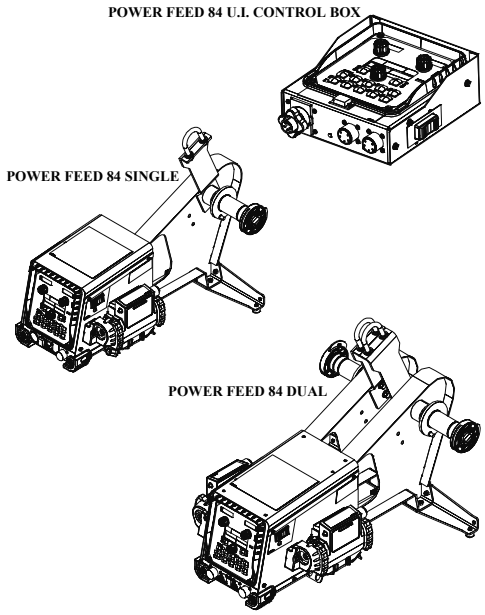
INSTRUCTION MANUAL

POWER FEED 84



For use with Product/Code Numbers:

12702, 12703, 12704, 12705, 12706, 12707, 12708, 12698, 12699, 12700, 12701, 12709, 12697, 12177, 12178, 12179

Save for future reference

Date Purchased

Code: (ex: 10859)

Serial: (ex: U1060512345)

IM10417-A | Issue Date Jun - 2026
© Lincoln Global, Inc. All Rights Reserved.

THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Avenue • Cleveland, OH • 44117-1199 • U.S.A.
www.lincolnelectric.com

Contents

INSTALLATION..... SECTION A

TECHNICAL SPECIFICATIONS..... A-1
SAFETY PRECAUTIONS..... A-3
LOCATION..... A-4
BENCH CONFIGURATIONS..... A-4
BOOM CONFIGURATIONS..... A-5
BOOM MOUNTING..... A-5
SINGLE/DUAL USER INTERFACE CONVERSION..... A-6
BENCH TO BOOM CONVERSION..... A-6
CONTROL BOX..... A-7
INSTALLING DRIVE ROLLS..... A-8
WIRE DRIVE PRESSURE SETTING:..... A-8
LINCOLN, STANDARD #2-#4, STANDARD #5, MILLER GUN ADAPTER INSTALLATION..... A-9
ROTATING THE WIRE DRIVE..... A-13
PINION GEAR RATIO..... A-13
SHIELDING GAS CONNECTION..... A-15
WATER-COOLED GUN CONNECTIONS..... A-16
LOADING SPOOLS OF WIRE..... A-17
WIRE REEL STANDS..... A-17
ELECTRICAL INSTALLATION..... A-18
WELD CABLES, STANDARD..... A-20
WELDING WITH MULTIPLE ARCS..... A-21
CONTROL CABLE..... A-21

OPERATION..... SECTION B

GENERAL DESCRIPTION..... B-1
POWER UP SEQUENCE..... B-1
GRAPHIC SYMBOLS..... B-2
RECOMMENDED PROCESSES AND EQUIPMENT..... B-2
PROCESS LIMITATIONS..... B-2
EQUIPMENT LIMITATIONS..... B-3
RECOMMENDED POWER SOURCES..... B-3
USER INTERFACE LAYOUT..... B-4
WIRE FEED SPEED / AMPS DISPLAY AND KNOB..... B-4
VOLTAGE / TRIM DISPLAY AND KNOB..... B-5
SELECTING WELD MODE..... B-7
WAVE CONTROL..... B-7
TRIGGER SELECTION..... B-10
2 STEP TRIGGER..... B-10
4 STEP TRIGGER..... B-13
SPOT TRIGGER..... B-16
4-STEP TRIGGER: SPECIAL CONSIDERATION..... B-16
START OPTIONS..... B-17
WIRE DRIVE SELECTION..... B-18
GOUGING KIT OPERATION..... B-19
DUAL PROCEDURE AND MEMORY OPERATION..... B-19
USING PROCEDURE MEMORIES..... B-20
USER MEMORIES..... B-20
LIMITS..... B-21
USB OPERATION..... B-23

SET-UP MENU.....B-24
GOUGING KIT.....B-39

ACCESSORIES AND OPTIONS..... SECTION C
OPTIONAL KITS AND ACCESSORIES..... C-1
GENERAL ACCESSORIES..... C-3

MAINTENANCE..... SECTION D
SAFETY PRECAUTIONS..... D-1
WFS CALIBRATION.....D-1
ROUTINE MAINTENANCE..... D-2
PERIODIC MAINTENANCE..... D-2

TROUBLESHOOTING..... SECTION E
HOW TO USE TROUBLESHOOTING GUIDE..... E-1
TROUBLESHOOTING GUIDE..... E-1

DIAGRAMS & PRINTS..... SECTION F
POWER FEED 84 WIRE DRIVE - SINGLE (ABOVE CODE 12000)..... F-2
POWER FEED 84 WIRE DRIVE - 1 DUAL (ABOVE CODE 12200)..... F-3
POWER FEED 84 WIRE DRIVE - 2 DUAL (ABOVE CODE 12200)..... F-4
POWER FEED 84 CONTROL BOX WITH USB FOR CODES 12177, 12178, 12179..... F-5
DIMENSIONS..... F-6
INDEX.....F-9

CUSTOMER ASSISTANCE POLICY

SAFETY INFORMATION

SAFETY DEPENDS ON YOU

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

⚠ DANGER

This statement indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

This statement indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

This statement indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

Notice: This statement indicates the possibility of damage to equipment if the potential risk is not avoided.

PLEASE EXAMINE CARTON AND EQUIPMENT FOR DAMAGE IMMEDIATELY

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

KEEP YOUR HEAD OUT OF THE FUMES



- **DON'T** get too close to the weld. Use corrective lenses if necessary to stay a reasonable distance away from the weld.
- **USE ENOUGH VENTILATION** or exhaust at the weld, or both, to keep the fumes and gases from your breathing zone and the general area.
- **IN A LARGE ROOM OR OUTDOORS** , natural ventilation may be adequate if you keep your head out of the fumes.
- **USE NATURAL DRAFTS** or fans to keep the fumes away from your face.
- **READ** and obey the Safety Data Sheet (SDS) and the warning label that appears on all containers of welding materials.

If you develop unusual symptoms, see your supervisor. Perhaps the welding atmosphere and ventilation system should be checked.

WEAR CORRECT EYE, EAR AND BODY PROTECTION



- **PROTECT** your eyes and face with properly fitted and with proper grade of filter plate (See ANSI Z49.1).
- **PROTECT** your body from welding spatter and arc flash with protective clothing including woolen clothing, flame-proof apron and gloves, leather leggings, and high boots.
- **PROTECT** others from spatter, flash, and glare with protective screens or barriers.
- **PROTECT** your eyes and face with welding helmet
- **IN SOME AREAS**, protection from noise may be appropriate.
- **BE SURE** protective equipment is in good condition.



- **AT ALL TIMES**, wear safety glasses in work area.

- **DO NOT WELD, CUT, OR HEAT** containers or materials which previously had been in contact with hazardous substances unless they are properly cleaned. This is extremely dangerous.

- **DO NOT WELD, CUT, OR HEAT** painted or plated parts unless special precautions with ventilation have been taken. They can release highly toxic fumes or gases.
- **PROTECT** compressed gas cylinders from excessive heat, mechanical shocks, and arcs; fasten cylinders so they cannot fall.
- **BE SURE** cylinders are never grounded or part of an electrical circuit.
- **REMOVE** all potential fire hazards from welding area.



- **ALWAYS HAVE FIRE FIGHTING EQUIPMENT READY FOR IMMEDIATE USE AND KNOW HOW TO USE IT.**

CALIFORNIA PROPOSITION 65 WARNINGS

⚠ WARNING



Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects, or other reproductive harm.

Always start and operate the engine in a well-ventilated area.

If in an exposed area, vent the exhaust to the outside.

Do not modify or tamper with the exhaust system.

Do not idle the engine except as necessary.

⚠ WARNING



This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code § 25249.5 et seq.)

For more information go to https://www.p65warnings.ca.gov

ARC WELDING CAN BE HAZARDOUS

PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS SHOULD CONSULT WITH THEIR DOCTOR BEFORE OPERATING.

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

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

FOR ENGINE POWERED EQUIPMENT



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



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



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

- In some cases it may be necessary to remove safety guards to perform required maintenance. **REMOVE GUARDS ONLY** when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.
- **DO NOT** put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.
- To prevent accidentally starting gasoline engines while turning the engine or welding generator during maintenance work, disconnect the spark plug wires, distributor cap or magneto wire as appropriate.



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



- Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.
- Using a generator indoors **CAN KILL YOU IN MINUTES**.
- **NEVER** use inside a home or garage, EVEN IF doors and windows are open.



- **ONLY** use **OUTSIDE** and far away from windows, doors and vents.
- Avoid other generator hazards. **READ MANUAL BEFORE USE**.

ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS



- Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding and heating current creates EMF fields around cables and equipment.
- EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult their physician before welding.
- Exposure to EMF fields in welding may have other health effects which are now not known.

All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

- Route the electrode and work cables together - Secure them with tape when possible.
- Never coil the electrode lead around your body.
- Do not place your body between the electrode and work cables. If the electrode cable is on your right side, the work cable should also be on your right side.
- Connect the work cable to the workpiece as close as possible to the area being welded.
- Do not work next to welding power source.

ELECTRIC SHOCK CAN KILL



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

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

- Semiautomatic DC Constant Voltage (Wire) Welder.
- DC Manual (Stick) Welder.
- AC Welder with Reduced Voltage Control.
- In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically “hot”.
- Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.
- Ground the work or metal to be welded to a good electrical (earth) ground.
- Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.
- Never dip the electrode in water for cooling.

- Never simultaneously touch electrically “hot” parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.
- When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.
- **Also see** WELDING AND CUTTING SPARKS CAN CAUSE FIRE OR EXPLOSION **and** FOR ELECTRICALLY POWERED EQUIPMENT

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

FUMES AND GASES CAN BE DANGEROUS



Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone.

- **When welding hardfacing (see instructions on container or SDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and within applicable OSHA PEL and ACGIH TLV limits using local exhaust or mechanical ventilation unless exposure assessments indicate otherwise. In confined spaces or in some circumstances, outdoors, a respirator may also be required. Additional precautions are also required when welding on galvanized steel.**
- The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.
- Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.
- Shielding gases used for welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.
- Read and understand the manufacturer’s instructions for this equipment and the consumables to be used, including the Safety Data Sheet (SDS) and follow your employer’s safety practices. SDS forms are available from your welding distributor or from the manufacturer.
- Also see FOR ENGINE POWERED EQUIPMENT

WELDING AND CUTTING SPARKS CAN CAUSE FIRE OR EXPLOSION



- Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.
- Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to **“Safety in Welding and Cutting” (ANSI Standard Z49.1)** and the operating information for the equipment being used.

- When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
- Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to ensure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been “cleaned”. For information, purchase “Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances”, **AWS F4.1** from the American Welding Society.
- Vent hollow castings or containers before heating, cutting or welding. They may explode.
- Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuff-less trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.
- Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.
- **Read and follow NFPA 51B** “Standard for Fire Prevention During Welding, Cutting and Other Hot Work”, available from NFPA, 1 Batterymarch Park, PO box 9101, Quincy, MA 022690-9101.
- **DO NOT** use a welding power source for pipe thawing.

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. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.
- Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.

Cylinders should be located:

- Away from areas where they may be struck or subjected to physical damage.
- A safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.
- Never allow the electrode, electrode holder or any other electrically “hot” parts to touch a cylinder.
- Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
- Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
- Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-l, “Precautions for Safe Handling of Compressed Gases in Cylinders,” available from the Compressed Gas Association, 14501 George Carter Way Chantilly, VA 20151.

FOR ELECTRICALLY POWERED EQUIPMENT



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

BATTERY HANDLING, STORAGE, AND DISPOSAL



Batteries can be flammable substances such as lithium or other organic solvents, which may result in overheating, rupture, or combustion. Failure to follow the battery manufactures instructions may result in fire, personal injury, and damage to property if used improperly.

- DO NOT short circuit, disassemble, deform, or heat batteries.
- DO NOT attempt to recharge batteries unless they are specifically marked as "rechargeable".
- DO NOT use or charge the battery if it appears to be leaking, deformed or damaged in any way.
- Store in a cool location. Keep batteries away from direct sunlight, high temperature, and high humidity.
- Immediately discontinue use of the battery if, while using, charging, or storing the battery, the battery emits an unusual smell, feels hot, changes color, changes shape, or appears abnormal in any other way.
- Keep batteries out of reach of children, should a child swallow a battery, consult a physician immediately.
- Recycle or dispose of batteries in accordance with local and federal laws.

FOR LASER EMITTING EQUIPMENT



- Hazardous Class 4 (IV) laser products emit invisible, infrared laser radiation which can permanently damage the eye's retina and/or cornea, burn skin, and pose a fire risk. End users shall assign a qualified Laser Safety Officer (LSO) who has the certifications required by applicable law/standards, have a documented Laser Safety Program and have a Laser Controlled Area (LCA) that confirms to ANSI Z136.1 & Z136.9.
- Do not operate laser before end user's LSO has completed a risk assessment and all the prescribed Risk Mitigations measures have been fully implemented. Ensure the laser is operated/ demonstrated safely by trained personnel and that the environment surrounding the laser welding cell or laser-controlled area is safe for people nearby when the laser is in operation.
- Never point the laser at yourself or others. Never look directly into a laser aperture, even if wearing full eye protection.
- All persons inside LCA must wear proper PPE to avoid eye or skin exposure to laser radiation. The end user's LSO shall select proper PPE including, but not limited to, heat-resistant gloves, flame-resistant clothing, laser safety eye wear and laser-safe helmets that conform to ANSI Z136.1 Optical Density requirements for the wavelength and output power of the laser in use. Standard safety glasses and welding helmets DO NOT provide adequate protection from laser beam hazards. Always inspect PPE for damage or improper fit before use.
- Only qualified persons shall install, operate or service this unit per ANSI Z136.1 standards and your LSO's instruction. Read and follow all labels and manuals before installing, operating, or servicing hand held any laser welding equipment.
- Do not operate outside of a LCA, or if the laser protective housing is modified or damaged, or if safety interlocks have been bypassed or otherwise defeated. Inspect all equipment and LCA for damage or tampering prior to use.
- Reflected beams from the laser can damage eyes and skin and can pose a fire risk. Prior to use, the LCA should be assessed by the LSO to understand the surfaces where hazardous reflected beams can exist. Never position yourself or flammable material in the anticipated laser beam path and take extra precautions when working on reflective materials like aluminum and stainless steel.
- Follow all standards, individual facility or building regulations, and national, state, and local codes.

DEALER LOCATOR & PRODUCT REGISTRATION

Register your machine:

https://www.lincolnelectric.com/register

Authorized Service and Distributor Locator:

https://www.lincolnelectric.com/locator

ADDITIONAL SAFETY INFORMATION

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

INSTALLATION

TECHNICAL SPECIFICATIONS

POWER FEED 84, POWER FEED 84 DUAL K3328-xx, K3330-xx, K3336-xx

INPUT VOLTAGE and CURRENT		
VOLTAGE	**INPUT AMPERES**	**NOTES**
40 VDC	9A	Wire Drive
	1A	User Interface

RATED OUTPUT @ 104°F (40°C)				
			DUTY CYCLE	**INPUT AMPERES**
With User Interface	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
Without User Interface	Wire Drive Only	Wire Drive	100%	600 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/min (1.3 – 19.0 m/min)	.025” – 1/16” (0.6 – 1.6 mm)	.035” – 5/64” (0.9 – 2.0 mm)
	30 tooth	50 – 1200 inch/min (1.3 – 30.4 m/min)	.025” – .045” (0.6 – 1.2 mm)	.035” – 1/16” (0.9 – 1.6 mm)

PHYSICAL DIMENSIONS				
MODEL	**HEIGHT**	**WIDTH**	**DEPTH**	**WEIGHT**
Power Feed 84 Wire Drive, Single	11.6 Inches (257 mm)	13.6 Inches (345 mm)	13.3 Inches (338 mm)	37 lbs. (16.8 kg.)
Power Feed 84 Wire Drive, Dual	11.9 Inches (302 mm)	17.2 Inches (437 mm)	15.9 Inches (404 mm)	59 lbs. (26.8 kg.)
Power Feed 84 Control Box	11.0 Inches (279 mm)	8.7 Inches (221 mm)	3.6 Inches (31 mm)	6.5 lbs. (2.9 kg.)
Standard Duty Wire Reel Stand	13.3 Inches (338 mm)	11.0 Inches (279 mm)	10.3 Inches (31 mm)	11 lbs. (5.0 kg.)
Heavy Duty Wire Reel Stand	25.2 Inches (640 mm)	11.0 Inches (279 mm)	14.6 Inches (371 mm)	19 lbs. (8.6 kg.)

