

IM2060
05/2017
REV01

POWER FEED 84, POWER FEED 84 DUAL, POWER FEED 84 U.I. CONTROL BOX

OPERATOR'S MANUAL



ENGLISH



THE LINCOLN ELECTRIC COMPANY
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THE LINCOLN ELECTRIC COMPANY

EC DECLARATION OF CONFORMITY



Manufacturer and technical documentation holder: The Lincoln Electric Company
22801 St. Clair Ave.
Cleveland Ohio 44117-1199 USA

EC Company: Lincoln Electric Europe S.L.
c/o Balmes, 89 - 8^o 2^a
08008 Barcelona
SPAIN

Hereby declare that equipment: Power Feed 84
K3328, K3330

Power Feed 84 One-Pak
K3329, K3331

(Product numbers may contain suffixes and prefixes.)

Is in conformity with Council Directives and amendments: Electromagnetic Compatibility (EMC) Directive 2014/30/EU

Low Voltage Directive 2014/35/EU

Standards: EN 60974-5:2013, Arc Welding Equipment-Part 5: Wire Feeders;

EN 60974-10:2014, Arc Welding Equipment-Part 10: Electromagnetic compatibility (EMC) requirements;

CE marking affixed in '15

Signature: 
Name: Samir Farah, Manufacturer
Position: Compliance Engineering Manager
Date: 3 Feb 2017

Signature: 
Name: Dario Gatti, European Community Representative
Position: European Engineering Director Machines
Date: 8 Feb 2017

MCD486c



THANKS! For having chosen the QUALITY of the Lincoln Electric products.

- Please Examine Package and Equipment for Damage. Claims for material damaged in shipment must be notified immediately to the dealer.
- For future reference record in the table below your equipment identification information. Model Name, Code & Serial Number can be found on the machine rating plate.

Model Name:	
.....	
Code & Serial number:	
.....
Date & Where Purchased:	
.....

ENGLISH INDEX

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Technical Specifications

POWER FEED 84 CE, POWER FEED 84 DUAL CE: K3328-xx, K3329-xx, K3330-xx, K3331-xx, K3336-xx

INPUT VOLTAGE AND CURRENT				
Voltage	Input Amperes		Notes	
40VDC	9A		Wire Drive	
	1A		User Interface	
RATED OUTPUT @ 40°C				
		Duty Cycle	Input Amperes	
Wire Drive Only	Wire Drive	60%	600 Amps	
With Gouging Kit	Wire Drive	60%	500 Amps	
	Gouging Stud	30%	600 Amps	
With Contactors	Wire Drive	60%	500 Amps	
GEARING – WIRE FEED SPEED RANGE-WIRE SIZE				
GEARBOX GEARING	PINION GEAR	WFS RANGE	WIRE SIZES	
			GMAW	FCAW
22.57:1	20 tooth*	50 – 700 inch/mm (1.3 – 19.0 m/min)	.025" – 1/16" (0.9 – 1.6 mm)	.035" – 5/64" (0.9 – 2.0 mm)
	30 tooth	50 – 1200 inch/mm (1.3 – 30.4 m/min)	.025" – .045" (0.9 – 1.2 mm)	.035" – 1/16" (0.9 – 1.6 mm)
PHYSICAL DIMENSIONS				
Model	Height	Width	Depth	Weight
Power Feed 84 Wire Drive, Single	257 mm	345 mm	338 mm	16.8 kg
Power Feed 84 Wire Drive, Dual	302 mm	437 mm	404 mm	26.8 kg
Power Feed 84 Control Box	279 mm	221 mm	31 mm	2.9 kg
Standard Duty Wire Reel Stand	338 mm	279 mm	31 mm	5.0 kg
Heavy Duty Wire Reel Stand	640 mm	279 mm	371 mm	8.6 kg
TEMPERATURE RANGES				
Operation:		-40°F to 104°F (-40°C to 40°C)		
Storage:		-40°F to 185°F (-40°C to 85°C)		

Thermal tests have been performed at ambient temperature. The Duty Cycle (duty factor) @ 40°C (104°F) has been determined by simulation.

* = gearing installed in the wire drive as equipped from the factory.

SINGLE WIRE DRIVE FEEDERS								
MODEL K#	User Interface	USB	Wire Reel Stand	Gun Adapter	Control Cable	Inlet Bushing	Gouging Kit	Contacto
K3328-1	BLANK PANEL	N	N	STD #2-#4	N	K3929-1	N	N
K3328-2	FULL DISPLAY WITH MEMORIES	N	N	STD #2-#4	N	K3929-1	N	N
K3328-3	FULL DISPLAY WITH MEMORIES	Y	N	STD #2-#4	N	K3929-1	N	N
K3328-6	FULL DISPLAY WITH MEMORIES	N	STD DUTY	STD #2-#4	K1543-8'	N	N	N
K3328-7	FULL DISPLAY WITH MEMORIES	Y	STD DUTY	STD #2-#4	K1543-8'	N	N	N
K3328-11	FULL DISPLAY WITH MEMORIES	N	N	STD #2-#4	N	K3929-1	Y	N
K3328-12	FULL DISPLAY WITH MEMORIES	Y	N	STD #2-#4	N	K3929-1	Y	N
K3328-13	FULL DISPLAY WITH MEMORIES	Y	HVY DTY	STD #2-#4	K1543-8'	N	N	N

DUAL WIRE DRIVE FEEDERS							
MODEL K#	User Interface	USB	Wire Reel Stand	Gun Adapter	Control Cable	Inlet Bushing	Contacto
K3330-1	BLANK PANEL	N	N	STD #2-#4	N	K3929-1	N
K3330-3	FULL DISPLAY WITH MEMORIES	Y	N	STD #2-#4	N	K3929-1	N
K3330-5	FULL DISPLAY WITH MEMORIES	Y	HVY DTY	STD #2-#4	K1543-8'	N	Y
K3330-6	FULL DISPLAY WITH MEMORIES	N	STD DUTY	STD #2-#4	K1543-8'	N	N
K3330-10	FULL DISPLAY WITH MEMORIES	Y	HVY DTY	STD #2-#4	K1543-8'	N	N

CONTROL BOXES		
MODEL K#	User Interface	USB
K3336-2	FULL DISPLAY WITH MEMORIES	Y
K3336-2	BLANK PANEL	N

READY PACK WIRE DRIVE FEEDERS									
MODEL K#	User Interface	USB	Wire Reel Stand	Gun Adapter	Control Cable	Drive Roll	Inlet Bushing	Gouging Kit	Contacto
SINGLE K3329-1-P	FULL DISPLAY WITH MEMORIES	Y	STD DUTY WITH SPOOL COVER	K3349-1 AND STD #2-#4	K1543-8'	KP1505-045S KP1505-1/16S	K3929-1	N	N
DUAL K3331-1-P	FULL DISPLAY WITH MEMORIES	Y	STD DUTY WITH SPOOL COVER	K3349-1 AND STD #2-#4	K1543-8'	KP1505-045S KP1505-1/16S	K3929-1	N	N

Electromagnetic Compatibility (EMC)

01/11

This machine has been designed in accordance with all relevant directives and standards. However, it may still generate electromagnetic disturbances that can affect other systems like telecommunications (telephone, radio, and television) or other safety systems. These disturbances can cause safety problems in the affected systems. Read and understand this section to eliminate or reduce the amount of electromagnetic disturbance generated by this machine.



This machine has been designed to operate in an industrial area. To operate in a domestic area it is necessary to observe particular precautions to eliminate possible electromagnetic disturbances. The operator must install and operate this equipment as described in this manual. If any electromagnetic disturbances are detected the operator must put in place corrective actions to eliminate these disturbances with, if necessary, assistance from Lincoln Electric.

Before installing the machine, the operator must check the work area for any devices that may malfunction because of electromagnetic disturbances. Consider the following.

- Input and output cables, control cables, and telephone cables that are in or adjacent to the work area and the machine.
- Radio and/or television transmitters and receivers. Computers or computer controlled equipment.
- Safety and control equipment for industrial processes. Equipment for calibration and measurement.
- Personal medical devices like pacemakers and hearing aids.
- Check the electromagnetic immunity for equipment operating in or near the work area. The operator must be sure that all equipment in the area is compatible. This may require additional protection measures.
- The dimensions of the work area to consider will depend on the construction of the area and other activities that are taking place.

Consider the following guidelines to reduce electromagnetic emissions from the machine.

- Connect the machine to the input supply according to this manual. If disturbances occur it may be necessary to take additional precautions such as filtering the input supply.
- The output cables should be kept as short as possible and should be positioned together. If possible connect the work piece to ground in order to reduce the electromagnetic emissions. The operator must check that connecting the work piece to ground does not cause problems or unsafe operating conditions for personnel and equipment.
- Shielding of cables in the work area can reduce electromagnetic emissions. This may be necessary for special applications.

WARNING

EMC classification of this product is class A in accordance with electromagnetic compatibility standard EN 60974-10 and therefore the product is designed to be used in an industrial environment only.

WARNING

The Class A equipment is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There can be potential difficulties in ensuring electromagnetic compatibility in those locations, due to conducted as well as radio-frequency disturbances.








WARNING

This equipment must be used by qualified personnel. Be sure that all installation, operation, maintenance and repair procedures are performed only by qualified person. Read and understand this manual before operating this equipment. Failure to follow the instructions in this manual could cause serious personal injury, loss of life, or damage to this equipment. Read and understand the following explanations of the warning symbols. Lincoln Electric is not responsible for damages caused by improper installation, improper care or abnormal operation.

	<p>WARNING: This symbol indicates that instructions must be followed to avoid serious personal injury, loss of life, or damage to this equipment. Protect yourself and others from possible serious injury or death.</p>
	<p>READ AND UNDERSTAND INSTRUCTIONS: Read and understand this manual before operating this equipment. Arc welding can be hazardous. Failure to follow the instructions in this manual could cause serious personal injury, loss of life, or damage to this equipment.</p>
	<p>ELECTRIC SHOCK CAN KILL: Welding equipment generates high voltages. Do not touch the electrode, work clamp, or connected work pieces when this equipment is on. Insulate yourself from the electrode, work clamp, and connected work pieces.</p>
	<p>ELECTRICALLY POWERED EQUIPMENT: Turn off input power using the disconnect switch at the fuse box before working on this equipment. Ground this equipment in accordance with local electrical regulations.</p>
	<p>ELECTRICALLY POWERED EQUIPMENT: Regularly inspect the input, electrode, and work clamp cables. If any insulation damage exists replace the cable immediately. Do not place the electrode holder directly on the welding table or any other surface in contact with the work clamp to avoid the risk of accidental arc ignition.</p>
	<p>ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS: Electric current flowing through any conductor creates electric and magnetic fields (EMF). EMF fields may interfere with some pacemakers, and welders having a pacemaker shall consult their physician before operating this equipment.</p>
	<p>CE COMPLIANCE: This equipment complies with the European Community Directives.</p>
	<p>ARTIFICIAL OPTICAL RADIATION: According with the requirements in 2006/25/EC Directive and EN 12198 Standard, the equipment is a category 2. It makes mandatory the adoption of Personal Protective Equipments (PPE) having filter with a protection degree up to a maximum of 15, as required by EN169 Standard.</p>
	<p>FUMES AND GASES CAN BE DANGEROUS: Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. To avoid these dangers the operator must use enough ventilation or exhaust to keep fumes and gases away from the breathing zone.</p>
	<p>ARC RAYS CAN BURN: 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. Use suitable clothing made from durable flame-resistant material to protect you skin and that of your helpers. Protect other nearby personnel with suitable, non-flammable screening and warn them not to watch the arc nor expose themselves to the arc.</p>
	<p>WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION: Remove fire hazards from the welding area and have a fire extinguisher readily available. Welding sparks and hot materials from the welding process can easily go through small cracks and openings to adjacent areas. Do not weld on any tanks, drums, containers, or material until the proper steps have been taken to insure that no flammable or toxic vapors will be present. Never operate this equipment when flammable gases, vapors or liquid combustibles are present.</p>
	<p>WELDED MATERIALS CAN BURN: Welding generates a large amount of heat. Hot surfaces and materials in work area can cause serious burns. Use gloves and pliers when touching or moving materials in the work area.</p>
	<p>SAFETY MARK: This equipment is suitable for supplying power for welding operations carried out in an environment with increased hazard of electric shock.</p>

	<p>CYLINDER MAY EXPLODE IF DAMAGED: 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. Always keep cylinders in an upright position securely chained to a fixed support. Do not move or transport gas cylinders with the protection cap removed. Do not allow the electrode, electrode holder, work clamp or any other electrically live part to touch a gas cylinder. Gas cylinders must be located away from areas where they may be subjected to physical damage or the welding process including sparks and heat sources.</p>
	<p>MOVING PARTS ARE DANGEROUS: There are moving mechanical parts in this machine, which can cause serious injury. Keep your hands, body and clothing away from those parts during machine starting, operating and servicing.</p>
	<p>EQUIPMENT WEIGHT OVER 30kg: Move this equipment with care and with the help of another person. Lifting may be dangerous for your physical health.</p>

The manufacturer reserves the right to make changes and/or improvements in design without upgrade at the same time the operator's manual.

Introduction

Read this entire section before installation or operation of the machine.

General Physical Description

The Power Feed 84 is an industrial, modular wire feeder. At the heart of the feeder is the proven wire drive and motor, capable of feeding large diameter electrodes and pulling through long conduits.

The modular platform allows the Power Feed 84 to be used in many applications. The user interface may be separated from the wire drive for "boom" applications. The feed plate may be located on either the left or right hand side of the wire drive housing. Two single Power Feed 84 wire drives may be connected to one user interface. A dual wire drive is offered for a compact set-up. The same user interface is used for both single and dual wire drive systems.

General Functional Description

The Power Feed 84 is ideal for applications requiring display of preset voltage at the wire feeder. In addition,

the feeder has digital display of the wire feed speed and for amperage.

Included with the wire drive is a pinion gear for high speed operation.

The wire drive easily rotates to any angle.

A new series of gun adapters has been created for better reliability and lower voltage drop.

Installation and Operator Instructions

Location

For best wire feeding performance, place the Power Feed 84 on a stable and dry surface.

This equipment is for industrial use only and it is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There can be potential difficulties in residential locations due to conducted as well as radiated radio-frequency disturbances. The EMC or RF classification of this equipment is Class A.

Do not submerge the Power Feed 84.

The Power Feed 84 is rated IP2x and is suitable for indoor use.

When suspending a wire feeder, insulate the hanging device from the wire feeder enclosure.

For bench models, do not angle spindle for the wire spool or coil more than 15 degrees downward. (See Figure #1).

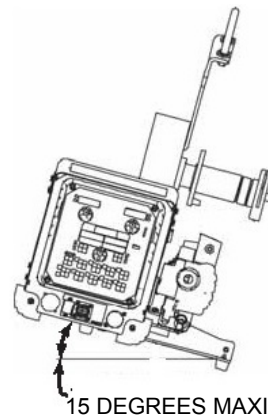


Figure #1

Bench Configurations

(See Figure #2)

“Bench” configuration means the user interface is mounted directly to the wire drive housing. Valid Bench configurations are:

- Single Wire Drive
- Dual Wire Drive
- Two Single Wire Drives

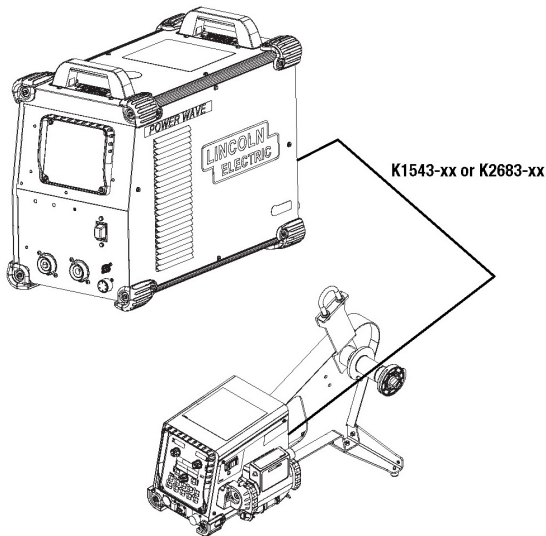


Figure #2

Boom Configurations

(See Figure #3)

“Boom” configuration means the user interface is located in a separate control box. Valid Boom configurations are:

- 1 Control box + 1 Single Wire Drive
- 1 Control box + 1 Dual Wire Drive
- 1 Control box + 2 Single Wire Drives

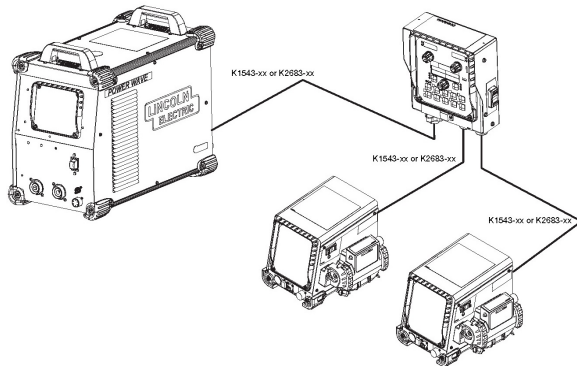


Figure #3

The User Interface may be remotely located from the wire drive up to 200 feet.

Boom Mounting

(See Figure #4)

When the wire drive is to be bolted to a boom or other flat surface, first remove the (4) rubber mounting feet. (3) screws secure each foot.

Mounting bolts securing the wire drive should not protrude more than 1” into the wire feeder.

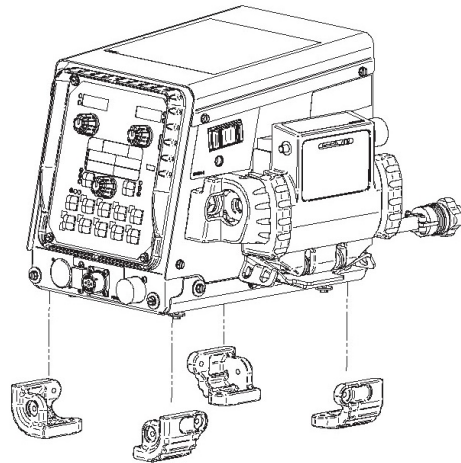


Figure #4

Single/Dual User Interface Conversion

(See Figure #5)

The Power Feed 84 uses the same user interface for both single and dual models. A DIP switch on the back side of the user interface board sets the board configuration.

1. Turn power OFF at the welding power source.
2. Remove the (4) screws securing the user interface.
3. Set the DIP switch on the back side of the user interface per the table.

