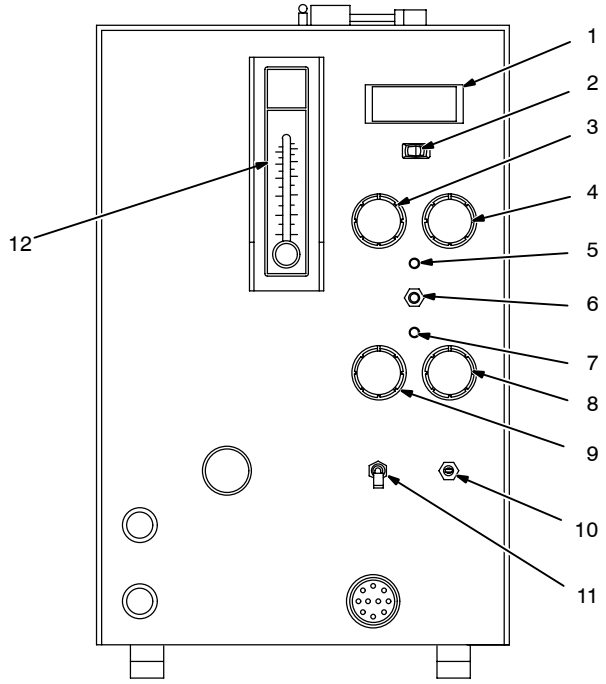
To decrease trigger hold actuation time, use a small nonconductive screwdriver and rotate potentiometer clockwise; to increase actuation time, rotate potentiometer counterclockwise.

Reinstall side panel.

Ref. 801 557-B / 197 716

SECTION 5 – OPERATION

5-1. Controls



801 554

1 Voltage/Wire Speed Meter

2 Voltage/Wire Speed Switch

When switch is in Voltage position, and operator is welding, meter displays arc voltage. Cable resistance and poor connections may cause displayed voltage to vary slightly from actual voltage at welding arc.

When switch is in Wire Speed position and operator is welding, meter displays preset wire speed in inches per minute. This wire speed is the combined settings of the Weld Speed Control on unit and Wire Speed Control on gun.

During run-in portion of weld cycle, meter displays run-in speed as selected on Run-In Speed control on feeder.

When welding Direct Current Electrode Negative (DCEN), meter does not display accurate output voltages; however, meter displays accurate wire speed values.

3 Remote Voltage Control (Optional)

Use control to adjust arc voltage at the wire feeder.

The scale around the control is marked in percent.

4 Wire Speed Control

Use control to set wire feed speed after arc initiation.

☞ *The gun wire feed speed control adjusts wire speed from minimum to maximum setting on Wire Speed Control.*

The scale around the control is percent of full range, not wire speed.

5 Schedule A Indicator LED

LED illuminates when Schedule A is active.

6 Press To Set Push Button

Use push button to set wire speed for Schedule B.

7 Schedule B Indicator LED

LED illuminates when Schedule B is active.

8 Wire Speed B Control (Optional)

Use control to set wire feed speed for a schedule B welding operation.

☞ *A dual schedule switch must be installed in unit to set wire speed B. There is no run-in speed setting for wire speed B.*

The scale around the control is percent of full range, not wire speed.

9 Remote Voltage B Control (Optional)

Use control to adjust arc voltage at the wire feeder for a schedule B welding operation.

The scale around the control is marked in percent.

10 Jog/Purge Switch

Push up to momentarily feed welding wire at speed set on Wire Speed control without energizing welding circuit or shielding gas valve.

Push down to momentarily energize gas valve to purge air from gun or adjust gas regulator.

11 Trigger Hold Switch

Push up to weld without holding gun trigger throughout the weld cycle.

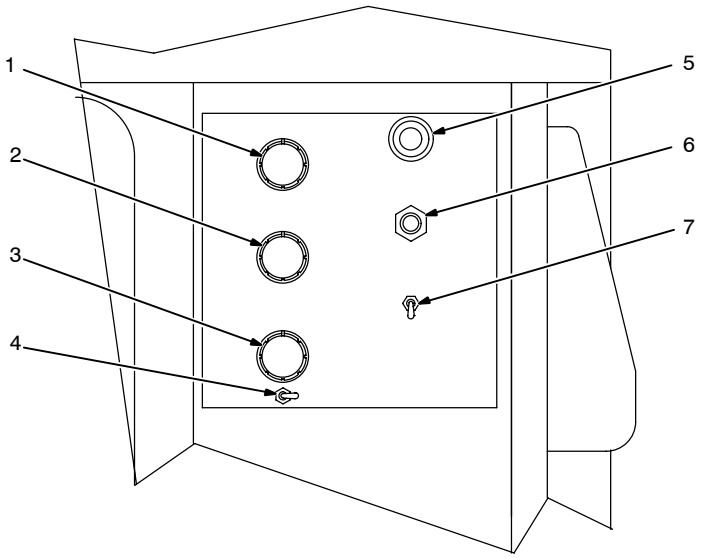
To start weld, press gun trigger, and trigger hold will actuate after 3 seconds of weld time. To end weld, press and release gun trigger.

12 Flowmeter (Optional)

Use flowmeter to control shielding gas flow at the feeder. The scale on the flowmeter is in cubic feet per hour (CFH). Read gas flow at the widest part of the float in the meter. Rotate valve to change gas flow as necessary.

A regulator is still required on shielding gas supply with this option.

5-2. Internal Controls



Open left side door.

1 Run-In Speed Control

Use this control to set run-in wire feed speed before arc initiation.

After arc initiation, weld wire feed speed is controlled by the wire speed setting on the welding gun (see Section 5-3).

The scale around the run-in speed control is a percent of weld wire feed speed.

If unit is equipped with optional Dual Schedule, Run-In is not available on Schedule B.

Maximum run-in wirefeed speed is approximately one half of weld wirefeed speed.

Minimum run-in wirefeed speed is approximately 40 inches per minute (1 mpm).

☞ *The gun wire feed speed control adjusts wire speed from minimum to maximum setting on Wire Speed Control.*

2 Burnback Time Control (Optional)

Use control to adjust time (up to 0.25 seconds) that the welding wire is electrically energized after the wire stops feeding.

If welding wire sticks in the weld puddle, increase burnback time. If wire burns back into the gun contact tip, decrease burnback time.

The scale around the control is marked in fractions of a second.

3 Spot Time Control (Optional)

Use control to set spot weld time. Welding wire feeds at speed selected on the gun Wire Speed Control. Spot time starts at arc initiation.

Rotating switch fully counterclockwise until it clicks selects an untimed continuous weld, all other positions will provide various timed spot welds.

The scale around the control is marked in seconds.

4 Time Range Switch

Use switch to select spot weld time range.

5 Fuse F1

See Section 8-11.

6 Circuit Breaker CB1

See Section 8-11.

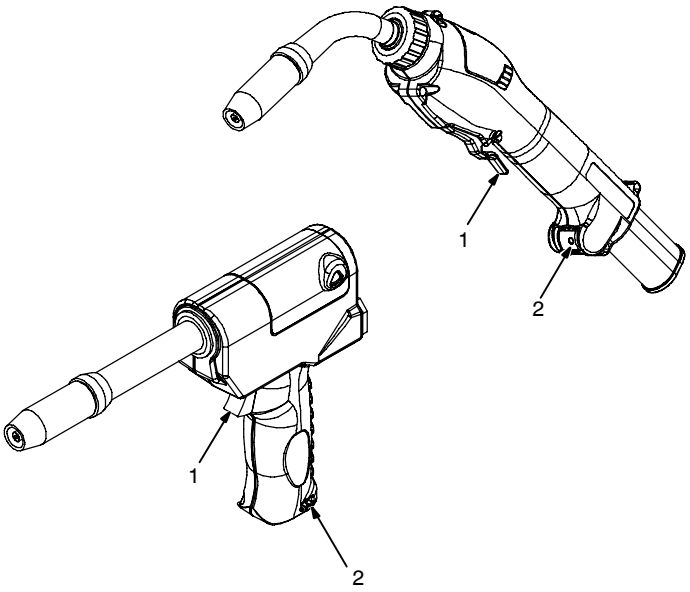
7 Motor Torque Switch

Use switch to select the force used to push wire. The up position is for high force, or torque. The down position is for low force, or torque.

Use Low position for .030 wire size and High position for all other wire sizes.

Close and latch door. Ref. 801 578

5-3. Gun Controls



1 Trigger

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

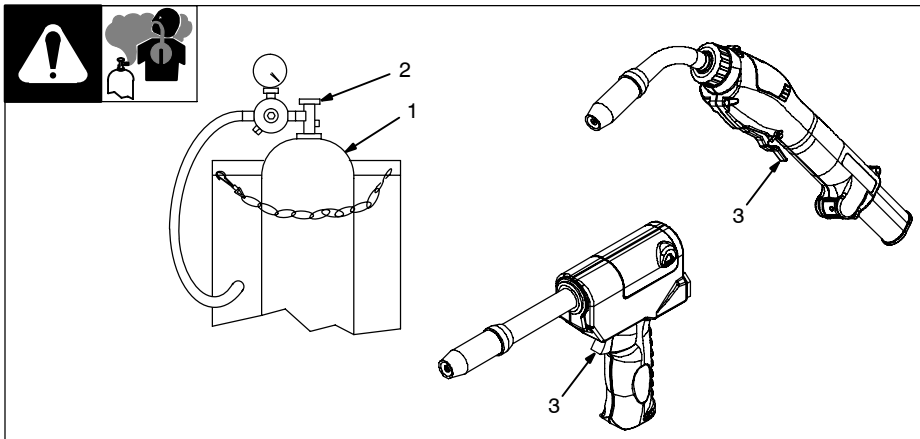
Switches inside the wire feeder can be set to provide timed shielding gas preflow and postflow when trigger is pressed and released (see Section 4-15). When this feature is turned Off, no preflow or postflow is provided for the welding operation.

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. 151 666-F

5-4. Shielding Gas



1 Shielding Gas Cylinder

2 Valve

3 Gun Trigger

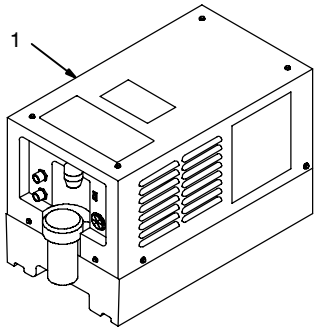
Open valve on cylinder just before welding.

Gun trigger turns weld output and gas flow on and off (see Section 5-3).

Close valve on cylinder when finished welding.

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

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



1 Coolant Supply

See Section 4-4 for coolant guidelines.

Turn On coolant supply before welding.

Turn Off coolant supply when finished welding.

Ref. 150 755-A

5-6. Sequence Of Gas Metal Arc Welding (GMAW) – Continuous Or Spot

Install & Connect Equipment → Put On Personal Safety Equipment → Set Controls → Turn On Gas And Water (If Applicable) → Turn On Feeder And Welding Power Source → Begin Welding

ssb6.1* 9/92

SECTION 6 – THEORY OF OPERATION

6-1. Functional Diagram For Wire Feeder

1 14-Pin Plug PLG9

Provides 24 volts ac input power from welding power source, contactor control, and optional remote voltage control to the welding power source.

2 Remote Voltage Control R50

Sets welding power source voltage at the feeder.

3 Power Switch S1

Provides on/off control of 24 volts ac to wire feeder.

4 Fuse F1

Provides overload protection for wire feeder.

5 Motor Control Board PC1

Controls speed of pull motor B2. Speed set by Master "A" WFS control R45, Run-In Speed Control R44, and GUN POT WFS control R4.

6 Circuit Breaker CB1

Protects pull motor B2 from overload.

7 Filter Board PC4

Filters out high-frequency input. Gun connects to receptacle RC20 on PC4.

8 Water Flow Switch S8

Protects gun from overheating by shutting down unit when coolant flowrate is low.

9 Master "A" WFS Control R45

Selects maximum wire speed output for GUN POT WFS control R4 and Run-In speed control R44.

10 Run-In WFS Control R44

Selects wire speed output before an arc is struck.

11 Purge Switch S2A

Energizes gas valve without energizing the weld circuit.

12 Gas Valve

Provides shielding gas during the weld cycle.

13 Inch Switch S2B

Feeds wire through gun without energizing wire.

14 Wire Spool Brake MP1

Stops turning of wire spool after welding to prevent overspooling.

15 Push Motor B1

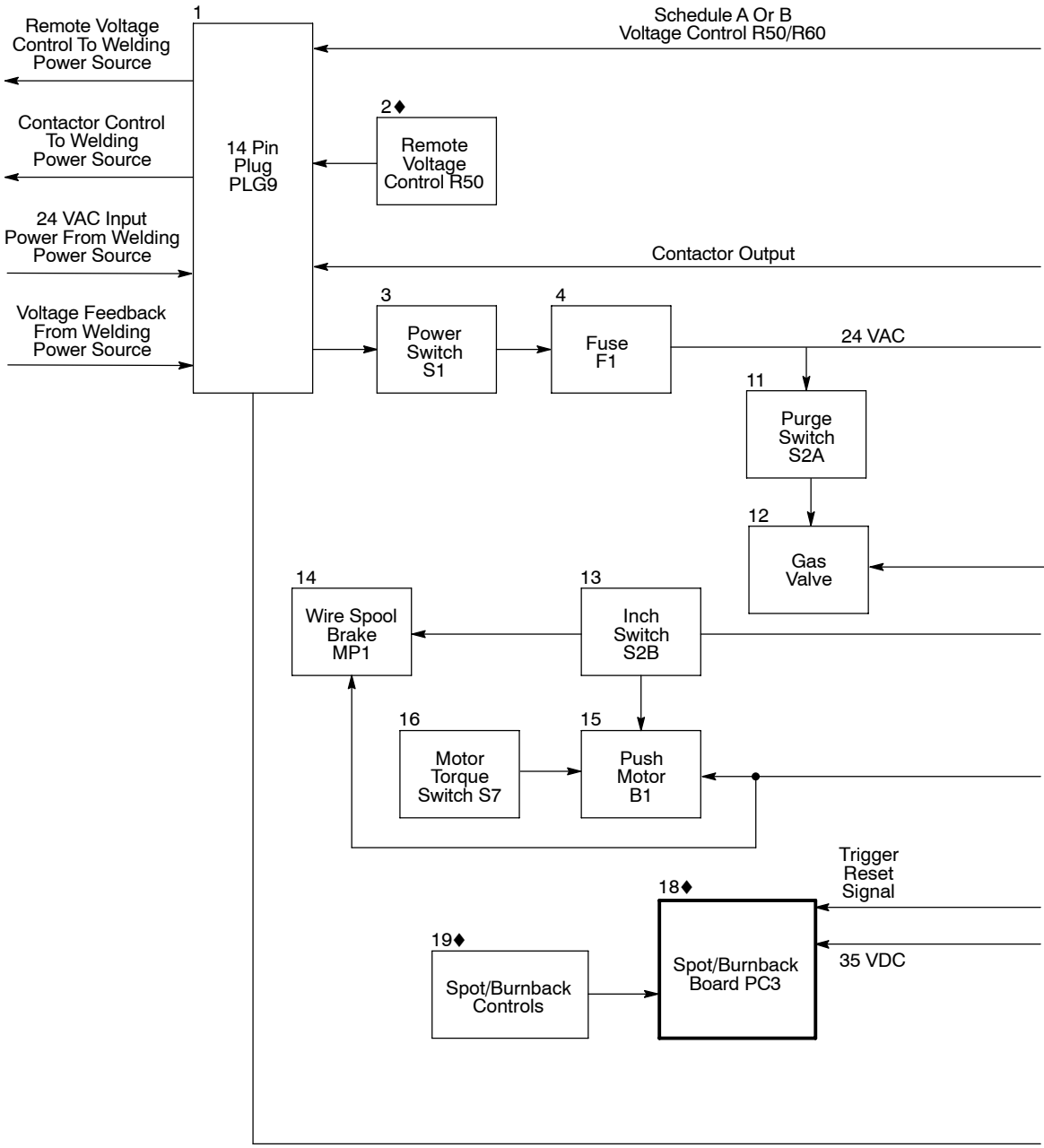
Provides pushing force to feed wire to gun. Force set by motor torque switch S7.

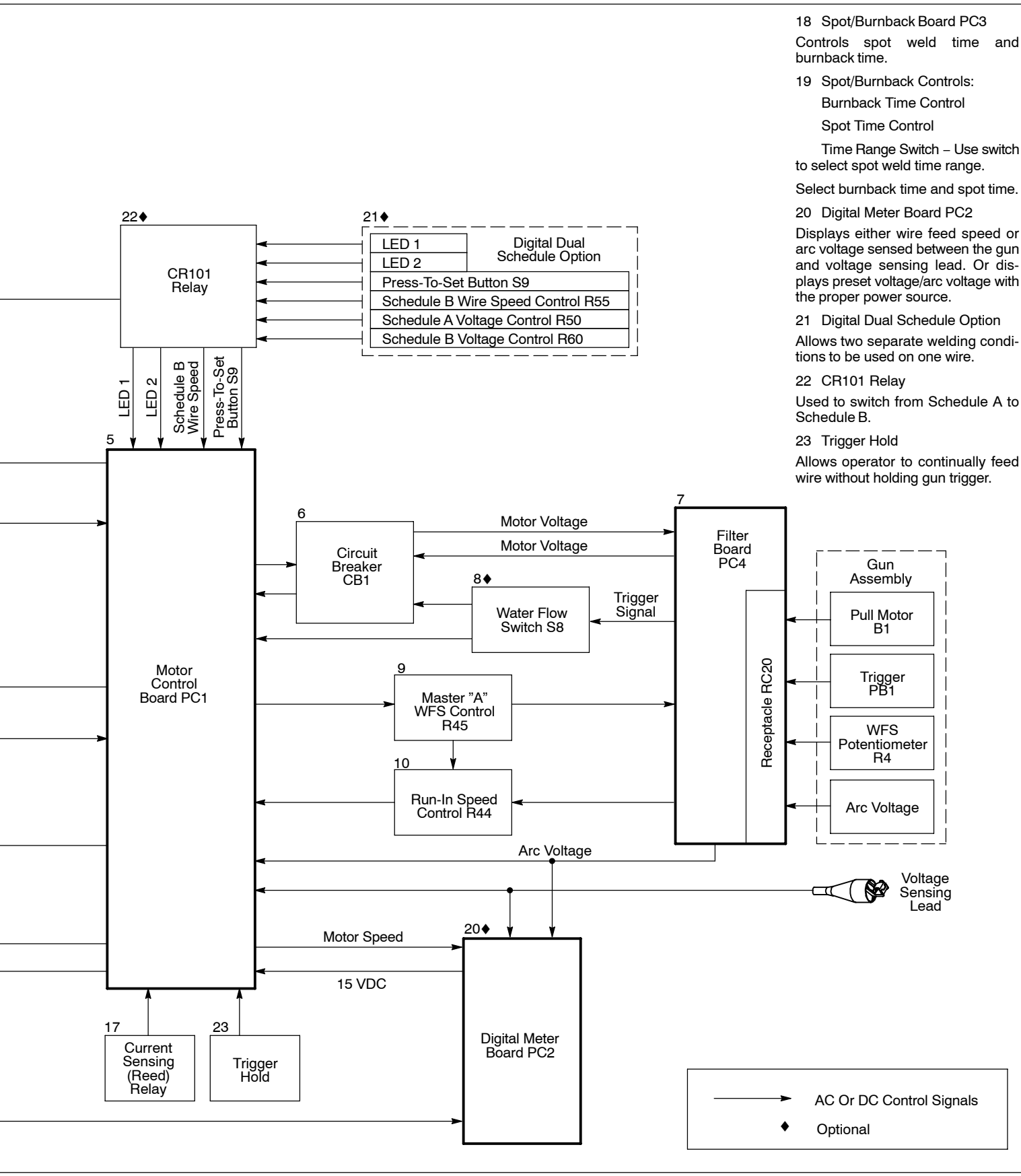
16 Motor Torque Switch S7

Selects the force used to push wire.

17 Current Sensing (Reed) Relay

Senses weld current for arc starting.





18 Spot/Burnback Board PC3

Controls spot weld time and burnback time.

19 Spot/Burnback Controls:

Burnback Time Control

Spot Time Control

Time Range Switch – Use switch to select spot weld time range.

Select burnback time and spot time.

20 Digital Meter Board PC2

Displays either wire feed speed or arc voltage sensed between the gun and voltage sensing lead. Or displays preset voltage/arc voltage with the proper power source.

21 Digital Dual Schedule Option

Allows two separate welding conditions to be used on one wire.

22 CR101 Relay

Used to switch from Schedule A to Schedule B.

23 Trigger Hold

Allows operator to continually feed wire without holding gun trigger.

6-2. Functional Diagram For Gun

1 Gun Assembly

Connects to welding power source or weld control, and provides weld power to energize wire.

2 Trigger PB1

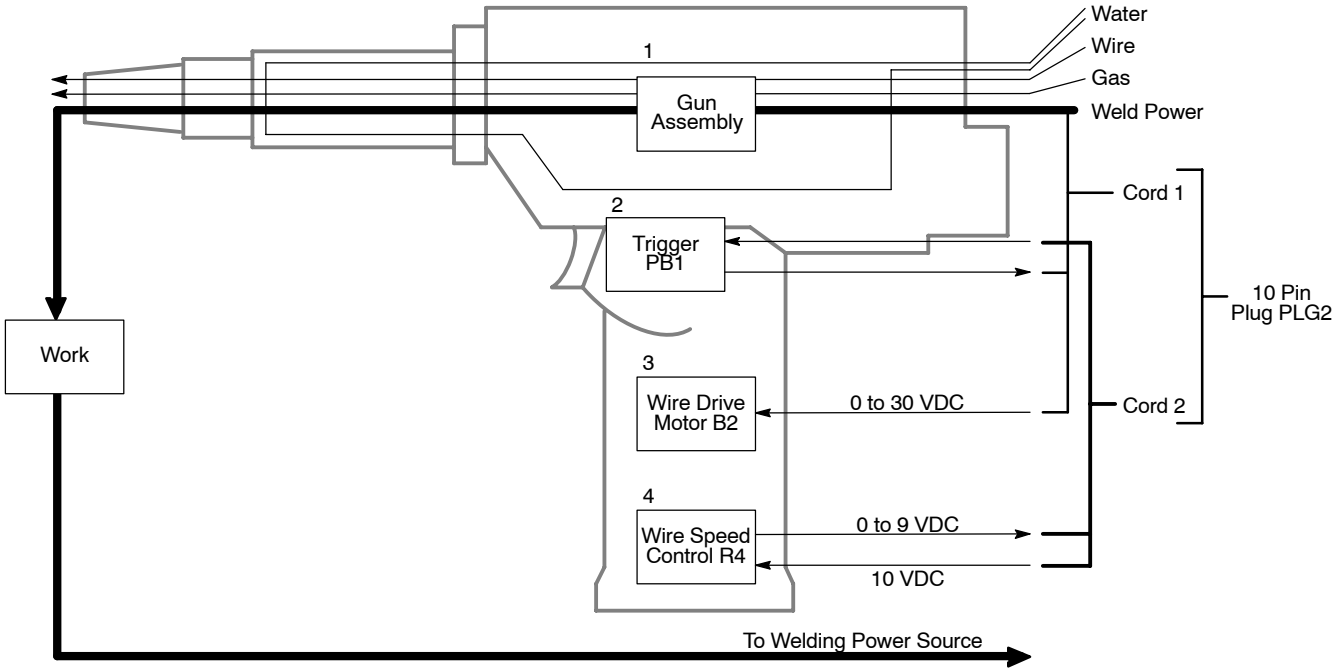
Provides contactor control of welding power source, starts shielding gas flow, starts wire feed.

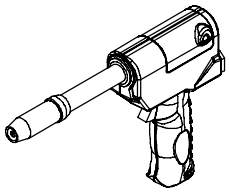
3 Wire Drive Motor B2

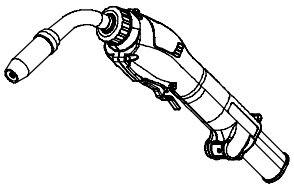
Feeds wire at speed set by R4 while welding.

4 Wire Speed Control R4

Selects wire speed.



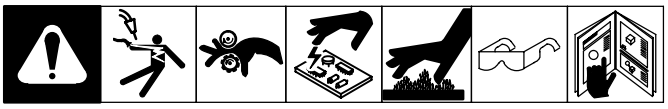




Ref. 151 666-F

SECTION 7 – TROUBLESHOOTING

7-1. Troubleshooting Table For Wire Feeder



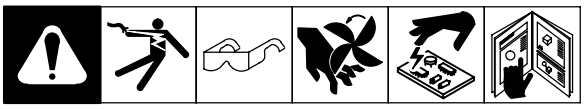
☞ *See Section 7-3 for test points and values and Section 10 for parts location.*

☞ *Use MILLER Testing Booklet (Part No. 150 853) when servicing this unit.*

Trouble	Remedy
Unit completely inoperative.	Check fuse F1 (see Section 8-11).
	Check continuity of Power switch S1, and replace if necessary.
	Check Motor Control Board PC1 and connections, and replace if necessary (see Section 7-9).
	Check 14-Pin plug and cord connections to welding power source; check welding power source.
Wire does not feed. Electrode wire is energized, and shielding gas flows.	Increase Master "A" WFS control R45 and GUN POT WFS control R4 settings.
	Check gun connection (see Sections 4-3 and 4-5).
	Clear obstruction in gun contact tube or liner.
	Check continuity of gun trigger switch and leads. Repair or replace welding gun (see Section 7-6).
	Check drive motors B1 and B2, and replace if necessary (see Sections 7-3 and 7-6).
	Check Motor Control Board PC1 and connections, and replace if necessary (see Section 7-9).
Wire does not feed when JOG switch is pressed.	Clear obstruction in gun contact tube or liner.
	Check continuity of JOG switch S2, and replace if necessary.
	Check Motor Control Board PC1 and connections, and replace if necessary (see Section 7-9).
Motor runs slowly.	Increase Master "A" WFS control R45 and GUN POT WFS control R4 settings.
	Check for correct line voltage.
	Check and replace liner if necessary (see Sections 8-3 and 8-8).
	Check Motor Control Board PC1 and connections, and replace if necessary (see Section 7-9).
Wire feeds erratically or stops while welding.	Check gun connection (see Sections 4-3 and 4-5).
	Check continuity of gun trigger switch and leads. Repair or replace welding gun (see Section 7-6).
	Readjust drive roll pressure (see Section 4-12).
	Check continuity of Motor Torque switch S7.
	Change to correct size and type of drive roll (see Sections 8-2 and 8-6).
	Clean or replace dirty or worn drive roll (see Sections 8-2 and 8-6).
	Clear obstruction in gun contact tube or liner.
	Check operation of brake MP1.
	Remove weld spatter from around nozzle opening.
	Check Motor Control Board PC1 and connections, and replace if necessary (see Section 7-9).
Arc varies and welding wire is kinked when feeding out gun.	Place Motor Torque switch in low torque position if welding with .030 (0.8 mm) aluminum welding wire and place torque switch in high torque position for all other wire sizes (see Section 5-2).

Trouble	Remedy
Pressing gun trigger will not feed wire, wire is not energized, shielding gas flows, and JOG switch activates push motor.	Reset circuit breaker CB1 (see Section 8-11).
	Check water connection to feeder or gun (see Sections 4-4 and 4-5).
	Check for kinks in water hose.
	Be sure coolant supply is turned ON.
	Check continuity of optional water flow switch (see Section 8-12).
Feeder feeds wire, but switches from weld mode to run-in mode while CV welding with voltage sensing lead installed.	Be sure PLG5 is in INT. position on PC1 (see Section 4-7).
Motor runs at full speed regardless of wire speed control setting.	Check resistance and connections of active wire speed potentiometer, and replace if necessary.
	Check Motor Control Board PC1 and connections, and replace if necessary (see Section 7-9).
Unit does not switch out of RUN-IN SPEED.	Be sure weld cable is routed through current sensing (reed) relay (see Section 4-4).
	If constant current (CC) welding, be sure PLG5 is in EXT. position on PC1, and voltage sensing lead is connected (see Section 4-7).
	If constant voltage (CV) welding, be sure PLG5 is in INT. position on PC1, and that voltage sensing lead is not connected (see Section 4-7).
	Check or replace current sensing (reed) relay, if necessary.
Wire continues to feed after gun trigger is released, and trigger hold is not on.	Check for a short between welding gun trigger leads and weld cable inside gun cable. Repair short or replace welding gun (see Section 7-6).
Pull motor coasts after gun trigger is released.	Check Motor Control Board PC1 and connections, and replace if necessary (see Section 7-9).
Wire Speed Meter display does not match actual wire feed speed.	Check optional Digital Meter Board PC2 and connections, and replace if necessary (see Section 7-11).
Shielding gas flow is irregular, but wire feeds and electrode wire is energized.	Clear blockage in gas hose or replace hose.
	Clear blockage in welding gun. See gun Owner's Manual.
	Check coil voltage and connections of gas valve GS1. Check continuity of coil. Replace GS1 if necessary.
Electrode is not energized, but wire feeds and shielding gas flows.	Check interconnecting cord and plug connections. If secure, check cord for continuity and repair or replace if necessary.
	Check optional Spot/Burnback Board PC3 and connections, and replace if necessary (see Section 7-13).
	Check Motor Control Board PC1 and connections, and replace if necessary (see Section 7-9).
	See Troubleshooting Section in welding power source Technical Manual.
Welding arc is too hot regardless of Remote VOLTAGE control setting; power source works with it's panel setting.	Check continuity and connections to Remote VOLTAGE control R50, and replace if necessary.
Gun nozzle opening restricted.	Remove weld spatter from around gun nozzle opening.
Shielding gas does not flow when Purge switch S2A is pressed.	Check continuity of Purge switch S2A, and replace if necessary.
	Check coil voltage and connections of gas valve. Check continuity of coil. Replace gas valve if necessary.
	Check Motor Control Board PC1 and connections, and replace if necessary (see Section 7-9).

7-2. Troubleshooting Table For Gun

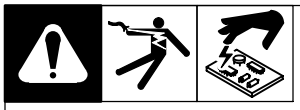


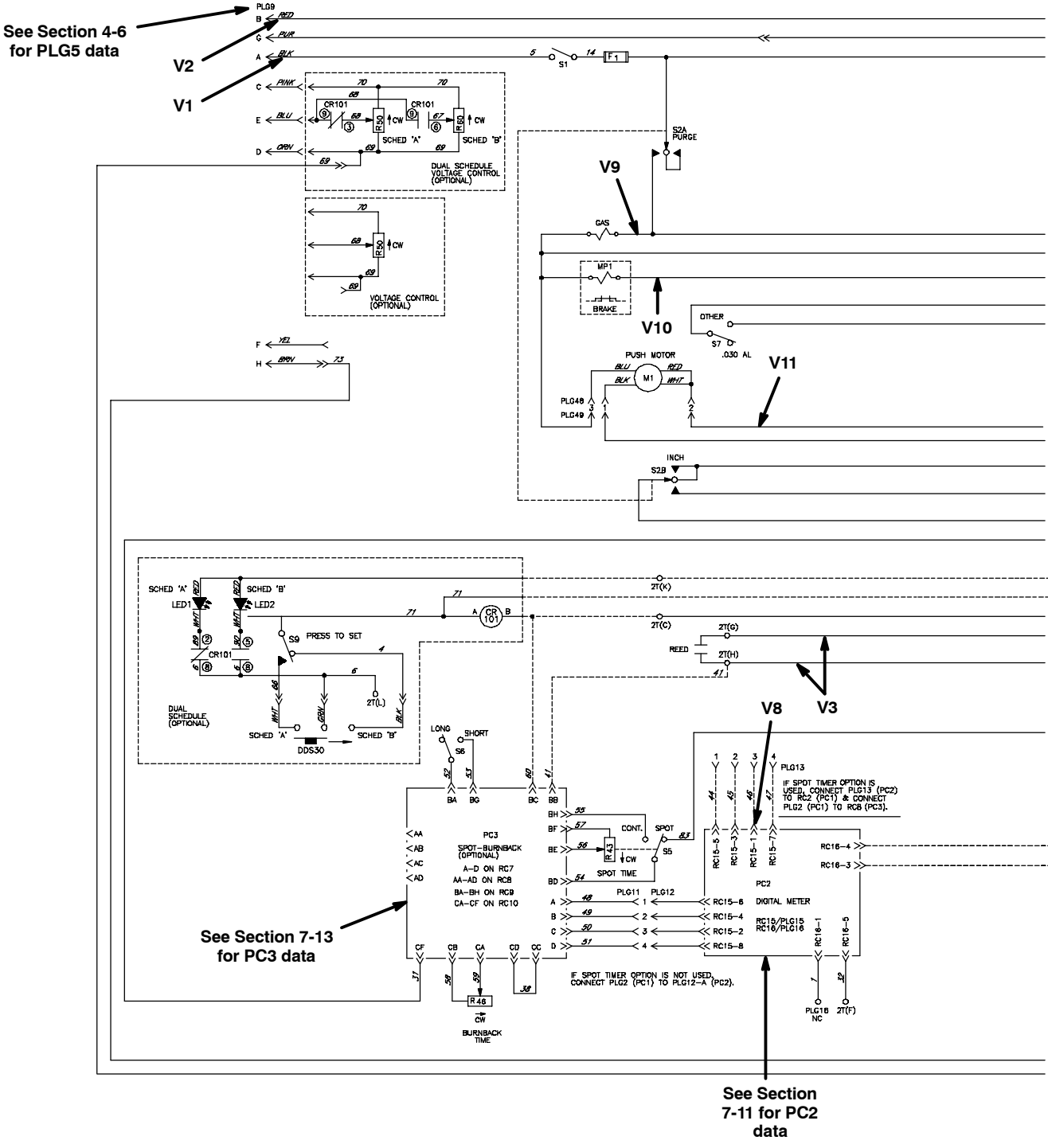
☞ *See Section 7-3 for test points and values and Section 10 for parts location.*

☞ *Use MILLER Testing Booklet (Part No. 150 853) when servicing this unit.*

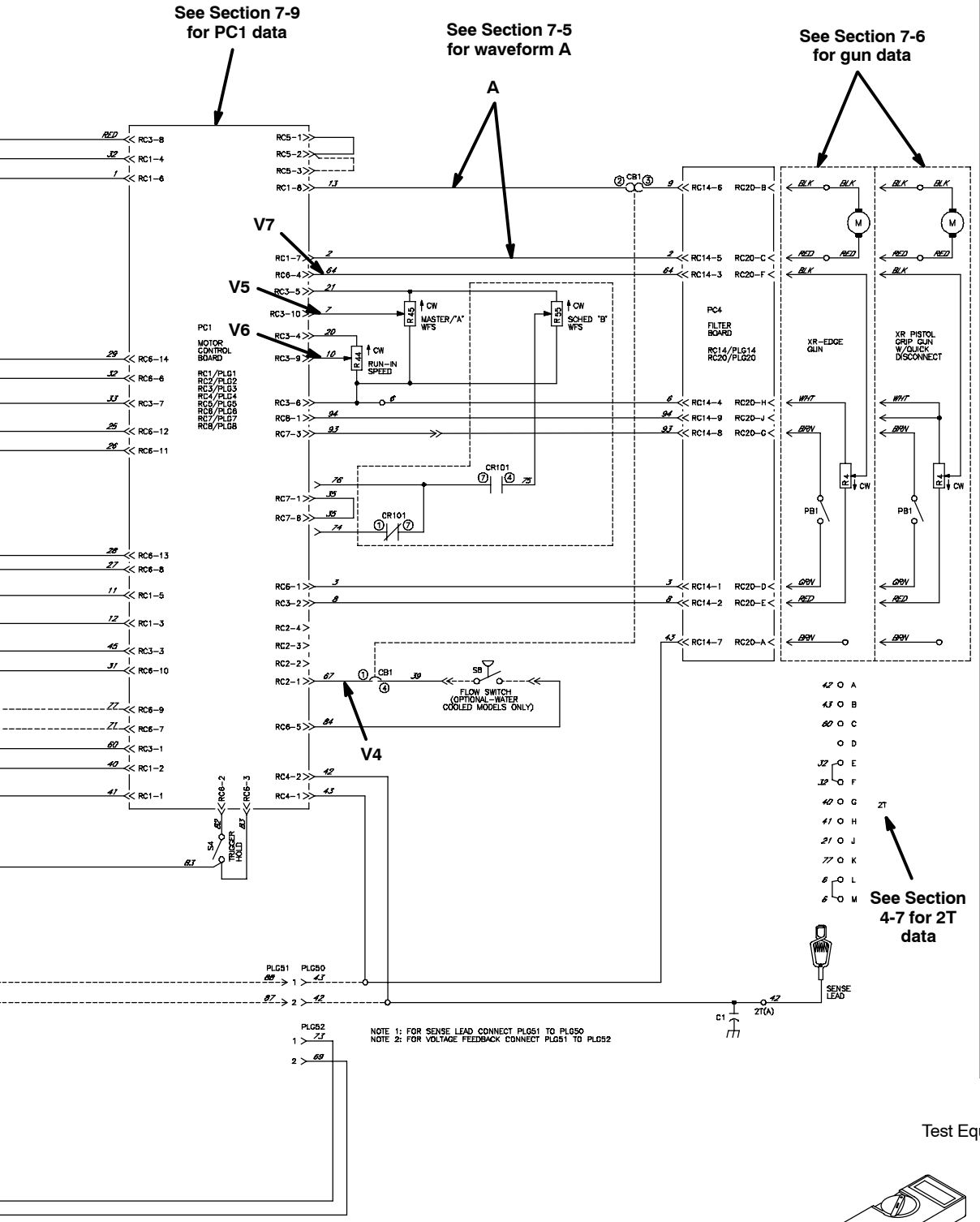
Trouble	Remedy
Motor does not run; pressing gun trigger does not energize welding power sources.	Check connection of plug PLG20 to wire feeder. Repair if necessary (see Sections 4-3 and 4-5).
	Check continuity of gun trigger switch and leads. Repair or replace if necessary (see Section 7-6).
	Check control cord for continuity, repair or replace if necessary (see Section 7-6).
	See Troubleshooting Section in welding power source Technical Manual.
Motor runs, but no torque (stops under load).	Prior to LC346881, check gun internal electrical connections. Check splice between motor leads and control cable leads, repair or replace if necessary.
Wire feeds, but wire is not energized.	Check connection of plug PLG20 to wire feeder. Repair if necessary (see Sections 4-3 and 4-5).
	Check control cord for continuity. Repair or replace if necessary (see Section 7-6).
No wire feed at gun.	Prior to LC346881, check gun internal electrical connections. Check splice between motor leads and control cable leads, repair or replace if necessary.
Wire does not feed but is energized.	Clear obstruction in contact tip or liner.
	Check motor B2, replace if necessary (see Section 7-6).
	Check control cord for continuity, repair or replace if necessary (see Section 7-6).
	See Troubleshooting Section in welding power source Technical Manual.
Wire feed speed slows down when arc is struck.	Prior to LC346881, check gun internal electrical connections. Check splice between motor leads and control cable leads, repair or replace if necessary.
Wire feeds erratically and/or no control of wire speed.	Change to correct size gun liner (see Section 8-3 and 8-8) and/or head tube liner and tip.
	Clear obstruction in contact tip or liner.
	Readjust drive roll pressure (see Sections 4-12 and 4-13).
	Change to correct size and type of drive roll (see Sections 8-2 and 8-7).
	Clean or replace dirty or worn drive roll (see Sections 8-2 and 8-7).
	Check Wire Speed Control; R4 is 0 to 10 Kilohms ±10%. Replace if necessary (see Section 7-6).
	Check motor B2, replace if necessary (see Section 7-6).
	Check control cord for continuity, repair or replace if necessary (see Section 7-6).
	See Troubleshooting Section in welding power source Technical Manual.
Erratic weld output.	Replace worn or damaged contact tip (see Section 8-5).
	Check control cord for continuity, repair or replace if necessary (see Section 7-6).
	See Troubleshooting Section in welding power source Technical Manual.
Wire feeds but burns back into contact tube.	Readjust burnback time on wire feeder.
	Replace worn or damaged contact tip (see Section 8-5).
	Clean or replace current pickup tab on Pistol-Grip guns (located between drive roll and gun housing).
	Prior to LC346881, check gun internal electrical connections. Check splice between motor leads and control cable leads, repair or replace if necessary.
No gas flow.	Repair gas hose (see Section 8).
Gun overheating (water model only).	Be sure coolant flowrate is at least 1 qt./min. Backflush coolant system, clean coolant system filter and clean fittings (see Section 7-6).