TEMPERATURE RANGE	
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) @ 40ºC (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**	**Contactor**
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 DUTY	STD #2-#4	K1543-8'	N	N	N

CONTROL BOXES		
MODEL K#	**User Interface**	**USB**
K3336-2	FULL DISPLAY WITH MEMORIES	Y
K3336-3	BLANK PANEL	N

DUAL WIRE DRIVE FEEDERS							
MODEL K#	**User Interface**	**USB**	**Wire Reel Stand**	**Gun Adapter**	**Control Cable**	**Inlet Bushing**	**Contactor**
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

DUAL WIRE DRIVE FEEDERS							
K3330-5	FULL DISPLAY WITH MEMORIES	Y	HVY DTY	STD #2-#4	K1543-8'	N	Y
K3330-6	FULL DISPLAY WITH MEMORIES	N	STD DTY	STD #2-#4	K1543-8'	N	N
K3330-10	FULL DISPLAY WITH MEMORIES	Y	HVY DTY	STD #2-#4	K1543-8'	N	N

SAFETY PRECAUTIONS

⚠ WARNING



ELECTRIC SHOCK CAN KILL.

ONLY QUALIFIED PERSONNEL SHOULD PERFORM THIS INSTALLATION.

Turn the input power OFF at the disconnect switch or fuse box before attempting to connect or disconnect input power lines, output cables or control cables.

Do not touch the wire drive, drive rolls, wire coil or electrode when welding output is ON.

Wire feeder may be connected to a piece of automatic equipment that may be remotely controlled.

Do not operate with covers, panels or guards removed.

Do not let the electrode or wire spool touch the wire feeder housing.

Insulate yourself from the work and ground.

Always wear dry insulating gloves.

The lift bail is insulated from the wire feeder enclosure. If an alternate hanging device is used, it must be insulated from the wire feeder enclosure.

⚠ WARNING



MOVING PARTS can injure.

Keep away from moving parts.

Wear Eye Protection

LOCATION

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

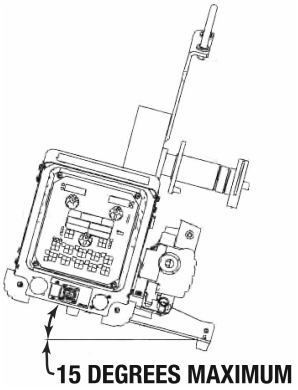
This equipment is for industrial use only and it is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There can be potential difficulties in residential locations due to conducted as well as radiated radio-frequency disturbances.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

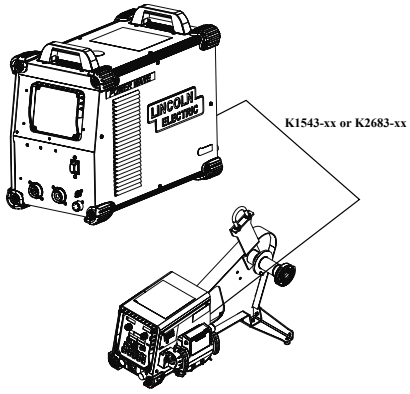
For bench models, do not angle spindle for the wire spool or coil more than 15 degrees downward.



BENCH CONFIGURATIONS

"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

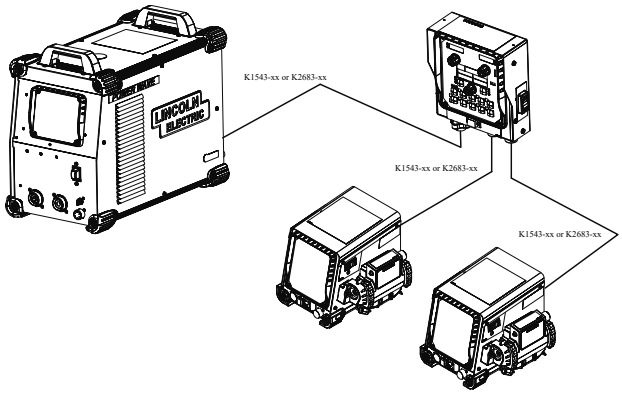


BOOM CONFIGURATIONS

"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

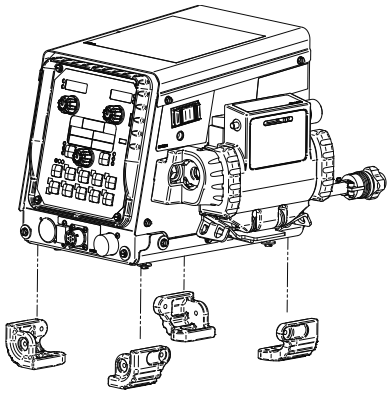
The User Interface may be remotely located from the wire drive up to 200 feet.



BOOM MOUNTING

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.

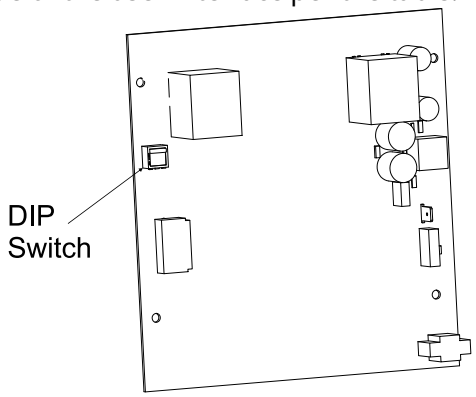
Mounting bolts securing the wire drive should not protrude more than 1" into the wire feeder.



SINGLE/DUAL USER INTERFACE CONVERSION

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.

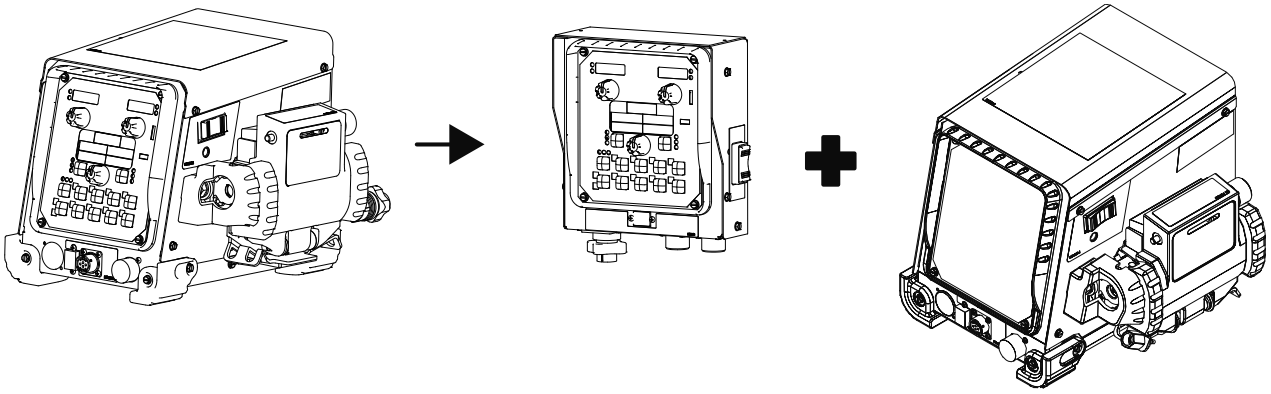


Configuration	DIP switch setting
Single	On
Dual	Off

4. Reassemble the user interface.

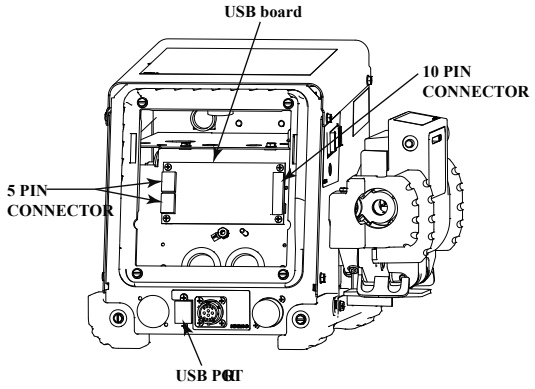
BENCH TO BOOM CONVERSION

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



Requires: K3336-3 User Interface.

1. Turn power OFF at the welding power source.
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.

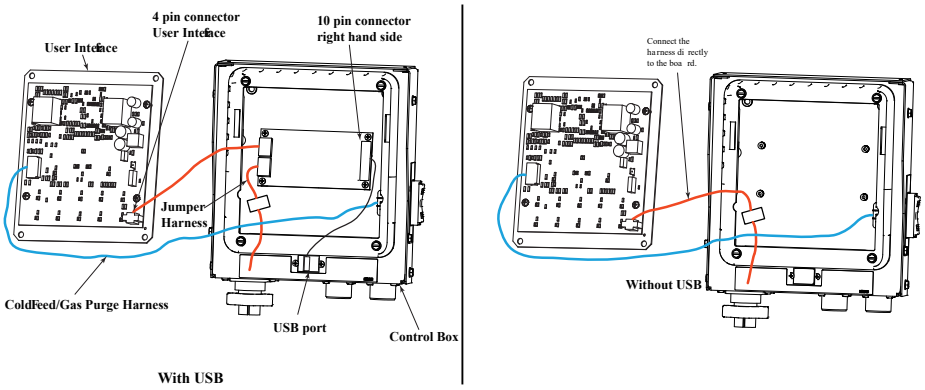
d. Disconnect both 5 pin connectors from the USB board. Remove both jumper harnesses from the wire drive.

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.

CONTROL BOX

5. If the control box will have USB installed:



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.

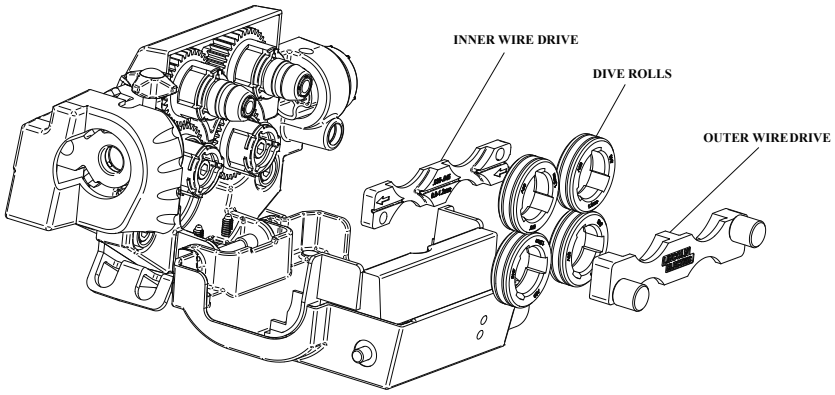
c. Connect one of the USB jumper harnesses to the control box harness. Connect the other to the 4 pin connector on the back of the User Interface.

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



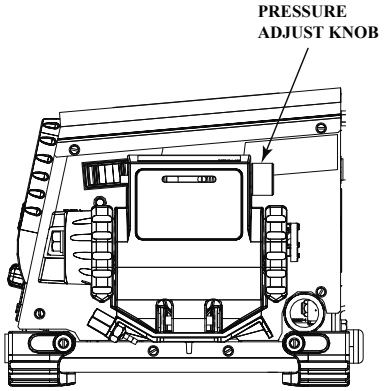
1. Turn power **OFF** at the welding power source.
2. Open the wire drive door by pulling on the top.
3. Remove the outer wire guide.
4. Remove drive rolls by pulling straight out. It may be necessary to wiggle the drive roll to free it from the snap ring.
5. Remove the inner wire guide.
6. Install the 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:

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:

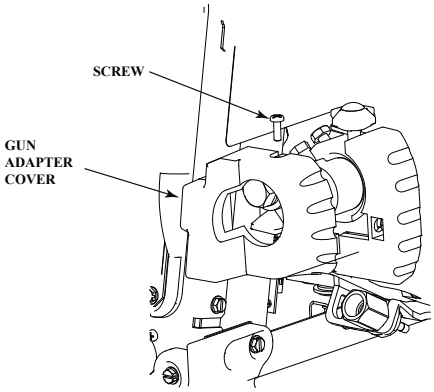
1. Press the end of the gun against a solid object that is electrically isolated from the welder output and press the gun trigger for several seconds.
2. If the wire "birdnests" or jams, the drive roll pressure is too high. Reduce the pressure by one turn of the knob, run new wire through the gun, and 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.



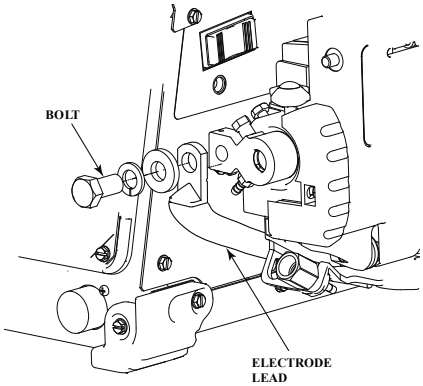
LINCOLN, STANDARD #2-#4, STANDARD #5, MILLER GUN ADAPTER INSTALLATION

1. Turn power OFF at the welding power source.

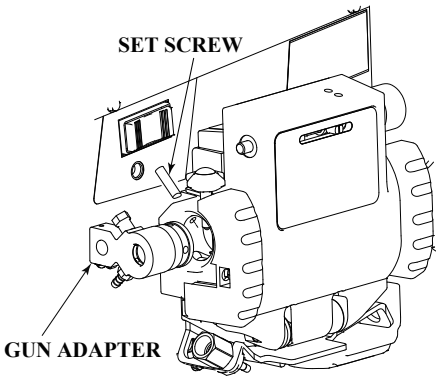
2. Using a Phillips screw driver, remove the screw, lock washer and washer securing the gun adapter cover. Remove the gun adapter cover.



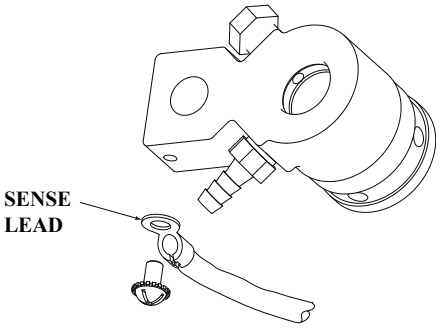
3. With a 3/4" wrench, remove the bolt holding the electrode lead to the gun adapter.



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



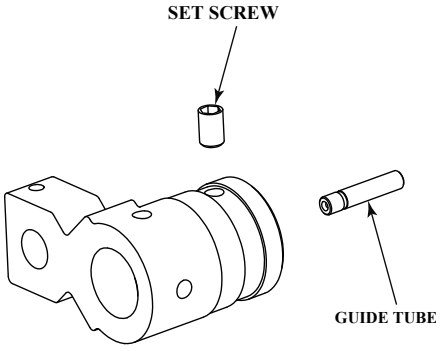
5. Remove the sense lead with a Phillips screw driver.



6. If a gas hose is attached to the gun adapter, use pliers to remove the hose clamp and remove the gas hose.

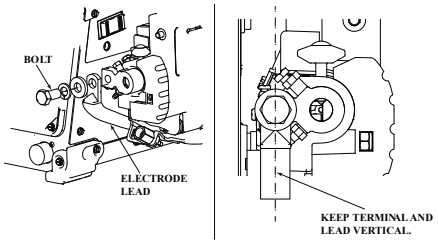
7. If the gun adapter requires guide tubes, install the correct size guide tube and secure with the set screw.

Wire size	Number of grooves in guide tube
.023-.045" (0.6 – 1.2mm)	1
.045 – 1/16" (1.2 – 1.6 mm)	2
1/16 – 5/64" (1.6 – 2.0 mm)	3
.068 – 7/64" (2.0 – 2.8 mm)	4

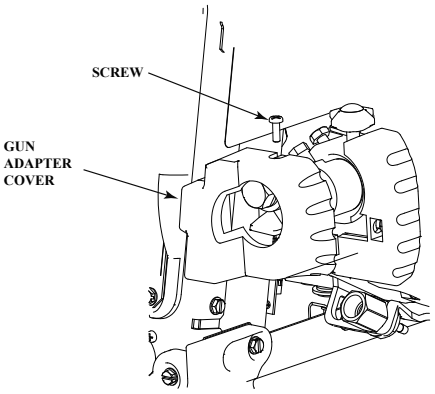


8. Assemble the sense lead to the new gun adapter. Orient the lead towards the rear of the gun adapter.
9. If required, assemble the gas hose to the gun adapter or the fitting on the feed plate and secure with a hose clamp.
10. Assemble the gun adapter to the wire drive. Tighten the set screw once the gun adapter is at a 90° angle.

11. Bolt the electrode lead to the gun adapter, making sure to route the lead straight down.



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

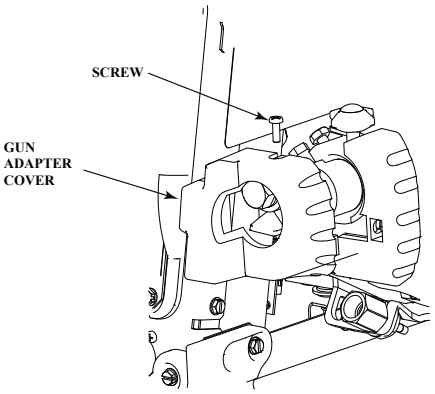


Oxo and Fast Mate Gun Adapter Installation

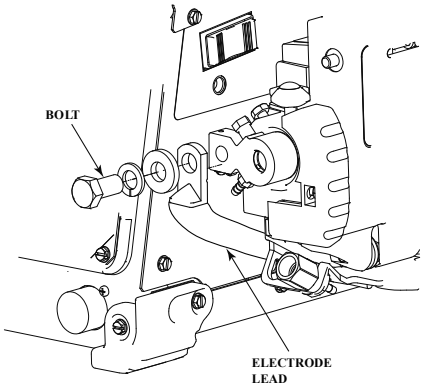
Using the Oxo or FastMate gun adapters requires a K3344-1 Standard #4 gun adapter to be installed in the wire drive.