CONFIGURATION	DIP SWITCH SETTING
Single	On
Dual	Off

4. Reassemble the user interface.

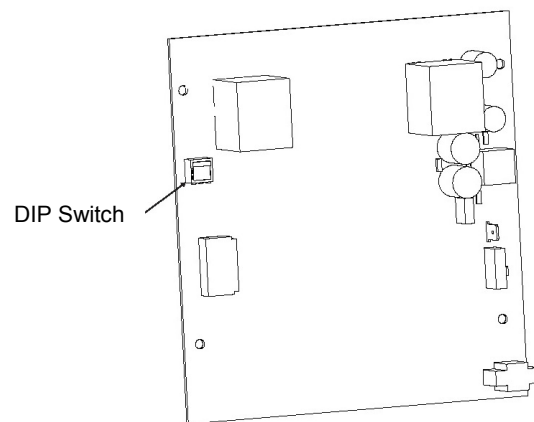


Figure #5

Bench to Boom Conversion

(See Figure #6)

Converting from a “Bench” feeder to a “Boom” feeder means moving the user interface from the wire drive to a control box.

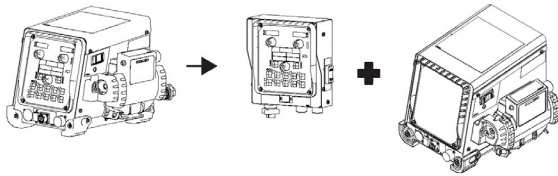


Figure #6

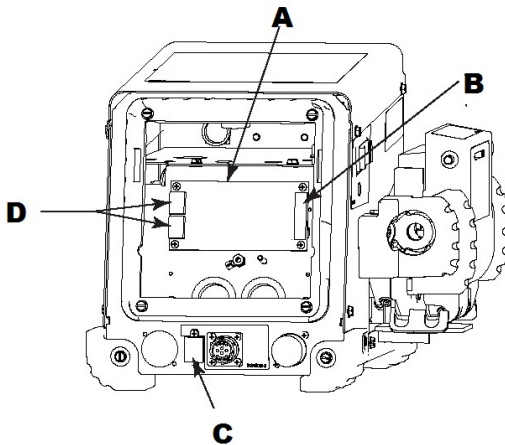
Requires: K3336-3 User Interface.

1. Turn power OFF at the welding power source.

Wire Drive

(see Figure #7)

2. Remove the (4) screws securing the user interface to the wire drive. Disconnect the harness from the 4 pin connector on the back of the user interface.
3. If the wire drive has a USB interface installed:
 - a. Disconnect 10 pin connector from the USB board.
 - b. Remove the (2) screws securing the USB port from the case front. Carefully remove the connector and harness from the wire drive.
 - c. Remove the USB cover panel from the control box and install on the wire drive.
 - d. Disconnect both 5 pin connectors from the USB board. Remove both jumper harnesses from the wire drive.
 - e. Remove the (4) screws securing the USB board and lift out the USB board.
4. Remove the blank user interface panel from the control box and install on the wire drive



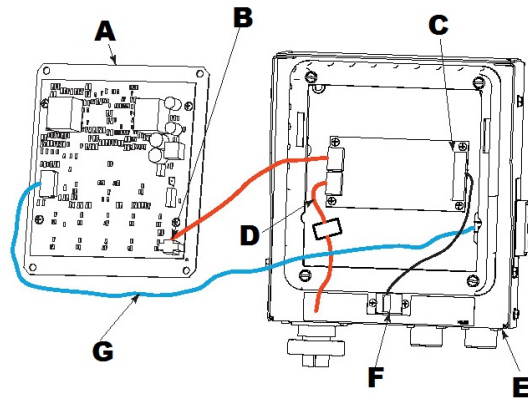
- A. USB Board
- B. 10 pin connector
- C. USB Port
- D. 5 pin connector

Figure #7

Control Box

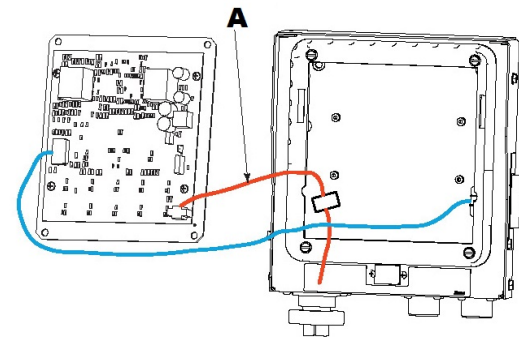
(see Figure #8A (with USB) and #8B (without USB)).

5. If the control box will have USB installed:



- A. User Interface
- B. 4 pin connector User Interface
- C. 10 pin connector right hand side
- D. Jumper Harness
- E. Control Box
- F. USB port
- G. Cold Feed/Gas purge Harness

Figure #8A: with USB



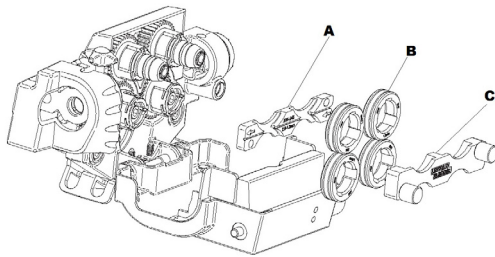
- A. Connect the harness directly to the board.

Figure #8B: without USB

- a. Install the USB board into the control box, oriented with the 10 pin connector on the right-hand side.
 - b. Assemble the USB port to the case front. Connect the harness to the USB board.
 - c. Connect one of the USB jumper harnesses to the control box harness. Connect the other to the 4 pin connector on the back of the User Interface.
6. Connect the Cold Feed/Gas Purge harness to the back side of the user interface.
 7. Connect the User Interface to the harness as shown.
 8. Secure the User Interface to the Control box with (4) screws.

Installing Drive Rolls

(See Figure #9)



- A. Inner Wire Drive
- B. Drive Rolls
- C. Outer Wire Drive

Figure #9

1. Turn power **OFF** at the welding power source.
2. Open the wire drive door by pulling on the top.
3. Remove the outer wire guide.
4. Remove drive rolls by pulling straight out. It may be necessary to wiggle the drive roll to free it from the snap ring.
5. Remove the inner wire guide.
6. Install the new inner wire guide, with the arrow pointing in the direction of wire travel.
7. Install the drive rolls and outer wire guide.
8. Close the wire drive door and adjust the pressure setting accordingly.

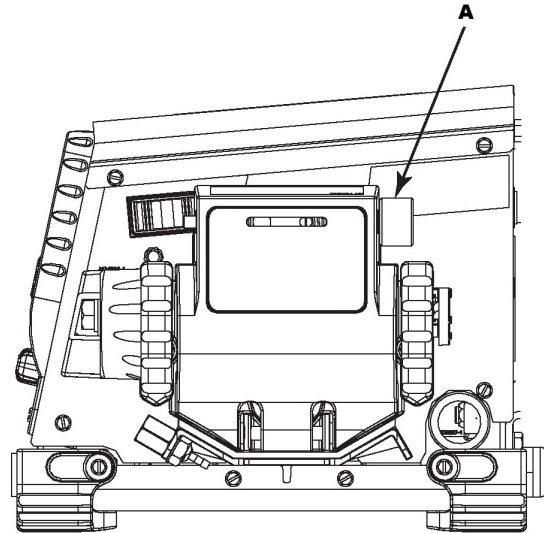
Wire Drive Pressure Setting

(See Figure #10)

Most wires operate well with a pressure setting of "2". The best drive roll pressure varies with wire type, wire surface, lubrication and hardness. Too much pressure may crush the wire or cause "birdnesting", but too little pressure could cause slippage.

Set the drive roll pressure by:

1. Press the end of the gun against a solid object that is electrically isolated from the welder output and press the gun trigger for several seconds.
2. If the wire "birdnests" or jams, the drive roll pressure is too high. Reduce the pressure by one turn of the knob, run new wire through the gun, and repeat step 1.
3. If the only result is slippage, disconnect the gun and pull the gun cable forward about 6" (150mm). There should be a slight waviness in the exposed wire. If there is no waviness, increase the pressure setting one turn, reconnect the gun and repeat the above step electrode lead to the gun adapter.

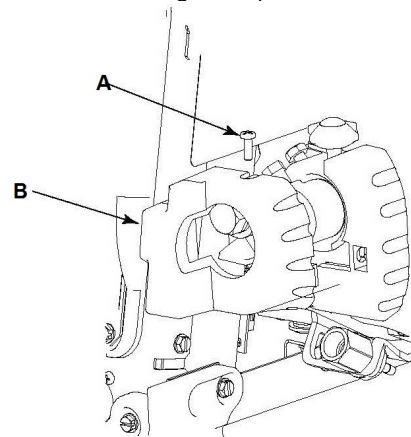


- A. Pressure adjust knob

Figure #10

Lincoln, Standard #2-#4, Standard #5, Miller Gun Adapter Installation

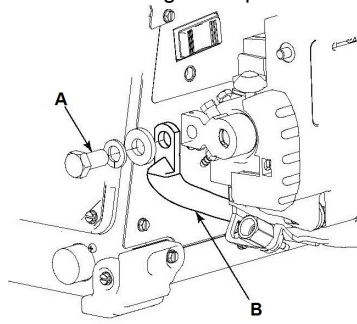
1. Turn power **OFF** at the welding power source.
2. Using a Phillips screw driver, remove the screw, lock washer and washer securing the gun adapter cover. Remove the gun adapter cover.



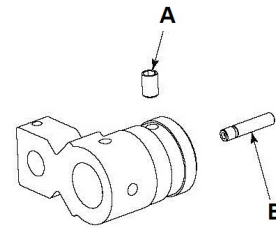
- A. Screw
- B. Gun Adapter Cover

Figure #11

- With a 3/4" wrench, remove the bolt holding the electrode lead to the gun adapter.



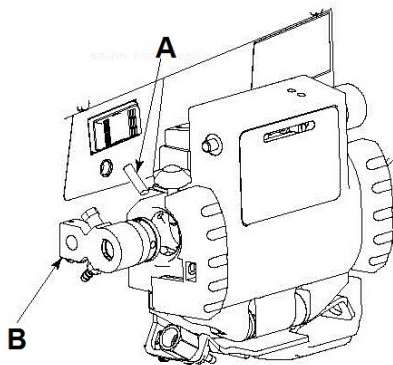
A. Bolt
B. Electrode Lead
Figure #12



A. Set Screw
B. Guide Tube
Figure #15

Wire size	Number of grooves in guide tube
0.6 – 1.2mm	1
1.2 – 1.6 mm	2
1.6 – 2.0 mm	3
2.0 – 2.8 mm	4

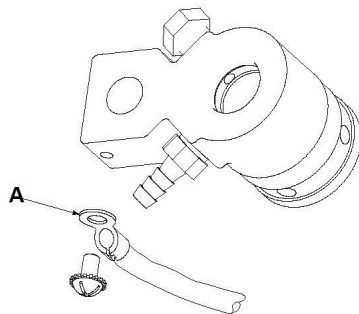
- Use a 1/8" hex key to loosen the set screw securing the gun adapter.



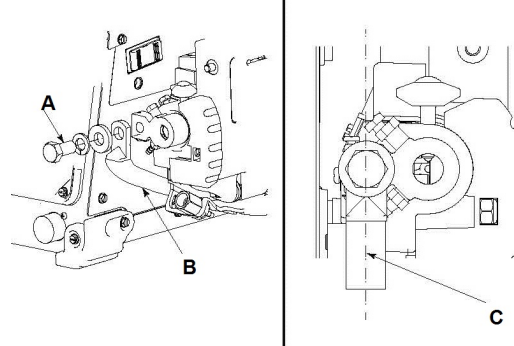
A. Set Screw
B. Gun Adapter
Figure #13

- Assemble the sense lead to the new gun adapter. Orient the lead towards the rear of the gun adapter.
- If required, assemble the gas hose to the gun adapter or the fitting on the feed plate and secure with a hose clamp.
- Assemble the gun adapter to the wire drive. Tighten the set screw once the gun adapter is at a 90° angle.
- Bolt the electrode lead to the gun adapter, making sure to route the lead straight down.

- Remove the sense lead with a Phillips screw driver.



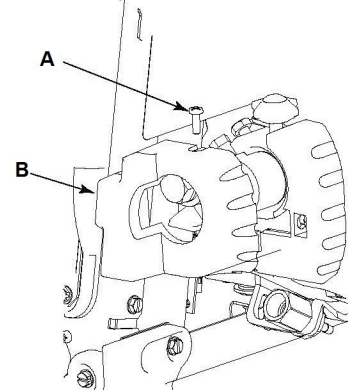
A. Sense Lead
Figure #14



A. Bolt
B. Electrode Lead
C. Keep Terminal and Lead Vertical
Figure#16

- If a gas hose is attached to the gun adapter, use pliers to remove the hose clamp and remove the gas hose.
- If the gun adapter requires guide tubes, install the correct size guide tube and secure with the set screw.

- Assemble the gun adapter cover and secure with the screw, lock washer and washer.

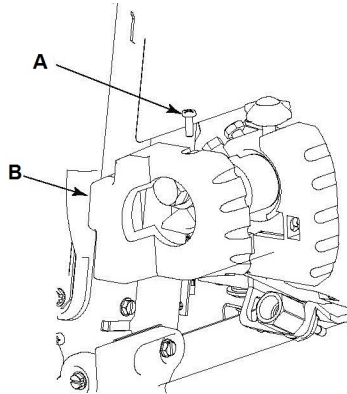


A. Screw
B. Gun Adapter Cover
Figure #17

Oxo and Fast Mate Gun Adapter Installation

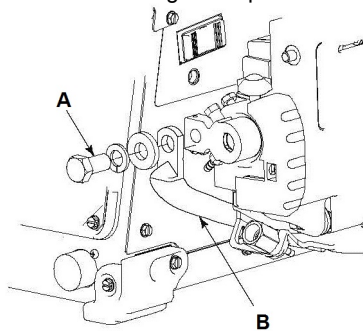
Using the Oxo or FastMate gun adapters requires a K3344-1 Standard #4 gun adapter to be installed in the wire drive.

1. Turn power OFF at the welding power source.
2. Using a Phillips screw driver, loosen the screw securing the gun adapter cover. Remove the gun adapter cover.



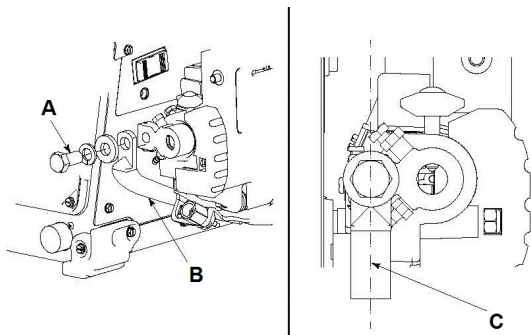
A. Screw
B. Gun Adapter Cover
Figure #17

3. With a 3/4" wrench, remove the bolt holding the electrode lead to the gun adapter.



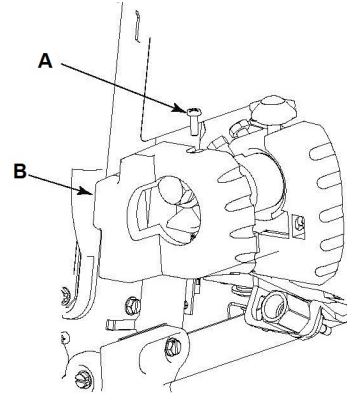
A. Bolt
B. Electrode Lead
Figure #18

4. Using pliers, remove the hose clamp and hose from the gun adapter.
5. Bolt the electrode lead to the gun adapter, making sure to route the lead straight down.



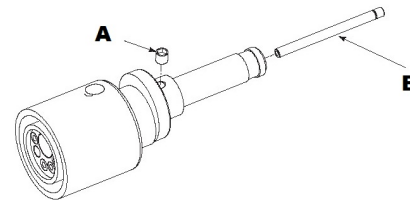
A. Bolt
B. Electrode Lead
C. Keep Terminal and Lead Vertical
Figure #19

6. Assemble the gun adapter cover and secure with the screw.



A. Screw
B. Gun Adapter Cover
Figure #20

7. Assemble the gas hose to the Oxo or FastMate gun adapter.
8. Select the appropriate guide tube and secure with the set screw.



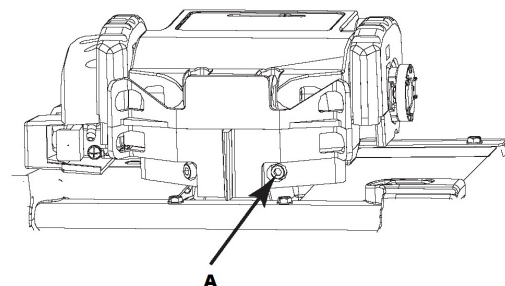
A. Set screw
B. Guide tube
Figure #22

Wire size	Number of grooves in guide tube
0.6 – 1.2mm	1
1.2 – 1.6 mm	2
1.6 – 2.0 mm	3
2.0 – 2.8 mm	4

9. Slide the Oxo or FastMate gun adapter into the wire drive and secure with the thumb screw.
10. For FastMate gun adapters, connect the trigger pigtail to the connector on the front of the feeder.

Rotating the Wire Drive

1. Turn power OFF at the welding power source.
2. Locate the socket head cap screw at the bottom of the wire drive. Loosen, but do not remove the screw.

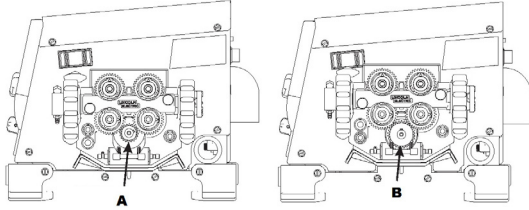


A. Socket head cap screw
Figure #23

- Rotate the wire drive to the desired position and tighten the screw.

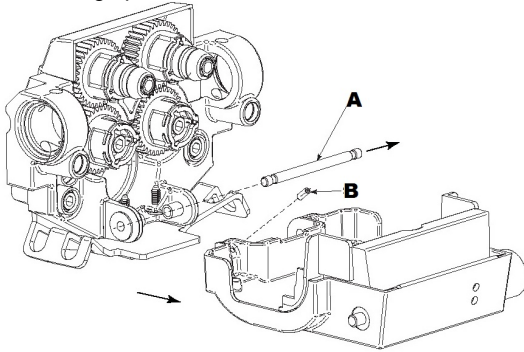
Pinion Gear Ratio

As shipped from the factory, a 20 tooth pinion gear is installed. If desired, the 30 tooth pinion gear may be installed for more speed but less torque.



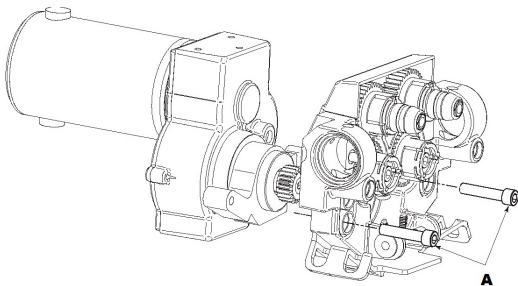
- A. 20 tooth pinion gear (standard speed)
 - B. 30 tooth pinion gear (high speed)
- Figure #24

- Turn power OFF at the welding power source.
- Open the wire drive door and loosen the set screw holding the hinge pin using a 5/64" hex key. Slide the hinge pin towards the rear and remove the door.



- A. Hinge pin
 - B. Set screw
- Figure #25

- Remove the two socket head cap screws securing the feed plate and remove the feed plate from clamp.