7-3. Troubleshooting Circuit Diagram For Wire Feeders Prior To Serial No. LE212804



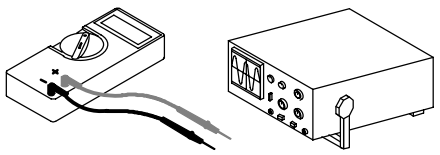


Resistance Values	
R1	All values for T1 are less than 1 ohm



Voltage Readings	
a)	**Tolerance – ±10% unless specified**
b)	**Reference to circuit common (lead 6 for DC, lead 32 for AC) unless noted**
c)	**Wiring Diagram – see Section 9**
V1	24 volts ac
V2	24 volts ac contactor with gun trigger pressed
V3	30 to 35 volts dc with PLG5 in INT. position on PC1, trigger pressed; 0 volts dc with PLG5 in INT. position, trigger pressed, and arc initiated
V4	30 to 35 volts dc with Power switch ON; 0 volts dc with trigger pressed
V5	0 to 9 volts dc from min to max of Master WFS control R45
V6	0 to 9 volts dc from min to max dependent on Master WFS control R45 and Gun Pot R4
V7	0 to 9 volts dc from min to max dependent on Master WFS control R45
V8	+15 volts dc if optional PC2 installed
V9	24 volts ac with gun trigger or Purge switch S2A pressed and during postflow
V10	24 volts ac with JOG switch pressed up or trigger pressed
V11	24 volts ac with torque switch in high and 16 volts ac with torque switch in low with gun trigger or switch S2 pressed for jog

Test Equipment Needed:



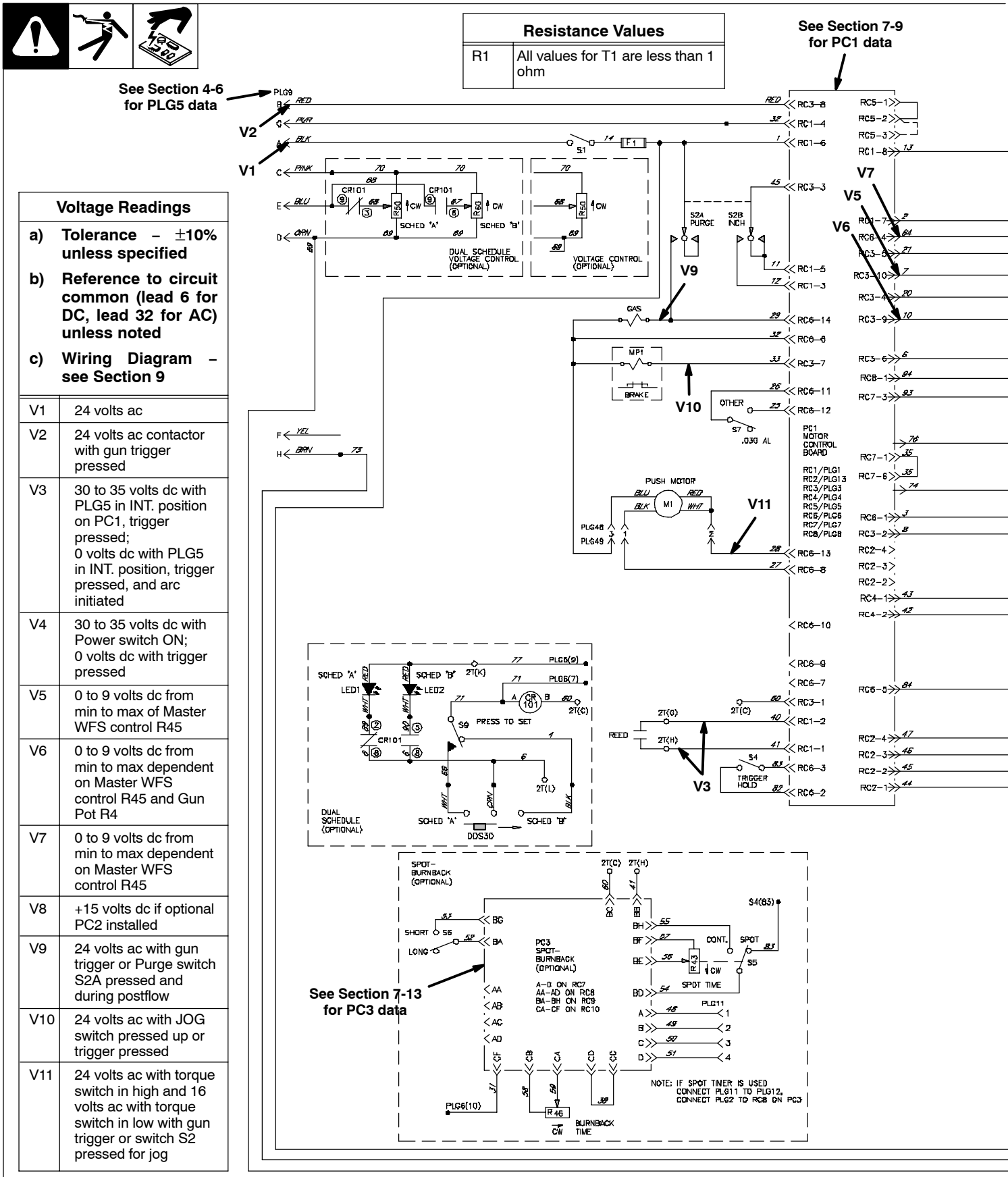
186 931-E

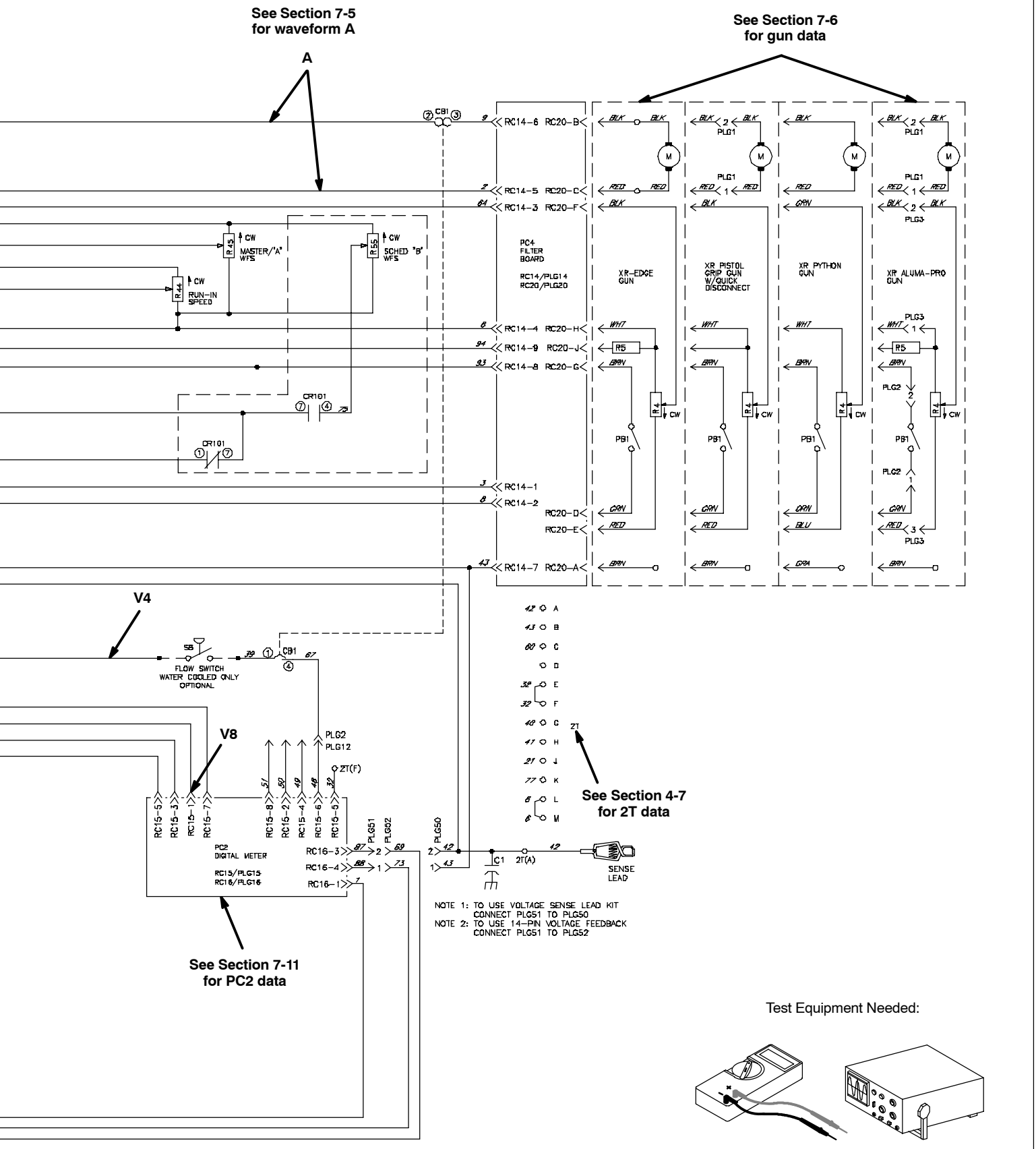
7-4. Troubleshooting Circuit Diagram For Wire Feeders With Serial Nos. Following LE212804

Resistance Values	
R1	All values for T1 are less than 1 ohm

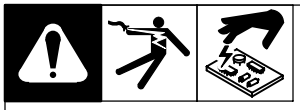
Voltage Readings
a) Tolerance – ±10% unless specified
b) Reference to circuit common (lead 6 for DC, lead 32 for AC) unless noted
c) Wiring Diagram – see Section 9

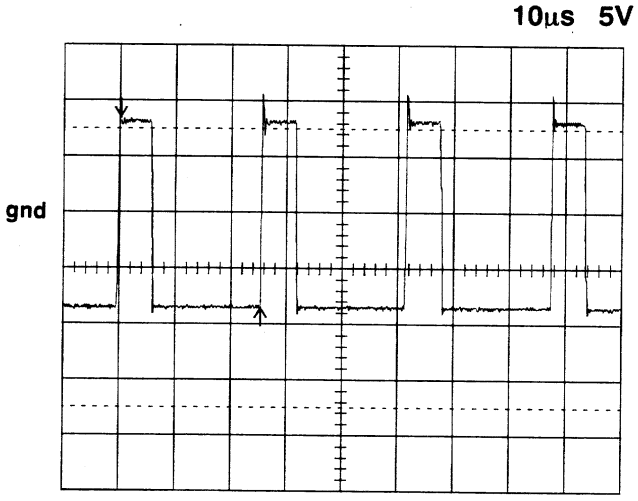
V1	24 volts ac
V2	24 volts ac contactor with gun trigger pressed
V3	30 to 35 volts dc with PLG5 in INT. position on PC1, trigger pressed; 0 volts dc with PLG5 in INT. position, trigger pressed, and arc initiated
V4	30 to 35 volts dc with Power switch ON; 0 volts dc with trigger pressed
V5	0 to 9 volts dc from min to max of Master WFS control R45
V6	0 to 9 volts dc from min to max dependent on Master WFS control R45 and Gun Pot R4
V7	0 to 9 volts dc from min to max dependent on Master WFS control R45
V8	+15 volts dc if optional PC2 installed
V9	24 volts ac with gun trigger or Purge switch S2A pressed and during postflow
V10	24 volts ac with JOG switch pressed up or trigger pressed
V11	24 volts ac with torque switch in high and 16 volts ac with torque switch in low with gun trigger or switch S2 pressed for jog




See Section 7-5
for waveform A
A
See Section 7-6
for gun data
CB1
RC14-6 RC20-B
RC14-5 RC20-C
RC14-3 RC20-F
RC14-4 RC20-H
RC14-9 RC20-J
RC14-8 RC20-G
RC14-1
RC14-2
RC20-D
RC20-E
RC14-7 RC20-A
R45 CW MASTER/"A" WFS
R55 CW SCHED "B" WFS
R44 CW RUN-IN SPEED
PC4
FILTER
BOARD
RC14/PLG14
RC20/PLG20
CR101
XR-EDGE GUN
XR PISTOL GRIP GUN W/QUICK DISCONNECT
XR PYTHON GUN
XR ALUMA-PRO GUN
PB1
R5
R4 CW
V4
SB
FLOW SWITCH
WATER COOLED ONLY
OPTIONAL
V8
PLG2
PLG12
ZT(F)
RC15-5
RC15-3
RC15-1
RC15-7
RC15-8
RC15-2
RC15-4
RC15-6
RC15-5
PC2
DIGITAL METER
RC15/PLG15
RC16/PLG16
RC16-3
RC16-4
RC16-1
PLG51
PLG52
PLG50
C1
2T(A)
SENSE LEAD
ZT
See Section 4-7
for 2T data
See Section 7-11
for PC2 data
NOTE 1: TO USE VOLTAGE SENSE LEAD KIT
CONNECT PLG51 TO PLG50
NOTE 2: TO USE 14-PIN VOLTAGE FEEDBACK
CONNECT PLG51 TO PLG52
Test Equipment Needed:
218 814-D

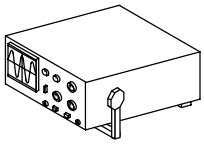
7-5. Waveform For Section 7-3



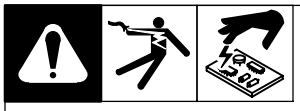


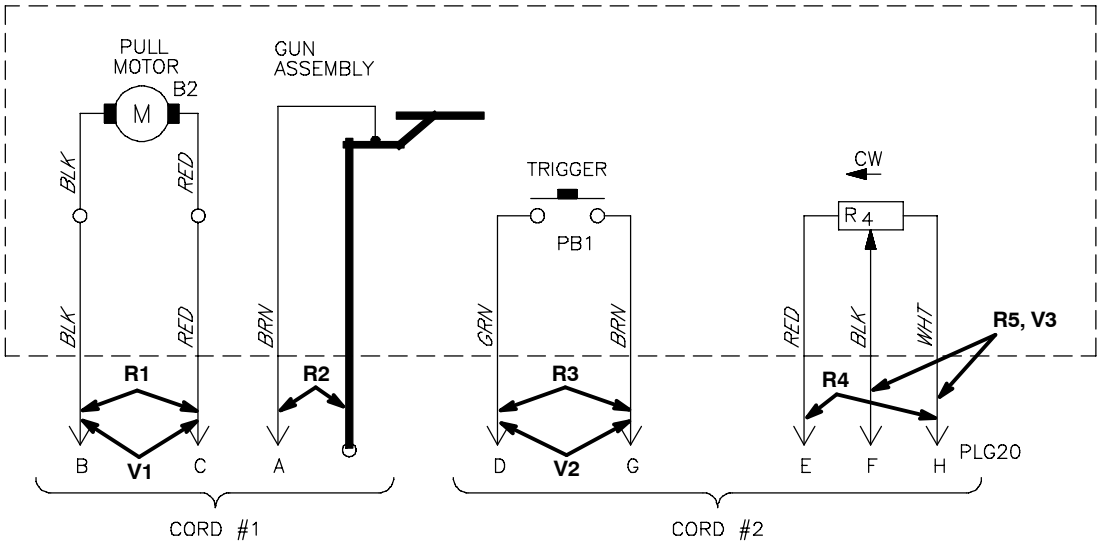
A. Signal To Gun Motor B2, 200 RPM

Test Equipment Needed:

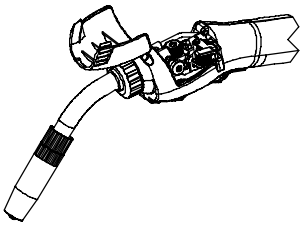


7-6. Troubleshooting Circuit Diagram For XR Edge Gun Prior To Serial No. LE079101





Voltage Readings: a) 10-pin plug PLG2 Connected b) Tolerance – ±10% unless specified	
For Gun Using Air-Cooled Or Water-Cooled Model Wire Feeder	
V1	2 volts dc input, motor running, R4 totally CCW 30 volts dc input, motor running, R4 totally CW
V2	32 volts dc (±4V) 0 volts dc with trigger pressed
V3	0 volts dc, R4 totally CCW 9 volts dc, R4 totally CW



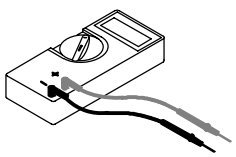
Resistance Values:

a) 10-pin plug PLG2 Connected

b) Tolerance – ±10% unless specified

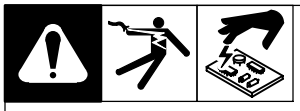
R1	10 to 100 ohms
R2	0 ohms
R3	0 ohms with trigger pressed
R4	10 Kilohms
R5	0 ohms totally CCW 10 Kilohms totally CW

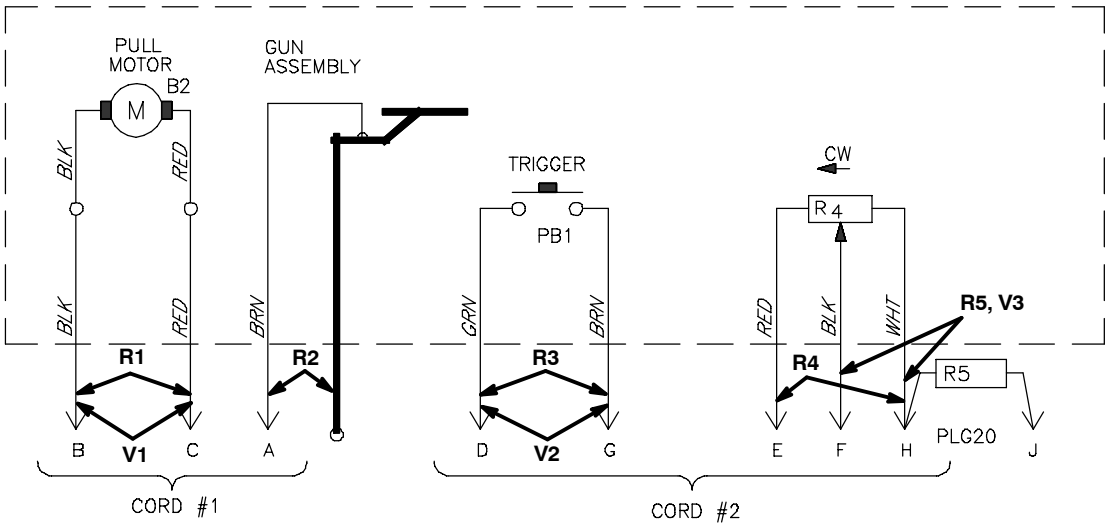
Test Equipment Needed:



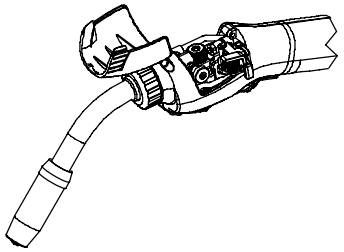
195 712-A / Ref. 801 556-B

7-7. Troubleshooting Circuit Diagram For XR Edge Gun With Serial Nos. Following LE079101





Voltage Readings: a) 10-pin plug PLG2 Connected b) Tolerance – ±10% unless specified	
For Gun Using Air-Cooled Or Water-Cooled Model Wire Feeder	
V1	2 volts dc input, motor running, R4 totally CCW 30 volts dc input, motor running, R4 totally CW
V2	32 volts dc (±4V) 0 volts dc with trigger pressed
V3	0 volts dc, R4 totally CCW 9 volts dc, R4 totally CW



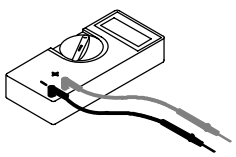
Resistance Values:

a) 10-pin plug PLG2 Connected

b) Tolerance – ±10% unless specified

R1	10 to 100 ohms
R2	0 ohms
R3	0 ohms with trigger pressed
R4	10 Kilohms
R5	0 ohms totally CCW 10 Kilohms totally CW

Test Equipment Needed:



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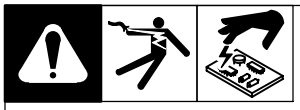
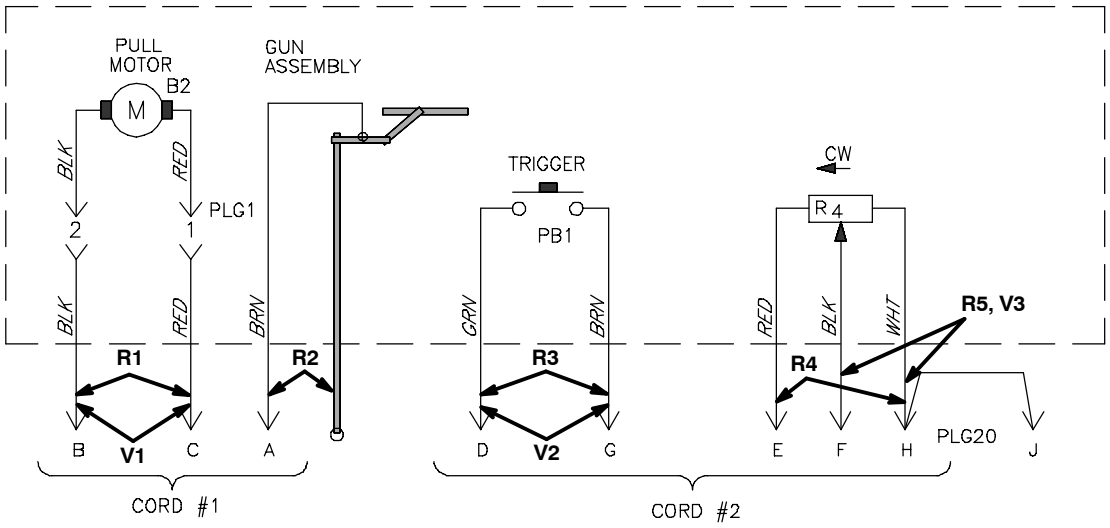
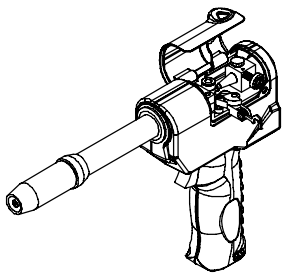
7-8. Troubleshooting Circuit Diagram For XR Pistol Grip Gun



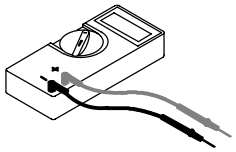


Voltage Readings: a) 10-pin plug PLG2 Connected b) Tolerance – ±10% unless specified	
For Gun Using Air-Cooled Or Water-Cooled Model Wire Feeder	
V1	2 volts dc input, motor running, R4 totally CCW 30 volts dc input, motor running, R4 totally CW
V2	32 volts dc (±4V) 0 volts dc with trigger pressed
V3	0 volts dc, R4 totally CCW 9 volts dc, R4 totally CW



Resistance Values: a) 10-pin plug PLG2 Connected b) Tolerance – ±10% unless specified	
R1	10 to 100 ohms
R2	0 ohms
R3	0 ohms with trigger pressed
R4	10 Kilohms
R5	0 ohms totally CCW 10 Kilohms totally CW

Test Equipment Needed:



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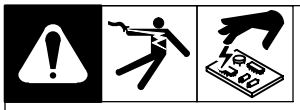
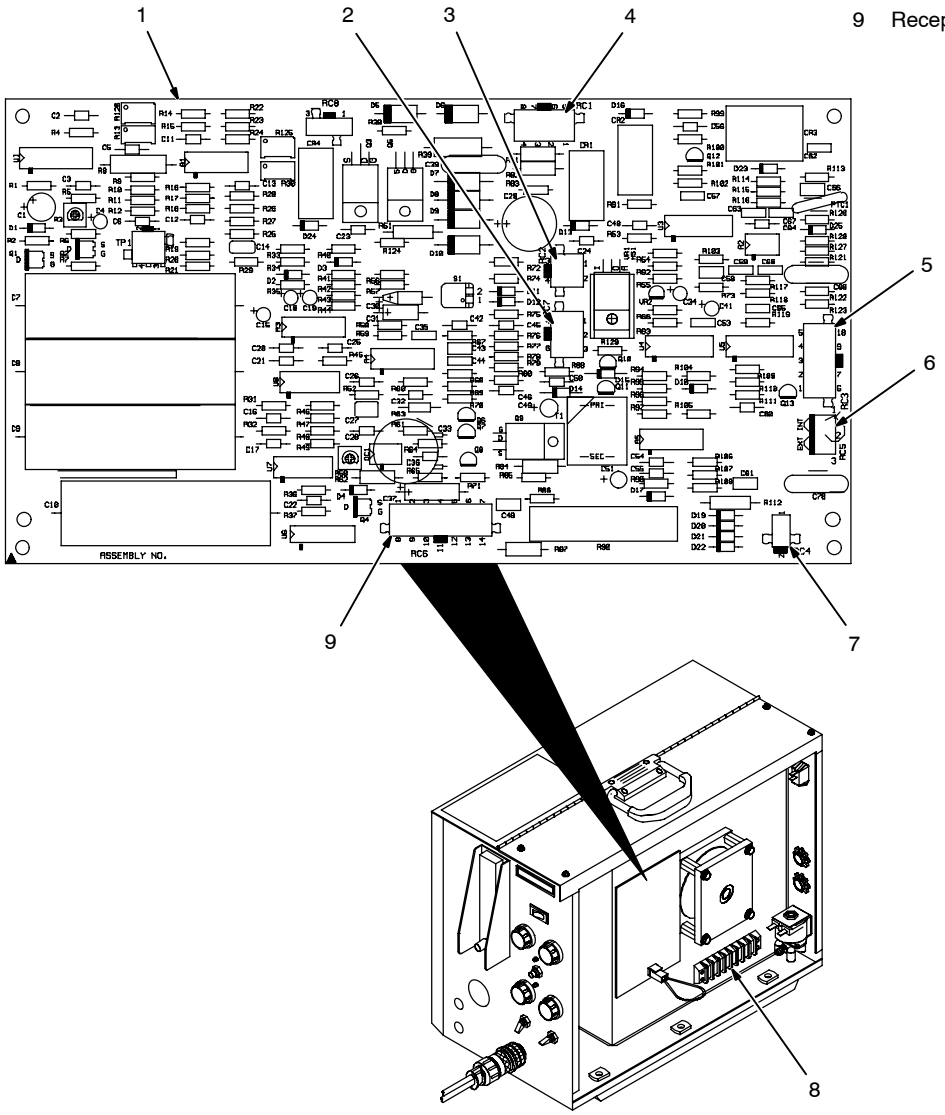
7-9. Motor Control Board PC1 Testing Information (Use With Section 7-10)

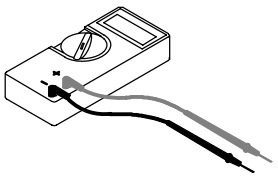


Be sure plugs are secure before testing. Use Section 7-10 for specific values during testing.

1 Motor Control Board PC1
2 Receptacle RC7
3 Receptacle RC2
4 Receptacle RC1
5 Receptacle RC3
6 Receptacle RC5
7 Receptacle RC4
8 Terminal Strip 2T
9 Receptacle RC6

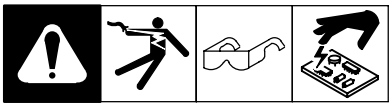


Test Equipment Needed:



210 371-C / Ref. 801 557

7-10. Motor Control Board PC1 Test Point Values (For Use With Sections 7-3 and 7-9)



PC1 Voltage Readings

a) Tolerance – ±10% unless specified

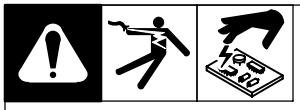
b) Triggered – means gun trigger is pressed

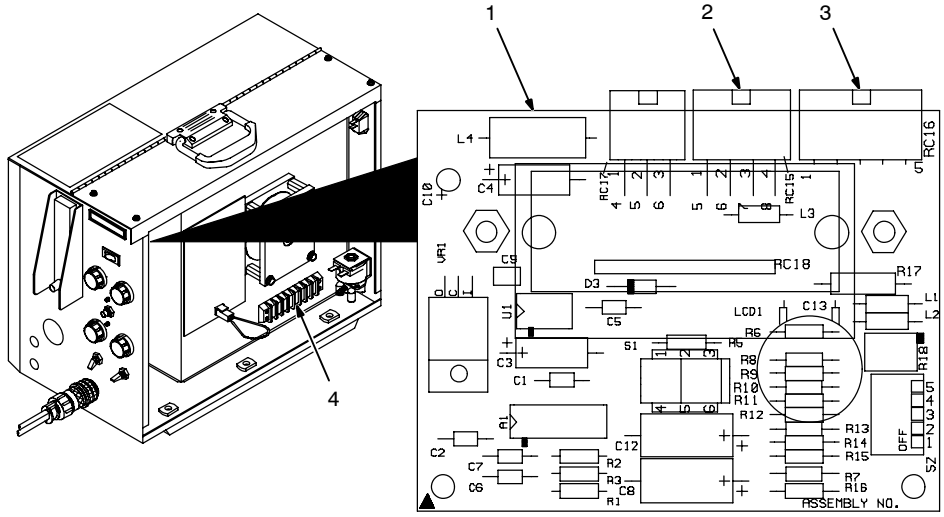
c) Reference – For DC circuit common: Use lead 6; For AC circuit common: Use lead 32

Receptacle	Pin	Value
RC1	1	With current sensing (reed) relay shorted, 0 volts dc output with gun trigger pressed and PLG5 in INT. position, 35 volts dc with trigger pressed and PLG5 in EXT. position
	2	0 volts dc output with gun trigger pressed and PLG5 in INT. position, 35 volts dc with trigger pressed and PLG5 in EXT. position along with a jumper between 2T (G) and 2T (H) on terminal strip
	3	15 volts dc output
	4	AC circuit common
	5	15 volts dc input with gun trigger pressed, 0 volts dc without gun trigger pressed
	6	24 volts ac input
	7	0 to 28 volts dc output, positive (+) connection to pull motor B2
	8	0 volts dc output, negative (–) connection to pull motor B2
RC2	1	35 volts dc output when wire feeder is energized, 0 volts dc with gun trigger pressed
	2	DC circuit common for Spot/Burnback or Meter options
	3	15 volts dc output for Spot/Burnback or Meter options
	4	0 to 9 volts dc output from GUN POT (R4) control to meter board and is dependent on where MASTER “A” WFS (R45) control is set
RC3	1	35 volts dc output for Spot/Burnback and/or Dual Schedule options
	2	0 to 9 volts dc output to GUN POT WFS (R4) control and is dependent on where MASTER “A” WFS (R45) control is set
	3	15 volts dc output with gun trigger pressed, or 15 volts dc input with switch S2 pressed for JOG
	4	0 to 9 volts dc output to RUN-IN SPEED (R44) control and is dependent on where MASTER “A” WFS (R45) and GUN POT WFS (R4) controls are set
	5	9 volts dc output to MASTER “A” WFS (R45) and optional SCHEDULE “B” WFS (R55) controls
	6	DC circuit common for MASTER “A” WFS (R45), RUN-IN SPEED (R44), GUN POT WFS (R4), and optional SCHEDULE “B” WFS (R55) controls
	7	0 volts ac output, 24 volts ac with gun trigger or switch S2 pressed for JOG to release BRAKE (MP1)
	8	24 volts ac output with gun trigger pressed
	9	0 to 9 volts dc input from RUN-IN SPEED (R44) control and is dependent on where MASTER “A” WFS (R45) and GUN POT WFS (R4) controls are set
	10	0 to 9 volts dc input from MASTER “A” WFS (R45) control
RC4	1	Positive (+) arc voltage input with respect to pin 2 when voltage sensing lead used
	2	Negative (–) arc voltage input with respect to pin 1 when voltage sensing lead used
RC5	1	DC circuit common
	2	35 volts dc with jumper in EXT., or 0 volts dc with jumper in INT.
	3	35 volts dc with jumper in EXT., or 0 volts dc with jumper in INT.
RC6	1	Common for RC7 pin 3

Receptacle	Pin	Value
	2	DC circuit common for TRIGGER HOLD switch S4
	3	0 volts dc with TRIGGER HOLD switch “OFF” or 15 volts dc with TRIGGER HOLD switch “ON”
	4	0 to 9 volts dc input from GUN POT WFS (R4) control and is dependent on where MASTER “A” WFS (R45) control is set
	5	0 volts dc with trigger pressed, 35 volts dc with wire feeder energized or 10 volts dc with wire feeder energized and with Spot/Burnback option
	6	AC circuit common
	7	35 volts dc with wire feeder energized
	8	0 volts ac output, 36 to 46 volts ac with gun trigger or switch S2 pressed for JOG
	9	35 volts dc with wire feeder energized, 2 volts dc with Dual Schedule option
	10	35 volts dc with wire feeder energized, 0 volts dc with trigger pressed
	11	0 volts ac output, 24 volts ac with switch S7 in “LOW TORQUE” or “HIGH TORQUE” with gun trigger or switch S2 pressed for JOG
	12	0 volts ac output, 16 volts ac with switch S7 in “LOW TORQUE” with gun trigger or switch S2 pressed for JOG or 24 volts ac with S7 in “HIGH TORQUE” with gun trigger or switch S2 pressed for JOG
	13	0 volts ac output, 24 volts ac with switch S7 in “HIGH TORQUE” with gun trigger or switch S2 pressed for JOG, 16 volts ac with switch S7 in “LOW TORQUE” with gun trigger or switch S2 pressed for JOG
	14	0 volts ac output, 24 volts ac with gun trigger or switch S2 pressed for PURGE
RC7	1	0 to 9 volts dc input from GUN POT WFS (R4) control and is dependent on where MASTER “A” WFS (R45) control is set
	2	15 volts dc output when triggered for Dual Schedule option
	3	Positive (+) 7 volts dc with respect to RC6 pin 1 for gun trigger
	4	15 volts dc input when triggered for Spot/Burnback option
	5	15 volts dc input when triggered for Spot/Burnback option
	6	0 to 9 volts dc output from GUN POT WFS (R4) control and is dependent on where MASTER “A” WFS (R45) control is set

7-11. Optional Digital Meter Board PC2 Testing Information (Use With Section 7-12)





Be sure plugs are secure before testing. Use Section 7-12 for specific values during testing.

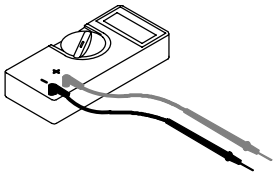
1 Digital Meter Board PC2

2 Receptacle RC15

3 Receptacle RC16

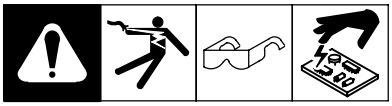
4 Terminal Strip 2T

Test Equipment Needed:



Ref. 801 557 / 186 266-C

7-12. Digital Meter Board PC2 Test Point Values (For Use With Sections 7-3 And 7-11)



PC2 Voltage Readings

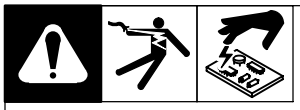
a) Tolerance – ±10% unless specified

b) Triggered – means gun trigger is pressed

c) Reference – For DC circuit common: Use lead 6; For AC circuit common: Use lead 32

Receptacle	Pin	Value
RC15	1	15 volts dc input
	2	15 volts dc output
	3	DC circuit common
	4	DC circuit common
	5	Input trigger control signal – 0 volts dc with gun trigger pressed and 35 volts dc without gun trigger pressed
	6	Input trigger control signal – 0 volts dc with gun trigger pressed and 35 volts dc without gun trigger pressed
	7	0 to 9 volts dc input from GUN POT (R4) control and is dependent on where MASTER “A” WFS (R45) control is set
	8	0 to 9 volts dc output from GUN POT (R4) control and is dependent on where MASTER “A” WFS (R45) control is set
RC16	1	24 volts ac input with respect to RC16 pin 5
	2	Not used
	3	Negative (–) arc voltage input from voltage sensing lead or pin D of 14 pin
	4	Positive (+) arc voltage input from wire drive housing or pin H of 14 pin
	5	24 volts ac input with respect to RC16 pin 1

7-13. Optional Spot/Burnback Board PC3 Testing Information (Use With Section 7-14)



Be sure plugs are secure before testing. Use Section 7-14 for specific values during testing.

1 Spot/Burnback Board PC3

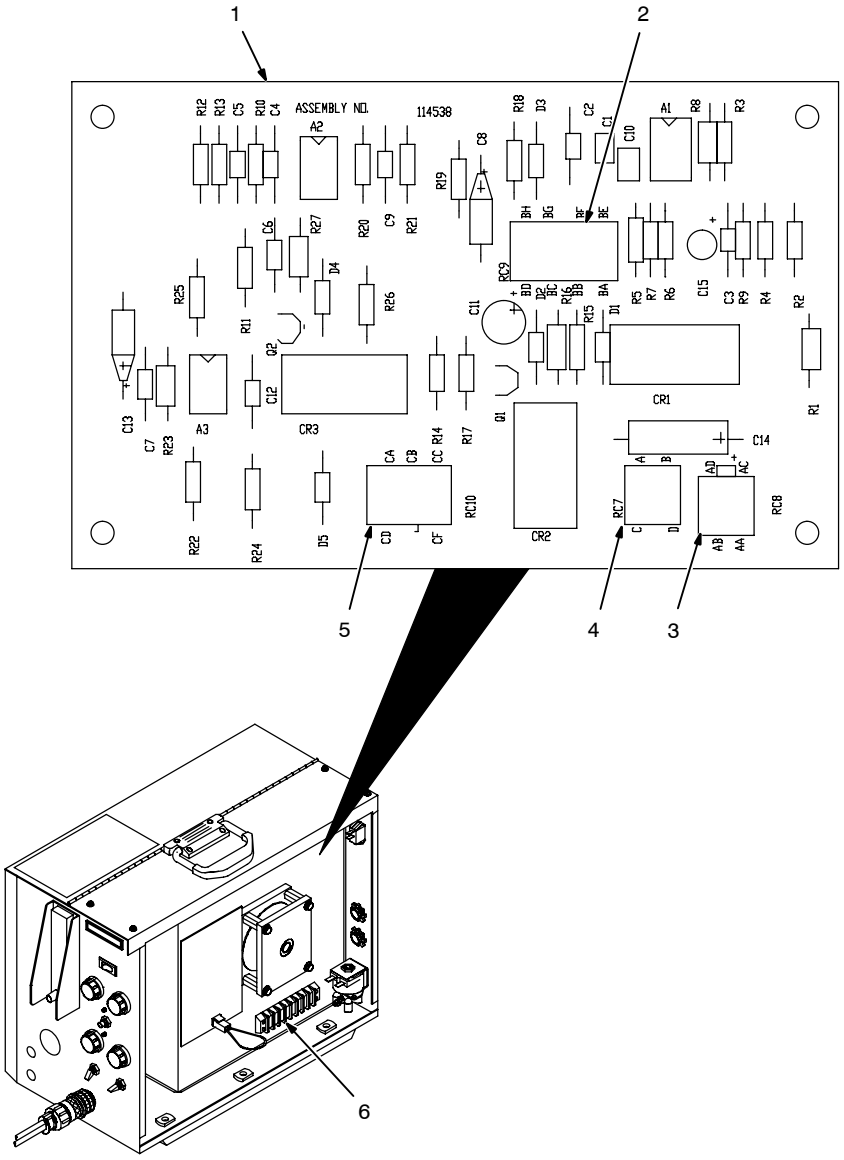
2 Receptacle RC9

3 Receptacle RC8

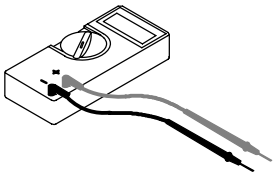
4 Receptacle RC7

5 Receptacle RC10

6 Terminal Strip 2T



Test Equipment Needed:



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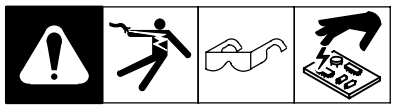
7-14. Spot/Burnback Board PC3 Test Point Values (For Use With Sections 7-3 And 7-13)



PC3 Voltage Readings

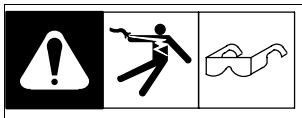
a) Tolerance – ±10% unless specified

b) Triggered – means gun trigger is pressed

c) Reference – For DC circuit common: Use lead 6; For AC circuit common: Use lead 32

Receptacle	Pin	Value
RC7	A	35 volts dc input without gun trigger pressed and after spot timer times out, 0 volts dc with Current Sensing Relay shorted, spot timer running and trigger is pressed continuously
	B	DC circuit common
	C	15 volts dc input
	D	0 to 9 volts dc input command from GUN POT (R4) control and is dependent on where MASTER “A” WFS (R45) control is set
RC8	AA	10 volts dc input without gun trigger pressed, 0 volts dc with gun trigger pressed
	AB	DC circuit common
	AC	15 volts dc output
	AD	0 to 9 volts dc output command from GUN POT (R4) control and is dependent on where MASTER “A” WFS (R45) control is set
RC9	BA	0 volts dc output, 13 volts dc with gun trigger pressed after run-in time
	BB	35 volts dc output, 0 volts dc with gun trigger pressed after run-in time
	BC	35 volts dc input
	BD	DC circuit common
	BE	0 to 13 volts dc input with gun trigger pressed after run-in time. Or slow change from 0 to 13 volts dc as spot time times out
	BF	Slow change from 0 to 13 volts dc input with gun trigger pressed, after run-in time, as spot time times out
	BG	0 to 13 volts dc input with gun trigger pressed after run-in time
	BH	Slow change from 0 to 13 volts dc input with gun trigger pressed, after run-in time, as spot time times out in spot mode; dc circuit common while in continuous mode
RC10	CA	0 volts dc input without gun trigger pressed; 13 volts dc with trigger pressed before spot timer times out; changes from 13 to 0 volts dc as burnback timer times out after trigger released or spot timer times out
	CB	0 volts dc output without gun trigger pressed, 13 volts dc during spot time with trigger pressed, 0 volts dc after gun trigger is released or spot timer times out
	CC	Common for RC10 pin CF
	CD	Common for RC10 pin CF
	CE	Not used
	CF	35 volts dc without gun trigger pressed, 0 volts dc with gun trigger pressed

SECTION 8 – MAINTENANCE

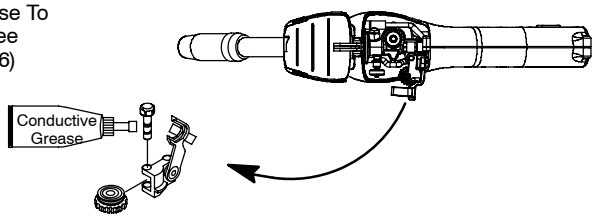


▲ **Disconnect power before maintaining.**

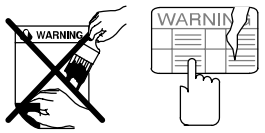
☞ *Maintain more often during severe conditions.*

4 To 6 Weeks

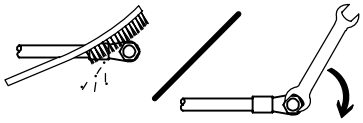
Apply Conductive Grease To Drive Roll Screw (See Sections 8-2 And 8-6)



3 Months

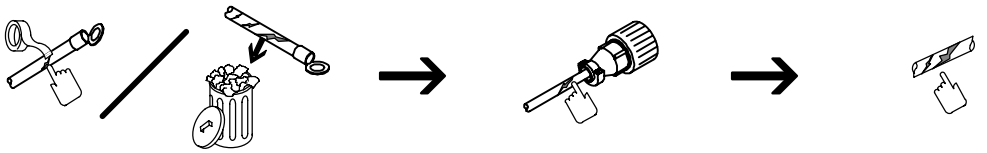


Replace Damaged Or Unreadable Labels



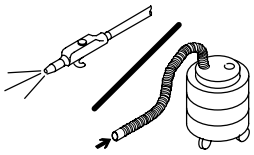
Clean And Tighten Weld Terminals

Replace Damaged Gas Hose

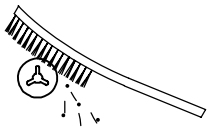


Repair Or Replace Cracked Cables And Cords

6 Months

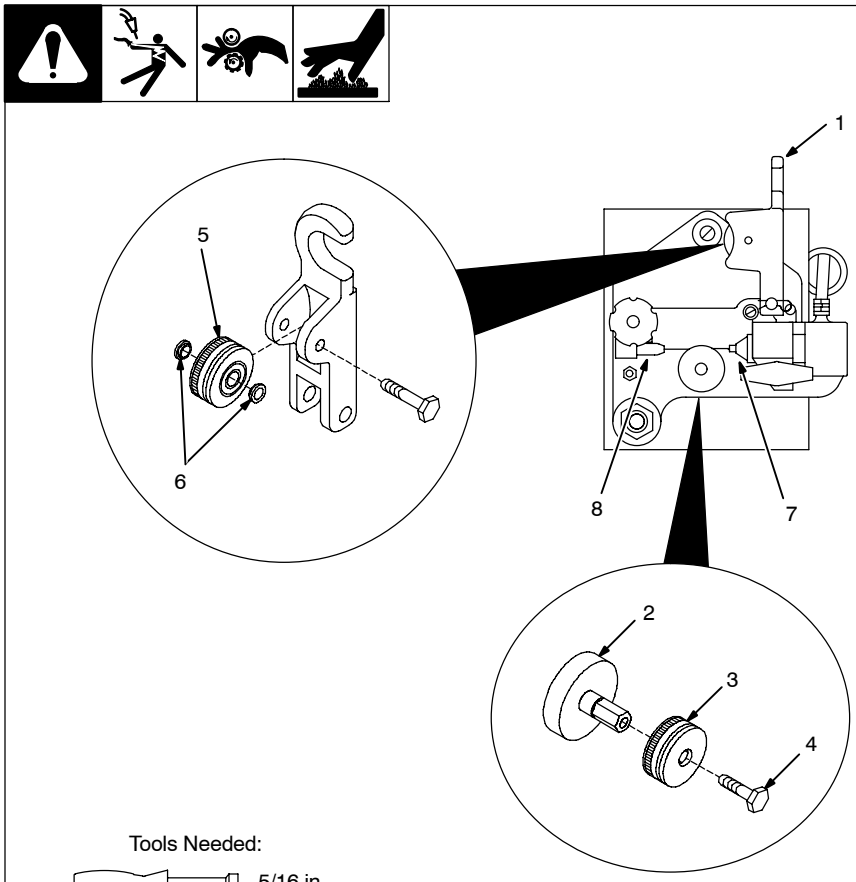


Blow Out Or Vacuum Inside

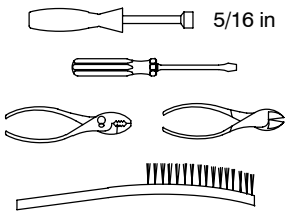


Clean Drive Rolls

8-1. Feeder Drive Assembly Maintenance



Tools Needed:



Retract wire onto spool.

1 Pressure Roll Assembly

2 Drive Motor Shaft

3 Drive Roll

4 Screw

Use wire brush to clean drive roll.

5 Drive Roll Idler

6 Shoulder Washers

Use wire brush to clean idler.

7 Outlet Guide

8 Wire Inlet Guide

Pull guide toward rear of feeder to remove. Install new guide.

Thread welding wire and adjust drive roll pressure, if necessary (see Section 4-12).

Drive roll and idler are available for the following wire size ranges:

.030-.035 wire size

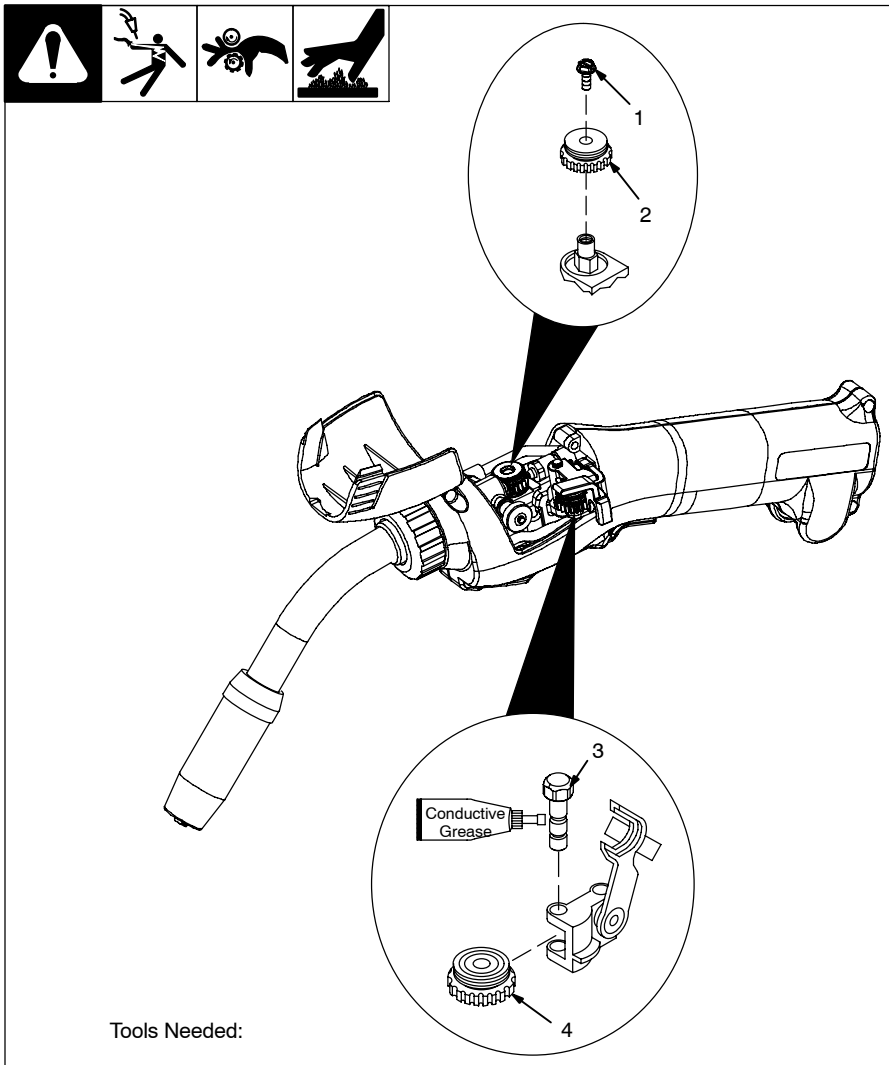
.047 wire size

.062 wire size

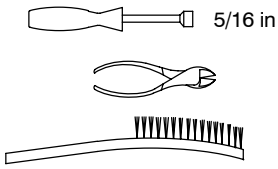
When changing wire size, change control box drive roll and idler, gun pressure roll and drive roll (see Section 8-2 for XR-Edge guns; see Sections 8-6 and 8-7 for pistol-grip guns), and gun liner (see Section 8-3 for XR-Edge guns; see Section 8-8 for pistol-grip guns).

