IM2078
01/2017
REV00

LN-25x™CE

OPERATOR'S MANUAL

ENGLISH

THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Ave., Cleveland Ohio 44117-1199 USA
www.lincolnelectric.eu

THE LINCOLN ELECTRIC COMPANY
EC DECLARATION OF CONFORMITY

Manufacturer and technical documentation holder:	The Lincoln Electric Company
Address:	22801 St. Clair Ave. Cleveland Ohio 44117-1199 USA
EC Company:	Lincoln Electric Europe S.L.
Address:	c/o Balmes, 89 - 80 2a 08008 Barcelona SPAIN
Hereby declare that welding equipment:	LN-25x™CE
Product numbers:	K4267 (Product numbers may also contain prefixes and suffixes)
Is in conformity with Council Directives and amendments:	Electromagnetic Compatibility (EMC) Directive 2014/30/EU Low Voltage Directive 2014/35/EU
Standards:	EN 60974-5: 2013, Arc Welding Equipment – Part 5: Wire Feeders, EN 60974-10: 2014 Arc Welding Equipment – Part 10: Electromagnetic compatibility (EMC) requirements;

Samir Farah, Manufacturer
Compliance Engineering Manager
11 November 2016

Dario Gatti, European Community Representative
European Engineering Director Machines
30 November 2016

MCD540

12/05

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

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

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

ENGLISH INDEX

Technical specifications

LN-25x™CE

MODEL SUMMARY					
K#	**Description**	**Meters**	**Drive Roll Kit Included**	**Gun Bushing Installed**	**Gun Bushing Shipped Loose**
K4267-1	LN-25X™CE	DIGITAL	---	K1500-2	K1500-1

INPUT - SINGLE PHASE	
Input Voltage ±10%	**Input Amperes**
15 - 110V DC	4A

RATED OUTPUT	
Duty Cycle 40°C (based on a 10 min. period)	**Output Current**
60%	450 A
100%	325 A

PHYSICAL DIMENSIONS			
Height	**Width**	**Depth**	**Weight**
376 mm	221 mm	589 mm	17 kg

WIRE FEED SPEED RANGE / WIRE DIAMETER					
WFS Range	Drive Rolls	Drive roll diameter	Solid Wires	Aluminum Wires	Cored Wires
1.3 ÷ 17.7 m/min	2	Ø44.8mm	0.6 ÷ 1.6 mm	0.9 ÷ 1.6 mm	0.8 ÷ 2.4 mm

Operating Temperature	Storage Temperature	Protection Rating	Maximum Gas Pressure
-10 °C to 40 °C	-40 °C to 50 °C	IP23	0,69MPa (6.9 bar)

AGENCY APPROVALS			
Model	**Market**	**Conformity Mark**	**Standard**
K4267-1	US AND CANADA	CSAC/UL	C22.2 NO. 60 UL551
	EUROPE	CE	EN60974-5 EN60974-10
	CHINA	CCC	GB/T15579.5-2005

Electromagnetic Compatibility (EMC)

01/11

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

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

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

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

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

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

WARNING

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

WARNING

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

Safety

01/11

WARNING

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

	WARNING: This symbol indicates that instructions must be followed to avoid serious personal injury, loss of life, or damage to this equipment. Protect yourself and others from possible serious injury or death.
	READ AND UNDERSTAND INSTRUCTIONS: Read and understand this manual before operating this equipment. Arc welding can be hazardous. Failure to follow the instructions in this manual could cause serious personal injury, loss of life, or damage to this equipment.
	ELECTRIC SHOCK CAN KILL: Welding equipment generates high voltages. Do not touch the electrode, work clamp, or connected work pieces when this equipment is on. Insulate yourself from the electrode, work clamp and connected work pieces.
	ELECTRICALLY POWERED EQUIPMENT: Turn off input power using the disconnect switch at the fuse box before working on this equipment. Ground this equipment in accordance with local electrical regulations.
	ELECTRICALLY POWERED EQUIPMENT: Regularly inspect the input, electrode, and work clamp cables. If any insulation damage exists replace the cable immediately. Do not place the electrode holder directly on the welding table or any other surface in contact with the work clamp to avoid the risk of accidental arc ignition.
	ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS: Electric current flowing through any conductor creates electric and magnetic fields (EMF). EMF fields may interfere with some pacemakers and welders having a pacemaker shall consult their physician before operating this equipment.
	CE COMPLIANCE: This equipment complies with the European Community Directives.
	ARTIFICIAL OPTICAL RADIATION: According with the requirements in 2006/25/EC Directive and EN 12198 Standard, the equipment is a category 2. It makes mandatory the adoption of Personal Protective Equipment (PPE) having filter with a protection degree up to a maximum of 15, as required by EN169 Standard.
	FUMES AND GASES CAN BE DANGEROUS: Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. To avoid these dangers the operator must use enough ventilation or exhaust to keep fumes and gases away from the breathing zone.
	ARC RAYS CAN BURN: Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing. Use suitable clothing made from durable flame-resistant material to protect you skin and that of your helpers. Protect other nearby personnel with suitable, non-flammable screening and warn them not to watch the arc nor expose themselves to the arc.

	WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION: Remove fire hazards from the welding area and have a fire extinguisher readily available. Welding sparks and hot materials from the welding process can easily go through small cracks and openings to adjacent areas. Do not weld on any tanks, drums, containers, or material until the proper steps have been taken to insure that no flammable or toxic vapors will be present. Never operate this equipment when flammable gases, vapors or liquid combustibles are present.
	WELDED MATERIALS CAN BURN: Welding generates a large amount of heat. Hot surfaces and materials in work area can cause serious burns. Use gloves and pliers when touching or moving materials in the work area.
	CYLINDER MAY EXPLODE IF DAMAGED: Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators designed for the gas and pressure used. Always keep cylinders in an upright position securely chained to a fixed support. Do not move or transport gas cylinders with the protection cap removed. Do not allow the electrode, electrode holder, work clamp or any other electrically live part to touch a gas cylinder. Gas cylinders must be located away from areas where they may be subjected to physical damage or the welding process including sparks and heat sources.
	MOVING PARTS ARE DANGEROUS: There are moving mechanical parts in this machine, which can cause serious injury. Keep your hands, body and clothing away from those parts during machine starting, operating and servicing.
	SAFETY MARK: This equipment is suitable for supplying power for welding operations carried out in an environment with increased hazard of electric shock.

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

Installation

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

General Description

The LN-25x™CE is a rugged, portable, across-the-arc wire feeder equipped with CrossLinc™ technology. When used with a CrossLinc™ equipped power source, this LN-25x™ allows the user to adjust the welding voltage at the wire feeder front panel without the need for a control cable. As a result, setup and changeover time is reduced while productivity is increased.
In addition to the advantages of CrossLinc™ technology, this wire feeder has the following features:

- Wire drive geared for great performance with both FCAW and GMAW wires up to 2mm diameter.
- Plastic case molded from a high impact, flame retardant material which is lightweight and extremely durable. The patent pending design keeps the internal components protected in harsh envri- onments.
- MAXTRAC™ drive system. The patented features on the MAXTRAC™ wire drive offer tool-less changing of the drive rolls and wire guides for quick spool changes.
- Tachometer feedback on the wire drive ensures accurate speed control with all wire types and environmental conditions.
- Bright digital meters which display voltage, current, and wire feed speed so that the user can accurately set and verify welding parameters.
- Rating of 450 amps at a 60% duty cycle.

Recommended Processes

- GMAW
- FCAW

Process Limitations

Not recommended for stitch or spot welding.

Equipment Limitations

- The duty cycle of the wire feeder is 325A, 100% and 450A, 60%. Duty cycle is based upon the amount of welding performed in a 10 minute period.
- The maximum spool size is 20kg, 305mm diameter.
- Maximum FCAW gun length is 4,5m.
- Maximum GMAW gun length is 7,6m.
- K2330-1 Timer Kits do not work with the feeder.
- Use K2330-2 kits.
- Push-pull guns do not work with the LN-25x™.
- May not be converted to control cable operation.

Recommended Power Sources

Flextec 350x™CE.