- A. (2) socket head cap screws
- Figure #26

- Remove the screw holding the pinion gear using a Phillips screw driver. Remove the pinion gear.
- Install the new pinion gear.
- Position the feed plate and tighten the socket head cap screws.
- Re-assemble the hinge pin and door. Secure the hinge pin with the set screw.
- Turn power ON.

- Enter the set-up menu and select P.18. Adjust to match the pinion gear installed.
- Turn power OFF, then back ON for the settings to take effect.

Shielding Gas Connection

⚠ WARNING

Maximum inlet pressure is 6.9 bar
The inlet fitting is 5/8-18 CGA type connection
Use KIT Quick connector R-2013-027-1R & D-1319-010-1R

Install the shielding gas supply as follows:

- Secure the cylinder to prevent it from falling.
- Remove the cylinder cap. Inspect the cylinder valves and regulator for damaged threads, dirt, dust, oil or grease. Remove dust and dirt with a clean cloth. **DO NOT ATTACH THE REGULATOR IF OIL, GREASE OR DAMAGE IS PRESENT!** Inform your gas supplier of this condition. Oil or grease in the presence of high pressure oxygen is explosive.
- Stand to one side away from the outlet and open the cylinder valve for an instant. This blows away any dust or dirt which may have accumulated in the valve outlet.
- Attach the flow regulator to the cylinder valve and tighten the union nut(s) securely with a wrench. Note: if connecting to 100% CO₂ cylinder, insert regulator adapter between regulator and cylinder valve. If adapter is equipped with a plastic washer, be sure it is seated for connection to the CO₂ cylinder.
- Attach one end of the inlet hose to the outlet fitting of the flow regulator. Attach the other end to the welding system shielding gas inlet. Tighten the union nuts with a wrench.
- Before opening the cylinder valve, turn the regulator adjusting knob counterclockwise until the adjusting spring pressure is released.
- Standing to one side, open the cylinder valve slowly a fraction of a turn. When the cylinder pressure gage stops moving, open the valve fully.
- The flow regulator is adjustable. Adjust it to the flow rate recommended for the procedure and process being used before making a weld.

Water-Cooled Gun Connections

The K590-6 water connection kit installs underneath the wire drive.

- Turn power OFF at the welding power source.
- Install the quick disconnect fittings to the plastic bracket, by holding the rear nut stationary and spinning the fitting.
- Cut the tubing to the desired length, and then install the tubing and hose clamps to the fittings.

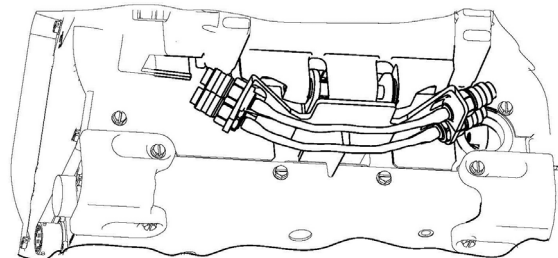


Figure #26

Loading Spools of Wire

22 – 27 kg coils require K3343-1 Heavy Duty Wire Reel Stand

1. Turn power OFF at the welding power source.
2. Squeeze the release bar on the retaining collar and remove it from the spindle.

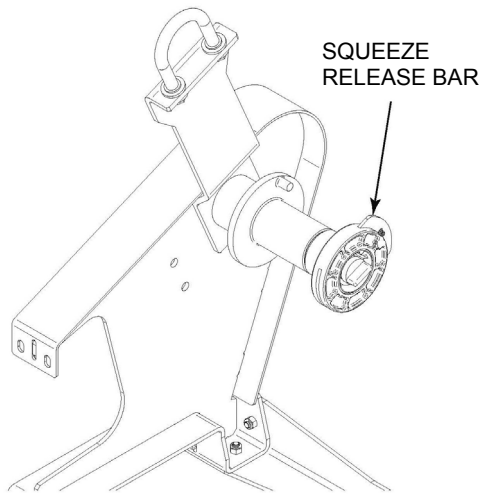
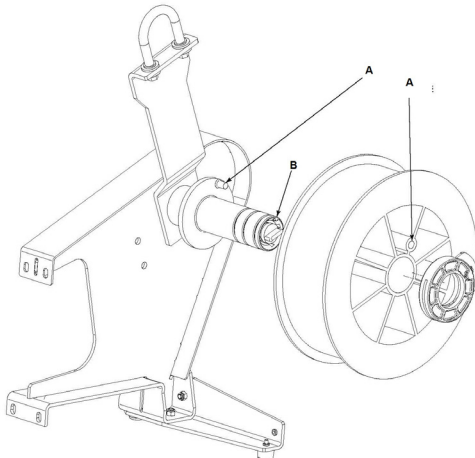


Figure #27

3. Place the spool on the spindle, aligning the spindle brake pin with one of the holes in the back side of the spool. An indicator mark on the end of the spindle shows the orientation of the brake holding pin. Be certain the wire feeds off of the spool in the proper direction.
4. Re-install the retaining collar, with the metal bar engaging one of the grooves of the spindle. The release bar will spring out when engaged.

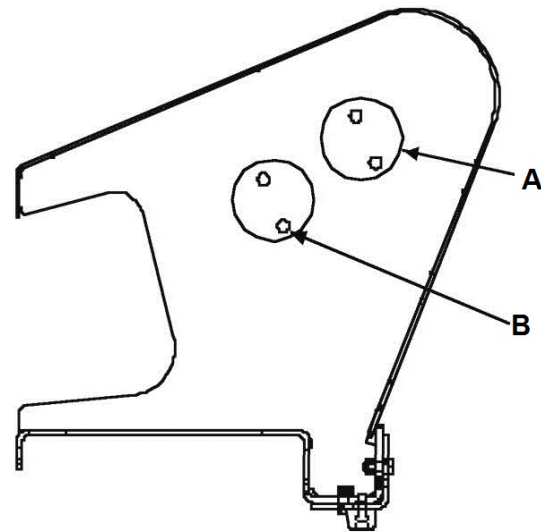


- A. Align Brake Pin with Hole
B. Indicator Mark
Figure#28

Wire Reel Stands

K3342-1 Standard Duty Wire Reel Stand is for use with spools 10 to 44 lb (4.5 to 20 kg).

When using the K3343-1 Heavy Duty Wire Reel Stand, place the spindle in the location as shown.



- A. Spindle and Lift Bail location for 50-60lb coils
B. Spindle and Lift Bail location for 15-44lb coils
Figure #29

Electrical Installation

Weld Cables, Coaxial

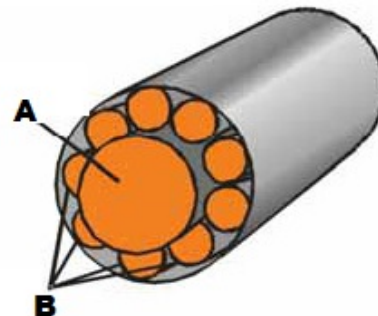
(See figure #30)

Coaxial welding cables are specially designed welding cables for STT™ and pulse welding. Coaxial weld cables feature low inductance, allowing fast changes in the weld current. Regular cables have a higher inductance which may distort the STT™ waveshape. Inductance becomes more severe as the weld cables become longer.

Coaxial cables work best for high performance waveforms and when:

- long cables are present
- the cables are housed in a metal tray

A coaxial weld cable is constructed with multiple small leads wrapped around one large lead. The large inner lead connects to the electrode stud on the power source and the electrode connection on the wire feeder. The small leads combine together to form the work lead, one end attached to the power source and the other end to the work piece.



- A. Electrode
B. Work
Figure #30

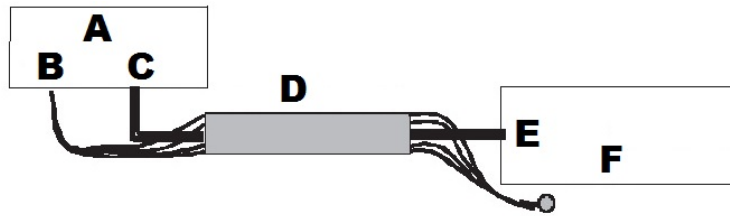
To install: (See figure #31)

1. Turn the input power off at the welding power source.
2. Connect one end of the center lead to the power source electrode connection, and the other end to the wire feeder electrode connection.
3. Connect the outer lead bundle to the power source work connection, and the other end to the work piece. Minimize the length of any work lead extension for best results.
4. Insulate all connections

Table 1

RECOMMENDED CABLE SIZES (RUBBER COVERED COPPER - RATED 75°C)**					
AMPERES	DUTY CYCLE	COAXIAL CABLE LENGTH			
		0m to 7.6m	7.6m to 15.2m	15.2m to 22.9m	22.9m to 30.5m
250	100%	1	1	1	1
300	60%	1	1	1	1/0
350	60%	1/0	1/0	--	--

** Tabled values are for operation at ambient temperatures of 104°F(40°C) and below. Applications above 104°F(40°C) may require cables larger than recommended, or cables rated higher than 167°F(75°C).



- A. Power source
 - B. Work
 - C. Electrode
 - D. Coaxial weld cable
 - E. Electrode
 - F. Wire feeder
 - G. work
- Figure #31

Weld Cables, Standard

Table 2 has copper cable sizes recommended for different currents and duty cycles. Lengths stipulated are the distance from the welder to work and back to the welder again. Cable sizes are increased for greater lengths primarily for the purpose of minimizing cable drop

Table 2

RECOMMENDED CABLE SIZES (RUBBER COVERED COPPER - RATED 75°C)**						
AMPERES	PERCENT DUTY CYCLE	CABLE SIZES FOR COMBINED LENGTHS OF ELECTRODE AND WORK CABLES				
		0 to 15m	15 to 30m	30 to 46m	46 to 61m	61 to 76m
200	60	35mm ²	35mm ²	35mm ²	50mm ²	70mm ²
200	100	35mm ²	35mm ²	35mm ²	50mm ²	70mm ²
225	20	25mm ²	35mm ²	25mm ²	50mm ²	70mm ²
225	40 & 30	35mm ²	35mm ²	35mm ²	50mm ²	70mm ²
250	30	35mm ²	35mm ²	35mm ²	50mm ²	70mm ²
250	40	35mm ²	35mm ²	50mm ²	50mm ²	70mm ²
250	60	50mm ²	50mm ²	50mm ²	50mm ²	70mm ²
250	100	50mm ²	50mm ²	50mm ²	50mm ²	70mm ²
300	60	50mm ²	50mm ²	50mm ²	70mm ²	70mm ²
350	100	70mm ²	70mm ²	70mm ²	70mm ²	95mm ²
350	60	70mm ²	70mm ²	70mm ²	70mm ²	95mm ²
400	60	70mm ²	70mm ²	70mm ²	95mm ²	120mm ²
400	100	70mm ²	95mm ²	95mm ²	95mm ²	120mm ²
500	60	70mm ²	70mm ²	95mm ²	95mm ²	120mm ²

** Tabled values are for operation at ambient temperatures of 104°F(40°C) and below. Applications above 104°F(40°C) may require cables larger than recommended, or cables rated higher than 167°F(75°C).

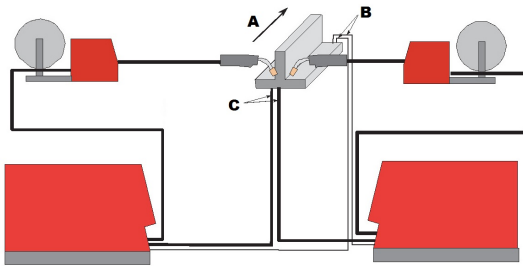
Negative Electrode Polarity

The Power Feed 84 ships from the factory configured for electrode positive polarity. See P.81 in the Operations Section (Set-Up menu) to select negative polarity welding.

Welding with Multiple Arcs

Special care must be taken when more than one arc is welding simultaneously on a single part. Arc blow and arc interference may occur or be magnified. Each power source requires a work lead from the work stud to the welding fixture. Do not combine all of the work leads into one lead. Perform welding in the direction away from the work leads. Connect all of the work sense leads from each power source to the work piece at the end of the weld, such that they are out of the path of the weld current.

For the best results when pulse welding, set the wire size and wire feed speed the same for all the arcs. When these parameters are identical, the pulsing frequency will be the same, helping to stabilize the arcs.



- A. Direction of travel
 - B. Connect all sense leads at the end of the weld
 - C. Connect all work leads at the beginning of the weld
- Figure #32

Control Cable

ArcLink Control Cables are available in two forms:

- K1543-xx series for most indoor or factory installations.
- K2683-xx series for outdoor use or when the equipment is frequently moved.

ArcLink/LincNet control cables are special high quality cables for digital communication. The cables are copper 5 conductor cable in a SO-type rubber jacket. There is one 20 gauge twisted pair for network communications. This pair has an impedance of approximately 120 ohms and a propagation delay per foot of less than 2.1 nanoseconds. There are two 12 gauge conductors that are used to supply 40VDC to the network. The fifth wire is 18 gauge and is used as an electrode sense lead.

Use of non-standard cables may lead to system shutdowns, poor arc starting and wire feeding problems.

Control cables may be connected end to end to extend their length. Use a maximum of 60m of control cable between components.



- A. Power source
 - B. Wire feeder
- Figure #33

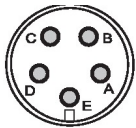
Power Source	
Pin	Function
A	ArcLink
B	ArcLink
C	"67" voltage sense
D	40 VDC
E	Common

Wire Feeder	
Pin	Function
A	ArcLink
B	ArcLink
C	"67" voltage sense
D	40 VDC
E	Common

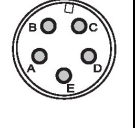
Advanced Accessories Connector (12 pin)

Function	pin	Wiring
	B	CAN HIGH
	C	75 Remote potentiometer, common
	D	76 Remote potentiometer, wiper
	E	77 Remote potentiometer, 5K
	F	ArcLink Peripheral Sense
	G	Trigger
	H	Trigger
	J	40VDC Common
	K	40VDC +
	L	Pull Motor -
	M	Pull Motor +

Trigger Connector (5 pin)

	Function	pin	Wiring	
	5-pin connector for push-only guns.		A	Trigger
			B	Not used
			C	Trigger
			D	Dual Procedure
			E	Dual Procedure

ArcLink Connector (5 pin)

	Function	pin	Wiring	
	5-pin connector for communication and power		A	CAN
			B	CAN
			C	67 Electrode Voltage Sense
			D	40 VDC
			E	Common








⚠ WARNING
















The serviceability of a product or structure utilizing the welding programs is and must be the sole responsibility of the builder/user. Many variables beyond the control of The Lincoln Electric Company affect the results obtained in applying these programs. These variables include, but are not limited to, welding procedure, plate chemistry and temperature, weldment design, fabrication methods and service requirements. The available range of a welding program may not be suitable for all applications, and the build/user is and must be solely responsible for welding program selection.




Power Up Sequence

1. The contactor drive energizes the contactor to match the active wire drive. The LED for the active wire drive illuminates.
2. Settings of the feeder before the last power-down are restored – wire feed speed, voltage, trigger type, procedure, etc.

GRAPHIC SYMBOLS THAT APPEAR ON POWER FEED 84, POWER FEED 84 DUAL OR IN THIS MANUAL

	WARNING or CAUTION
	INPUT POWER
	ON
	OFF
	POSITIVE OUTPUT
	NEGATIVE OUTPUT
	CHASSIE GROUND

U_1	INPUT VOLTAGE
I_1	INPUT CURRENT
I_2	OUTPUT CURRENT
A	WELDING AMPERAGE
V	WELDING VOLTAGE
	WIRE FEEDER
	SHIELDING GAS
	MENU
	WAVE CONTROL
	ARC START PARMETERS
	ARC END PARMENTERS
	COLD FEED
	GAS PURGE
	SHIELDING GAS INLET
	SHIELDING GAS OUTLET
	MEMORY SAVED
	MEMORY RECALL
	WIRE DRIVE SELECTION
	2-STEP TRIGGER
	4-STEP TRIGGER

	THERMAL
	SET-UP MENU
	TRIM

Recommended Processes and Equipment

RECOMMENDED PROCESSES

- GMAW, GMAW-Pulse, GMAW-STT
- FCAW
- SMAW
- GTAW
- CAG

PROCESS LIMITATIONS

- Processes must be within the duty cycle and rating of the wire feeder.

EQUIPMENT LIMITATIONS

- The Power Feed 84 does not operate with LincNet Power Sources.
- The power source may require a software update.
- If the Power Feed 84 has contactors or a gouging kit installed, the power source software may require updated.
- Does not include weld cables
- Operates on 40 VDC input
- The user interface may be located a maximum of 60m away from the wire drive.
- Must use newer gun adapter kits. Not compatible with K1500-1, K1500-2, K1500-3, K1500-4 K1500-5 and K489-7 gun adapter kits.
- A remote control/foot amptrol and a push-pull gun may not be connected to the Power Feed 84 single simultaneously.
- Power Feed 84 user interfaces are not compatible with Power Feed 10M wire drives.
- Power Feed 84 wire drives are not compatible with Power Feed 10M user interfaces.
- The Power Feed 84 with contactors or gouging kit may not be connected to a system with a robotic wire drive.
- With the Power Feed 84, only one USB port may present anywhere in the system.

RECOMMENDED POWER SOURCES

Power Wave 355M, 455M
Power Wave 455M/STT
Power Wave 655R
Power Wave S350
Power Wave S500
Power Wave S700
Power Wave R350, R500
Power Wave i400
Speedtec 405, 505
Flextec 350x, 500, 650x

User Interface Layout

(See Figure #35)

1. Wire feed speed/amps
2. Volt/trim
3. Thermal
4. Set-up menu
5. 2-step/4-step trigger
6. Arc start parameters
7. Arc end parameters
8. Memory buttons
9. Wire drive select
10. Dual procedure
11. Arc control
12. Weld mode menu
13. Shielding gas

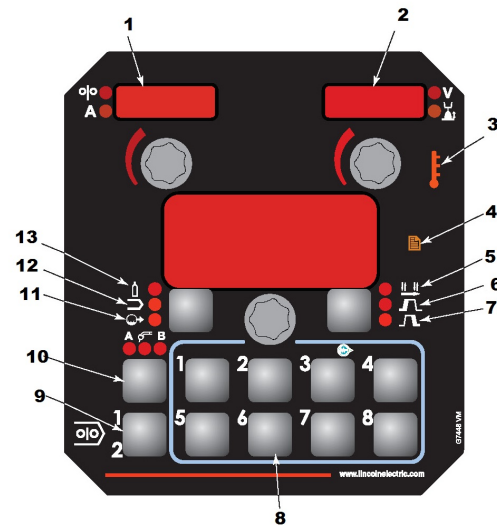


Figure #35

Wire Feed Speed/Amps Display and Knob

(see Figure #36)

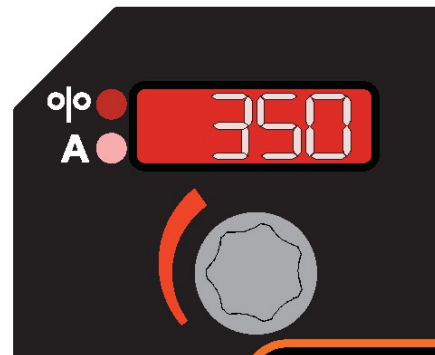


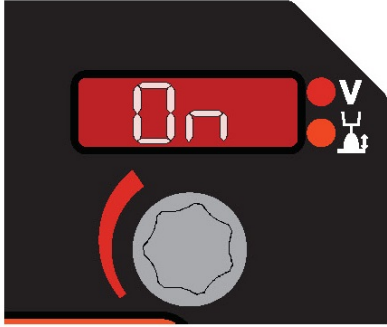




Figure #36

The left display and knob are used to adjust either wire feed speed or amperage, depending upon the process selected.