802 193-A

8-2. Gun Drive Assembly Maintenance For An XR-Edge Gun



Tools Needed:



Retract wire onto spool.

1 Screw

2 Drive Roll

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

☞ *Apply conductive grease to drive roll post every 4 to 6 weeks.*

3 Post

4 Pressure Roll w/Bearing

Use wire brush to clean pressure roll. Install pressure roll so that gear teeth mesh with drive roll gear teeth, and secure with screw.

If changing drive roll in feeder, see Section 8-1.

Thread welding wire through gun. Close and secure pressure roll assembly. Adjust drive roll pressure, if necessary (see Section 4-12).

Drive roll and pressure roll are available for the following wire sizes:

.030 wire size

.035 wire size

.047 wire size

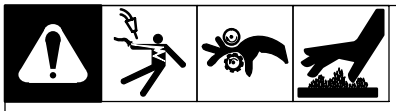
.062 wire size

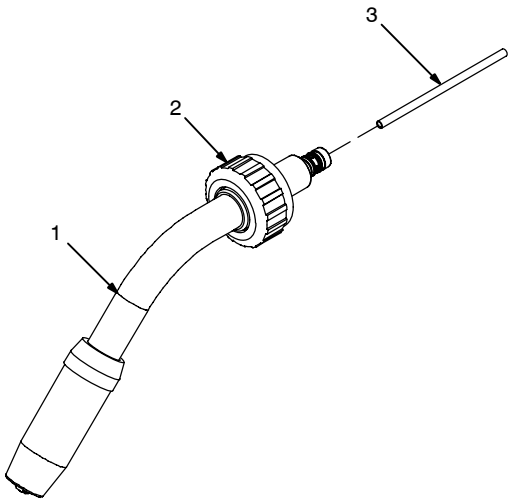
When changing wire size, change control box drive roll and idler (see Section 8-1), gun pressure roll and drive roll, and gun liner (see Section 8-3 and 8-8).

Close top cover.

Ref. 801 556-C

8-3. Replacing Head Tube Liner In XR-Edge Guns





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

The standard head tube liner will accommodate wire diameters from .030-1/16 wire size.

When changing wire size, change control box drive roll and idler (see Section 8-1), gun pressure roll and drive roll (see Sections 8-2 and 8-6).

1 Head Tube

2 Head Tube Nut

Loosen head tube nut and remove head tube from gun.

3 Liner

Pull liner out of head tube.

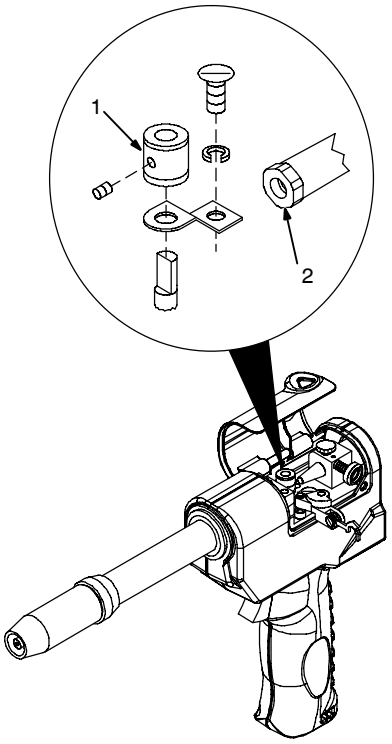
Insert new liner into head tube and reinstall head tube onto gun.

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

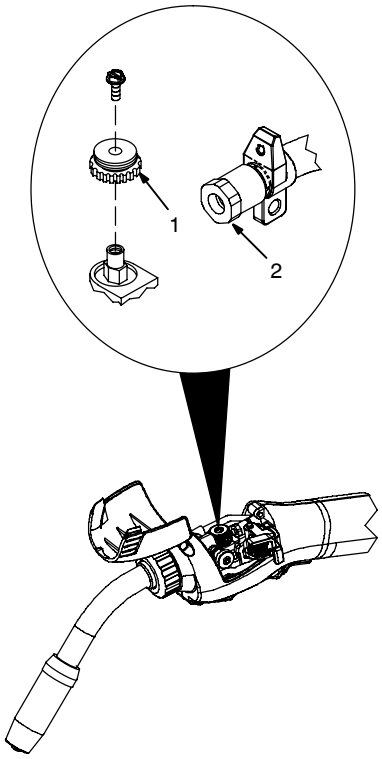
☞ *Be sure head tube nut is securely tightened before operating gun. If head tube nut is not adequately tightened, unwanted arcing may occur between head tube and gun housing.*

Ref. 801 556-C

8-4. Replacing The Liner



Pistol Grip Gun



XR-Edge Gun

▲ **Turn Off welding power source and wire feeder.**

1 Drive Roll

2 Collet Nut

Lay gun cable out straight. Remove drive roll on gun and collet nut on liner tube assembly.

3 Gun Connector

Remove inlet guide from gun connector, and remove old liner.

4 New Liner

Insert split end of new liner into gun connector and continue feeding liner through cable assembly until liner is through liner tube assembly and all of split portion is visible.

☞ *If gun is a 15 ft (4.5 m) model, push the split end of liner through until the opposite end is sticking out of the gun connector 1 to 2 inches (2.5 to 5 cm). After trimming, the section with the split on it can be saved to use as another replacement liner.*

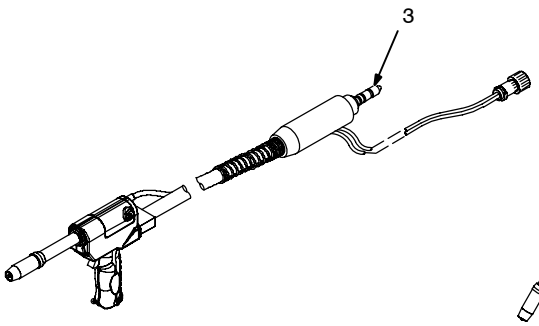
Cut off split portion of liner. Replace collet nut with new nut from this kit. Reinstall inlet guide at gun connector and tighten onto liner.

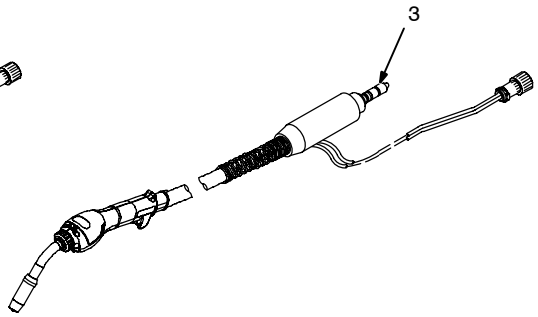
The liner end will not stick out of the collet nut supplied with this kit.

At the gun connection end, cut liner as close as possible to control (push motor) drive rolls.

Refer to Owner's Manual for instructions on rethreading wire.

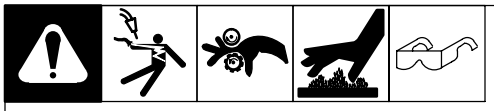
☞ *On pistol grip models it may be easier to replace the collet nut with the liner conduit removed from the gun housing block.*

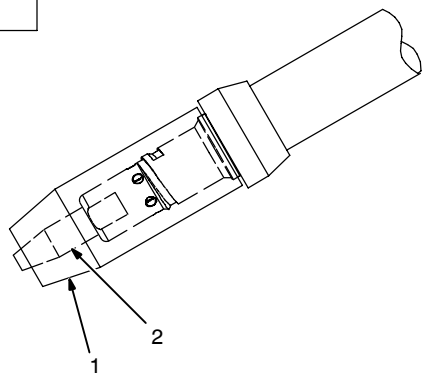




Ref. 151 599-F / Ref. 801 556-C / 801 564–E / Ref. 151 666-G / Ref. 200 371

8-5. Changing Gun Contact Tip





Remove nozzle

1 Nozzle

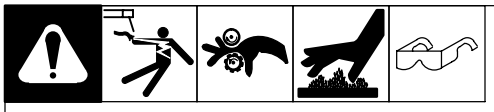
2 FasTip

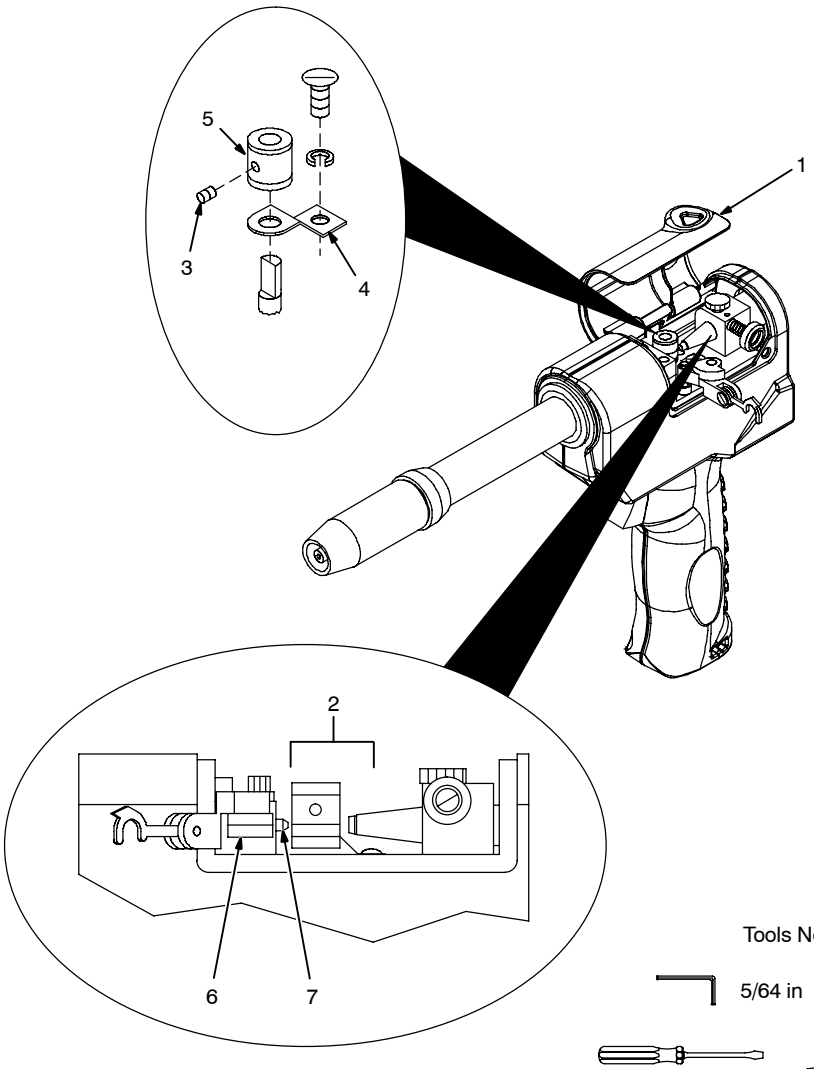
Unscrew FasTip.

Install new FasTip.

Ref. 150 437-A

8-6. Replacing Or Cleaning Gun Drive Roll In Pistol-Grip Guns





Turn Off wire feeder and welding power source.

1 Top Cover

2 Pressure Roll Assembly

Cut off wire where it enters pressure roll assembly area.

3 Setscrew

4 Current Pick-Up Tab

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

5 Drive Roll

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

6 Bearing

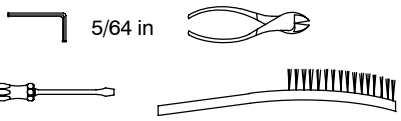
7 Liner

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

If changing drive roll in feeder, see Section 8-1.

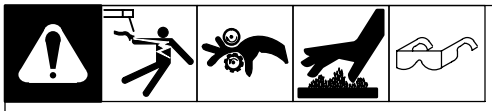
Thread welding wire through gun, and adjust drive roll pressure, if necessary (see Section 4-13). Close and secure pressure roll assembly. Reinstall top cover.

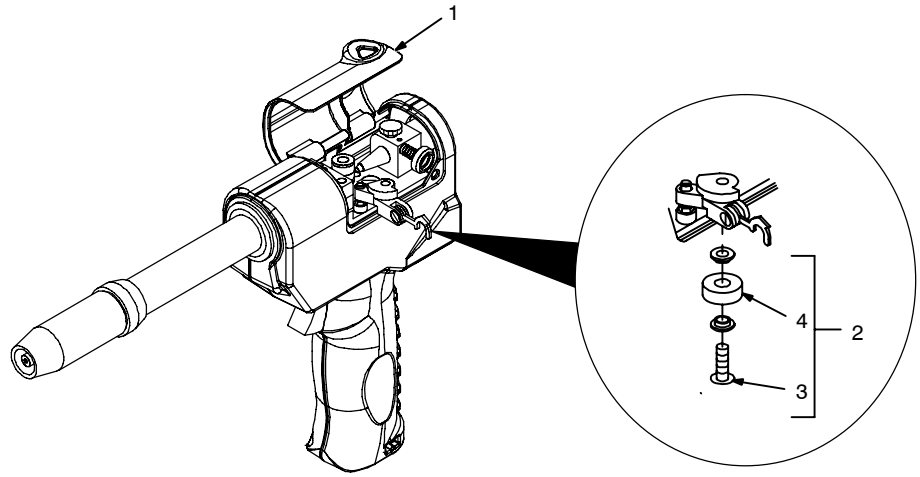
Tools Needed:



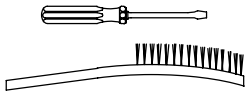
Ref. 151 599-F

8-7. Replacing Or Cleaning Gun Drive Roll Bearing In Pistol-Grip Guns





Tools Needed:



Turn Off wire feeder and welding power source.

1 Top Cover

2 Pressure Roll Assembly

3 Screw

4 Pressure Roll

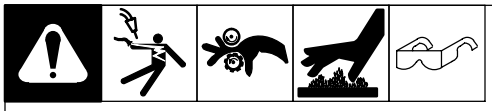
Remove as shown.

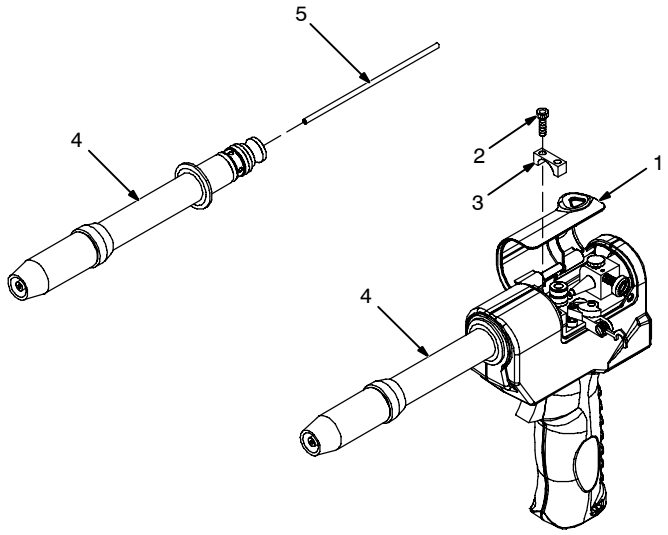
Use a wire brush to clean bearing. Reinstall with washers, and tighten screw.

Close pressure roll assembly. Reinstall top cover.

Ref. 151 599–F

8-8. Replacing Head Tube Liner In Pistol-Grip Guns





Tool Needed:

5/32 in

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

The standard head tube liner will accommodate wire diameters from .030-1/16 wire size.

When changing wire size, change control box drive roll and idler (see Section 8-1), gun drive roll (see Sections 8-2 and 8-6).

1 Cover

2 Screw

3 Clamp

Loosen clamp screws and remove clamp.

4 Head Tube

Remove head tube from gun.

5 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.*

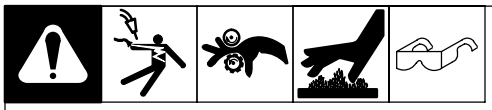
Ref. 803 917-A

8-9. Removing Diffuser In Air And Water-Cooled Pistol-Grip Guns

⚠ WARNING

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

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



Turn Off welding power source.

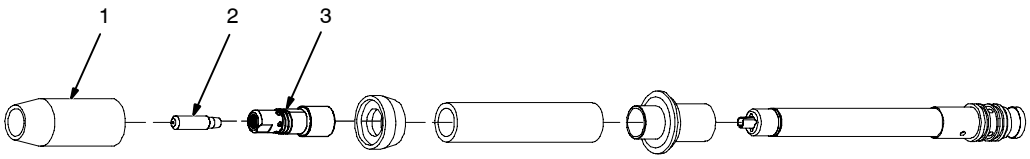
1 Nozzle

2 FasTip

To remove, see Section 8-5.

3 Diffuser

Remove diffuser and replace.

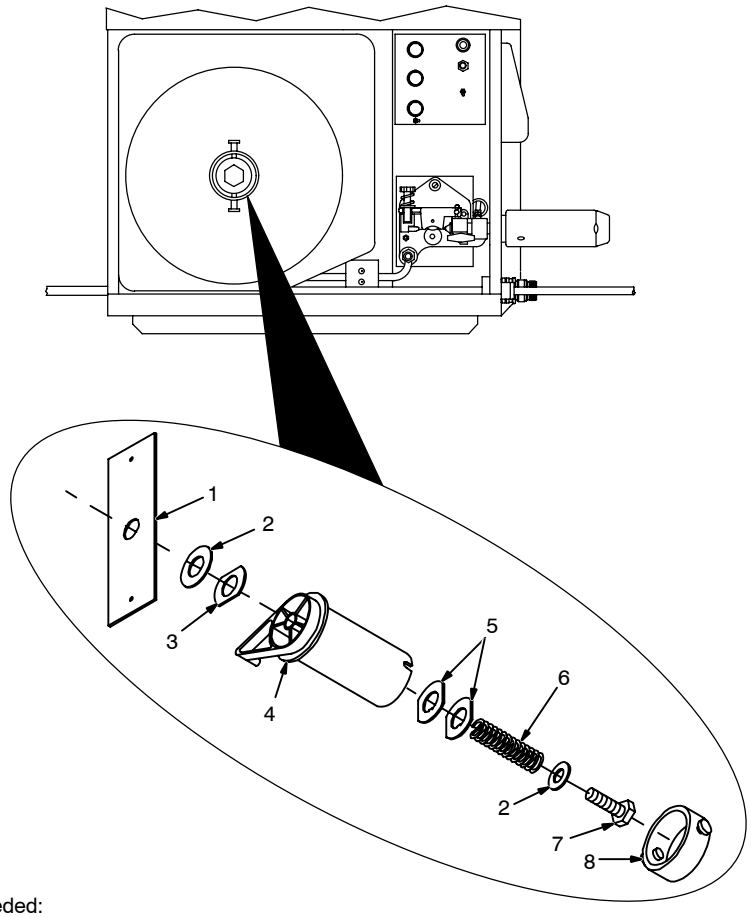


Air Cooled Head Tube Assembly

Tools Needed:

Ref. 803 348-G

8-10. Replacing Hub Assembly



Remove gun top cover and release pressure arm (see Sections 4-9 and 4-10).

Retract wire onto spool and remove spool. Take hub apart as shown.

1 Metal Brake Washer
2 Flat Washer
3 Brake Washer
4 Hub
5 Keyed Washer
6 Spring
7 Cap Screw
8 Retaining Ring

Replace broken or worn parts and slide parts onto shaft as shown.

Adjust hub tension and thread welding wire. Close and latch door.

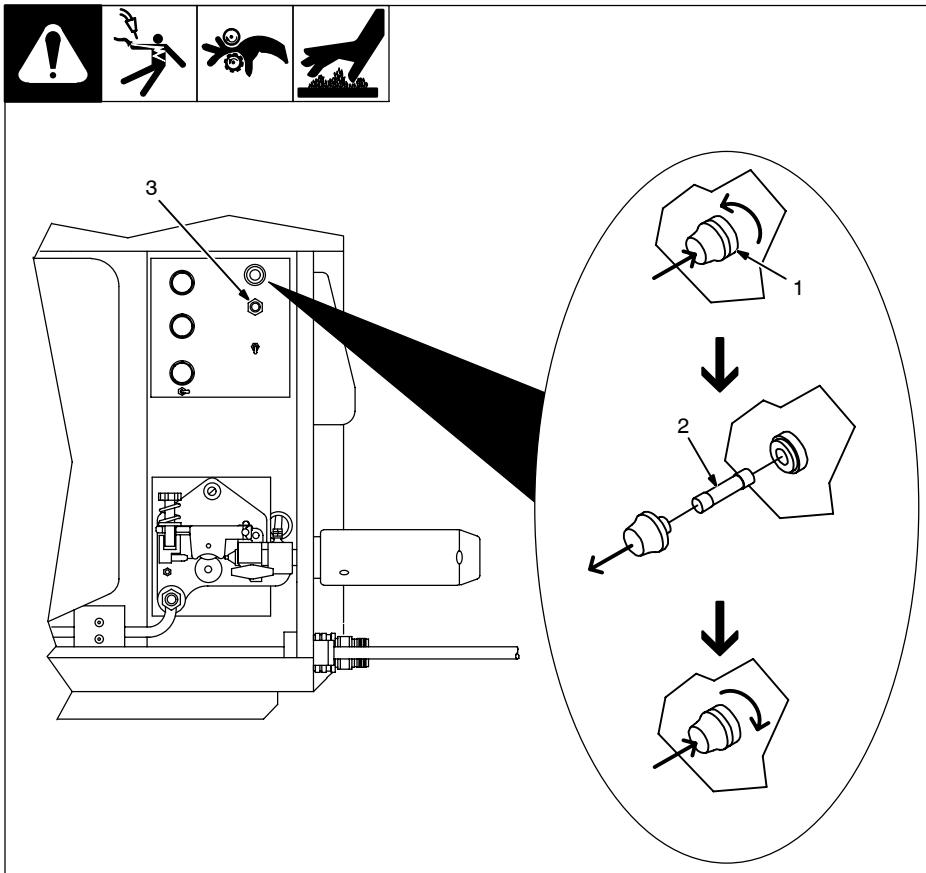
Close gun pressure roll assembly and reinstall gun cover.

Tools Needed:

7/16 in

801 577 / Ref. 143 223-A

8-11. Overload Protection



▲ **Turn Off wire feeder and welding power source. Stop engine on welding generator.**

If fuse opens, unit shuts down. To replace fuse, proceed as follows:

1 Fuse Holder Cover

2 Fuse F1 (See Parts List)

3 Circuit Breaker CB1

If CB1 opens, the gun drive motor, gas valve, and contactor will not operate when trigger is pulled. The gun drive motor operates in the Jog mode with CB1 open.

Check for blocked gun liner.

Check for jammed wire, binding drive gear or misaligned drive rolls in feeder. Correct problem.

Allow cooling period and manually reset breaker. Close and latch door.

Ref. 801 577 / Ref. 800 185-A

8-12. Water Flow Switch (Optional For Water-Cooled Models)

The water flow switch protects the gun from overheating. If coolant flow rate drops below 1 qt/min, the water flow switch opens and stops the welding wire from feeding. See Section 7-2 for remedies to this trouble.

Notes

MATERIAL THICKNESS REFERENCE CHART

24 Gauge (.025 in)

22 Gauge (.031 in)

20 Gauge (.037 in)

18 Gauge (.050 in)

16 Gauge (.063 in)

14 Gauge (.078 in)

1/8 in (.125 in)

3/16 in (.188 in)

1/4 in (.25 in)

5/16 in (.313 in)

3/8 in (.375 in)

1/2 in (.5 in)

SECTION 9 – ELECTRICAL DIAGRAMS

☞ *The circuits in this manual can be used for troubleshooting, but there might be minor circuit differences from your machine. Use circuit inside machine case or contact distributor for more information.*

The following is a list of all diagrams for models covered by this manual.

Model	Serial Or Style Number	Circuit Diagram	Wiring Diagram
Air-Cooled and Water-Cooled Wire Feeder	KK082113 thru LE079100	186 931-E	187 922-B♦♦
	LE079101 and following	218 814-D	187 922-C
Gun-XR Edge	KK082113 thru LE079100	195 712-A	
	LE079101 and following	218 815-A	
Gun-XR Pistol Grip	LC173265 and following	198 344-B	
Circuit Board PC1	KK082113 thru KK309905	181 259♦♦	
	KK309906 thru LA197604	197 718♦♦	
	LA197605 thru LC173264	198 978♦♦	
	LC173265 and following	210 373-C	
Circuit Board PC2♦	KK082113 and following	186 265-B	
Circuit Board PC3♦	KK082113 and following	114 922-B	
Circuit Board PC4, RC20	KK082113 thru KK309905	193 948♦♦	
	KK309906 and following	197 722-A	

♦ Optional

♦♦ Not included in this manual

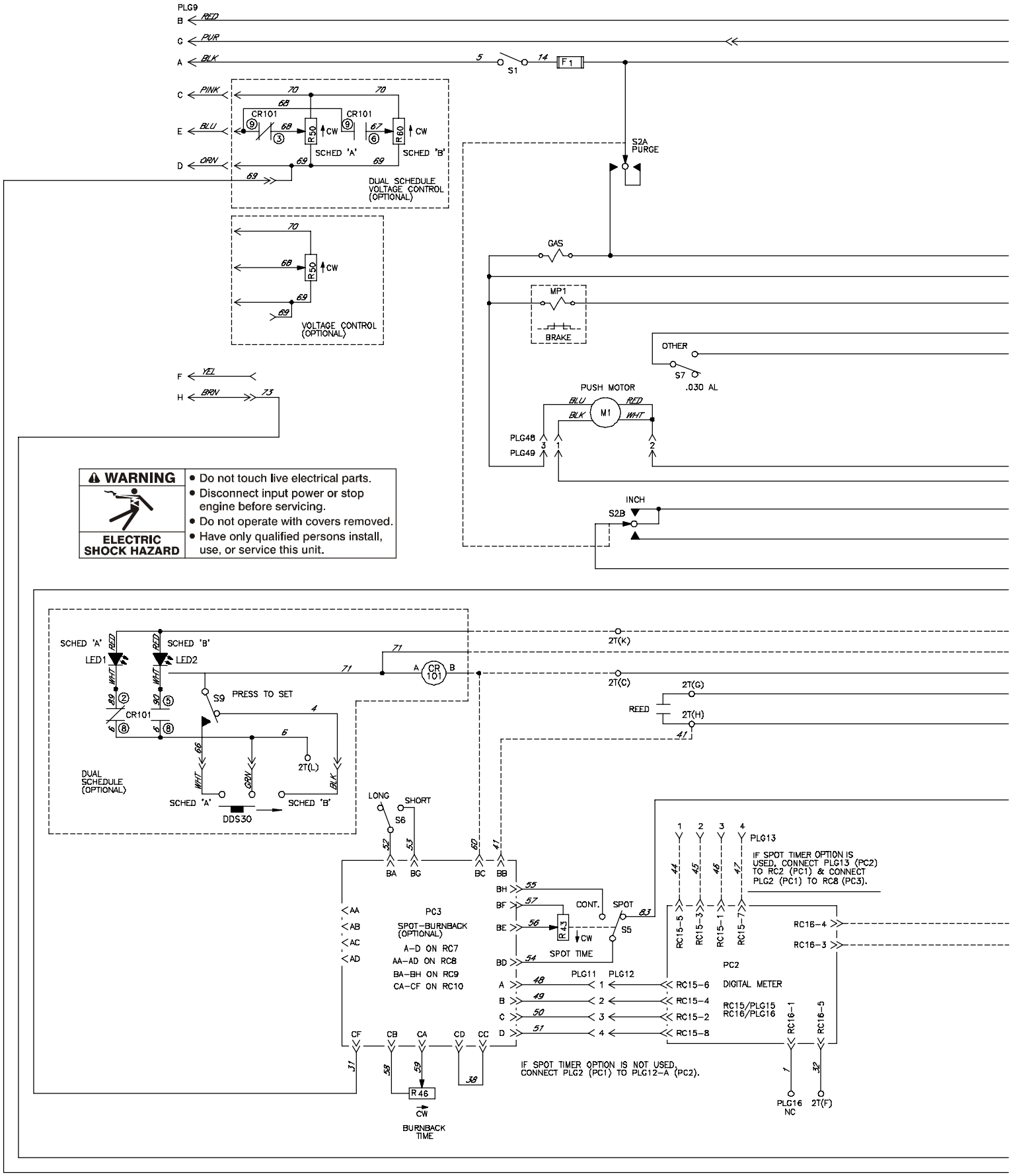
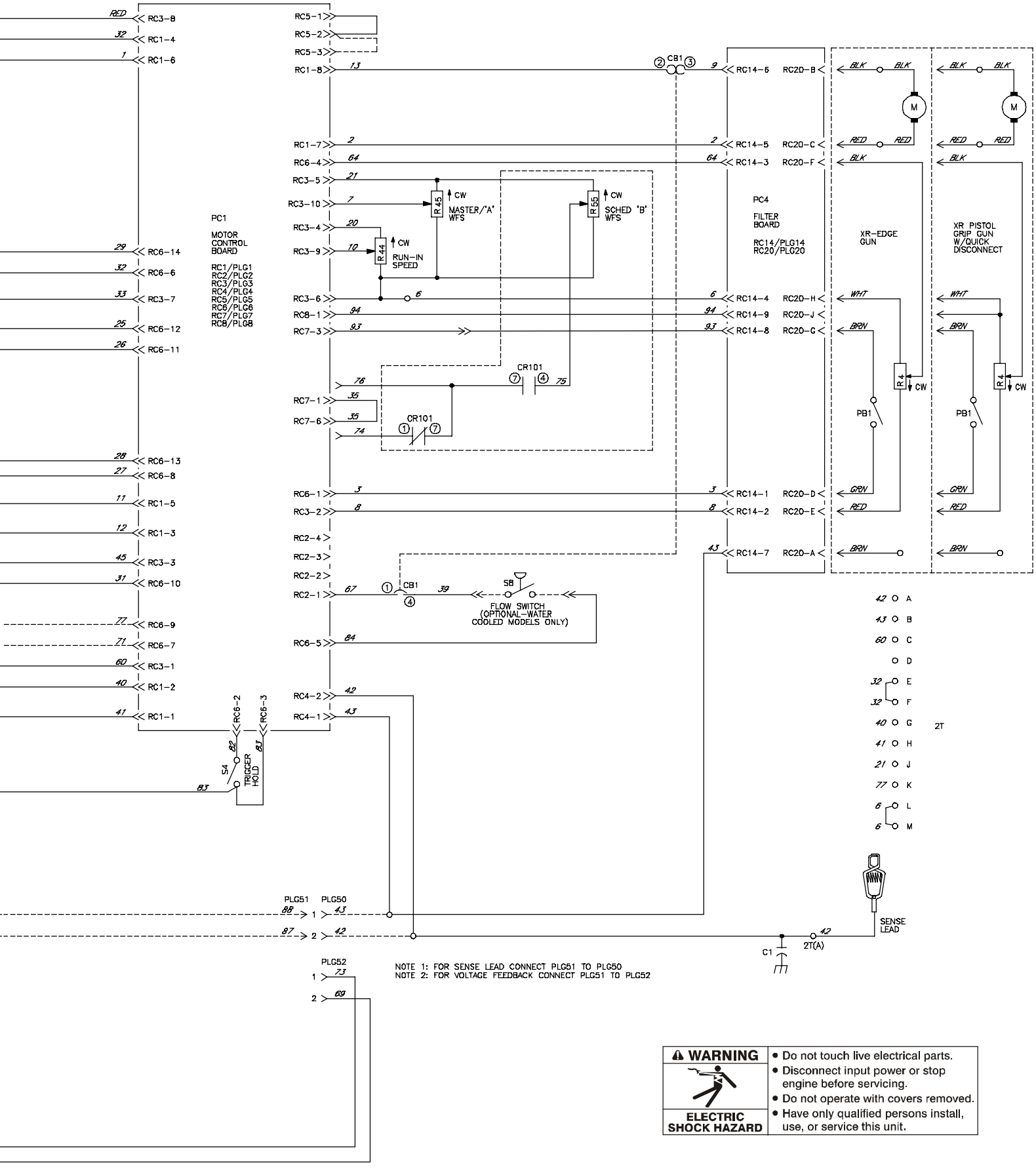


Figure 9-1. Circuit Diagram For Wire Feeder Effective With Serial No. KK082113 Thru LE079100



⚠ WARNING

ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.

186 931-E

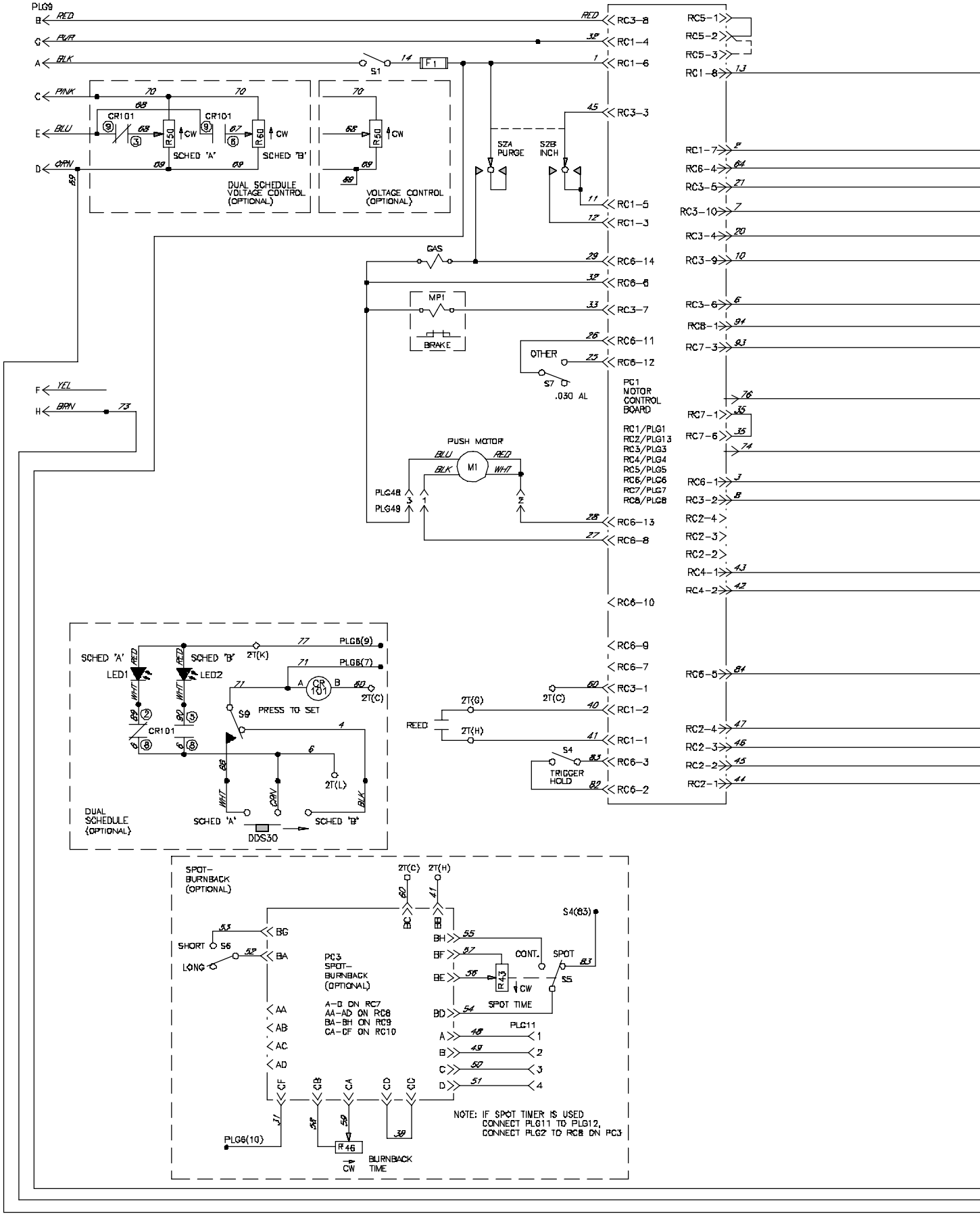
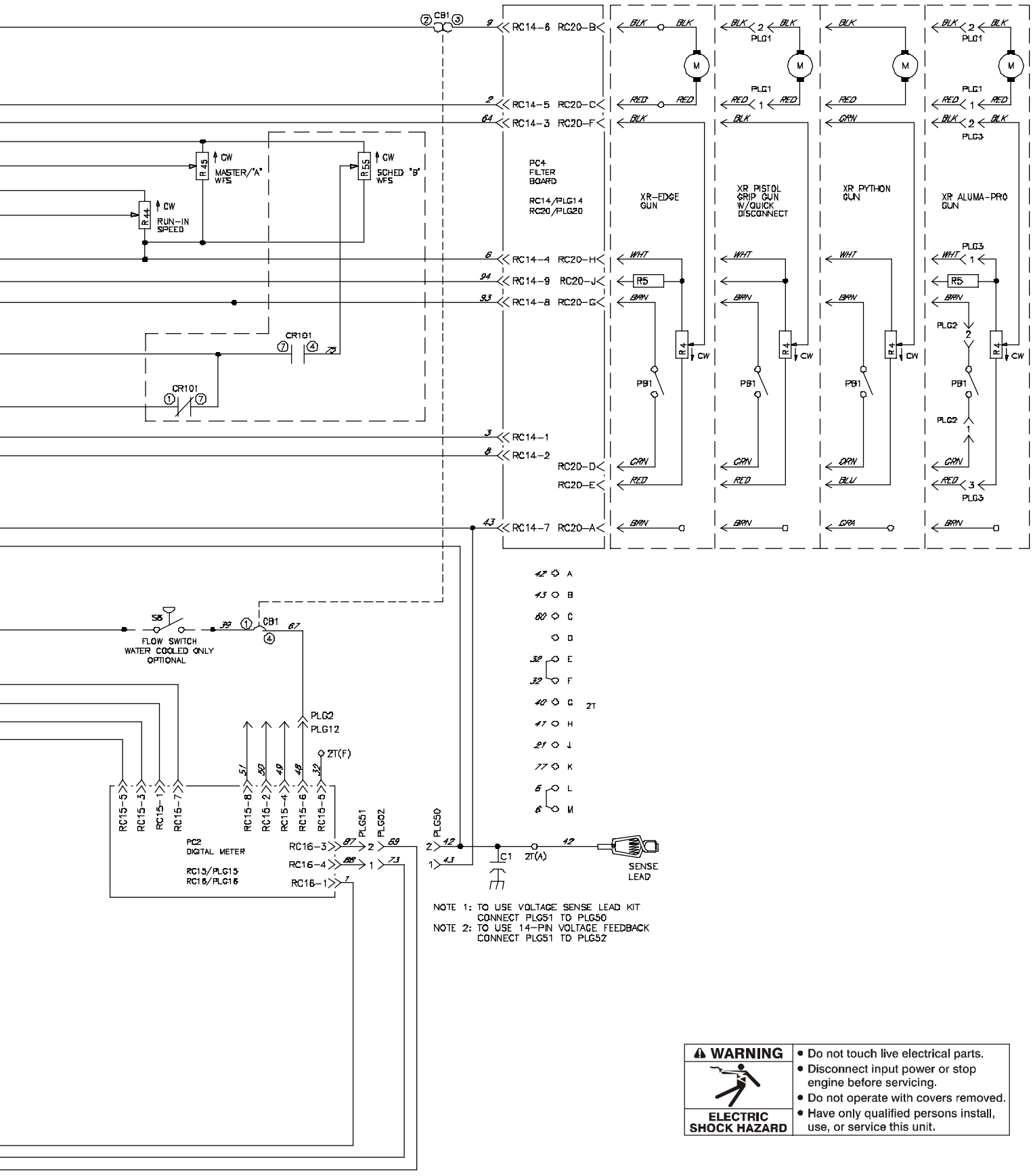


Figure 9-2. Circuit Diagram For Wire Feeder Effective With Serial No. LE079101 And Following



⚠ WARNING	• Do not touch live electrical parts. • Disconnect input power or stop engine before servicing. • Do not operate with covers removed. • Have only qualified persons install, use, or service this unit.
ELECTRIC SHOCK HAZARD	