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.

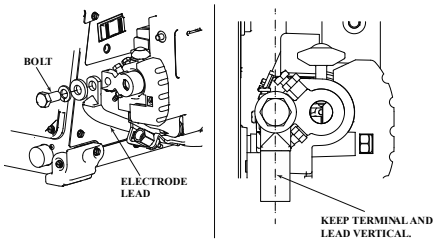


3. With a 3/4” wrench, remove the bolt holding the electrode lead to the gun adapter.

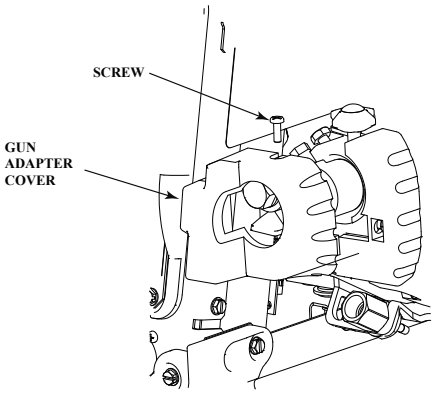


4. Using pliers, remove the hose clamp and hose from the gun adapter.

5. Bolt the electrode lead to the gun adapter, making sure to route the lead straight down.



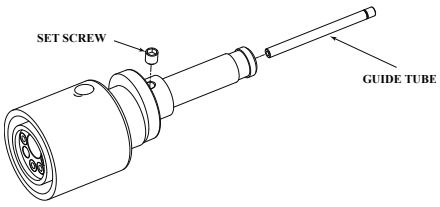
6. Assemble the gun adapter cover and secure with the screw.



7. Assemble the gas hose to the Oxo or FastMate gun adapter.

8. Select the appropriate guide tube and secure with the set screw.

Wire size	Number of grooves in guide tube
.023-.045” (0.6 – 1.2mm)	1
.045 – 1/16” (1.2 – 1.6 mm)	2
1/16 – 5/64” (1.6 – 2.0 mm)	3
.068 – 7/64” (2.0 – 2.8 mm)	4

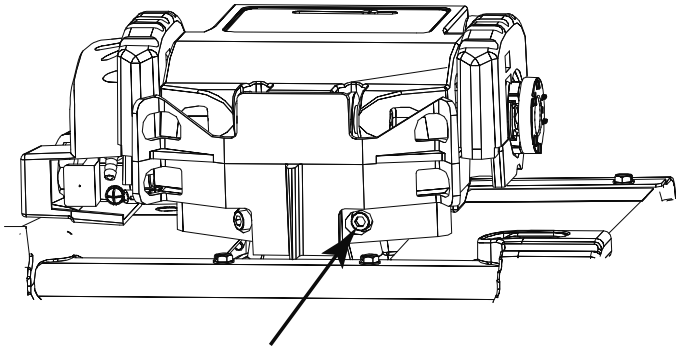


9. Slide the Oxo or FastMate gun adapter into the wire drive and secure with the thumb screw.
10. For FastMate gun adapters, connect the trigger pigtail to the connector on the front of the feeder.

ROTATING THE WIRE DRIVE

1. Turn power OFF at the welding power source.

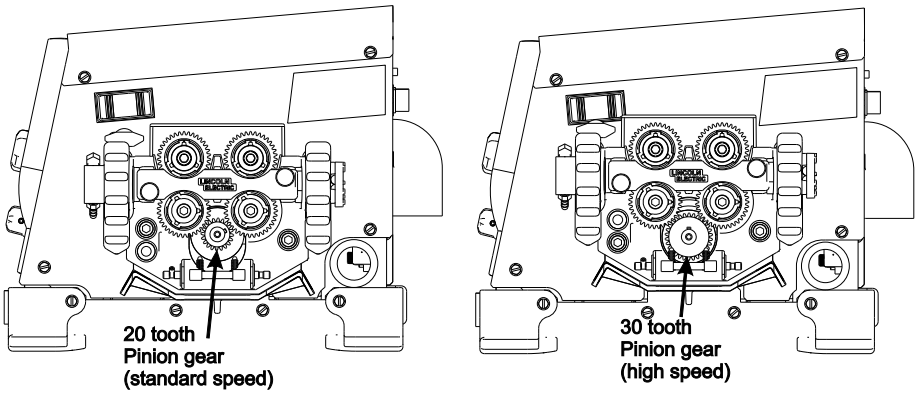
2. Locate the socket head cap screw at the bottom of the wire drive. Loosen, but do not remove the screw.



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

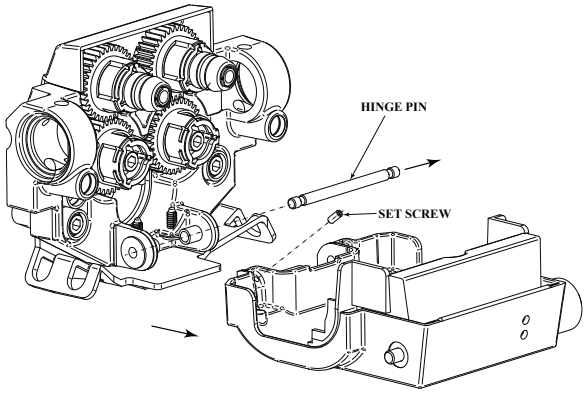
PINION GEAR RATIO

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.

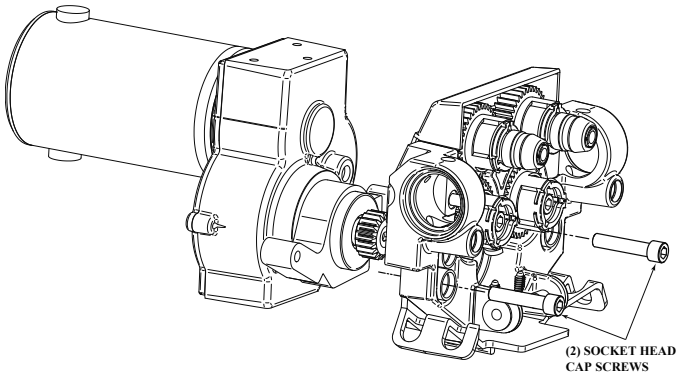


1. Turn power OFF at the welding power source.

2. Open the wire drive door and loosen the set screw holding the hinge pin using a 5/64” hex key. Slide hinge pin towards the rear and remove the door.



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



4. Remove the screw holding the pinion gear using a Phillips screw driver. Remove the pinion gear.
5. Install the new pinion gear.
6. Position the feed plate and tighten the socket head cap screws.
7. Re-assemble the hinge pin and door. Secure the hinge pin with the set screw.
8. Turn power ON.
9. Enter the set-up menu and select P.18. Adjust to match the pinion gear installed.
10. Turn power OFF, then back ON for the settings to take effect.

SHIELDING GAS CONNECTION

⚠ WARNING



CYLINDER may explode if damaged.

Keep cylinder upright and chained to support.

Keep cylinder away from areas where it may be damaged.

Never lift welder with cylinder attached.

Never allow welding electrode to touch cylinder.

Keep cylinder away from welding or other live electrical circuits.

⚠ WARNING



BUILD UP OF SHIELDING GAS MAY HARM HEALTH OR KILL.

Shut off shielding gas supply when not in use.

See American National Standard Z-49.1, "Safety in Welding and Cutting" Published by the American Welding Society.

Maximum inlet pressure is 100 psi. (6.9 bar.)

The inlet fitting is 5/8-18 CGA type connection.

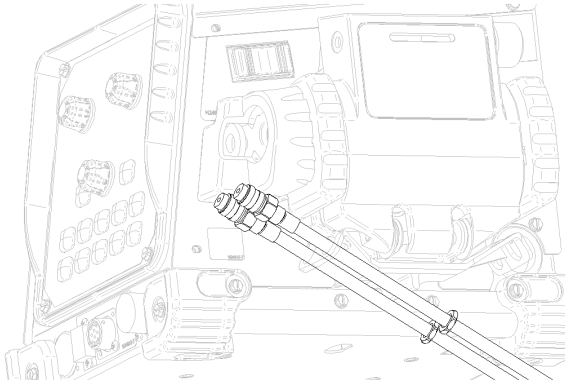
Install the shielding gas supply as follows:

1. Secure the cylinder to prevent it from falling.
2. 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.
3. 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.
4. 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.
5. 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.
6. Before opening the cylinder valve, turn the regulator adjusting knob counterclockwise until the adjusting spring pressure is released.
7. 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.
8. The flow regulator is adjustable. Adjust it to the flow rate recommended for the procedure and process being used before making a weld.

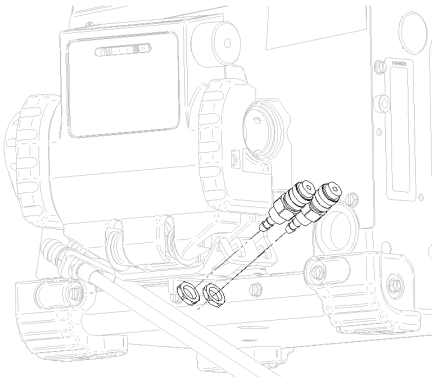
WATER-COOLED GUN CONNECTIONS

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

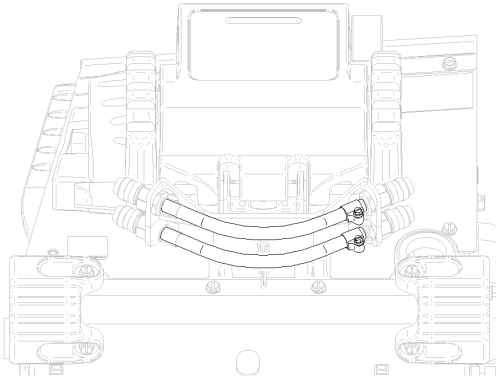
1. Turn power OFF at the welding power source.
2. Assemble two of the Female Quick Disconnect fittings with hoses, feed these two lines through the front holes in the bracket, underneath the wire drive assembly.
3. Install two nuts to fittings, using a 17mm Wrench (2 places as shown). Torque to 7-10 ft-lbs (9-13 N-m)

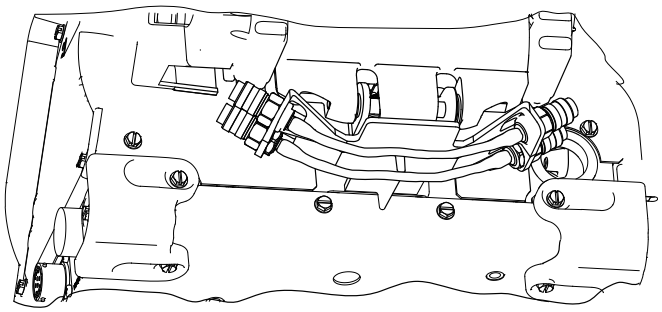


4. Cut the two water hoses to appropriate length, slide the two Hose Clamps and two 17mm nuts over the two hose ends and assemble hoses to the Quick Disconnect Fittings, make sure to push hoses fully onto the barbed fitting.



5. Install two nuts to fittings, using a 17mm Wrench (2 places as shown). Torque to 7-10 ft-lbs (9-13 N-m)
6. Secure the Hose Clamps positioned 1/8” from end of hose using a 1/4" nut driver (2 places as shown). Torque to 30-45 in-lbs (3.4-5.1 N-m).





LOADING SPOOLS OF WIRE

⚠ WARNING



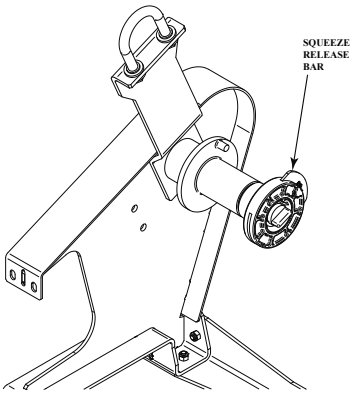
Keep hands, hair, clothing and tools away from rotating equipment.

Do not wear gloves when threading wire or changing wire spool.

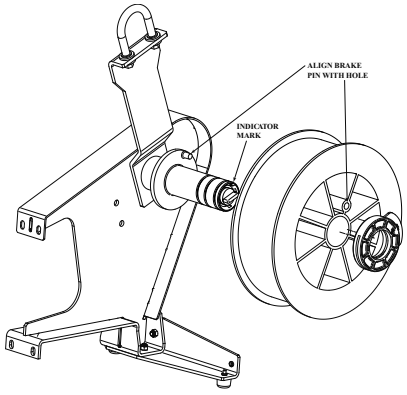
Only qualified personnel should install, use or service this equipment.

50 - 60 lb (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.



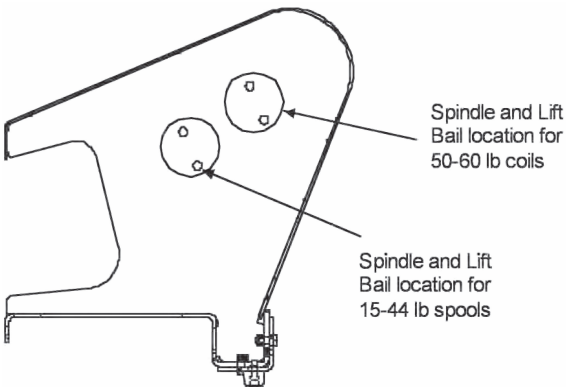
3. Place the spool on the spindle, aligning the spindle brake pin with one of the holes in the back side of the spool. An indicator mark on the end of the spindle shows the orientation of the brake holding pin. Be certain the wire feeds off of the spool in the proper direction.

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.

WIRE REEL STANDS

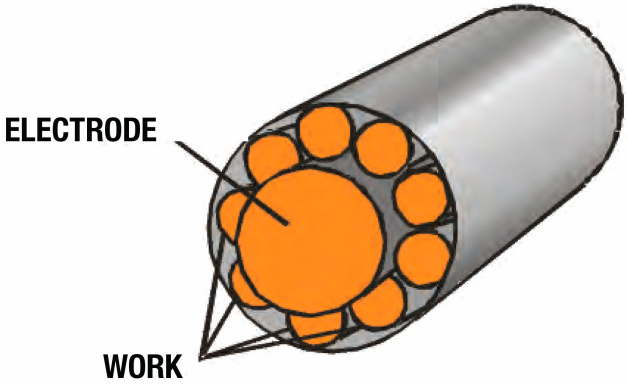
K3342-1 Standard Duty Wire Reel Stand is for use with spools 10 to 44 lb (4.5 to 20 kg).

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



ELECTRICAL INSTALLATION

Weld Cables, Coaxial



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

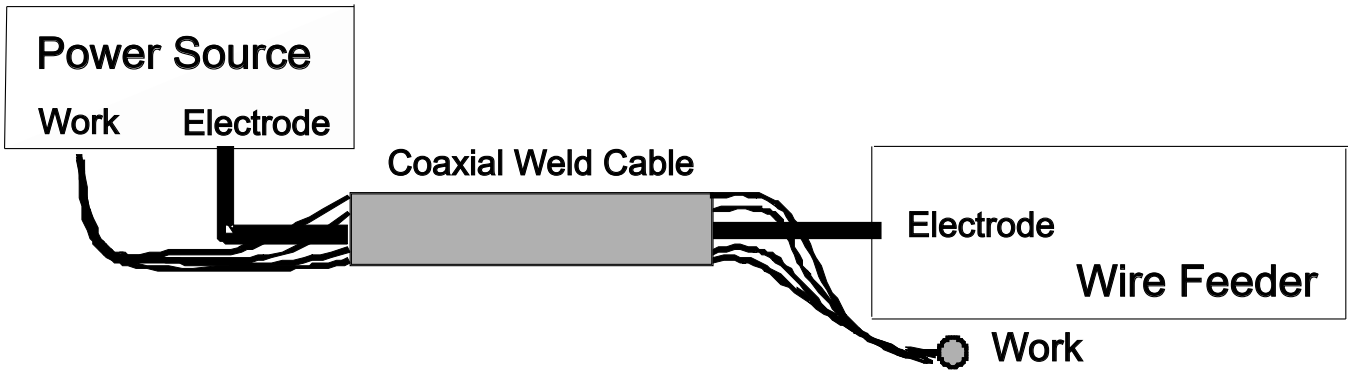
A coaxial weld cable is constructed with multiple small leads wrapped around one large lead. The large inner lead connects to the electrode stud on the power source and the electrode connection on the wire feeder. The small leads combine together to form the work lead, one end attached to the power source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

To install:

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.

RECOMMENDED CABLE SIZES (RUBBER COVERED COPPER - RATED 75°C)**					
AMPERES	DUTY CYCLE	COAXIAL CABLE LENGTH			
		0 to 25Ft. (0 to7.6M)	25 to 50Ft. (7.6 to 15.2M)	50 to 75 Ft. (15.2 to 22.9M)	75 to 100 Ft. (22.9 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).