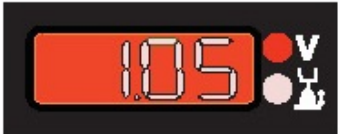
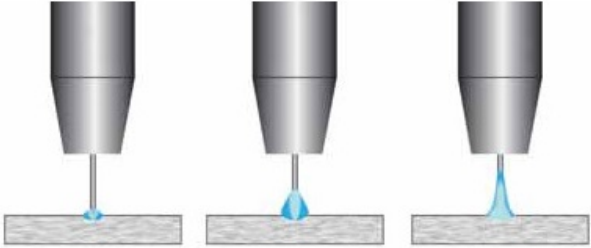
While welding, the amps LED lights when amperage is displayed and the wire feed speed LED lights when WFS is displayed.

Voltage/Trim Display and Knob

The right display and knob control voltage, trim or output depending upon the process selected. Once welding is complete, the display continues to show the welding voltage for 5 seconds.

Process	Display/Function	Description
SMAW (Stick) and GTAW (TIG)	Weld Output	<p>Rotate clockwise to turn output ON. Rotate counterclockwise to turn output OFF</p> 
Non-synergic GMAW (MIG) and FCAW Voltage (Flux-cored)	Voltage	<p>Adjusts the voltage. The display is blank for non-synergic STT modes</p> 
Synergic GMAW (MIG) and FCAW (Flux-cored)	Voltage	<p>When the voltage knob is rotated, the display will show an upper or lower bar indicating if the voltage is above or below the ideal voltage. The display is blank for synergic STT Modes.</p> <ul style="list-style-type: none"> Preset voltage above ideal voltage. (upper bar displayed).  <ul style="list-style-type: none"> Preset voltage at ideal voltage. (no bar displayed).  <ul style="list-style-type: none"> Preset voltage below ideal voltage. (lower bar displayed) 

Voltage/Trim Display and Knob

Process	Display/Function	Description
Pulse GMAW (MIG) and FCAW (Flux-cored)	Trim	<p>Pulse welding controls the arc length with 'Trim' instead of voltage. When trim (arc length) is adjusted, the Power Wave automatically recalculates the voltage, current and time of each part of the pulse waveform for the best result. Trim adjusts the arc length and ranges from 0.50 to 1.50. Increasing the trim value increases the arc length, while decreasing the trim value decreases the arc length.</p>   <p>A. Trim.50 Arc length start B. Trim 1.00 Arc length Medium C. Trim 1.50 Arc length Long</p>

Gas Flow Sensor Kit Operation

The K3338-1 Shielding Gas Flow Sensor is a precision, solid state device for measuring gas flow.



To display the actual gas flow, press the left button to select the shielding gas LED and then press the gas purge button. To display gas flow while welding, change P.3 in the set-up menu to "Show Gas Flow Rate."

When selected, the actual gas flow and gas type are displayed. The gas flow rate is displayed in xx.x for either cfh or l/min. The flow rate range is 0-28 l/min.

Units for gas flow are selected with P.42, "Gas Flow Units," in the set-up menu. English units are cubic feet per hour (cfh) and metric units are liters/min (lmin).

By default, the gas type is set to 100% Argon. The gas type is a global setting and is only used to determine the gas flow rate. It will not change based on the weld mode selected. It can only be changed by hitting the left button until the "Gas Type" selection is shown, and then rotating the center knob.

Selecting a Weld Mode

Weld modes may be selected by mode number or through a search function.

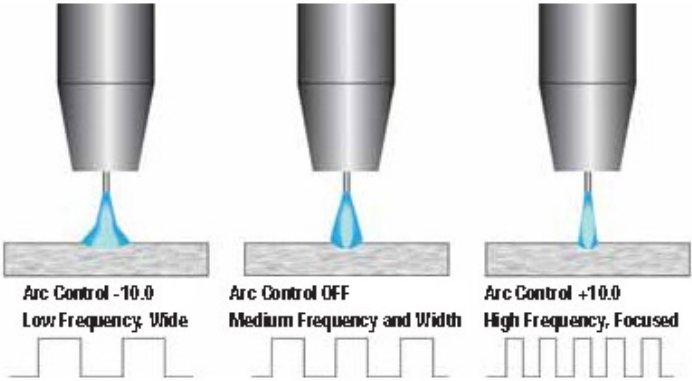
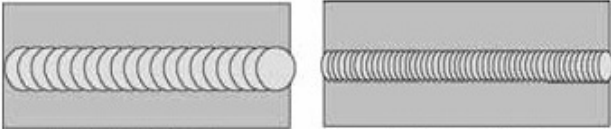
To select a weld mode:

1. Press the left button until the Weld Mode Menu LED illuminates.
2. Rotate the center knob to select the weld mode.

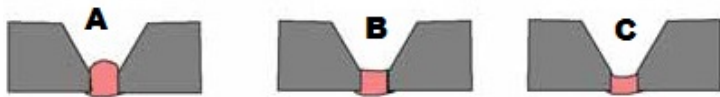
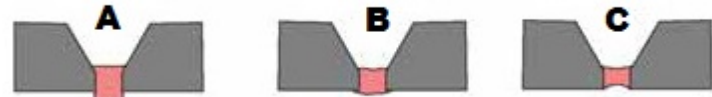
To enter the search function:

1. Rotate the center knob until "Weld Mode Search" is displayed and then press the right button.
2. Rotate the center knob to select the wire material. Press the right button to accept and the left button to cancel.
3. Rotate the center knob to select the wire size. Press the right button to accept and the left button to cancel.
4. Rotate the center knob to make the final selection about the process, gas type and waveform. Press the right button to accept and the left button to cancel.

Wave Control

Process	Wave Control Name	Effect/Range	Description
SMAW (Stick)	Arc Force	Soft (-10.0) to Crisp (10.0)	Arc Force adjusts the short circuit current for a soft arc, or for a forceful, driving arc. It helps to prevent sticking and shorting of organic coated electrodes, particularly globular transfer types such as stainless and low hydrogen. Arc Force is especially effective for root pass on pipe with stainless electrode and helps to minimize spatter for certain electrodes and procedure as with low hydrogen, etc.
GMAW (MIG) and FCAW (Flux-cored)	Pinch	Soft (-10.0) to Crisp (10.0)	Pinch controls the arc characteristics when short-arc welding.
GMAW-P (Pulsed MIG), Steel and Stainless	Ultimarc	Soft (-10.0) to Crisp (10.0)	<p>Ultimarc regulates the focus or shape of the arc. Ultimarc values greater than 0.0 increase the pulse frequency while decreasing the background current, resulting in a tight, stiff arc best for high speed sheet metal welding. Ultimarc values less than 0.0 decrease the pulse frequency while increasing the background current, for a soft arc good for out-of-position welding.</p>  <p>For Pulse modes, Arc Control changes the pulsing frequency. When the frequency changes, the Power Wave system automatically adjusts the background current to maintain a similar heat input into the weld. Low frequencies give more control over the puddle and high frequencies minimize spatter.</p>
GMAW-P (Pulsed MIG), Aluminium	Arc Control	Low (-10.0) to High (10.0)	<p>For Pulse-On-Pulse modes, Arc controls changes the frequency modulation. The frequency modulation controls the spacing of the ripples in the weld. Use low values for slow travel speeds and wide welds, and high values for fast travel speeds and narrower welds.</p>  <p>Modulation Frequency =10 Wide weld and ripple spacing, slow travel speed</p> <p>Modulation Frequency =10 Narrow weld and ripple spacing, fast travel speed</p>

Wave Control

Process	Wave Control Name	Effect/Range	Description
GMAW-STT (Surface Tension Transfer)	Peak Current	Controls arc length	<p>Peak Current acts similar to an arc pinch control. Peak Current sets the arc length and promotes good fusion. Higher peak current levels will cause the arc to broaden momentarily while increasing arc length. If set too high, globular transfer may occur. Setting it too low may cause instability and wire stubbing. Best practice is to adjust for minimum spatter and puddle agitation.</p> <p>Peak also affects the shape of the root. When using 100% CO₂, the peak current will be higher than when welding with blended shielding gases. A longer arc length is required with CO₂ to reduce spatter.</p>  <p>A. Peak Current Too Low B. Peak Current Optimum C. Peak Current too High</p>
	Background Current	Regulates bead contour	<p>Background current adjusts the overall heat input into the weld. Changing the background current changes the shape of the back bead. 100% CO₂ requires less background current than when welding with blended shielding gases.</p>  <p>A. Background Current Too Low B. Background Current Optimum C. Background Current Too High</p>
	Tail out	Provides additional power to the arc	<p>Tail out provides additional power without the molten droplet becoming too large. Increase as necessary to add heat input without increasing arc length. Often this results in faster travel speeds. Note that as tail out increases, the peak current and/or background current may need to be reduced.</p>
GTAW (TIG)	No Wave controls available	---	---

Trigger Selection

To select the trigger type, press the right button until the trigger LED illuminates.

Rotate the center knob clockwise for 4-step trigger or counter-clockwise for 2-step trigger.

Note that different trigger types may be stored in the memories. For example, memory 1 may use a 2-step trigger and memory 3 may use a 4-step trigger.

When using A-B Dual Procedure, both A and B procedures must be the same trigger type.



2-Step Trigger

2-Step Trigger controls the welding sequence in direct response to the trigger. When the gun trigger is pulled, the welding system (power source and wire feeder) cycles through the arc starting sequence and into the main welding parameters. The welding system will continue to weld as long as the gun trigger is activated. Once the trigger is released, the welding system cycles through the arc ending steps.

Example 1: 2-Step Trigger: Simple operation

The simplest trigger operation occurs with a 2-Step trigger and Start and Crater set to OFF.

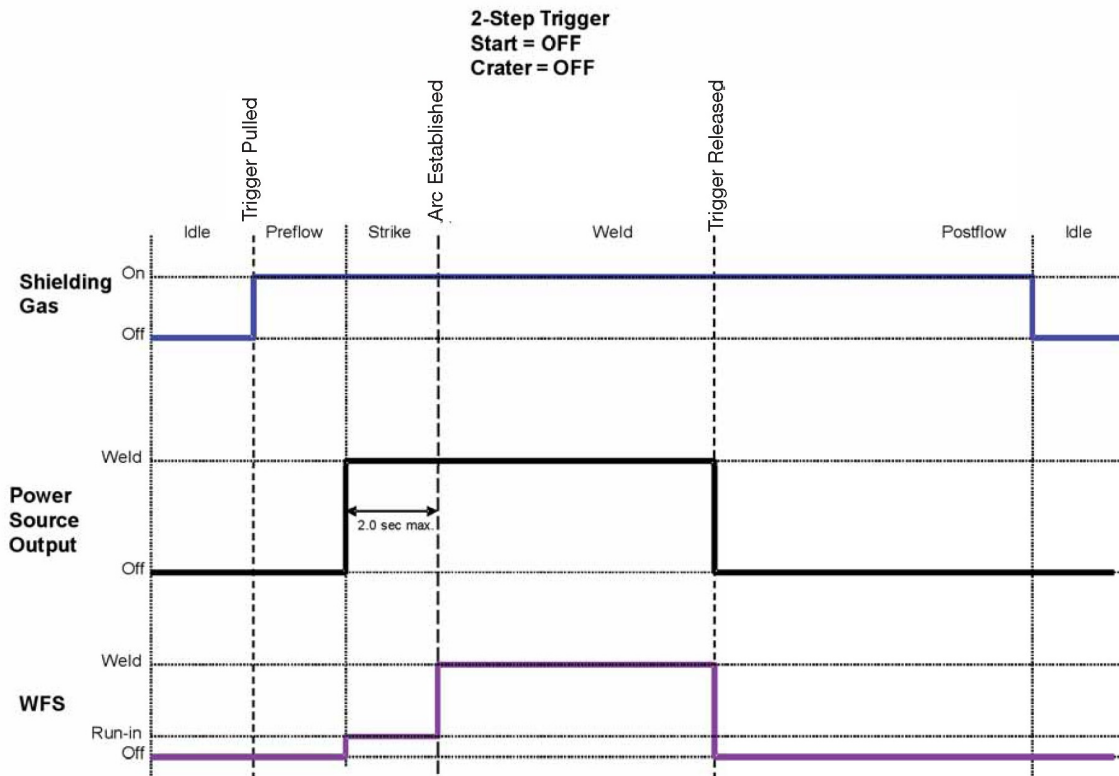
For this sequence,

PREFLOW: Shielding gas begins to flow immediately when the gun trigger is pulled.

RUN-IN: After preflow time expires, the power source regulates to the welding output and wire is advanced towards the work piece at the Run-In WFS. If an arc is not established within 2.0 seconds, the wire feed speed will jump to the welding wire feed speed.

WELD: The power source output and the wire feed speed continue at the weld settings for as long as the trigger is pulled.

POSTFLOW: As soon as the trigger is released, the power source output and the wire feed speed are turned OFF. Shielding gas continues until the post flow timer expires.

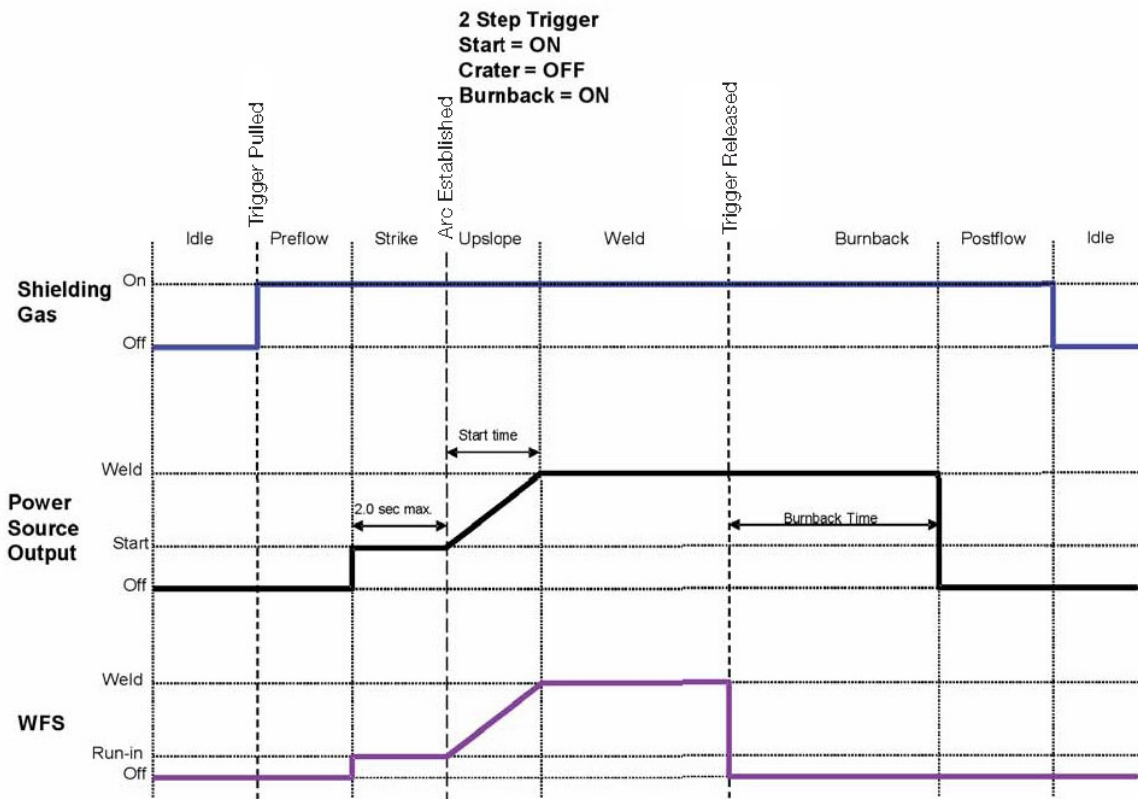


Example 2: 2-Step Trigger: Improved Arc Start and Arc End

Tailoring the arc start and arc end is a common method for reducing spatter and improving weld quality. This can be accomplished with the Start and Burnback functions set to a desired values and Crater set to OFF.

For this sequence,

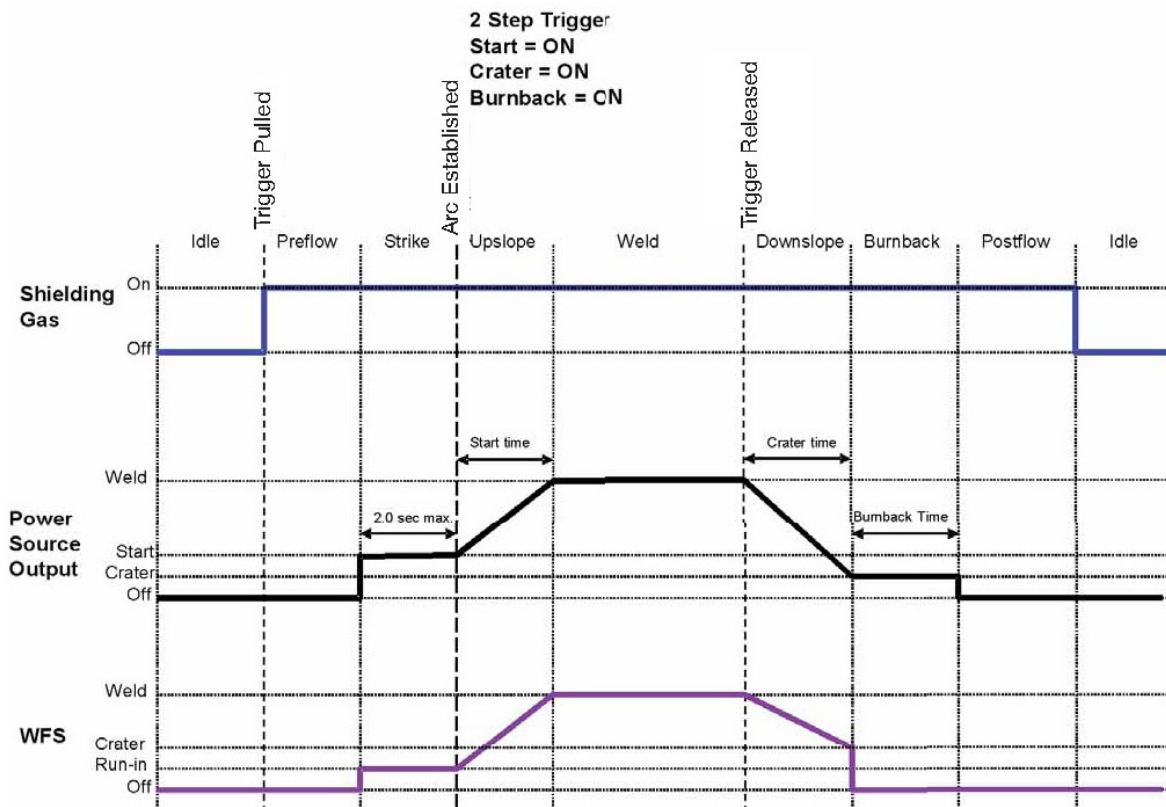
- PREFLOW:** Shielding gas begins to flow immediately when the gun trigger is pulled.
- RUN-IN:** After preflow time expires, the power source regulates to the start output and wire is advanced towards the work piece at the Run-In WFS. If an arc is not established within 2.0 seconds, the power source output and wire feed speed skips to the weld settings.
- START:** Once the wire touches the work and an arc is established, both the machine output and the wire feed speed ramp to the weld settings throughout the start time. The time period of ramping from the start settings to the weld settings is called UPSLOPE.
- WELD:** After upslope, the power source output and the wire feed speed continue at the weld settings.
- BURNBACK:** As soon as the trigger is released, the wire feed speed is turned OFF and the machine output continues for the burnback time.
- POSTFLOW:** Next, the machine output is turned OFF and shielding gas continues until the post flow timer expires.



