

# WIRE FEEDER WELDER (125, 140, 180 MODELS)

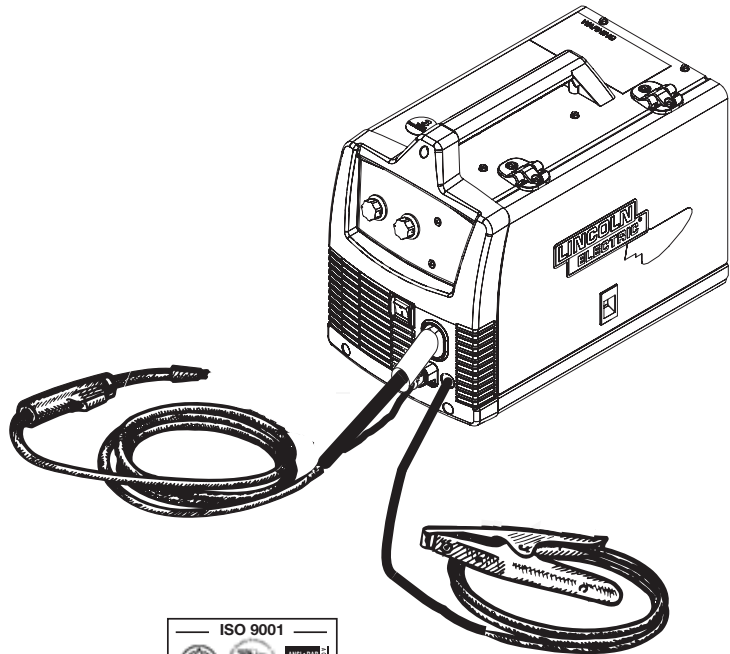
IMT891-D

June, 2011

For use with machines having Code Numbers: 11173 thru 11506, 11550, 11658

## TABLE OF CONTENTS

<b>Installation</b> .....	<b>Section A</b>
Technical Specifications .....	A-1, A-2
Safety Precautions .....	A-2
Location .....	A-2
Stacking .....	A-2
Tilting .....	A-2
Identify and Locate Components for 180 Amp and 140 Amp Units .....	A-3
Identify and Locate Components for 125 Amp Flux Core Unit .....	A-3
<b>Operation</b> .....	<b>Section B</b>
Safety and Product Description .....	B-1
Controls and Settings .....	B-2, B-3
Drive Roll and Wire Guides Table .....	B-4
Setting Up and Making a Flux-Cored Weld .....	B-4 thru B-6
Setting Up and Making a MIG Weld and Install Shielding Gas .....	B-7 thru B-10
Setting Up and Making an Aluminum Weld .....	B-11
<b>Accessories</b> .....	<b>Section C</b>
Optional Accessories .....	C-1
Utility Carts .....	C-2, C-3
<b>Maintenance</b> .....	<b>Section D</b>
Safety Precautions .....	D-1
Wire Feed Compartment, Fan Motor, Wire Reel Maintenance .....	D-1
Gun And Cable Maintenance .....	D-2
Overload Protection .....	D-2
Component Replacement Procedures .....	D-2
<b>Troubleshooting</b> .....	<b>Section E</b>
Safety Precautions .....	E-1
How to Use Troubleshooting Guide .....	E-1
Troubleshooting Guide .....	E-2 thru E-3
<b>Wiring Diagram and Dimension Print</b> ..	<b>Section F</b>
<b>Parts Pages</b> .....	<b>P-532, P-202-E</b>



### Safety Depends on You

Lincoln arc welding and cutting equipment is designed and built with safety in mind. However, your overall safety can be increased by proper installation ... and thoughtful operation on your part. **DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT.** And, most importantly, think before you act and be careful.

OPERATOR'S MANUAL

MANUAL DE OPERACIÓN

MANUEL DE L'OPÉRATEUR



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## ⚠ WARNING

### ⚠ CALIFORNIA PROPOSITION 65 WARNINGS ⚠

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

The Above For Diesel Engines

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

The Above For Gasoline Engines

**ARC WELDING CAN BE HAZARDOUS. PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS SHOULD CONSULT WITH THEIR DOCTOR BEFORE OPERATING.**

Read and understand the following safety highlights. For additional safety information, it is strongly recommended that you purchase a copy of "Safety in Welding & Cutting - ANSI Standard Z49.1" from the American Welding Society, P.O. Box 351040, Miami, Florida 33135 or CSA Standard W117.2-1974. A Free copy of "Arc Welding Safety" booklet E205 is available from the Lincoln Electric Company, 22801 St. Clair Avenue, Cleveland, Ohio 44117-1199.

**BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.**



### FOR ENGINE powered equipment.

1.a. Turn the engine off before troubleshooting and maintenance work unless the maintenance work requires it to be running.



1.b. Operate engines in open, well-ventilated areas or vent the engine exhaust fumes outdoors.



1.c. Do not add the fuel near an open flame welding arc or when the engine is running. Stop the engine and allow it to cool before refueling to prevent spilled fuel from vaporizing on contact with hot engine parts and igniting. Do not spill fuel when filling tank. If fuel is spilled, wipe it up and do not start engine until fumes have been eliminated.

1.d. Keep all equipment safety guards, covers and devices in position and in good repair. Keep hands, hair, clothing and tools away from V-belts, gears, fans and all other moving parts when starting, operating or repairing equipment.

1.e. In some cases it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.



1.f. Do not put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.

1.g. To prevent accidentally starting gasoline engines while turning the engine or welding generator during maintenance work, disconnect the spark plug wires, distributor cap or magneto wire as appropriate.



1.h. To avoid scalding, do not remove the radiator pressure cap when the engine is hot.



### ELECTRIC AND MAGNETIC FIELDS may be dangerous

- 2.a. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around welding cables and welding machines
- 2.b. EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult their physician before welding.
- 2.c. Exposure to EMF fields in welding may have other health effects which are now not known.
- 2.d. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:
  - 2.d.1. Route the electrode and work cables together - Secure them with tape when possible.
  - 2.d.2. Never coil the electrode lead around your body.
  - 2.d.3. Do not place your body between the electrode and work cables. If the electrode cable is on your right side, the work cable should also be on your right side.
  - 2.d.4. Connect the work cable to the workpiece as close as possible to the area being welded.
  - 2.d.5. Do not work next to welding power source.



## ELECTRIC SHOCK can kill.

- 3.a. The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not touch these “hot” parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.
- 3.b. Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and ground.

**In addition to the normal safety precautions, if welding must be performed under electrically hazardous conditions (in damp locations or while wearing wet clothing; on metal structures such as floors, gratings or scaffolds; when in cramped positions such as sitting, kneeling or lying, if there is a high risk of unavoidable or accidental contact with the workpiece or ground) use the following equipment:**

- Semiautomatic DC Constant Voltage (Wire) Welder.
- DC Manual (Stick) Welder.
- AC Welder with Reduced Voltage Control.

- 3.c. In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically “hot”.
- 3.d. Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.
- 3.e. Ground the work or metal to be welded to a good electrical (earth) ground.
- 3.f. Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.
- 3.g. Never dip the electrode in water for cooling.
- 3.h. Never simultaneously touch electrically “hot” parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.
- 3.i. When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.
- 3.j. Also see Items 6.c. and 8.



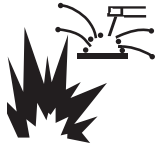
## ARC RAYS can burn.

- 4.a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87.1 standards.
- 4.b. Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.
- 4.c. Protect other nearby personnel with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.



## FUMES AND GASES can be dangerous.

- 5.a. Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone. **When welding with electrodes which require special ventilation such as stainless or hard facing (see instructions on container or MSDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and within applicable OSHA PEL and ACGIH TLV limits using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, outdoors, a respirator may be required. Additional precautions are also required when welding on galvanized steel.**
5. b. The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.
- 5.c. Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.
- 5.d. Shielding gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.
- 5.e. Read and understand the manufacturer’s instructions for this equipment and the consumables to be used, including the material safety data sheet (MSDS) and follow your employer’s safety practices. MSDS forms are available from your welding distributor or from the manufacturer.
- 5.f. Also see item 1.b.

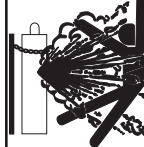


## WELDING and CUTTING SPARKS can cause fire or explosion.

6.a. Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire.

Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.

- 6.b. Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to "Safety in Welding and Cutting" (ANSI Standard Z49.1) and the operating information for the equipment being used.
- 6.c. When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
- 6.d. Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been "cleaned". For information, purchase "Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances", AWS F4.1 from the American Welding Society (see address above).
- 6.e. Vent hollow castings or containers before heating, cutting or welding. They may explode.
- 6.f. Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.
- 6.g. Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.
- 6.h. Also see item 1.c.
- 6.i. Read and follow NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work", available from NFPA, 1 Batterymarch Park, PO box 9101, Quincy, Ma 022690-9101.
- 6.j. Do not use a welding power source for pipe thawing.



## CYLINDER may explode if damaged.

- 7.a. Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.
- 7.b. Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.
- 7.c. Cylinders should be located:
  - Away from areas where they may be struck or subjected to physical damage.
  - A safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.
- 7.d. Never allow the electrode, electrode holder or any other electrically "hot" parts to touch a cylinder.
- 7.e. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
- 7.f. Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
- 7.g. Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders," available from the Compressed Gas Association 1235 Jefferson Davis Highway, Arlington, VA 22202.



## FOR ELECTRICALLY powered equipment.

- 8.a. Turn off input power using the disconnect switch at the fuse box before working on the equipment.
- 8.b. Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer's recommendations.
- 8.c. Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

Refer to <http://www.lincolnelectric.com/safety> for additional safety information.

# NOTES

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**Thank You** — for selecting a **QUALITY** product by Lincoln Electric. We want you to take pride in operating this Lincoln Electric Company product ... as much pride as we have in bringing this product to you!

#### CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for advice or information about their use of our products. We respond to our customers based on the best information in our possession at that time. Lincoln Electric is not in a position to warrant or guarantee such advice, and assumes no liability, with respect to such information or advice. We expressly disclaim any warranty of any kind, including any warranty of fitness for any customer's particular purpose, with respect to such information or advice. As a matter of practical consideration, we also cannot assume any responsibility for updating or correcting any such information or advice once it has been given, nor does the provision of information or advice create, expand or alter any warranty with respect to the sale of our products.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to [www.lincolnelectric.com](http://www.lincolnelectric.com) for any updated information.

#### **Please Examine Carton and Equipment For Damage Immediately**

When this equipment is shipped, title passes to the purchaser upon receipt by the carrier. Consequently, Claims for material damaged in shipment must be made by the purchaser against the transportation company at the time the shipment is received.

Please record your equipment identification information below for future reference. This information can be found on your machine nameplate.

Product \_\_\_\_\_

Model Number \_\_\_\_\_

Code Number or Date Code \_\_\_\_\_

Serial Number \_\_\_\_\_

Date Purchased \_\_\_\_\_

Where Purchased \_\_\_\_\_

Whenever you request replacement parts or information on this equipment, always supply the information you have recorded above. The code number is especially important when identifying the correct replacement parts.

#### **On-Line Product Registration**

- Register your machine with Lincoln Electric either via fax or over the Internet.
  - For faxing: Complete the form on the back of the warranty statement included in the literature packet accompanying this machine and fax the form per the instructions printed on it.
  - For On-Line Registration: Go to our **WEB SITE** at [www.lincolnelectric.com](http://www.lincolnelectric.com). Choose "Quick Links" and then "Product Registration". Please complete the form and submit your registration.