218 814-D

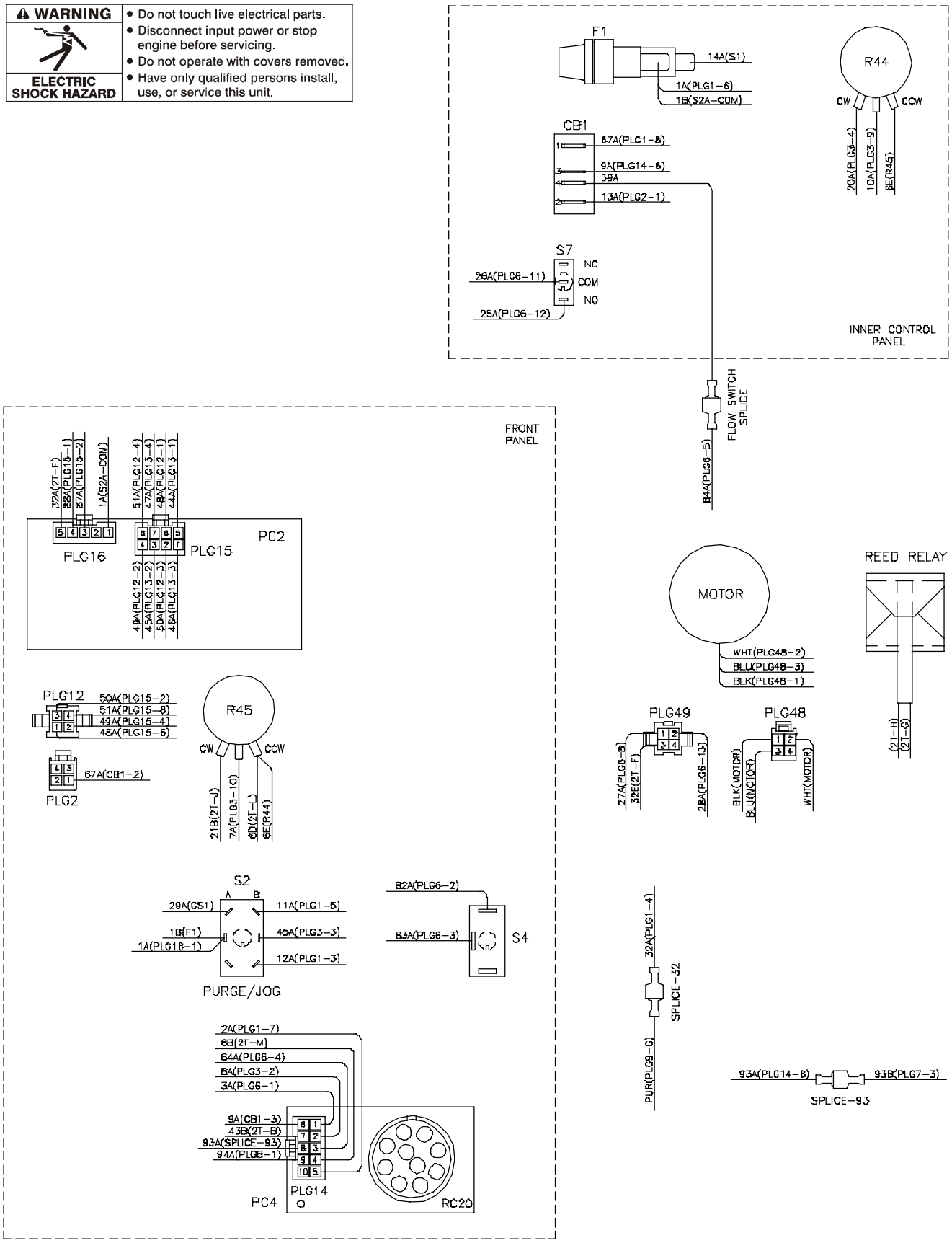
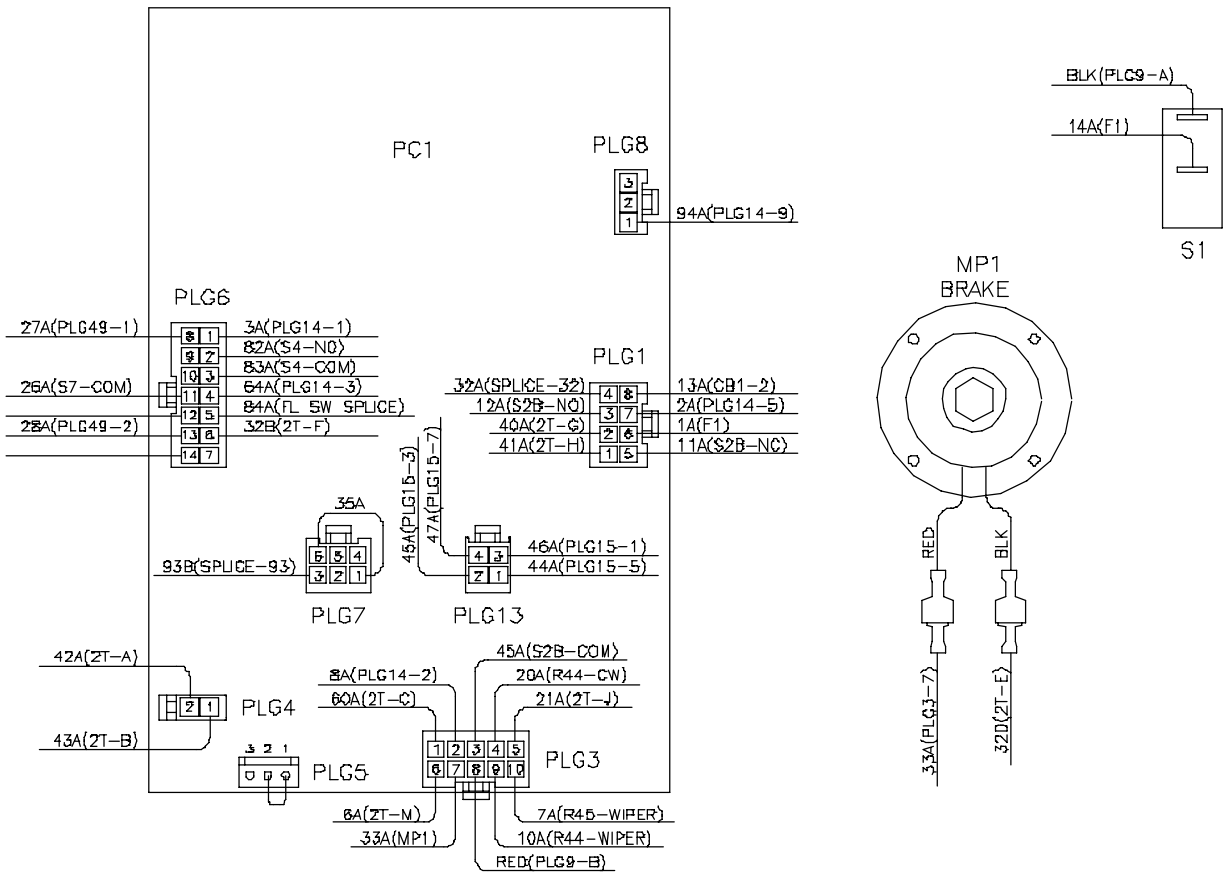
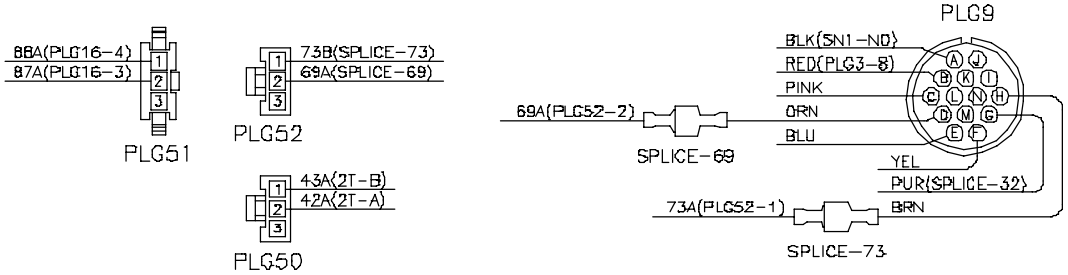
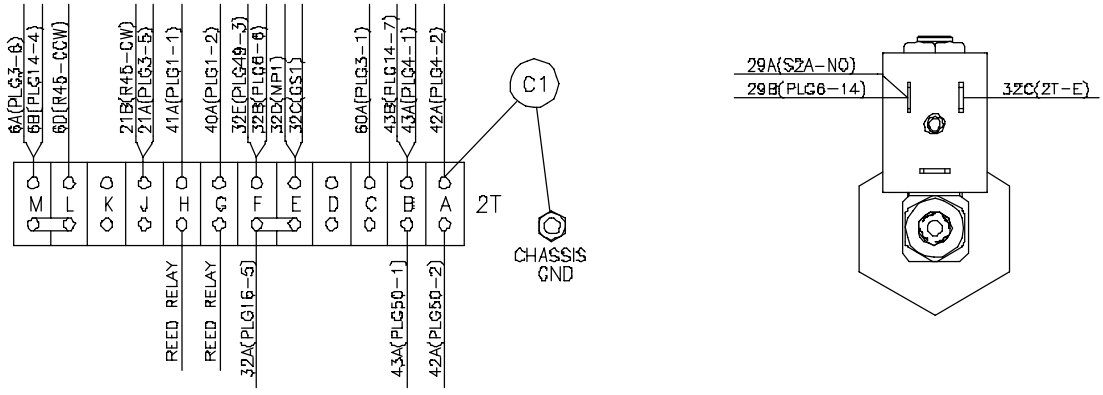


Figure 9-3. Wiring Diagram For Wire Feeder Effective With Serial No. KK082113 And Following


PC1
PLG8
94A(PLG14-9)
PLG6
27A(PLG49-1)
3A(PLG14-1)
82A(S4-NO)
83A(S4-COM)
26A(S7-COM)
64A(PLG14-3)
84A(FL SW SPLICE)
28A(PLG49-2)
32B(2T-F)
PLG1
32A(SPLICE-32)
13A(CB1-2)
12A(S2B-NO)
2A(PLG14-5)
40A(2T-G)
1A(F1)
41A(2T-H)
11A(S2B-NC)
35A
93B(SPLICE-93)
45A(PLG15-3)
47A(PLG15-7)
46A(PLG15-1)
44A(PLG15-5)
PLG7
PLG13
42A(2T-A)
PLG4
43A(2T-B)
PLG5
8A(PLG14-2)
60A(2T-C)
45A(S2B-COM)
20A(R44-CW)
21A(2T-J)
PLG3
6A(2T-M)
33A(MP1)
7A(R45-WIPER)
10A(R44-WIPER)
RED(PLG9-B)
BLK(PLG9-A)
14A(F1)
S1
MP1
BRAKE
RED
BLK
33A(PLG3-7)
32D(2T-E)


88A(PLG16-4)
87A(PLG16-3)
PLG51
73B(SPLICE-73)
69A(SPLICE-69)
PLG52
43A(2T-B)
42A(2T-A)
PLG50
PLG9
BLK(SN1-NO)
RED(PLG3-8)
PINK
ORN
BLU
YEL
PUR(SPLICE-32)
BRN
69A(PLG52-2)
SPLICE-69
73A(PLG52-1)
SPLICE-73


6A(PLG3-6)
6B(PLG14-4)
6D(R45-CCW)
21B(R45-CW)
21A(PLG3-5)
41A(PLG1-1)
40A(PLG1-2)
32E(PLG49-3)
32B(PLG6-6)
32D(MP1)
32C(GS1)
60A(PLG3-1)
43B(PLG14-7)
43A(PLG4-1)
42A(PLG4-2)
C1
M
L
K
J
H
G
F
E
D
C
B
A
2T
CHASSIS GND
REED RELAY
REED RELAY
32A(PLG16-5)
43A(PLG50-1)
42A(PLG50-2)
29A(S2A-NO)
29B(PLG6-14)
32C(2T-E)

187 922-C

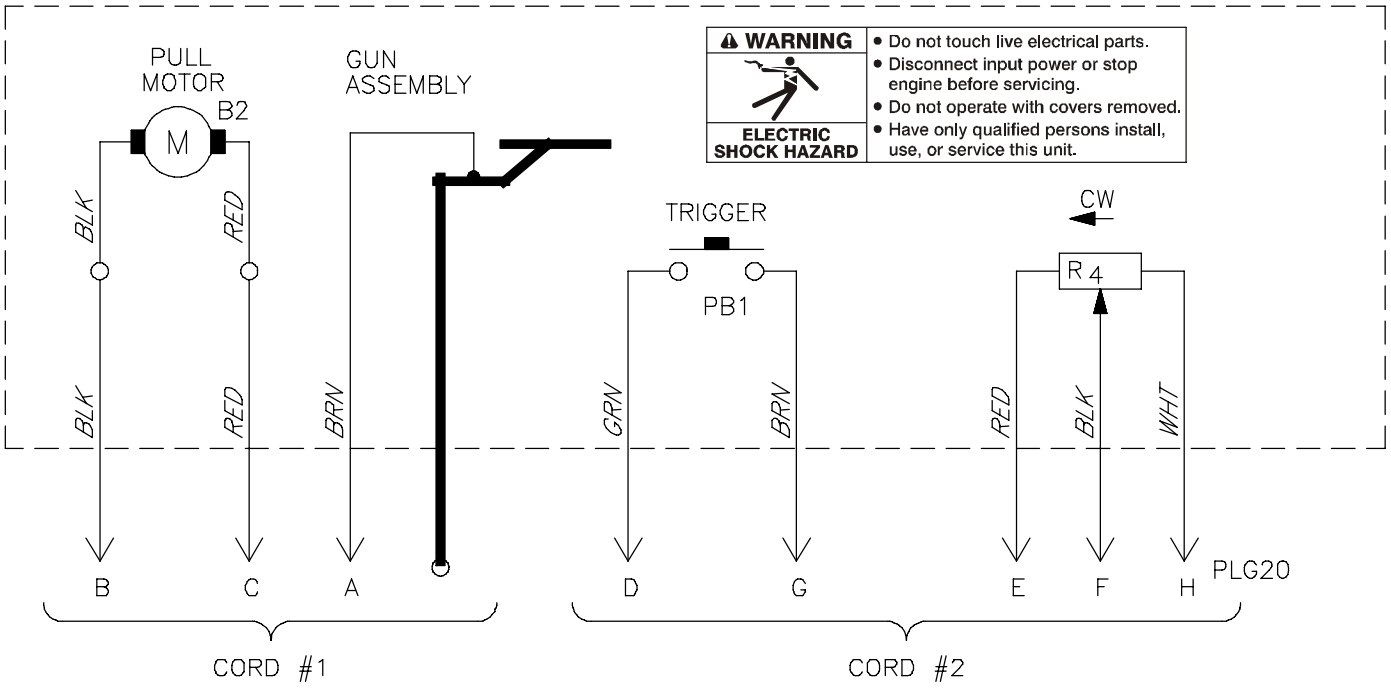


Figure 9-4. Circuit Diagram For XR Edge Gun
Effective With Serial No. KK082113 Thru LE079100

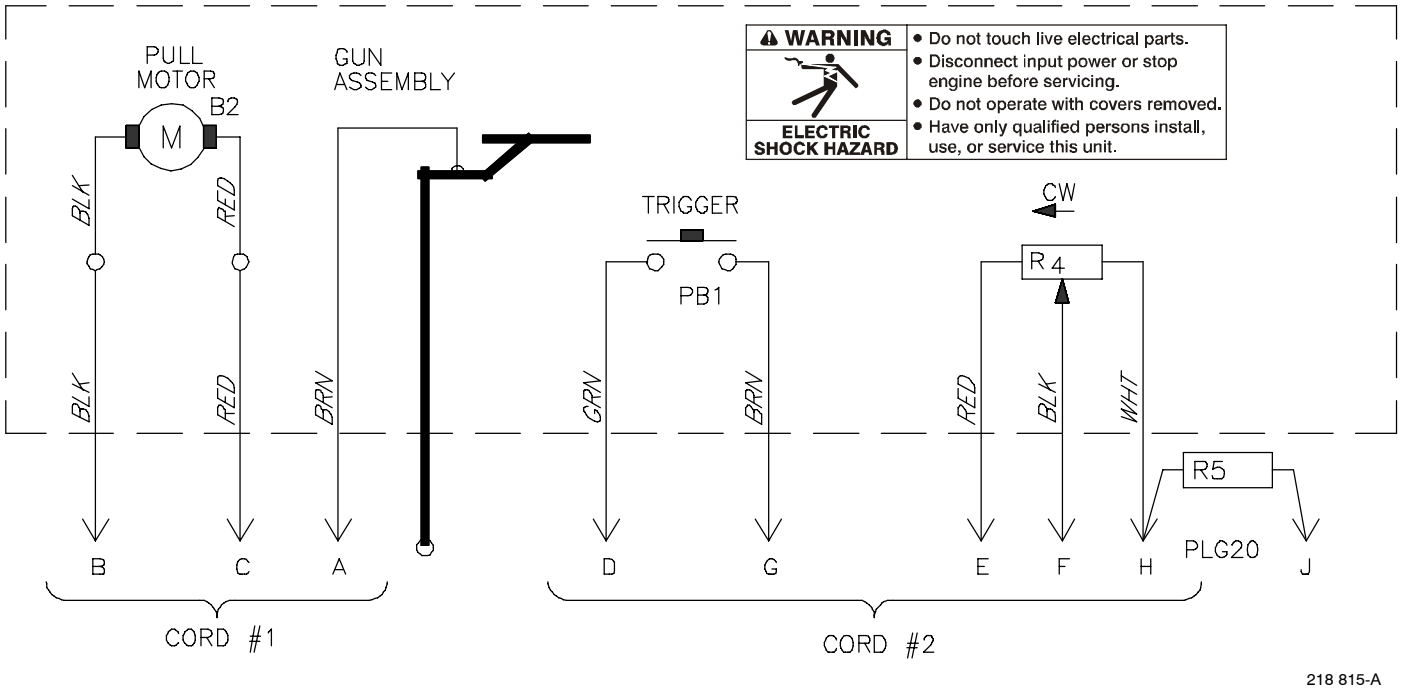


Figure 9-5. Circuit Diagram For XR Edge Gun
Effective With Serial No. LE079101 And Following

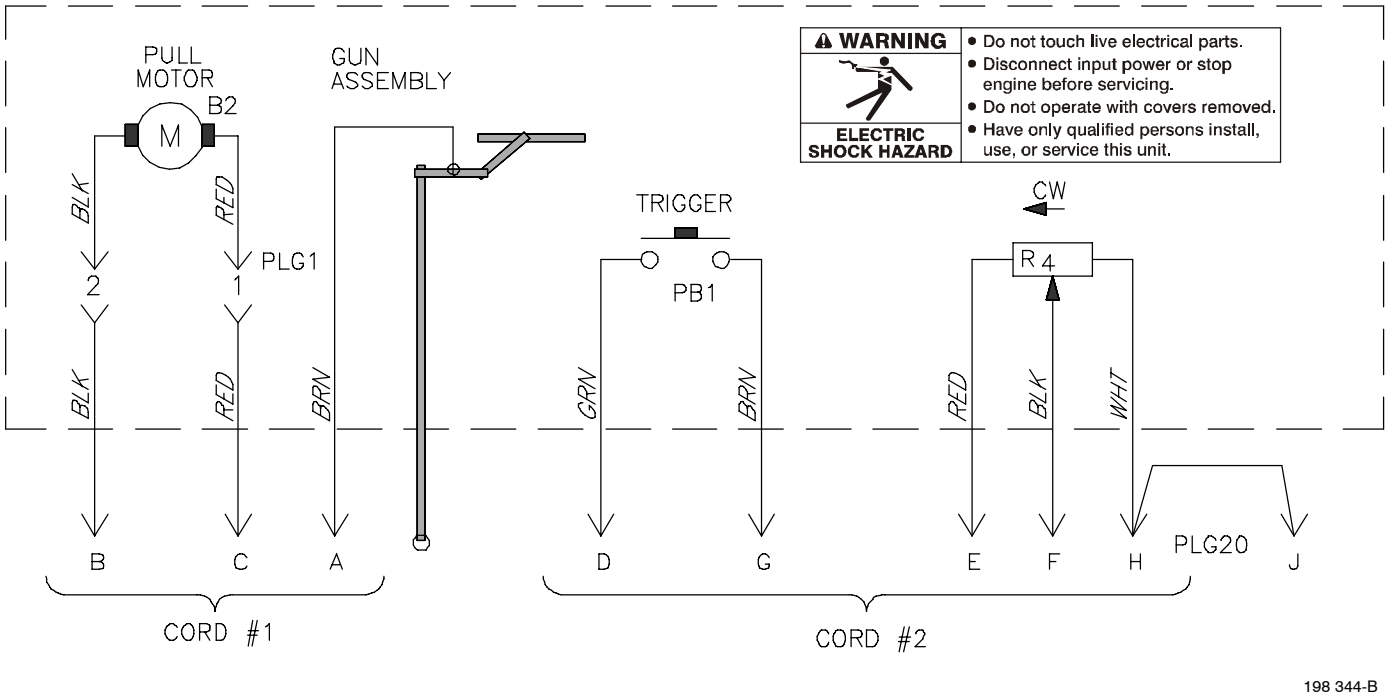


Figure 9-6. Circuit Diagram For XR Pistol Grip Gun Effective With Serial No. LC173265 And Following

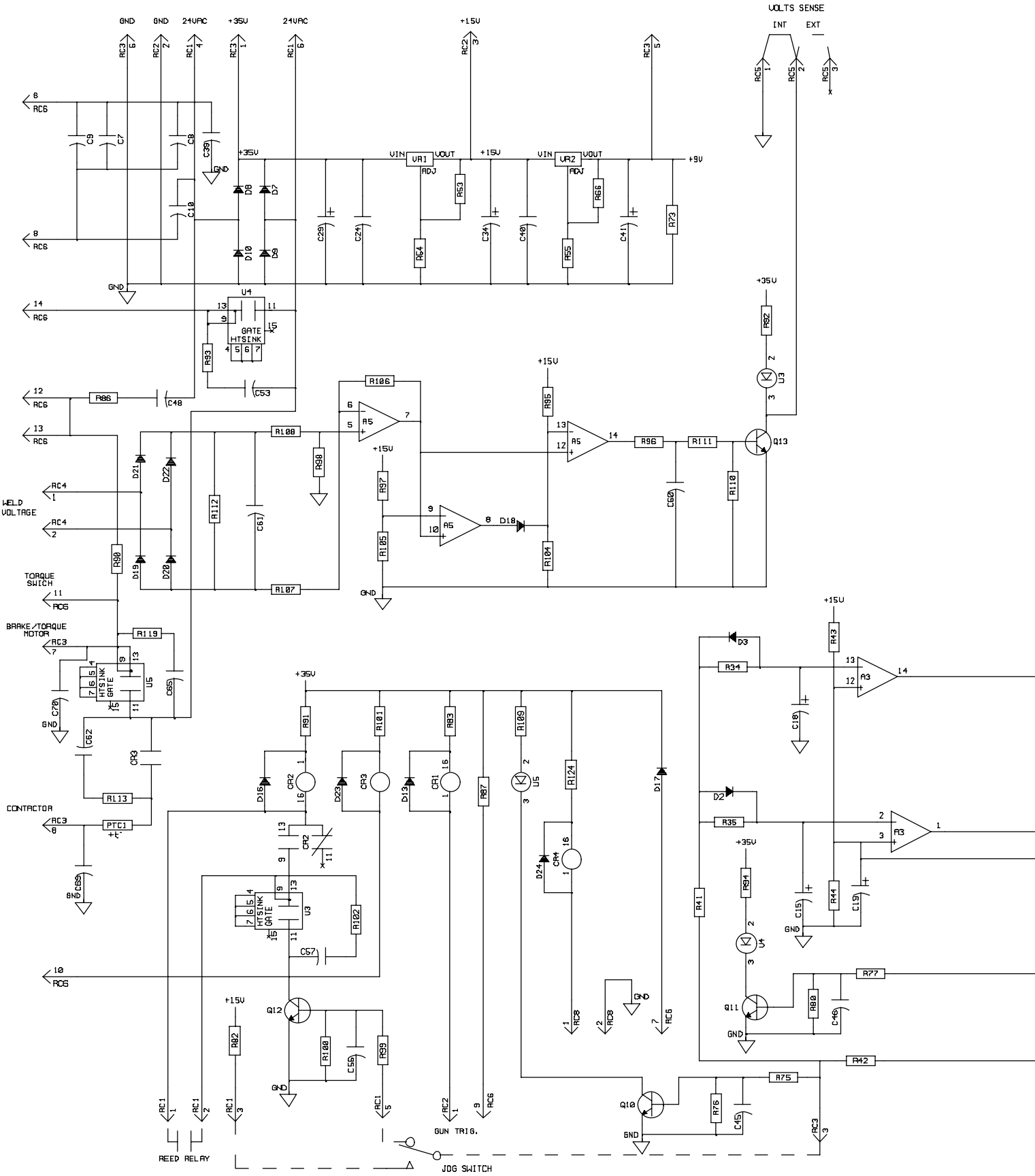
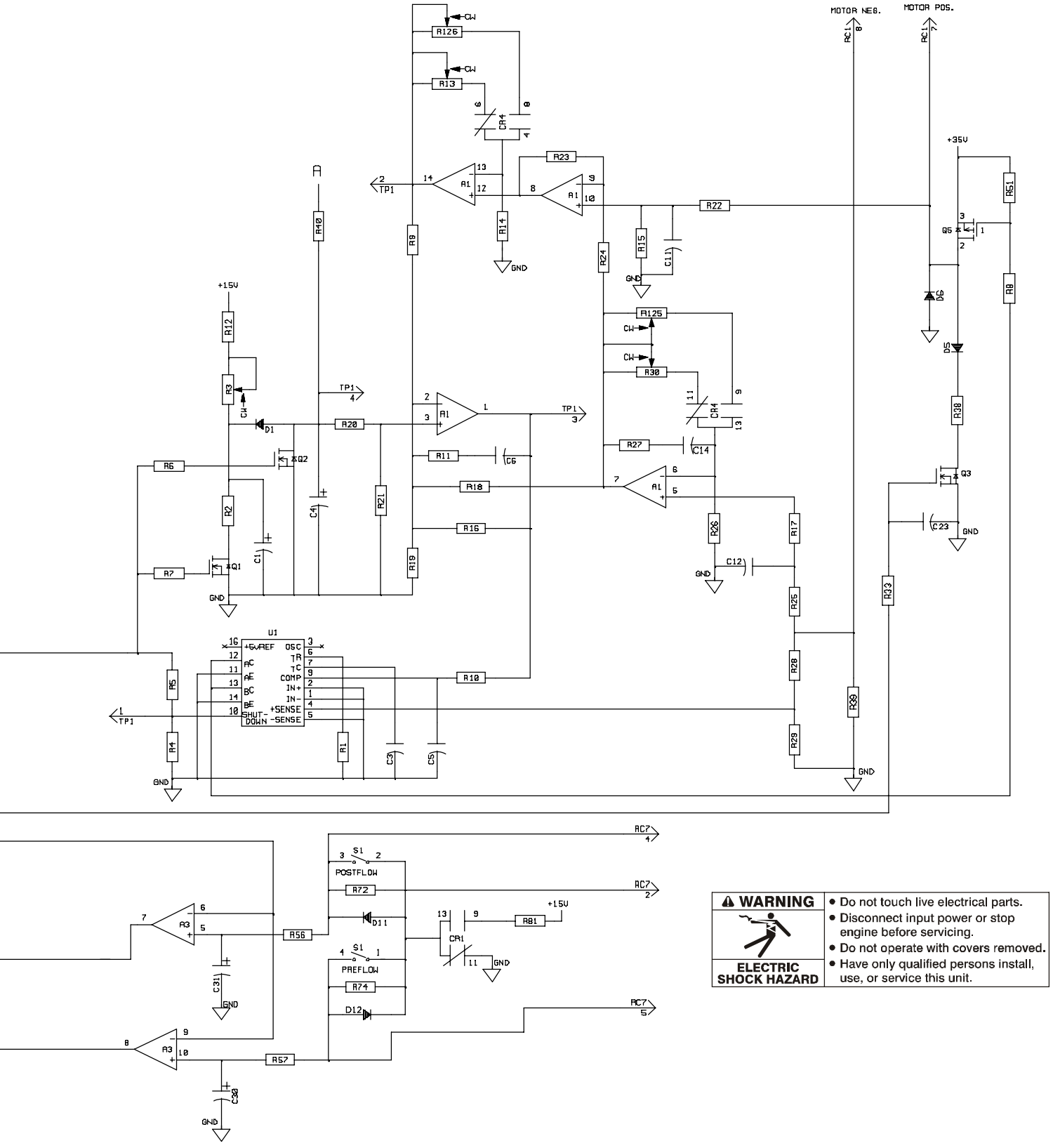


Figure 9-7. Circuit for Motor Control Board PC1 Eff. w/LC173265 (Part 1 of 2)



⚠ WARNING

ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.

210 373-C

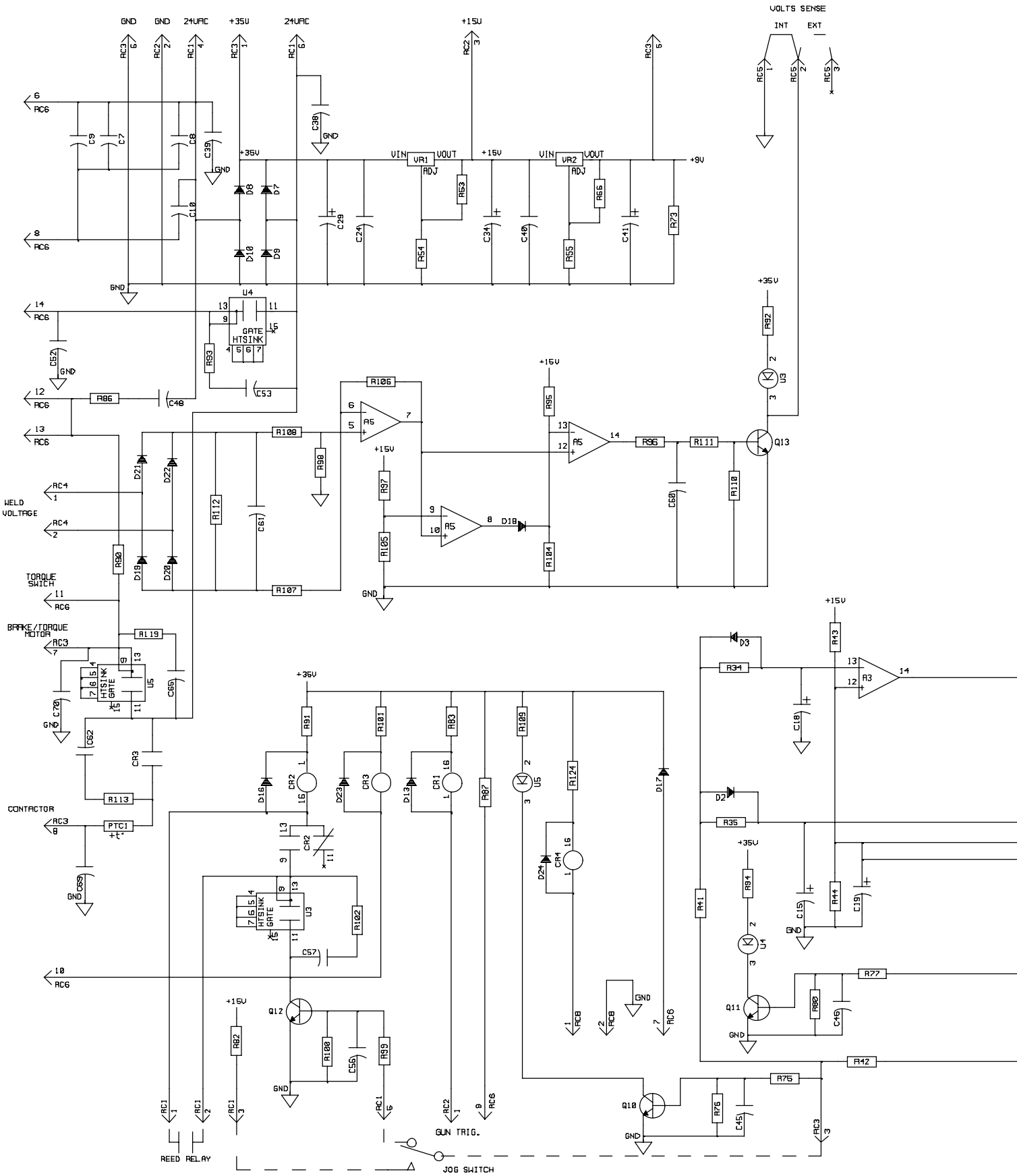
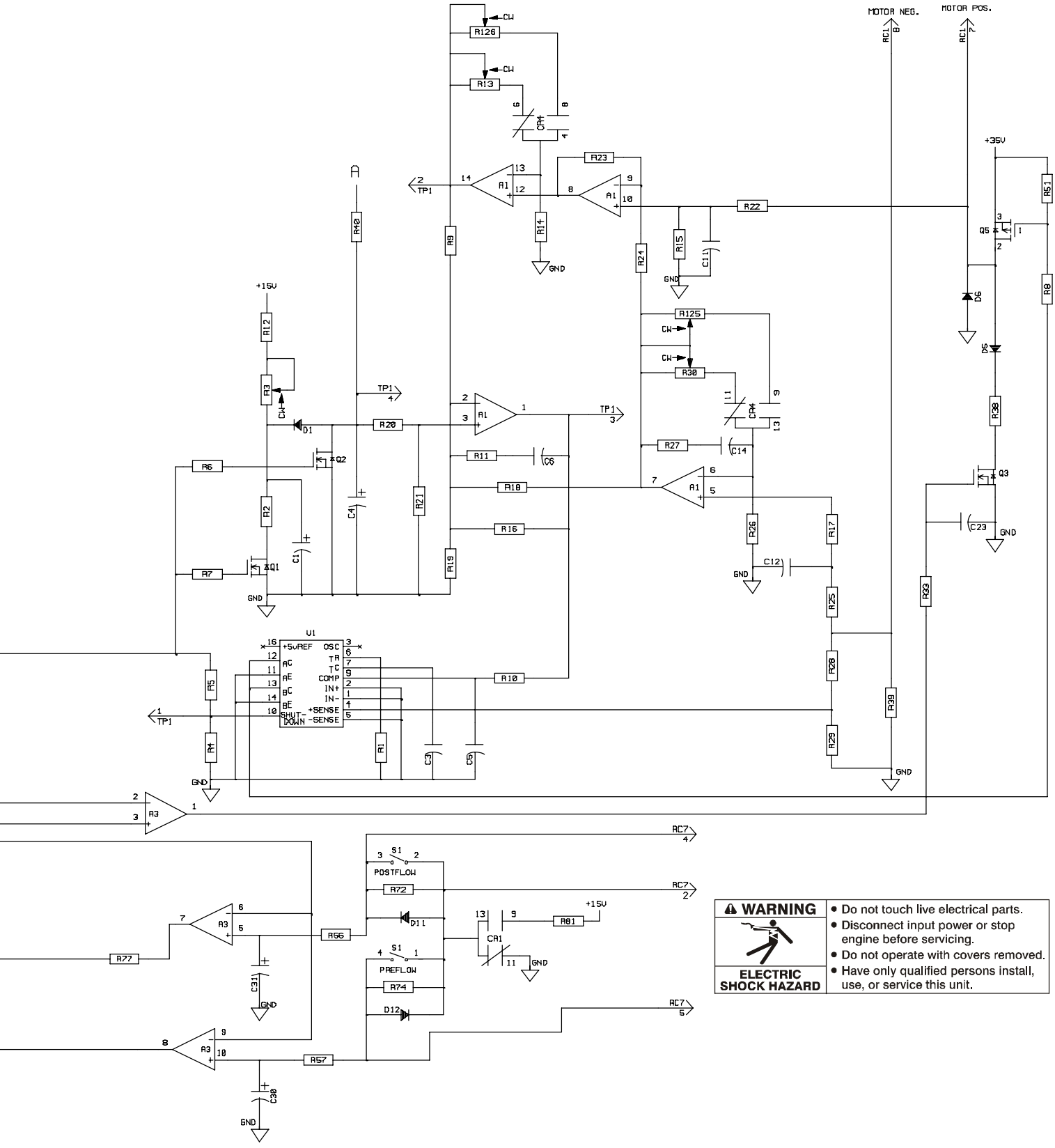
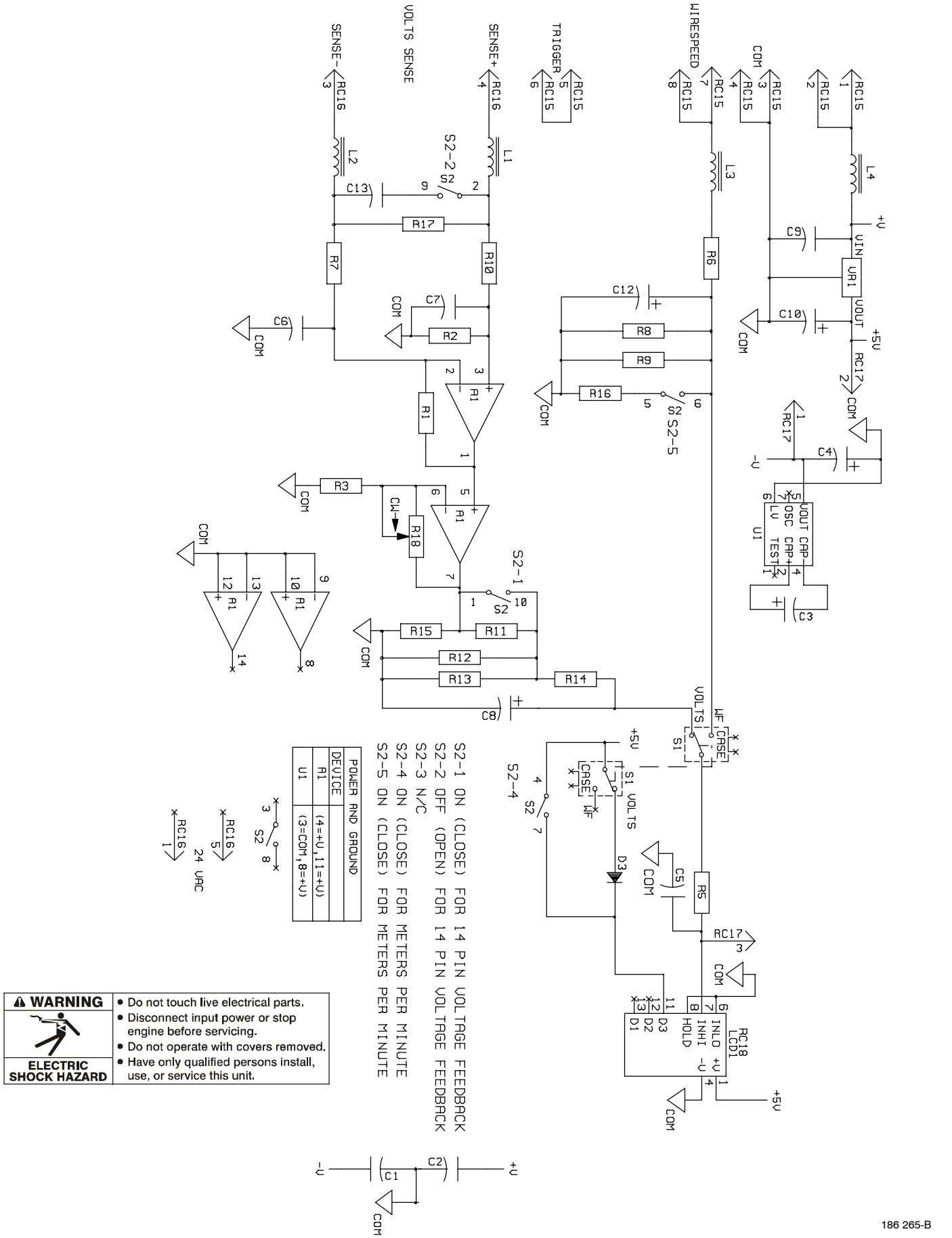


Figure 9-8. Circuit for Motor Control Board PC1 Eff. w/LC173265 (Part 2 of 2)


MOTOR NEG.
MOTOR POS.
+35V
+15V
GND
TP1
POSTFLOW
PREFLOW
+5vREF
OSC
TR
TC
COMP
IN+
IN-
+SENSE
-SENSE
SHUT-
DOWN
CW
RC7
RC1
WARNING
ELECTRIC SHOCK HAZARD
• Do not touch live electrical parts.
• Disconnect input power or stop engine before servicing.
• Do not operate with covers removed.
• Have only qualified persons install, use, or service this unit.

210 373-B



⚠ WARNING

ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.

186 265-B

Figure 9-9. Circuit Diagram For Optional Digital Meter Board PC2 Effective With Serial No. KK082113 And Following

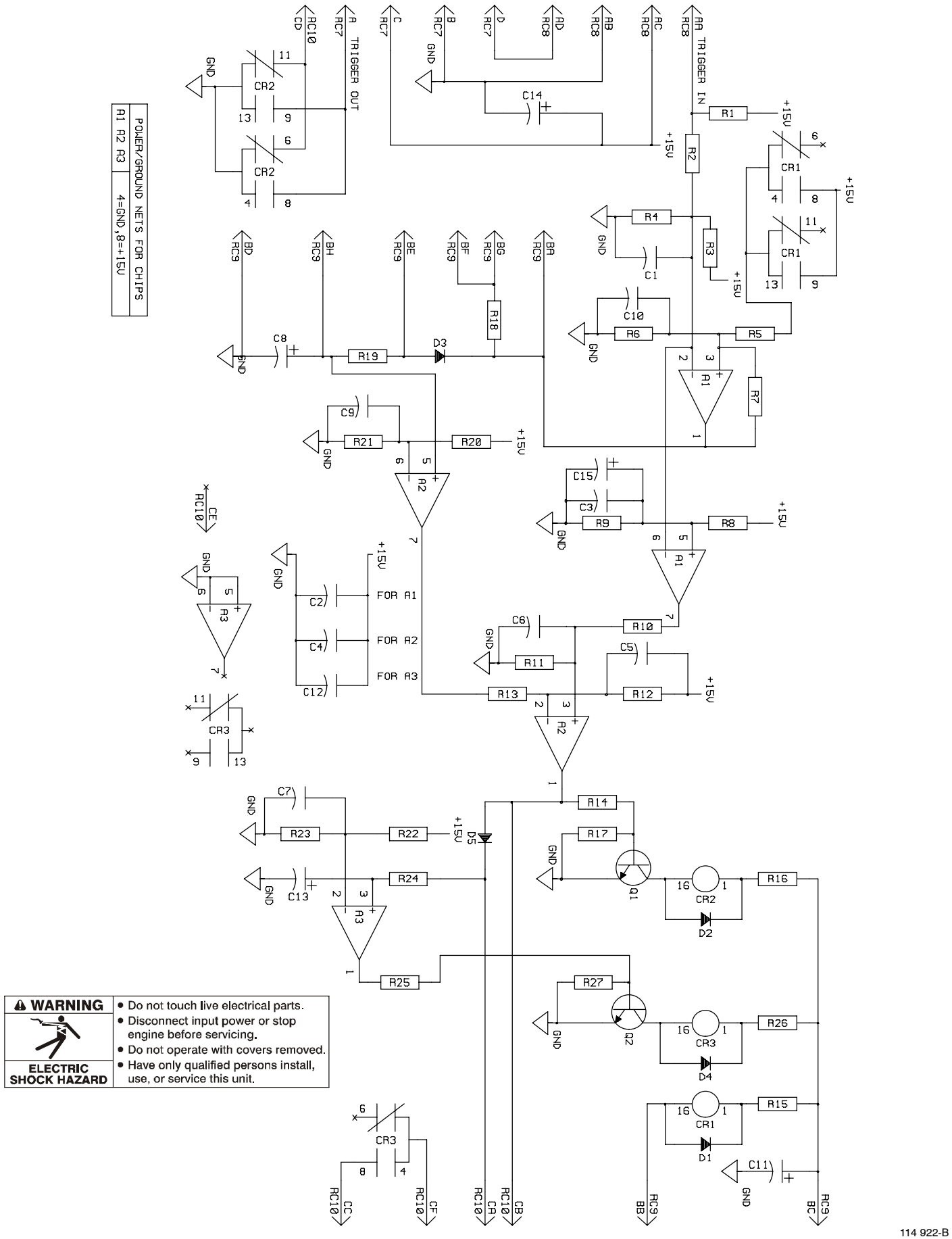
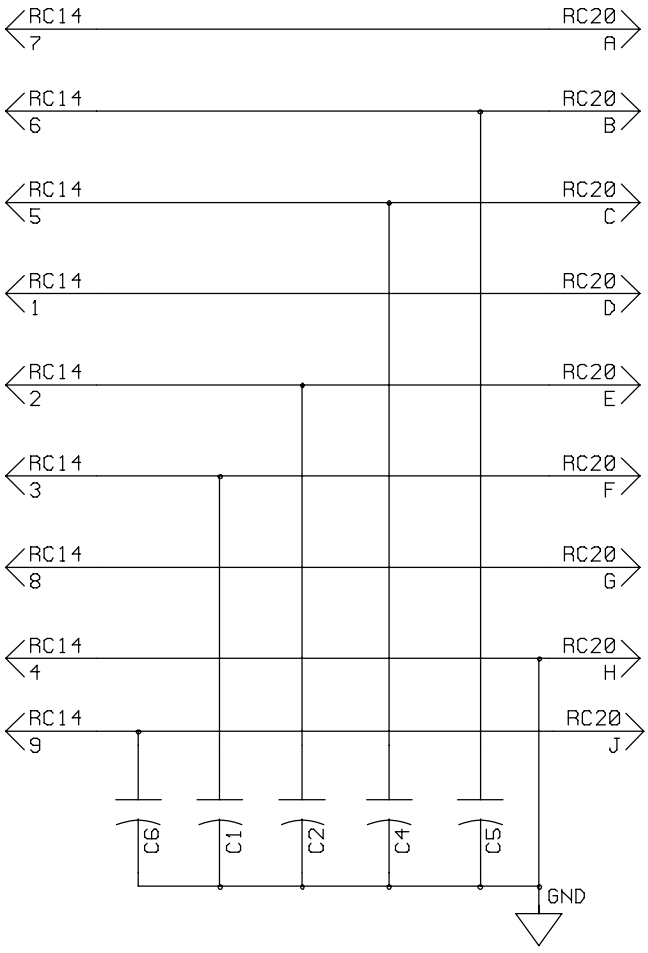


Figure 9-10. Circuit Diagram For Optional Spot-Burnback Board PC3 Effective With Serial No. KK082113 And Following

⚠ WARNING	• Do not touch live electrical parts. • Disconnect input power or stop engine before servicing. • Do not operate with covers removed. • Have only qualified persons install, use, or service this unit.
ELECTRIC SHOCK HAZARD	



197 722-A

Figure 9-11. Circuit Diagram For Filter Board PC4 Effective With Serial No. KK309906 And Following