Example 3: 2-Step Trigger: Customized Arc Start, Crater and Arc End.
 Aluminum is an example of where start, crater and burnback are commonly used to improve welding performance.

For this sequence,

- PREFLOW:** Shielding gas begins to flow immediately when the gun trigger is pulled.
- RUN-IN:** After preflow time expires, the power source regulates to the start output and wire is advanced towards the work piece at the Run-In WFS. If an arc is not established within 2.0 seconds, the power source output and wire feed speed skips to the weld settings.
- START & UPSLOPE:** Once the wire touches the work and an arc is established, both the machine output and the wire feed speed ramp to the weld settings throughout the start time. The time period of ramping from the start settings to the weld settings is called UPSLOPE.
- WELD:** After upslope, the power source output and the wire feed speed continue at the weld settings.
- BURNBACK:** After the crater time expires, the wire feed speed is turned OFF and the machine output continues for the burnback time.
- POSTFLOW:** Next, the machine output is turned OFF and shielding gas continues until the post flow timer expires.



2-Step trigger: Special considerations

The weld sequence response depends upon when the trigger is pulled and released and whether or not START or CRATER are active

An example sequence:

Pull the trigger to start feed of wire. When arc is established the sequencer will begin START/UPSLOPE. UPSLOPE and CRATER/DOWNSLOPE is active, the machine will begin CRATER/DOWNSLOPE and sloping regardless of when the trigger release occurred.

If the CRATER is disabled and the trigger is released during START/UPSLOPE, the sequencer will move to the BURNBACK state to end the weld.

4-Step Trigger

4-step trigger allows the operator to release the trigger once an arc has been established. To end the weld, the trigger is pulled and then released again.

Two types of 4-Step Trigger are available. Use the set-up menu to select the desired type of operation.

With current interlock, if the arc goes out for more than 0.5 seconds while the trigger is released, the welding process stops and goes to the idle state.

Without the current interlock, if the arc goes out while the trigger is released, output to the power source remains on and the wire feeder will continue to feed wire.

Example 1: 4-Step Trigger: Trigger Interlock

The 4-Step trigger can be configured as a trigger interlock. Trigger interlock adds to the welder's comfort when making long welds by allowing the trigger to be released after an initial trigger pull. Welding stops when the trigger is pulled a second time and then released, or if the arc is interrupted.

For this sequence,

PREFLOW:

Shielding gas begins to flow immediately when the gun trigger is pulled.

RUN-IN:

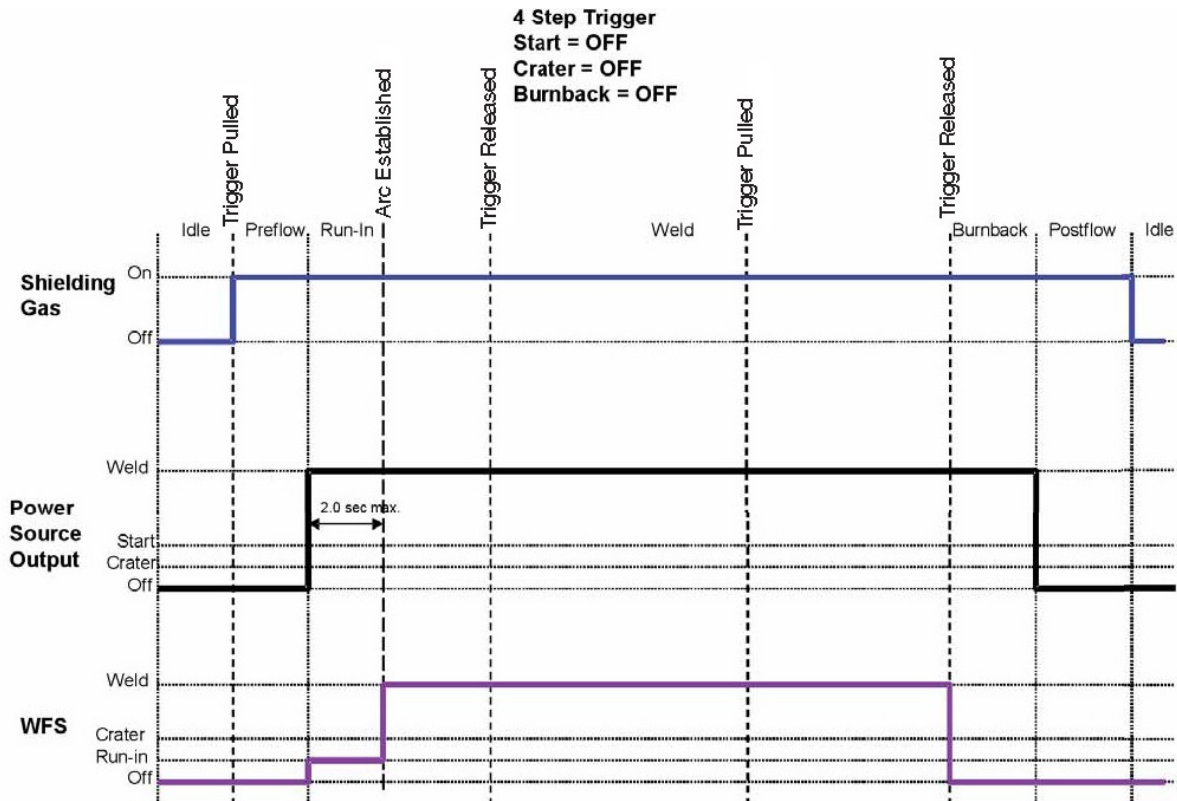
After preflow time expires, the power source regulates to the welding output and wire is advanced towards the work piece at the Run-In WFS. If an arc is not established within 1.5 seconds, the wire feed speed will jump to the welding wire feed speed.

WELD:

The power source output and the wire feed speed continue at the weld settings. The trigger is released and welding continues. Welding continues when the trigger is pulled a second time

POSTFLOW:

As soon as the trigger is released for the second time, the power source output and the wire feed speed are turned OFF. Shielding gas flows until the post flow timer expires.

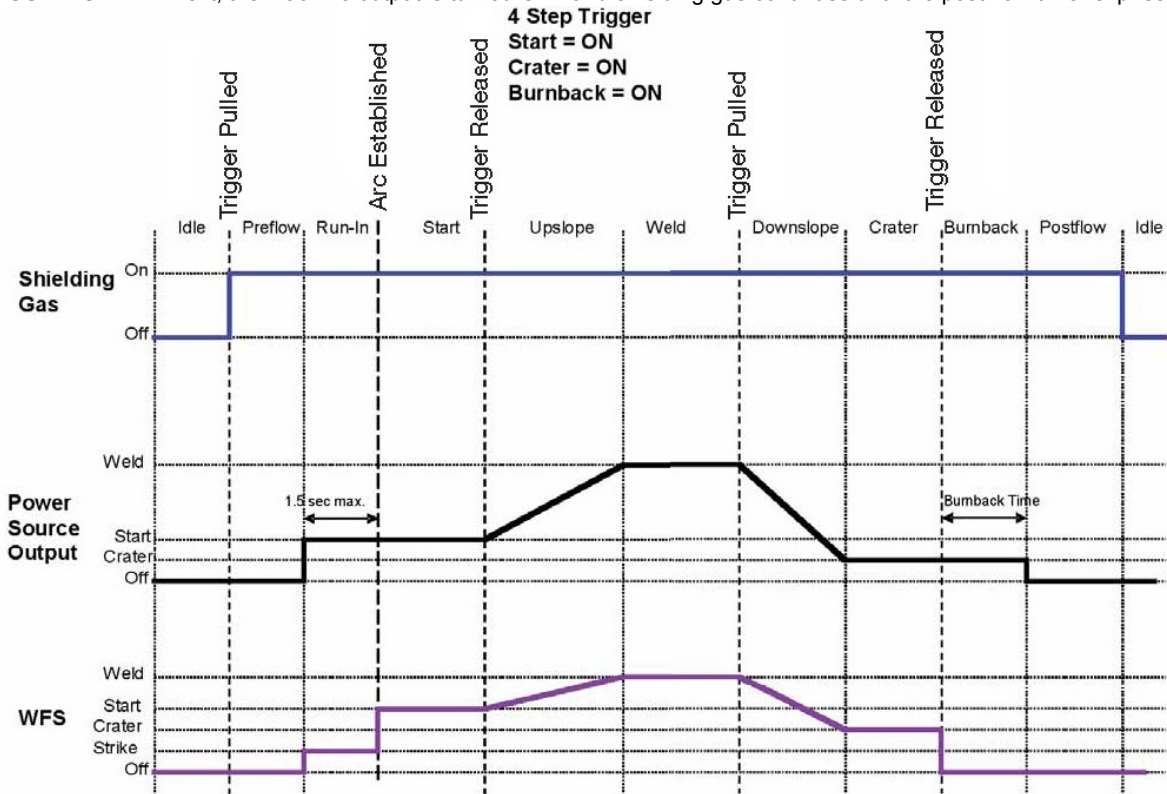


Example 2: 4-Step Trigger: Manual Control of Start and Crater times with Burnback ON.

The 4-Step trigger sequence gives the most flexibility when the Start, Crater and Burnback functions are active. This is a popular choice when welding aluminum because extra heat may be needed during Start and less heat desired during crater. With 4-Step trigger, the welder chooses the amount of time to weld at the Start, Weld and Crater settings by using the gun trigger. Burnback reduces the occurrence of wire to sticking into the weld pool at the end of a weld and conditions the end of the wire for the next arc start.

In this sequence,

- PREFLOW:** Shielding gas begins to flow immediately when the gun trigger is pulled.
- RUN-IN:** After preflow time expires, the power source regulates to the start output and wire is advanced towards the work piece at the run-in WFS. If an arc is not established within 2.0 seconds, the power source output and wire feed speed skips to the weld settings.
- START:** The power source welds at the start WFS and voltage until the trigger is released.
- UPSLOPE:** During upslope, the power source output and the wire feed speed ramp to the weld settings throughout the start time. The time period of ramping from the start settings to the weld settings is called UPSLOPE. If the trigger is pulled before upslope is complete, WELD is skipped and the sequence jumps to DOWNSLOPE.
- WELD:** After upslope, the power source output and the wire feed speed continue at the weld settings.
- DOWNSLOPE:** As soon as the trigger is pulled, the wire feed speed and power source output ramp to the crater settings throughout the crater time. The time period of ramping from the weld settings to the crater settings is called DOWNSLOPE.
- CRATER:** During CRATER, the power source continues to supply output at the crater WFS and voltage.
- BURNBACK:** When the trigger is released, the wire feed speed is turned OFF and the machine output continues for the burnback time.
- POSTFLOW:** Next, the machine output is turned OFF and shielding gas continues until the post flow timer expires.



Spot Trigger

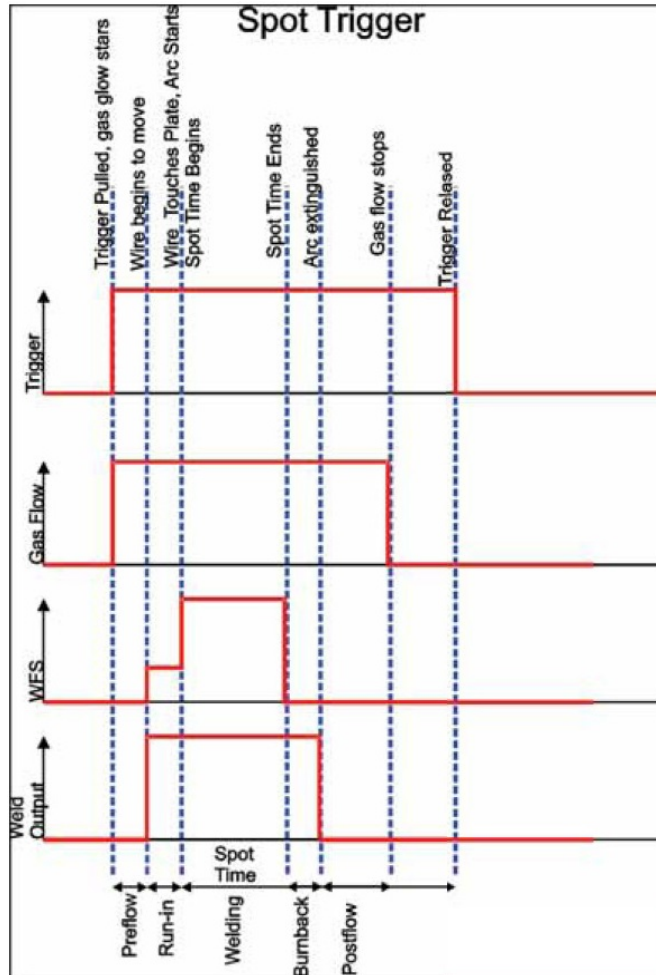
The Spot Trigger may only be selected if the Spot Time has previously been set to a value other than 0.0 (OFF) and the Start and Crater are both OFF.

Spot time causes the welding system to turn on for a fixed time, regardless if the trigger is held for a longer period of time. If the trigger is released before the spot timer is complete, welding stops.

If the Spot Time is set to 0.0 (OFF), the left display will be blank and the right display will show "OFF". The Spot Time LED from the timer menu will blink twice. After 2.0 seconds, the trigger menu cycles back to the Cold Feed Trigger option.

If Start is not set to OFF, the left display will be blank and the right display will show "On". The Start LED from the sequence menu will blink twice. After 2.0 seconds, the trigger menu cycles back to the Cold Feed Trigger option.

If Crater is not set to OFF, the left display will be blank and the right display will show "On". The Crater LED from the sequence menu will blink twice. After 2.0 seconds, the trigger menu cycles back to the Cold Feed Trigger option.



4-Step Trigger: Special Considerations

The response to the trigger with 4-step trigger active is dependent upon when the trigger is pulled/released and the settings for START and CRATER.

Example 1.

Pull the trigger to start feed of wire. When arc is established the sequencer will remain in START until the trigger is released. When the trigger is released, UPSLOPE begins. If trigger is pulled again during UPSLOPE and CRATER/DOWNSLOPE is active, the feeder will begin the DOWNSLOPE, sloping down over the CRATER time, regardless of when the trigger pull occurred.

If the CRATER/DOWNSLOPE state is disabled and the trigger is pulled during UPSLOPE, the sequencer will remain in the UPSLOPE state and continue with the weld. If the fourth step (trigger release) occurs during UPSLOPE, the sequencer will jump to the BURNBACK to end the weld.

Example 2:

Pull the trigger to start feed of wire. When arc is established the sequencer will remain in START until the trigger is released. When the trigger is released, UPSLOPE begins and continues into WELD when the START timer is complete. When the trigger is pulled again (step 3) and CRATER/DOWNSLOPE is active, DOWNSLOPE begins and continues until the CRATER timer expires, at which time CRATER will be entered until the trigger is released.

While in DOWNSLOPE, if the trigger is released before the timer expires, the trigger will be ignored and the DOWNSLOPE state will continue until the timer expires, at which point CRATER state will be enabled, check for trigger, and jump to BURNBACK since the trigger has been released.

While in the DOWNSLOPE state and the trigger is released and then pulled again, it will be ignored. During 4-Step operation in DOWNSLOPE, the trigger will always be ignored.

Start Options



The Start Options available depend upon the process and weld mode selected.

Process	Start Options	Effect / Range	Description
SMAW (Stick)	---	---	---
All GMAW (MIG) and FCAW (Flux-cored)	Preflow Time	0 – 25.0 Seconds	---
	Run-In WFS	Auto, OFF, 30 in/min to weld WFS	Run-In sets the wire feed speed from the time the trigger is pulled until an arc is established or 2.5 seconds. Use run-in for softer arc starts.
	Start Time, WFS and Volts	0 – 10.0 seconds	The Start Procedure controls the WFS and Volts for a specified time at the beginning of the weld. During the start time, the machine will ramp up or down from the Start Procedure to the preset Welding Procedure.
GTAW (TIG)	---	---	---

End Options

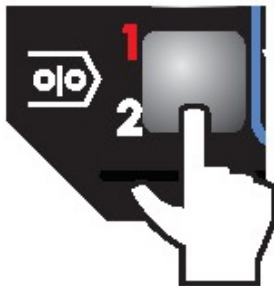


The End Options available depend upon the process and weld mode selected.

Process	Start Options	Effect / Range	Description
SMAW (Stick)	---	---	---
All GMAW (MIG) and FCAW (Flux-cored)	Spot Timer		Sets the length of time for welding when the trigger is pulled. If the trigger is released before the Spot Timer is complete, welding stops. This option has no effect in 4-Step Trigger Mode.
	Crater Time, WFS and Volts	0 – 10.0 seconds Auto,	Crater Procedure controls the WFS and volts for a specified time at the end of the weld after the trigger is released. During the Crater time, the machine will ramp up or down from the Weld Procedure to the Crater Procedure. Crater is not commonly used with STT processes.
	Burnback Time	0 – 0.25 seconds	The burnback time is the amount of time that the weld output continues after the wire stops feeding. It prevents the wire from sticking in the puddle and prepares the end of the wire for the next arc start.
	Postflow Time	0 – 25.0 seconds	Adjusts the time that shielding gas flows after the welding output turns off.
GTAW (TIG)	Postflow Time	0 – 25.0 seconds	Adjusts the time that shielding gas flows after the welding output turns off.

Wire Drive Selection

The wire drive selection is active when a dual wire drive or more than one single wire drive is connected to the user interface. When a single wire drive (Power Feed 84) is connected, Wire Drive 1 LED is always illuminated.