**Read this Operators Manual completely** before attempting to use this equipment. Save this manual and keep it handy for quick reference. Pay particular attention to the safety instructions we have provided for your protection. The level of seriousness to be applied to each is explained below:

#### **⚠ WARNING**

This statement appears where the information **must** be followed **exactly** to avoid **serious personal injury** or **loss of life**.

#### **⚠ CAUTION**

This statement appears where the information **must** be followed to avoid **minor personal injury** or **damage to this equipment**.

**TECHNICAL SPECIFICATIONS 180 Amp units (K2481-1, K2515-1, K2659-1, K2689-1, K2698-1)**

<b>INPUT – SINGLE PHASE ONLY</b>				
<u>Standard Voltage/Frequency</u> 230 V      60 Hz 208 V      60 Hz		<u>Input Current</u> 20 Amps @ rated output 20 Amps @ rated output		
<b>RATED OUTPUT</b>				
<u>Voltage/Duty Cycle</u> 230 V      30% 208 V      30%		<u>Current</u> 130 Amps 130 Amps	<u>Voltage at Rated Amperes</u> 20 17	
<b>OUTPUT</b>				
<u>Welding Current Range</u> 30-180 Amps		<u>Open Circuit Voltage</u> 34 V	<u>Wire Speed Range</u> 50 - 500 in/min. (1.3 - 12.7 m/min.)	
<b>RECOMMENDED INPUT CABLE AND FUSE SIZES</b>				
<u>Input Voltage/Frequency</u>		<u>Fuse or Breaker Size</u> <sup>1</sup>	<u>Input Amps</u>	<u>Power Cord</u>
230 V      60 Hz		40 Amp Super Lag	20	50 Amp, 250 V, Three Prong Plug (NEMA Type 6-50P)
<b>PHYSICAL DIMENSIONS</b>				
<u>Height</u> 13.7 in 347 mm	<u>Width</u> 10.15 in 258 mm	<u>Depth</u> 17.9 in 454 mm	<u>Weight</u> 64 lbs 29 kg	

<sup>1</sup> If connected to a circuit protected by fuses use Time Delay Fuse marked "D".

**140 Amp units (K2480-1, K2514-1, K2658-1, K2688-1, K2697-1)**

<b>INPUT – SINGLE PHASE ONLY</b>				
<u>Standard Voltage/Frequency</u> 120 V / 60 Hz		<u>Input Current</u> 20 Amps @ rated output		
<b>RATED OUTPUT</b>				
<u>Duty Cycle</u> 20% Duty Cycle		<u>Current</u> 90 Amps	<u>Voltage at Rated Amperes</u> 19.5	
<b>OUTPUT</b>				
<u>Welding Current Range</u> 30-140 Amps		<u>Open Circuit Voltage</u> 33 V	<u>Wire Speed Range</u> 50 - 500 in/min. (1.3 - 12.7 m/min.)	
<b>RECOMMENDED INPUT CABLE AND FUSE SIZES</b>				
<u>Input Voltage/Frequency</u>	<u>Fuse or Breaker Size</u> <sup>1,2</sup>	<u>Input Amps</u>	<u>Power Cord</u>	<u>Extension Cord</u>
120 V      60 Hz	20 Amp	20	15 Amp, 125 V, Three Prong Plug (NEMA Type 5-15P)	3 Conductor # 12 AWG (4mm <sup>2</sup> ) or Larger up to 50 ft.(15.2m)
<b>PHYSICAL DIMENSIONS</b>				
<u>Height</u> 13.7 in 347 mm	<u>Width</u> 10.15 in 258 mm	<u>Depth</u> 17.9 in 454 mm	<u>Weight</u> 54 lbs 24.5 kg	

<sup>1</sup>If connected to a circuit protected by fuses use Time Delay Fuse marked "D".

**WIRE FEEDER WELDERS (125, 140, 180 MODELS)**




**TECHNICAL SPECIFICATIONS 125 Amp units (K2479-1, K2513-1, K2696-1, K2699-1, K2785-1)**

<b>INPUT – SINGLE PHASE ONLY</b>				
<b>Standard Voltage/Frequency</b> 120 V / 60 Hz		<b>Input Current</b> 20 Amps @ rated output		
<b>RATED OUTPUT</b>				
<b>Duty Cycle</b> 20% Duty Cycle		<b>Current</b> 90 Amps		<b>Voltage at Rated Amperes</b> 19
<b>OUTPUT</b>				
<b>Welding Current Range</b> 30-125 Amps		<b>Maximum-Open Circuit Voltage</b> 33 V		<b>Wire Speed Range</b> 50 - 500 in/min. (1.3 - 12.7 m/min.)
<b>RECOMMENDED INPUT CABLE AND FUSE SIZES</b>				
Input Voltage / Frequency	Fuse or Breaker Size <sup>1,2</sup>	Input Amps	Power Cord	Extension Cord
120 V    60 Hz	20 Amp	20	15 Amp, 125 V, Three Prong Plug (NEMA Type 5-15P)	3 Conductor # 12 AWG (4mm <sup>2</sup> ) or Larger up to 50 ft.(15.2m)
<b>PHYSICAL DIMENSIONS</b>				
<b>Height</b> 13.7 in 347 mm	<b>Width</b> 10.15 in 258 mm	<b>Depth</b> 17.9 in 454 mm	<b>Weight</b> 48 lbs 21.7 kg	

<sup>1</sup> If connected to a circuit protected by fuses use Time Delay Fuse marked "D".

## <sup>2</sup> Requirements For Maximum Output

In order to utilize the maximum output capability of the machine, a branch circuit capable of 25 amps at 120 volts, 60 Hertz is required.

Read entire installation section before starting installation.

## SAFETY PRECAUTIONS

### WARNING



#### **ELECTRIC SHOCK can kill.**

- Only qualified personnel should perform this installation.
- Only personnel that have read and understood the POWER MIG Operating Manual should install and operate this equipment.
- Machine must be plugged into a receptacle which is grounded per any national, local or other applicable electrical codes.
- The POWER MIG power switch is to be in the OFF ("O") position when installing work cable and gun and when connecting power cord to input power.

## SELECT SUITABLE LOCATION

Locate the welder in a dry location where there is free circulation of clean air into the louvers in the back and out the front of the unit. A location that minimizes the amount of smoke and dirt drawn into the rear louvers reduces the chance of dirt accumulation that can block air passages and cause overheating.

## STACKING

WIRE FEEDER WELDER(125, 140, 180 MODELS) cannot be stacked.

## TILTING

Each machine must be placed on a secure, level surface, directly or on recommended cart. The machine may topple over if this procedure is not followed.

WIRE FEEDER WELDERS (125, 140, 180 MODELS)



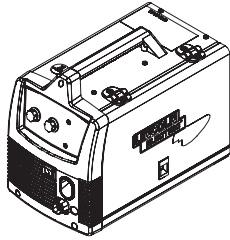


**IDENTIFY AND LOCATE COMPONENTS**

for 140 AMP and 180 AMP UNITS

**INCLUDED COMPONENTS**

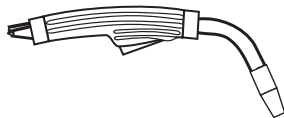
- Wire Feeder Welder.



- Work Cable & Clamp.

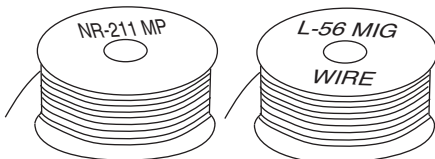


- Magnum 100L Welding Gun.

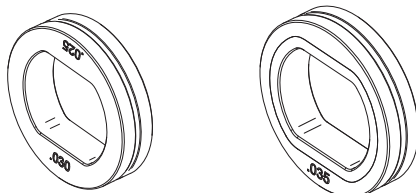


- 3 .035 Contact Tips (1 installed on the welding gun).
- 3 .025 Contact Tips.

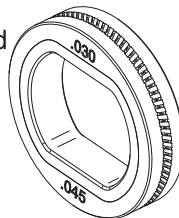
- Spool of .035 diameter NR-211MP Innershield Flux-cored Wire.
- Spool of .025 diameter L-56 MIG Wire.



- .025-.030 Smooth Drive Roll
- .035 Smooth Drive Roll



- .030 -.045 Knurled Drive Roll (Installed on Machine)

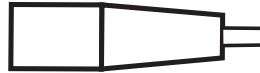


- Handshield\*



\*Handshield not available on Code 11658.

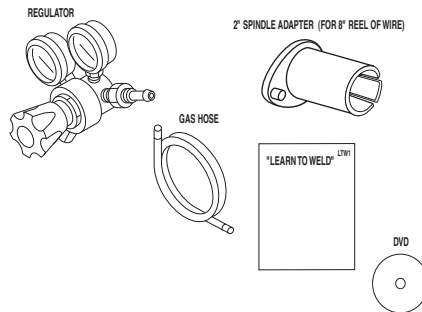
- Black Flux-cored Gasless Gun Nozzle (Installed on Welding Gun)



- Brass MIG Gas Gun Nozzle



- 2" Spindle Adapter (For 8" Reel of wire)
- Regulator
- Gas Hose
- Learn to Weld (LTW1 Manual)
- DVD

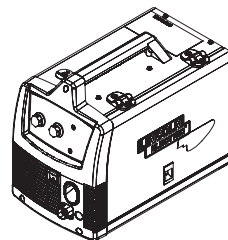


**IDENTIFY AND LOCATE COMPONENTS**

for 125 AMP FLUX CORE UNIT

**INCLUDED COMPONENTS**

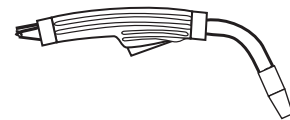
- Wire Feeder Welder.



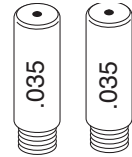
- Work Cable & Clamp.



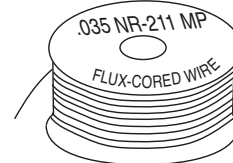
- Magnum 100L Welding Gun.



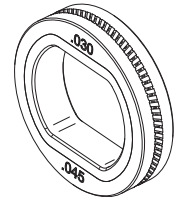
- 3 .035 Contact Tips (1 installed on the welding gun).



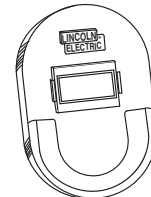
- Spool of .035 diameter NR-211MP Innershield Flux-cored Wire.



- .030 -.045 Knurled Drive Roll (Installed on Machine)



- Handshield



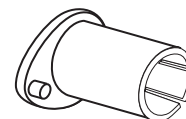
- Black Flux-cored Gasless Gun Nozzle (Installed on Welding Gun)



- 2" Spindle Adapter (For 8" Reel of wire)

- Learn to Weld (LTW1 Manual)
- DVD

2" SPINDLE ADAPTER (FOR 8" REEL OF WIRE)



Read entire operation section before operating the WIRE FEEDER WELDERS.

## ⚠ WARNING



### ELECTRIC SHOCK can kill.

- Do not touch electrically live parts or electrode with skin or wet clothing. Insulate yourself from work and ground.
- Always wear dry insulating gloves.



### FUMES AND GASES can be dangerous.

- Keep your head out of fumes.
- Use ventilation or exhaust to remove fumes from breathing zone.



### WELDING SPARKS can cause fire or explosion.

- Keep flammable material away.
- Do not weld on closed containers.



### ARC RAYS can burn eyes and skin.

- Wear eye, ear and body protection.

Observe all safety information throughout this manual.