TM-1594E 2007–03

Processes

MIG (GMAW) Welding

Description

Wire Feeder And Feeder Gun

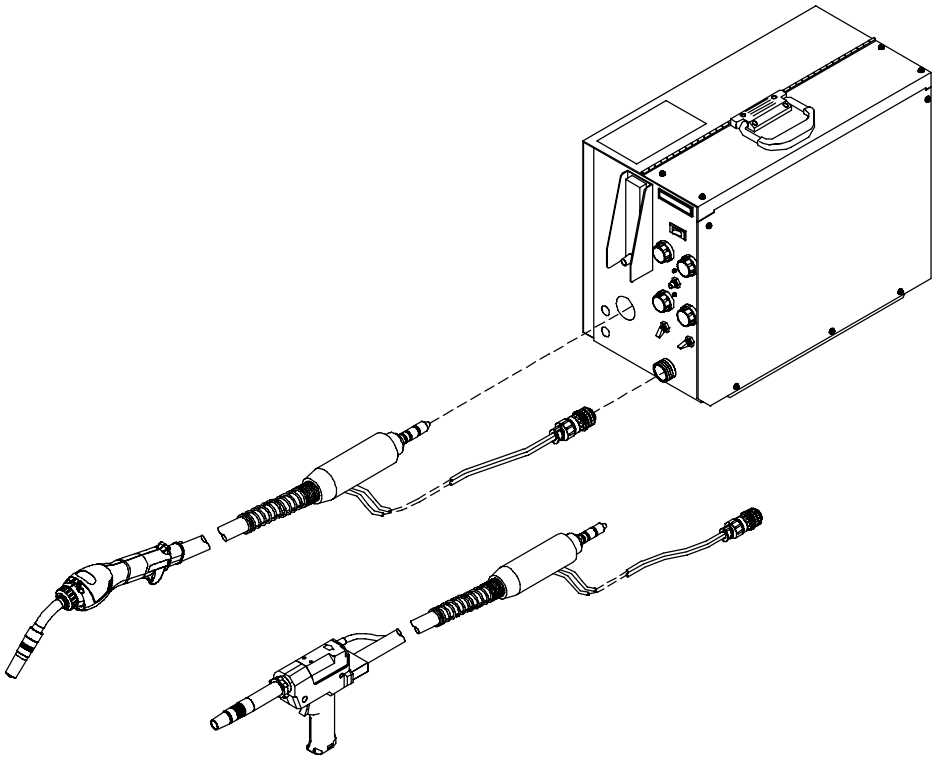
CE

XR™ Control
XR™ Air- And Water-Cooled Guns

PARTS LIST

Eff w/KK082113 Thru LC373468

For OM-1594 (181 715) Revisions * Thru L



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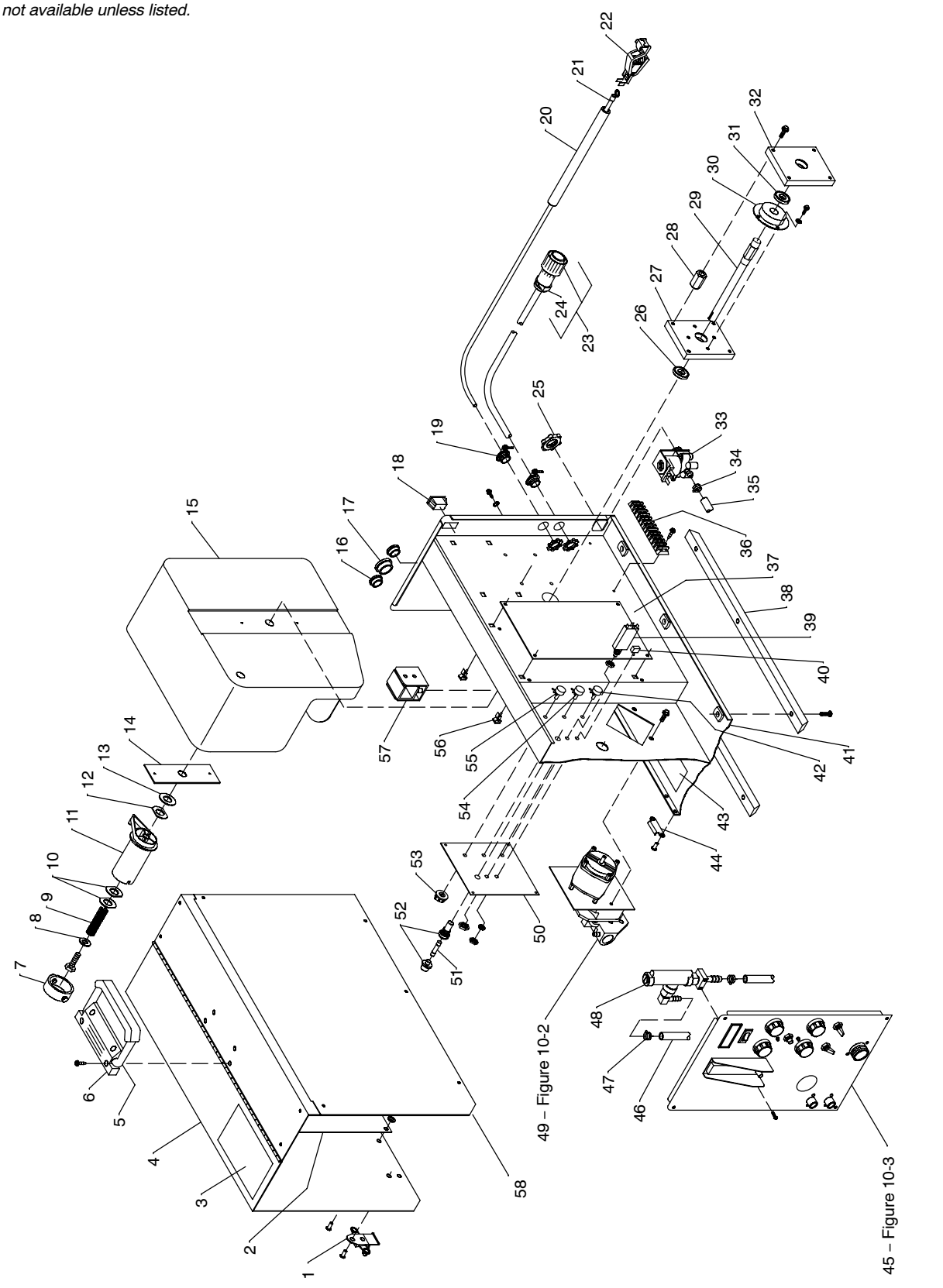

Figure 10-1. Main Assembly

Item No.	Dia. Mkgs.	Part No.	Description	Quantity

Figure 10-1. Main Assembly

1		089 572	CATCH, link-lock	2
2		112 167	INSULATOR, door	1
3		134 327	LABEL, warning general precautionary (non-CE units)	1
3		178 936	LABEL, warning general precautionary (CE units)	1
4		+169 085	WRAPPER	1
5		126 415	CLAMP, saddle	1
6		126 416	HANDLE, molded	1
7		058 427	RING, retaining spool	1
8		602 233	WASHER, flat stl .250 ID x .875 OD x .062thk	1
9		057 543	SPRING, cprsn .845 OD x .091 wire x 1.500	1
10		113 168	WASHER, locking	2
11		058 428	HUB, spool	1
12		089 561	WASHER, anti-turn stl	1
13		058 424	WASHER, fbr brake	1
14		151 697	STRIP, brake surface anti-turn	1
15		112 198	SHROUD, spool wire 12 in	1
16		057 357	BUSHING, snap-in nyl .937 ID x 1.125mtg hole	2
17		010 494	BUSHING, snap-in nyl 1.375 ID x 1.750mtg hole	1
18	S1	111 997	SWITCH, rocker SPST 10A 250VAC	1
19		115 104	CONNECTOR, clamp cable .500	2
20		176 089	TUBING, plstc PVC black	1ft (0.3 m)
21		600 399	WIRE, strd 14ga(order by ft)	35ft (10.7 m)
22		601 222	CLAMP, univ 50A	1
23	PLG5	141 162	HOUSING PLUG & PINS	1
24		079 739	CLAMP, cable strain relief	1
		182 475	CABLE, port no 18 6/c 10 ft 8 in	1
25		605 227	NUT, .750-14 knurled nyl	1
26		073 302	BEARING, ball rdl sgl row .669 x 1.378 x .39	1
27		113 161	BLOCK, bearing front	1
28		113 165	STAND-OFF, .250-20 x 1.000 lg	4
29		120 396	SHAFT, spool	1
30	MP1	163 304	BRAKE, w/terminals	1
31		073 302	BEARING, ball rdl sgl row .669 x 1.378 x .39	1
32		113 900	BLOCK, bearing rear	1
33	GS1	125 785	VALVE. 24VAC 2way custom port 1/8 orf	1
34		089 120	CLAMP, hose .375-.450clp dia slfttng	1
35		176 357	HOSE, SAE .187 ID x .410 OD x 21.000	1
36	2T	038 783	BLOCK, term 20A 12P	1
		601 219	LINK, jumper	2
		111 008	LABEL, term mkg	1
37	PC1	210 370	CIRCUIT CARD, motor speed control	1
38		105 567	SKID, base	2
39	CB1	011 991	CIRCUIT BREAKER, main reset	1
40	S7	011 770	SWITCH, tgl SPDT 6A 125V	1
41		+187 704	CABINET, control	1
42		♦194 282	POTENTIOMETER, C sltd sft 1T 1W 1M	1
43		090 439	LABEL, warning electric shock can kill	1
44		089 573	PLATE, keeper link-lock	2
45		Fig 8-3	PANEL, front w/components	1
46		♦♦♦134 834	HOSE, SAE .187 ID X .410 OD (order by ft)	2ft (0.6 m)
47		♦♦♦089 120	CLAMP, hose .375-.450clp dia slfttng	4
48	S8	♦♦♦194 195	SWITCH, flow w/fittings	1
49		Fig 8-2	MOTOR & WIRE DRIVE	1
50		187 789	PLATE, control side (non-CE units)	1
50		197 645	PLATE, control side (CE units)	1
51	F1	*073 426	FUSE, mintr gl slo-blo 5A	1
52		046 432	HOLDER, fuse mintr .250 x 1.250 panel mtg	1
53		193 919	KNOB, pointer	2

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
. . 54	♦	028 770	POTENTIOMETER, CP std slot 1T 2W 1M	1
. . 55		073 562	POTENTIOMETER, CP std slot 1T 2W 10k	1
. . 56		134 201	STAND-OFF SUPPORT, PC card .312/.375	4
. . 57	REED	140 786	SWITCH, reed	1
. . 58		169 089	DOOR, side rh	1

Figure 10-1. Main Assembly (Continued)

+When ordering a component originally displaying a precautionary label, the label should also be ordered.
♦Part of 114 144 Spot Weld Control Option
♦♦Part of 144 931 Voltage Control Option
♦♦♦Part of 130 838 Water Flow Shutdown Switch Option
*Recommended Spare Parts.

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.

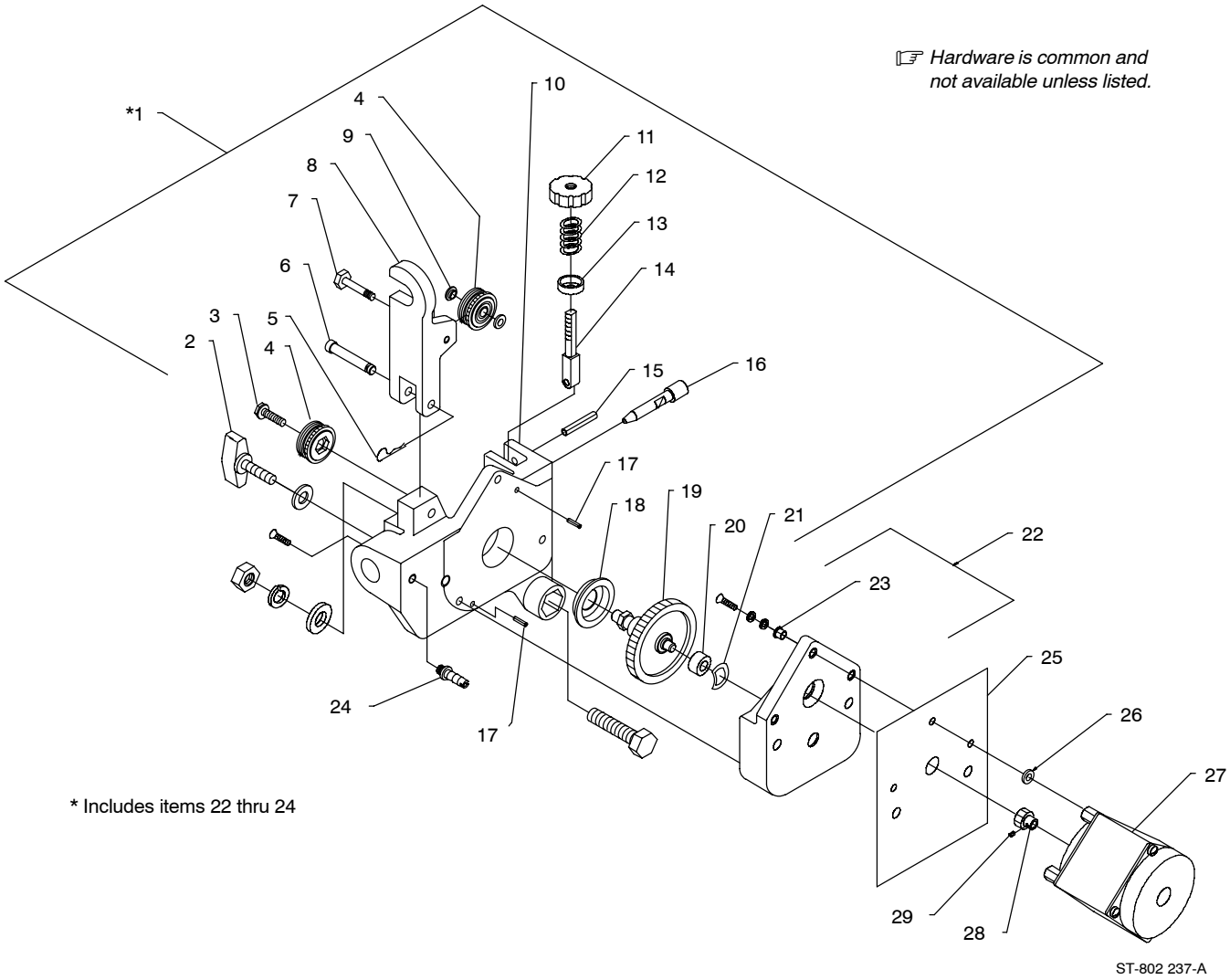

Figure 10-2. Motor & Wire Drive

Figure 10-2. Motor & Wire Drive (Figure 10-1 Item 49)

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
1		193 186	DRIVE ASSEMBLY, wire (consisting of)	1
2		124 778	KNOB, T 2.000 bar w/.312 - 18 nut	1
3		111 630	SCREW, 010-32 x .25 hexwhd-pln stl pld	1
4		♦194 118	KIT, drive roll .030–.035 (Part of Wire Guide Kits 193 520 and 193 521)	1
4		♦194 119	KIT, drive roll .047–.062 (Part of Wire Guide Kit 193 522)	1
4		♦195 591	KIT, drive roll .062 (Part of Wire Guide Kit 193 523)	1
5		151 828	PIN, cotter hair .042 x .750	1
6		090 416	PIN, hinge	1
7		191 826	SCREW, mtg idler roll	1
8		189 714	PRESSURE ARM	1
9		♦188 098	WASHER, shlder .192 ID x .375 OD	2
10		189 716	HOUSING, wire drive	1
11		092 237	KNOB, adjust tension 1.000	1
12		189 911	SPRING, cprsn .720 OD x .063 wire x 1.500	1
13		085 244	WASHER, cupped .328 ID x .812 OD x 16 ga x .125 lip	1
14		085 242	FASTENER, pinned	1
15		010 224	PIN, spring CS .187 x 1.000	1
16		058 549	GUIDE, wire inlet 1/16	1
17		602 306	PIN, spring CS .125 x .500	2
18		189 823	INSULATOR, front bearing	1
19		189 920	GEAR ASSY, shaft/bearing	1
20		189 605	BEARING ASSY, upper drive shaft	1
21		079 625	WASHER, wave .500 ID x .750 OD	1
22		189 917	CASE, gear wire drive (consisting of) (Prior to KK212173)	1
23		605 971	WASHER, shldr .187 ID .343 OD x .045T .234 OD X .138T nyl	3
22		196 613	CASE, gear wire drive (consisting of) (Eff w/KK212173)	1
23		196 604	WASHER, shldr.173 ID 0.343 OD x .062 T .202 OD x .250t nyl	3
24		144 172	FITTING, hose brs barbed M 3/16 tbg x .250-20	1
25		113 162	INSULATOR, motor	1
26		605 798	WASHER, shldr .168 ID 0.375 OD x .047T .246 OD x .030T nyl	3
27	B1	163 326	MOTOR, torque 24VAC 50/60Hz	1
28		113 169	GEAR, driver	1
29		604 612	SCREW, set stl sch 8-32 x .125 cup point	1

♦Part of 194 118, 194 119, or 195 591 Drive Roll Kits

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.

Eff w/KK082113 Thru LC373468

☞ *Hardware is common and not available unless listed.*

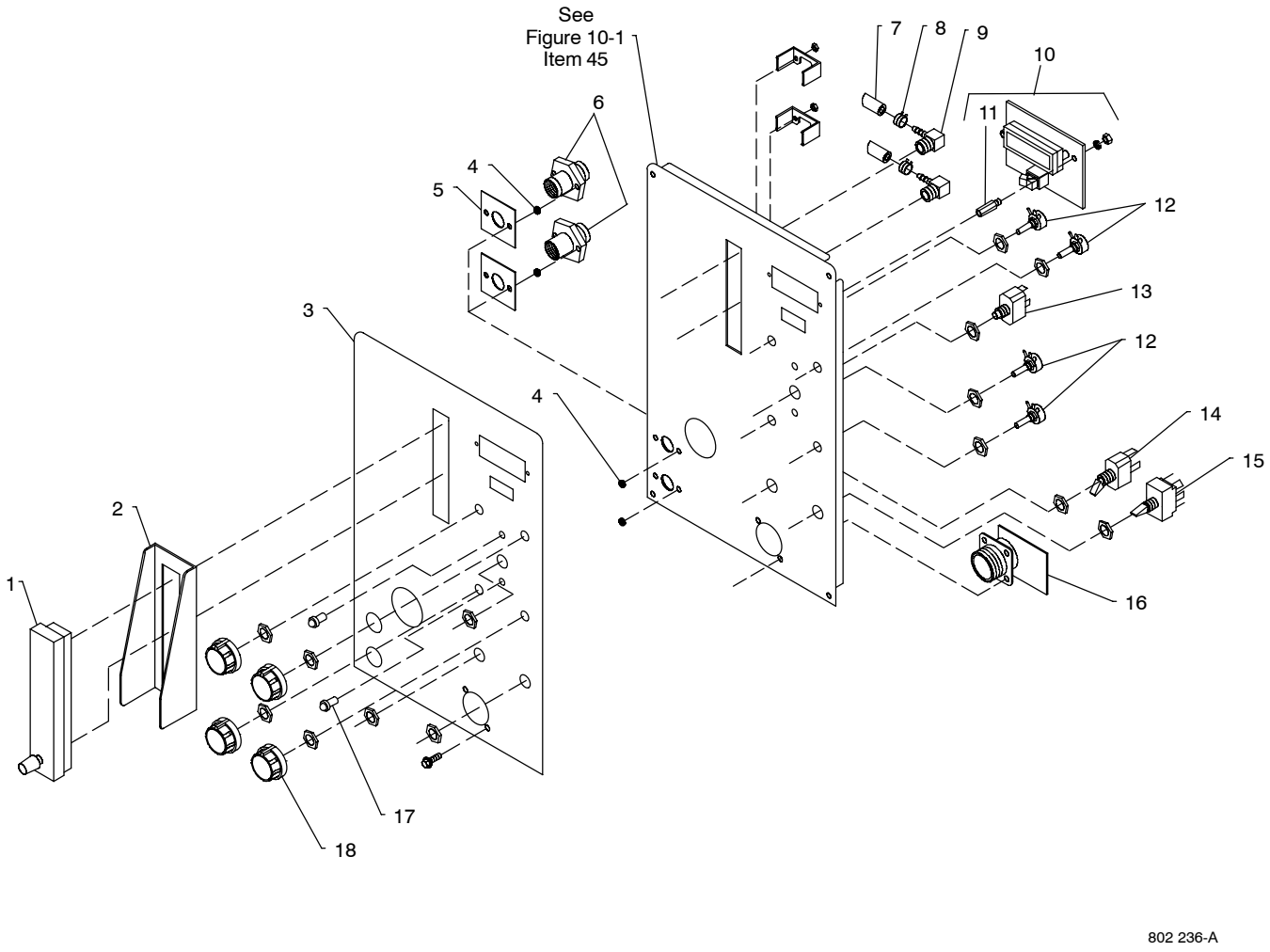

Figure 10-3. Panel, Front w/Components (Water-Cooled Model Illustrated)

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
			Figure 10-3. Panel, Front w/Components (Figure 10-1 Item 45)	
1		♦111 569	METER, flow 6-60	1
2		♦111 633	GUARD, flow meter	1
3			NAMEPLATE, (order by model and serial number)	1
4		605 798	WASHER, shldr. nyl	8
5		173 259	INSULATOR, water flow switch	2
6		139 678	FITTING, water (supplied with water-cooled gun)	2
7		♦176 357	HOSE, SAE .187 ID x .410 OD (order by ft)	4ft (1.2 m)
8		♦089 120	CLAMP, hose .375-.450clp dia	2
9		♦112 090	FITTING, pipe brs elb 1/8NPT x 3/16 hose	2
		♦056 851	FITTING, hose brs barbed nipple 3/16tbg	2
		♦010 606	FITTING, hose brs nut .625-18	2
		♦056 108	FITTING, hose brs ferrule .425 ID x .718 lg	2
		♦045 852	CLIP, component .687dia mtg adh back	1
10	PC2	186 268	CIRCUIT CARD, meter (consisting of) (Optional Prior to LC122752)	1
11		115 443	STAND-OFF, No. 6-32 x .750 lg	2
		133 644	FRAME, snap-in switch rocker panel mtg	1
12		073 562	POTENTIOMETER, CP std slot 1T 2W	4
13		011 232	SWITCH, PB SPDT	1
14	S4	134 847	SWITCH, tgl SPDT 15A 125VAC	1
15	S2	134 846	SWITCH, tgl SPTT 6A 125VAC	1
16	PC4, RC20	193 945	CIRCUIT CARD, filter (Prior to KK309906)	1
16	PC4, RC20	197 719	CIRCUIT CARD, filter (Eff w/KK309906)	1
		146 212	PLUG, 10 pin MS-3106A-18-1PX Amphenol	1
	PLG14	115 092	HOUSING PLUG & SOCKETS	1
17		194 151	LED, green (Prior to LA062999)	2
17		194 152	LED, green (Eff w/LA062999)	2
18		193 919	KNOB, pointer	5

♦Part of 114 101 Gas Flow Meter Option.

♦♦Part of 193 273 Meter Kit Option.

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.

Eff w/KK082113 Thru LC373468

☞ *Hardware is common and not available unless listed.*

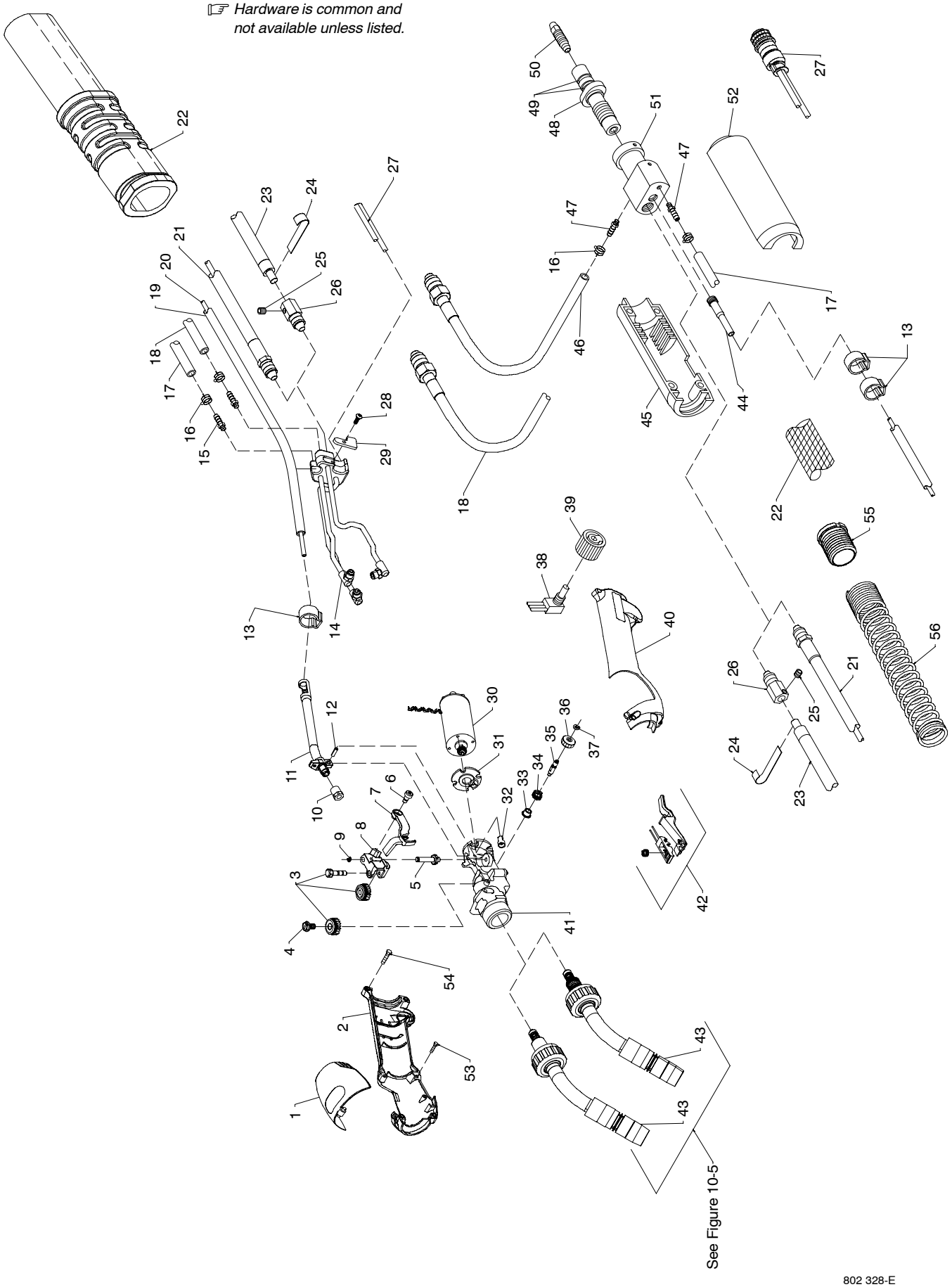

Figure 10-4. Exploded View Of XR-Edge Gun

Eff w/KK082113 Thru LC373468

Item No.	Part No.	Description	Quantity

Figure 10-4. Exploded View Of XR-Edge Gun

1	187 000	COVER,handle	1
2	187 002	HANDLE, right	1
3	194 114	KIT, drive roll .030 (Part of Wire Guide Kit 193 520)	1
3	194 115	KIT, drive roll .035 (Part of Wire Guide Kit 193 521)	1
3	194 116	KIT, drive roll .047 (Part of Wire Guide Kit 193 522)	1
3	194 117	KIT, drive roll .062 (Part of Wire Guide Kit 193 523)	1
3	♦191 135	SHAFT, hot drive roll	1
4	♦111 630	SCREW, 010-32 x .25 hexwhd slt	1
5	185 098	PIN, pressure	1
6	191 098	SCREW, shld stl sch 008-32 x .188 x .188 shld	1
7	191 097	ARM, tension	1
8	191 096	ARM, pressure	1
9	000 364	RING, rtng ext .188 shaft x .025 thk E style	1
10	185 106	NUT, liner collet	1
11	191 090	GUIDE ASSY, liner	1
12	602 306	PIN, spring cs .125 x .500	1
13	203 557	CLAMP, 1−ear type nom dim .391 x .236 wide special (Eff w/LB088591)	3
14	191 104	POWER BLOCK ASSY	1
15	135 580	FITTING, gas (air)	1
15	135 580	FITTING, gas (water)	2
16	149 332	CLAMP, hose .405 − .485 clp dia (air)	2
16	149 332	CLAMP, hose .405 − .485 clp dia (water)	4
17	191 058	HOSE, gas in 15ft	1
17	191 059	HOSE, gas in 30ft	1
17	191 060	HOSE, gas in 50ft	1
18	191 072	HOSE, water in 15ft	1
18	191 073	HOSE, water in 30ft	1
18	191 074	HOSE, water in 50ft	1
19	191 061	TUBING, liner carrier 15ft (Prior to LB088591)	1
19	203 599	CONDUIT, monocoil double wound 15ft	1
19	191 062	TUBING, liner carrier 30ft (Prior to LB088591)	1
19	203 671	CONDUIT, monocoil double wound 30ft	1
19	203 673	CONDUIT, monocoil double wound 50 ft	1
20	191 064	LINER, .187 OD x .110 ID (15ft)	1
20	191 065	LINER, .187 OD x .110 ID (30ft)	1
20	191 066	LINER, .187 OD x .110 ID (50ft)	1
21	191 052	CABLE, power/water out 15ft	1
21	191 053	CABLE, power/water out 30ft	1
21	191 054	CABLE, power/water out 50ft	1
22	191 067	JACKET, cable combination 15ft gun (air) (Prior to LB088591)	1
22	203 579	JACKET, cable combination 15ft w/molded strain relief	1
22	191 068	JACKET, cable combination 30ft (Prior to LB088591)	1
22	203 672	JACKET, cable combination 30ft w/molded strain relief	1
22	203 674	JACKET, cable combination 50ft w/molded strain relief	1
23	191 049	CABLE, power 15ft (air)	1
23	191 050	CABLE, power 30ft (air)	1
23	191 051	CABLE, power 50ft (air)	1
24	152 577	STRIP, copper .010 x 2.000 x .750 (air)	1
25	141 694	SCREW, set 312-18 x .37 conept sch stl pln	1
26	137 495	FITTING, connection power weld	1
27	191 055	CABLE, control 15ft	1
27	191 056	CABLE, control 30ft	1
27	191 057	CABLE, control 50ft	1
28	191 121	SCREW, 006-32 x .37 btn hd-soc	1
29	191 119	STRAIN RELIEF, cable	1
30	191 082	MOTOR ASSY	1
31	189 078	INSULATOR, motor	1
32	190 906	INSULATOR, motor screw	4

Item No.	Part No.	Description	Quantity

Figure 10-4. Exploded View Of XR-Edge Gun (Continued)

. . . 33	191 131	. . SPACER, tension	1
. . . 34	191 141	. . SPRING, cprsn .360 OD x .032 wire x .875 free	1
. . . 35	190 907	. . SHAFT, spring tension	1
. . . 36	135 773	. . KNOB, adjust tension thumb	1
. . . 37	191 087	. . RING, rtng ext .094 shaft x .015 thk E style	1
. . . 38	191 235	. . POTENTIOMETER, CP flat 1T .5W 10K ohm	1
. . . 39	191 205	. . KNOB, speed control	1
. . . 40	187 001	. . HANDLE, left	1
. . . 41	196 045	. . HOUSING, drive w/gears	1
. . . 42	191 212	. . TRIGGER ASSY	1
. . . 43	194 255	. . HEAD TUBE ASSY, water (see Figure 10-5)	1
. . . 43	194 073	. . HEAD TUBE ASSY, air (see Figure 10-5)	1
. . . 44	187 953	. . FITTING, liner (Prior to LB088591)	1
. . . 44	203 539	. . FITTING, liner (Eff w/LB088591)	1
. . . 45	189 812	. . HOUSING, power pin RH	1
. . . 46	196 177	. . HOSE, water out 10in	1
. . . 47	202 513	. . FITTING, hose brs barbed M 3/16 tbg x .250-20 (air)	1
. . . 47	202 513	. . FITTING, hose brs barbed M 3/16 tbg x .250-20 (water)	2
. . . 48	193 896	. . PIN, power assembly (consisting of)	1
. . . 49	079 974	. . O-RING, .500 ID x .103 cs rbr	2
. . . 50	202 216	. . GUIDE, wire outlet .030-1/16	1
. . . 51	187 029	. . CONNECTOR, power/gas	1
. . . 52	189 811	. . HOUSING, power pin LH	1
. . . 53	156 579	. . SCREW, 004−40 x .37 soc hd−hex stl pld	1
. . . 54	143 480	. . SCREW, 006−32 x .62 soc hd−hex gr 8 pld	5
. . . . .	189 081	. . STRAIN RELIEF (Prior to LB088591)	1
. . . 55	203 560	. . STRAIN RELIEF, spring retainer (Eff w/LB088591)	1
. . . 56	203 562	. . SPRING, strain relief (Eff w/LB088591)	1
. . . . .	♦605 107	. . GREASE MINICAP	1

♦Part of 194 114, 194 115, 194 116, or 194 117 Drive Roll Kits

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Eff w/KK082113 Thru LC373468

☞ *Hardware is common and not available unless listed.*

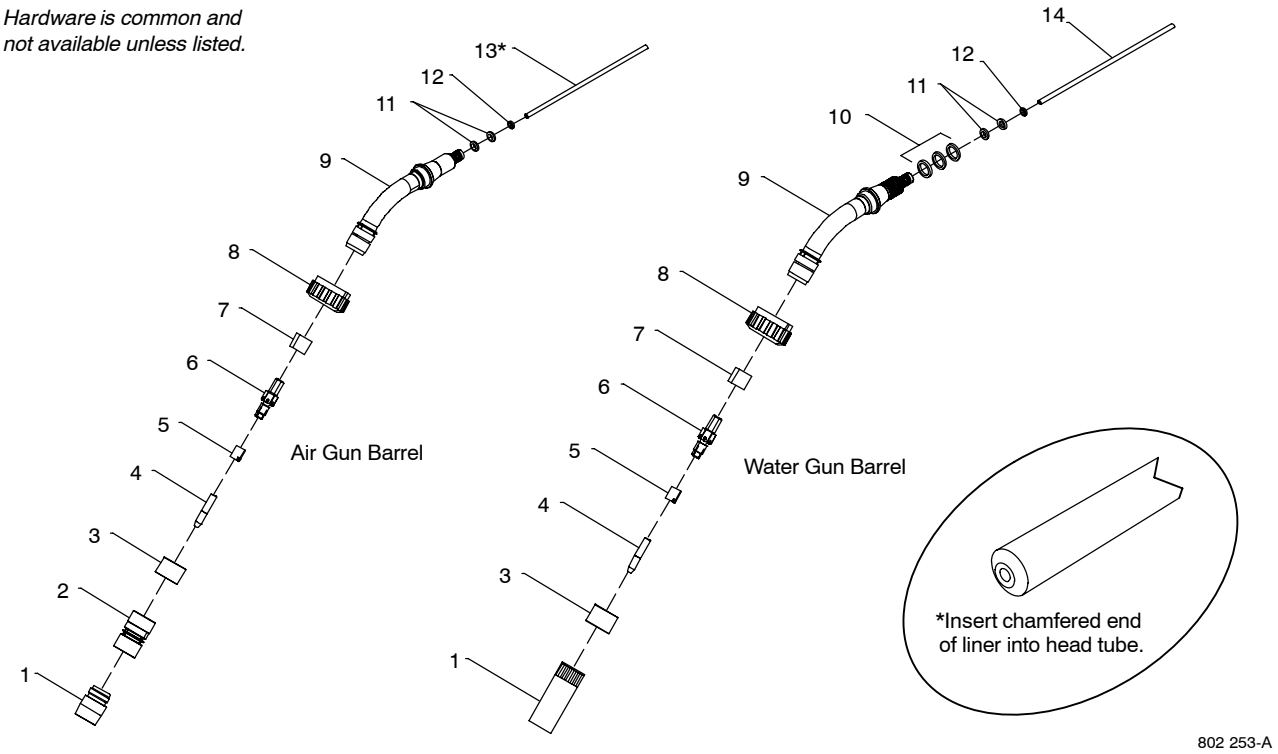


Figure 10-5. Barrel Assembly Of XR-Edge Gun

Item No.	Part No.	Description	Quantity
		Figure 10-5. Barrel Assembly Of XR-Edge Gun (Figure 10-4 Item 41)	
1	197 728	NOZZLE, 5/8 orf x 2-1/2 (water)	1
1	185 100	NOZZLE, 5/8 orf x 1-3/8 (air)	1
2	185 105	NOZZLE, adapter (air)	1
3	185 102	NUT, nozzle adapter locking	1
4	135 428	TIP, contact .030/41 wire (part of Wire Guide Kit 193 520)	1
4	135 430	TIP, contact .035/52 wire (part of Wire Guide Kit 193 521)	1
4	135 430	TIP, contact .040/52 wire (part of Wire Guide Kit 196 300)	1
4	135 424	TIP, contact .047/61 wire (part of Wire Guide Kit 193 522)	1
4	135 425	TIP, contact .062/81 wire (part of Wire Guide Kit 193 523)	1
4	♦135 427	TIP, contact .030/36 wire	1
4	♦147 314	TIP, contact .035/41 wire	1
4	♦135 429	TIP, contact .047/52 wire	1
4	♦135 426	TIP, contact .062/73 wire	1
5	136 748	COLLET, nut (part of Wire Guide Kits)	1
6	185 110	ADAPTER, quick change contact tip	1
7	185 097	INSULATOR, contact tip adapter	1
8	185 111	NUT, molded head tube rotation	1
9	191 180	HEAD TUBE, air (consisting of)	1
9	191 181	HEAD TUBE, water	1
10	194 261	O-RING, .551 ID x .070CS (water)	3
11	191 191	O-RING, .312 ID x .070CS	2
12	164 485	O-RING, .176 ID x .070CS	1
13	♦♦193 792	LINER, .045-1/16 wire x 7.188 lg (air)	1
13	♦♦♦193 793	LINER, .023-.040 wire x 7.188 lg (air)	1
14	♦♦197 730	LINER, .045-1/16 wire x 7.875 lg (water)	1
14	♦♦♦197 729	LINER, .023-.040 wire x 7.875 lg (water)	1

♦Optional

♦♦Part of 193 522 and 193 523 Wire Guide Kit Options

♦♦♦Part of 193 520 and 193 521 Wire Guide Kit Options

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.

Eff w/KK082113 Thru LC373468

☞ *Hardware is common and not available unless listed.*

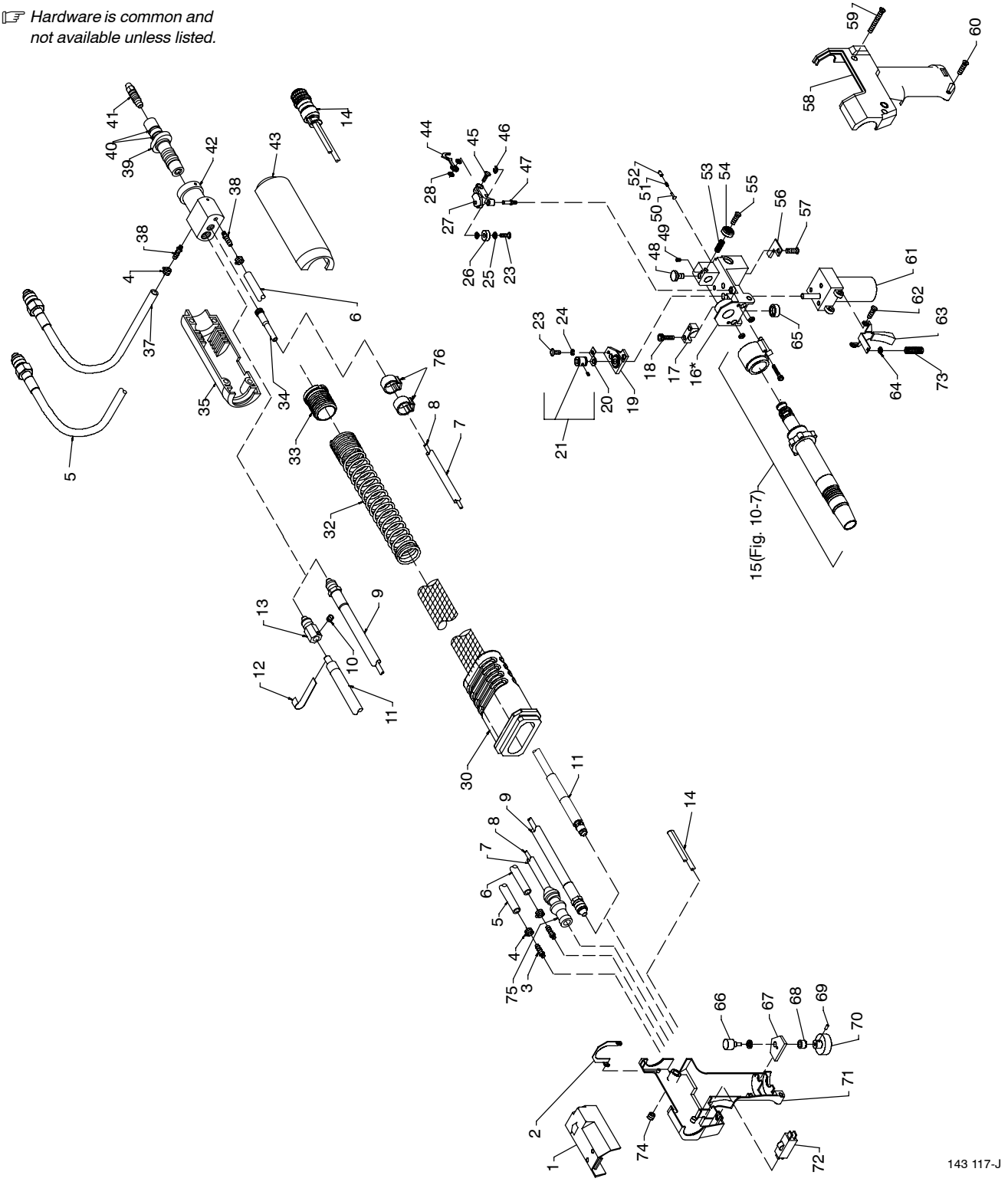


Figure 10-6. Exploded View Of Pistol-Grip Gun

Item No.	Dia. Mkgs.	Part No.	Description	Quantity

Figure 10-6. Exploded View Of Pistol-Grip Gun

. . 1	133 479	. .	COVER	1
. . 2	135 196	. .	SPRING, closure cover	1
. . 3	135 580	. .	FITTING, gas (air)	1
. . 3	135 580	. .	FITTING, gas (water)	2

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
			Figure 10-6. Exploded View Of Pistol-Grip Gun (Continued)	
.. 4		149 332	.. CLAMP, hose .405 – .485 clp dia (air) (water uses 4)	2
.. 5		191 058	.. HOSE, gas in 15ft	1
.. 5		191 059	.. HOSE, gas in 30ft	1
.. 6		191 072	.. HOSE, water in 15ft	1
.. 6		191 073	.. HOSE, water in 30ft	1
.. 7		191 061	.. TUBING, liner carrier 15ft (Prior to LB088591)	1
.. 7		203 691	.. CONDUIT W/FITTING, molded 15 ft (Eff w/LB088591)	1
.. 7		191 062	.. TUBING, liner carrier 30ft (Prior to LB088591)	1
.. 7		203 692	.. CONDUIT W/FITTING, molded 30 ft (Eff w/LB088591)	1
.. 8		191 064	.. LINER, .187 OD x .110 ID (15ft)	1
.. 8		191 065	.. LINER, .187 OD x .110 ID (30ft)	1
.. 9		191 052	.. CABLE, power/water out 15ft	1
.. 9		191 053	.. CABLE, power/water out 30ft	1
.. 10		141 694	.. SCREW, set 312-18 x .37 conept sch stl pln (Prior to LB088591 use 2)	1
.. 11		191 049	.. CABLE, power 15ft (air) (Prior to LB088591)	1
.. 11		203 758	.. CABLE, power 15ft (air) (Eff w/LB088591)	1
.. 11		191 050	.. CABLE, power 30ft (air) (Prior to LB088591)	1
.. 11		203 759	.. CABLE, power 30ft (air) (Eff w/LB088591)	1
.. 12		152 577	.. STRIP, copper .010 x 2.000 x .750 (air) (Prior to LB088591 use 2)	1
.. 13		137 495	.. FITTING, connection power weld (Prior to LB088591 use 2)	1
.. 14		191 055	.. CABLE, control 15ft (Prior to LA062999)	1
.. 14		198 330	.. CABLE, control 15ft (Eff w/LA062999)	1
.. 14		191 056	.. CABLE, control 30ft (Prior to LA062999)	1
.. 14		196 466	.. CABLE, control 30ft (Eff w/LA062999)	1
.. 15		Fig 8-7	.. BARREL ASSEMBLY	1
.. 16		164 582	.. HOUSING, wire drive (15A & 30A models) (Prior to LA062999) (includes items 3,48,50,51,52, 60 & 65)	1
.. 16		163 704	.. HOUSING, wire drive (15A & 30A models) (Eff w/LA062999) (includes items 3,48,50,51,52, 60 & 65)	1
.. 16		164 581	.. HOUSING, wire drive (15W & 30W models) (Prior to LA062999) (includes items 3,48,50,51,52, 60 & 65)	1
.. 16		163 692	.. HOUSING, wire drive (15W & 30W models) (Eff w/LA062999) (includes items 3,48,50,51,52, 60 & 65)	1
		151 661	.. SCREW, set 10-32 x .125 cup sch (30W models only)	2
.. 17		133 365	.. CLAMP, head tube	1
.. 18		000 417	.. SCREW, cap stl sch 10-24 x 1.000	2
.. 19		162 041	.. BEARING BLOCK ASSEMBLY	1
		604 638	.. SCREW, cap stl sch 6-32 x .375	3
		143 480	.. SCREW, 6-32 x .625 soc hd-hex stl	1
.. 20		162 042	.. CONTACT, current pick-up	1
.. 21		♦136 135	.. ROLL, drive VK groove .023-1/16 wire (consisting of)	1
		♦604 612	.... SCREW, set stl sch 8-32 x .125 cup point	2
.. 21		♦183 357	.. ROLL, drive VK groove .030-.035 wire (part of wire guide kit 198 384)	1
.. 21		♦183 357	.. ROLL, drive VK groove .040 wire (part of wire guide kit 198 383)	1
.. 21		♦183 358	.. ROLL, drive VK groove .047-.062 wire (part of wire guide kit 198 382)	1
.. 21		♦183 358	.. ROLL, drive VK groove .047-.062 wire (part of wire guide kit 198 381)	1
.. 23		114 045	.. SCREW, 6-32 x .500 hexwhd slt stl slffmg	3
.. 24		602 198	.. WASHER, lock .141 ID stl split	4
.. 25		134 624	.. BEARING, flg nyl .140 ID x .187 OD x .375flg x .031thk	2
.. 26		134 623	.. BEARING, idler roll	1
.. 27		132 852	.. ARM, pressure	1
.. 28		605 798	.. WASHER, shldr nyl .375 OD x .168 ID x .080	2
.. 30		191 067	.. JACKET, cable combination 15ft (Prior to LB088591)	1
.. 30		203 689	.. JACKET, molded strain relief 15ft (Eff w/LB088591)	1
.. 30		191 068	.. JACKET, cable combination 30ft (Prior to LB088591)	1
.. 30		203 690	.. JACKET, molded strain relief 30ft (Eff w/LB088591)	1
		189 081	.. STRAIN RELIEF (prior to LB088591 *not shown*)	1
		133 362	.. STRAIN RELIEF (prior to LB088591 *not shown*)	1

Item No.	Dia. Mkgs.	Part No.	Description	Quantity

Figure 10-6. Exploded View Of Pistol-Grip Gun (Continued)

32		203 562	SPRING, strain relief (Eff w/LB088591)	1
33		203 560	STRAIN RELIEF, spring retainer (Eff w/LB088591)	1
34		187 953	FITTING, liner double wound adapter (Prior to LB088591)	1
34		203 539	FITTING, liner double wound adapter (Eff w/LB088591)	1
35		189 812	HOUSING, power pin RH	1
37		166 412	HOSE, water 14in	1
38		144 172	FITTING, hose brs barbed M 3/16 tbg x .250-20 (air) (Prior to LA321919)	1
38		202 513	FITTING, hose brs barbed M 3/16 tbg x .250-20 (air) (Eff w/LA321919)	1
38		144 172	FITTING, hose brs barbed M 3/16 tbg x .250-20 (water) (Prior to LA321918)	2
38		202 513	FITTING, hose brs barbed M 3/16 tbg x .250-20 (water) (Eff w/LA321919)	2
39		187 030	PIN, power/gas (Prior to LA062999)	1
39		193 896	PIN, power assembly (Eff w/LA062999)	1
40		079 974	O-RING, .500 ID x .103 cs rbr	2
41		120 995	GUIDE, wire outlet .030-1/16 (Prior to LA321919)	1
41		202 216	GUIDE, wire outlet .030-1/16 (Eff w/LA321919)	1
42		187 029	CONNECTOR, power/gas	1
43		189 811	HOUSING, power pin LH	1
44		133 083	SPRING, tension adj drive roll	1
45		144 860	SCREW, mach stl flh 8-32 x .437	1
46		058 968	RING, retainer E	2
47		135 474	PIN, hinge	1
48		155 565	SCREW, thumb	1
		134 799	O-RING, .176 ID x .070 CS (used w/thumbscrew)	1
49		135 126	SCREW, set stl sch 6-32 x .125 cup point	1
50		170 353	PLUNGER, pin	1
51		170 351	SPRING, cprsn .150 od x .01 wire x .375 lg	1
52		170 352	PLUNGER, gas flow	1
53		112 896	SPRING, cprsn .240 OD x .020 wire x .437	2
54		135 773	KNOB, thumb tension adjusting 8-32	1
55		143 360	SCREW, mach stl rdh 8-32 x .500	1
56		136 679	CLAMP, strain relief	1
57		132 269	SCREW, mach stl rdhph 8-32 x .375	1
58		164 591	CASE, gun LH	1
59		173 527	SCREW, 8–32 x 1.50 soc hd-hex gr 8	2
60		173 528	SCREW, 8-32 x .875 soc hd-hex gr 8	1
61	B2	161 813	MOTOR, gear PM 24VDC 420RPM 10.2:1 ratio	1
62		191 121	SCREW, mach stl trh 6-32 x .250	2
63		164 592	TRIGGER	1
64		184 101	WASHER, shldr.140 id 0.250 od x .047 t .340 od x .078 t nyl	1
65		058 262	CAP, valve	1
66	R4	200 096	POTENTIOMETER, C sltd sft 1/T .5W 10K ohm	1
67		144 861	WASHER, anti-turn	1
68		135 127	LOCK, shaft pot .250-32 x .125dia shaft	1
69		602 169	SCREW, set stl sch 8-32 x .187	2
70		134 856	KNOB, speed control 1-10 .140 shaft x 1.125 OD	1
71		164 590	CASE, gun RH	1
72	PB1	000 369	SWITCH, lim 10A 125/250VAC DPST plgr	1
73		183 884	SPRING, cprsn .240 OD x .026 wire x 1.000	1
74		135 647	NUT, stl 8-32	3
75		185 106	NUT, liner collet	1
		♦605 107	GREASE MINICAP	1
76		203 557	CLAMP, 1-ear type	2

♦Optional

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.