Other Power Sources

- CV-250, 300, 305, 400, 655
- DC-400, 600, 655
- Invertec V-350, V-450
- Multi-Weld 350
- Ranger 10,000, 3 Phase, 225, 250, 250 GXT
- Ranger 250 LPG, 305
- Cross Country 300
- Vantage 300, 400, 500, 520, 600
- Air Vantage 500, 600, 650
- Dual Vantage 700
- Flextec 450, 500, 500P, 650
- Engine Drive Welder with a wire feed module

Design Features

Loaded with Standard Features Controls

- Digital displays with large voltage and wire feed speed knobs.
- Trigger interlock for comfort when making long welds.
- Cold-feed switch for wire feeding without activating welding output
- Gas Purge switch for purging the gas path without activating welding output.

⚠ WARNING

ELECTRIC SHOCK CAN KILL.

- 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.
- Only qualified personnel should perform this installation.
- Do not touch metal portions of the LN-25x™ work clip when the welding power source is on.
- Do not attach the work clip to the wire feeder.
- Connect the work clip directly to the work, as close as possible to the welding arc.
- Turn power off at the welding power source before disconnecting the work clip from the work.
- Only use on power sources with open circuit voltages less than 110 VDC.

Select Suitable Location

For best wire feeding performance, place the LN25x™CE on a stable and dry surface. Keep the wire feeder in a vertical position. Do not operate the wire feeder on an angled surface of more than 15 degrees.

Do not submerge the LN25x™CE

The LN25x™CE is rated IP23 and is suitable for outdoor use.
The handle of the LN25x™CE is intended for moving the wire feeder about the work place only.

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

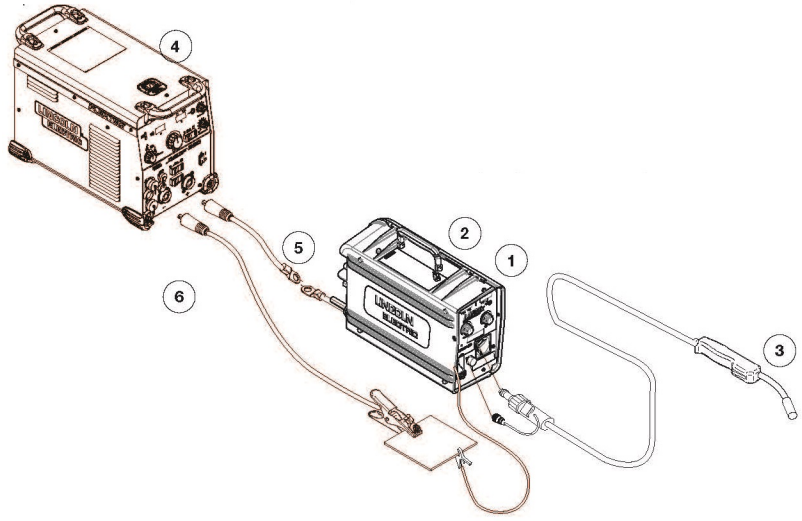
High Frequency Protection

⚠ WARNING

Locate the LN-25x™CE away from radio controlled machinery. The normal operation of the LN25x™CE may adversely affect the operation of RF controlled equipment, which may result in bodily injury or damage to the equipment.

Across the Arc Set-up with Crosslinc™ (Recommended)

Place the power source Remote/Local switch in the Remote position.

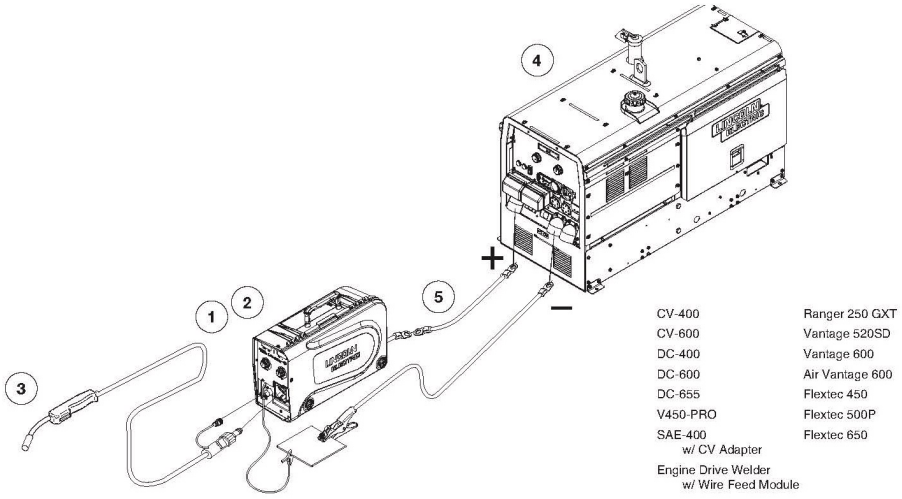


Item	K#	Description
1	K4267-1	LN25x™ CE
2	KP1695-xx KP1696-xx KP1697-xx	Drive Roll Kit
3	See "Accessories"	Welding Gun
4	K4283-1 K4284-1	Flextec350x CE Construction Flextec350x CE Standard
5	See "Accessories"	
6	See "Accessories"	

Across the Arc Set-up without Crosslinc™

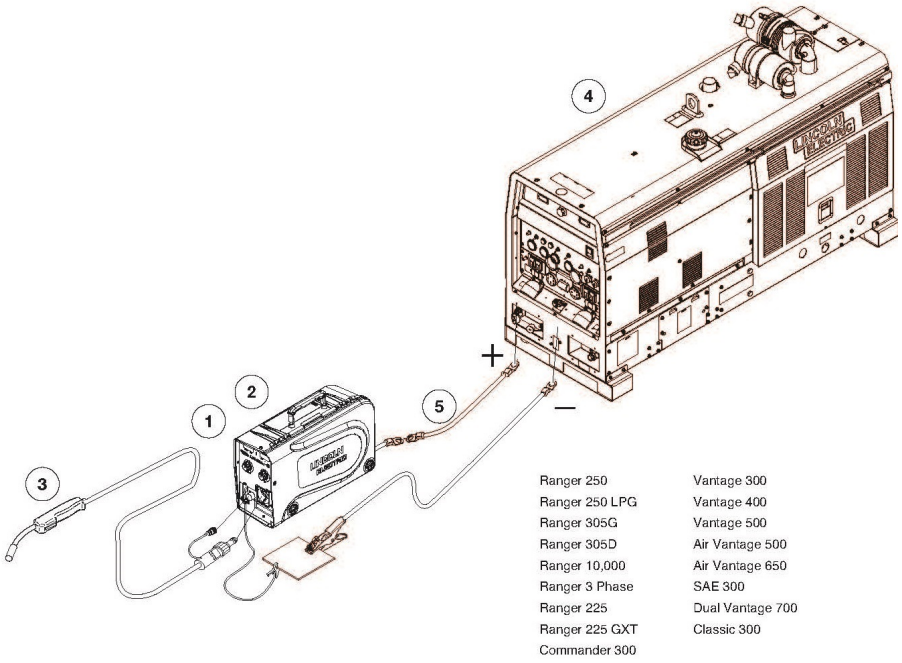
CV Power Sources with Stud Connectors with Local/Remote Switch

Place the power source Remote/Local switch in the Local position.