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## PRODUCT DESCRIPTION (PRODUCT CAPABILITIES)

These small portable wire feed welders are capable of MIG welding on steel, stainless steel, and aluminum. They are also capable of flux-cored welding on mild steel.

MIG welding stands for Metal Inert Gas welding and requires a separate bottle of shielding gas to protect the weld until it cools. Appropriate shielding gas based on the type of material you are welding can be purchased separately from your local welding gas distributor. MIG welding is ideal for welding on thinner and clean materials when a very clean excellent cosmetic looking weld is required. An example would be automotive body panels.

Self Shielding Flux-cored Welding does not require separate shielding gas to protect the weld since the welding wire has special additives known as flux to protect the weld until it cools. Flux-cored welding is ideal for medium to thicker material and if welding on painted or rusty steel. Flux-cored welding is also ideal in outdoor applications where windy conditions might blow the MIG shielding gas away from the weld. Flux-cored welding produces a good looking weld but does not produce an excellent weld appearance as MIG welding does.

Your machine includes the necessary items to weld with either the MIG or the flux-cored welding process on steel. To weld on stainless steel optional stainless steel welding wire can be purchased separately. This machine can weld aluminum using .035 diameter 4043 aluminum welding wire. Since aluminum welding wire is soft an optional aluminum spool gun is recommended for best results. A welding Procedure Decal is located inside machine door to help provide suggested settings for welding.

## COMMON WELDING ABBREVIATIONS

### GMAW (MIG)

- Gas Metal Arc Welding

### FCAW (Innershield or Outershield)

- Flux Core Arc Welding

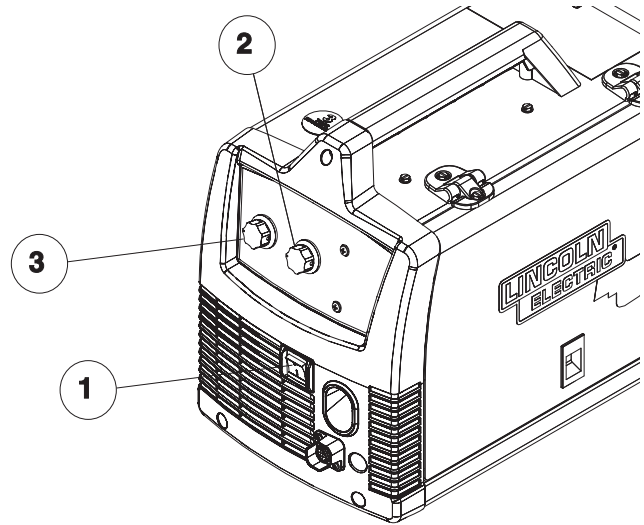
## CONTROLS AND SETTINGS

This machine has the following controls:

See Figure B.1

1. **POWER SWITCH** – Turns power on and off to the machine.
2. **ARC VOLTAGE CONTROL** – This knob sets the output voltage of the machine. Along with wire feed speed (WFS) this control sets a weld procedure. Refer to the procedure decal on the inside wire drive compartment door to set a correct welding procedure based on type of material and thickness being welded.
3. **WIRE FEED SPEED CONTROL (WFS)** – The knob sets the speed that the machine feeds wire. Along with arc voltage this control sets a weld procedure. Refer to the procedure decal on the inside wire drive compartment door to set a correct welding procedure based on type of material and thickness being welded.

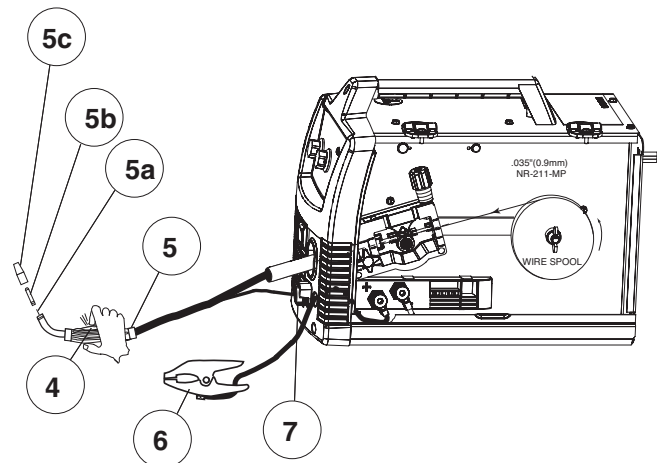
FIGURE B.1



See Figure B.2

4. **GUN TRIGGER** – Depress the trigger to activate the wire drive to feed wire and energizes the output of the machine. Depress the trigger to weld and release the trigger to stop welding.
5. **WELDING GUN** – Delivers wire and welding current to the weld.
  - a. **Gun Liner** – wire travels through the liner from the wire drive. The gun liner will feed .025 to .035 wire. The 180A machine can weld with .045 wire if an optional .045 liner is installed in the gun.
  - b. **Contact Tip** – provides electrical contact to the wire.
  - c. **Nozzle** – When flux-cored welding the black nozzle protects the mounting threads on the gun. When MIG welding the brass nozzle funnels the shielding gas to the weld.
6. **WORK CLAMP & CABLE** – Clamps to the work piece being welded and completes the electrical welding circuit.
7. **GUN TRIGGER CONNECTOR RECEPTACLE** – Plug the 4 pin gun trigger connector into this receptacle.

FIGURE B.2

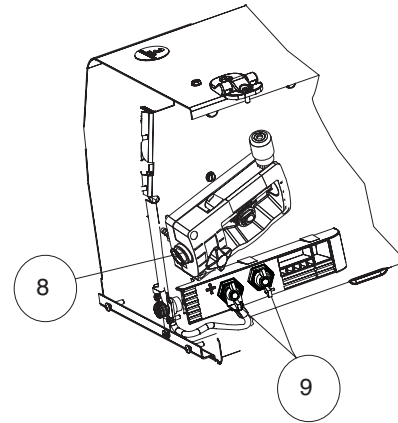


See Figure B.3

**8. WELDING GUN CONNECTOR BUSHING & THUMBSCREW** – Provides electrical power to the welding gun. The thumbscrew holds the welding gun into the connector block. (Front of Machine, Side Door and Wire Drive Cover have been removed for clarity of Items 8 and 9).

**9. OUTPUT TERMINALS** –These connections allow to change the welding polarity of the machine depending on whether you are MIG welding or flux-cored welding.

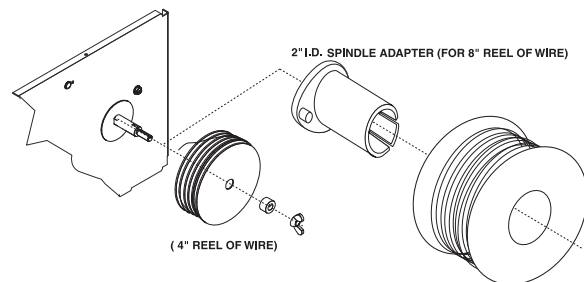
FIGURE B.3



See Figure B.4

**10. WIRE SPOOL SPINDLE AND BRAKE** – Holds a 4 inch diameter spool. Use the 2 inch spindle adapter included with the machine to use 8 inch diameter spools. The thumbscrew sets the brake friction to prevent the spool from over rotating when the trigger is released.

FIGURE B.4



See Figure B.5

**11. WIRE DRIVE & COMPONENTS** – Feeds wire from the wire spool through the drive and through the welding gun to the weld.

**a. Drive Roll** – Drives the wire through the drive system. The drive roll has a groove to match the specific wire type and diameter. Refer to Table B.1 for available drive rolls.

**b. Liner & Outgoing Guide** – The liner guides the wire between the bearing on the Pivot Arm Assembly and Drive Roll and through the outgoing guide.

**c. Drive Roll Tension Thumbscrew** – Turning clockwise increases the force on the drive roll and turning counterclockwise decreases the force.

FIGURE B.5

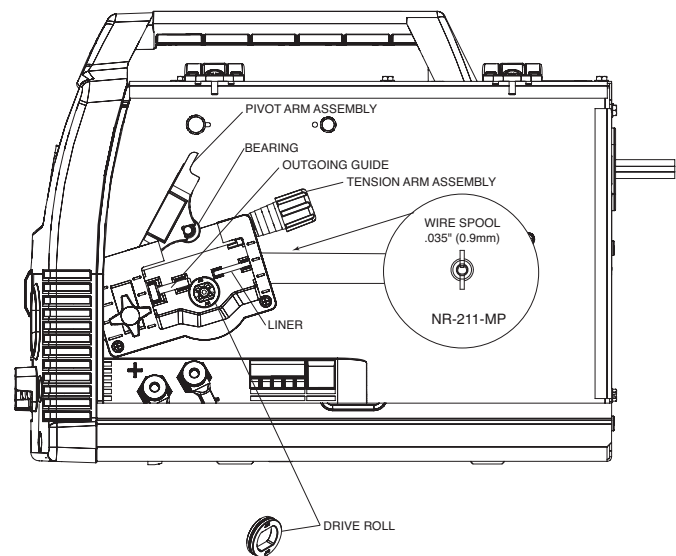


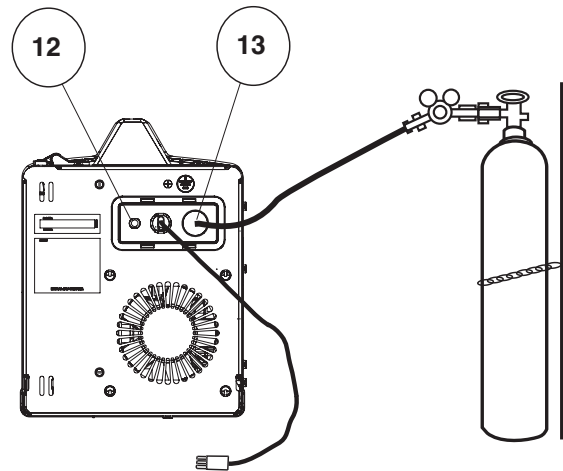
TABLE B.1  
DRIVE ROLLS

Wire Diameter & Type	Drive Roll	Drive Roll Part Number
.025 MIG wire	.025/.030 Smooth Drive Roll	KP2529-1
.030 MIG wire		
.035 MIG wire	.035 Smooth Drive Roll	KP2529-2
.030 flux-cored	.030/.045 Knurled Drive Roll	KP2529-3
.035 flux-cored		
.045 flux-cored	.030/.045 Knurled Drive Roll	KP2529-3

See Figure B.6

- 12. **CIRCUIT BREAKER** – If the rated input current of the machine is exceeded this circuit breaker will trip. Press to reset.
- 13. **GAS INLET** –Shielding gas connects to this inlet (This is optional on 125 Amp Unit.)