WELD CABLES, STANDARD

Table 1 :RECOMMENDED CABLE SIZES on page A-20 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 1 :RECOMMENDED CABLE SIZES

RECOMMENDED CABLE SIZES (RUBBER COVERED COPPER - RATED 167°F OF 75°C)**						
AMPERES	PERCENT DUTY CYCLE	CABLE SIZES FOR COMBINED LENGTHS OF ELECTRODE AND WORK CABLE				
		0 TO 50 FT (0 TO 15M)	50 TO 100 FT (15 TO 30M)	100 TO 150 FT (30 TO 46M)	150 TO 200 FT (46 TO 61M)	200 TO 250 FT (61 TO 76M)
200	60	2	2	2	1	1/0
200	100	2	2	2	1	1/0
225	20	4 OR 5	3	2	1	1/0
225	40 & 30	3	3	2	1	1/0
250	30	3	3	2	1	1/0
250	40	2	2	1	1	1/0
250	60	1	1	1	1	1/0
250	100	1	1	1	1	1/0
300	60	1	1	1	1/0	2/0
325	100	2/0	2/0	2/0	2/0	3/0
350	60	1/0	1/0	2/0	2/0	3/0
400	60	2/0	2/0	2/0	3/0	4/0
400	100	3/0	3/0	3/0	3/0	4/0
500	60	2/0	2/0	3/0	3/0	4/0
600	60	3/0	3/0	3/0	4/0	2-3/0
600	100	2-1/0	2-1/0	2-1/0	2-2/0	2-3/0

** 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).

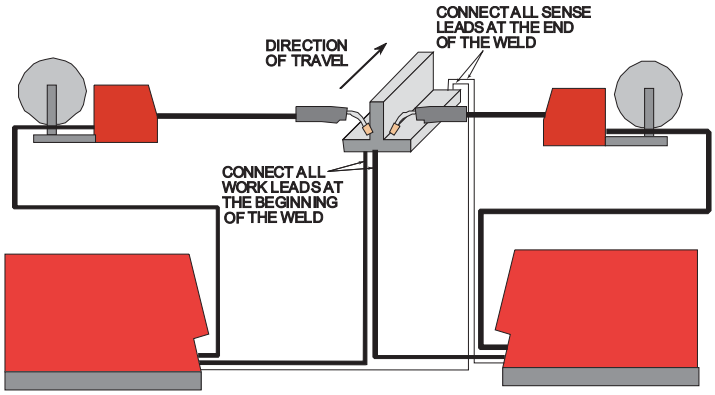
Negative Electrode Polarity

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.



CONTROL CABLE

ArcLink Control Cables are available in two forms:

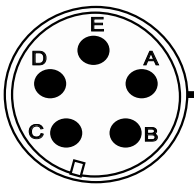
- K1543-xx series for most indoor or factory installations.
- K2683-xx series for outdoor use or when the equipment is frequently moved.

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.

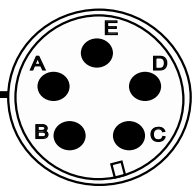
Control cables may be connected end to end to extend their length. Use a maximum of 200 feet (61 m) of control cable between components.

POWER SOURCE



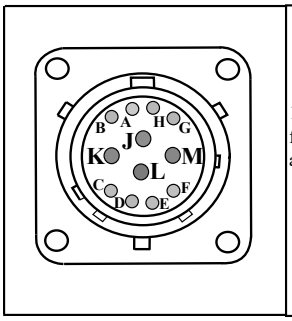
Power Source	
Pin	Function
A	ArcLink
B	ArcLink
C	"67" voltage sense
D	40 VDC
E	Common

WIRE FEEDER



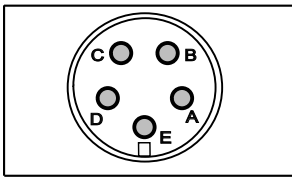
Wire Feeder	
Pin	Function
A	ArcLink
B	ArcLink
C	"67" voltage sense
D	40 VDC
E	Common

Advanced Accessories Connector (12 pin)



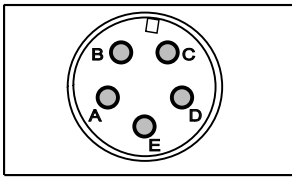
Function	PIN	Wiring
12-pin connector for push-pull guns and remotes	A	CAN LOW
	B	CAN HIGH
	C	75 Remote potentiometer, common
	D	76 Remote potentiometer, wiper
	E	77 Remote potentiometer, 5K
	F	ArcLink Peripheral Sense
	G	Trigger
	H	Trigger
	J	40VDC Common
	K	40VDC +
	L	Pull Motor –
	M	Pull Motor +

Trigger Connector (5 pin)



Function	PIN	Wiring
5-pin trigger 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

OPERATION

GENERAL DESCRIPTION

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.

POWER UP SEQUENCE

⚠ WARNING

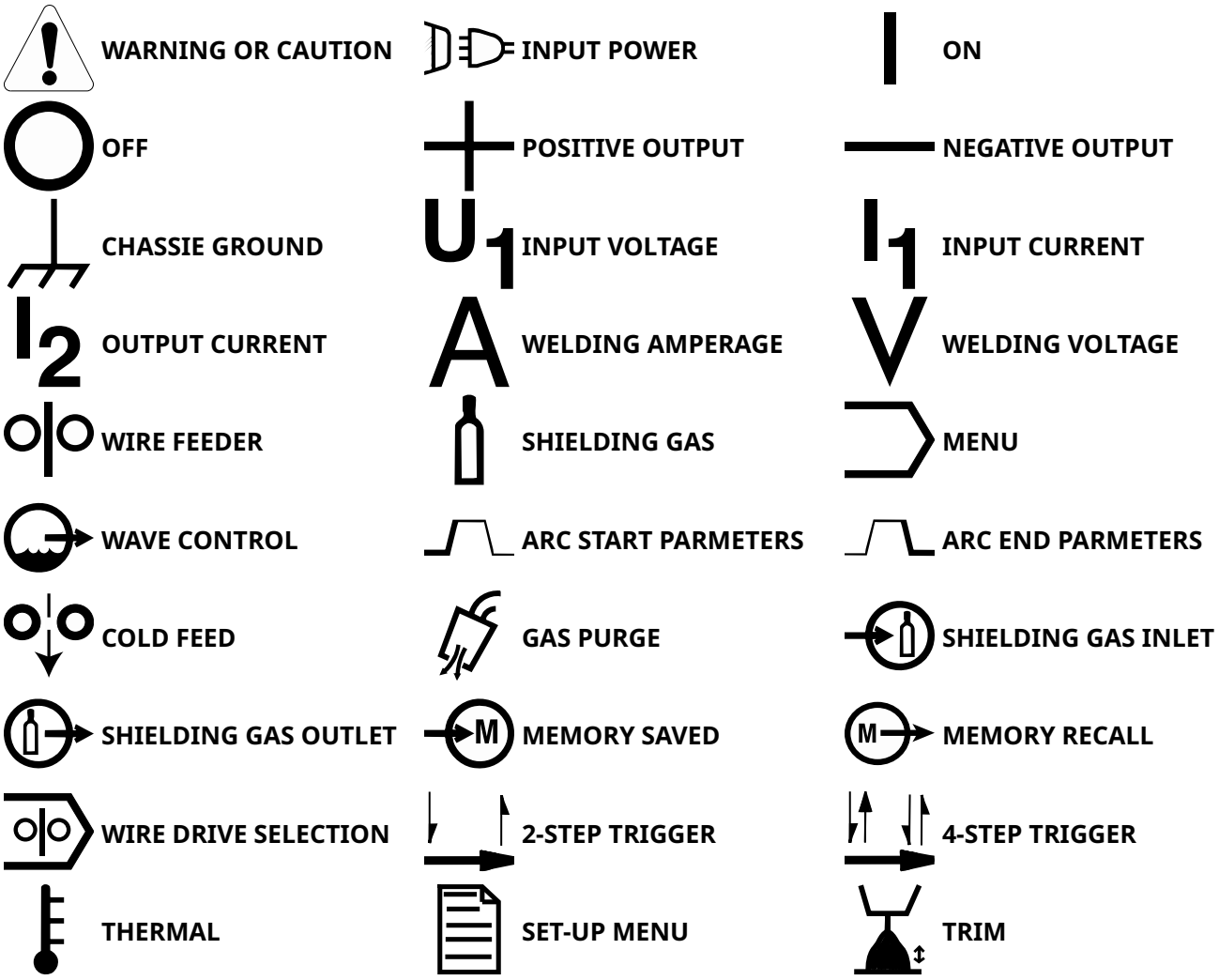
The serviceability of a product or structure utilizing the welding programs is and must be the sole responsibility of the builder/user. Many variables beyond the control of The Lincoln Electric Company affect the results obtained in applying these programs. These variables include, but are not limited 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

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



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.

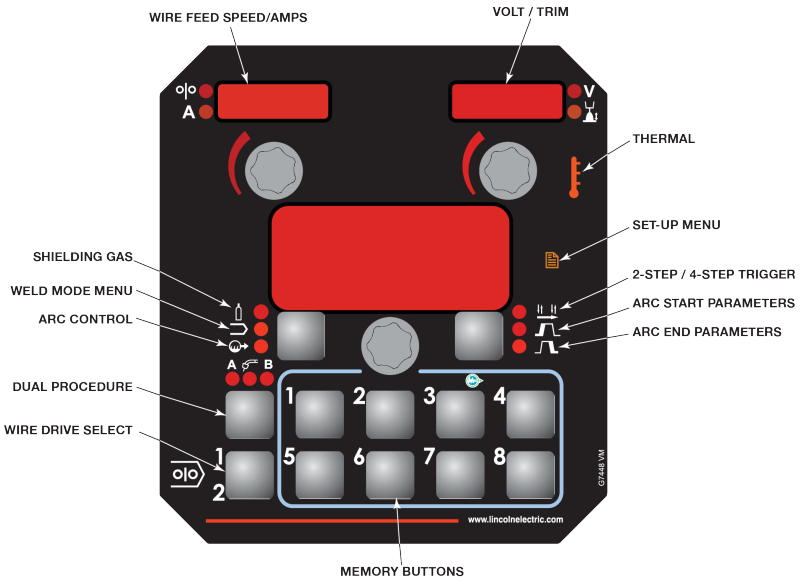
EQUIPMENT LIMITATIONS

- 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 200 feet 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.

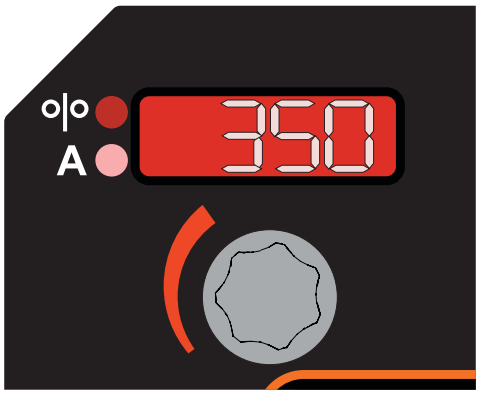
RECOMMENDED POWER SOURCES

Power Wave 355M
Power Wave 455M
Power Wave 455M/STT
Power Wave 655R
Power Wave S350
Power Wave S500
Power Wave S700
Power Wave R350
Power Wave R500
Power Wave i400

USER INTERFACE LAYOUT



WIRE FEED SPEED / AMPS DISPLAY AND KNOB

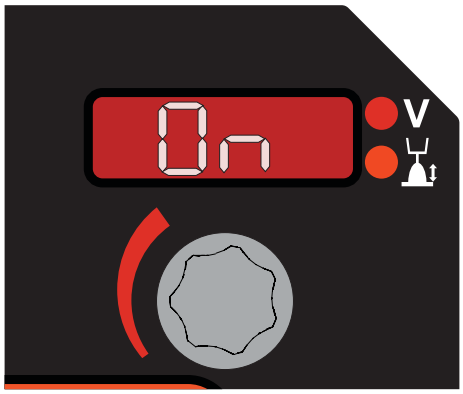
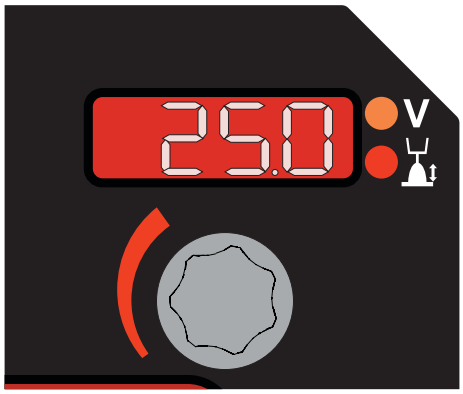


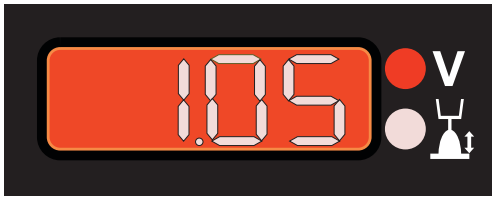
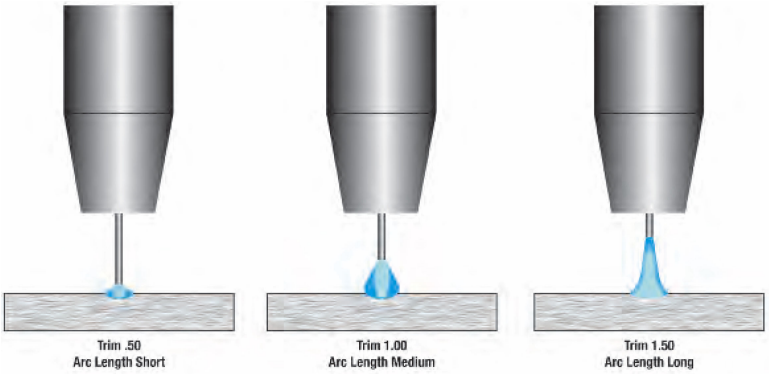
The left display and knob are used to adjust either wire feed speed or amperage, depending upon the process selected.

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	 Rotate clockwise to turn output ON. Rotate counterclockwise to turn output OFF.
Non-synergic GMAW (MIG) and FCAW (Flux-cored)	Voltage	 Adjusts the voltage. The display is blank for non-synergic STT modes.
Synergic GMAW (MIG) and FCAW (Flux-cored)	Voltage	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. • Preset voltage above ideal voltage. (upper bar displayed).  • Preset voltage at ideal voltage. (no bar displayed).  • Preset voltage below ideal voltage. (lower bar displayed). 

Process	Display / Function	Description
Pulse GMAW (MIG) and FCAW (Flux-cored)	Trim	 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. 

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 display in xx.x for either cfh or l/min. The flow rate range is 0-60 cfh (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 (l\min).

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 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.

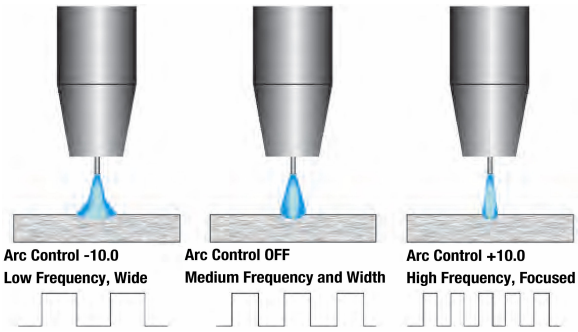
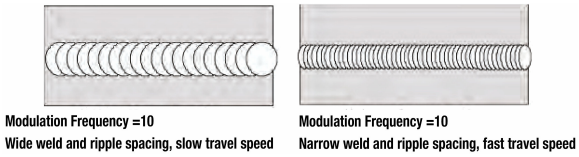
To enter the search function:

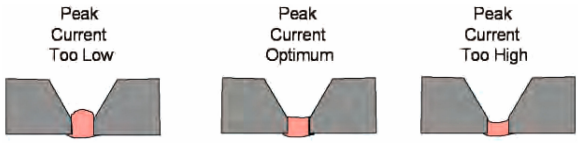
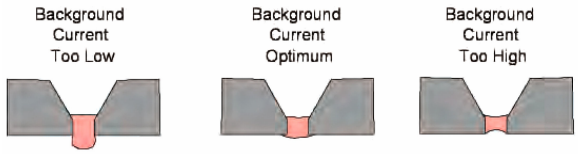
1. Rotate the center knob until “Weld Mode Search” is displayed and then press the right button.
2. Rotate the center knob to select the wire material. Press the right button to accept and the left button to cancel.
3. Rotate the center knob to select the wire size. Press the right button to accept and 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

Wave Control is used to adjust the arc for exact preferences. The wave control functions vary for different processes and weld modes.

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, particularity 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.

Process	Wave Control Name	Effect / Range	Description
GMAW-P (Pulsed MIG), Steel and Stainless	Ultimarc	Soft (-10.0) to Stiff (10.0)	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.  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.
GMAW-P (Pulsed MIG), Aluminum	Arc Control	Low (-10.0) to High (10.0)	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. 

Process	Wave Control Name	Effect / Range	Description
GMAW-STT (Surface Tension Transfer)	Peak Current	Controls arc length	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. Peak also affects the shape of the root. When using 100% CO2, the peak current will be higher than when welding with blended shielded gases. A longer arc length is required with CO2 to reduce spatter. 
	Background Current	Regulates bead contour	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. 
	Tail-out	Provides additional power to the arc.	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.
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 counterclockwise 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.