Pressing the button toggles the active wire drive between 1 and 2. The active wire drive may also be selected by pulling the gun trigger on wire drive 1 or 2. LED "1" or "2" illuminates to indicate the active wire drive.

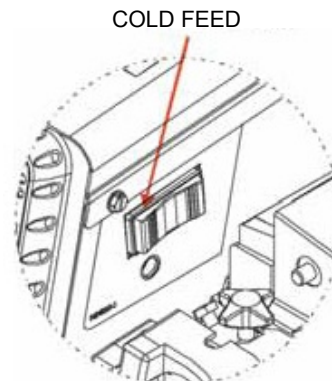
When the active wire drive is switched, all parameters of the active drive from the last active procedure are loaded into the display.

If contactors are installed, the power path is routed to the appropriate wire drive or gouging stud.

Cold Feed

Pressing the Cold Feed rocker switch feeds wire forward at the indicated speed for as long as the switch is held.

When the user interface is mounted in a separate control box, Cold Feed may be active by the rocker switch on the side of the feeder or the rocker switch on the side of the control box.

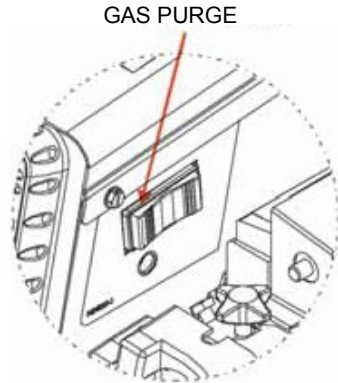


The power source output remains OFF during Cold Feeding.

Gas Purge

Pressing the Gas Purge rocker switch turns on the gas solenoid for as long as the gas purge switch is held.

When the user interface is mounted in a separate control box, gas purge may be active by the rocker switch on the side of the feeder or the rocker switch on the side of the control box.



The power source output remains OFF during Gas Purge.

Gouging Kit Operation

The gouging kit provides a method to switch between wire welding processes and a gouging process. The electrode power path is automatically routed through the wire feeder based upon the weld mode selected. FCAW and GMAW modes route the power to the wire drive; CAG modes route power to the gouging stud.

When in the gouging mode, the output to the power source is turned ON and the gouging output stud will be at electrode potential. Actual voltage and amperage are displayed on the user interface.

Changing from a weld mode to gouging, or gouging to welding may not be done while actively welding or gouging.

When 2 single wire drives, both with a gouging kit, are connected to one user interface, only one gouging stud may be active at a time. To switch from gouging from wire drive 1 to wire drive 2, first place wire drive 1 into a welding mode. Then place wire drive 2 into a gouging mode and active the output.

Dual Procedure and Memory Operation

The Dual Procedure and Memory buttons perform three functions:

- Weld procedure selection
- Memory save and recall
- Limits setting

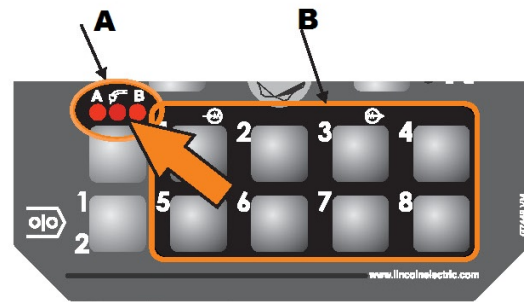
There are two procedure memories (A and B) and 8 user memories on single feeders and 16 user memories on dual feeders. Additional memories are available through the USB port.

Procedure Memory vs. User Memory

Procedure memory is used while welding. Changes to the weld procedure (WFS, voltage, arc control, etc.) immediately change the contents inside the selected procedure memory.

User memories work by copying the weld procedure

from one of the six memories into either the A or B procedure. Weld procedures are saved into the memories only when the operator chooses.



C

- A. Procedure Memory
- B. User Memory
- C. User Memories are copied to Procedure Memories

Using Procedure Memories

Procedure memories can be selected by choosing either "A" or "B" procedure directly with the memory panel, or by selecting "GUN" and using a dual procedure gun to select between procedure "A" and "B". When selecting procedures with the gun switch, "A" or "B" will flash to show which procedure is active.



A

- A. Press to select procedure

User Memories

Recall a memory with memory buttons

To recall a user memory, press one of the six user memory buttons. The memory is recalled when the button is released. Do not hold the button for more than two seconds when recalling a user memory.

Recall a memory with the gun trigger.

If desired, memories 2 through 8 can be recalled with the gun trigger. For example, to recall memory 3, quickly pull and release the gun trigger 3 times without welding.

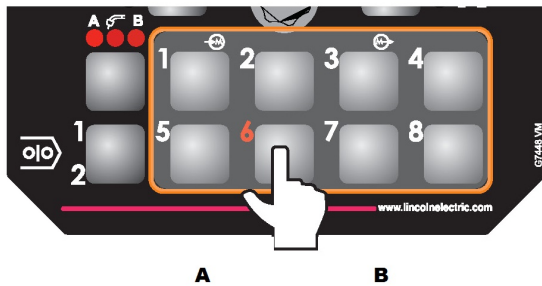
Note: the Power Feed 84 is factory set with this feature disabled. Use the SETUP menu and change P.4 to enable memory recall with the gun trigger.

Save a memory with memory buttons.

To save a memory, press and hold the desired memory button for two seconds. When the button is initially pressed, the corresponding LED will illuminate. After two seconds, the LED will turn off. Do not hold the button for more than 5 seconds when saving a user memory.

Note that memories may be locked in the set-up menu to prevent accidental overwrite of the memories. If an

attempt is made to save a memory when memory saving is locked, the message "Memory save is Disabled!" will appear briefly in the display.



- A. Recall: Press 1 second
- B. Save: Press 2 seconds

Limits

Limits allow the welder to adjust the welding procedure only within a defined range. Each user memory may have a different set of limits. For example, memory 1 may limit the WFS to 5 through 7,5 m/min, and memory 2 may limit the WFS to 7 through 8 m/min, while memory 3 may have no WFS limits.

Parameters are constrained by machine limits, or by setting memory limits. When memory limits are enabled, the parameter will flash whenever an attempt is made to exceed the memory limit value. The parameter will not flash if an attempt is made to exceed the machine limit.

The system machine limits are:

Parameter	Range	Units
Wire Feed Speed	Weld mode dependent and gear box ratio dependent	In/min
Voltage	Weld mode dependent	Volts
Trim	0.50 to 1.50	---
Arc Control	-10.0 to 10.0	Weld mode dependent
Preflow	0.0 to 2.5	Seconds
Start Time	0.0 to 10.0	Seconds
Run-In WFS	Off, 50 to 150	in/min
Crater Time	0.0 to 10.0	Seconds
Burnback Time	0.00 to 0.25	Seconds
Postflow Time	0.0 to 10.0	Seconds

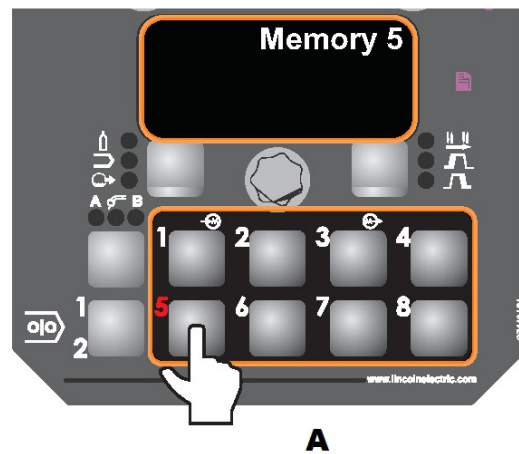
Limits may be set for:

- Wire Feed Speed/Amperage
- Start Time
- Voltage/Trim
- Burnback Time
- Arc Control
- Crater Wire Feed Speed
- Preflow Time
- Crater Voltage/Trim
- Run-In Speed
- Crater Time
- Start Wire Feed Speed
- Postflow Time
- Start Voltage/Trim

Weld modes cannot be selected through the Limits

Setup menu, and must be chosen and saved to memory before entering the Limits Setup Menu.

To set limits, press the desired memory button 1-8 and hold for 5 seconds. Release the memory button when the memory number begins to blink rapidly and the displays "Memory X Set Limits" as shown below.



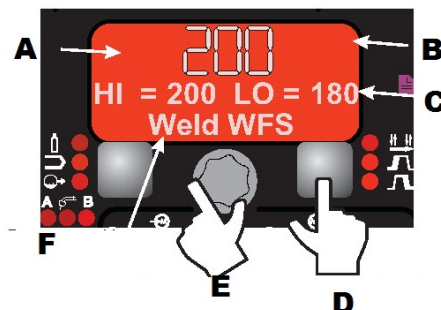
- A. Set Limits: Press 5 seconds.

If the passcode does not equal zero (0000), enter the passcode now. If the passcode has been forgotten, a computer application is required to change the passcode.

If the passcode has been set to zero (0000), the display will show the following:

- Memory Value
- High Limit
- Low Limit
- Parameter Name

One of these items will flash to indicate which item will change when the knob is rotated. Press the right button on to select the item to change.



- A. Memory value
- B. High Limit
- C. Low Limit
- D. Press to select item to change
- E. Rotate to change value
- F. Parameter Name

The Limits Setup menu shows a list of all parameters available for the weld mode stored in the memory chosen. For example, if limits are being set for a stick (SMAW) mode, parameters such as Run-in WFS and Postflow will not appear.

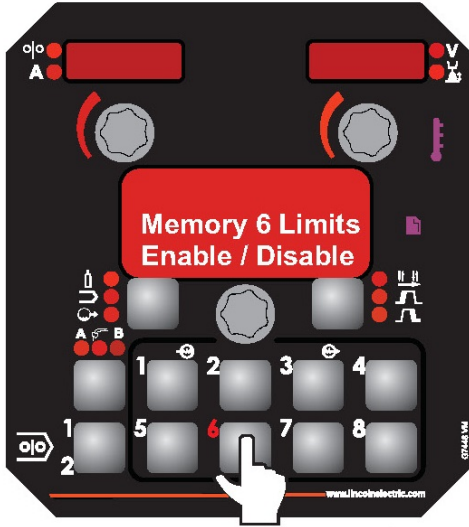
To lock a parameter to a specific value that cannot be changed, set the high and low limits to the same value.

The memory value must always be less than or equal to the high limit, and greater than or equal to the low limit.

After setting limits, press the memory button with the number. The display will ask to save or discard the limit changes just made. Press the left button (YES) to save and enable the limits and exit. Press the right button (NO) to exit and leave limits unchanged.

Enabling/Disabling Limits

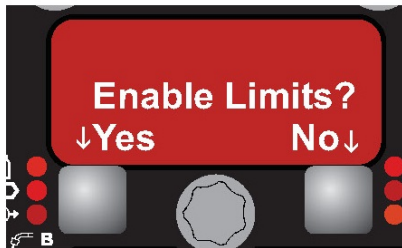
Limits for each memory may be enabled or disabled by pressing and hold the appropriate memory button for 10 seconds. Release the memory button when the display shows "Memory x Limits Enable / Disable"



A

A. Press 10 seconds to enable/disable limits

If the passcode does not equal zero, enter the passcode now. If the passcode is zero (0000), SETUP will light and the display will show:



Press the left button (YES) to enable limits or the right button (NO) to disable limits. Disabling limits does not change any limits values that may have been previously set.

Usb Operation

Memories

The USB port may be used to load and store memories. Memories are stored on the USB device as set of 8 (single head) or 16 (dual head) memories. The memory set may be given a custom name by renaming the file on a computer.

When a USB device is plugged in, the display will momentarily show "USB Device Connected!". The display will then enter the USB prompt, if enabled

through P.513 (the prompt is enabled by default).

To load memories from the USB:

1. Enter the set-up menu, scroll to P.37 and hit the right button (if not in the USB prompt)
2. Select "Load Mems/P-Nums" with the right button
3. Scroll to and select the desired memory set with the right button
4. Scroll to and select what to load from the file. Options are:
 - a) Load all: This will load user memories and set-up menu options to the PF84
 - b) Load Mems Only: This will load only user memories to the PF84
 - c) Load P-Nums Only: This will only load set-up menu options to the PF84

Note: If the memory file was saved on a dual-head PF84, and it is being loaded to a single-head PF84, the user memories from Head 1 of the dual-head PF84 will be loaded to the single-head of the PF84. If the memory file was saved on a single-head PF84, and it is being loaded to a dual-head PF84, the user memories from the single-head PF84 will be loaded to Head 1 of the dual-head PF84.

To save memories to the USB:

1. Enter the set-up menu, scroll to P.37 and hit the right button (if not in the USB prompt)
2. Scroll to and select "Save Mems/P-Nums" with the right button
3. Wait for the save to complete. The file name will be displayed while the save occurs.

Note that when memories are saved, the memories include information about limits and 2-step/4-step trigger.

Set-Up Menu

USER DEFINED PARAMETERS

Parameter	Name and Description	Range
P.0	<p>Exit Setup Menu This option is used to exit the setup menu. When P.0 is displayed, press the Left Button to exit the setup menu.</p>	
P.1	<p>Wire Feed Speed Units This option selects which units to use for displaying wire feed speed. English = inches/minute wire feed speed units (default). Metric = meters/minute wire feed speed units.</p>	English, Metric
P.2	<p>Arc Display Mode This option selects what value will be shown on the upper left display while welding. Amps = The left display shows Amperage while welding (default). WFS = The left display shows Wire Feed Speed while welding.</p>	Amps, WFS
P.3	<p>Display Options This setup parameter was previously named "Display Energy" If the previous software revision had this parameter set to display energy, that selection will remain. This option selects the information displayed on the alphanumeric displays while welding. Not all P.3 selections will be available on all machines. In order for each selection to be included in the list, the power source must support that feature. A software update of the power source may be needed to include the features. Standard Display = The lower displays will continue to show preset information during and after a weld (default). Show Energy = Energy is displayed, along with time in HH:MM:SS format. Show Weld Score = The accumulative weld score result is shown</p>	Standard Display, Show Energy, Show Weld Score Show Gas Flow Rate
P.4	<p>Recall Memory with Trigger This option allows a memory to be recalled by quickly pulling and releasing the gun trigger. To recall a memory, quickly pull and release the trigger the number of times that correspond to the memory number. For example, to recall memory 3, quickly pull and release the trigger 3 times. To recall memory 1, quickly pull and release the trigger the number of user memories plus 1. Memories cannot be recalled while the system is welding. Disabled = The gun trigger cannot be used to recall user memories (default). Enabled = The gun trigger can be used to recall user memories.</p>	Disabled, Enabled

Parameter	Name and Description	Range
P.5	<p>Procedure Change Method</p> <p>This option selects how remote procedure selection (A/B) will be made. For some products the selected procedure can be changed locally at the user interface by pressing the 'A-Gun-B' button. Other products do not have this button and must use a Cross-switch gun or wire into the procedure select input. The following methods can be used to remotely change the selected procedure:</p> <p>External Switch = Dual Procedure selection may only be performed at the memory panel or an external switch (e.g. K683).</p> <p>Quick Trigger = The selected procedure can be changed remotely by releasing and re-pulling the trigger quickly while welding. This feature is disabled in 4-Step trigger mode. The external procedure switch is disabled. To operate:</p> <ul style="list-style-type: none"> • Select "GUN" on the memory panel (for products that have an 'A-Gun-B' button). • Start the weld by pulling the gun trigger. The system will weld with procedure A settings. • While welding, quickly release then pull the gun trigger once. The system will switch to procedure B settings. Repeat to switch back to procedure A settings. The procedure can be changed as many times as needed during the weld. • Release the trigger to stop welding. The system will automatically return to procedure A settings. <p>IntegralTrigProc = When using a Magnum DS dual-schedule gun (or similar) that incorporates a procedure switch in the gun trigger mechanism. While welding in 2-step, machine operation is identical to the "External Switch" selection. When welding in 4-step, additional logic prevents procedure A from being re-selected when the trigger is released at step 2 of the 4-step weld sequence. The machine will always operate in 2-step if a weld is made exclusively in procedure A, regardless of the 2/4 step switch position (this is intended to simplify tack welding when using a dual-schedule gun in 4-step).</p>	<p>External Switch,</p> <p>Quick Trigger,</p> <p>IntegralTrigProc</p>
P.7	<p>Gun Offset Adjustment</p> <p>This option adjusts the wire feed speed calibration of the pull motor of a push-pull gun. This should only be performed when other possible corrections do not solve any push-pull feeding problems. An rpm meter is required to perform the pull gun motor offset calibration. To perform the calibration procedure do the following:</p> <ol style="list-style-type: none"> 1. Release the pressure arm on both the pull and push wire drives. 2. Set the wire feed speed to 200 ipm. 3. Remove wire from the pull wire drive. 4. Hold an rpm meter to the drive roll in the pull gun. 5. Pull the trigger on the push-pull gun. 6. Measure the rpm of the pull motor. The rpm should be between 115 and 125 rpm. If necessary, decrease the calibration setting to slow the pull motor, or increase the calibration setting to speed up the motor. <p>The calibration range is -30 to +30, with 0 as the default value.</p> <p>Note: The range was changed to -90 to +90 for the PF25M in WD software S28539-3. Default value remains at 0.</p> <p>On dual-head Power Feed 84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.</p>	-90 to 90

Parameter	Name and Description	Range
P.8	<p>TIG Gas Control</p> <p>This option allows control over which gas solenoid actuates while TIG welding. "Valve (manual)" = No MIG solenoid will actuate while TIG welding, gas flow is manually controlled by an external valve. "Solenoid (auto)" = The MIG solenoid will turn on and off automatically while TIG welding. "Feeder Solenoid" = The internal (feeder) MIG solenoid will turn on and off automatically while TIG welding. "Pwr Src Solenoid" = Any gas solenoid connected to the power source will turn on and off automatically while TIG welding. This selection will not appear in the list if the power source does not support a gas solenoid.</p> <p>Notes: Preflow is not available while TIG welding. Postflow is available - the same postflow time will be used in MIG and TIG. When machine output on/off is controlled via the upper right knob, gas flow will not start until the tungsten touches the work. Gas flow will continue when the arc is broken until the Postflow time expires. When machine output on/off is controlled via an arc start switch or foot Amptrol, gas will begin flowing when the output is turned on and will continue flowing until the output is turned off and the Postflow time expires.</p> <p>If a dedicated TIG gas solenoid is installed, as in the Advanced ACModule, all TIG gas control will use that solenoid and this menu option will be irrelevant.</p>	<p>Valve (manual),</p> <p>Feeder Solenoid,</p> <p>Pwr Src Solenoid</p>
P.9	<p>Crater Delay</p> <p>This option is used to skip the Crater sequence when making short tack welds. If the trigger is released before the timer expires, Crater will be bypassed and the weld will end. If the trigger is released after the timer expires, the Crater sequence will function normally (if enabled). On dual-head Power Feed 84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.</p>	
P.14	<p>Reset Consumable Weight</p> <p>Use this option to reset the initial weight of the consumable package. Press the Right Button to reset the consumable weight. This option will only appear with systems using Production Monitoring.</p>	
P.16	<p>Push-Pull Gun Knob Behavior</p> <p>This option determines how the potentiometer on the Push/Pull torch will behave.</p> <ul style="list-style-type: none"> • Gun Pot Enabled = The welding wire feed speed is always controlled by the potentiometer on the push-pull gun (default). The left front panel knob is only used to adjust Start and Crater wire feed speed. • Gun Pot Disabled = The wire feed speed is always controlled by the left front panel knob. This setting is useful when the operator wishes to have wire feed speed settings recalled from memories and not have the potentiometer "overwrite" the setting. • Gun Pot Proc A = When in procedure A, the welding wire feed speed is controlled by the potentiometer on the push-pull gun. When in procedure B, the welding wire feed speed is controlled by the left front panel knob. This setting allows a fixed wire feed speed to be selected in procedure B and not have the potentiometer "overwrite" the setting when the procedure changes. <p>On dual-head Power Feed 84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.</p>	<p>Gun Pot Enabled</p> <p>Gun Pot Disabled</p> <p>Gun Pot Proc A</p>