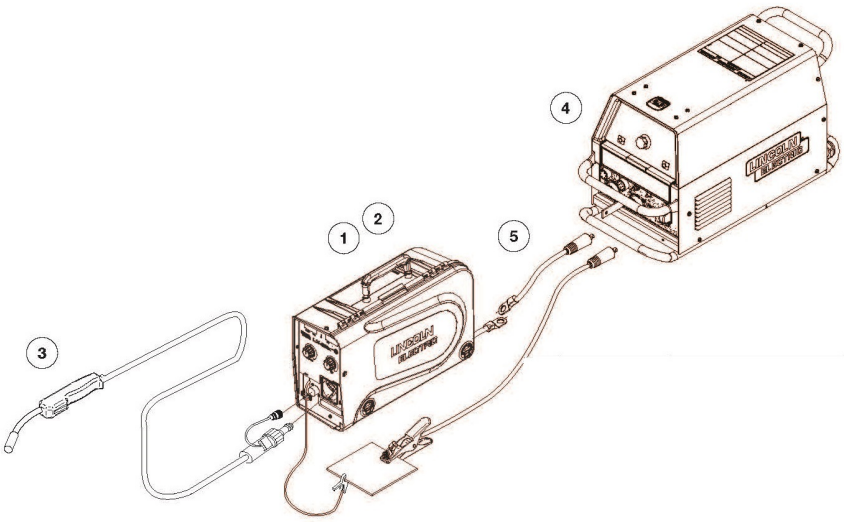
Item	K#	Description
1	K4267-1	LN25x™ CE
2	KP1695-xx KP1696-xx KP1697-xx	Drive Roll Kit
3	See "Accessories"	Welding Gun
4		CV Power Source
5	See "Accessories"	

CV Power Sources with Stud Connectors and no Local/Remote Switch



Item	K#	Description
1	K4267-1	LN25x™ CE
2	KP1695-xx KP1696-xx KP1697-xx	Drive Roll Kit
3	See "Accessories"	Welding Gun
4		CV Power Source
5	See "Accessories"	

CV Power Sources with Twist-Mate Connectors and no Local/Remote Switch



Item	K#	Description
1	K4267-1	LN25x™ CE
2	KP1695-xx KP1696-xx KP1697-xx	Drive Roll Kit
3	See "Accessories"	Welding Gun
4		CV Power Source
5	See "Accessories"	

Reccomended Electrode and Work Cable Sizes for Arc Welding

See Table 1 located below are 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 (RUBBER COVERED COPPER - RATED 75°C)**						
AMPERES	PERCENT DUTY CYCLE	CABLE SIZES FOR COMBINED LENGTHS OF ELECTRODE AND WORK CABLES				
		0 to 15m	15 to 30m	30 to 46m	46 to 61m	61 to 76m
200	60	35mm2	35mm2	35mm2	50mm2	70mm2
200	100	35mm2	35mm2	35mm2	50mm2	70mm2
225	20	25mm2	35mm2	25mm2	50mm2	70mm2
225	40 & 30	35mm2	35mm2	35mm2	50mm2	70mm2
250	30	35mm2	35mm2	35mm2	50mm2	70mm2
250	40	35mm2	35mm2	50mm2	50mm2	70mm2
250	60	50mm2	50mm2	50mm2	50mm2	70mm2
250	100	50mm2	50mm2	50mm2	50mm2	70mm2
300	60	50mm2	50mm2	50mm2	70mm2	70mm2
350	100	70mm2	70mm2	70mm2	70mm2	95mm2
350	60	70mm2	70mm2	70mm2	70mm2	95mm2
400	60	70mm2	70mm2	70mm2	95mm2	120mm2
400	100	70mm2	95mm2	95mm2	95mm2	120mm2
500	60	70mm2	70mm2	95mm2	95mm2	120mm2

** 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).

Coaxial weld Cable

(See table 2)

Coaxial welding cables are specially designed welding cables for pulse welding or STT™ welding. Coaxial weld cables feature low inductance, allowing fast changes in the weld current. Regular cables have a higher inductance which may distort the pulse or STT™ wave shape. 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.

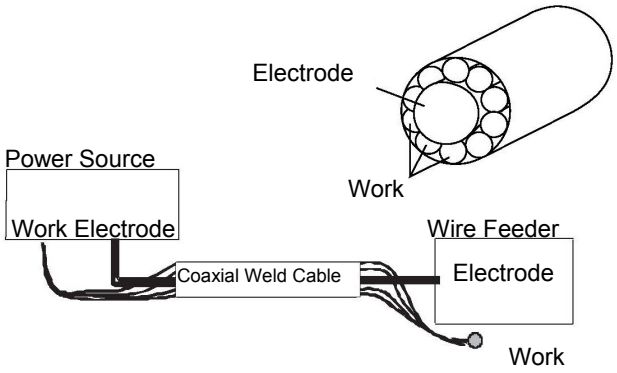
A coaxial weld cable is constructed with multiple small leads wrapped around one large lead. The large inner lead connects to the electrode stud on the power source and the electrode connection on the wire feeder. The small leads combine together to form the work lead, one end attached to the power source and the other end to the work piece. See Figure 1.

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.

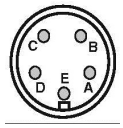
Table 2

RECOMMENDED CABLE SIZES (RUBBER COVERED COPPER - RATED 75°C)**					
Amperes	**PERCENT DUTY CYCLE**	**COAXIAL CABLE LENGTH**			
		0 to7.6M	**7.6 to 15.2M**	**15.2 to 22.9M**	**22.9 to 30.5M**
250	100	50mm2	50mm2	50mm2	50mm2
300	60	50mm2	50mm2	50mm2	70mm2
350	60	70mm2	70mm2	--	--



Trigger Connector

There is one circular connector for the gun trigger on the front of the LN-25x™CE.

Picture	Function	Pin	Wiring
	5 PIN TRIGGER CONNECTOR FOR PUSH-ONLY GUNS.	A	15 VOLT SUPPLY
		B	NOT USED
		C	TRIGGER
		D	83% WFS SWITCH
		E	15 VOLT SUPPLY

⚠ WARNING

ELECTRIC SHOCK CAN KILL.

- Do not touch electrically live parts.

Changing the Gun Adapter Bushing

⚠ WARNING

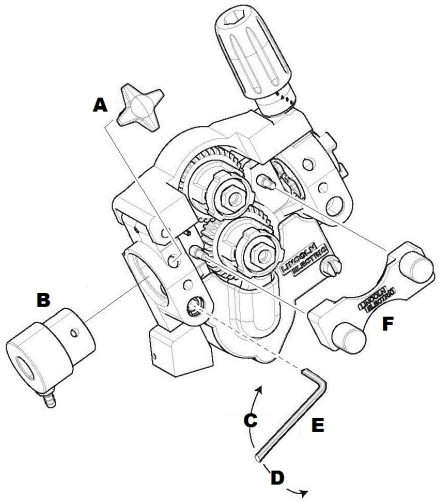
ELECTRIC SHOCK CAN KILL.

- 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.

Tools required:
¼" hex key wrench

Note: Some gun adapters do not require the use of the thumb screw.

1. Turn power off at the welding power source.
2. Remove the welding wire from the wire drive.
3. Remove the thumb screw from the wire drive.
4. Remove the welding gun from the wire drive.
5. Loosen the socket head cap screw that holds the connector bar against the gun adapter. Important: Do not attempt to completely remove the socket head cap screw.
6. Remove the outer wire guide, and push the gun adapter out of the wire drive. Because of the precision fit, light tapping may be required to remove the gun bushing.
7. Disconnect the shielding gas hose from the gun bushing, if required.
8. Connect the shielding gas hose to the new gun adapter, if required.
9. Rotate the gun adapter until the thumb screw hole aligns with the thumb screw hole in the feedplate. Slide the gun receiver bushing into the wire drive and verify the thumb screw holes are aligned.
10. Tighten the socket head cap screw.
11. Insert the welding gun into the gun adapter and tighten the thumb screw.



A. Thumb Screw
B. Gun Adapter
C. Tighten
D. Lossen
E. 1/4" Hex key wrench
F. Outer Wire guide

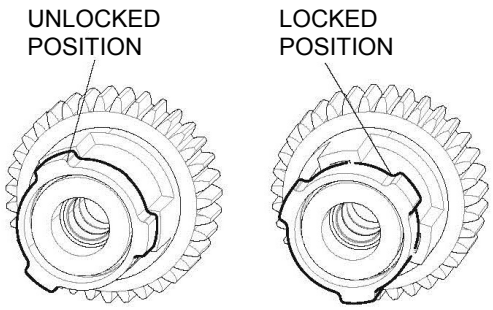
Procedure to Install Drive Rolls and Wire Guides

⚠ 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.

1. Turn power off at the welding power source.
2. Release the idle roll pressure arm.
3. Remove the outer wire guide by turning the knurled thumbscrews counter-clockwise to unscrew them from the feedplate.
4. Rotate the triangular lock and remove the drive rolls.