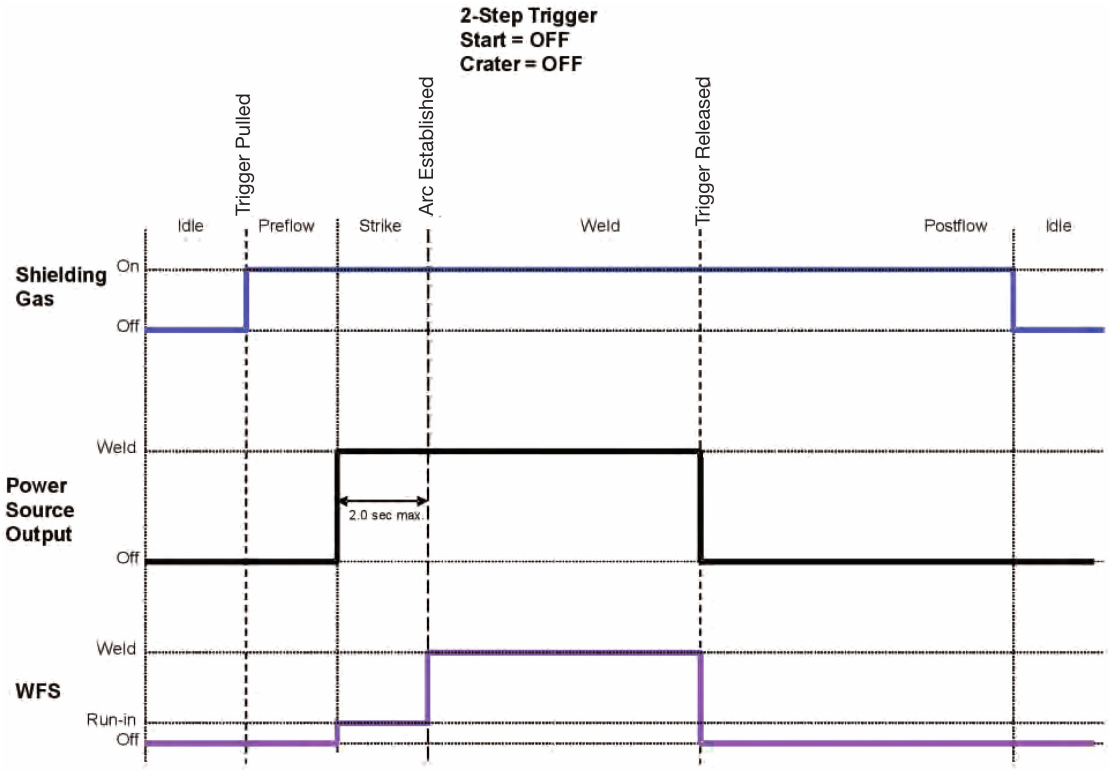
For this sequence,

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.



2-Step Trigger

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.

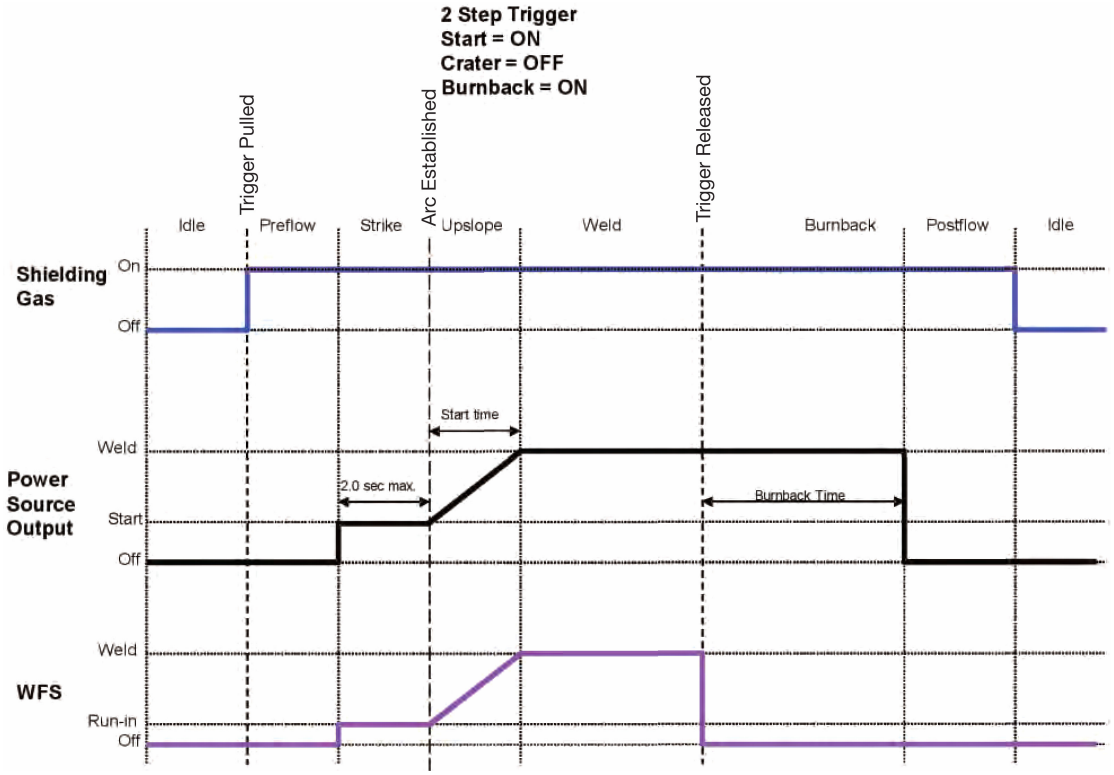
RUN-IN: After preflow time expires, the power source regulates to the start output and wire is advanced towards the work piece at the Run-In WFS. If an arc is not established within 2.0 seconds, the power source output and wire feed speed skips to the weld settings.

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.



2-Step Trigger

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.

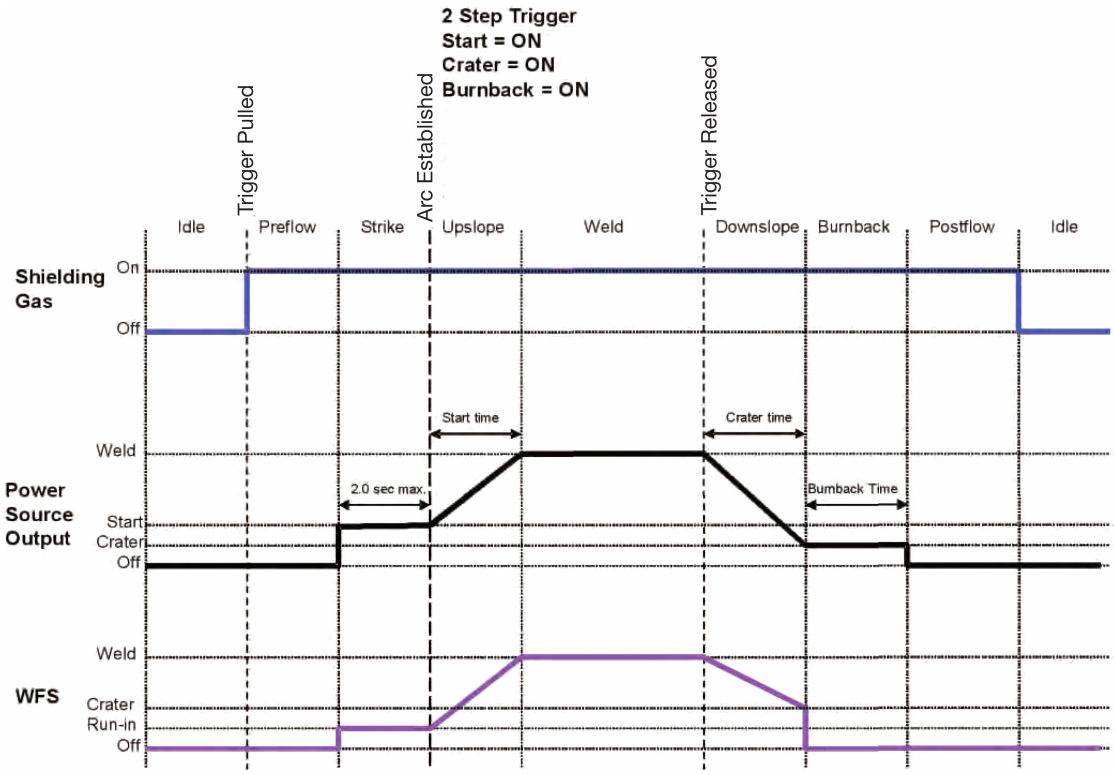
RUN-IN: After preflow time expires, the power source regulates to the start output and wire is advanced towards the work piece at the Run-In WFS. If an arc is not established within 2.0 seconds, the power source output and wire feed speed skips to the weld settings.

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. If trigger is released during UPSLOPE and CRATER/DOWNSLOPE is active, the machine will begin CRATER/DOWNSLOPE and sloping down over the CRATER time, 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

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.

The 4-step trigger also has a current interlock feature. 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.

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.

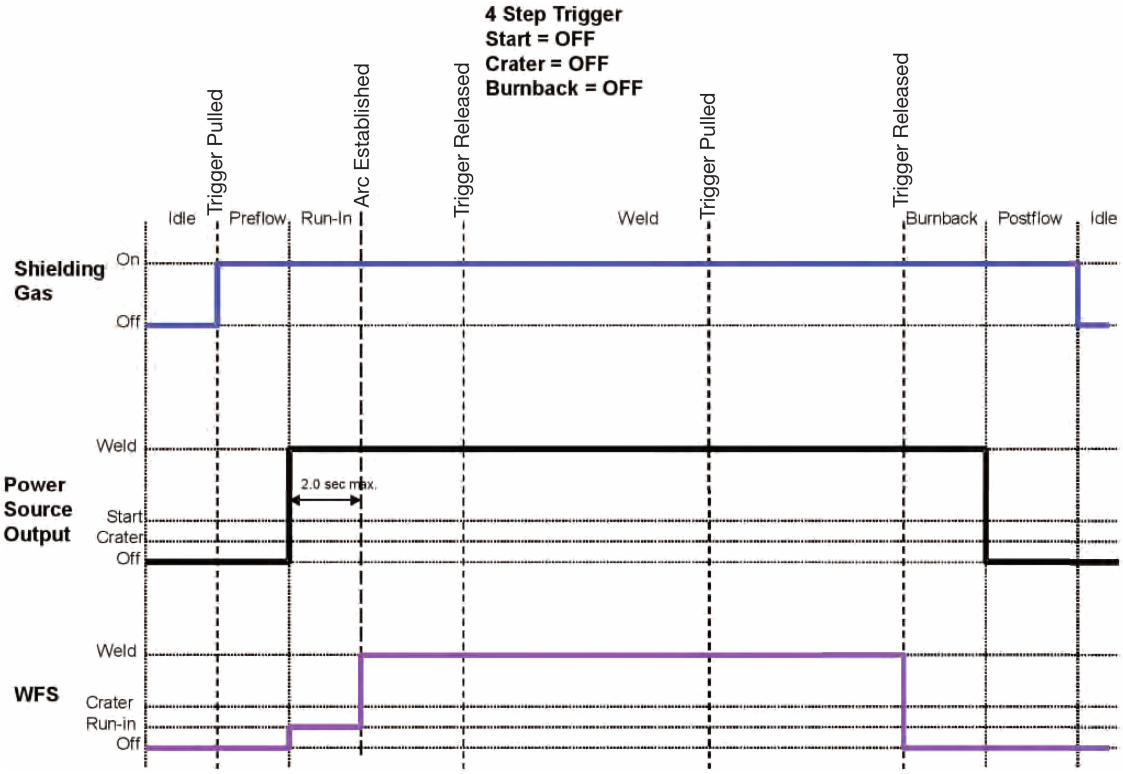
For this sequence,

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.



4-Step Trigger

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.

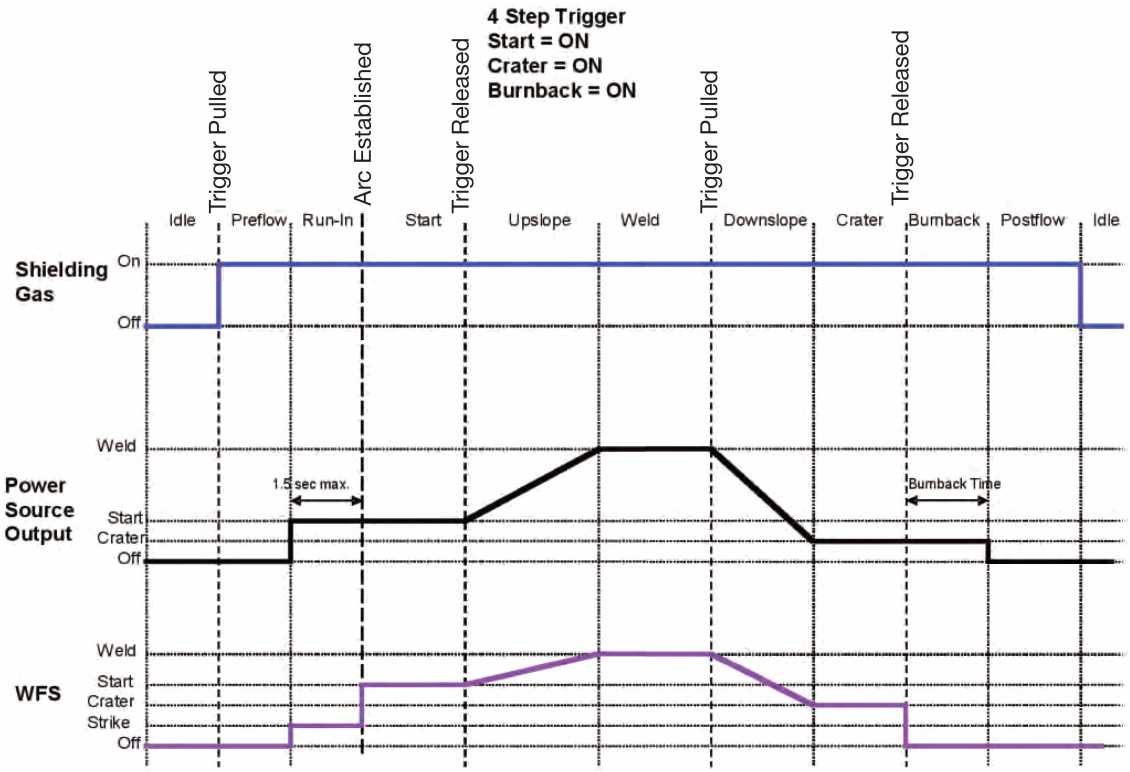
WELD: After upslope, the power source output and the wire feed speed continue at the weld settings.

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

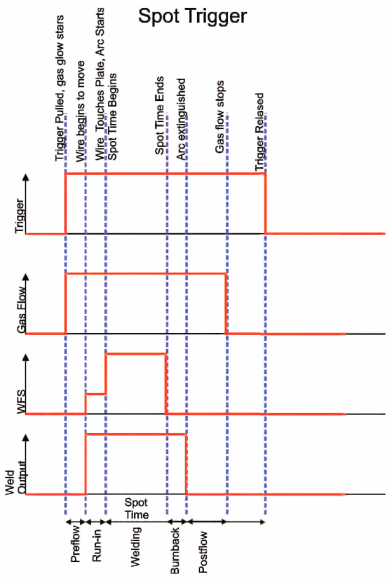
The Spot Trigger may only be selected if the Spot Time has previously been set to a value other than 0.0 (OFF) and the Start and Crater are both OFF.

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 CONSIDERATION

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:

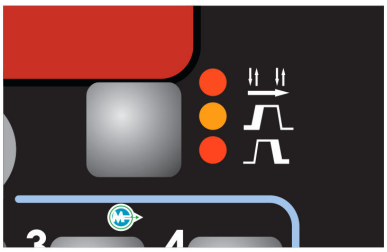
Pull the trigger to start feed of wire. When arc is established the sequencer will remain in START until the trigger is released. When the trigger is released, UPSLOPE begins and continues into WELD when the START timer is complete. When the trigger is pulled again (step 3) and CRATER/DOWNSLOPE is active,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

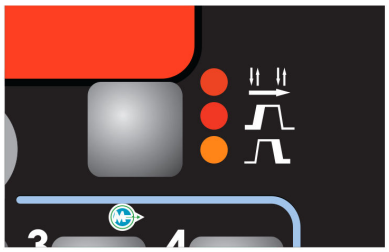
The Start Options available depend upon the process and weld mode selected.



Process	Start Options	Effect / Range	Description
SMAW (Stick)	----	----	----
All GMAW (MIG) and FCAW (Fluxcored)	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

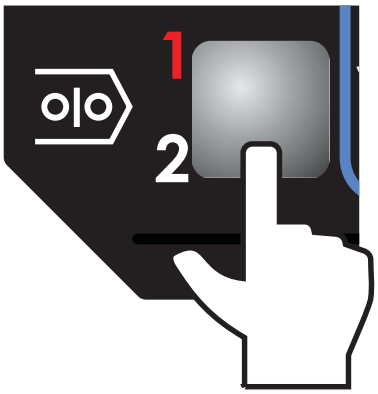
The End Options available depend upon the process and weld mode selected.