FIGURE B.6



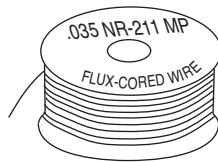
SETTING UP AND MAKING A FLUX-CORED WELD

A. ITEMS NEEDED FOR FLUX CORED WELDING

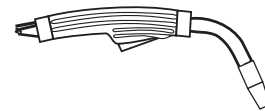
- 1. .035 Contact Tip



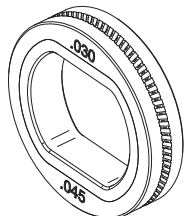
- 3. .035 NR-211MP Flux-Cored Wire



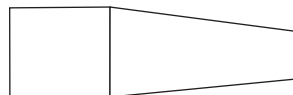
- 5. Welding Gun



- 2. Knurled Drive Roll



- 4. Black Flux Cored gun nozzle



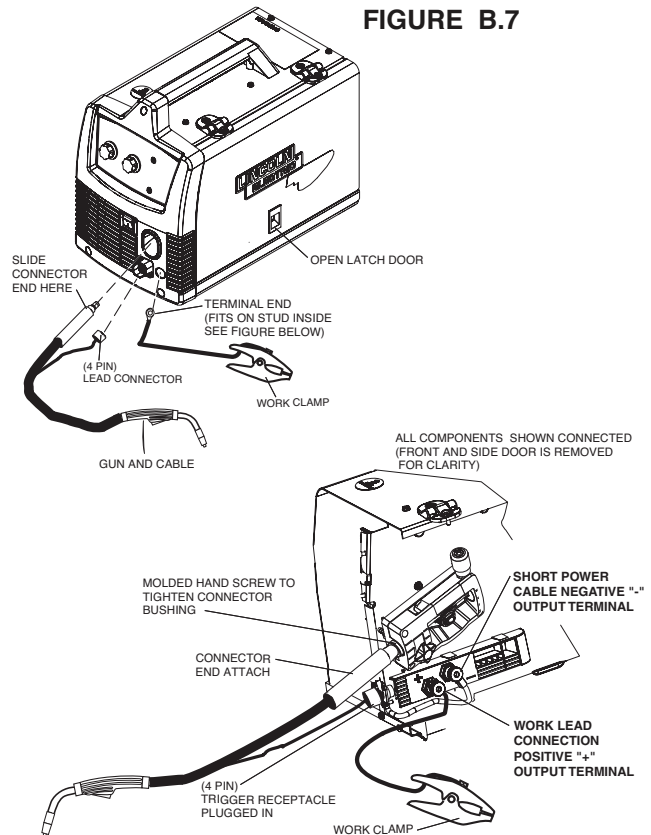
- 7. Work Cable & Clamp



## B. CONNECT LEADS AND CABLES ON THE MACHINE

(See Figure B.7)

1. Open the case side door
2. Slide the connector end of the gun and cable through the hole in the machine front and into the gun connector bushing on the wire drive.
3. Make sure the gun connector end is seated fully into the wire drive and tighten the molded hand screw to secure the gun connector.
4. Plug the gun trigger lead connector into the 4 pin gun trigger receptacle on the machine front.
5. Wire Drive Polarity. Flux cored welding requires negative (-) polarity. Connect the short power cable from the wire drive to the negative (-) output terminal and tighten threaded knob.
6. Work Lead Connection. Slide the lugged end of the work cable through the hole in the machine front and place on the positive (+) output terminal and tighten threaded knob.

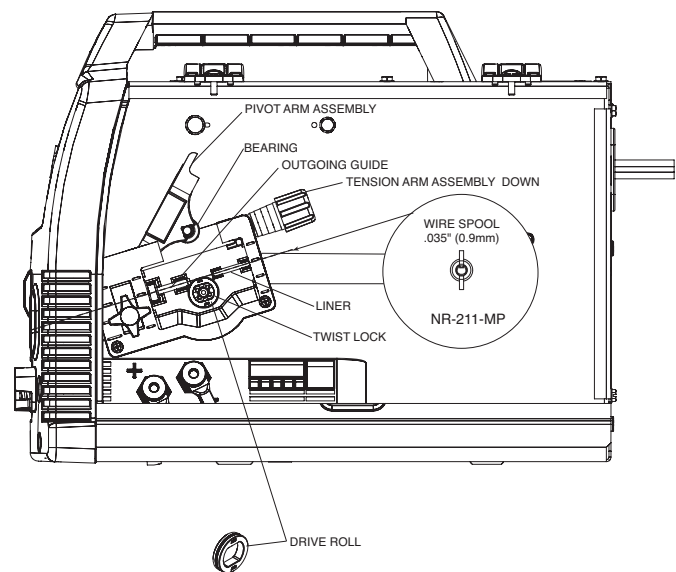


## C. LOAD WIRE SPOOL

(See Figure B.8)

1. Locate the blue labeled 4" diameter spool of .035 NR-211MP flux-cored wire and place onto wire spool spindle. Orient the spool so that the wire feeds off the top of the spool.
2. Secure spool in place by tightening the wing nut against the spacer that holds the wire spool on the spindle.
3. Open the pivot arm assembly by rotating the tension arm assembly down and lift pivot arm assembly up.
4. Remove drive roll by turning the twist lock that holds the drive roll on. Install the .030/.045 knurled drive roll.
5. Carefully unwind and straighten the first six inches of welding wire from the spool. Do not let the end of the wire go to prevent the wire from unspooling.

**FIGURE B.8**





(See Figure B.9)

6. Feed the wire through the inlet liner, over the drive roll groove, thru the outgoing guide and wire drive outlet on the gun side.

7. Close the Pivot Arm Assembly and secure by pivoting the Tension Arm Assembly back to the up position.

(See Figure B.10)

8. Remove the nozzle from the gun and contact tip and straighten the gun out flat.

9. Turn the machine power to on and depress the gun trigger to feed the wire through the gun liner until the wire comes out of the threaded end of the gun several inches. (See figure B.11)

10. When trigger is released spool of wire should not unwind. Adjust wire spool brake accordingly.

## WARNING



**MOVING PARTS AND ELECTRICAL CONTACT CAN CAUSE INJURY OR BE FATAL.**

•When the gun trigger is depressed drive rolls, spool of wire and electrode are **ELECTRICALLY LIVE (HOT)**.

•Keep away from moving parts and pinch points.

•Keep all Doors, Covers, panels and guards securely in place.

**DO NOT REMOVE OR CONCEAL WARNING LABELS.**



11. Install the .035 contact tip

12. Install the black flux cored welding nozzle to the gun.

13. Trim the wire stickout to 3/8" from the contact tip. (See Figure B.12)

14. Close the case side door. The machine is now ready to weld.

15. Read "Learn to Weld" (LTW1) that is included with the machine or watch the "How to Weld" DVD included with the machine.

16. Based on the thickness of the material you are going to weld and the type and diameter of the welding wire set the voltage and the wire feed speed per the procedure decal attached to the inside of the wire drive compartment door.

FIGURE B.9

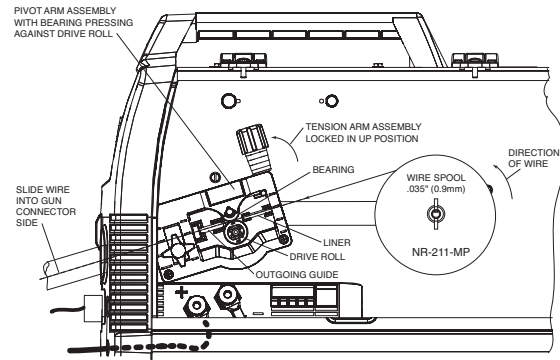


FIGURE B.10

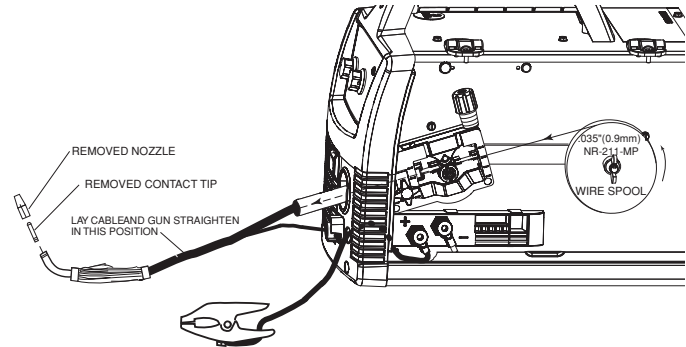


FIGURE B.11

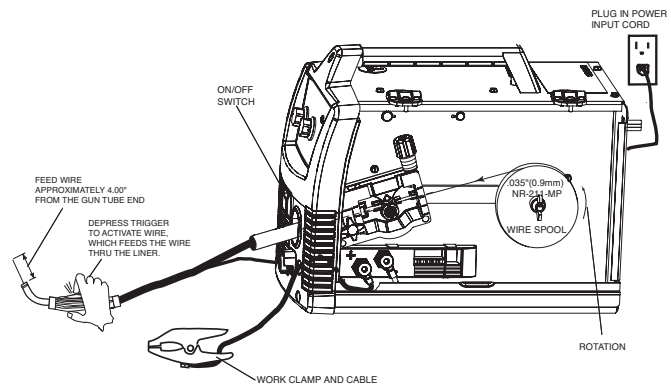
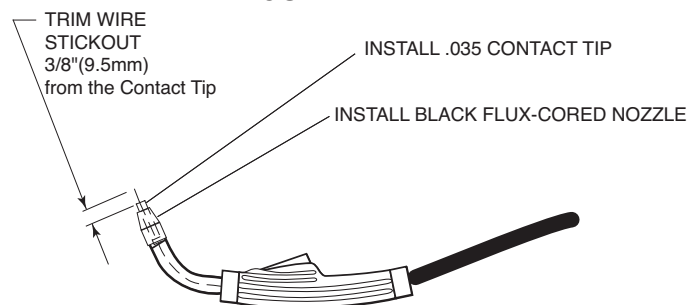


FIGURE B.12



WIRE FEEDER WELDERS (125, 140, 180 MODELS)





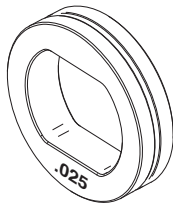
## SETTING UP AND MAKING A MIG WELD\*

### A. ITEMS NEEDED FOR MIG WELDING

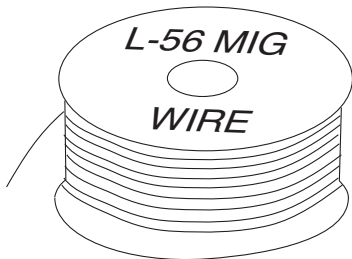
1. .025 Contact Tip



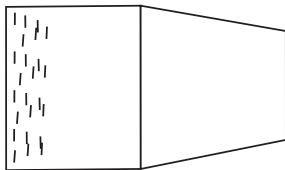
3. .025 Drive Roll



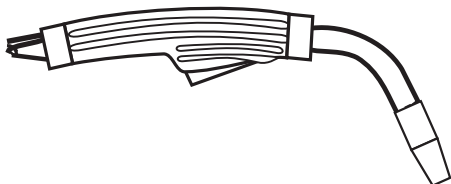
4. .025 SuperArc L-56 Solid MIG Wire



5. Brass gun nozzle



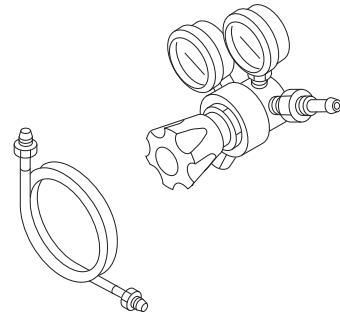
6. Welding Gun



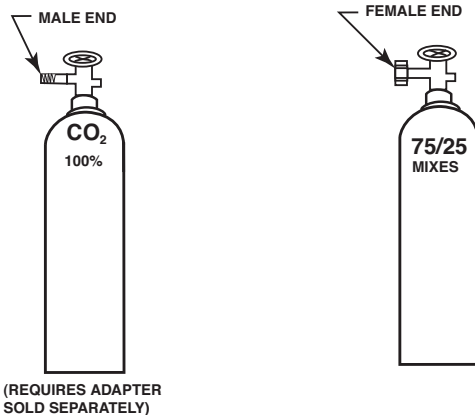
7. Work Cable & Clamp



8. Gas Regulator & Gas Line



9. Bottle of 75/25 Ar/CO<sub>2</sub> shielding gas (or 100% CO<sub>2</sub> shielding gas) (note this requires a CO<sub>2</sub> regulator adapter which is sold separately).