5. Remove the inner wire guide
6. Insert the new inner wire guide, groove side out, over the two locating pins in the feedplate.
7. Install a drive roll on each hub assembly secure with the triangular lock.
8. Install the outer wire guide by aligning it with the pins and tightening the knurled thumbscrews.
9. Close the idle arm and engage the idle roll pressure arm. Adjust the pressure appropriately.

Pressure Arm Adjustment

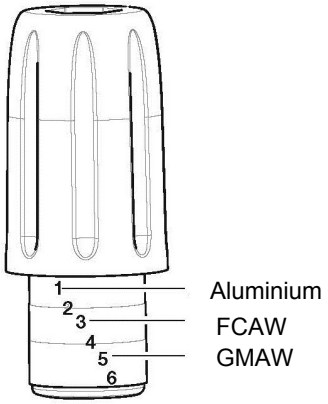
⚠ WARNING

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.

The pressure arm controls the amount of force the drive rolls exert on the wire. Proper adjustment of the pressure arm gives the best welding performance.

Set the pressure arm as follows:



Aluminium wires	Between 1 and 3
Cored wires	Between 3 and 4
Steel, stainless wires	Between 4 and 6

Gun Connection

⚠ WARNING

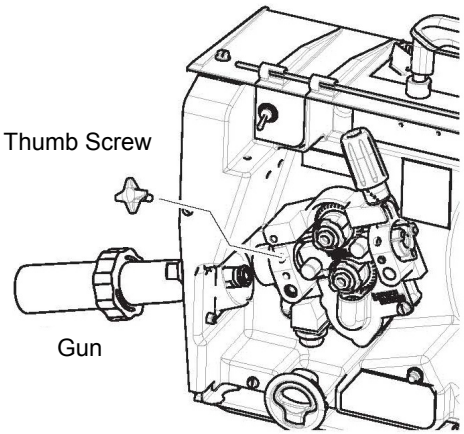
ELECTRIC SHOCK CAN KILL.

- 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.

The LN-25x™CE comes with a K1500-2 gun adapter installed. To install a gun,

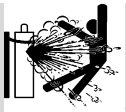
1. Turn power OFF.
2. Remove the thumb screw.
3. Push the gun the completely into the gun bushing.
4. Secure the gun in place with the thumb screw.
5. Connect the trigger cable from the gun to the trigger connector on the front of the feeder.
6. Note: Not all gun bushings require the use of the thumb screw.

Note: not all gun bushings require the use of the thumb screw.



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.)
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.

Operation

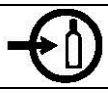
See "Safety" section for safety precautions.

Observe additional Safety Guidelines detailed in the beginning of this manual.
The serviceability of a product or structure utilizing the LN-25x™CE wirefeeder 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 using the LN- 25x™ CE wirefeeder. 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 the LN-25x™ CE wirefeeder may not be suitable for all applications, and the builder/user is and must be solely responsible for welding settings.

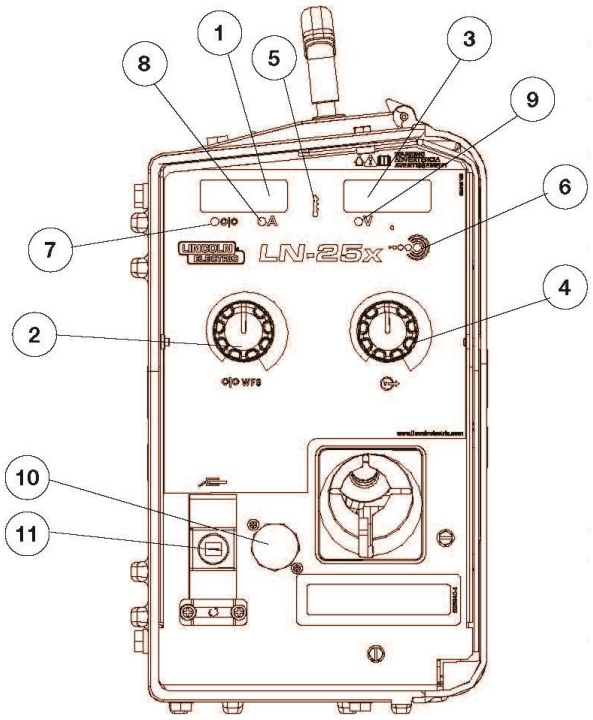
Power Up Sequence

All of the case front LEDs and displays will briefly light. If the gun trigger is activated during power up, the feeder will not operate until the gun trigger is released.

Graphic symbols that appear on this machine or in this manual

	WARNING or CAUTION
	INPUT VOLTAGE
	OUTPUT ON
	GAS PURGE
	HIGH TEMPERATURE
	READ INSTRUCTION MANUAL
	PROTECTIVE GROUND
	GAS INPUT
	SINGLE PHASE

Case Front Controls



Item	Description
1	Wire Feed Speed Digital Display
2	Wire Feed Speed Knob
3	Voltage Digital Display
4	Voltage Knob
5	Thermal LED
6	CrossLinc™ LED
7	Wire Feed Speed LED
8	Amperage LED
9	Voltage LED
10	5 Pin Gun Trigger Connector
11	Work Sense Lead

1. Wire Feed Speed Digital Display: The LN-25x™ CE has a digital display that shows the wire feed speed. This display is also capable of displaying amperage and the setup manu.
2. Wire Feed Speed Control: Use the Wire Feed Speed Knob to set the rate of wire feed speed. The wire feed speed will be displayed on the Wire Feed Speed Digital Display. During CV operation, the wire feed speed will remain a constant value, independent of arc voltage changes, as along as the arc voltage does not drop below the values per the following table:

Minimum Arc Volts	Maximum WFS
15V	280
17V	340
21V	440
24V	520
27V	600

3. Voltage Digital Display: The LN-25x™CE has a digital display that shows the voltage between electrode and work. This display is also capable of displaying the setup menu.
4. Voltage Knob: Use the Voltage Knob to set the voltage when connected to a CrossLinc™ Power Source, otherwise the display will show dashes. The voltage will be displayed on the Voltage Digital Display. During CV operation, the voltage will remain stable while welding.
   83% Wire Feed Speed
   The 83% wire feed speed reduces the wire feed speed to 83% of the original set value when activated. For example, if the original wfs = 200 in/min, the feeder will regulate to 0.83 x 200 = 166 in/min.
   The 83% trigger requires a gun with a dual procedure switch. This feature is often useful when welding pipe, and a “cooler”
   procedure is required on the bottom portion.
5. Thermal LED, Motor Overload: The thermal light illuminates when the wire drive motor draws too much current. If the thermal light illuminates, the wire drive will automatically shutdown for up to 30 seconds to allow the motor to cool. To start welding again, release the gun trigger, inspect the gun cable, liner (and conduit). Clean and make repairs as necessary. Start welding again when the problem has been safely resolved.
   For best results, keep the gun cable and conduit as straight as possible. Perform regular maintenance and cleaning on the gun liner, conduit and gun. Always use quality electrode, such as L-50 or L-56 from Lincoln Electric.
6. CrossLinc™ LED: The CrossLinc™ LED displays whether the feeder is connected to the power source. When the feeder has successfully connected to the power source, the LED will illuminate.
7. Wire Feed Speed LED and Amperage LED: The Wire Feed Speed and Amperage LEDs will communicate what is being displayed on the Wire Feed Speed Digital Display. When the Wire Feed Speed LED is illuminated, wire feed speed is being displayed. When the Amperage LED is illuminated, amperage is being displayed.
8. Amperage LED.
9. Voltage LED: The Voltage LED will be illuminated when the Voltage Digital Display is displaying actual voltage or when its displaying with a CrossLinc™ connection.
10. Five Pin Gun Trigger Connector: The 5 Pin Gun Trigger Connector is where the trigger that is attached to the welding gun is connected. This will actuate the welding current when the trigger is pulled.
11. Work Sense Lead: The Work Sense Lead is used to power the feeder and communicate with the power source. Connected the Work Sense Lead is critical for the operation of the feeder, as it will not power up if it is disconnected.