Process	Start Options	Effect / Range	Description
SMAW (Stick)	----	----	----

Process	Start Options	Effect / Range	Description
All GMAW (MIG) and FCAW (Fluxcored)	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



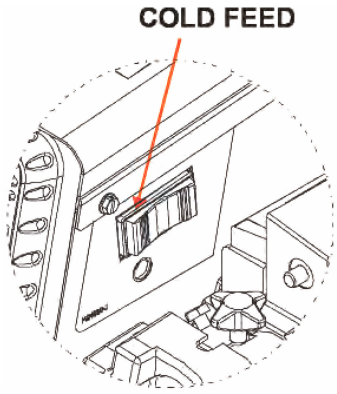
The wire drive selection is active when a dual wire drive or more than one single wire drive is connected to the user interface. When a single wire drive (POWER FEED 84) is connected, Wire Drive 1 LED is always illuminated.

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

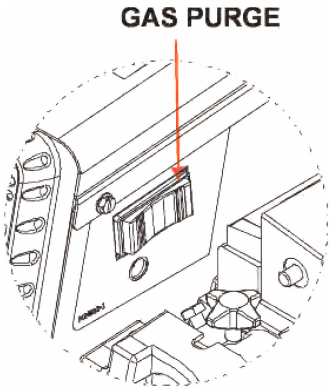


Pressing the Cold Feed rocker switch feeds wire forward at the indicated speed for as long as the switch is held.

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

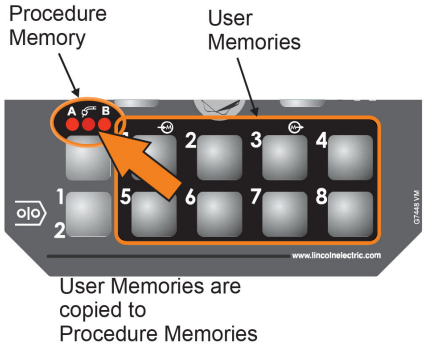
The gouging kit provides a method to switch between wire welding processes and a gouging process. The electrode power path is automatically routed through the wire feeder based upon the weld mode selected. FCAW and GMAW modes route the power to the wire drive; CAG modes route power to the gouging stud.

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.

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.



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.



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 200 through 300 in/min, and memory 2 may limit the WFS to 275 through 310 in/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:

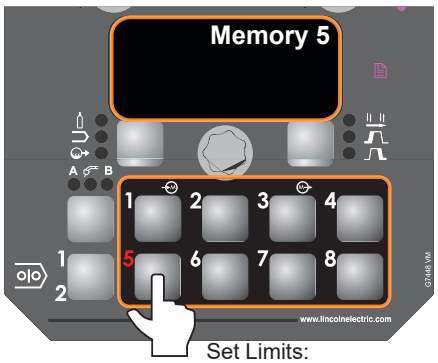
Parameter	Range	Units
Wire Feed Speed	Weld mode dependent and gear box ratio dependent	in/min
Voltage	Weld mode dependent	Volts
Trim	0.50 to 1.50	---
Arc Control	-10.0 to 10.0	Weld mode dependent
Preflow	0.0 to 2.5	Seconds
Start Time	0.0 to 10.0	Seconds
Run-In WFS	Off, 50 to 150	in/min
Crater Time	0.0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

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



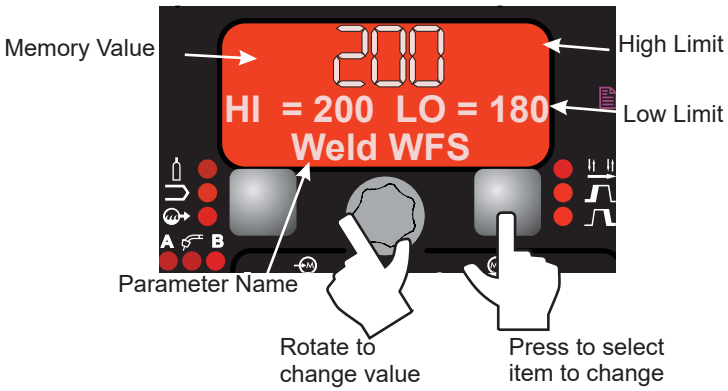
Set Limits:
Press 5 seconds

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.



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.

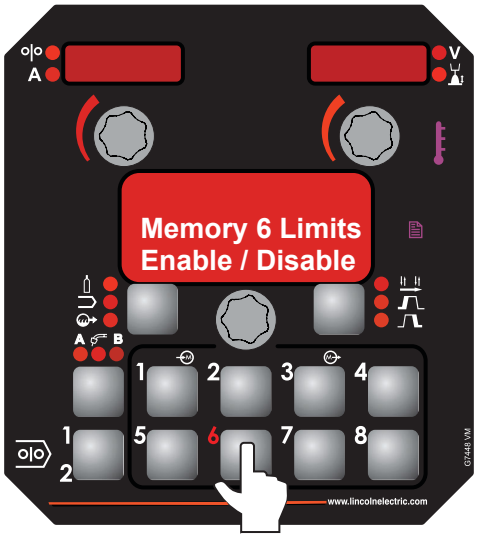
To lock a parameter to a specific value that cannot be changed, set the high and low limits to the same value.

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.

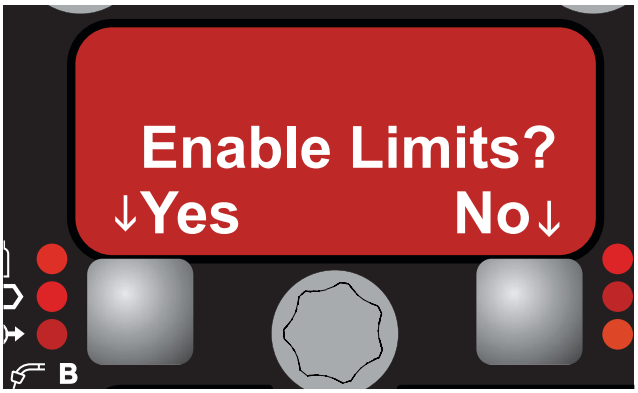
Enabling/Disabling Limits

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”.



Press 10 seconds
to enable/disable limts

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	**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.1	**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.	English, Metric
P.2	**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.	Amps, WFS

Parameter	Name and Description	Range
P.3	**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. Show Gas Flow = Gas Flow Rate is displayed during a weld (PF84 only).	Standard Display, Show Energy, Show Weld Score, Show Gas Flow
P.4	**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.	Disabled, Enabled

Parameter	Name and Description	Range
P.5	**Procedure Change Method** 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: External Switch = Dual Procedure selection may only be performed at the memory panel or an external switch (e.g. K683). 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: • 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. 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).	External Switch, Quick Trigger, IntegralTrigProc

Parameter	Name and Description	Range
P.7	**Gun Offset Adjustment** 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: **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. The calibration range is -30 to +30, with 0 as the default value. **Note:** The range was changed to -90 to +90 for the PF25M in WD software S28539-3. Default value remains at 0. 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.	-90 to 90
P.8	**TIG Gas Control** 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" = Not applicable to PWC300. 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. **Note:** 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. If a dedicated TIG gas solenoid is installed, as in the Advanced AC Module, all TIG gas control will use that solenoid and this menu option will be irrelevant.	Valve (manual), Feeder Solenoid, Pwr Src Solenoid

Parameter	Name and Description	Range
P.9	**Crater Delay** 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.14	**Reset Consumable Weight** 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.16	**Push-Pull Gun Knob Behavior** This option determines how the potentiometer on the Push/Pull torch will behave. • 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. 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.	Gun Pot Enabled Gun Pot Disabled Gun Pot Proc A

Parameter	Name and Description	Range
P.17	**Remote Control Type** This setup parameter was previously named "Spool/Push-Pull." 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. **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). **Push-Pull Gun** = Use this setting wile 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). **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. **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 it's maximum setting. While gouging, the upper left knob is disabled and the gouging current is set on the remote control. **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) **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) 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.	Spool Gun Push-Pull Gun Tig Amp Control Stick/Gouge Rem. All Mode Remote Joystick MIG Gun

Parameter	Name and Description	Range
P.18	**Wire Drive Gear Ratio** 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. 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. **Note:** Changing this value will cause the system to reset.	
P.19	**Wire Drive Direction** 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. A → B = Wire drive assembled on the right hand side (default) B → A = Wire drive assembled on the left hand	A → B B →A
P.20	**Display Trim as Volts Option** This option determines how trim is displayed. False = The trim is displayed in the format defined in the weld set (default). True = All trim values are displayed as a voltage. **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.	False, True
P.22	**Arc Start/Loss Error Time** 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. 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.24	**Push Pull Type** 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.	Default Prince

Parameter	Name and Description	Range
P.27	**Language Select** Selects which language will be displayed on the User Interface. English (Default) Italiano Deutsch Francais Polski Espanol	English, Italiano, Deutsch, Francais, Polski, Espanol
P.28	**Display Workpoint as Amps Option** This option determines how workpoint is displayed. False = The workpoint is displayed in the format defined in the weld set (default). True = All workpoint values are displayed as an amperage. **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.	False, True
P.37	**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: (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. The operator will be informed of success or failure of the load by a message on the User Interface. 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. 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. **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.	Load Mems/P-Nums Save Mems/P-Nums Create USB Key

Parameter	Name and Description	Range
P.37 (CONT)	**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. 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. **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. **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. 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. 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. **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.	Load Mems/P-Nums Save Mems/P-Nums Create USB Key
P.41	**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. 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. **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.	-5% to 5% (default is 0%)

Parameter	Name and Description	Range
P.42	**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). The units take effect in two places: (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). (2) The Gas Purge display shown while purging gas (if a gas flow monitor is installed in the feeder).	cfh 1/min
P.80	**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".	False, True
P.81	**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. Positive Electrode Welding (default). Negative Electrode Welding. 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.	Positive Electrode Welding, Negative Electrode Welding
P.82	**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.90	**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. 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. **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.	

Parameter	Name and Description	Range
P.92	**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. 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. **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.98	**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.	n/a
P.99	**Show Test Modes** 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.100	**View Diagnostics** 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.101	**View Event Logs** Used for viewing all the system event logs. 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. Press the Left Button again to exit this option.	

Parameter	Name and Description	Range
P.102	**View Fatal Logs** Used for viewing all the system fatal logs. 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. Press the Left Button again to exit this option.	
P.103	**View Software Version Information** Used for viewing the software versions for each board in the system. 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.104	**View Hardware Version Information** Used for viewing the hardware version for each board in the system. 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 hardware version. Press the Left Button to back out to select another board. Press the Left Button again to exit this option.	
P.105	**View Welding Software Information** Used for viewing the Weld Set in the Power Source. Press the Right Button to read the Weld Set version. Press the Left Button to back out and exit this option.	
P.106	**View Ethernet IP Address** Used for viewing the IP address of Ethernet compatible equipment. Press the Right Button to read the IP Address. Press the Left Button to back out and exit this option. The IP address cannot be changed using this option.	
P.107	**View Power Source Protocol** Used for viewing the type of power source the feeder is connected to. Press the Right Button to identify the power source as either LincNet or ArcLink. Press the Left Button to back out and exit this option.	
P.500	**View Lockout Parameters** 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.	

Parameter	Name and Description	Range
P.501	**Encoder Lockout** 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. This parameter can only be accessed using Power Wave Manager software.	
P.502	**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.	No, Yes
P.503	**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.	

Parameter	Name and Description	Range
P.504	**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. • 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. This parameter can only be accessed using Power Wave Manager software.	All MSP Options Unlocked All MSP Options Locked Start & End Options Locked Weld Mode Option Locked Wave Control Options Locked Start, End Wave Options Locked Start, End, Mode Options Locked
P.505	**Setup Menu Lock** Determines if the setup parameters can be modified by the operator without entering a passcode. • 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. This parameter can only be accessed using Power Wave Manager.	
P.506	**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). 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. This parameter can only be accessed using Power Wave Manager software.	
P.507	**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.	

Parameter	Name and Description	Range
P.509	**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.512	**USB Options** This setting is used to enable and disable which USB options can be used on the feeder. Available selections are as follows: (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 Mems & 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 Mems & 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). This parameter can only be accessed using Power Wave Manager software.	
P.513	**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). This parameter can only be accessed using Power Wave Manager software.	
P.514	**USB Key Lock** This setting turns on and off the USB-Key lock on a feeder. 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. 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). 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. This parameter can only be accessed using Power Wave Manager software.	

GOUGING KIT

⚠ WARNING



ELECTRIC SHOCK can kill.

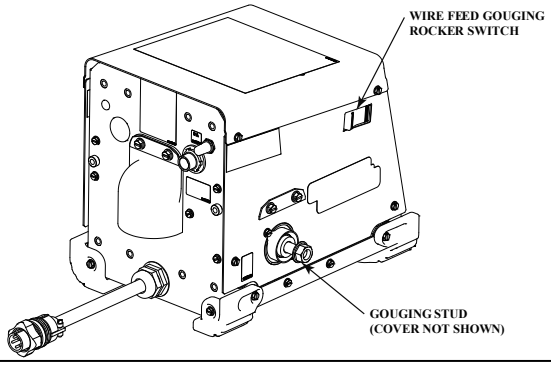
If the wire feeder is turned on with the process switch in the gouging position, the welding output will turn on.

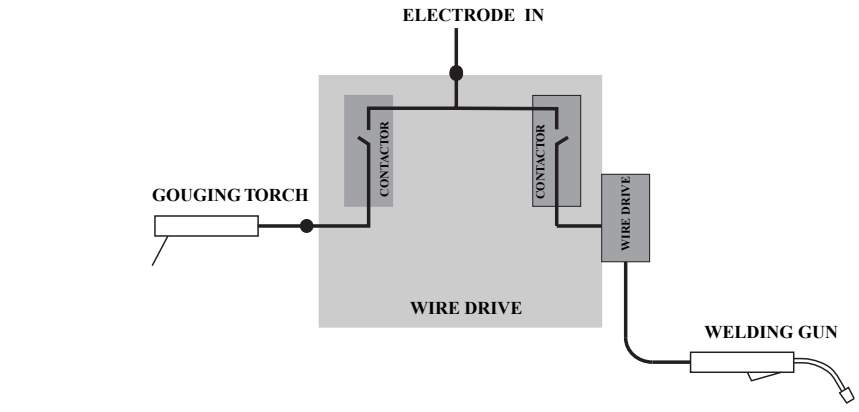
The POWER FEED 84 is available from the factory with the gouging kit installed.

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.





GAS FLOW SENSOR KIT

The gas flow sensor uses a mass flow sensor for measuring gas flow in the range of 0 – 60 cfh (0 – 28 l/min).

The gas flow sensor kit is compatible with the following gases:

- Argon
- CO_2
- 98Ar $2CO_2$
- 90Ar $10CO_2$
- 85Ar $15CO_2$
- 80Ar $20CO_2$
- 75Ar $25CO_2$

Dual feeders require (2) gas flow sensors.

ACCESSORIES AND OPTIONS

OPTIONAL KITS AND ACCESSORIES

DRIVE ROLL AND WIRE GUIDE KITS

Drive roll Kits, steel wires		
KP1505-030S	.023-.030 (0.6-0.8mm)	Includes: 4 Smooth V groove drive rolls and inner wire guide.
KP1505-035S	.035 (0.9mm)	
KP1505-045S	.045 (1.2mm)	
KP1505-052S	.052 (1.4mm)	
KP1505-1/16S	1/16 (1.6mm)	
KP1505-1	.035, .045 (0.9, 1.2mm)	
KP1505-2	.040 (1.0mm)	

Drive Roll Kits, Cored Wires		
KP1505-035C	.030-.035" (0.8-0.9mm)	Includes: 4 Knurled drive rolls and inner wire guide.
KP1505-045C	.040-.045" (1.0-1.2mm)	
KP1505-052C	.052" (1.4mm)	
KP1505-1/16C	1/16" (1.6mm)	

Drive Roll Kits, Steel or Cored Wires		
KP1505-068	.068-.072" (1.8mm)	Includes: 4 Knurled drive rolls and inner wire guide.
KP1505-5/64	5/64" (2.0mm)	
KP1505-3/32	3/32" (2.4mm)	
KP1505-7/64	7/64" (2.8mm)	
KP1505-.120	.120" (3.2mm)	

Drive Roll Kits, Hardfacing Wires		
KP1505-7/64C	7/64" (2.8mm)	Includes: 2 Knurled drive rolls, 2 Smooth V groove drive rolls and inner wire guide.