Eff w/KK082113 Thru LC373468

☞ *Hardware is common and not available unless listed.*

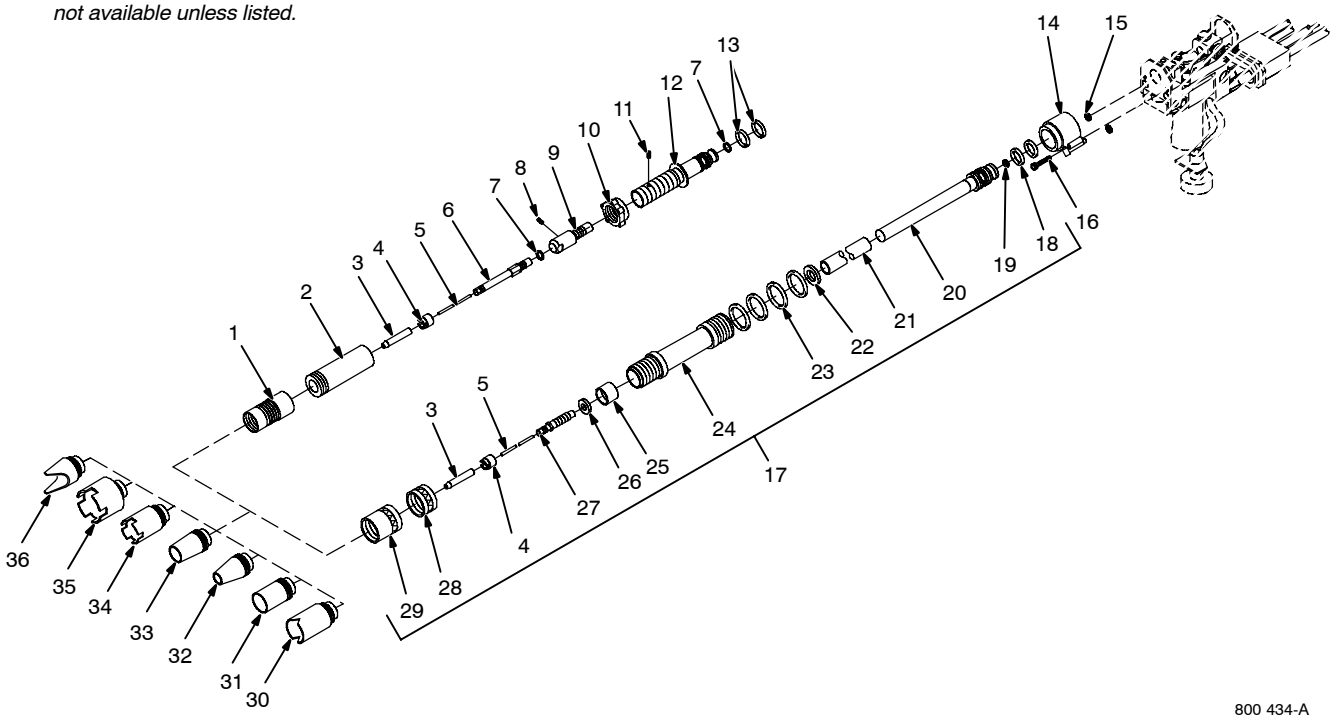


Figure 10-7. Barrel Assembly Of Pistol-Grip Gun

Item No.	Part No.	Description	Quantity
		Figure 10-7. Barrel Assembly Of Pistol-Grip Gun (Figure 10-6 Item 15)	
1	144 862	EXTENSION, nozzle (15A & 30A models)	1
2	156 821	EXTENSION, barrel 2.875 lg (15A & 30A models)	1
3	135 428	TUBE, contact .030/41 wire (Part of Wire Guide Kit 198 384)	1
3	135 430	TUBE, contact .035/52 wire (Part of Wire Guide Kit 198 384)	1
3	135 430	TUBE, contact .040/52 wire (Part of Wire Guide Kit 198 383)	1
3	135 424	TUBE, contact .047/61 wire (Part of Wire Guide Kit 198 382)	1
3	135 425	TUBE, contact .062/81 wire (Part of Wire Guide Kit 198 381)	1
3	♦135 427	TUBE, contact .030/36 wire	1
3	♦147 314	TUBE, contact .035/41 wire	1
3	♦135 429	TUBE, contact .047/52 wire	1
3	♦135 426	TUBE, contact .062/73 wire	1
	136 821	WRENCH, nut tube contact	1
	166 575	WRENCH, hex .078 across the flat	1
4	136 748	NUT, collet	1
5	♦♦136 683	LINER, teflon .045-1/16 wire x 6.875 lg	1
5	♦♦♦136 682	LINER, teflon .023-.035 wire x 6.875 lg	1
6	164 421	ADAPTER, contact tube (15A & 30A models)	1
7	164 485	O-RING .176 ID x .070CS (15A & 30A models)	2
8	604 612	SCREW, set stl sch 8-32 x .125 (15A & 30A models)	1
9	164 422	TUBE, head (15A & 30A models)	1
10	058 685	NUT, jam nozzle extension (15A & 30A models)	1
11	602 172	SCREW, set stl sch 10-32 x .187 cup point (15A & 30A models)	1
12	164 423	ADAPTER, tube head (15A & 30A models)	1
13	134 800	O-RING, .614 ID x .070CS	2
	203 675	MANIFOLD ASSY, water (Includes)	1
14	132 985	MANIFOLD, water (15W & 30W models)	1
15	175 946	O-RING, .614 ID x .070CS	2
	146 555	SCREW, set 8-32 x .125 cup sch	2
16	135 128	SCREW, cap stl sch 6-32 x 1.000 (15W & 30W models)	2

Item No.	Part No.	Description	Quantity

Figure 10-7. Barrel Assembly Of Pistol-Grip Gun (Continued)

. . 17	137 042	. . BARREL ASSEMBLY, water cooled (15W & 30W models) (consisting of)	1
. . 18	134 800	. . . . O-RING, .614 ID x .070CS	1
. . 19	134 799	. . . . O-RING, .176 ID x .070CS (15W & 30W models)	1
. . 20	180 805	. . . . FITTING ASSEMBLY, barrel	1
. . 21	136 943	. . . . TUBING, teflon	1
. . 22	136 834	. . . . WASHER, flat .594 ID fbr	1
. . 23	180 966	. . . . O-RING, .926 ID x .070CS	4
. . 24	137 041	. . . . BARREL, outer	1
. . 25	136 836	. . . . INSULATOR, head tube from adapter	1
. . 26	136 835	. . . . WASHER, flat .390 ID brs	1
. . 27	136 680	. . . . ADAPTER, contact tube	1
. . 28	136 833	. . . . NUT, 1.000-12 stl	1
. . 29	136 832	. . . . ADAPTER, nozzle	1
. . 33	050 622	. . . . NOZZLE, 5/8 orf x 1-5/8 lg	1
. . 30	♦009 925	. . NOZZLE, spot outside corner .937 ID x 2.375	1
. . 31	♦050 116	. . NOZZLE,13/16 orf x 1-5/8 lg	1
. . 32	♦050 115	. . NOZZLE, 1/2 orf x 1-5/8 lg	1
. . 34	♦000 442	. . NOZZLE, spot	1
. . 35	♦004 466	. . NOZZLE, spot	1
. . 36	♦000 443	. . NOZZLE, spot inside corner	1

♦Optional

♦♦Part of 198 382 and 198 381 Wire Guide Kit Options

♦♦♦Part of 198 384 and 198 383 Wire Guide Kit Options

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.

TM-1594E 2007–03

Processes

MIG (GMAW) Welding

Description

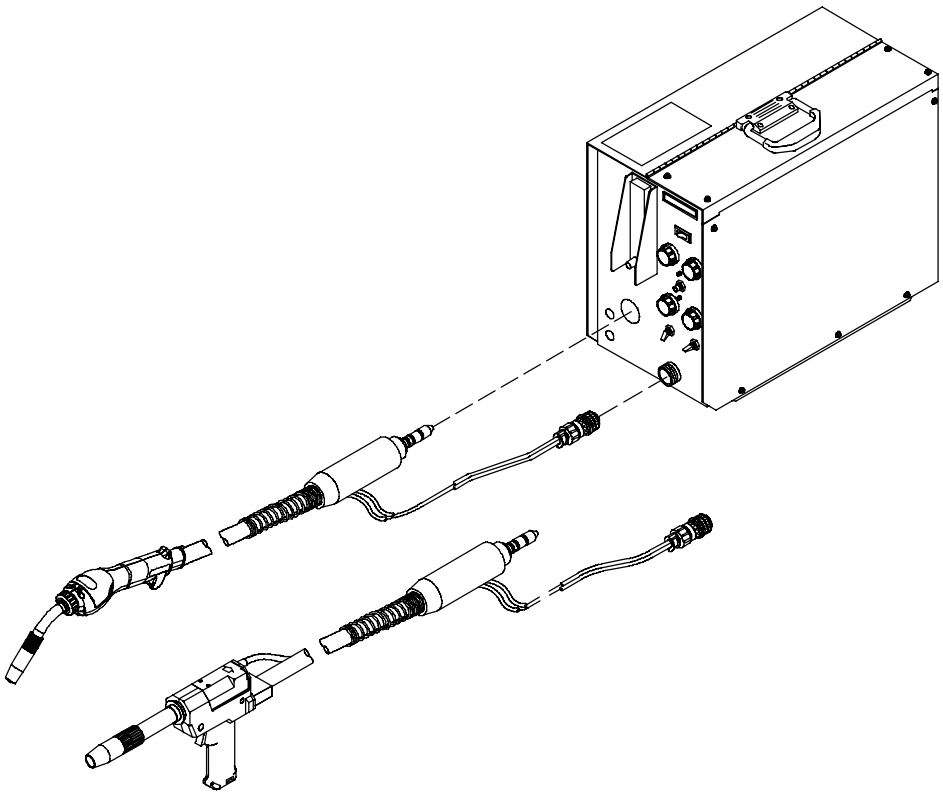
Wire Feeder And Feeder Gun

XR™ Control
XR™ Air- And Water-Cooled Guns

PARTS LIST

Eff w/LC373469 Thru LE033394

For OM-1594 (181 715) Revisions M Thru P



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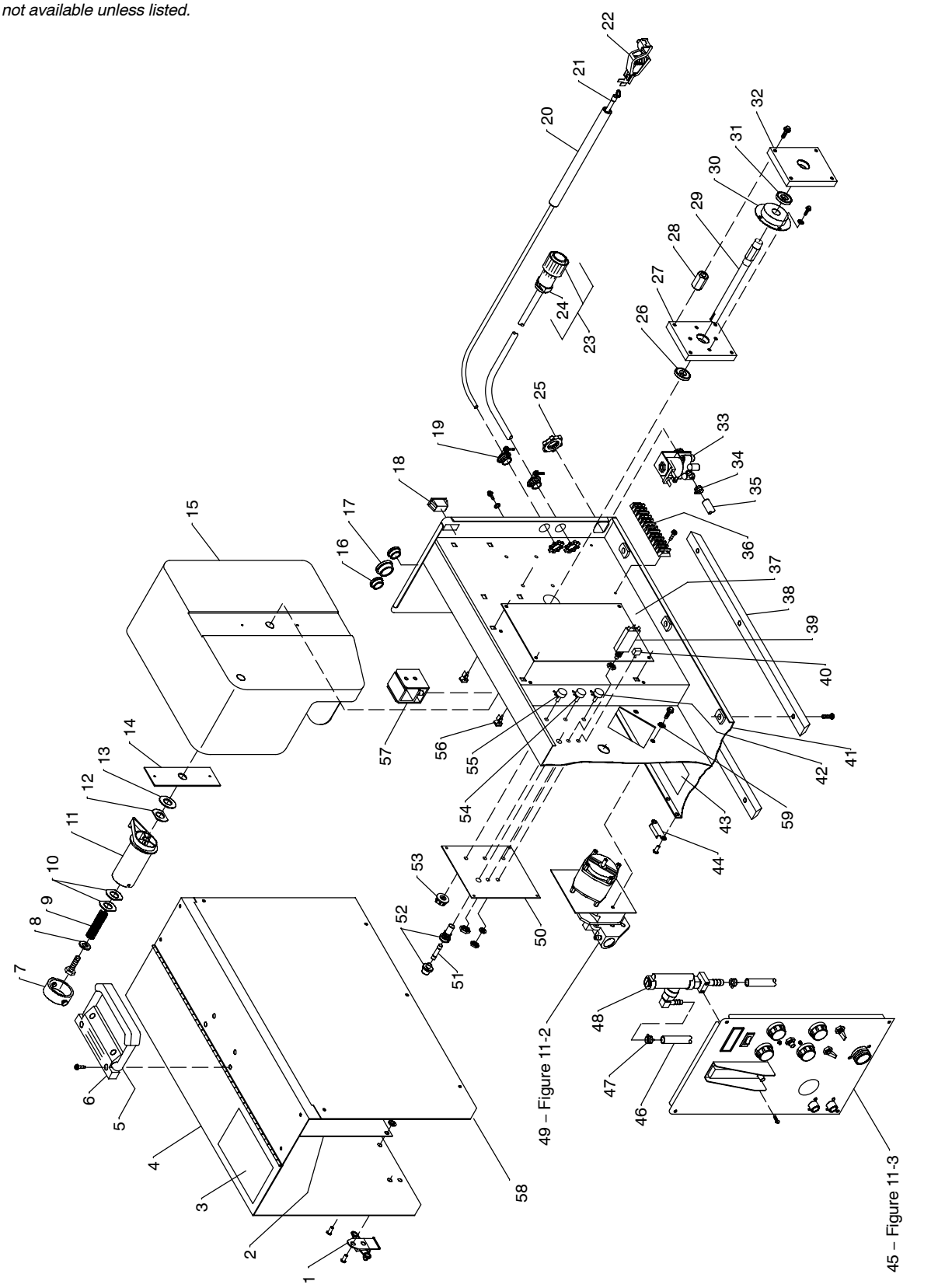

802 230-A

Eff w/LC373469 Thru LE033394

Figure 11-1. Main Assembly

Item No.	Dia. Mkgs.	Part No.	Description	Quantity

Figure 11-1. Main Assembly

1		089 572	Catch, Link-lock	2
2		112 167	Insulator, Door	1
3		134 327	Label, Warning General Precautionary (Non-ce Units)	1
3		178 936	Label, Warning General Precautionary (Ce Units)	1
4		+169 085	Wrapper	1
5		126 415	Clamp, Saddle	1
6		126 416	Handle, Molded	1
7		058 427	Ring, Retaining Spool	1
8		602 233	Washer, Flat Stl .250 Id X .875 Od X .062thk	1
9		057 543	Spring, Cprsn .845 Od X .091 Wire X 1.500	1
10		113 168	Washer, Locking	2
11		058 428	Hub, Spool	1
12		089 561	Washer, Anti-turn Stl	1
13		058 424	Washer, Fbr Brake	1
14		151 697	Strip, Brake Surface Anti-turn	1
15		112 198	Shroud, Spool Wire 12 In	1
16		057 357	Bushing, Snap-in Nyl .937 Id X 1.125mtg Hole	2
17		010 494	Bushing, Snap-in Nyl 1.375 Id X 1.750mtg Hole	1
18	S1	111 997	Switch, Rocker Spst 10A 250VAC	1
19		115 104	Connector, Clamp Cable .500	2
20	♦♦♦♦	176 089	Tubing, Plstc PVC Black	1ft (0.3 m)
21	♦♦♦♦	600 399	Wire, Strd 14Ga(Order By Ft)	35ft (10.7 m)
22	♦♦♦♦	601 222	Clamp, Univ 50A	1
23	PLG5	141 162	Housing Plug & Pins	1
24		079 739	Clamp, Cable Strain Relief	1
		182 475	Cable, Port No 18 6/C 10 Ft 8 In	1
25		605 227	Nut, .750-14 Knurled Nyl	1
26		073 302	Bearing, Ball Rdl Sgl Row .669 X 1.378 X .39	1
27		113 161	Block, Bearing Front	1
28		113 165	Stand-Off, .250-20 X 1.000 Lg	4
29		120 396	Shaft, Spool	1
30	MP1	163 304	Brake, W/Terminals	1
31		073 302	Bearing, Ball Rdl Sgl Row .669 X 1.378 X .39	1
32		113 900	Block, Bearing Rear	1
33	GS1	125 785	Valve. 24VAC 2way Custom Port 1/8 Orf	1
34		089 120	Clamp, Hose .375-.450clp Dia Slfttng	1
35		176 357	Hose, Sae .187 Id X .410 Od X 21.000	1
36	2T	038 783	Block, Term 20A 12P	1
		601 219	Link, Jumper	2
		111 008	Label, Term Mkg	1
37	PC1	210 370	Circuit Card, Motor Speed Control	1
38		105 567	Skid, Base	2
39	CB1	011 991	Circuit Breaker, Main Reset	1
40	S7	011 770	Switch, Tgl Spdt 6A 125V	1
41		+187 704	Cabinet, Control	1
42	♦	194 282	Potentiometer, C Sltd Sft 1t 1w 1m	1
43		090 439	Label, Warning Electric Shock Can Kill	1
44		089 573	Plate, Keeper Link-lock	2
45		Fig 8-3	Panel, Front W/Components	1
46	♦♦♦	134 834	Hose, Sae .187 Id X .410 Od (Order By Ft)	2ft (0.6 m)
47	♦♦♦	089 120	Clamp, Hose .375-.450Clp Dia Slfttng	4
48	S8	♦♦♦ 194 195	Switch, Flow W/Fittings	1
49		Fig 8-2	Motor & Wire Drive	1
50		187 789	Plate, Control Side (Non-CE Units)	1
50		197 645	Plate, Control Side (CE Units)	1
51	F1	*073 426	Fuse, Mintr Gl Slo-blo 5A	1
52		046 432	Holder, Fuse Mintr .250 X 1.250 Panel Mtg	1
53		193 919	Knob, Pointer	2

Item No.	Dia. Mkgs.	Part No.	Description	Quantity

Figure 11-1. Main Assembly (Continued)

. . 54		♦028 770 . .	Potentiometer, Cp Std Slot 1t 2w 1m	1
. . 55		073 562 . .	Potentiometer, Cp Std Slot 1t 2w 10k	1
. . 56		134 201 . .	Stand-Off Support, PC Card .312/.375	4
. . 57	REED	140 786 . .	Switch, Reed	1
. . 58		169 089 . .	Door, Side Rh	1
. . 59		605 970 . .	Washer, Shldr.252 Id 0.310 Odx.064t .500 Odx.250h Nyl	2

+When ordering a component originally displaying a precautionary label, the label should also be ordered.
♦Part of 114 144 Spot Weld Control Option
♦♦Part of 144 931 Voltage Control Option
♦♦♦Part of 130 838 Water Flow Shutdown Switch Option
♦♦♦♦Part of 209 867 Voltage Sensing Lead Kit
*Recommended Spare Parts.
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.

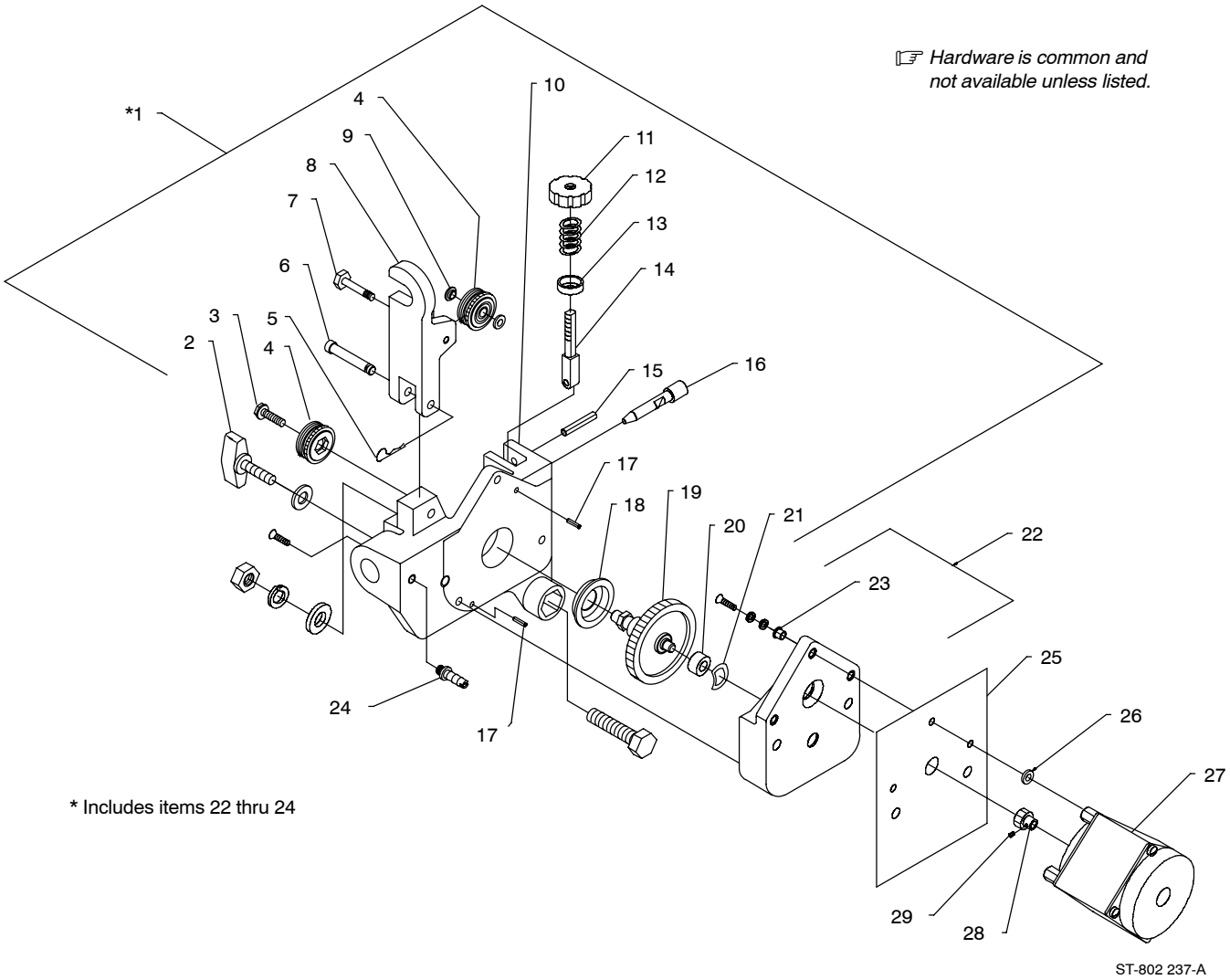

Figure 11-2. Motor & Wire Drive

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
			Figure 11-2. Motor & Wire Drive (Figure 11-1 Item 49)	
1		193 186	Drive Assembly, Wire (Includes)	1
2		124 778	Knob, T 2.000 Bar W/.312 - 18 Nut	1
3		111 630	Screw, 010-32 X .25 Hexwhd-pln Stl Pld	1
4		♦194 118	Kit, Drive Roll .030–.035 (Part Of Wire Guide Kits 193 520 & 193 521)	1
4		♦194 119	Kit, Drive Roll .047–.062 (Part Of Wire Guide Kit 193 522)	1
4		♦195 591	Kit, Drive Roll .062 (Part Of Wire Guide Kit 193 523)	1
5		151 828	Pin, Cotter Hair .042 X .750	1
6		090 416	Pin, Hinge	1
7		191 826	Screw, Mtg Idler Roll	1
8		189 714	Pressure Arm	1
9		♦188 098	Washer, Shlder .192 Id X .375 Od	2
10		189 716	Housing, Wire Drive	1
11		092 237	Knob, Adjust Tension 1.000	1
12		189 911	Spring, Cprsn .720 Od X .063 Wire X 1.500	1
13		085 244	Washer, Cupped .328 Id X .812 Od X 16 Ga X .125 Lip	1
14		085 242	Fastener, Pinned	1
15		010 224	Pin, Spring Cs .187 X 1.000	1
16		058 549	Guide, Wire Inlet 1/16	1
17		602 306	Pin, Spring Cs .125 X .500	2
18		189 823	Insulator, Front Bearing	1
19		189 920	Gear Assy, Shaft/Bearing	1
20		189 605	Bearing Assy, Upper Drive Shaft	1
21		079 625	Washer, Wave .500 Id X .750 Od	1
22		196 613	Case, Gear Wire Drive (Includes)	1
23		196 604	Washer, Shldr .187 Id .343 Od X .045t .234 Od X .138t Nyl	3
24		144 172	Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20	1
25		113 162	Insulator, Motor	1
26		605 798	Washer, Shldr .168 Id 0.375 Od X .047t .246 Od X .030t Nyl	3
27	B1	163 326	Motor, Torque 24VAC 50/60hz	1
28		113 169	Gear, Driver	1
29		604 612	Screw, Set Stl Sch 8-32 X .125 Cup Point	1

♦Part of 194 118, 194 119, or 195 591 Drive Roll Kits

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.

Eff w/LC373469 Thru LE033394

☞ *Hardware is common and not available unless listed.*

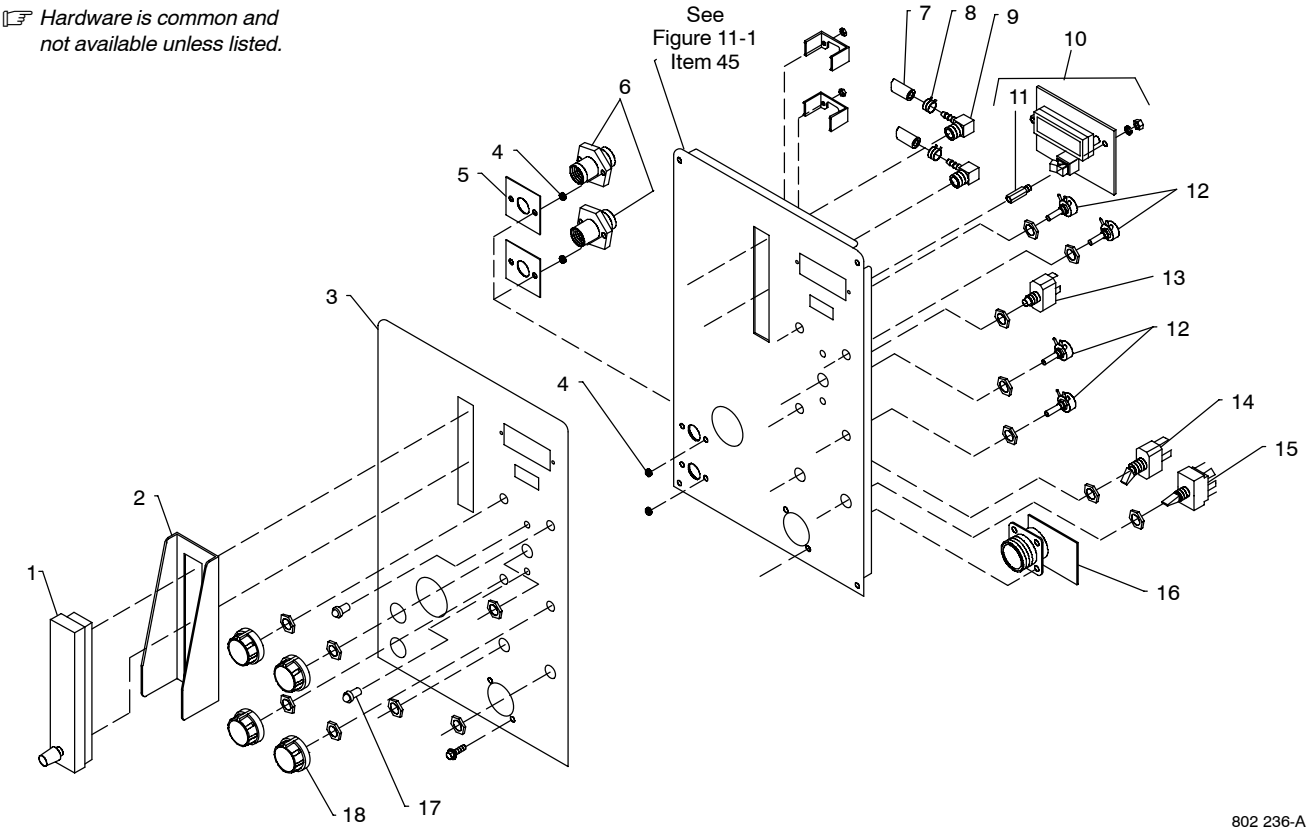

Figure 11-3. Panel, Front w/Components (Water-Cooled Model Illustrated)

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
			Figure 11-3. Panel, Front w/Components (Figure 11-1 Item 45)	
1		♦111 569	Meter, Flow 6-60	1
2		♦111 633	Guard, Flow Meter	1
3			Nameplate, (Order By Model And Serial Number)	1
4		605 798	Washer, Shldr. Nyl	8
5		173 259	Insulator, Water Flow Switch	2
6		139 678	Fitting, Water (Supplied With Water-cooled Gun)	2
7		♦176 357	Hose, Sae .187 Id X .410 Od (Order By Ft)	4ft (1.2 m)
8		♦089 120	Clamp, Hose .375-.450Clp Dia	2
9		♦112 090	Fitting, Pipe Brs Elb 1/8npt X 3/16 Hose	2
		♦056 851	Fitting, Hose Brs Barbed Nipple 3/16tbg	2
		♦010 606	Fitting, Hose Brs Nut .625-18	2
		♦056 108	Fitting, Hose Brs Ferrule .425 Id X .718 Lg	2
		♦045 852	Clip, Component .687dia Mtg Adh Back	1
10	PC2	186 268	Circuit Card, Meter (Includes)	1
11		115 443	Stand-Off, No. 6-32 X .750 Lg	2
		133 644	Frame, Snap-in Switch Rocker Panel Mtg	1
12		073 562	Potentiometer, Cp Std Slot 1t 2w	4
13		011 232	Switch, Pb Spdt	1
14	S4	134 847	Switch, Tgl SPDT 15A 125VAC	1
15	S2	211 476	Switch, Tgl SPTT 6A 125VAC	1
16	PC4, RC20	197 719	Circuit Card, Filter	1
		146 212	Plug, 10 Pin MS-3106A-18-1PX Amphenol	1
	PLG14	115 092	Housing Plug & Sockets	1
17		194 152	Led, Green	2
18		193 919	Knob, Pointer	5

♦Part of 114 101 Gas Flow Meter Option.

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.

Eff w/LC373469 Thru LE033394

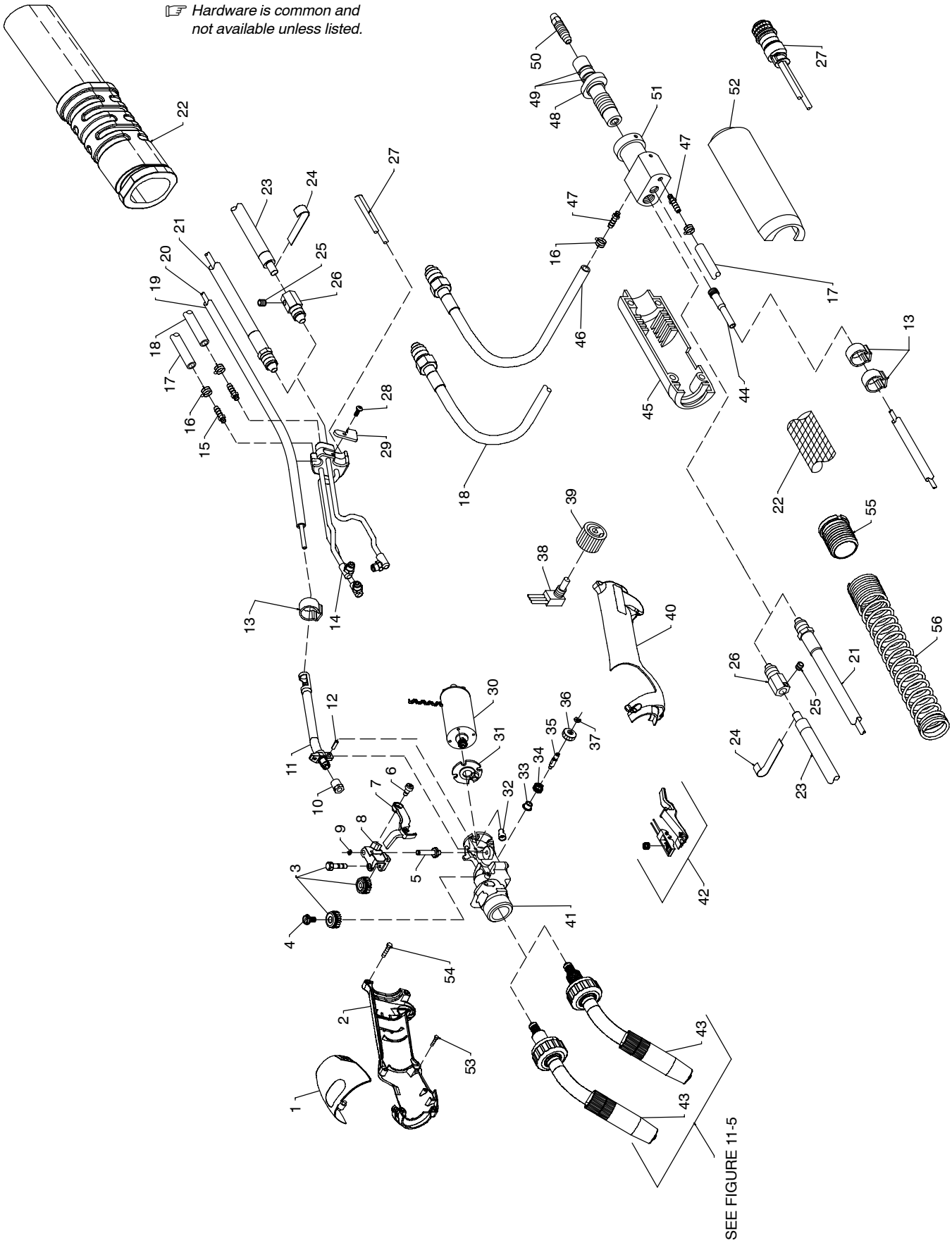

Figure 11-4. Exploded View Of XR-Edge Gun

Item No.	Dia. Mkgs.	Part No.	Description	Quantity

Figure 11-4. Exploded View Of XR-Edge Gun

... 1	.....	187 000	. . Cover,Handle	1
... 2	.....	187 002	. . Handle, Right	1
... 3	.....	194 114	. . Kit, Drive Roll .030 (Part Of Wire Guide Kit 193 520)	1
... 3	.....	194 115	. . Kit, Drive Roll .035 (Part Of Wire Guide Kit 193 521)	1
... 3	.....	194 116	. . Kit, Drive Roll .047 (Part Of Wire Guide Kit 193 522)	1
... 3	.....	194 117	. . Kit, Drive Roll .062 (Part Of Wire Guide Kit 193 523)	1
... 3	.....	♦191 135	. . Shaft, Hot Drive Roll	1
... 4	.....	♦111 630	. . Screw, 010-32 X .25 Hexwhd Slt	1
... 5	.....	185 098	. . Pin, Pressure	1
... 6	.....	191 098	. . Screw, Shld Stl Sch 008-32 X .188 X .188 Shld	1
... 7	.....	191 097	. . Arm, Tension	1
... 8	.....	191 096	. . Arm, Pressure	1
... 9	.....	000 364	. . Ring, Rtng Ext .188 Shaft X .025 Thk E Style	1
... 10	.....	185 106	. . Nut, Liner Collet	1
... 11	.....	191 090	. . Guide Assy, Liner	1
... 12	.....	602 306	. . Pin, Spring Cs .125 X .500	1
... 13	.....	203 557	. . Clamp, 1–ear Type Nom Dim .391 X .236 Wide Special	3
... 14	.....	191 104	. . Power Block Assy	1
... 15	.....	135 580	. . Fitting, Gas (Air)	1
... 15	.....	135 580	. . Fitting, Gas (Water)	2
... 16	.....	149 332	. . Clamp, Hose .405 – .485 Clp Dia (Air)	2
... 16	.....	149 332	. . Clamp, Hose .405 – .485 Clp Dia (Water)	4
... 17	.....	191 058	. . Hose, Gas In 15ft	1
... 17	.....	191 059	. . Hose, Gas In 30ft	1
... 17	.....	191 060	. . Hose, Gas In 50ft	1
... 18	.....	191 072	. . Hose, Water In 15ft	1
... 18	.....	191 073	. . Hose, Water In 30ft	1
... 18	.....	191 074	. . Hose, Water In 50ft	1
... 19	.....	203 599	. . Conduit, Monocoil Double Wound 15ft	1
... 19	.....	203 671	. . Conduit, Monocoil Double Wound 30ft	1
... 19	.....	203 673	. . Conduit, Monocoil Double Wound 50 Ft	1
... 20	.....	191 064	. . Liner, .187 Od X .110 Id (15ft)	1
... 20	.....	191 065	. . Liner, .187 Od X .110 Id (30ft)	1
... 20	.....	191 066	. . Liner, .187 Od X .110 Id (50ft)	1
... 21	.....	191 052	. . Cable, Power/Water Out 15ft	1
... 21	.....	191 053	. . Cable, Power/Water Out 30ft	1
... 21	.....	191 054	. . Cable, Power/Water Out 50ft	1
... 22	.....	203 579	. . Jacket, Cable Combination 15ft W/Molded Strain Relief	1
... 22	.....	203 672	. . Jacket, Cable Combination 30ft W/Molded Strain Relief	1
... 22	.....	203 674	. . Jacket, Cable Combination 50ft W/Molded Strain Relief	1
... 23	.....	191 049	. . Cable, Power 15ft (Air)	1
... 23	.....	191 050	. . Cable, Power 30ft (Air)	1
... 23	.....	191 051	. . Cable, Power 50ft (Air)	1
... 24	.....	152 577	. . Strip, Copper .010 X 2.000 X .750 (Air)	1
... 25	.....	141 694	. . Screw, Set 312-18 X .37 Conept Sch Stl Pln	1
... 26	.....	137 495	. . Fitting, Connection Power Weld	1
... 27	.....	191 055	. . Cable, Control 15ft	1
... 27	.....	191 056	. . Cable, Control 30ft	1
... 27	.....	191 057	. . Cable, Control 50ft	1
... 28	.....	191 121	. . Screw, 006-32 X .37 Btn Hd-Soc	1
... 29	.....	191 119	. . Strain Relief, Cable	1
... 30	.....	191 082	. . Motor Assy	1
... 31	.....	189 078	. . Insulator, Motor	1
... 32	.....	190 906	. . Insulator, Motor Screw	4
... 33	.....	191 131	. . Spacer, Tension	1
... 34	.....	191 141	. . Spring, Cprsn .360 Od X .032 Wire X .875 Free	1
... 35	.....	190 907	. . Shaft, Spring Tension	1
... 36	.....	135 773	. . Knob, Adjust Tension Thumb	1
... 37	.....	191 087	. . Ring, Rtng Ext .094 Shaft X .015 Thk E Style	1

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
			Figure 11-4. Exploded View Of XR-Edge Gun (Continued)	
38		191 235	. . Potentiometer, Cp Flat 1t .5w 10k Ohm	1
39		191 205	. . Knob, Speed Control	1
40		187 001	. . Handle, Left	1
41		196 045	. . Housing, Drive W/Gears	1
42		191 212	. . Trigger Assy	1
43		210 763	. . Head Tube Assy, Water (See Figure 11-5)	1
43		194 073	. . Head Tube Assy, Air (See Figure 11-5)	1
44		203 539	. . Fitting, Liner	1
45		189 812	. . Housing, Power Pin Rh	1
46		196 177	. . Hose, Water Out 10in	1
47		202 513	. . Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20 (Air)	1
47		202 513	. . Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20 (Water)	2
48		193 896	. . Pin, Power Assembly	1
49		079 974	. . O-ring, .500 Id X .103 Cs Rbr	2
50		202 216	. . Guide, Wire Outlet .030-1/16	1
51		187 029	. . Connector, Power/Gas	1
52		189 811	. . Housing, Power Pin Lh	1
53		156 579	. . Screw, 004−40 X .37 Soc Hd−hex Stl Pld	1
54		143 480	. . Screw, 006−32 X .62 Soc Hd−hex Gr 8 Pld	5
55		203 560	. . Strain Relief, Spring Retainer	1
56		203 562	. . Spring, Strain Relief	1
		♦605 107	. . Grease Minicap	1

♦Part of 194 114, 194 115, 194 116, or 194 117 Drive Roll Kits

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.