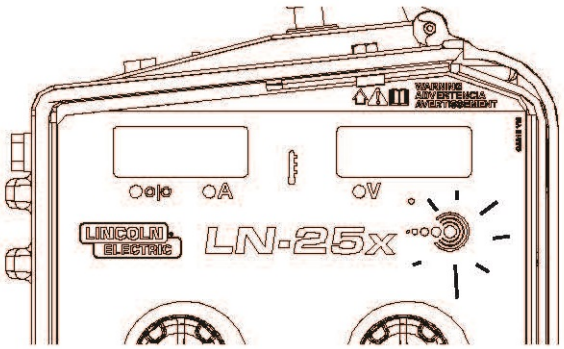
Digital Meter Operation

Power up

All of the LED’s will briefly illuminate during power-up.

CrossLinc™

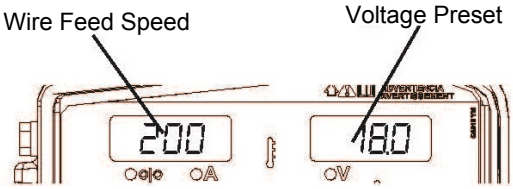
When connected to a power source that supports CrossLinc™, the CrossLinc™ LED will be illuminated when a connection is made between the feeder and power source.
When connected to a power source that does not support CrossLinc™, the CrossLinc™ LED will not be illuminated.



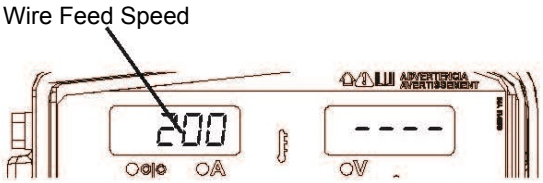
Idle

The left display shows the preset wire feed speed. The right display shows the preset voltage when it is connected to a power source that supports CrossLinc™ and is switched to remote. It will display dashes when connected to a power source that does not support CrossLinc™.

When connected to a power source with CrossLinc

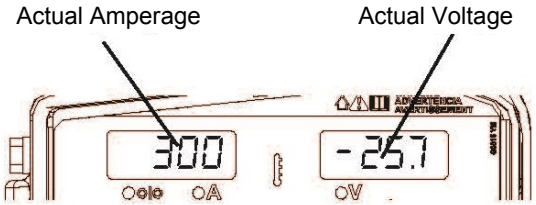


When connected to a power source without CrossLinc, or switched to local.



Welding

The value in the left display will be either amps or actual wire feed speed, depending upon the selection chosen in the set-up menu. The corresponding LED below the display will light. Note that actual WFS may not match preset WFS, if welding at low voltages with high wire feed speeds. The right display shows the arc voltage. If the wire feeder is connected for electrode negative welding, then the voltage display shows a minus sign.

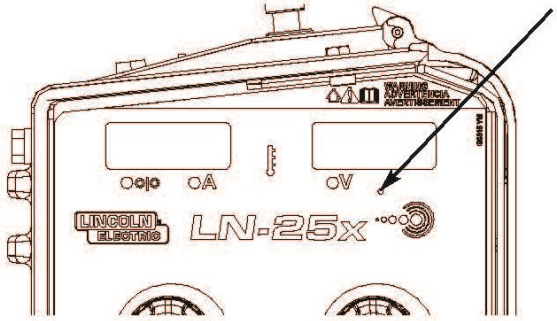


After Welding

The display continues to hold the value of the amperage or WFS and arc voltage for ten seconds after welding stops. The amperage or WFS and voltage displays flash.

Set-up Menu

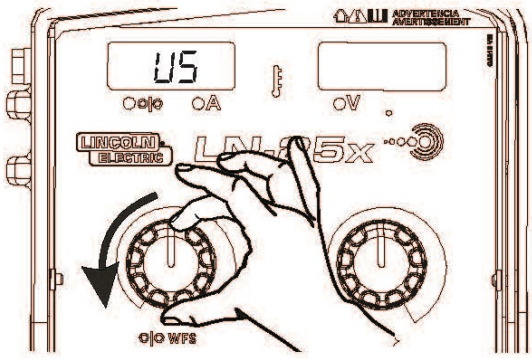
To enter the set-up menu, use paper clip to press the small button located below the Voltage Display on the case front.

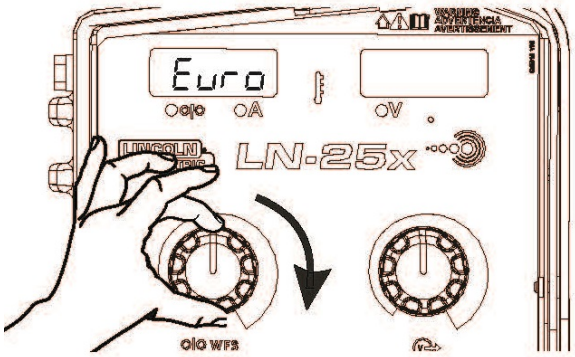


Wire Feed Speed Units

To change the wire feed speed units:

- Rotate the WFS knob to the left to use “inches/minute” for the wire feed speed units.
- Rotate the WFS knob to the right to use “meters/minute” for the wire feed speed units.





Press the set-up button again to enter the Run-In menu.

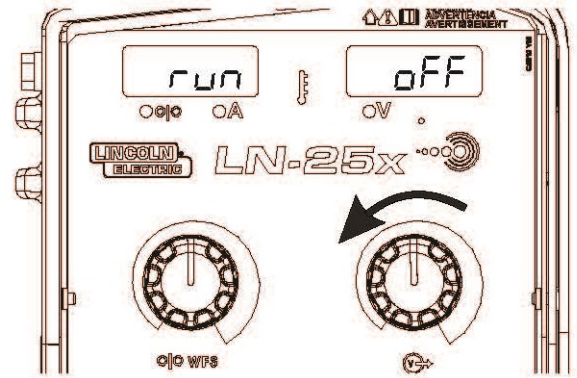
Run-in

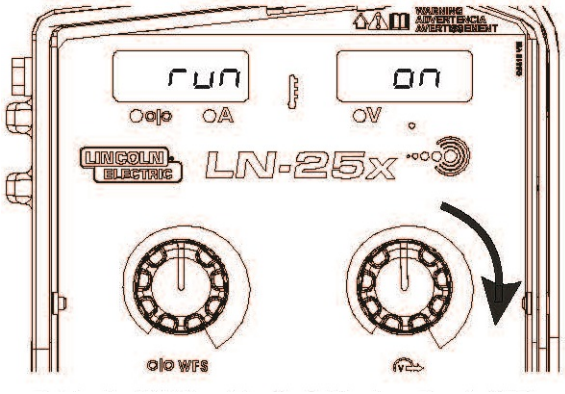
“Run-in” refers to the wire feed speed during the time from when the trigger is pulled to when an arc is struck. When Run-in is “ON”, the wire feed speed is reduced until an arc is stuck. Factory setting is run-in "OFF".

Model	Run-in Wire Feed Speed
K4267-1	50 in/min

When Run-in is “OFF”, the wire feed speed is the same as the welding wire feed speed. Turn Run-In “OFF” for fast, crisp starts, especially when running with 0.9 or 1.2mm (.035 or .045) solid steel wires at high wire feed speeds.

To change the Run-in setting:





- Rotate the WFS knob to the left to turn Run-In OFF.
- Rotate the WFS knob to the right to turn Run-In ON.

Press the set-up button again to enter the WFS calibration menu.

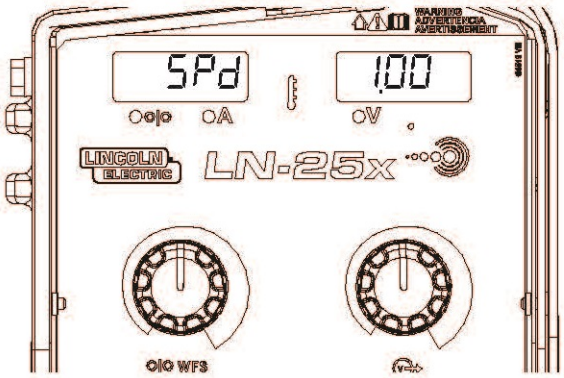
WFS Calibration

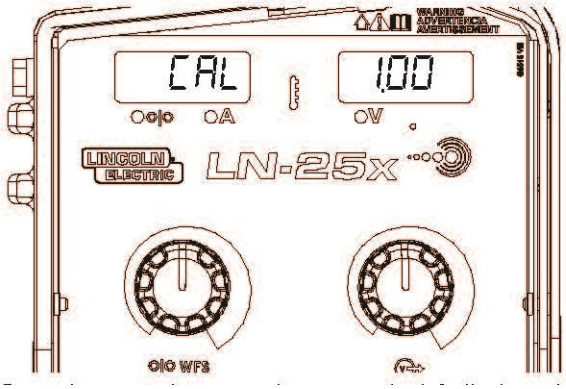
To calibrate the wire feed speed, before entering the set-up menu:

- Set the display to the desired wire feed speed (example: 400 inches per minute)
- Measure the actual wire feed speed (example: 405 inches per minute)

While in the set-up menu, adjust the calibration factor as follows:
ActualWFS:SetWFS=CalibrationFactor
Example: 405:400=1.01

The calibration factor is factory set as 1.00.