\* 125 Amp Units can be upgraded for MIG welding using KIT K2526-1 (See Accessory Section).

## B. INSTALL SHIELDING GAS

MIG welding requires an appropriate bottle of shielding gas. For mild steel either a cylinder bottle of Ar/CO<sub>2</sub> or 100% CO<sub>2</sub> can be used refer to the following instructions to properly connect shielding gas to the machine.

### ⚠ WARNING

**CYLINDER may explode if damaged. Keep cylinder upright and chained to support**



- Keep cylinder away from areas where it may be damaged.
- Never lift welder with cylinder attached.
- Never allow welding electrode to touch cylinder.
- Keep cylinder away from welding or other live electrical circuits.

### ⚠ WARNING



**BUILDUP OF SHIELDING GAS may harm health or kill.**

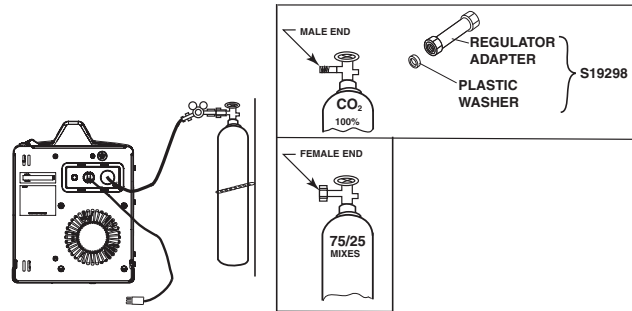
- Shut off shielding gas supply when not in use.

1. Secure the cylinder to a wall or other stationary support to prevent the cylinder from falling over. Insulate the cylinder from the work circuit and earth ground. Refer to Figure B.13.
2. With the cylinder securely installed, remove the cylinder cap. Stand to one side away from the outlet and open the cylinder valve very slightly for an instant. This blows away any dust or dirt which may have accumulated in the valve outlet.

### ⚠ WARNING

**BE SURE TO KEEP YOUR FACE AWAY FROM THE VALVE OUTLET WHEN “CRACKING” THE VALVE. Never stand directly in front of or behind the flow regulator when opening the cylinder valve. Always stand to one side.**

FIGURE B.13



3. Attach the flow regulator to the cylinder valve and tighten the union nut securely with a wrench.

**NOTE:** If connecting to 100% CO<sub>2</sub> cylinder, a CO<sub>2</sub> regulator adapter is required. Purchase separately S19298 CO<sub>2</sub> adapter be sure to install plastic washer included in the fitting on the bottle side.(See Figure B.13 )

4. Refer to Figure B.13. Attach one end of inlet gas hose to the outlet fitting of the flow regulator and tighten the union nut securely with a wrench. Connect the other end to the machine Solenoid Inlet Fitting (5/8-18 female threads — for CGA — 032 fitting). Make certain the gas hose is not kinked or twisted.

## SHIELDING GAS

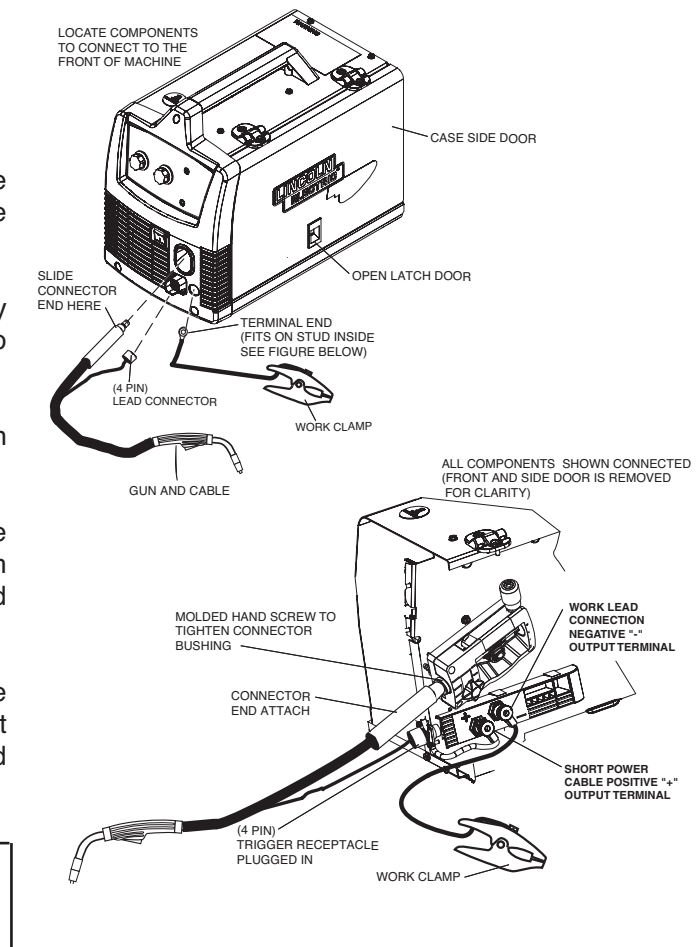
1. For CO<sub>2</sub>, open the cylinder very slowly. For argon-mixed gas, open cylinder valve slowly a fraction of a turn. When the cylinder pressure gauge pointer stops moving, open the valve fully.
2. Set gas flow rate for 30 to 40 cubic feet per hour (14 to 18 l/min.) under normal conditions, increase to as high as 40 to 50 CFH (18 to 23.5 l/min.) under drafty (slightly windy) conditions.
3. Keep the cylinder valve closed, except when using the machine.

## C. CONNECT LEADS AND CABLES ON THE MACHINE

(See Figure B.14)

1. Open the case side door.
2. Slide the connector end of the gun and cable through the hole of the machine front and into the gun connector bushing on the wire drive.
3. Make sure the gun connector end is seated fully into the wire drive and tighten the thumbscrew to secure the gun.
4. Plug the gun trigger lead connector into the 4 pin gun trigger receptacle on the machine front.
5. Wire Drive Polarity. MIG welding requires Positive (+) polarity. Connect the short power cable from the wire drive to the positive (+) output terminal and tighten the thumbscrew.
6. Work Lead Connection. Slide the lugged end of the work cable through the hole in the machine front and place on the negative (-) output terminal and tighten thumbscrew.

FIGURE B.14

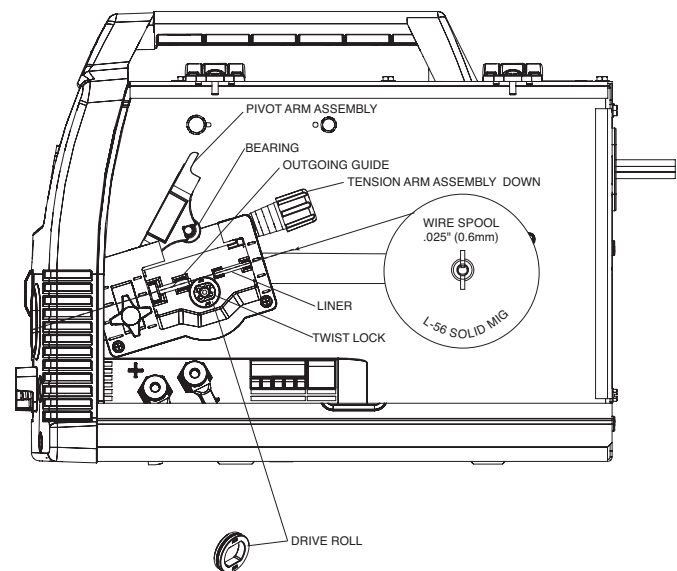


## D. LOAD WIRE SPOOL

(See Figure B.15)

1. Locate the green labeled 4" diameter spool of .025 L-56 solid MIG wire and place onto wire spool spindle. Orient the spool so that the wire feeds off the top of the spool.
2. Secure spool in place by tightening the wing nut against the spacer that holds the wire spool on the spindle.
3. Open the pivot arm assembly by rotating the tension arm assembly down and lift pivot arm assembly up.
4. Remove drive roll by turning the twist lock that holds the drive roll on. Install the .025-.035 smooth grooved drive roll.
5. Carefully unwind and straighten the first six inches of welding wire from the spool. Do not let the end of the wire go to prevent the wire from unspooling.

FIGURE B.15



(See Figure B.16)

6. Feed the wire through the inlet liner, over the drive roll groove, thru the outgoing guide and wire drive outlet on the gun side.
7. Close the Pivot Arm Assembly and secure by pivoting the Tension Arm Assembly back to the up position.

(See Figure B.17)

8. Remove the nozzle from the gun and contact tip and straighten the gun out flat.
9. Turn the machine power to on and depress the gun trigger to feed the wire through the gun liner until the wire comes out of the threaded end of the gun several inches. (See Figure B.18)
10. When trigger is released spool of wire should not unwind. Adjust wire spool brake accordingly.

### ⚠ WARNING



**MOVING PARTS AND ELECTRICAL CONTACT CAN CAUSE INJURY OR BE FATAL.**

- When the gun trigger is depressed drive rolls, spool of wire and electrode are **ELECTRICALLY LIVE (HOT)**.
  - Keep away from moving parts and pinch points.
  - Keep all Doors, Covers, panels and guards securely in place.
- DO NOT REMOVE OR CONCEAL WARNING LABELS.**



11. Install the .025 contact tip.
12. Install the brass gas MIG welding nozzle to the gun.
13. Trim the wire stickout to 3/8 from the nozzle end. (See Figure B.19)
14. Close the case side door. The machine is now ready to weld.
15. Read "Learn to Weld" (LTW1) that is included with the machine or watch the "How to Weld" DVD included with the machine.
16. Based on the thickness of the material you are going to weld and the type and diameter of the welding wire set the voltage and the wire feed speed per the procedure decal attached to the inside of the wire drive compartment door.