Eff w/LC373469 Thru LE033394

☞ *Hardware is common and not available unless listed.*

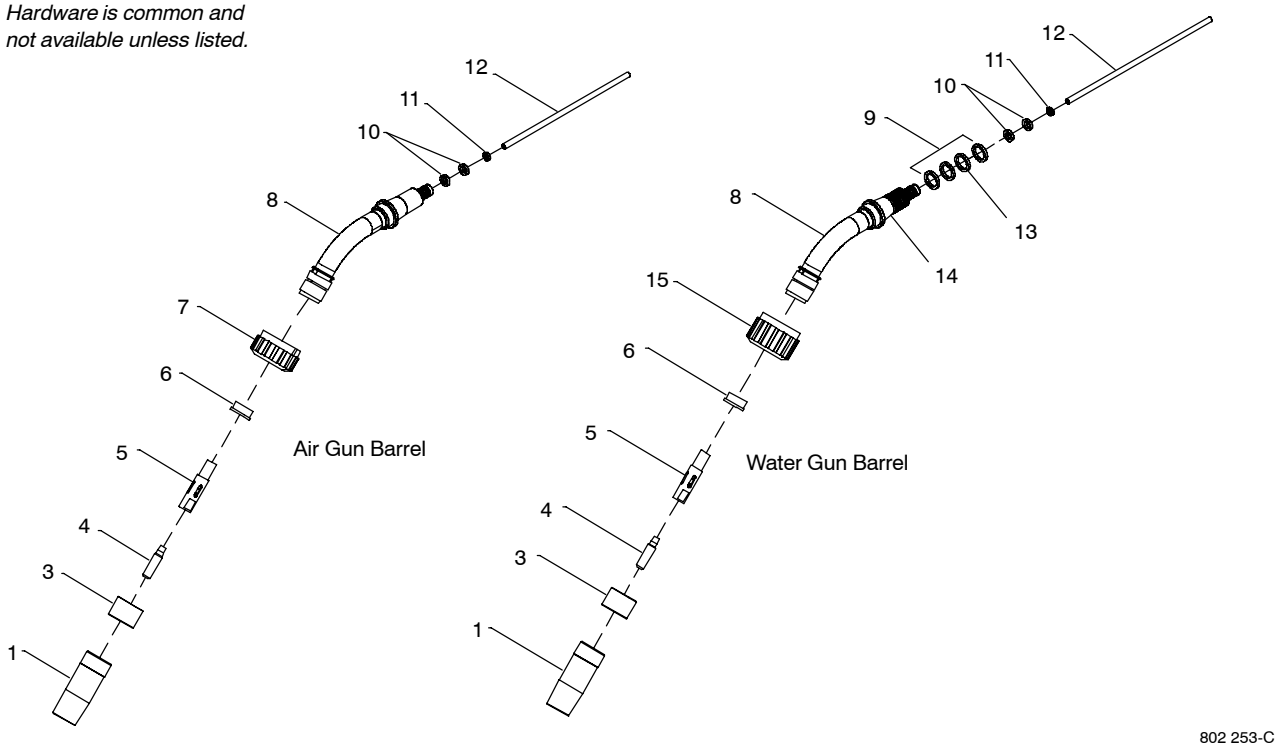

Figure 11-5. Barrel Assembly Of XR-Edge Gun

Item No.	Dia. Mkgs.	Part No.	Description	Quantity

Figure 11-5. Barrel Assembly Of XR-Edge Gun (Figure 11-4 Item 41)

... 1	.....	197 728	.. Nozzle, 5/8 Orf X 2-1/2 (Water)	1
... 3	.....	185 102	.. Nut, Nozzle Adapter Locking	1
... 4	.....	206 176	.. Tip, FasTip .281 Od .030 Wire	1
... 4	.....	206 177	.. Tip, FasTip .281 Od .035 And .030al Wires	1
... 4	.....	206 178	.. Tip, FasTip .281 Od .040 And .035al Wires	1
... 4	.....	206 179	.. Tip, FasTip .281 Od .045 And .040al Wires	1
... 4	.....	206 180	.. Tip, FasTip .281 Od .052 And 3/64al Wires	1
... 4	.....	206 181	.. Tip, FasTip .281 Od 1/16 Wire	1
... 5	.....	209 875	.. Diffuser, FasTip Slotted	1
... 6	.....	185 097	.. Insulator, Contact Tip Adapter	1
... 7	.....	185 111	.. Nut, Molded Head Tube Rotation	1
... 8	.....	191 180	.. Head Tube, Air (Includes)	1
... 8	.....	210 764	.. Head Tube, Water	1
... 9	.....	194 261	.. O-ring, .551 Id X .070cs (Water)	3
... 10	.....	191 191	.. O-ring, .312 Id X .070cs	2
... 11	.....	164 485	.. O-ring, .176 Id X .070cs	1
... 12	.....	212 523	.. Liner, Phos Bronze .030–1/16 Wire X 7.875	1
... 13	.....	210 771	.. O-ring, 14.99mm Id X 1.27mm cs	1
... 14	.....	210 767	.. Insulator, Head Tube Tapered	1
... 15	.....	210 766	.. Nut, Molded Headtube Rotation	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.

Eff w/LC373469 Thru LE033394

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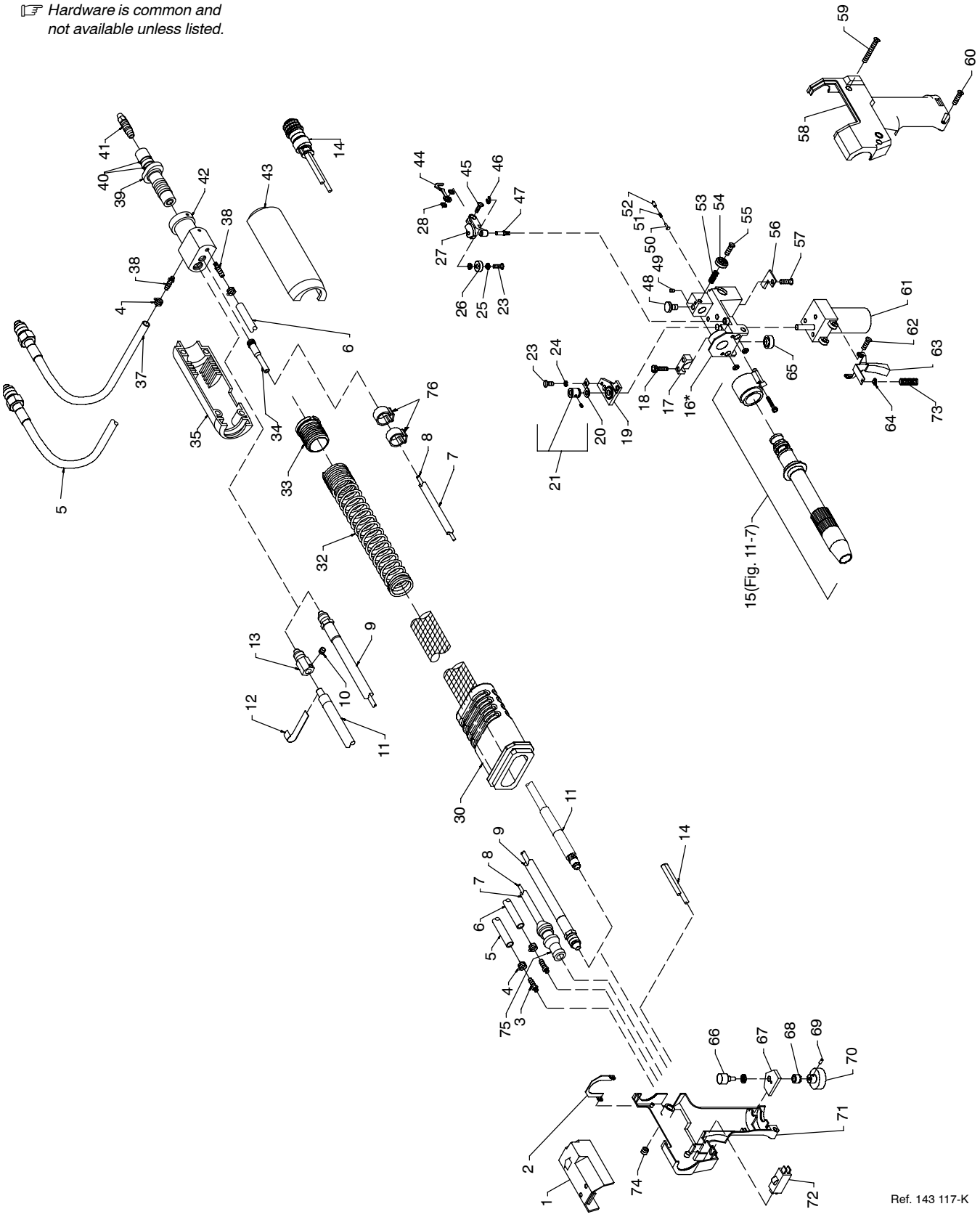


Figure 11-6. Exploded View Of Pistol-Grip Gun

Item No.	Dia. Mkgs.	Part No.	Description	Quantity

Figure 11-6. Exploded View Of Pistol-Grip Gun

1		133 479	Cover	1
2		135 196	Spring, Closure Cover	1
3		135 580	Fitting, Gas (Air)	1
3		135 580	Fitting, Gas (Water)	2
4		149 332	Clamp, Hose .405 – .485 Clp Dia (Air)	2
4		149 332	Clamp, Hose .405 – .485 Clp Dia (Water)	4
5		191 072	Hose, Water In 15ft	1
5		191 073	Hose, Water In 30ft	1
6		191 058	Hose, Gas In 15ft	1
6		191 059	Hose, Gas In 30ft	1
7		203 691	Conduit W/Fitting, Molded 15ft	1
7		203 692	Conduit W/Fitting, Molded 30ft	1
8		191 064	Liner, .187 Od X .110 Id (15ft)	1
8		191 065	Liner, .187 Od X .110 Id (30ft)	1
9		191 052	Cable, Power/Water Out 15ft	1
9		191 053	Cable, Power/Water Out 30ft	1
10		141 694	Screw, Set 312-18 X .37 Conept Sch Stl Pln	1
11		203 758	Cable, Power 15ft (Air)	1
11		203 759	Cable, Power 30ft (Air)	1
12		152 577	Strip, Copper .010 X 2.000 X .750 (Air)	1
13		137 495	Fitting, Connection Power Weld	1
14		198 330	Cable, Control 15ft	1
14		196 466	Cable, Control 30ft	1
15	Fig 8-7	210 646	Barrel Assembly	1
16		163 704	Housing, Wire Drive (15A & 30A Models) (Includes Items 3, 48, 50, 51, 52, 60 & 65)	1
16		163 692	Housing, Wire Drive (15w & 30w Models) (Includes Items 3, 48, 50, 51, 52, 60 & 65)	1
		151 661	Screw, Set 10-32 X .125 Cup Sch (30w Models Only)	2
17		133 365	Clamp, Head Tube	1
18		000 417	Screw, Cap Stl Sch 10-24 X 1.000	2
19		162 041	Bearing Block Assembly	1
		604 638	Screw, Cap Stl Sch 6-32 X .375	3
		143 480	Screw, 6-32 X .625 Soc Hd-hex Stl	1
20		162 042	Contact, Current Pick-up	1
21		136 135	Roll, Drive Vk Groove .023-1/16 Wire (Includes)	1
		604 612	Screw, Set Stl Sch 8-32 X .125 Cup Point	2
21		♦183 357	Kit, Drive Vk Groove .030-.035 Wire (Part Of Wire Guide Kit 198 384)	1
21		♦183 357	Kit, Drive Vk Groove .040 Wire (Part Of Wire Guide Kit 198 383)	1
21		♦183 358	Kit, Drive Vk Groove .047-.062 Wire (Part Of Wire Guide Kit 198 382)	1
21		♦183 358	Kit, Drive Vk Groove .047-.062 Wire (Part Of Wire Guide Kit 198 381)	1
23		114 045	Screw, 6-32 X .500 Hexwhd Slt Stl Slffmg	3
24		602 198	Washer, Lock .141 Id Stl Split	4
25		134 624	Bearing, Flg Nyl .140 Id X .187 Od X .375Flg X .031Thk	2
26		134 623	Bearing, Idler Roll	1
27		132 852	Arm, Pressure	1
28		605 798	Washer, Shldr Nyl .375 Od X .168 Id X .080	2
30		203 689	Jacket, Cable Combination 15ft Molded Strain Relief	1
30		203 690	Jacket, Cable Combination 30ft Molded Strain Relief	1
32		203 562	Spring, Strain Relief	1
33		203 560	Strain Relief, Spring Retainer	1
34		203 539	Fitting, Liner Double Wound Adapter	1
35		189 812	Housing, Power Pin Rh	1
37		166 412	Hose, Water 14in	1
38		202 513	Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20 (Air)	1
38		202 513	Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20 (Water)	2
39		193 896	Pin, Power Assembly	1
40		079 974	O-ring, .500 Id X .103 Cs Rbr	2

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
			Figure 11-6. Exploded View Of Pistol-Grip Gun (Continued)	
. . 41		202 216	. . Guide, Wire Outlet .030-1/16	1
. . 42		187 029	. . Connector, Power/Gas	1
. . 43		189 811	. . Housing, Power Pin Lh	1
. . 44		133 083	. . Spring, Tension Adj Drive Roll	1
. . 45		144 860	. . Screw, Mach Stl Flh 8-32 X .437	1
. . 46		058 968	. . Ring, Retainer E	2
. . 47		135 474	. . Pin, Hinge	1
. . 48		155 565	. . Screw, Thumb	1
		134 799	. . O-ring, .176 Id X .070 Cs (Used W/Thumbscrew)	1
. . 49		135 126	. . Screw, Set Stl Sch 6-32 X .125 Cup Point	1
. . 50		170 353	. . Plunger, Pin	1
. . 51		170 351	. . Spring, Cprsn .150 Od X .01 Wire X .375 Lg	1
. . 52		170 352	. . Plunger, Gas Flow	1
. . 53		112 896	. . Spring, Cprsn .240 Od X .020 Wire X .437	2
. . 54		135 773	. . Knob, Thumb Tension Adjusting 8-32	1
. . 55		143 360	. . Screw, Mach Stl Rdh 8-32 X .500	1
. . 56		136 679	. . Clamp, Strain Relief	1
. . 57		132 269	. . Screw, Mach Stl Rdhph 8-32 X .375	1
. . 58		164 591	. . Case, Gun Lh	1
. . 59		173 527	. . Screw, 8–32 X 1.50 Soc Hd-hex Gr 8	2
. . 60		173 528	. . Screw, 8-32 X .875 Soc Hd-hex Gr 8	1
. . 61	B2	161 813	. . Motor, Gear Pm 24VDC 420RPM 10.2:1 Ratio	1
. . 62		191 121	. . Screw, Mach Stl Trh 6-32 X .250	2
. . 63		164 592	. . Trigger	1
. . 64		184 101	. . Washer, Shldr.140 Id 0.250 Od X .047 T .340 Od X .078 T Nyl	1
. . 65		058 262	. . Cap, Valve	1
. . 66	R4	200 096	. . Potentiometer, C Sltd Sft 1/T .5w 10k Ohm	1
. . 67		144 861	. . Washer, Anti-turn	1
. . 68		135 127	. . Lock, Shaft Pot .250-32 X .125dia Shaft	1
. . 69		602 169	. . Screw, Set Stl Sch 8-32 X .187	2
. . 70		134 856	. . Knob, Speed Control 1-10 .140 Shaft X 1.125 Od	1
. . 71		164 590	. . Case, Gun Rh	1
. . 72	PB1	000 369	. . Switch, Lim 10A 125/250VAC Dpst Plgr	1
. . 73		183 884	. . Spring, Cprsn .240 Od X .026 Wire X 1.000	1
. . 74		135 647	. . Nut, Stl 8-32	3
. . 75		185 106	. . Nut, Liner Collet	1
		♦605 107	. . Grease Minicap	1
. . 76		203 557	. . Clamp, 1–Ear Type	2

♦ Optional

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.

Eff w/LC373469 Thru LE033394

☞ *Hardware is common and not available unless listed.*

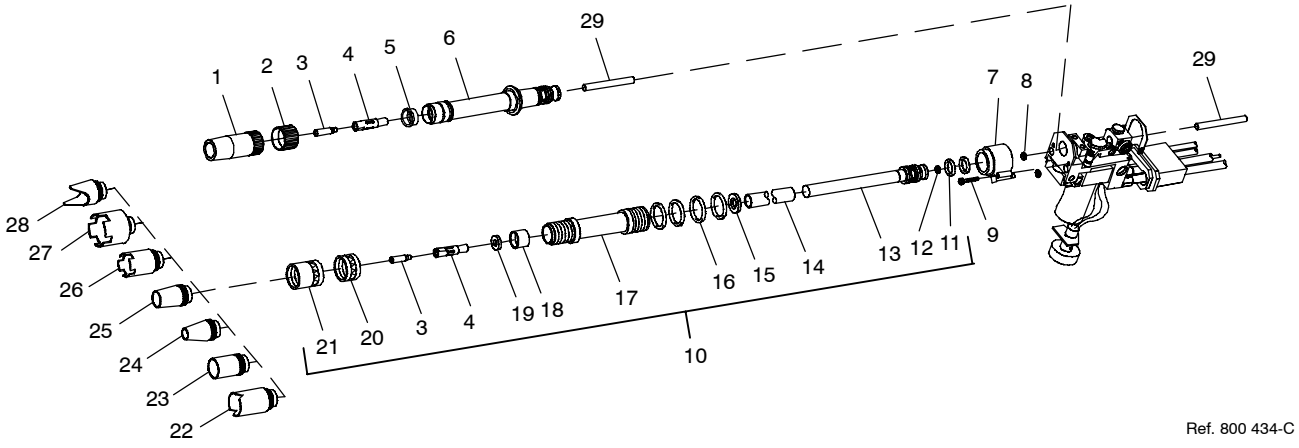


Figure 11-7. Barrel Assembly Of Pistol-Grip Gun

Item No.	Part No.	Description	Quantity
		Figure 11-7. Barrel Assembly Of Pistol-Grip Gun (Figure 11-6 Item 15)	
1	197 728	Nozzle (Standard)	1
2	185 102	Nut, Nozzle Adapter Locking	1
3	206 176	Tip, FasTip .281 Od .030 Wire	1
3	206 177	Tip, FasTip .281 Od .035 And .030al Wires	1
3	206 178	Tip, FasTip .281 Od .040 And .035al Wires	1
3	206 179	Tip, FasTip .281 Od .045 And .040al Wires	1
3	206 180	Tip, FasTip .281 Od .052 And 3/64al Wires	1
3	206 181	Tip, FasTip .281 Od 1/16 Wire	1
4	209 875	Diffuser, FasTip Slotted	1
5	185 097	Insulator, Contact Tip Adapter	1
6	210 511	Head Tube	1
7	203 675	Manifold, Water (15w & 30w Models) (Includes)	1
8	175 946	O-ring, .614 Id X .070cs	2
9	135 128	Screw, Cap Stl Sch 6-32 X 1.000 (15, 30w Models)	2
10	137 042	Barrel Assembly, Water Cooled (15, 30w Models) (Includes) (Prior to LC591623)	1
10	198 348	Barrel Assembly, Water Cooled (15, 30w Models) (Includes) (Eff w/LC591623)	1
11	134 800	O-ring, .614 Id X .070cs	1
12	134 799	O-ring, .176 Id X .070cs (15w & 30w Models)	1
13	180 805	Fitting Assembly, Barrel (Prior to LC591623)	1
13	215 504	Fitting Assembly, Barrel (Eff w/LC591623)	1
14	136 943	Tubing, Teflon (Prior to LC591623)	1
14	215 497	Tubing, Teflon Nat .500 Id X .025 Wall X 5.234 (Eff w/LC591623)	1
15	136 834	Washer, Flat .594 Id Fbr	1
16	180 966	O-ring, .926 Id X .070cs	4
17	137 041	Barrel, Outer (Prior to LC591623)	1
17	215 498	Barrel, Outer (Eff w/LC591623)	1
18	136 836	Insulator, Head Tube From Adapter	1
19	136 835	Washer, Flat .390 Id Brs	1
20	136 833	Nut, 1.000-12 Stl	1
21	136 832	Adapter, Nozzle	1
22	♦009 925	Nozzle, Spot Outside Corner .937 ID X 2.375	1
23	♦050 116	Nozzle,13/16 Orf X 1-5/8 Lg	1
24	♦050 115	Nozzle, 1/2 Orf X 1-5/8 Lg	1

Item No.	Part No.	Description	Quantity

Figure 11-7. Barrel Assembly Of Pistol-Grip Gun (Figure 11-6 Item 15) (Cont.)

. . 25	050 622	. . . . Nozzle, 5/8 Orf X 1-5/8 Lg (Standard)	1
. . 26	♦000 442	. . Nozzle, Spot	1
. . 27	♦004 466	. . Nozzle, Spot	1
. . 28	♦000 443	. . Nozzle, Spot Inside Corner	1
. . 29	212 156	. . Liner, Phos Bronze .030–1/16 Wire X 7.313	1
	♦193 794	. . Kit, Nozzle Adapter (Required For items 22 Thru 28 if using with item 6)	1

♦Optional

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

MATERIAL THICKNESS REFERENCE CHART

24 Gauge (.025 in)

22 Gauge (.031 in)

20 Gauge (.037 in)

18 Gauge (.050 in)

16 Gauge (.063 in)

14 Gauge (.078 in)

1/8 in (.125 in)

3/16 in (.188 in)

1/4 in (.25 in)

5/16 in (.313 in)

3/8 in (.375 in)

1/2 in (.5 in)

TM-1594E 2007–03

Processes

MIG (GMAW) Welding

Description

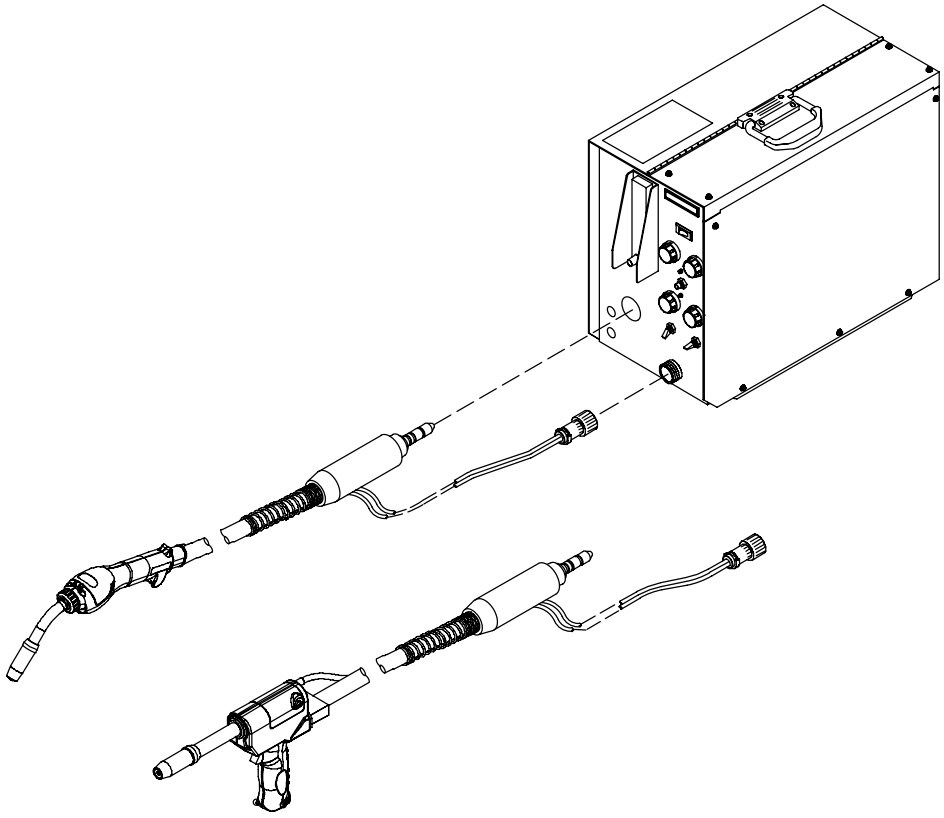
Wire Feeder And Feeder Gun

XR™ Control
XR™ Air- And Water-Cooled Guns

PARTS LIST

Eff w/LE033395 And Following

For OM-1594 (181 715) Revisions Q Thru AF



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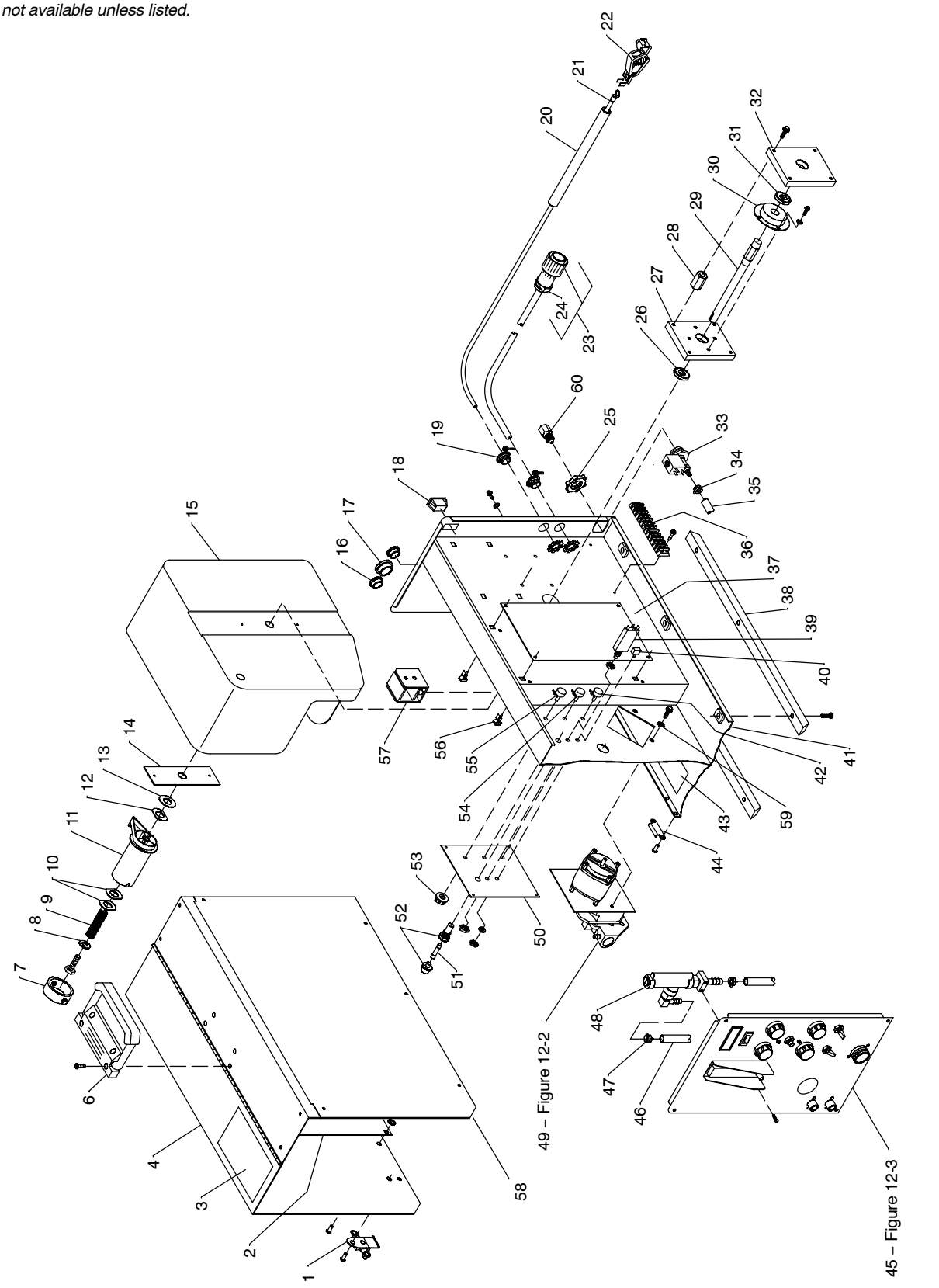


Figure 12-1 Main Assembly

Eff w/LE033395 And Following

Item No.	Diagram marking	Part No.	Description	Quantity

Figure 12-1. Main Assembly

1		089 572	Catch, Link-lock	2
2		112 167	Insulator, Door	1
3		134 327	Label, Warning General Precautionary (Non-CE Units)	1
3		178 936	Label, Warning General Precautionary (CE Units)	1
4		+169 085	Wrapper	1
5			Deleted	
6		126 416	Handle, Molded (Prior To LF203367)	1
6		208 015	Handle, Rubberized Carrying (Eff W/LF203367)	1
7		058 427	Ring, Retaining Spool	1
8		602 233	Washer, Flat Stl .250 Id X .875 Od X .062Thk	1
9		057 543	Spring, Cprsn .845 Od X .091 Wire X 1.500	1
10		113 168	Washer, Locking	2
11		058 428	Hub, Spool	1
12		089 561	Washer, Anti-turn Stl	1
13		058 424	Washer, Fbr Brake	1
14		151 697	Strip, Brake Surface Anti-turn	1
15		112 198	Shroud, Spool Wire 12 In	1
16		057 357	Bushing, Snap-in Nyl .937 Id X 1.125Mtg Hole	2
17		010 494	Bushing, Snap-in Nyl 1.375 Id X 1.750Mtg Hole	1
18	S1	111 997	Switch, Rocker Spst 10A 250VAC	1
19		115 104	Connector, Clamp Cable .500	2
20	♦♦♦♦	176 089	Tubing, Plstc PVC Black	1Ft (0.3 m)
21	♦♦♦♦	600 399	Wire, Strd 14Ga(Order By Ft)	35Ft (10.7 m)
22	♦♦♦♦	601 222	Clamp, Univ 50A	1
23	PLG5	141 162	Housing Plug & Pins	1
24		079 739	Clamp, Cable Strain Relief	1
		182 475	Cable, Port No 18 6/C 10 Ft 8 In	1
25		220 805	Nut, 750-14 Nps 1.48Hex .41H nyl	1
26		073 302	Bearing, Ball Rdl Sgl Row .669 X 1.378 X .39	1
27		113 161	Block, Bearing Front	1
28		113 165	Stand-Off, .250-20 X 1.000 Lg	4
29		120 396	Shaft, Spool	1
30	MP1	163 304	Brake, W/Terminals	1
31		073 302	Bearing, Ball Rdl Sgl Row .669 X 1.378 X .39	1
32		113 900	Block, Bearing Rear	1
33	GS1	125 785	Valve, 24VAC 2way Custom Port 1/8 Orf W/Frict (Prior To LE212804)	1
33	GS1	216 126	Valve, Gas W/Fittings 24VAC (Eff W/LE212804 Thru LG172301W)	1
33	GS1	228 036	Valve, 24VAC 1Way .750−14 Thd 2.0mm Orf 100 PSI (Eff W/LG172302W)	1
34		089 120	Clamp, Hose .375-.450clp Dia Slfttng	1
35		176 357	Hose, Sae .187 Id X .410 Od X 21.000	1
36	2T	038 783	Block, Term 20A 12P	1
		601 219	Link, Jumper	2
		111 008	Label, Term Mkg	1
37	PC1	210 370	Circuit Card, Motor Speed Control	1
38		105 567	Skid, Base	2
39	CB1	220 595	Circuit Breaker, Main Reset	1
40	S7	011 770	Switch, Tgl Spdt 6A 125V	1
41		+187 704	Cabinet, Control	1
42		♦194 282	Potentiometer, C Sltd Sft 1T 1W 1M	1
43		090 439	Label, Warning Electric Shock Can Kill	1
44		089 573	Plate, Keeper Link-lock	2
45		Fig 12-3	Panel, Front W/Components	1
46	♦♦♦	134 834	Hose, Sae .187 Id X .410 Od (Order By Ft)	2Ft (0.6 m)
47	♦♦♦	089 120	Clamp, Hose .375-.450Clp Dia Slfttng	4
48	S8	♦♦♦ 194 195	Switch, Flow W/Fittings	1
49		Fig 12-2	Motor & Wire Drive	1
50		187 789	Plate, Control Side (Non-CE Units)	1
50		197 645	Plate, Control Side (CE Units)	1

Eff w/LE033395 And Following

Item No.	Diagram marking	Part No.	Description	Quantity

Figure 12-1. Main Assembly (Continued)

. . 51	F1	*073 426	. . Fuse, Mintr Gl Slo-blo 5A	1
. . 52		046 432	. . Holder, Fuse Mintr .250 X 1.250 Panel Mtg	1
. . 53		193 919	. . Knob, Pointer	2
. . 54		♦028 770	. . Potentiometer, Cp Std Slot 1T 2W 1M	1
. . 55		073 562	. . Potentiometer, Cp Std Slot 1T 2W 10K	1
. . 56		134 201	. . Stand-Off Support, PC Card .312/.375	4
. . 57	REED	140 786	. . Switch, Reed	1
. . 58		169 089	. . Door, Side Rh	1
. . 59		605 970	. . Washer, Shldr.252 Id 0.310 Odx.064T .500 Odx.250H Nyl	2
. . 60		211 989	. . Fitting, W/Screen (Eff W/LE033395)	1

+When ordering a component originally displaying a precautionary label, the label should also be ordered.
♦Part of 114 144 Spot Weld Control Option
♦♦Part of 144 931 Voltage Control Option
♦♦♦Part of 130 838 Water Flow Shutdown Switch Option
♦♦♦♦Part of 209 867 Voltage Sensing Lead Kit
*Recommended Spare Parts.

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.

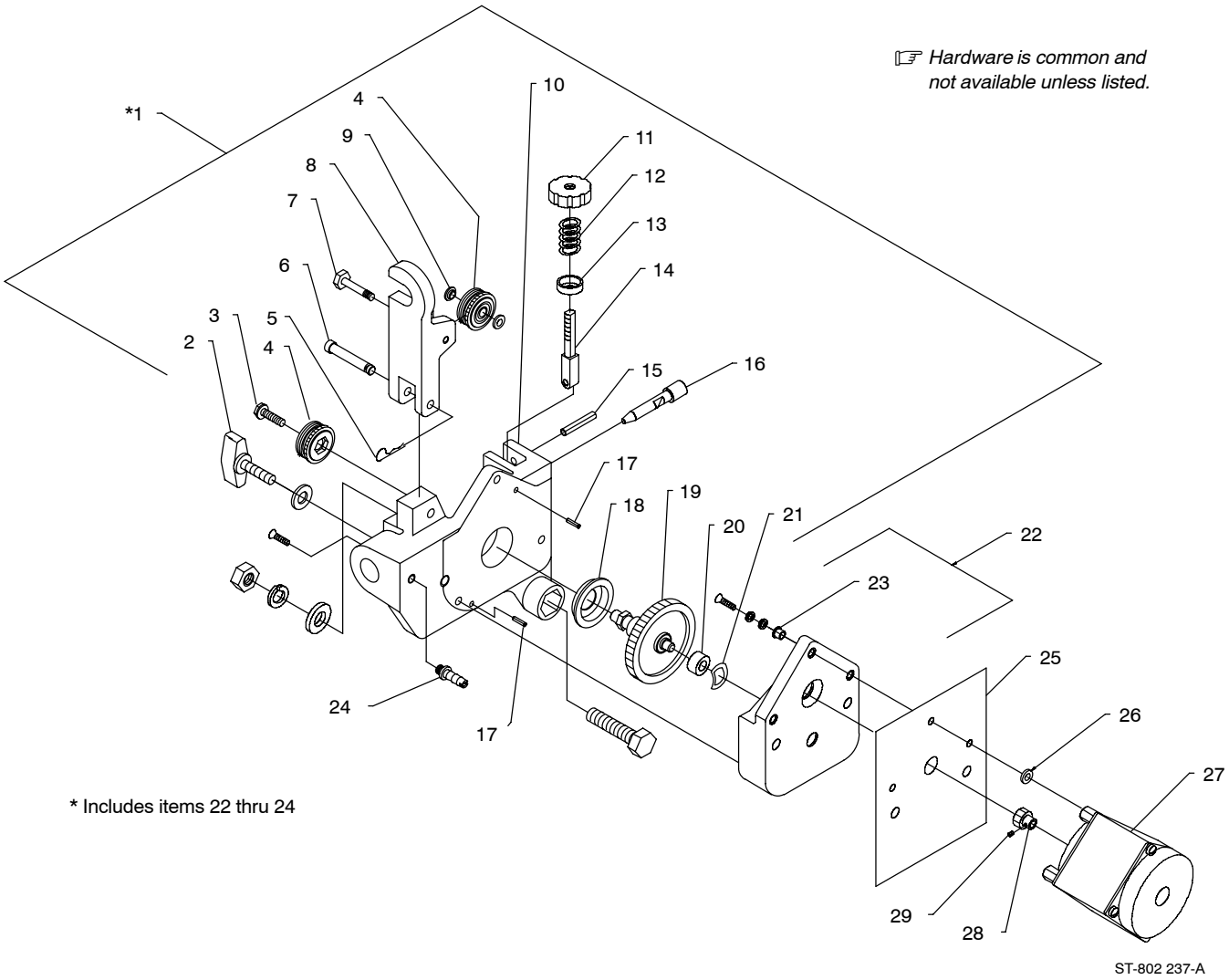


Figure 12-2 Motor & Wire Drive

Eff w/LE033395 And Following

Item No.	Diagram marking	Part No.	Description	Quantity

Figure 12-2. Motor & Wire Drive (Figure 12-1 Item 49)

1		193 186	Drive Assembly, Wire (Includes)	1
2		124 778	Knob, T 2.000 Bar W/.312 - 18 Nut	1
3		111 630	Screw, 010-32 X .25 Hexwhd-pln Stl Pld	1
4		♦194 118	Kit, Drive Roll .030–.035 (Part Of Wire Guide Kits 195 208 & 195 209)	1
4		♦194 119	Kit, Drive Roll .047–.062 (Part Of Wire Guide Kit 195 205)	1
4		♦195 591	Kit, Drive Roll .062 (Part Of Wire Guide Kit 195 204)	1
5		151 828	Pin, Cotter Hair .042 X .750	1
6		090 416	Pin, Hinge	1
7		191 826	Screw, Mtg Idler Roll	1
8		189 714	Pressure Arm	1
9		♦188 098	Washer, Shlder .192 Id X .375 Od	2
10		189 716	Housing, Wire Drive	1
11		092 237	Knob, Adjust Tension 1.000	1
12		189 911	Spring, Cprsn .720 Od X .063 Wire X 1.500	1
13		085 244	Washer, Cupped .328 Id X .812 Od X 16 Ga X .125 Lip	1
14		085 242	Fastener, Pinned	1
15		010 224	Pin, Spring Cs .187 X 1.000	1
16		058 549	Guide, Wire Inlet 1/16	1
17		602 306	Pin, Spring Cs .125 X .500	2
18		189 823	Insulator, Front Bearing	1
19		189 920	Gear Assy, Shaft/Bearing	1
20		189 605	Bearing Assy, Upper Drive Shaft	1
21		079 625	Washer, Wave .500 Id X .750 Od	1
22		196 613	Case, Gear Wire Drive (Includes)	1
23		196 604	Washer, Shldr .187 Id .343 Od X .045T .234 Od X .138T Nyl	3
24		144 172	Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20	1
25		113 162	Insulator, Motor	1
26		605 798	Washer, Shldr .168 Id 0.375 Od X .047T .246 Od X .030t Nyl	3
27	B1	163 326	Motor, Torque 24VAC 50/60hz	1
28		113 169	Gear, Driver	1
29		604 612	Screw, Set Stl Sch 8-32 X .125 Cup Point	1

♦Part of 194 118, 194 119, or 195 591 Drive Roll Kits

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.

Eff w/LE033395 And Following

☞ *Hardware is common and not available unless listed.*

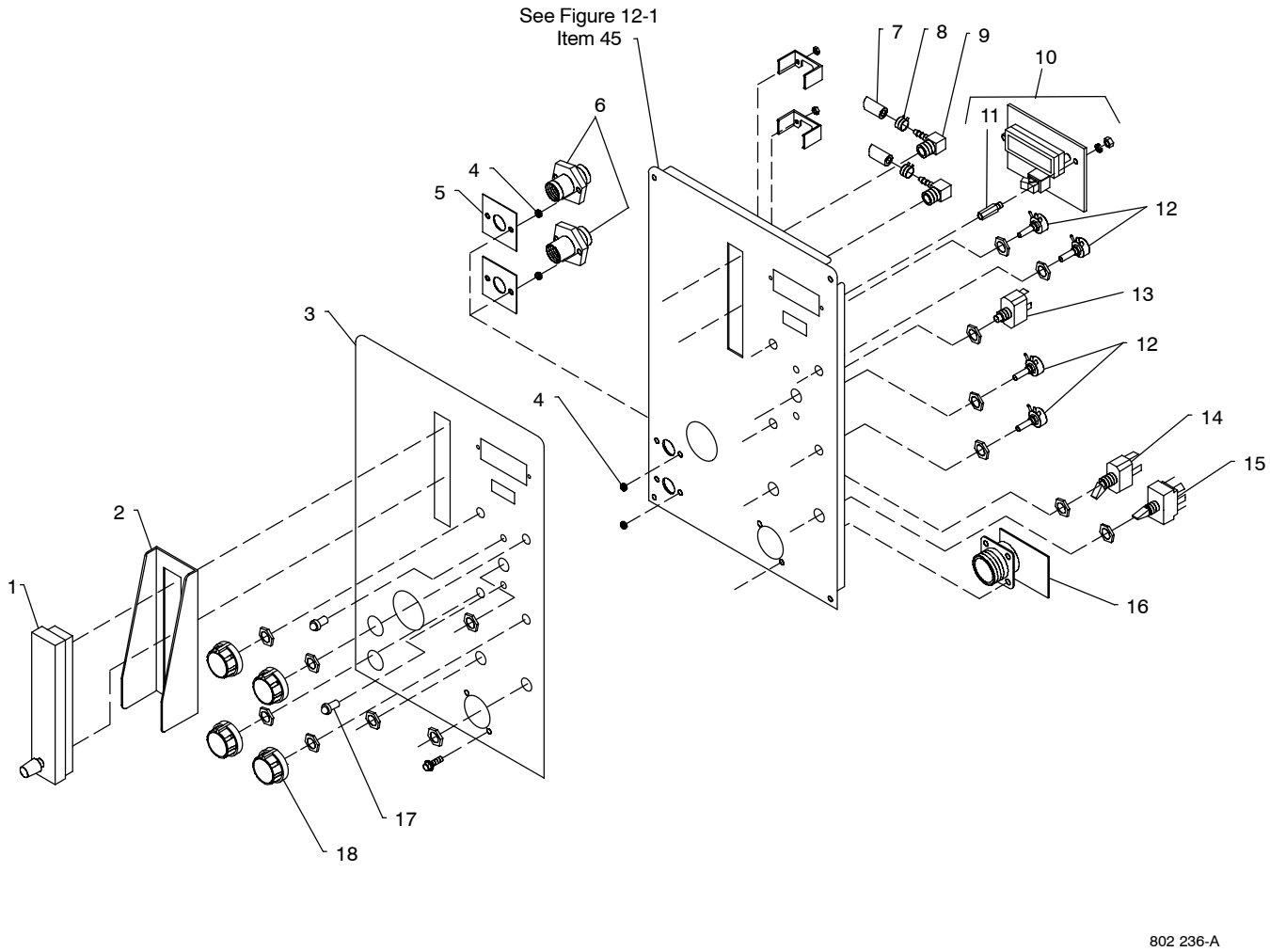


Figure 12-3 Panel, Front W/Components (Water-Cooled Model Illustrated)

Eff w/LE033395 And Following

Item No.	Diagram marking	Part No.	Description	Quantity
			Figure 12-3. Panel, Front W/Components (Figure 12-1 Item 45)	
1		♦111 569	Meter, Flow 6-60	1
2		♦111 633	Guard, Flow Meter	1
3			Nameplate, (Order By Model And Serial Number)	1
4		605 798	Washer, Shldr. Nyl	8
5		173 259	Insulator, Water Flow Switch	2
6		139 678	Fitting, Water (Supplied With Water-cooled Gun)	2
7		♦176 357	Hose, Sae .187 Id X .410 Od (Order By Ft)	4Ft (1.2 m)
8		♦089 120	Clamp, Hose .375-.450Clp Dia	2
9		♦112 090	Fitting, Pipe Brs Elb 1/8npt X 3/16 Hose	2
		♦056 851	Fitting, Hose Brs Barbed Nipple 3/16Tbg	2
		♦010 606	Fitting, Hose Brs Nut .625-18	2
		♦056 108	Fitting, Hose Brs Ferrule .425 Id X .718 Lg	2
		♦045 852	Clip, Component .687Dia Mtg Adh Back	1
10	PC2	186 268	Circuit Card, Meter (Includes)	1
11		115 443	Stand-Off, No. 6-32 X .750 Lg	2
		133 644	Frame, Snap-in Switch Rocker Panel Mtg	1
12		073 562	Potentiometer, Cp Std Slot 1t 2w	4
13		011 232	Switch, Pb Spdt	1
14	S4	134 847	Switch, Tgl SPDT 15A 125VAC	1
15	S2	211 476	Switch, Tgl SPTT 6A 125VAC	1
16	PC4, RC20	197 719	Circuit Card, Filter	1
	PLG14	115 092	Housing Plug & Sockets	1
17		194 152	Led, Green	2
18		193 919	Knob, Pointer	5

♦Part of 114 101 Gas Flow Meter Option.