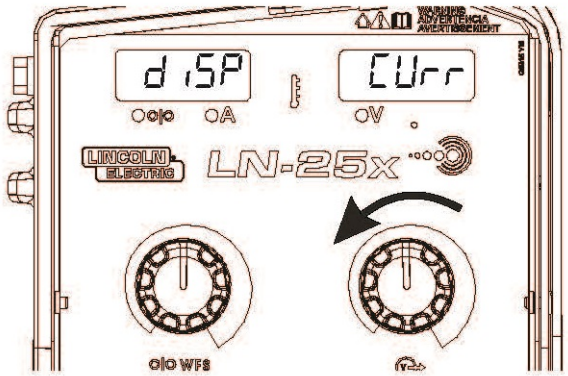


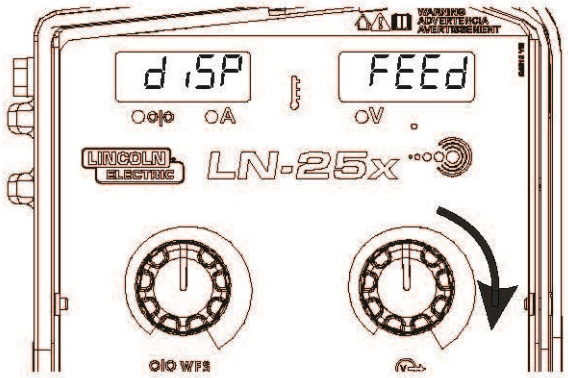
Press the set-up button again to enter the left display selection menu.

Left Display Selection

The left display can show either amperage or actual WFS during welding. Note that actual WFS is not the same as preset WFS. For example, the preset WFS may be set to 400 ipm, but the arc voltage is only 15V. The actual WFS will be approximately 280 ipm because there is not enough arc voltage to run at 400 ipm.
To change the left display reading:

- Rotate the WFS knob to the left to display amperage (current).
- Rotate the WFS knob to the right to display actual WFS.



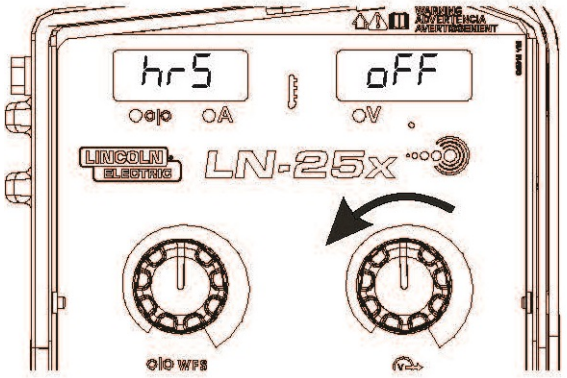


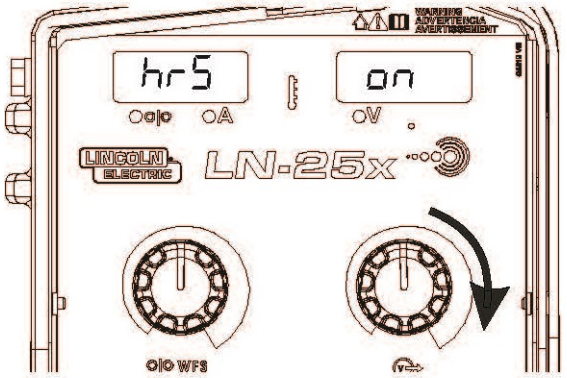
Press the set-up button again to enter the the arc hours menu.

Arc Hours

The LN-25x™CE can keep track of the number of hours in which the unit has been welding.
To change is setting:

- Rotate the WFS knob to the left to turn arc hours off.
- Rotate the WFS knob to the right for 300 second hold.



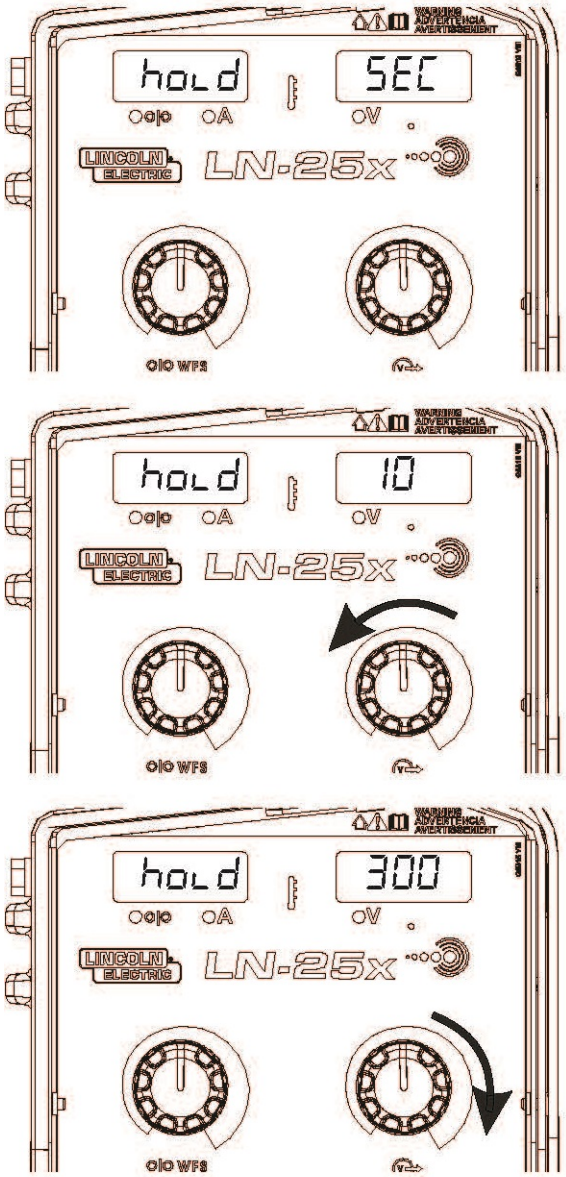


Press the set-up button to enter the hold display menu.

Hold Display

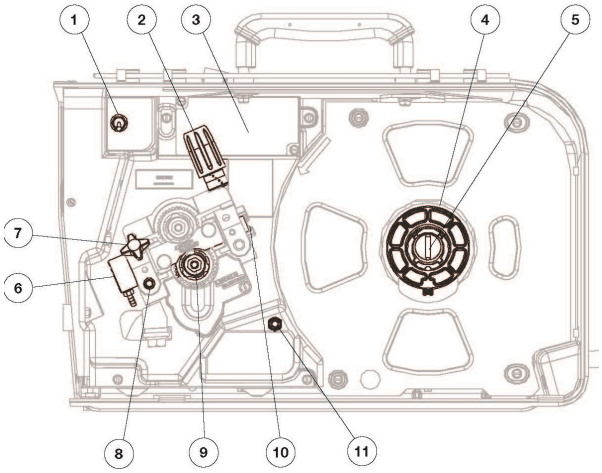
The LN-25x™ will display the actual wire feed speed or amperage and voltage after welding has stopped. The hold display option will hold these values for either 10 seconds or 300 seconds.
To change setting:

- Rotate the WFS knob to the left for 10 second hold..
- Rotate the WFS knob to the right for 300 second hold.