Drive roll Kits, Aluminum Wire		
KP1507-035A	.035" (0.9 mm)	Includes: 4 polished U groove drive rolls, outer wire guide and inner wire guide, pressure door springs, conduit bushing.
KP1507-040A	.040" (1.0mm)	
KP1507-3/64A	3/64" (1.2mm)	
KP1507-1/16A	1/16" (1.6mm)	
KP1507-3/32A	3/32" (2.4mm)	

GUN ADAPTER KITS	
K#	**Description**
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

GUN ADAPTER KITS			
K#	**Description**		
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 #
	.023-.045” (0.6-1.2mm)	1	KP2110-1
	.045-1/16” (1.2-1.6mm)	2	KP2110-2
	1/16-5/64” (1.6-2.0mm)	3	KP2110-3
	.068-7/64” (2.0-2.8mm)	4	KP2110-4

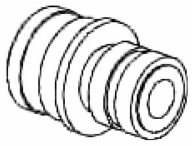
CABLES		
K#	**Description**	**Purpose**
K1543-xx	Control Cable: Male 5 pin to Female 5 pin ArcLink cable.	Connects the user interface to the wire drive for boom systems. Connects the wire drive to the power source on bench systems.
K2683-xx	Heavy Duty Control Cable: Male 5 pin to Female 5 pin ArcLink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

GENERAL ACCESSORIES			
K#	**Description**	**Purpose**	**Image**
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.	

GENERAL ACCESSORIES

GENERAL ACCESSORIES			
K#	**Description**	**Purpose**	**Image**
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.	

GENERAL ACCESSORIES			
K#	**Description**	**Purpose**	**Image**
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.

MAINTENANCE

SAFETY PRECAUTIONS

⚠ 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.

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: $\frac{\text{Actual WFS}}{\text{Set WFS}} = \text{Calibration Factor}$, Example: $\frac{405}{400} = 1.01$

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.

TROUBLESHOOTING

HOW TO USE TROUBLESHOOTING GUIDE

⚠ WARNING



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

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

1. **LOCATE PROBLEM (SYMPTOM)**

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

2. **POSSIBLE CAUSE**

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

3. **RECOMMENDED COURSE OF ACTION**

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

⚠ CAUTION



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

Observe all additional safety guidelines detailed throughout this manual.

TROUBLESHOOTING GUIDE

Observe all Safety Guidelines detailed throughout this manual

ArcLink System Error Codes			
Fault Code		**Description**	**Possible Adjustments**
Err 18	Configuration error	**1.** The DIP switch setting for the user interface does not match the wire drives. The UI is set for “single” with a “dual” wire drive, or the UI is set for “dual” with a “single” wire drive.	**1.** Verify the user interface DIP is in the correct position.

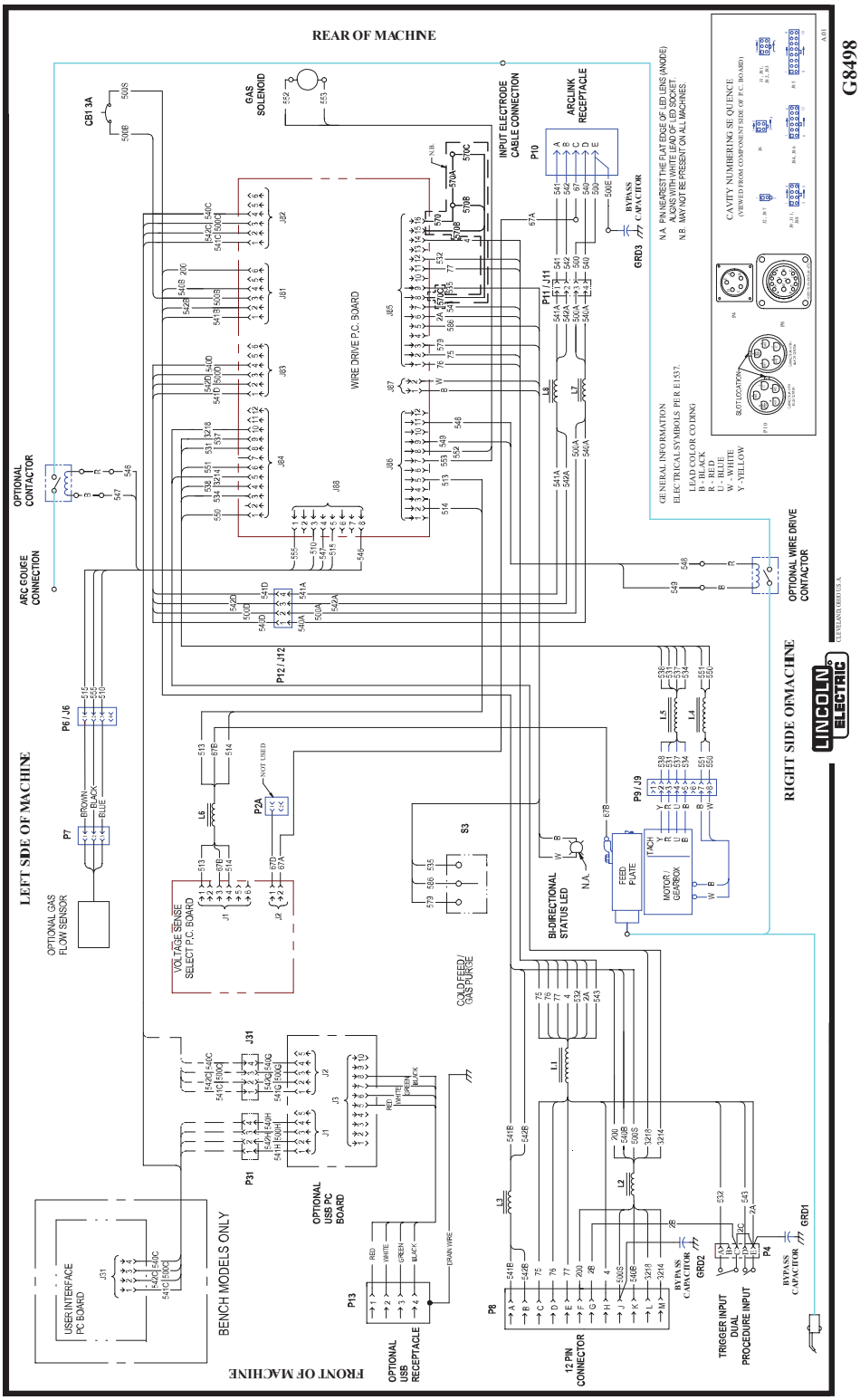
ArcLink System Error Codes			
Fault Code		**Description**	**Possible Adjustments**
Err 81	Motor overload, long term.	**1.** The wire drive motor has overheated.	**1.** Check that the electrode slides easily through the gun and cable. **2.** Remove tight bends from the gun and cable. **3.** Check that the spindle brake is not too tight. **4.** Verify a high quality electrode is being used. **5.** Wait for the error to reset and the motor to cool (approximately 1 minute).
Err 82	Motor overload, short term.	**1.** The wire drive motor current draw has exceeded limits, usually because the motor is in a locked rotor state.	**1.** Check that motor can turn freely when idle arm is open. **2.** Verify that the gears are free of debris and dirt.

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
OUTPUT PROBLEMS		
The feeder does not power up - no voltage, no cold feed.	**1.** The work sense lead is disconnected or is a poor electrical connection. (Across the arc models) **2.** The power source is OFF. **3.** The circuit breaker for the wire feeder on power source have tripped. (control cable models) **4.** The control cable may be loose or damaged. (control cable models)	**1.** Connect the work sense lead to the work in a location free of dirt, rust and paint. **2.** Turn ON the power source. **3.** Reset the circuit breakers. **4.** Tighten, repair or replace the control cable.
The green LED on the wire drive or user interface is flashing quickly.	**1.** Loss of ArcLink communication between the wire feeder and the power source. **2.** Loss of ArcLink communication between the wire drive and control box of boom systems **3.** Multiple feeders are connected to the power source.	**1.** Check cables for good connections. **2.** Check cables for good connections. **3.** Upgrade the software in the power source.
The feeder is stuck in procedure B.	**1.** A dual procedure gun is being used with the dual procedure switch closed.	**1.** Change the position of the dual procedure switch.
Poor welding. An arc can be struck but is unstable. The wire feed speed is confirmed to be correct.	**1.** The feeder has been configured for the opposite polarity.	**1.** Verify P.81 in the set-up menu matches the polarity of the procedure being used.

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
OUTPUT PROBLEMS		
The actual wire feed speed does not match the set wire feed speed.	**1.** The gear ratio has been set incorrectly.	**1.** Confirm that P.18 matches the pinion gear installed in the wire drive.

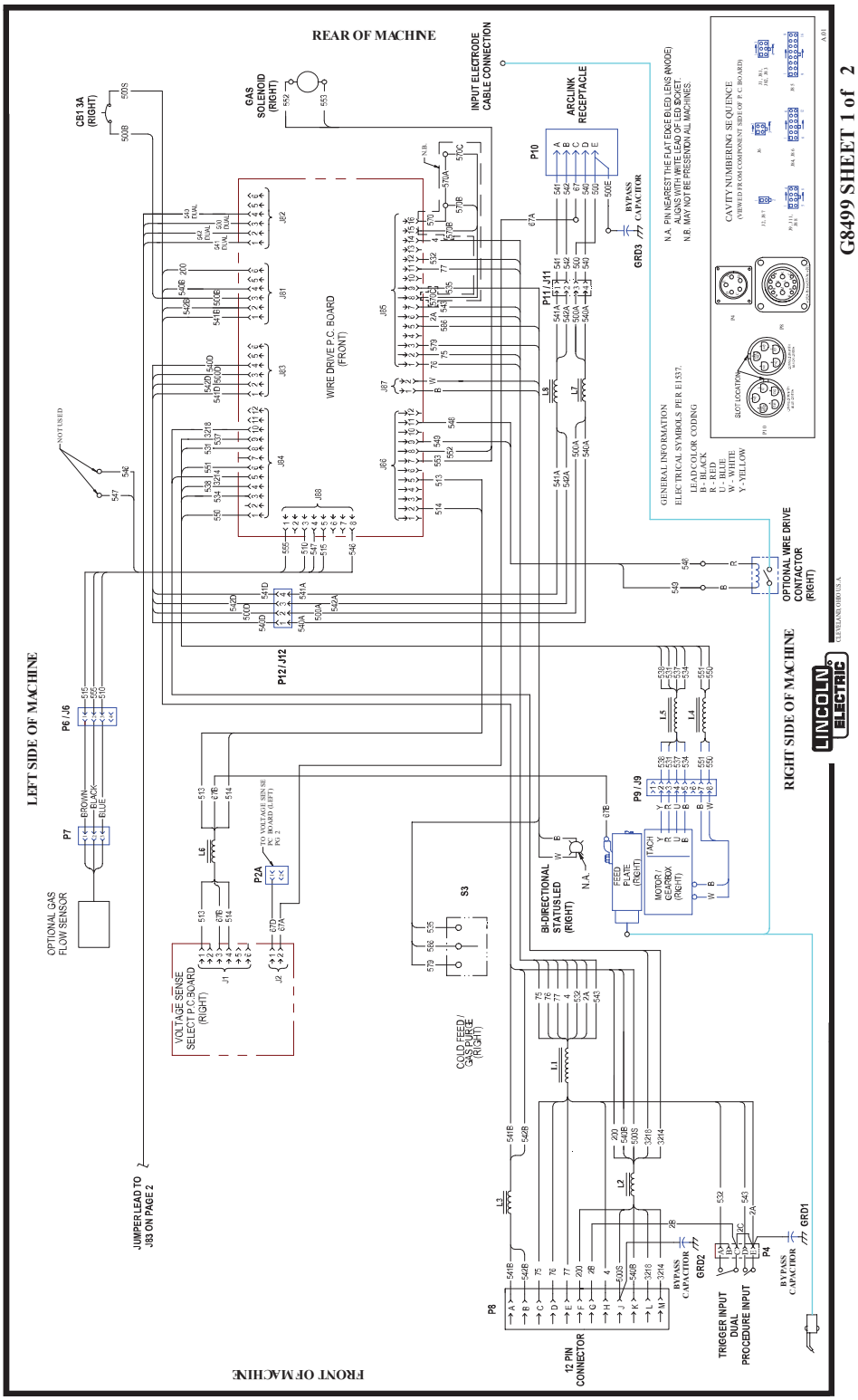
DIAGRAMS & PRINTS

POWER FEED 84 WIRE DRIVE - SINGLE (ABOVE CODE 12000)



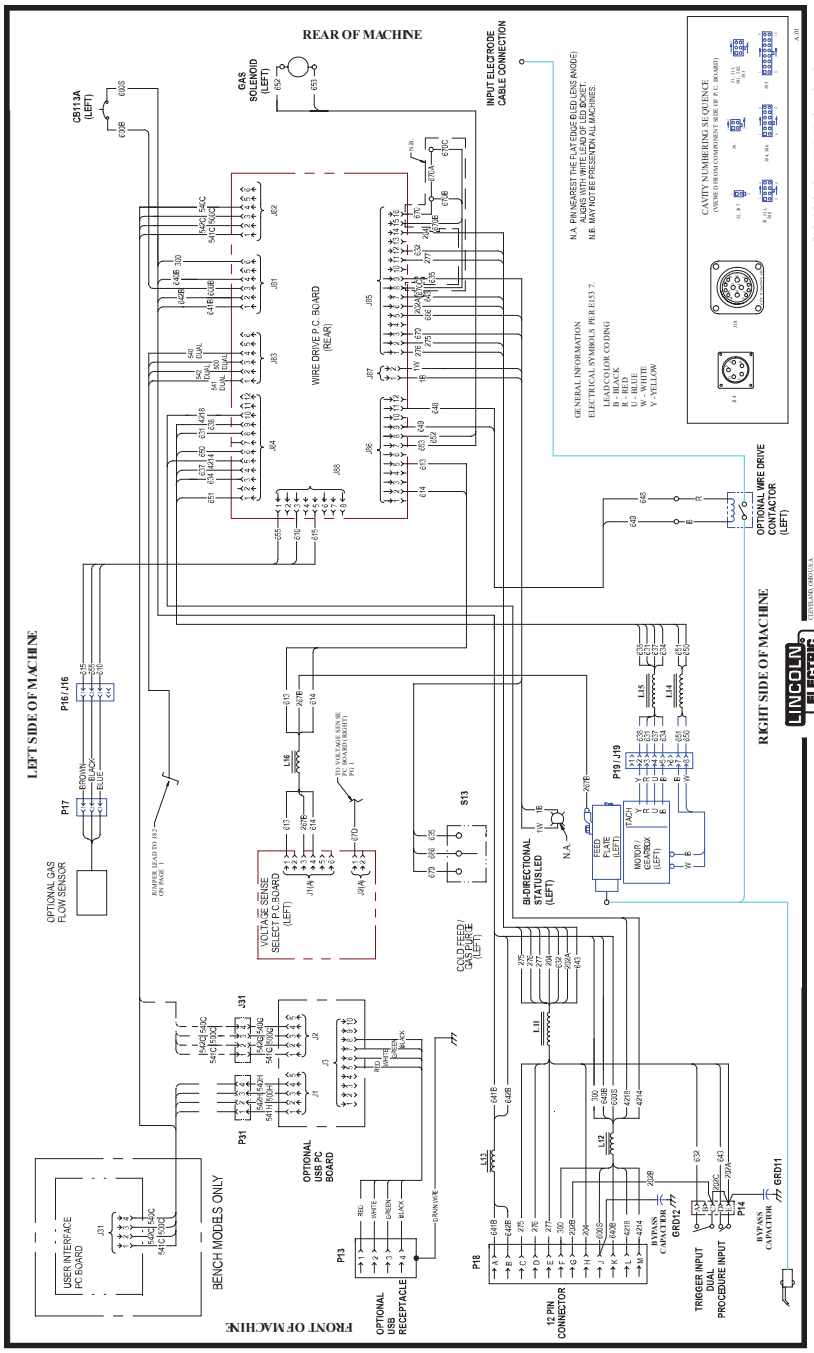
NOTE: This diagram is for reference only. It may not be accurate for all machines covered by this manual. The specific diagram for a particular code is pasted inside the machine on one of the enclosure panels. If the diagram is illegible, write to the Service Department for a replacement. Give the equipment code number.