Parameter	Name and Description	Range
P.17	<p>Remote Control Type This setup parameter was previously named "Spool/Push-Pull"</p> <p>This option selects the type of analog remote control being used. Digital remote control devices (those with a digital display) are configured automatically. Not all P.17 selections will be available on all machines. When P.17 is used to configure the remote control to function in a specific process, the remote will be ignored in other processes. For example, if P.17 = TIG Amp Control, the remote control will only function when TIG welding - the remote will be ignored in other processes (MIG, stick and gouge). If P.17 is set to Spool Gun or Push-Pull Gun then set to All Mode Remote, the machine will remember prior value of P.17 and will operate a Spool Gun or Push-Pull Gun, depending on the prior value of P.17.</p> <p>Spool Gun = Use this setting while MIG welding with a spool gun that uses a potentiometer used for wire feed speed control (this setting is backward compatible with "P.17 Gun Selection" = Standard/Spool).</p> <p>Push-Pull Gun = Use this setting while MIG welding with a push-pull gun that uses a potentiometer for wire feed speed control (this setting is backward compatible with "P.17 Gun Selection" = PushPull).</p> <p>TIG Amp Control = Use this setting while TIG welding with a foot or hand current control device (Amptrol). While TIG welding, the upper left knob on the User Interface sets the maximum current obtained when the TIG amp control is at its maximum setting.</p> <p>Stick/Gouge Rem. = Use this setting while stick welding or gouging with a remote output control device. While stick welding, the upper left knob on the User Interface sets the maximum current obtained when the stick remote is at its maximum setting. While gouging, the upper left knob is disabled and the gouging current is set on the remote control.</p> <p>All Mode Remote = This setting allows the remote control to function in all weld modes which is how most machines with 6-pin and 7-pin remote control connections operate. This setting was provided so that customers with a mix of Lincoln Electric equipment can have consistent remote control behavior across all of their equipment. (N. American default)</p> <p>Joystick MIG Gun = Use this setting while MIG welding with a push MIG gun with a joystick control. Stick, TIG and gouge welding currents are set at the User Interface. (European default)</p> <p>On dual-head PF84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.</p>	<p>Spool Gun</p> <p>Push-Pull Gun</p> <p>Tig Amp Control</p> <p>Stick/Gouge Rem.</p> <p>All Mode Remote</p> <p>Joystick MIG Gun</p>

Parameter	Name and Description	Range
P.18	<p>Wire Drive Gear Ratio</p> <p>This option selects the Wire Drive Gear Ratio that will be used. The possible selectable values are read from the Wire Drive on startup. For semi-automatic systems, if the feedhead board has dip switches, this option does not appear in the menu. Gear ratio can be selected using the dip switches.</p> <p>On dual-head PF84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.</p> <p>Note: Changing this value will cause the system to reset.</p>	
P.19	<p>Wire Drive Direction</p> <p>Used to select the wire drive "Forward" direction for single wire drive feeders. If the wire drive is reassembled to the left side, the direction must change.</p> <p>A ->B = Wire drive assembled on the right hand side (default) B -> A = Wire drive assembled on the left hand.</p>	<p>A ->B</p> <p>B -> A</p>
P.20	<p>Display Trim as Volts Option</p> <p>This option determines how trim is displayed.</p> <p>False = The trim is displayed in the format defined in the weld set (default). True = All trim values are displayed as a voltage.</p> <p>Note: This option may not be available on all machines. The power source must support this functionality, or this option will not appear in the menu.</p>	False, True
P.22	<p>Arc Start/Loss Error Time</p> <p>This option can be used to optionally shut off output if an arc is not established, or is lost for a specified amount of time.</p> <p>Error 269 will be displayed if the machine times out. If the value is set to OFF, machine output will not be turned off if an arc is not established nor will output be turned off if an arc is lost. The trigger can be used to hot feed the wire (default). If a value is set, the machine output will shut off if an arc is not established within the specified amount of time after the trigger is pulled or if the trigger remains pulled after an arc is lost. This is disabled while welding in Stick, TIG or Gouge. To prevent nuisance errors, set Arc Start/Loss Error Time to an appropriate value after considering all welding parameters (run-in wire feed speed, weld wire feed speed, electrical stick out, etc). To prevent subsequent changes to Arc Start/Loss Error Time, the setup menu should be locked out by setting Preference Lock = Yes using the Power Wave Manager software.</p>	
P.24	<p>Push Pull Type</p> <p>Allows operator to choose the Prince option if welding with a Prince Push Pull gun. This gun requires unique settings to run at the correct WFS.</p>	<p>Default</p> <p>Price</p>
P.27	<p>Language Select</p> <p>Selects which language will be displayed on the User Interface.</p> <p>English (Default) Italiano Deutsch Francais Polski Espanol</p>	<p>English, Italiano, Deutsch, Francais, Polski, Espanol</p>
P.28	<p>Display Workpoint as Amps Option</p> <p>This option determines how workpoint is displayed.</p> <p>False = The workpoint is displayed in the format defined in the weld set (default). True = All workpoint values are displayed as an amperage.</p> <p>Note: This option may not be available on all machines. The power source must support this functionality, or this option will not appear in the menu.</p>	False, True

Parameter	Name and Description	Range
P.37	<p>USB Options - Load User Mems & P-Nums from USB Allows operator to scroll through files on a mounted USB drive in the "\Lincoln\Memories" folder, if files exist in that folder. The operator can then choose a file, and if it is a valid memory set file, the UI will then prompt the operator what data to load. There will be three options:</p> <p>(1) Load All - this will load the User Memories and P-Numbers stored in the backup file. (2) Load Mems Only - this will load only the User Memories stored in the backup file. (3) Load P-Nums Only - this will load only the P-Numbers stored in the backup file.</p> <p>The operator will be informed of success or failure of the load by a message on the User Interface.</p> <p>If the feeder is single-head, and the backup file is from a dual-head feeder, the User Memories from Head 1 of the backup file will be loaded to the feeder.</p> <p>If the feeder is dual-head, and the backup file is from a single-head feeder, the User Memories from the backup file will be loaded to Head 1 of the feeder.</p> <p>Note: This option will only appear in the menu if (1) a USB module is in the same group as the UI and (2) a USB drive has been plugged into the USB port and was properly mounted.</p> <p>USB Options - Save User Mems & P-Nums to USB Allows operator to save the User Memories and P-Number settings to a mounted USB drive. The file name will be automatically generated and saved into the "Lincoln\Memories" folder on the USB drive. If the directory does not exist, it will be created.</p> <p>The name of the backup file that is created will be displayed on the UI as the save is in progress. The operator will be informed of success or failure of the save by a message on the User Interface.</p> <p>Note: This option will only appear in the menu if (1) a USB module is in the same group as the UI and (2) a USB drive has been plugged into the USB port and was properly mounted.</p> <p>USB Options - Create USB Key This option creates a unique USB Key and saves it to the USB drive that is plugged into the system. The key is saved to the "\Lincoln\Keys" directory on the USB drive. The directory will be created if it does not exist.</p> <p>The key file that is created will allow the operator to unlock *only* that feeder with *only* that USB drive. If the drive is plugged into another feeder, the newly created key will not be valid on that feeder. Also, if the newly created key file is placed onto another USB drive, the key will no longer be valid.</p> <p>A USB drive can have multiple keys for multiple feeders. This option will not overwrite any existing keys, it will only create new keys. All keys will be stored in the "Lincoln\Keys" directory.</p> <p>Note: This option will only appear in the menu if (1) a USB module is in the same group as the UI and (2) a USB drive has been plugged into the USB port and was properly mounted.</p>	Load Mems/P-Nums Save Mems/P-Nums Create USB Key
P.41	<p>WFS Offset Allows the operator to adjust the speed of the WD drive rolls. The adjustment can range from -5% to +5% of normal speed.</p> <p>On dual-head Power Feed 84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.</p> <p>Note: This option may not be available on all machines. The wire drive must support this functionality, or this option will not appear in the menu.</p>	-5% to 5% (default is 0%)

Parameter	Name and Description	Range
P.42	<p>Gas Flow Units This setting chooses the Gas Flow units to be used when displaying the rate of gas flow on the UI. Currently, two units are supported: cfh (cubic feet per hour) and l/min (liters per minute).</p> <p>The units take effect in two places:</p> <p>(1) The Gas Flow display shown during a weld (if "Show Gas Flow" is displayed on P.3, and a gas flow monitor is installed in the feeder).</p> <p>(2) The Gas Purge display shown while purging gas (if a gas flow monitor is installed in the feeder).</p>	Cfh l/min
P.80	<p>Sense From Studs Use this option for diagnostic purposes only. When power is cycled, this option is automatically reset to False. False = Voltage sensing is automatically determined by the selected weld mode and other machine settings (default). True = Voltage sensing is forced to "studs".</p>	False, True
P.81	<p>Electrode Polarity This option allows selection of the electrode voltage sense polarity. Most GMAW welding procedures use Electrode Positive welding. Most GTAW and some inner shield procedures use Electrode Negative welding.</p> <p>Positive Electrode Welding (default).</p> <p>Negative Electrode Welding.</p> <p>On dual-head Power Feed 84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.</p>	Positive Electrode Welding, Negative Electrode Welding
P.82	<p>Voltage Sense Display Allows viewing of Voltage Sense Lead Selection to aid in troubleshooting. The configuration is displayed as a text string on the lower display whenever the output is enabled. This parameter is not saved on a power cycle, but will be reset to False.</p>	
P.90	<p>Retract Delay This parameter is for the Wire Retract functionality. It sets the time the Feeder will wait after a weld has ended before it starts retracting wire.</p> <p>On dual-head Power Feed 84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.</p> <p>Note: This option may not be available on all machines. The product must support this functionality, or this option will not appear in the menu.</p>	
P.92	<p>Retract Adjust This parameter is for the Wire Retract functionality. It allows an operator to adjust the amount time the Feeder will retract the wire after a weld has completed. The adjustment is made as a percentage of the original time (-100% to 100%) calculated internally by the Feeder.</p> <p>On dual-head Power Feed 84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.</p> <p>Note: This option may not be available on all machines. The product must support this functionality, or this option will not appear in the menu.</p>	
P.98	<p>Disable Lockouts This allows the operator to override all user interface lockouts currently in place on the machine. The operator will be asked for the UI passcode, and if correct, all lockouts will be removed. If the lockouts have been removed with this setup menu option, then the name of the option will change to "Enable Lockouts". The lockouts can be re-enabled with the same passcode by selecting this. The machine will also automatically re-enable lockouts after 60-seconds of inactivity. Note: This option will only display if there is a UI passcode on the machine.</p>	n/a

Parameter	Name and Description	Range
P.99	<p>Show Test Modes</p> <p>Most power sources contain weld modes used for calibration and test purposes. By default, the machine does not include test weld modes in the list of weld modes that are available to the operator. To manually select a test weld mode, set this option to "Yes". When the power source is turned off and back on again, the test modes will no longer appear in the mode list. Test weld modes typically require the machine output to be connected to a grid load and cannot be used for welding.</p>	
P.100	<p>View Diagnostics</p> <p>Diagnostics are only used for servicing or troubleshooting the Power Wave system. Select "Yes" to access the diagnostic options in the menu. Additional parameters will now appear in the setup menu (P.101, P.102, etc).</p>	
P.101	<p>View Event Logs</p> <p>Used for viewing all the system event logs.</p> <p>Press the Right Button to enter the option. Rotate Control Knob to select the desired event log to read. Press the Right Button again to enter the selected log. Rotating the Control Knob will scroll through the event log, displaying the log index number, event code and some other data. Press the Left Button to back out to select another log.</p> <p>Press the Left Button again to exit this option.</p>	
P.102	<p>View Fatal Logs</p> <p>Used for viewing all the system fatal logs.</p> <p>Press the Right Button to enter the option. Rotate Control Knob to select the desired fatal log to read. Press the Right Button again to enter that log. Rotating the Control Knob will scroll through the log, displaying the log index number and fatal code. Press the Left Button to back out to select another log.</p> <p>Press the Left Button again to exit this option.</p>	
P.103	<p>View Software Version Information</p> <p>Used for viewing the software versions for each board in the system.</p> <p>Press the Right Button to enter the option. Rotate Control Knob to select the desired board to read. Press the Right Button again to read the firmware version. Press the Left Button to back out to select another board. Rotate the Control Knob to select another board, or Press the Left Button to exit this option.</p>	
P.104	<p>View Hardware Version Information</p> <p>Used for viewing the hardware version for each board in the system. Press the Right Button to enter the option.</p> <p>Rotate Control Knob to select the desired board to read. Press the Right Button again to read the hardware version. Press the Left Button to back out to select another board. Press the Left Button again to exit this option</p>	
P.105	<p>View Welding Software Information</p> <p>Used for viewing the Weld Set in the Power Source.</p> <p>Press the Right Button to read the Weld Set version.</p> <p>Press the Left Button to back out and exit this option</p>	
P.106	<p>View Ethernet IP Address</p> <p>Used for viewing the IP address of Ethernet compatible equipment.</p> <p>Press the Right Button to read the IP Address.</p> <p>Press the Left Button to back out and exit this option. The IP address cannot be changed using this option.</p>	
P.107	<p>View Power Source Protocol</p> <p>Used for viewing the type of power source the feeder is connected to.</p> <p>Press the Right Button to identify the power source as either LincNet or ArcLink.</p> <p>Press the Left Button to back out and exit this option.</p>	
P.500	<p>View Lockout Parameters</p> <p>Originally used to prevent inadvertent changes of secure setup parameters, P.500 was previously used as a gateway to these parameters. Presently, this option does not exist in any setup menu.</p>	
P.501	<p>Encoder Lockout</p> <p>Locks one or both of the upper knobs (encoders), preventing the operator from changing wire feed speed, amps, volts or trim. The function of each upper knob depends on the selected weld mode. When a constant current weld mode is selected (e.g. Stick, TIG, Gouge), the upper right knob will always function as an on/off switch.</p> <p>This parameter can only be accessed using Power Wave Manager software.</p>	

Parameter	Name and Description	Range
P.502	<p>Memory Change Lockout Determines if the memories can be overwritten with new contents. Unlocked = Memories can be saved and limits can be configured (default). Fully Locked = Memories cannot be changed - saving is prohibited and limits cannot be reconfigured. Allow Saving Within Limits = Allows saving to memory when limits are enabled. Only the nominal value is saved and only to the selected memory. This parameter can only be accessed using Power Wave Manager software.</p>	No, Yes
P.503	<p>Memory Button Disable Disables the specified memory button(s). When a memory is disabled, welding procedures cannot be restored from or saved to that memory. If an attempt is made to save or restore a disabled memory, a message will be displayed on the lower display indicating the memory number is disabled. In multi-head systems, this parameter disables the same memory buttons on both feed heads. This parameter can only be accessed using Power Wave Manager software.</p>	
P.504	<p>Mode Select Panel Lock Selects between several Mode Select Panel lockout preferences. When a Mode Select Panel selection is locked and an attempt is made to change that parameter, a message will be displayed on the lower display indicating the parameter is locked.</p> <ul style="list-style-type: none"> All MSP Options Unlocked = All adjustable parameters on the Mode Select Panel are unlocked. All MSP Options Locked = All knobs and buttons on the Mode Select Panel are locked. Start & End Options Locked = The Start and End parameters on the Mode Select Panel are locked, all others are unlocked. Weld Mode Option Locked = The weld mode cannot be changed from the Mode Select Panel, all others Mode Select Panel settings are unlocked. Wave Control Options Locked = The Wave Control parameters on the Mode Select Panel are locked, all others are unlocked. Start, End, Wave Options Locked = The Start, End and Wave Control parameters on the Mode Select Panel are locked, all others are unlocked. Start, End, Mode Options Locked = The Start, End and Weld Mode Select parameters on the Mode Select Panel are locked, all others are unlocked. <p>This parameter can only be accessed using Power Wave Manager software.</p>	<p>All MSP Options Unlocked</p> <p>All MSP Options Locked</p> <p>Start & End Options Locked</p> <p>Weld Mode Option Locked</p> <p>Wave Control Options Locked</p> <p>Start, End Wave Options Locked</p> <p>Start, End, Mode Options Locked</p>
P.505	<p>Setup Menu Lock Determines if the setup parameters can be modified by the operator without entering a passcode.</p> <ul style="list-style-type: none"> No = The operator can change any set menu parameter without first entering the passcode even if the passcode is non-zero (default). Yes = The operator must enter the passcode (if the passcode is non-zero) in order to change any setup menu parameters. <p>This parameter can only be accessed using Power Wave Manager.</p>	
P.506	<p>Set User Interface Passcode Prevents unauthorized changes to the equipment. The default passcode is zero which allows full access. A nonzero passcode will prevent unauthorized: changes to memory limits, saving to memory (if P.502 = Yes), changes to setup parameters (if P.505 = Yes).</p> <p>If someone repeatedly enters an invalid passcode 5 times in a row, the passcode will be automatically set to 9999, which is an invalid code and the interface can no longer be unlocked. PWManager is required to reset the passcode or unlock the machine.</p> <p>This parameter can only be accessed using Power Wave Manager software.</p>	
P.507	<p>UI Clear All Memories Allows the operator to quickly set all memories to the default weld mode and welding parameters. This parameter can only be accessed using Power Wave Manager software.</p>	
P.509	<p>UI Master Lockout Locks all user interface controls, preventing the operator from making any changes. This parameter can only be accessed using Power Wave Manager software.</p>	

Parameter	Name and Description	Range
P.512	<p>USB Options This setting is used to enable and disable which USB options can be used on the feeder. Available selections are as follows:</p> <p>(1) No Options = No USB options will be available for use. P.37 will not be available, and the USB prompt will be disabled. (2) Load/Save Memos & P-Nums, Create Key (All Options) = All USB options will be available for use in P.37 and the USB prompt (if enabled) (3) Load/Save Memos & P-Nums Only = Only the Load and Save User Memories and P-Numbers options will be available for use in P.37 and the USB prompt (if enabled). (4) Create Key Only = Only the Create USB Key option will be available in P.37 and the USB prompt (if enabled).</p> <p>This parameter can only be accessed using Power Wave Manager software.</p>	
P.513	<p>USB Prompt This setting enables and disables the USB prompt. If enabled, the USB prompt will appear whenever a USB drive is plugged into the system (the prompt is the same as P.37).</p> <p>This parameter can only be accessed using Power Wave Manager software.</p>	
P.514	<p>USB Key Lock This setting turns on and off the USB-Key lock on a feeder.</p> <p>When the feeder is locked, all encoders and buttons on the UI are disabled, Cold-Inch and Gas Purge are disabled, and the feeder will not weld. Other feeders connected to the same Power Source will not be affected.</p> <p>The only way to unlock the feeder is to plug a "USB Key" into the system. The key is a USB drive that has the correct .key file in its "Lincoln\Keys" directory. A USB drive can be turned into a key by using the "Create USB Key" option in P.37 on the feeder, or by creating the key through PowerWave Manager (future feature).</p> <p>A .key file is specific to a feeder and the USB drive. A .key file that works on one feeder will not work on another feeder. A .key file that works on one USB drive will not work on another USB drive. A USB drive can have multiple .key files, making it a "USB Key" for multiple feeders.</p> <p>This parameter can only be accessed using Power Wave Manager software.</p>	

Gouging Kit

⚠ WARNING

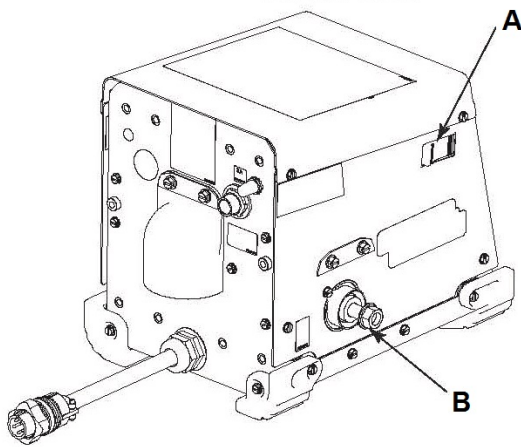
If the wire feeder is turned on with the process switch in the gouging position, the welding output will turn on.