Press the set-up button to exit the set-up menu.

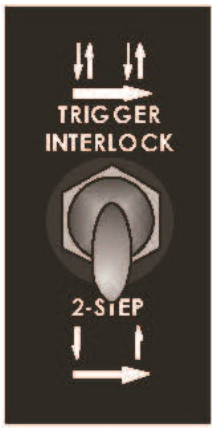
Internal Controls



Item	Description
1	2 Step/Trigger Interlock Switch
2	Pressure Adjustment Knob
3	Optional Timer Kit
4	Spool Retainer
5	Spindle Brake
6	Gun Bushing
7	Thumb Screw
8	Socket Head Cap Screw for Gun Bushing
9	Drive Hubs
10	Inlet Wire Guide
11	Cold Feed Pushbutton

Internal Controls Description

1. 2 Step - Trigger Interlock Switch: The 2 Step - Trigger Interlock switch changes the function of the gun trigger. 2 Step trigger operation turns welding on and off in direct response to the trigger. Trigger Interlock operation allows welding to continue when the trigger is released for comfort on long welds. Place the toggle switch in the DOWN position for 2 Step operation or in the UP position for Trigger Interlock operation.



2 Step – Trigger: 2 Step trigger operation is the most common. When the gun trigger is pulled, the welding power source energizes the electrode output and the wire feeder feeds wire for welding. The power source and wire feeder continue welding until the trigger is released.

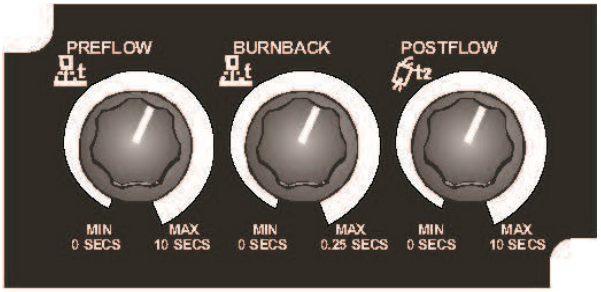
Trigger Interlock: Trigger Interlock operation provides for operator comfort when making long welds. When the gun trigger is first pulled, the welding power source energizes the output and the wire feeder feeds wire for welding. The gun trigger is then released while the weld is made. To stop welding, the gun trigger is pulled again, and when it is released the welding power source output turns off and the wire feeder stops feeding wire.

Caution: If the arc goes out while welding with trigger interlock operation, the electrode output from the welding power source remains energized and the wire feeder will continue to feed wire until the gun trigger is again pulled and then released.

11. Cold Feed Pushbutton: When cold feeding, the wire drive will feed electrode but neither the power source nor the gas solenoid will be energized. Adjust the speed of cold feeding by rotating the WFS knob. Cold feeding, or "cold inching" the electrode is useful for threading the electrode through the gun.

Optional Preflow, Burnback and Postflow Timer Kit (K2330-2)

The Preflow, Burnback and Postflow Timer Kit gives control over the shielding gas at the beginning and end of the weld and prepares the end of the wire for the next arc start. Additional shielding gas protection is often required when welding aluminum, stainless steel or exotic alloys.



Preflow Timer

The preflow timer range is OFF to 10 seconds. Preflow time is the time delay from when the trigger is pulled to when the wire starts to feed and is energized. Preflow is used to purge the welding gun with shielding gas and helps to minimize porosity at the start of the weld.

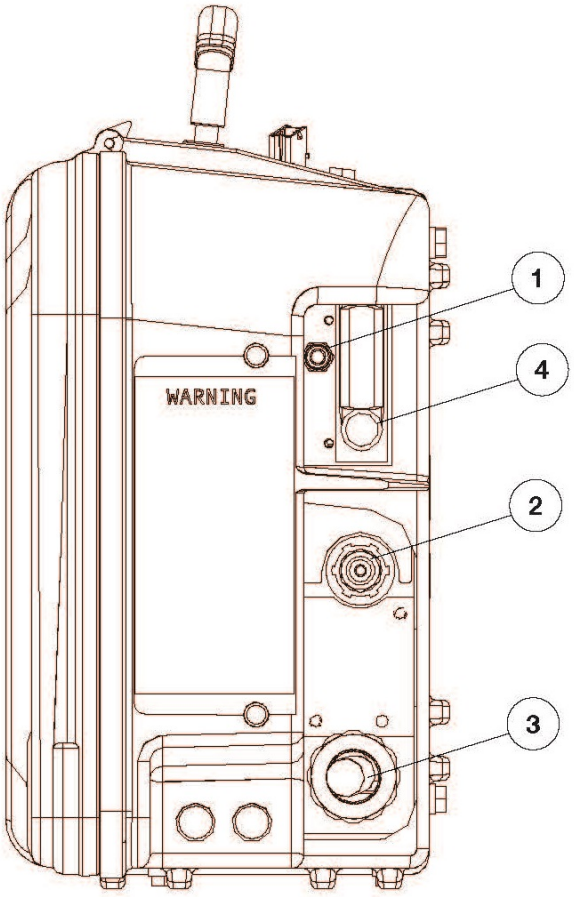
Burnback Timer

The burnback timer range is OFF to 0.25 seconds. The burnback timer controls the additional amount of time the power source output remains ON after the wire drive has stopped feeding wire. Burnback adjustment prevents the wire from sticking to the weld at the end of a weld and helps to condition the wire for the next weld. To set the burnback time, adjust the knob to approximately 0.03 seconds and then decrease or increase the time as desired.

Postflow Timer

The postflow timer range is OFF to 10 seconds. Postflow is the time from when the power source output turns OFF until the postflow timer expires. Use postflow to protect the weld while the weld cools.

Rear Controls



Item	Description
1	Gas Purge Pushbutton
2	Shielding Gas Inlet
3	Electrode Lead
4	Gas Flowmeter

1. Gas Purge Pushbutton: The gas solenoid valve will energize but neither the power source output nor the drive motor will be turned on. The Gas Purge switch is useful for setting the proper flow rate of shielding gas. Flow meters should always be adjusted while the shielding gas is flowing.

Maintenance

⚠ WARNING

ELECTRIC SHOCK CAN KILL.

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

Routine Maintenance

- Check weld 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.

Flow Meter Validation

Tools required:

- Flow meter reference standard.
- Constant voltage DC welding power source (DC-400, V-350, CV-400 or equivalent).

To Verify the Flow Meter Accuaracy

1. Turn power OFF.
2. Connect the LN-25x™CE to the constant voltage DC welding power source. The work lead of the LN-25x ™CE must be connected to the work terminal of the power source.
3. Connect a supply of CO2 to the wire feeder. Do not exceed the maximum inlet pressure of the wire feeder.
4. Disconnect the shielding gas hose that connects to the gun bushing.
5. Connect the shielding gas hose to flow meter reference standard.
6. Orient the LN-25x ™CE in a vertical position.
7. Turn power ON.
8. Adjust the flow meter on the LN-25x ™CE to 40 scfh while pressing the GAS PURGE button.
9. Measure the gas flow with the calibrated flow meter while pressing the GAS PURGE button.
10. The measured flow rate should be between 35 and 45 scfh. The LN-25x ™CE flow meter cannot be calibrated. If the flow meter reads incorrectly, check for leaks or kinks in the gas hose. Replace the flow meter if necessary

Customer Assistance Policy

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

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

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.

WEEE

07/06

English

Do not dispose of electrical equipment together with normal waste!
In observance of European Directive 2012/19/EC on Waste Electrical and Electronic Equipment (WEEE) and its implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility. As the owner of the equipment, you should get information on approved collection systems from our local representative.
By applying this European Directive you will protect the environment and human health!