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.

Eff w/LE033395 And Following

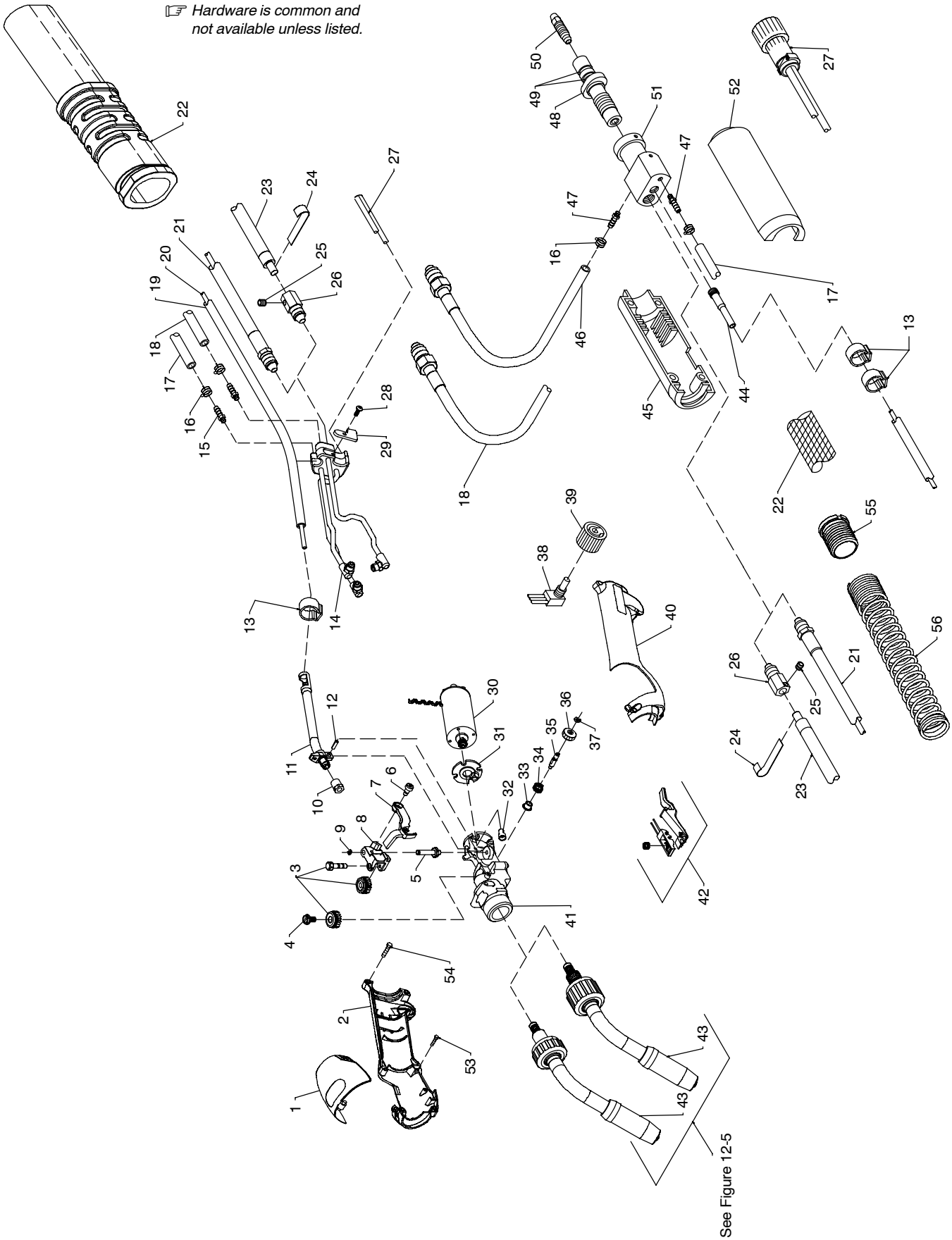


Figure 12-4 Exploded View Of XR-Edge Gun

Eff w/LE033395 And Following

Item No.	Part No.	Description	Quantity

Figure 12-4. Exploded View Of XR-Edge Gun

1	187 000	. . Cover, Handle	1
2	187 002	. . Handle, Right	1
3	194 114	. . Kit, Drive Roll .030 (Part Of Wire Guide Kit 195 208)	1
3	194 115	. . Kit, Drive Roll .035 (Part Of Wire Guide Kit 195 209)	1
3	194 116	. . Kit, Drive Roll .047 (Part Of Wire Guide Kit 195 205)	1
3	194 117	. . Kit, Drive Roll .062 (Part Of Wire Guide Kit 195 204)	1
3	♦191 135	. . Shaft, Hot Drive Roll	1
4	♦111 630	. . Screw, 010-32 X .25 Hexwhd Slt	1
5	185 098	. . Pin, Pressure	1
6	191 098	. . Screw, Shld Stl Sch 008-32 X .188 X .188 Shld	1
7	191 097	. . Arm, Tension	1
8	191 096	. . Arm, Pressure	1
9	000 364	. . Ring, Rtng Ext .188 Shaft X .025 Thk E Style	1
10	185 106	. . Nut, Liner Collet (Prior To LE033395)	1
10	216 001	. . Nut, Liner Collet Retaining (Eff W/LE033395)	1
11	191 090	. . Guide Assy, Liner	1
12	602 306	. . Pin, Spring Cs .125 X .500	1
13	203 557	. . Clamp, 1−ear Type Nom Dim .391 X .236 Wide Special	3
14	191 104	. . Power Block Assy	1
15	135 580	. . Fitting, Gas (Air)	1
15	135 580	. . Fitting, Gas (Water)	2
16	149 332	. . Clamp, Hose .405 − .485 Clp Dia (Air)	2
16	149 332	. . Clamp, Hose .405 − .485 Clp Dia (Water)	4
17	191 058	. . Hose, Gas In 15Ft	1
17	191 059	. . Hose, Gas In 30Ft	1
17	191 060	. . Hose, Gas In 50Ft	1
18	191 072	. . Hose, Water In 15Ft	1
18	191 073	. . Hose, Water In 30Ft	1
18	191 074	. . Hose, Water In 50Ft	1
19	203 599	. . Conduit, Monocoil Double Wound 15Ft	1
19	203 671	. . Conduit, Monocoil Double Wound 30Ft	1
19	203 673	. . Conduit, Monocoil Double Wound 50 Ft	1
20	191 065	. . Liner, Replacement 15 Ft Or 30 Ft Xr Guns	1
20	191 066	. . Liner, Replacement (50Ft)	1
21	191 052	. . Cable, Power/Water Out 15Ft	1
21	191 053	. . Cable, Power/Water Out 30Ft	1
21	191 054	. . Cable, Power/Water Out 50Ft	1
22	203 579	. . Jacket, Cable Combination 15Ft W/Molded Strain Relief	1
22	203 672	. . Jacket, Cable Combination 30Ft W/Molded Strain Relief	1
22	203 674	. . Jacket, Cable Combination 50Ft W/Molded Strain Relief	1
23	191 049	. . Cable, Power 15Ft (Air)	1
23	191 050	. . Cable, Power 30Ft (Air)	1
23	191 051	. . Cable, Power 50Ft (Air)	1
24	152 577	. . Strip, Copper .010 X 2.000 X .750 (Air)	1
25	141 694	. . Screw, Set 312-18 X .37 Conept Sch Stl Pln	1
26	137 495	. . Fitting, Connection Power Weld	1
27	191 055	. . Cable, Control 15Ft	1
PLG20	217 292	. . Housing Plug+Pins, (Service Kit) (Eff W/LE385139)	1
27	191 056	. . Cable, Control 30Ft	1
PLG20	217 292	. . Housing Plug+Pins, (Service Kit) (Eff W/LE385139)	1
27	191 057	. . Cable, Control 50Ft	1
PLG20	217 292	. . Housing Plug+Pins, (Service Kit) (Eff W/LE385139)	1
28	191 121	. . Screw, 006-32 X .37 Btn Hd-Soc	1
29	191 119	. . Strain Relief, Cable	1
30	191 082	. . Motor Assy	1
31	189 078	. . Insulator, Motor	1
32	190 906	. . Insulator, Motor Screw	4
33	191 131	. . Spacer, Tension	1
34	191 141	. . Spring, Cprsn .360 Od X .032 Wire X .875 Free	1

Eff w/LE033395 And Following

Item No.	Part No.	Description	Quantity

Figure 12-4. Exploded View Of XR-Edge Gun (Continued)

. . . 35	190 907	. . Shaft, Spring Tension	1
. . . 36	135 773	. . Knob, Adjust Tension Thumb	1
. . . 37	191 087	. . Ring, Rtng Ext .094 Shaft X .015 Thk E Style	1
. . . 38	191 235	. . Potentiometer, Cp Flat 1T .5W 10K Ohm	1
. . . 39	218 818	. . Knob, Speed Control Blue	1
. . . 40	187 001	. . Handle, Left	1
. . . 41	196 045	. . Housing, Drive W/Gears	1
. . . 42	218 816	. . Trigger Assy, Blue	1
. . . 43	210 763	. . Head Tube Assy, Water (Prior To LE385139)	1
. . . 43	220 109	. . Head Tube Assy, Water (See Figure 12-5) (Eff W/LE385139 Thru LG442230W)	1
. . . 43	231 530	. . Head Tube Assy, Water Cooled (See Figure 12-5) (Eff W/LG442231W)	1
. . . 43	194 073	. . Head Tube Assy, Air (Prior To LE385139)	1
. . . 43	220 101	. . Head Tube Assy, Air (See Figure 12-5) (Eff W/LE385139 Thru LG442230W)	1
. . . 43	231 529	. . Head Tube Assy, Air Cooled (See Figure 12-5) (Eff W/LG442231W)	1
. . . 44	203 539	. . Fitting, Liner	1
. . . 45	189 812	. . Housing, Power Pin Rh	1
. . . 46	196 177	. . Hose, Water Out 10in	1
. . . 47	202 513	. . Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20 (Air)	1
. . . 47	202 513	. . Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20 (Water)	2
. . . 48	193 896	. . Pin, Power Assembly	1
. . . 49	079 974	. . O-ring, .500 Id X .103 Cs Rbr	2
. . . 50	202 216	. . Guide, Wire Outlet .030-1/16	1
. . . 51	187 029	. . Connector, Power/Gas	1
. . . 52	189 811	. . Housing, Power Pin Lh	1
. . . 53	156 579	. . Screw, 004−40 X .37 Soc Hd−hex Stl Pld	1
. . . 54	143 480	. . Screw, 006−32 X .62 Soc Hd−hex Gr 8 Pld	5
. . . 55	203 560	. . Strain Relief, Spring Retainer	1
. . . 56	203 562	. . Spring, Strain Relief	1
. . . . .	♦605 107	. . Grease Minicap	1

♦Part of 194 114, 194 115, 194 116, or 194 117 Drive Roll Kits

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.

Eff w/LE033395 And Following

☞ *Hardware is common and not available unless listed.*

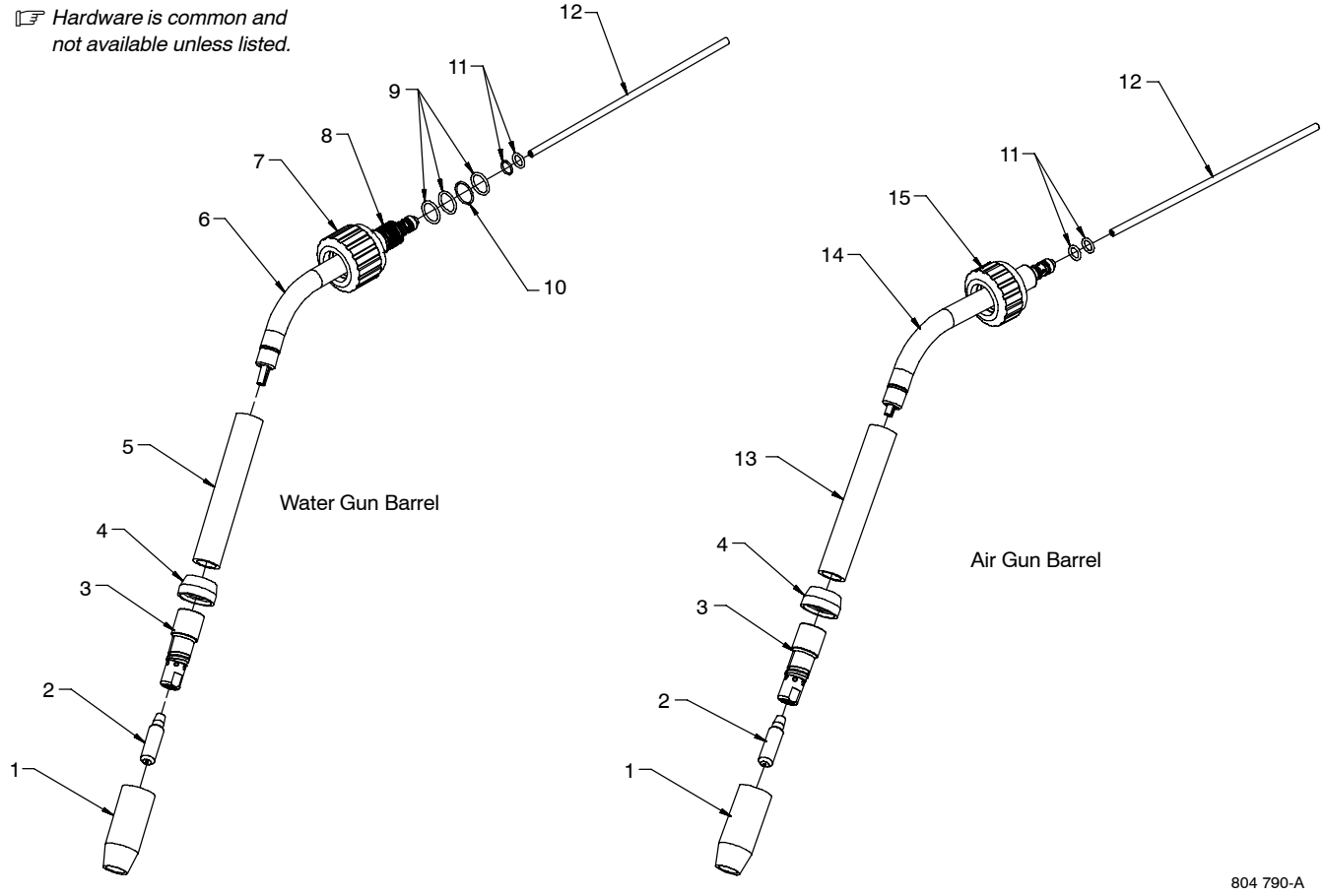


Figure 12-5 Head Tube Assembly Of XR-Edge Gun

Item No.	Part No.	Description	Quantity
		Figure 12-5. Head Tube Assembly Of XR-Edge Gun (Figure 12-4 Item 43)	
1	199 613	Nozzle, Brass 5/8 In Orifice Tapered	1
2		Tip, Fastip (See Figure 12-8)	1
3	206 195	Diffuser, .281/.312 Od Fastip 1/8 Tip Recess (Prior To LG442231W)	1
3	227 749	Diffuser, .281/.312 Od Collar Fastip 1/8 Rec Edge/ Spool (Eff W/LG442231W)	1
4	198 856	Insulator, Nozzle Prior To LG490001W)	1
4	232 284	Insulator, Nozzle Collared Diffuser (Eff W/LG490001W)	1
5	220 117	Jacket, Outer Insulating Water Edge	1
6	220 110	Head Tube Assy, Water Insulated Taper Edge (Brazed)	1
7	210 766	Nut, Head Tube Rotation	1
8	210 767	Insulator, Head Tube Tapered	1
9	194 261	O-Ring, .551 Id X .070 Cs 70 Duro Buna-n	3
10	210 771	O-Ring, 14.99mm Id X 1.27mm Cs 70 Duro Buna-n	1
11	191 191	O-Ring, .312 Id X .070 Cs 70 Duro Buna-n	2
12	212 523	Liner, Phos Bronze .030–1/16 Wire X 7.813	1
13	220 103	Jacket, Outer Insulating Air Edge	1
14	220 102	Head Tube, Air Edge (Brazed)	1
15	185 111	Nut, Molded Head Tube Rotation	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.

Eff w/LE033395 And Following

☞ *Hardware is common and not available unless listed.*

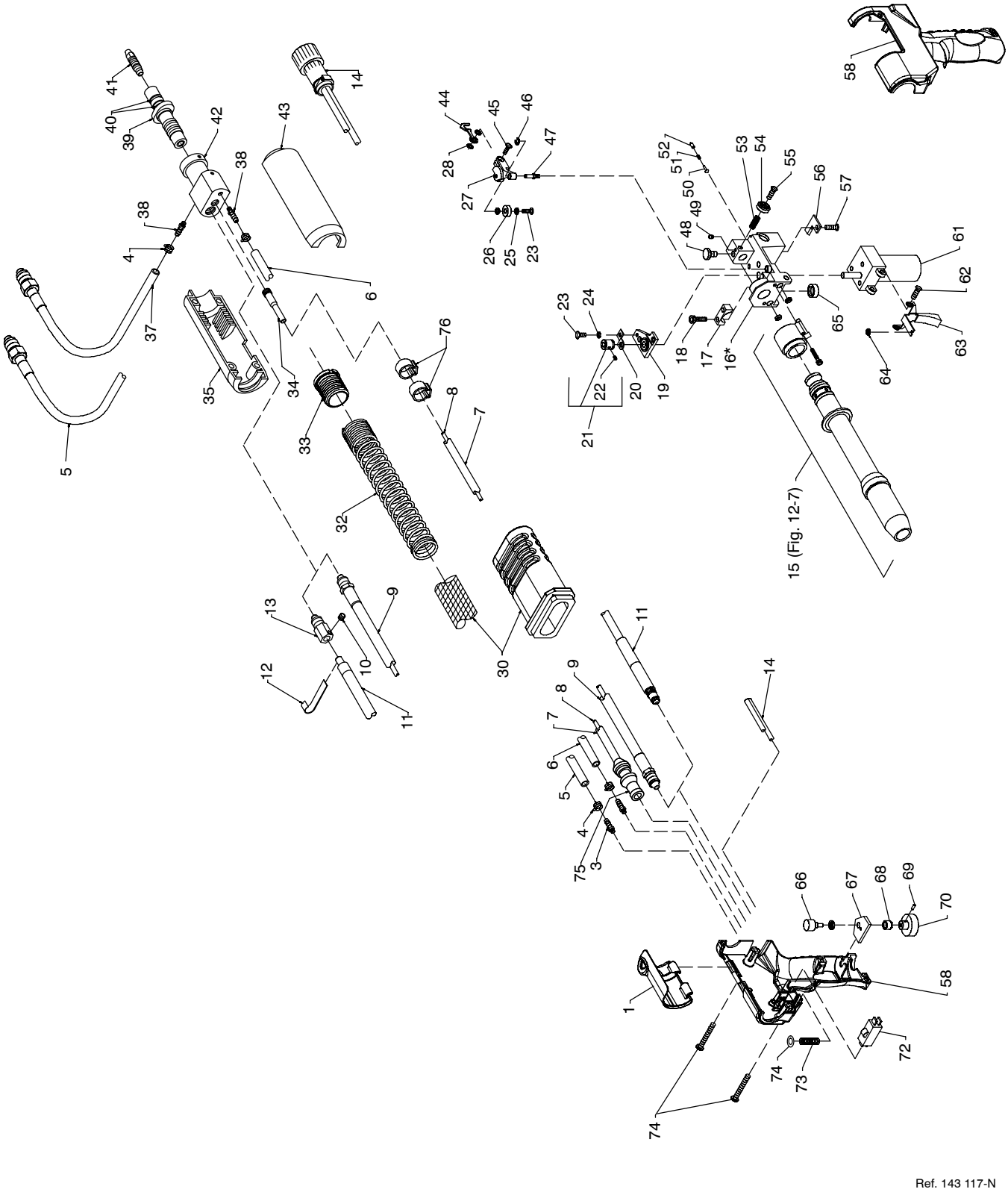


Figure 12-6 Exploded View Of Pistol-Grip Gun

Eff w/LE033395 And Following

Item No.	Diagram marking	Part No.	Description	Quantity

Figure 12-6. Exploded View Of Pistol-Grip Gun

1		214 745	Cover	1
2		Deleted		
3		135 580	Fitting, Gas (Air)	1
3		135 580	Fitting, Gas (Water)	2
4		149 332	Clamp, Hose .405 – .485 Clp Dia (Air)	2
4		149 332	Clamp, Hose .405 – .485 Clp Dia (Water)	4
5		191 072	Hose, Water In 15Ft	1
5		191 073	Hose, Water In 30Ft	1
6		191 058	Hose, Gas In 15Ft	1
6		191 059	Hose, Gas In 30Ft	1
7		203 691	Conduit W/Fitting, Molded 15 Ft	1
7		203 692	Conduit W/Fitting, Molded 30 Ft	1
8		219 202	Liner, XR/Cable	1
9		191 052	Cable, Power/Water Out 15Ft	1
9		191 053	Cable, Power/Water Out 30Ft	1
10		141 694	Screw, Set 312-18 X .37 Conept Sch Stl Pln	1
11		203 758	Cable, Power 15Ft (Air)	1
11		203 759	Cable, Power 30Ft (Air)	1
12		152 577	Strip, Copper .010 X 2.000 X .750 (Air)	1
13		137 495	Fitting, Connection Power Weld	1
14		198 330	Cable, Control 15Ft	1
	PLG20	217 292	Housing Plug+Pins, (Service Kit) (Eff W/LE385139)	1
14		196 466	Cable, Control 30Ft	1
	PLG20	217 292	Housing Plug+Pins, (Service Kit) (Eff W/LE385139)	1
15	Fig 12-7	210 646	Barrel Assembly Air Cooled (Prior To LE279296)	1
15	Fig 12-7	219 793	Barrel Assembly, Air Cooled (Eff W/LE279296)	1
15	Fig 12-7	231 531	Head Tube Assy, Air Cooled (Eff W/LG442231W)	1
15	Fig 12-7	231 532	Head Tube Assy, Water Cooled (Eff W/LG442231W)	1
16		163 704	Housing, Wire Drive (15A & 30A Models) (Includes Items 3, 48, 50, 51, 52, 60 & 65)	1
16		163 692	Housing, Wire Drive (15W & 30W Models) (Includes Items 3, 48, 50, 51, 52, 60 & 65)	1
		151 661	Screw, Set 10-32 X .125 Cup Sch (30W Models Only)	2
17		133 365	Clamp, Head Tube	1
18		000 417	Screw, Cap Stl Sch 10-24 X 1.000	2
19		162 041	Bearing Block Assembly	1
		604 638	Screw, Cap Stl Sch 6-32 X .375	3
		143 480	Screw, 6-32 X .625 Soc Hd-hex Stl	1
20		162 042	Contact, Current Pick-up	1
21		136 135	Roll, Drive Vk Groove .023-1/16 Wire (Includes)	1
		604 612	Screw, Set Stl Sch 8-32 X .125 Cup Point	2
21		♦183 357	Kit, Drive Vk Groove .030 Wire (Part Of Wire Guide Kit 195 213)	1
21		♦183 357	Kit, Drive Vk Groove .035 Wire (Part Of Wire Guide Kit 195 212)	1
21		♦183 357	Kit, Drive Vk Groove .040 Wire (Part Of Wire Guide Kit 195 211)	1
21		♦183 358	Kit, Drive Vk Groove .047 Wire (Part Of Wire Guide Kit 195 210)	1
21		♦183 358	Kit, Drive Vk Groove .062 Wire (Part Of Wire Guide Kit 195 209)	1
23		114 045	Screw, 6-32 X .500 Hexwhd Slt Stl Slffmg	3
24		602 198	Washer, Lock .141 Id Stl Split	4
25		134 624	Bearing, Flg Nyl .140 Id X .187 Od X .375Flg X .031Thk	2
26		134 623	Bearing, Idler Roll	1
27		132 852	Arm, Pressure	1
28		605 798	Washer, Shldr Nyl .375 Od X .168 Id X .080	2
29		Deleted		
30		203 689	Jacket, Cable Combination 15Ft Molded Strain Relief	1
30		203 690	Jacket, Cable Combination 30Ft Molded Strain Relief	1
31		Deleted		
32		203 562	Spring, Strain Relief	1
33		203 560	Strain Relief, Spring Retainer	1

Eff w/LE033395 And Following

Item No.	Diagram marking	Part No.	Description	Quantity

Figure 12-6. Exploded View Of Pistol-Grip Gun (Continued)

34		203 539	Fitting, Liner Double Wound Adapter	1
35		189 812	Housing, Power Pin Rh	1
36		Deleted		
37		166 412	Hose, Water 14in	1
38		202 513	Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20 (Air)	1
38		202 513	Fitting, Hose Brs Barbed M 3/16 Tbg X .250-20 (Water)	2
39		193 896	Pin, Power Assembly	1
40		079 974	O-ring, .500 Id X .103 Cs Rbr	2
41		202 216	Guide, Wire Outlet .030-1/16	1
42		187 029	Connector, Power/Gas	1
43		189 811	Housing, Power Pin Lh	1
44		133 083	Spring, Tension Adj Drive Roll	1
45		144 860	Screw, Mach Stl Flh 8-32 X .437	1
46		058 968	Ring, Retainer E	2
47		135 474	Pin, Hinge	1
48		155 565	Screw, Thumb	1
		134 799	O-ring, .176 Id X .070 Cs (Used W/Thumbscrew)	1
49		135 126	Screw, Set Stl Sch 6-32 X .125 Cup Point	1
50		170 353	Plunger, Pin	1
51		170 351	Spring, Cprsn .150 Od X .01 Wire X .375 Lg	1
52		170 352	Plunger, Gas Flow	1
53		112 896	Spring, Cprsn .240 Od X .020 Wire X .437	2
54		135 773	Knob, Thumb Tension Adjusting 8-32	1
55		143 360	Screw, Mach Stl Rdh 8-32 X .500	1
56		136 679	Clamp, Strain Relief	1
57		132 269	Screw, Mach Stl Rdhph 8-32 X .375	1
58		214 743	Case, Gun Lh/Rh (Molded Halves)	1
59		173 527	Screw, 8–32 X 1.50 Soc Hd-hex Gr 8	2
60		173 528	Screw, 8-32 X .875 Soc Hd-hex Gr 8	1
61	B2	161 813	Motor, Gear Pm 24VDC 420RPM 10.2:1 Ratio (Prior To LG360912W)	1
61	B2	230 947	Motor, Gear Pm 24VDC 420RPM 10.2:1 Ratio (Eff W/LG360912W)	1
62		191 121	Screw, Mach Stl Trh 6-32 X .250	2
63		164 592	Trigger	1
64		184 101	Washer, Shldr.140 Id 0.250 Od X .047 T .340 Od X .078 T Nyl	1
65		058 262	Cap, Valve	1
66	R4	200 096	Potentiometer, C Sltd Sft 1/T .5W 10K Ohm	1
67		144 861	Washer, Anti-turn	1
68		135 127	Lock, Shaft Pot .250-32 X .125Dia Shaft	1
69		602 169	Screw, Set Stl Sch 8-32 X .187	2
70		134 856	Knob, Speed Control 1-10 .140 Shaft X 1.125 Od	1
71		Deleted		
72	PB1	000 369	Switch, Lim 10A 125/250VAC Dpst Plgr	1
73		183 884	Spring, Cprsn .240 Od X .026 Wire X 1.000	1
74		217 934	Screw, K40x 20 Pan Hd-Trx Stl Pld Pt Thread Forming	4
75		185 106	Nut, Liner Collet	1
		♦605 107	Grease Minicap	1
76		203 557	Clamp, 1–Ear Type	2

♦ Optional

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.

Eff w/LE033395 And Following

☞ *Hardware is common and not available unless listed.*

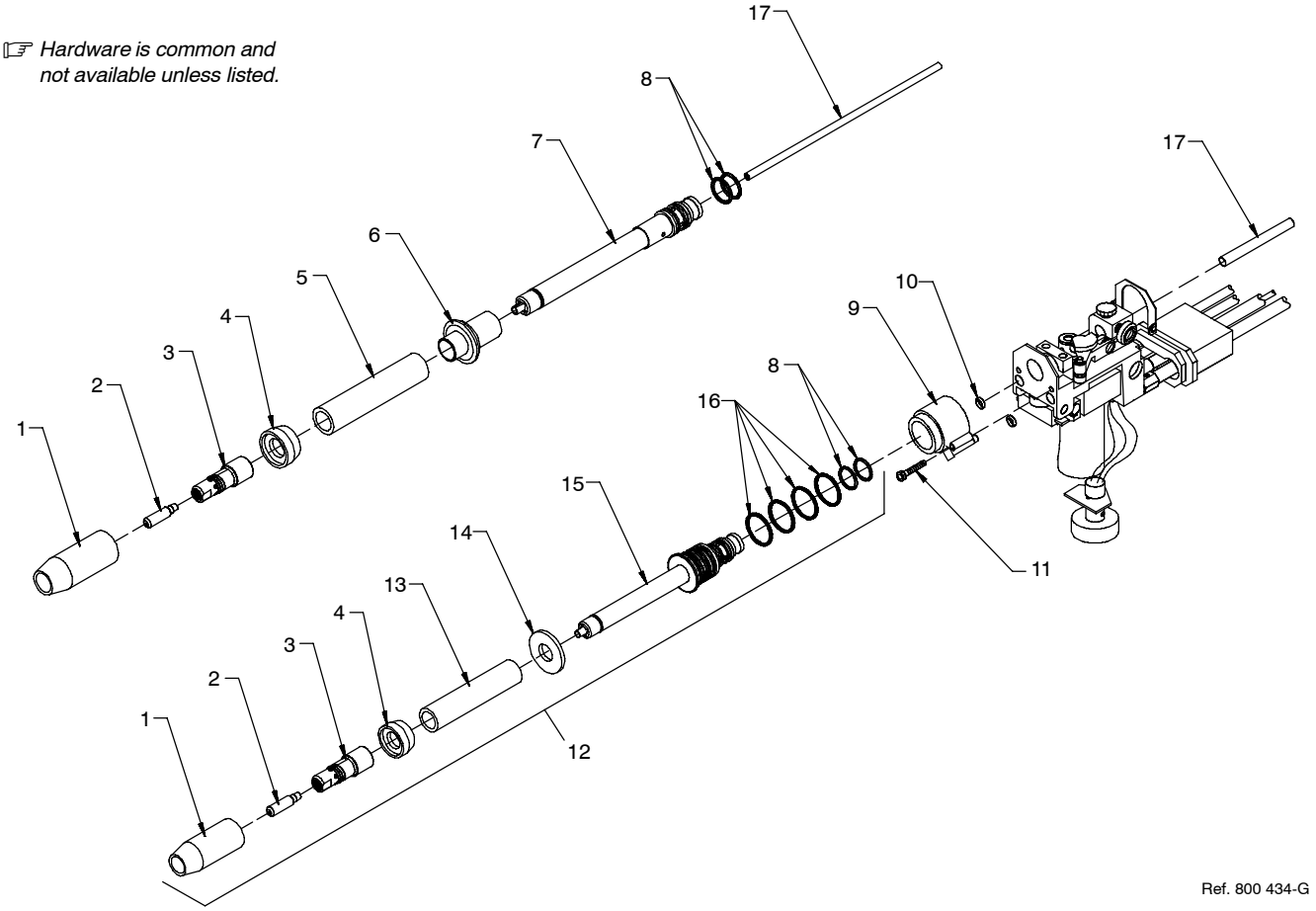
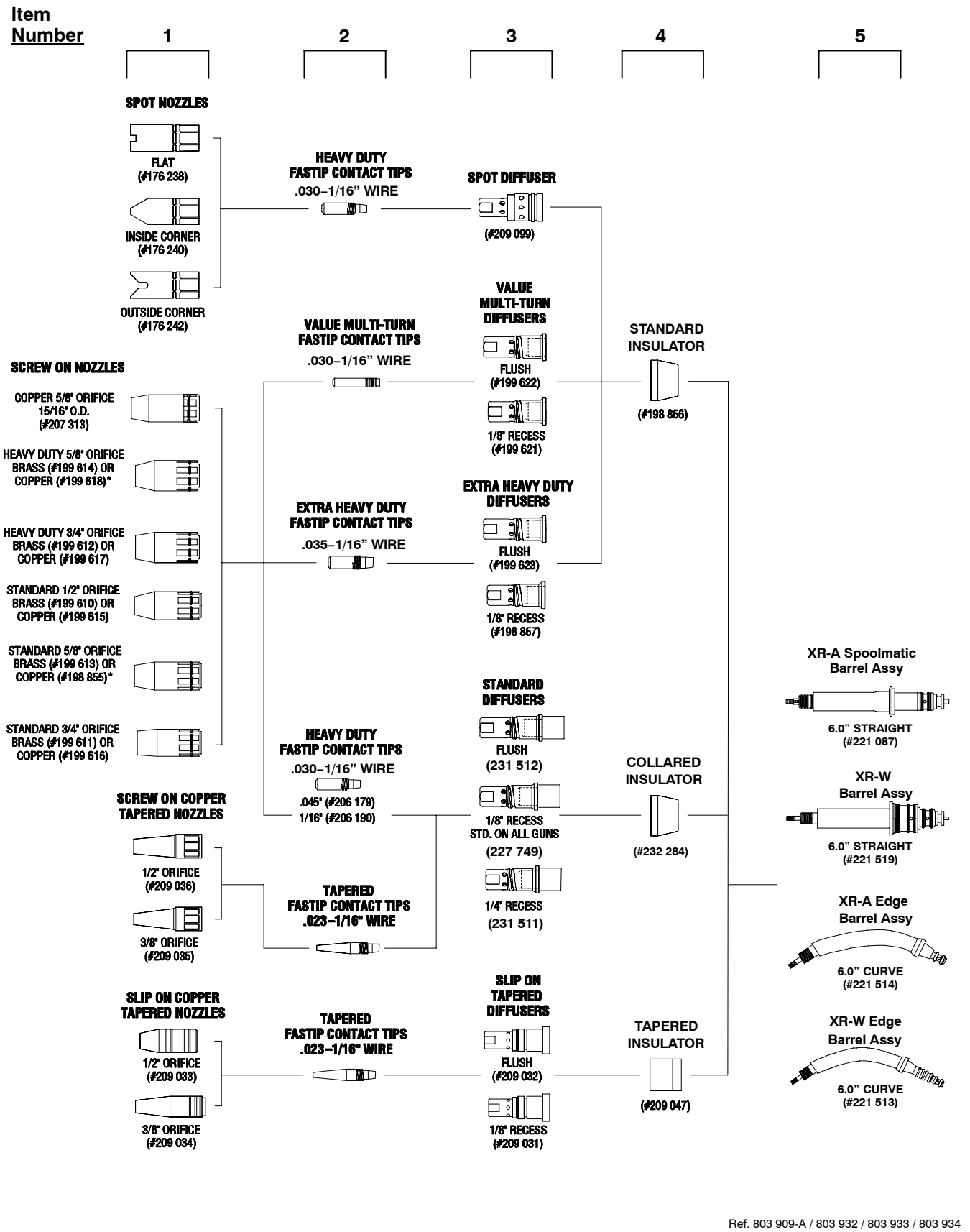


Figure 12-7 Head Tube Assembly Of Pistol-Grip Gun

Item No.	Part No.	Description	Quantity
		Figure 12-7. Head Tube Assembly Of Pistol-Grip Gun (Figure 12-6 Item 15)	
1	199 613	Nozzle, Brass 5/8 In Orifice Tapered	1
2		Tip, Fastip (See Figure 12-8)	1
3	206 195	Diffuser, .281/.312 Od Fastip 1/8 Tip Recess	1
3	227 749	Diffuser, .281/.312 Od Collar Fastip 1/8 Rec Edge/ Spool (Eff W/LG442231W)	1
4	198 856	Insulator, Nozzle (Prior To LG490001W)	1
4	232 284	Insulator, Nozzle Collared Diffuser (Eff W/LG490001W)	1
5	219 794	Jacket, Outer Insulating	1
6	219 795	Insulator, Barrel Pistol	1
7	219 796	Head Tube, Air Pistol (Brazed)	1
8	134 800	O-ring, .614 Id X .070Cs	2
9	203 675	Manifold, Water (15W & 30W Models) (Includes)	1
10	175 946	O-ring, .614 Id X .070Cs	2
11	135 128	Screw, Cap Stl Sch 6-32 X 1.000 (15, 30W Models)	2
12	198 348	Barrel Assembly, Water Cooled (15, 30W Models) (Prior To LE385139)	1
12	220 208	Barrel Assembly, Water Cooled (15, 30W Models) (Includes) (Eff W/LE385139 Thru LG442230W)	1
12	231 532	Head Tube Assy, Water Cooled (Eff W/LG442231W)	1
13	220 209	Jacket, Outer Insulating	1
14	220 216	Washer, Flat .594idx1.375odx.125T Black Vulc Fbr	1
15	220 210	Head Tube, Water Pistol (Brazed)	1
16	180 966	O-ring, .926 Id X .070 Cs 70 Duro Quadring	4
17	212 156	Liner, Phos Bronze .030-1/16 Wire X 7.313	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.

Eff w/LE033395 And Following



Ref. 803 909-A / 803 932 / 803 933 / 803 934

Figure 12-8 Consumables Flowchart

Item No.	Part No.	Description	Quantity

Figure 12-8. Consumables Flowchart

Table 12-1. Nozzles

1	♦176238	Nozzle, Spot Flat (Requires Diffuser 209099, Used With Any Heavy Duty FasTip™ Contact Tip)	1
1	♦176240	Nozzle, Spot Inside Corner (Requires Diffuser 209099, Used With Any Heavy Duty FasTip™ Contact Tip)	1
1	♦176242	Nozzle, Spot Outside Corner (Requires Diffuser 209099, Used With Any Heavy Duty FasTip™ Contact Tip)	1
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	♦209 033	Nozzle, Slip On Copper 1/2 In Orifice Tapered (Requires Diffuser 209031 Or 209032 And Insulator 209047, Used With Any Tapered FasTip™ Contact Tip)	1
1	♦209 034	Nozzle, Slip On Copper 3/8 In Orifice Tapered (Requires Diffuser 209031 Or 209032 And Insulator 209047, Used With Any Tapered FasTip™ Contact Tip)	1
1	♦209 035	Nozzle, Screw On Copper 3/8 In Orifice Tapered (Requires Diffuser 227 747, 231 511 Or 231 512, Used With Any Tapered FasTip™ Contact Tip)	1
1	♦209 036	Nozzle, Screw On Copper 1/2 In Orifice Tapered (Requires Diffuser 227 747, 231 511 Or 231 512, Used With Any Tapered FasTip™ Contact Tip)	1

Table 12-2. 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 12-3. Extra Heavy Duty FasTip™ Contact Tips*

2	♦199 605	.035 in (0.9 mm)	1
2	♦199 606	.040 in (1.0 mm) or .035 in (0.9 mm) Aluminum Wire	1
2	♦198 851	.045 in (1.2 mm)	1
2	♦198 852	.052 in (1.3 mm) or 3/64 in (1.2 mm) Aluminum Wire	1
2	♦198 853	1/16 in (1.6 mm)	1
2	♦198 854	.068 in (1.7 mm) or 1/16 in (1.6 mm) Aluminum Wire	1

Table 12-4. 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

Item No.	Part No.	Description	Quantity

Figure 12-8. Consumables Flowchart (Continued)

Table 12-5. Value Multi−Turn Contact Tips*

2	♦071 825	.030 in (0.9 mm)	1
2	♦054 202	.035 in (0.9 mm)	1
2	♦054 201	.045 in (1.2 mm)	1
2	♦199 593	.3/64 in (1.2 mm) Aluminum Wire	1
2	♦044 006	.052 in (1.3 mm)	1
2	♦047 566	1/16 in (1.6 mm)	1
2	♦202 933	1/16 in (1.6 mm) Aluminum Wire	1

Table 12-6. Gas Diffusers

3	♦198 857	1/8 in Tip Recess − For Extra Heavy Duty FasTip Contact Tips	1
3	♦199 623	Flush Tip − For Extra Heavy Duty FasTip Contact Tips	1
3	♦199 621	1/8 in Tip Recess − For Value Multi−turn Contact Tips	1
3	♦199 622	Flush Tip − For Value Multi−Turn Contact Tips	1
3	227 749	1/8 in Tip Recess − For Heavy Duty FasTip Contact Tips (Standard On All Guns)	1
3	♦231 511	1/4 in Tip Recess − For Heavy Duty FasTip Contact Tips	1
3	♦231 512	Flush Tip − For Heavy Duty FasTip Contact Tips	1
3	♦209 031	Slip On Recessed Diffuser (Requires Nozzle 209033 or 209034 and insulator 209047, Used With Any Tapered FasTip Contact Tip)	1
3	♦209 032	Slip On Flush Diffuser (Requires Nozzle 209033 or 209034 and Insulator 209047, Used With Any Tapered FasTip Contact Tip)	1
3	♦209 099	Spot Diffuser (Requires Spot Nozzle 176238 or176240 or 176242)	1

Table 12-7. Insulators

4	232 284	Insulator, Nozzle Collared Diffuser	1
4	198 856	Insulator, Rubber	1
4	209 047	Insulator, Teflon (Required When Using Diffuser 209031 Or 209032 With Nozzle 209033 Or 209034)	1

Table 12-8. Barrel Assemblies

5	221 087	Barrel Assy, Air Cooled Pistol	1
5	221 519	Barrel Assy, Water Cooled Pistol	1
5	221 514	Head Tube Assy, Air Cooled Edge	1
5	221 513	Head Tube Assy, Water Insulated Taper Edge Bent	1

Table 12-9. Head Tube Assemblies

	231 523	Kit, Head Tube Assy Air Cooled Pistol	1
	231 524	Kit, Head Tube Assy Water Cooled Pistol	1
	231 525	Kit, Head Tube Assy Air Cooled Edge	1
	231 526	Kit, Head Tube Assy Water Cooled Edge	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.

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