The Power Feed 84 is available from the factory with the gouging kit installed.

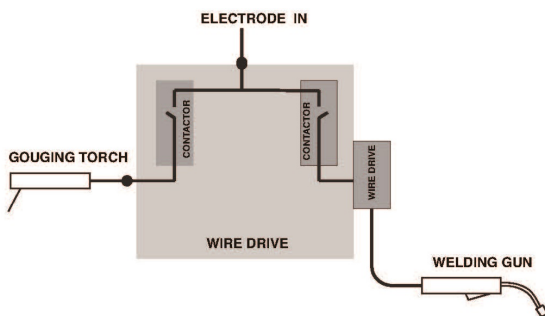
The gouging kit includes a mounting stud for attaching a gouging torch and two contactors to electrically isolate the gouging torch while welding, and to isolate the welding head while gouging.

The contactors automatically switch from the wire drive to the gouging stud when a gouging, stick or TIG mode is selected. If two single wire drives with gouging kits are connected to one power source, then only one wire drive at a time may be selected for gouging.

The gouging kit is not available for dual wire drives.



- A. Wire Feeder Gouging Rocker Switch
B. Gouging Stud (Cover not shown)



Gas Flow Sensor Kit

The gas flow sensor uses a mass flow sensor for measuring gas flow in the range of 0 – 28 l/min. The gas flow sensor kit is compatible with the following gases:

- Argon
- CO₂
- 98Ar 2CO₂
- 90Ar 10CO₂
- 85Ar 15CO₂
- 80Ar 20CO₂
- 75Ar 25CO₂

Dual feeders require (2) gas flow sensors

Maintenance

⚠ WARNING

Electric Shock can kill.



- Turn the input power OFF at the welding power source before installation or changing drive rolls and/or guides.
- Do not touch electrically live parts.
- When inching with the gun trigger, electrode and drive mechanism are "hot" to work and ground and could remain energized several seconds after the gun trigger is released.
- Do not operate with covers, panels or guards removed or open.
- Only qualified personnel should perform maintenance work.

⚠ WARNING

For any maintenance or repair operations it is recommended to contact the nearest technical service center or Lincoln Electric. Maintenance or repairs performed by unauthorized service centers or personnel will null and void the manufacturer's warranty.

WFS Calibration

Measurements for adjusting the WFS calibration must be made before entering the set-up menu.

On dual feeders, there is calibration value for each wire drive.

Wire Feed Speed offset allows the operator to adjust the speed of the WD drive rolls. The adjustment can range from -5% to +5% of normal speed.

On dual-head Power Feed 84 Feeders, a different setting can be used for each head. The operator will be prompted to select which head to edit before the setting can be changed.

The calibration factor is adjustable from 0.95 to 1.05. Adjust the WFS calibration value in the set-up menu. While in the set-up menu, adjust the calibration factor as follows.

Example:

Actual WFS/Set WFS = Calibration Factor.

Example:

405/100=1.01

Routine Maintenance

Check weld cables, control cables and gas hoses for cuts.

Clean and tighten all weld terminals

Periodic Maintenance

Clean the drive rolls and inner wire guide and replace if worn.

Blow out or vacuum the inside of the feeder.

Inspect the motor brushes every 6 months. Replace if shorter than 0.5" (12.7mm).

Every year inspect the gearbox and coat the gear teeth with a moly-disulfide filled grease. DO NOT use graphite grease.

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 for any updated information.

WEEE

07/06

English



Do not dispose of electrical equipment together with normal waste!

In observance of European Directive 2012/19/EC on Waste Electrical and Electronic Equipment (WEEE) and its implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility. As the owner of the equipment, you should get information on approved collection systems from our local representative.

By applying this European Directive you will protect the environment and human health!

Spare Parts

12/05

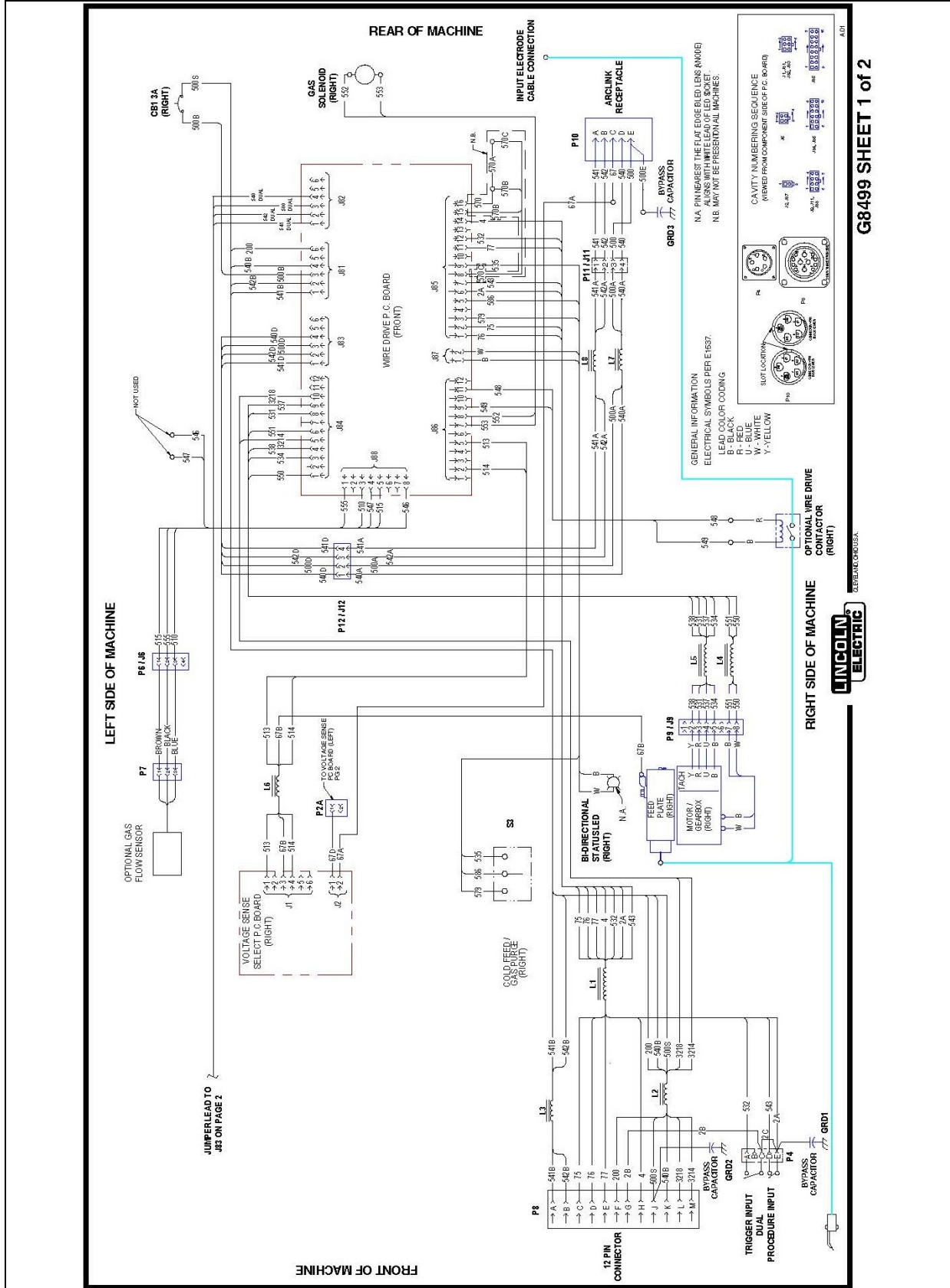
For Spare Parts references visit the Web page: <https://www.lincolnelectric.com/LEExtranet/EPC/>

Authorized Service Shops Location

09/16

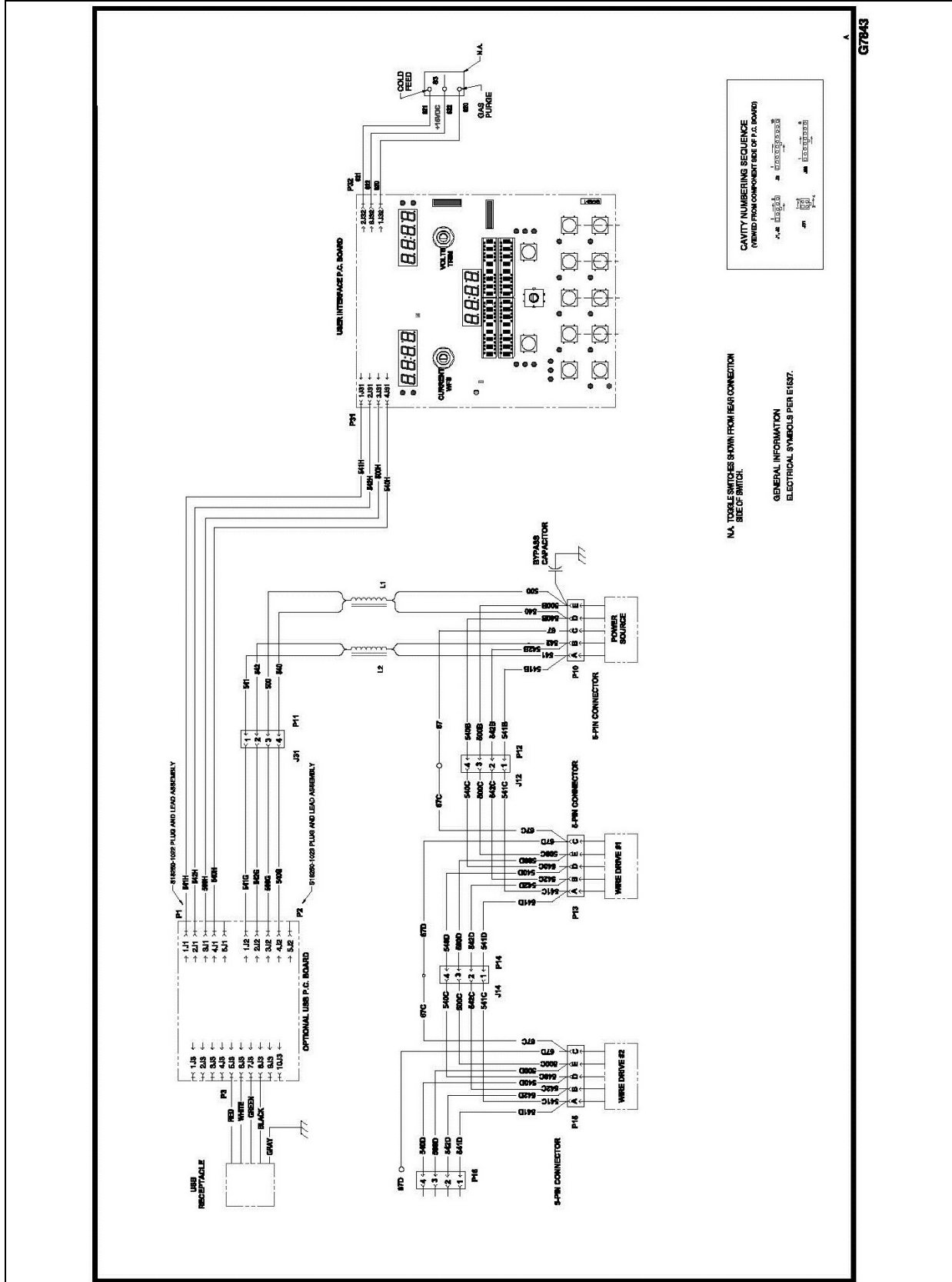
- The purchaser must contact a Lincoln Authorized Service Facility (LASF) about any defect claimed under Lincoln's warranty period.
- Contact your local Lincoln Sales Representative for assistance in locating a LASF or go to www.lincolnelectric.com/en-gb/Support/Locator.

WIRING DIAGRAM – POWER FEED 84 WIRE DRIVE – 1 DUAL (ABOVE CODE 12200)



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. If the diagram is illegible, write to the Service Department for a replacement. Give the equipment code number.

WIRING DIAGRAM – POWER FEED 84 CONTROL BOX WITH USB FOR CODES 12177, 12178, 12179



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. If the diagram is illegible, write to the Service Department for a replacement. Give the equipment code number.

Suggested Accessories

DRIVE ROLL AND WIRE GUIDE KITS

Drive Roll Kits, Steel Wires		
KP1505-030S	0.6-0.8mm	Includes: 4 Smooth V groove drive rolls and inner wire guide.
KP1505-035S	0.9mm	
KP1505-045S	1.2mm	
KP1505-052S	1.4mm	
KP1505-1/16S	1.6mm	
KP1505-1	0.9, 1.2mm	
KP1505-2	1.0mm	
Drive Roll Kits, Cored Wires		
KP1505-035C	0.8-0.9mm	Includes: 4 Knurled drive rolls and inner wire guide.
KP1505-045C	1.0-1.2mm	
KP1505-052C	1.4mm	
KP1505-1/16C	1.6mm	
Drive Roll Kits, Steel or Cored Wires		
KP1505-068	1.8mm	Includes: 4 Knurled drive rolls and inner wire guide.
KP1505-5/64	2.0mm	
KP1505-3/32	2.4mm	
KP1505-7/64	2.8mm	
KP1505-.120	3.2mm	
Drive roll Kits, hardfacing Wires		
KP1505-7/64C	2.8mm	Includes: 2 Knurled drive rolls, 2 Smooth V groove drive rolls and inner wire guide.
Drive roll Kits, Aluminum Wire		
KP1507-035A	0.9 mm	Includes: 4 polished U groove drive rolls, outer wire guide and inner wire guide, pressure door springs, conduit bushing.
KP1507-040A	1.0mm	
KP1507-3/64A	1.2mm	
KP1507-1/16A	1.6mm	
KP1507-3/32A	2.4mm	












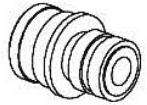
GUN ADAPTER KITS

K3344-1	Gun Adapter Kit, Lincoln Back-end Also Includes KP4069-1 Guide tube Kit		
K3345-1	Gun Adapter Kit, Tweco #2-#4 back-end		
K3346-1	Gun Adapter Kit, Tweco #5 back-end		
K3347-1	Gun Adapter Kit, Miller back-end		
K3348-1	Gun Adapter Kit, Oxo back-end Also Includes KP4069-2 Guide tube kit.		
K3349-1	Gun Adapter Kit, Fast-Mate (Euro) Also includes KP4069-3 Guide tube kit.		
KP4069-3	Guide tube kit, Fast Mate		
	Wire Size	No. of Grooves in Guide Tube	Individual Buy Part #
	0.6-1.2mm	1	KP2110-1
	1.2-1.6mm	2	KP2110-2
	1.6-2.0mm	3	KP2110-3
	2.0-2.8mm	4	KP2110-4

CABLES

K#	Description	Purpose
K1543-xx	Control Cable: Male 5 pin to Female 5 pin ArcLink cable	Connects the user interface to the wire drive for boom systems. Connects the wire drive to the power source on bench systems.
K2683-xx	Heavy Duty Control Cable: Male 5 pin to Female 5 pin ArcLink cable	Connects the user interface to the wire drive for boom systems. Connects the wire drive to the power source on bench systems.

GENERAL ACCESSORIES

K#	Description	purpose	image
K1546-1	Incoming Bushing for Lincoln Conduit.	Use with .025 – 1/16" wires.	
K1546-2	Incoming Bushing for Lincoln Conduit.	Use with 1/16" to 1/8" wires.	
K1733-1	Wire Straightener.		
K590-6	Water Connection Kit.		
K283	Portable Digital Wire Feed Speed Meter.		
K3341-1	Lift Bail.		
K4068-1	Cart Mounting Bracket	Used to mount feeders to K3059-2 and K3059-3 carts.	
K3342-1	Standard Duty Wire Reel Stand.	For use with 30-40 lb spools.	
K3974-1	Gouging Kit.	Includes two contactors, side panel with gouging stud and switch. May only be used with single wire drives.	
K3343-1	Heavy Duty Wire Reel Stand.	For use with 50-60 lb coils and 30- 40 lb spools.	
K1634-4	Wire Reel Enclosure.	For use with 30-40 lb spools.	
K3340-1	Wire Reel Enclosure.	For use with 50-60 lb coils.	
KP3103-1	Shielding Gas Filter.	Protects the gas solenoid and gun from contaminants.	
K3338-1	Shield Gas Flow Sensor.	Precision mass flow sensor for measuring the shielding gas flow.	
K3929-1	Quick Connect Conduit Inlet Bushing.	Quick disconnect inlet bushing for Electron Beam Technologies conduit.	

ACCESSORIES INCLUDED WITH THE POWER FEED 84

- Wire drives include a Standard #2-#4 gun adapter.
- 30 tooth pinion gear.
- All wire feeders with a wire reel stand include a K1543-8 8' control cable.
- All wire feeders without a wire reel stand include a K3929-1 conduit inlet bushing.