FIGURE B.16

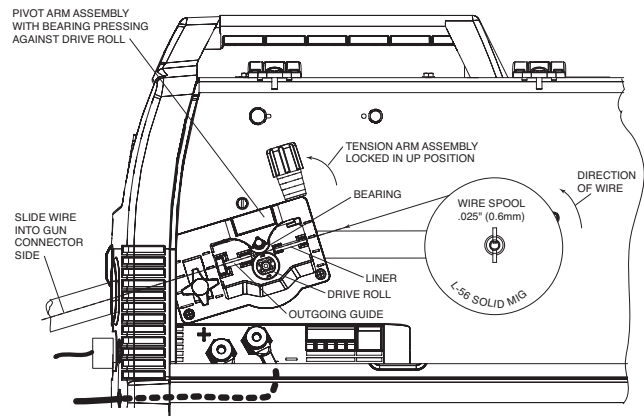


FIGURE B.17

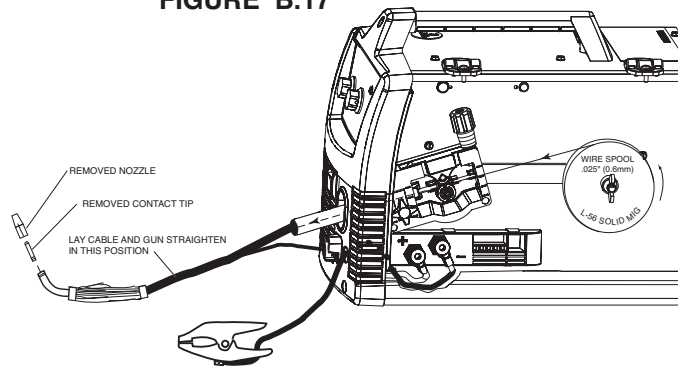


FIGURE B.18

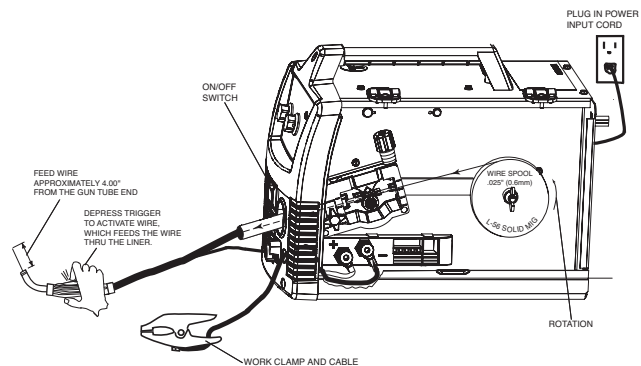
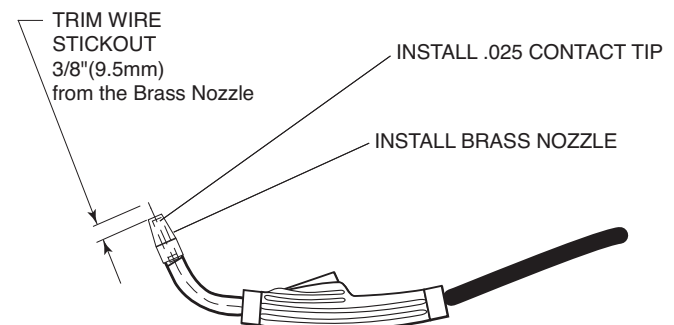


FIGURE B.19



## SETTING UP AND MAKING A ALUMINUM WELD USING SPOOL GUN

1. Follow the MIG welding steps in the previous section.
2. Connect a bottle of 100% Argon shielding Gas per previous section.
3. Disconnect Magnum 100L Gun.
4. Install optional K2532-1 Magnum 100SG spool gun per instructions included with gun.
5. Set Gun selector toggle switch to Spool Gun position. (See Figure B.20)

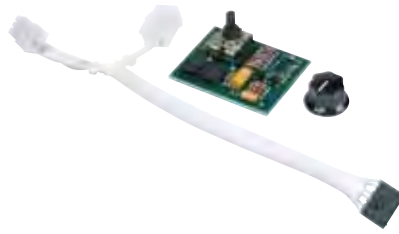
**FIGURE B.20**



6. Turn machine on and make weld per recommended settings on Procedure Decal inside machine door.

**K2525-1 - Spot Timer Kit**

Timer kit, when turned on, allows you to set a fixed weld time so that when the gun trigger is pulled the machine will weld for a fixed time period up to 10 seconds. Ideal for making consistent spot welds when welding on thin sheet metal

**K2528-1 - .045 Innershield Kit (For 230V models)**

Includes everything needed to weld with .045 diameter Innershield wire. Includes an .035/.045 Magnum™ 100L gun liner, .045 Contact Tip, gasless nozzle, knurled drive roll, .035-.045 inner wire guide, and a 10 lb. (4.5kg) spool of .045"(0.9mm) Innershield® NR®-212 wire.

**K2532-1 - Magnum 100SG Pool Gun**

Designed to easily feed small 4" diameter (1lb. spools of) .030 or .035 aluminum wire. Includes gun, adapter kit, three extra .035 contact tips, gas nozzle, and spool of Superglaze 4043 .035" diameter welding wire. Packaged in a convenient carry case.

**K2377-1 - Small Canvas Cover**

Protect your machine when not in use. Made from attractive red canvas that is flame retardant, mildew resistant and water repellent. Includes a convenient side pocket to hold welding gun.



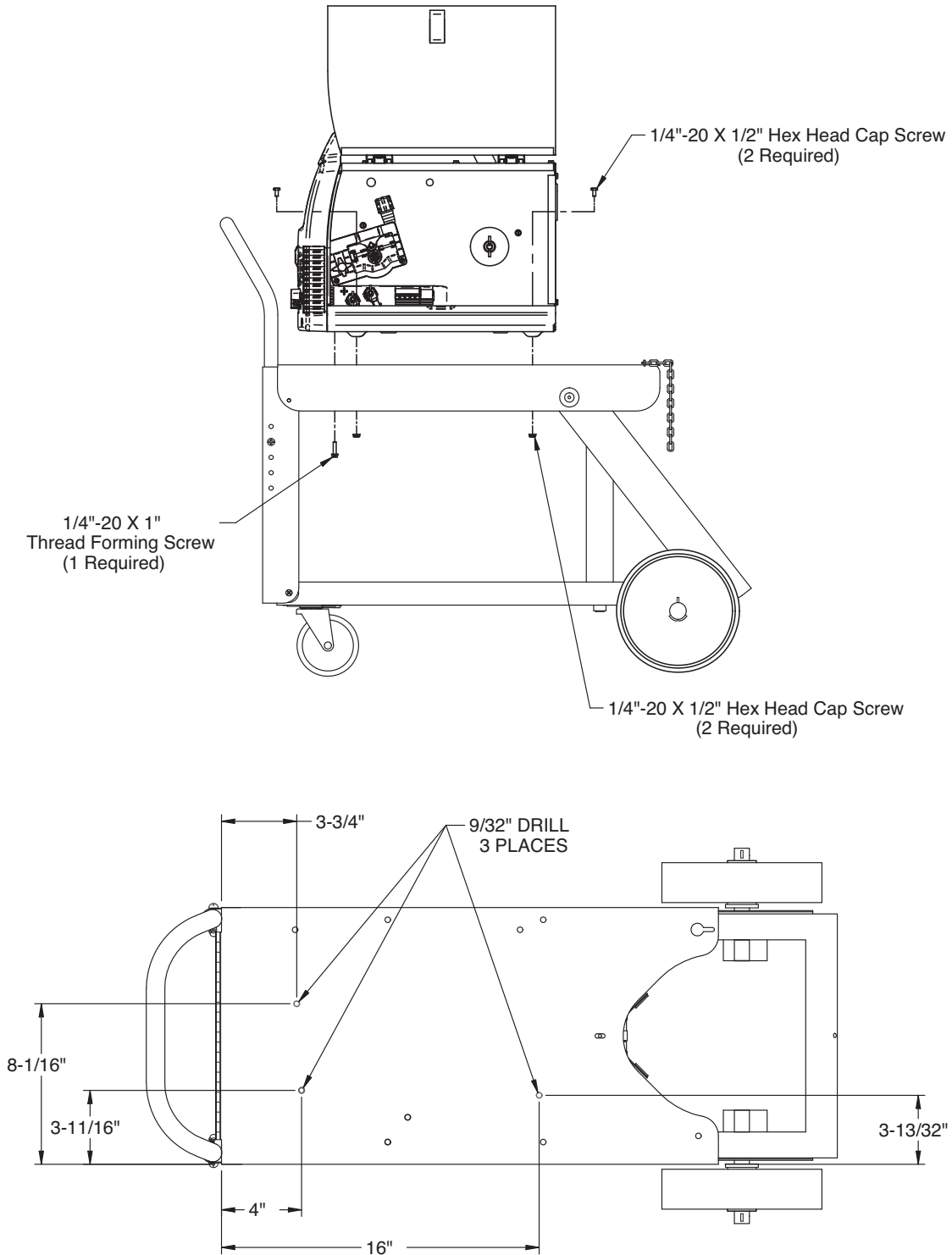
For additional Optional and Miscellaneous Parts  
(See Parts Pages)

**K520—Utility Cart**

Heavy duty cart stores and transports welder, 150 cubic foot shielding gas cylinder, welding cables and accessories. Includes stable platforms for welder and gas bottle platform, lower tray for added storage capacity and adjustable height handle.



For mounting welding machines to K520 carts that do not have slotted mounting holes. Drill 9/32" holes (3 places) into the cart top as shown and attach the welding machine to the cart with the proper hardware shown.



**WIRE FEEDER WELDERS (125, 140, 180 MODELS)**



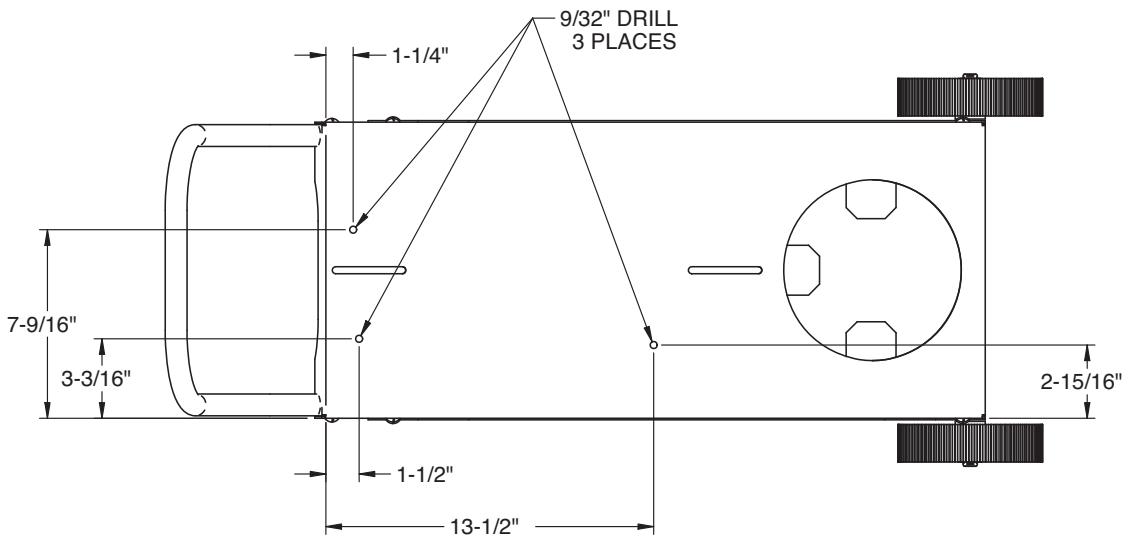
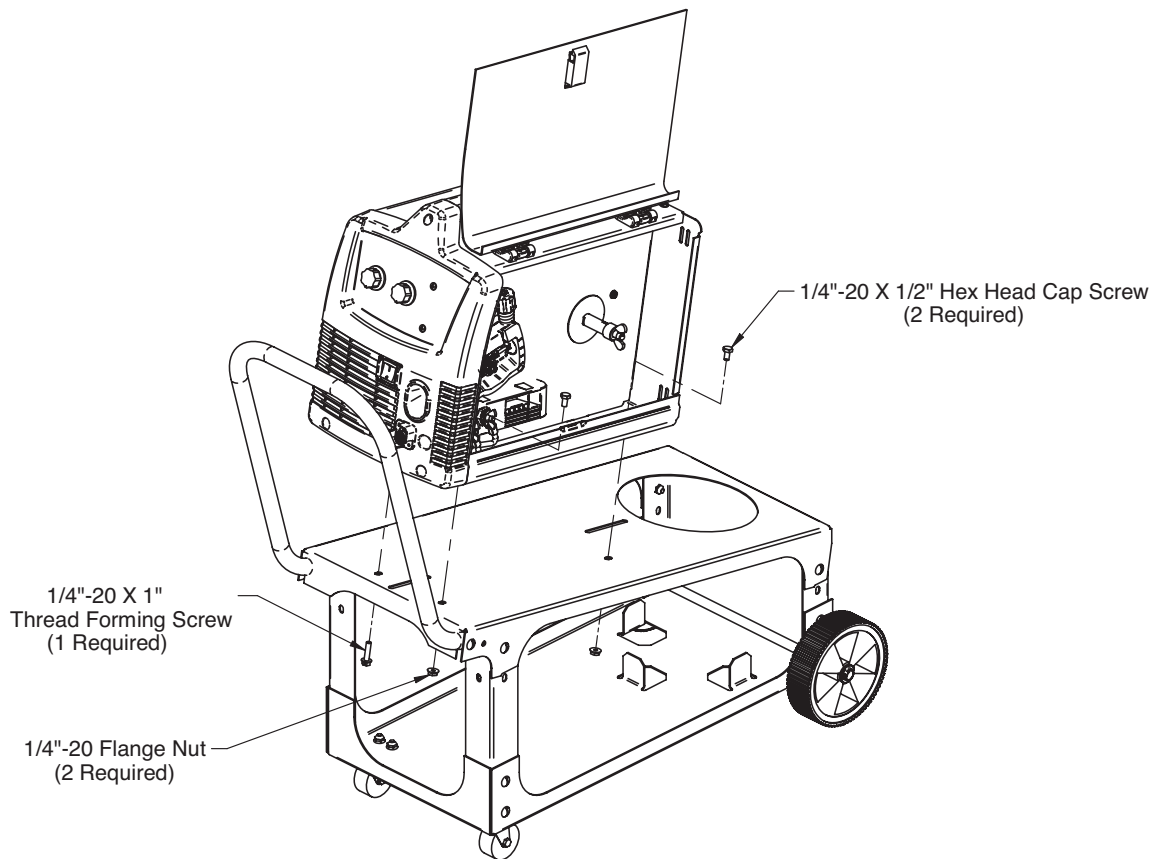