Spare Parts

12/05

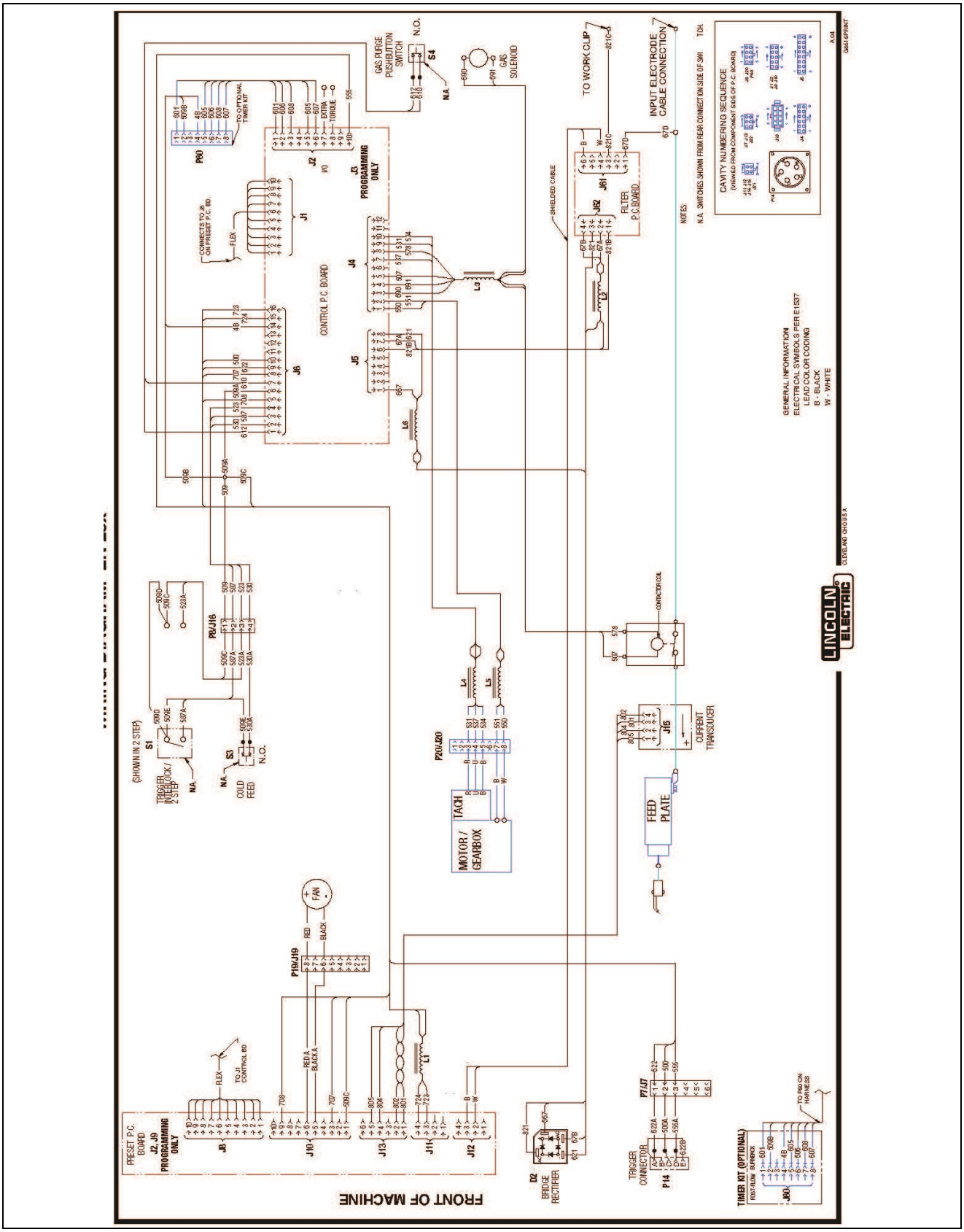
For Spare Parts references visit the Web page: https://www.lincolnelectric.com/LEExtranet/EPC/

Authorized Service Shops Location

09/16

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

Electrical Schematic



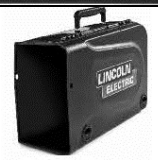
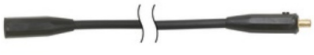
NOTE: this diagram is for reference only. It may not be accurate for all machines covered by this manual. The specific diagram for a partiuclar code is pasted inside the machine on one of the enclosure panels. If the diagram is ellegible, write to the Service Department for a raplacement. Give the equipment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

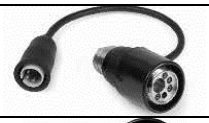
Suggested Accessories

Drive Roll Kits

Wire Type	KP Kits	Electrode Size	Notes
Steel Wires	KP1505-030S KP1505-035S KP1505-045S KP1696-052S KP1696-1/16S KP1696-1 KP1696-2	0.6-0.8mm 0.9mm 1.2mm 1.4mm 1.6mm 0.9, 1.2mm 1.0mm	Includes: 2 V groove drive rolls and inner wire guide.
Cored Wires	KP1697-035C KP1697-045C KP1697-052C KP1697-1/16C KP1697-068 KP1697-5/64 KP1697-3/32	0.8-0.9mm 1.0-1.2mm 1.4mm 1.6mm 1.7-1.8mm 2.0mm 2.4mm	Includes: 2 Knurled drive rolls and inner wire guide.
Aluminium Wires	KP1695-035A KP1695-040A KP1695-3/64A KP1695-1/16A	0.9mm 1.0mm 1.2mm 1.6mm	Includes: 2 polished U groove drive rolls, outer wire guide and inner wire guide.

Optional Kits & Accessories.

Item	Description	Picture
K2330-2	**Preflow, Postflow and Burnback Timer Kit** Provides adjustable delay of power source output shut off to prevent electrode sticking in crater when using high wire feed speeds.	
K2596-2	**Polycarbonate Portable Feeder Case** Replace a damaged case without replacing the entire unit.	
K1796-xx	**AWG 1/0 Co-Axial Power Cable** Includes: 1/0 Coaxial weld cable of length "xx". Ends of the weld cable have lug connections. Use for Pulse welding. xx = 25; 50; 75 or 100	
K2593-100	**AWG #1 Coaxial Power Cable** Includes: #1 Coaxial weld cable of length 30m (100ft.). Ends of the weld cable have lug connections. Use for Pulse welding.	
K1803-1	**Work and Wire Feeder 2/0 Weld Cable Package** Includes Twist Mate™ connectors, work clamp, 4.5 m (15 ft.) work cable and 3.0 m (10 ft.) electrode cable. Rated 350 amps, 60% duty cycle.	
K1840-10	**Weld Power Cable, Twist-Mate to Lug** Includes: Twist-Mate to Lug, 1/0 cable of length 3m, 350A, 60% duty cycle.	
K1841-xx	**Weld Power Cable, Twist-Mate to Twist-Mate** Includes: Twist-Mate to Twist-Mate, 2/0 cable of length "xx". 2/0, 350A, 60% duty cycle. xx = 25 or 50	
K1842-xx	**Weld Power Cable, Lug to Lug** Includes: Lug to Lug, 3/0 cable of length "xx". 3/0, 600A, 60% duty cycle. xx = 10, 35, 60 or 110	
K1500-1	**Gun Receiver Bushing** (for guns with K466-1 Lincoln gun connectors; Innershield and Subarc guns) Includes: Gun receiver bushing, set screw and hex key wrench.	

K1500-2	**Gun Receiver Bushing** (for guns with K466-2, K466-10 Lincoln gun connectors; Magnum 200/300/400 guns and compatible with Tweco® #2-#4) Includes: Gun receiver bushing with hose nipple, set screw and hex key wrench.	
K1500-3	**Gun Receiver Bushing** for guns with K613-7 Lincoln gun connectors; Magnum 550 guns and compatible with Tweco® #5) Includes: Gun receiver bushing with hose nipple, set screw and hex key wrench.	
K1500-4	**Gun Receiver Bushing** For gun with K466-3 Lincoln gun connectors; compatible with Miller® guns.) Includes: Gun receiver bushing with hose nipple, set screw and hex key wrench.	
K489-7	**Gun Receiver Bushing** for Lincoln Fast-Mate guns.) Includes: Gun receiver bushing with trigger connector.	
K435	**Spindle Adapter,** for mounting 6.4 kg (14 lb.) Innershield Coils on 51 mm (2 in) spindles. Includes: Spindle Adapter made from 2 coil retainers. (Electrodenot included.)	
R-2013-027-1R	Quick Connector Nipple	
D-1319-010-1R	Screw Right Thread	
K10376	Adapter M14/Dinse(F)	
K4198-1	Weld Cable Twist Mate Adapter	