POWER FEED 84 WIRE DRIVE - 1 DUAL (ABOVE CODE 12200)



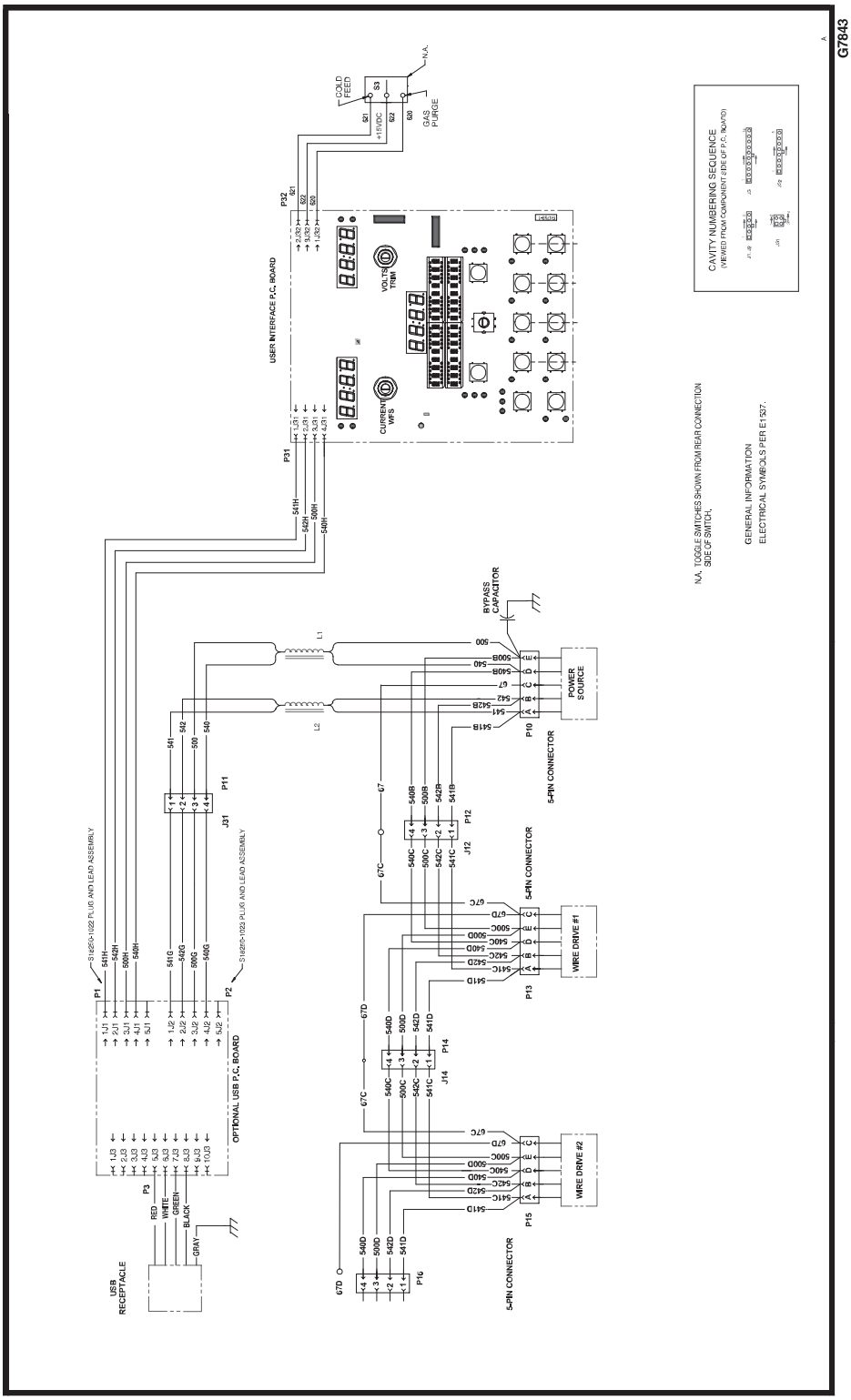
NOTE: This diagram is for reference only. It may not be accurate for all machines covered by this manual. The specific diagram for a particular code is pasted inside the machine on one of the enclosure panels. If the diagram is illegible, write to the Service Department for a replacement. Give the equipment code number.

POWER FEED 84 WIRE DRIVE - 2 DUAL (ABOVE CODE 12200)



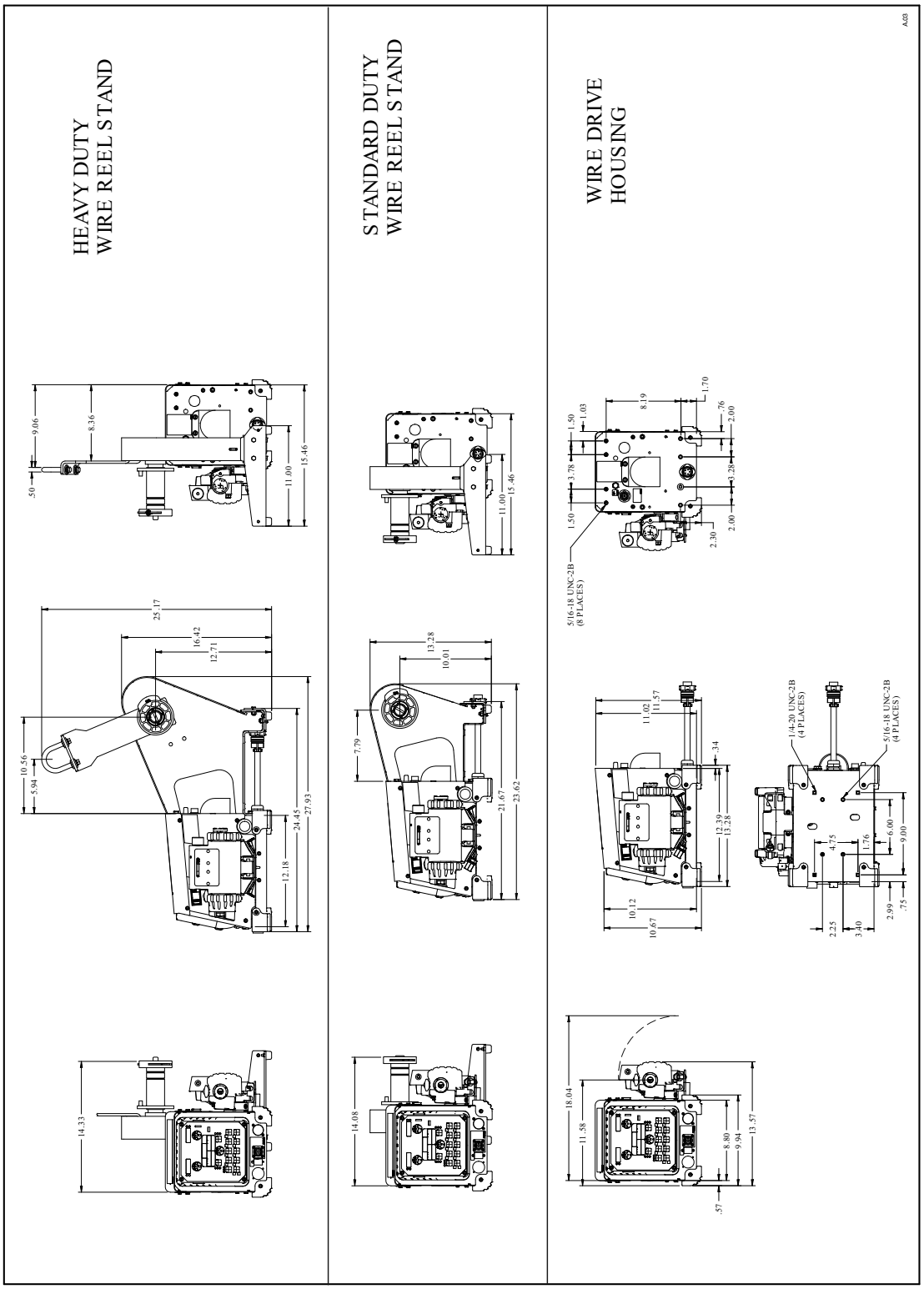
NOTE: This diagram is for reference only. It may not be accurate for all machines covered by this manual. The specific diagram for a particular code is pasted inside the machine on one of the enclosure panels. If the diagram is illegible, write to the Service Department for a replacement. Give the equipment code number.

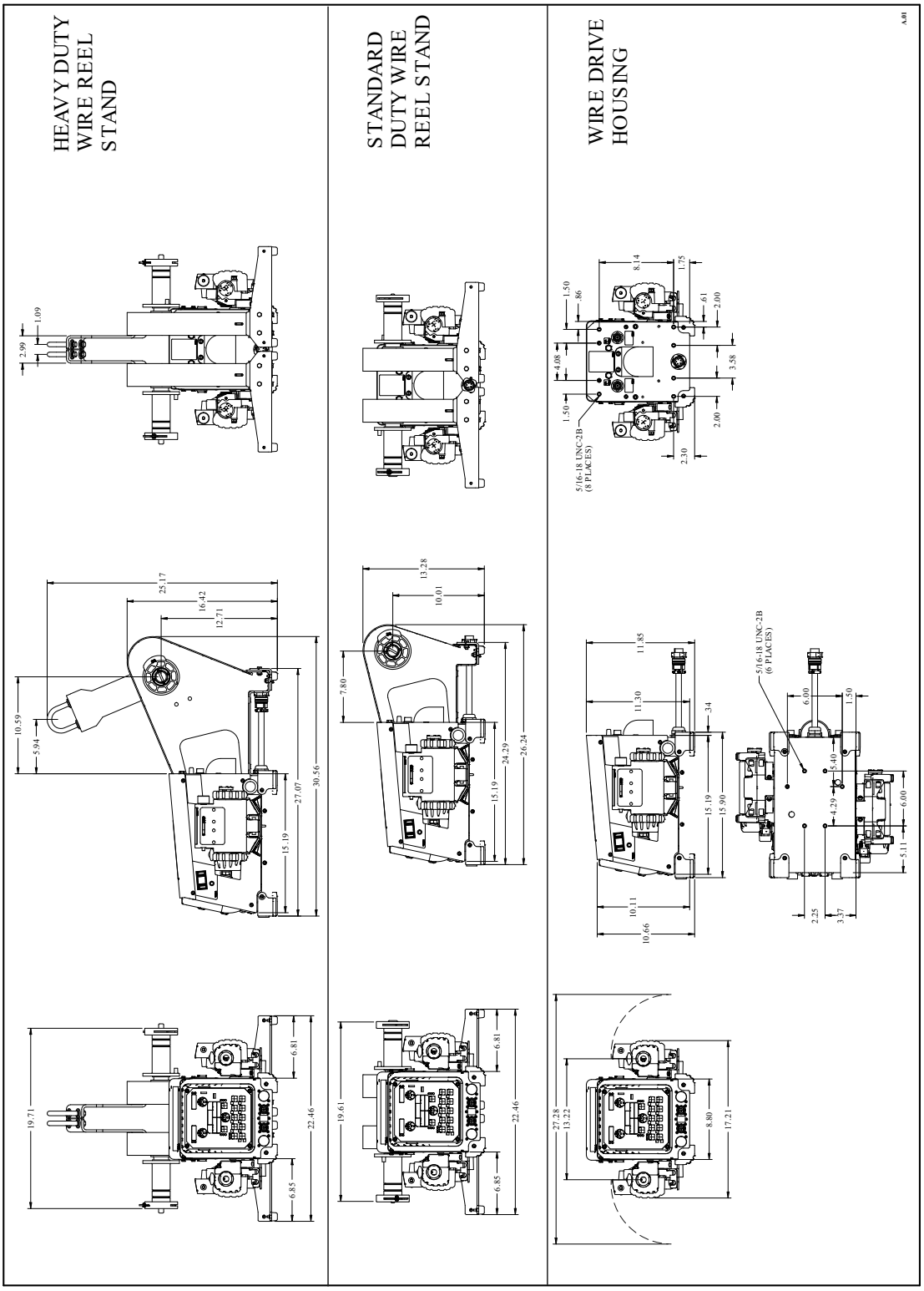
POWER FEED 84 CONTROL BOX WITH USB FOR CODES 12177, 12178, 12179

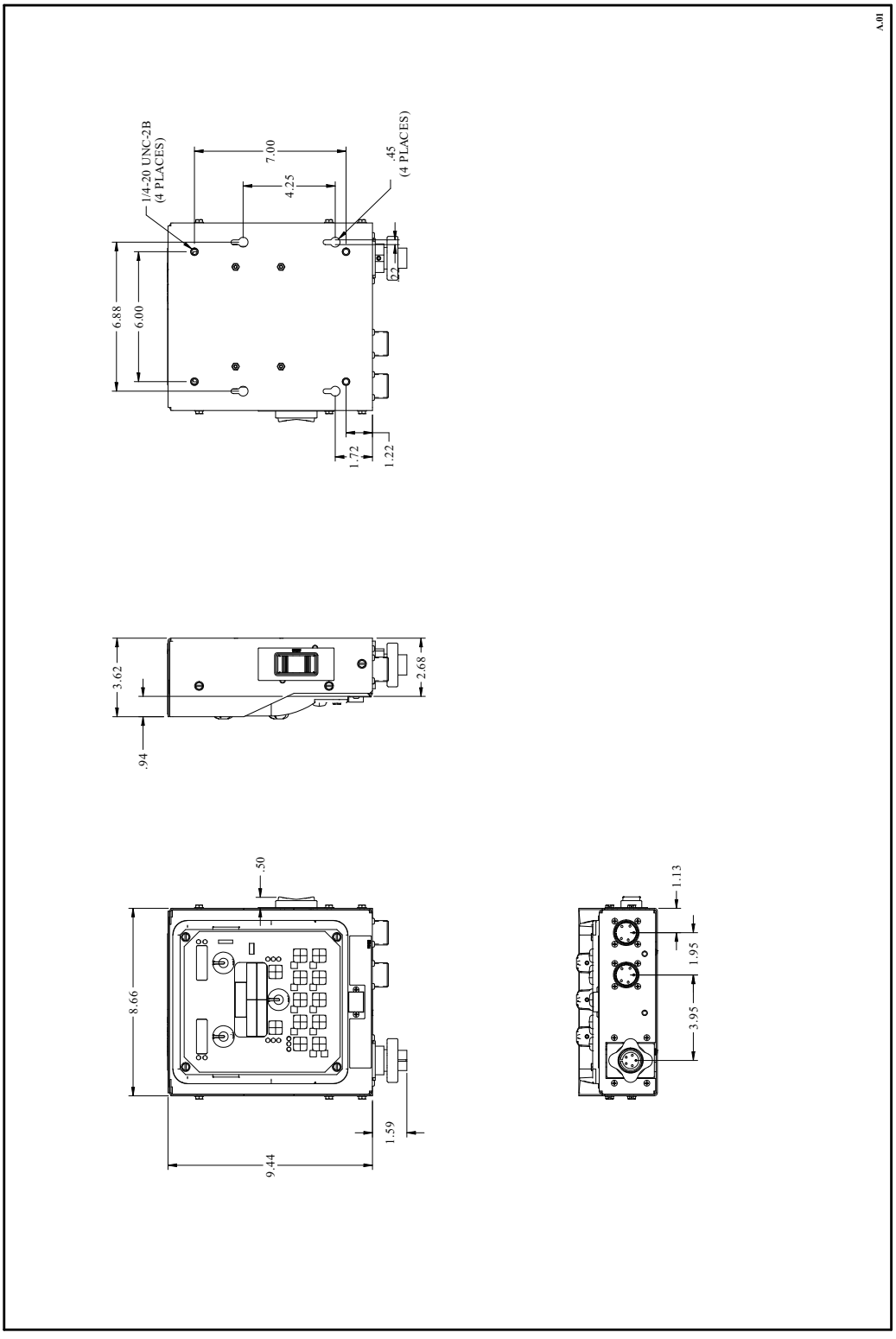


NOTE: This diagram is for reference only. It may not be accurate for all machines covered by this manual. The specific diagram for a particular code is pasted inside the machine on one of the enclosure panels. If the diagram is illegible, write to the Service Department for a replacement. Give the equipment code number.

DIMENSIONS


HEAVY DUTY
WIRE REEL STAND
STANDARD DUTY
WIRE REEL STAND
WIRE DRIVE
HOUSING
M24854
A.08
5/16-18 UNC-2B
(8 PLACES)
1/4-20 UNC-2B
(4 PLACES)
5/16-18 UNC-2B
(4 PLACES)


HEAVY DUTY
WIRE REEL
STAND
STANDARD
DUTY WIRE
REEL STAND
WIRE DRIVE
HOUSING
M24855
A.01
5/16-18 UNC-2B
(8 PLACES)
5/16-18 UNC-2B
(6 PLACES)


A.01
M24856
1/4-20 UNC-2B
(4 PLACES)
7.00
4.25
.45
(4 PLACES)
.22
6.88
6.00
1.72
1.22
3.62
2.68
.94
.50
8.66
1.59
9.44
1.13
1.95
3.95

INDEX

K#	CODE	PRODUCT
K3328-1	12702	Power Feed 84 - Single Boom Feeder, No U/I
K3328-2	12703	Power Feed 84 - U/I, No Reel
K3328-3	12704	Power Feed 84 - U/I, No Reel, USB
K3328-6	12705	Power Feed 84 - U/I, Standard Duty Reel
K3328-11	12706	Power Feed 84 - U/I, No Reel, Gouge Kit
K3328-12	12707	Power Feed 84 - U/I, No Reel, Gouge Kit, USB
K3328-13	12708	Power Feed 84 - U/I, Heavy Duty Reel, USB
K3330-1	12698	Power Feed 84 Dual - Dual Boom Feeder, No U/I
K3330-3	12699	Power Feed 84 Dual - U/I, No Reel, USB
K3330-5	12700	Power Feed 84 Dual - U/I, Heavy Duty Reel, Contactors, USB
K3330-6	12701	Power Feed 84 Dual - U/I, Standard Duty Reel
K4164-1	12709	Power Feed 84 - CCC, U/I, Heavy Duty Reel, USB
K4165-1	12647	Power Feed 84 Dual - CCC, U/I, Heavy Duty Reel, USB

CUSTOMER ASSISTANCE POLICY

CUSTOMER ASSISTANCE POLICY

The business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, and cutting equipment. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment, or to provide engineering advice in relation to a specific situation or application. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the definition of specifications, and 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.

WELD FUME CONTROL EQUIPMENT

The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.

PARTS LIST

Content/Details may be changed or updated without notice. For most current Instruction Manuals, go to PARTS.LINCOLNELECTRIC.COM.