**K2275-1 - Welding Cart**

Lightweight cart stores and transports welder, 80 cubic foot shielding gas cylinder, welding cables and accessories. Includes an angled top shelf for easy access to controls, lower tray for added storage capacity, a sturdy fixed handle and convenient cable wrap hanger.



For mounting welding machines to K2275-1 carts that do not have slotted mounting holes. Drill 9/32" holes (3 places) into the cart top as shown and attach the welding machine to the cart with the proper hardware shown.



WIRE FEEDER WELDERS (125, 140, 180 MODELS)



## MAINTENANCE

### SAFETY PRECAUTIONS

#### WARNING



**ELECTRIC SHOCK can kill.**

- **Disconnect input power by removing plug from receptacle before working inside WIRE FEEDER WELDERS (125,140, 180 MODELS).**

**Use only grounded receptacle. Do not touch electrically “hot” parts inside WIRE FEEDER WELDERS (125,140, 180 MODELS).**

- **Have qualified personnel do the maintenance and trouble shooting work.**

### ROUTINE MAINTENANCE

#### POWER SOURCE COMPARTMENT

No user serviceable parts inside! Do not attempt to perform service in the power source (fixed) side of the WIRE FEEDER WELDERS (125,140, 180 MODELS). Take the unit to an authorized Lincoln Service Center if you experience problems. NO maintenance is required.

In extremely dusty locations, dirt may clog the air passages causing the welder to run hot with premature tripping of thermal protection. If so, blow dirt out of the welder with low pressure air at regular intervals to eliminate excessive dirt and dust build-up on internal parts.

#### WIRE FEED COMPARTMENT

1. When necessary, vacuum accumulated dirt from gearbox and wire feed section.
2. Occasionally inspect the incoming guide tube and clean inside diameter if necessary.
3. Motor and gearbox have lifetime lubrication and require no maintenance.

#### FAN MOTOR

Has lifetime lubrication — requires no maintenance.

#### WIRE REEL SPINDLE

Requires no maintenance. Do **not** lubricate shaft.

## GUN AND CABLE MAINTENANCE

### FOR MAGNUM™ 100L GUN

#### Gun Cable Cleaning

Clean cable liner after using approximately 300 lbs (136 kg) of solid wire or 50 lbs (23 kg) of flux-cored wire. Remove the cable from the wire feeder and lay it out straight on the floor. Remove the contact tip from the gun. Using low pressure air, gently blow out the cable liner from the gas diffuser end.

#### CAUTION

**Excessive pressure at the start may cause the dirt to form a plug.**

Flex the cable over its entire length and again blow out the cable. Repeat this procedure until no further dirt comes out.

#### Contact Tips, Nozzles, and Gun Tubes

1. Dirt can accumulate in the contact tip hole and restrict wire feeding. After each spool of wire is used, remove the contact tip and clean it by pushing a short piece of wire through the tip repeatedly. Use the wire as a reamer to remove dirt that may be adhering to the wall of the hole through the tip.
2. Replace worn contact tips as required. A variable or “hunting” arc is a typical symptom of a worn contact tip. To install a new tip, choose the correct size contact tip for the electrode being used (wire size is stenciled on the side of the contact tip) and screw it snugly into the gas diffuser.
3. Remove spatter from inside of gas nozzle and from tip after each 10 minutes of arc time or as required.
4. Be sure the gas nozzle is fully screwed onto the diffuser for gas shielded processes. For the Innershield® process, the gasless nozzle should screw onto the diffuser.
5. To remove gun tube from gun, remove gas nozzle or gasless nozzle and remove diffuser from gun tube. Remove both collars from each end of the gun handle and separate the handle halves. Loosen the locking nut holding the gun tube in place against the gun end cable connector. Unscrew gun tube from cable connector. To install gun tube, screw the locking nut on the gun tube as far as possible. Then screw the gun tube into the cable connector until it bottoms. Then unscrew (no more than one turn) the gun tube until its axis is perpendicular to the flat sides of the cable connector and pointed in the direction of the trigger. Tighten the locking nut so as to maintain the proper relationship between the gun tube and the cable connector. Replace the gun handle, trigger and diffuser. Replace the gas nozzle or gasless nozzle.

## OVERLOAD PROTECTION

### Output Overload

The WIRE FEEDER WELDERS (125,140, 180 MODELS) is equipped with a circuit breaker and a thermostat which protects the machine from damage if maximum output is exceeded. The circuit breaker button will extend out when tripped. The circuit breaker must be manually reset.

### Thermal Protection

The WIRE FEEDER WELDERS (125,140, 180 MODELS) has a rated output duty cycle as defined in the Technical Specification page. If the duty cycle is exceeded, a thermal protector will shut off the output until the machine cools to a reasonable operating temperature. This is an automatic function of the WIRE FEEDER WELDERS (125,140, 180 MODELS) and does not require user intervention. The fan continues to run during cooling.

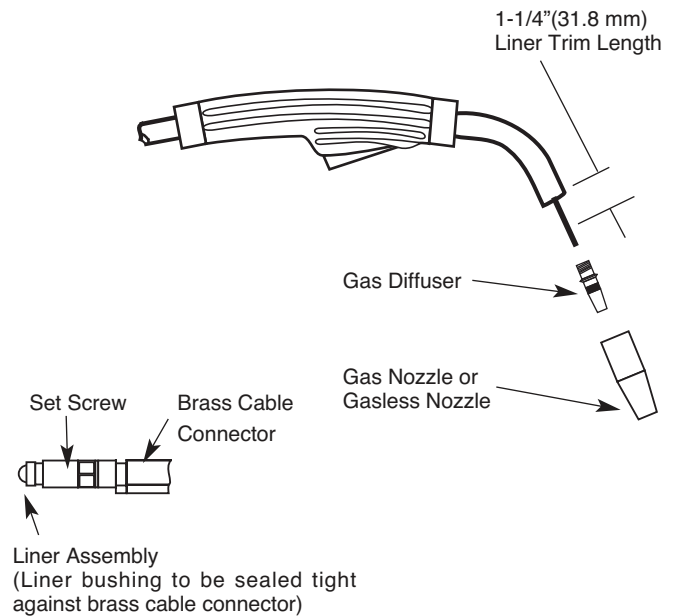
### Electronic Wire Drive Motor Protection

The WIRE FEEDER WELDERS (125,140, 180 MODELS) has built-in protection for wire drive motor overload.

## CHANGING LINER

**NOTICE:** The variation in cable lengths prevents the interchangeability of liners. Once a liner has been cut for a particular gun, it should not be installed in another gun unless it can meet the liner cutoff length requirement. Refer to Figure D.2.

1. Remove the gas nozzle from the gun by unscrewing counter-clockwise.
2. Remove the existing contact tip from the gun by unscrewing counter-clockwise.
3. Remove the gas diffuser from the gun tube by unscrewing counter-clockwise.
4. Lay the gun and cable out straight on a flat surface. Loosen the set screw located in the brass connector at the wire feeder end of the cable. Pull the liner out of the cable.
5. Insert a new untrimmed liner into the connector end of the cable. Be sure the liner bushing is stenciled appropriately for the wire size being used.
6. Fully seat the liner bushing into the connector. Tighten the set screw on the brass cable connector. At this time, the gas diffuser should not be installed onto the end of the gun tube.
7. With the gas nozzle and diffuser removed from the gun tube, be sure the cable is straight, and then trim the liner to the length shown in the Figure D.2. Remove any burrs from the end of the liner.

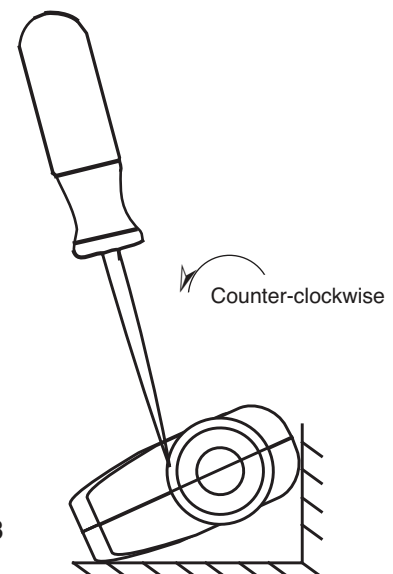


**FIGURE D.2**  
Liner trim length

8. Screw the gas diffuser onto the end of the gun tube and securely tighten.
9. Replace the contact tip and nozzle.

## GUN HANDLE PARTS

The gun handle consists of two halves that are held together with a collar on each end. To open up the handle, turn the collars approximately 60 degrees counter-clockwise until the collar reaches a stop. Then pull the collar off the gun handle. If the collars are difficult to turn, position the gun handle against a corner, place a screwdriver against the tab on the collar and give the screwdriver a sharp blow to turn the collar past an internal locking rib. See Figure D-3.



**FIGURE D.3**

## HOW TO USE TROUBLESHOOTING GUIDE

### WARNING

Service and Repair should only be performed by Lincoln Electric Factory Trained Personnel. Unauthorized repairs performed on this equipment may result in danger to the technician and machine operator and will invalidate your factory warranty. For your safety and to avoid Electrical Shock, please observe all safety notes and precautions detailed throughout this manual.

This Troubleshooting Guide is provided to help you locate and repair possible machine malfunctions. Simply follow the three-step procedure listed below.

#### **Step 1. LOCATE PROBLEM (SYMPTOM).**

Look under the column labeled “PROBLEM (SYMPTOMS)”. This column describes possible symptoms that the machine may exhibit. Find the listing that best describes the symptom that the machine is exhibiting.

#### **Step 2. POSSIBLE CAUSE.**

The second column labeled “POSSIBLE CAUSE” lists the obvious external possibilities that may contribute to the machine symptom.

#### **Step 3. RECOMMENDED COURSE OF ACTION**

This column provides a course of action for the Possible Cause, generally it states to contact your local Lincoln Authorized Field Service Facility.

If you do not understand or are unable to perform the Recommended Course of Action safely, contact your local Lincoln Authorized Field Service Facility.

### CAUTION

If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact your **Local Lincoln Authorized Field Service Facility** for technical troubleshooting assistance before you proceed.

Observe all Safety Guidelines detailed throughout this manual

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
<b>OUTPUT PROBLEMS</b>		
Major physical or electrical damage is evident.	“Do not Plug in machine or turn it on”. Contact your local Authorized Field Service Facility.	If all recommended possible areas of misadjustment have been checked and the problem persists, <b>Contact your local Lincoln Authorized Field Service Facility.</b>
No wire feed, weld output or gas flow when gun trigger is pulled. Fan does NOT operate.	<ol style="list-style-type: none"> <li>1. Make sure correct voltage is applied to the machine.</li> <li>2. Make certain that power switch is in the ON position.</li> <li>3. Make sure circuit breaker is reset.</li> </ol>	
No wire feed, weld output or gas flow when gun trigger is pulled. Fan operates normally.	<ol style="list-style-type: none"> <li>1. The thermostat may be tripped due to overheating. Let machine cool. Weld at lower duty cycle.</li> <li>2. Check for obstructions in air flow. Check Gun Trigger connections. See Installation section.</li> <li>3. Gun trigger may be faulty.</li> </ol>	

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
<b>FEEDING PROBLEMS</b>		
No wire feed when gun trigger is pulled. Fan runs, gas flows and machine has correct open circuit voltage (33V) – weld output.	<ol style="list-style-type: none"> <li>1. If the wire drive motor is running make sure that the correct drive rolls are installed in the machine.</li> <li>2. Check for clogged cable liner or contact tip.</li> <li>3. Check for proper size cable liner and contact tip.</li> </ol>	If all recommended possible areas of misadjustment have been checked and the problem persists, <b>Contact your local Lincoln Authorized Field Service Facility.</b>

### CAUTION

If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact your **Local Lincoln Authorized Field Service Facility** for technical troubleshooting assistance before you proceed.

**WIRE FEEDER WELDERS (125, 140, 180 MODELS)**



Observe all Safety Guidelines detailed throughout this manual

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
<b>GAS FLOW PROBLEMS</b>		
Low or no gas flow when gun trigger is pulled. Wire feed, weld output and fan operate normally.	<ol style="list-style-type: none"> <li>1. Check gas supply, flow regulator and gas hoses.</li> <li>2. Check gun connection to machine for obstruction or leaky seals.</li> </ol>	<p>If all recommended possible areas of misadjustment have been checked and the problem persists, <b>Contact your local Lincoln Authorized Field Service Facility.</b></p>

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
<b>WELDING PROBLEMS</b>		
Arc is unstable – Poor starting	<ol style="list-style-type: none"> <li>1. Check for correct input voltage to machine.</li> <li>2. Check for proper electrode polarity for process.</li> <li>3. Check gun tip for wear or damage and proper size – Replace.</li> <li>4. Check for proper gas and flow rate for process. (For MIG only.)</li> <li>5. Check work cable for loose or faulty connections.</li> <li>6. Check gun for damage or breaks.</li> <li>7. Check for proper drive roll orientation and alignment.</li> <li>8. Check liner for proper size.</li> </ol>	<p>If all recommended possible areas of misadjustment have been checked and the problem persists, <b>Contact your local Lincoln Authorized Field Service Facility.</b></p>

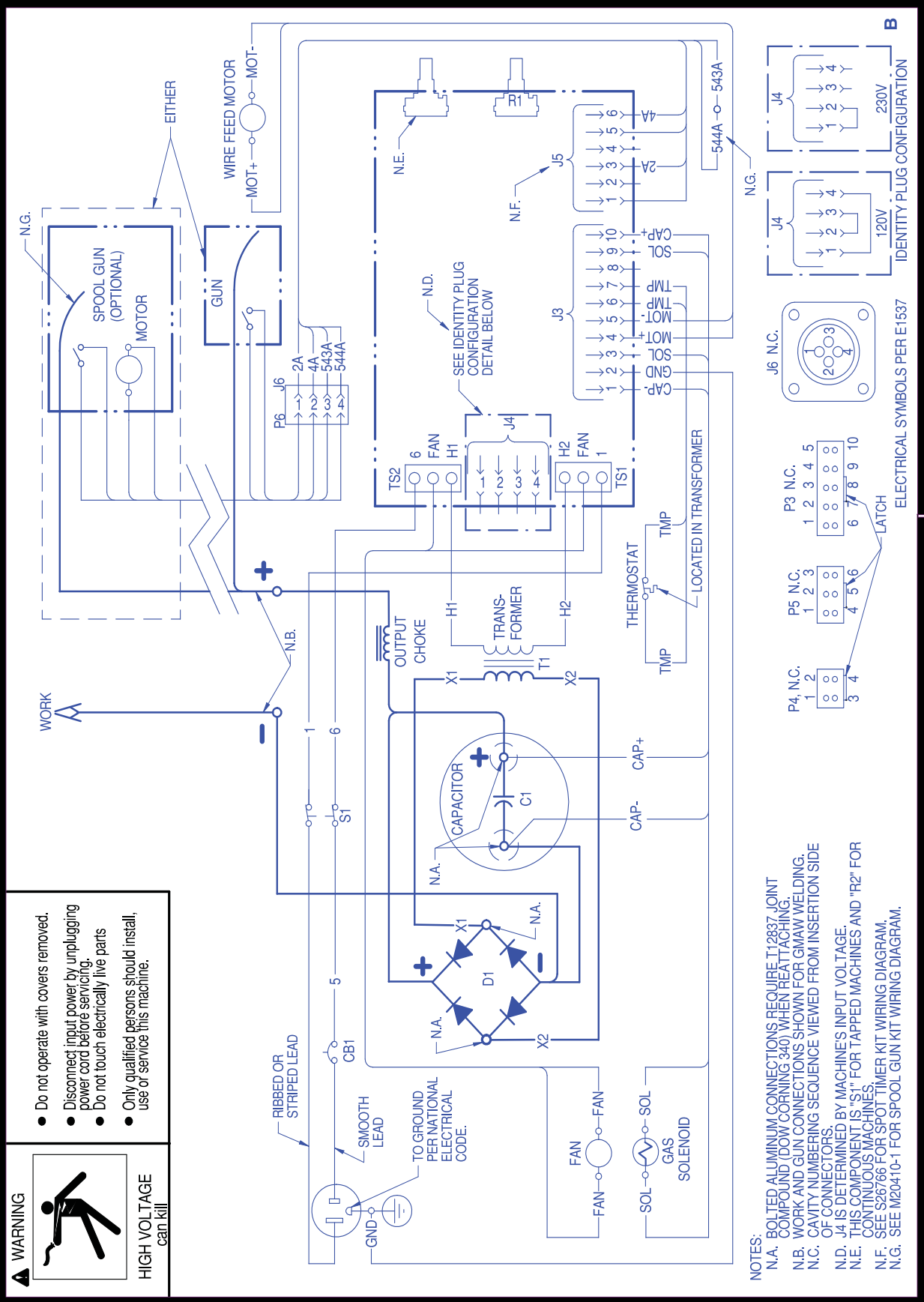
**⚠ CAUTION**

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**WIRE FEEDER WELDERS (125, 140, 180 MODELS)**



WIRING DIAGRAM



M20410

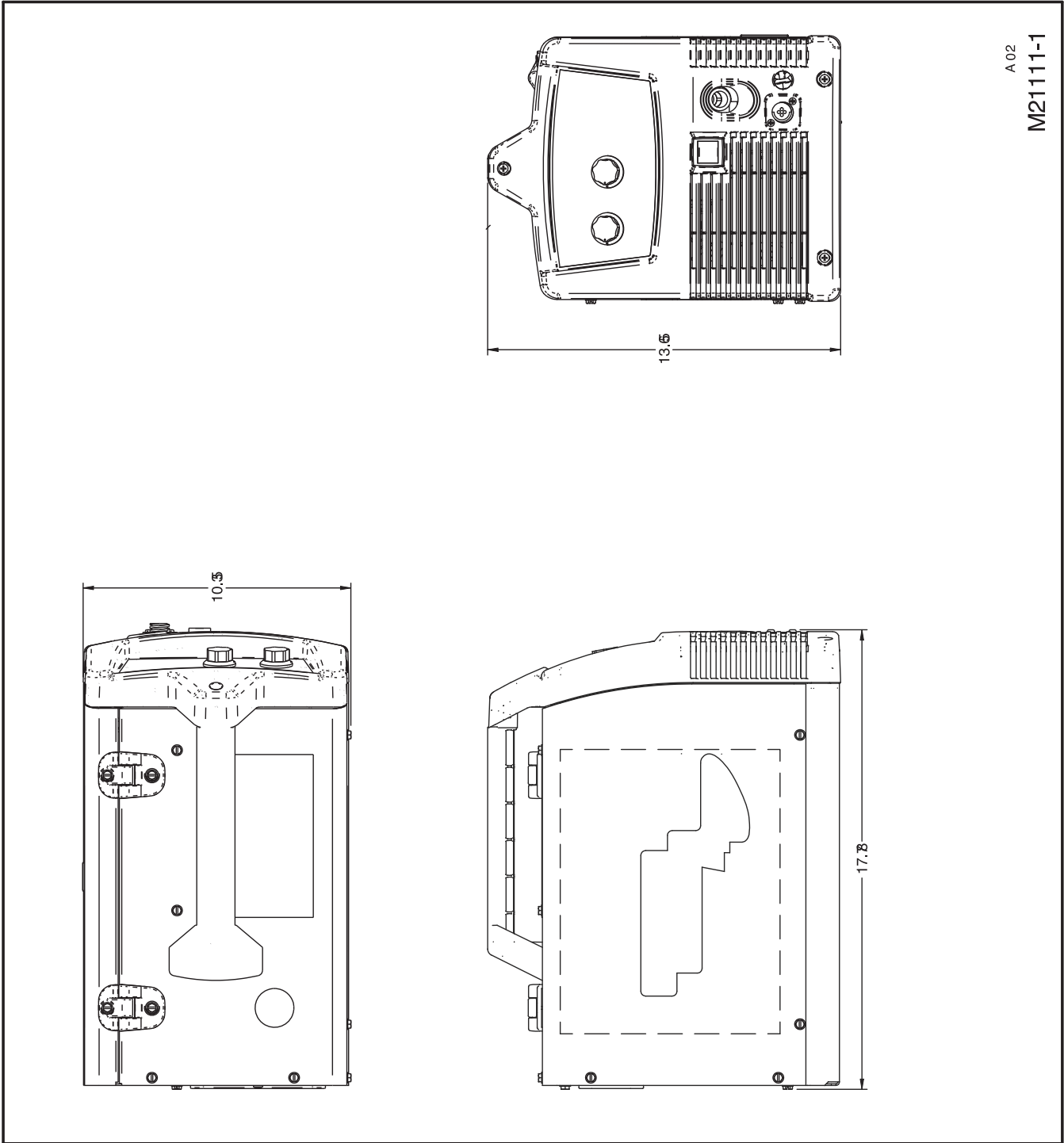
OPERATOR'S MANUAL

NOTE: This diagram is for reference only. It may not be accurate for all machines covered by this manual. The specific diagram for a particular code is pasted inside the machine on one of the enclosure panels.

WIRE FEEDER WELDERS (125, 140, 180 MODELS)







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WIRE FEEDER WELDERS (125, 140, 180 MODELS)

