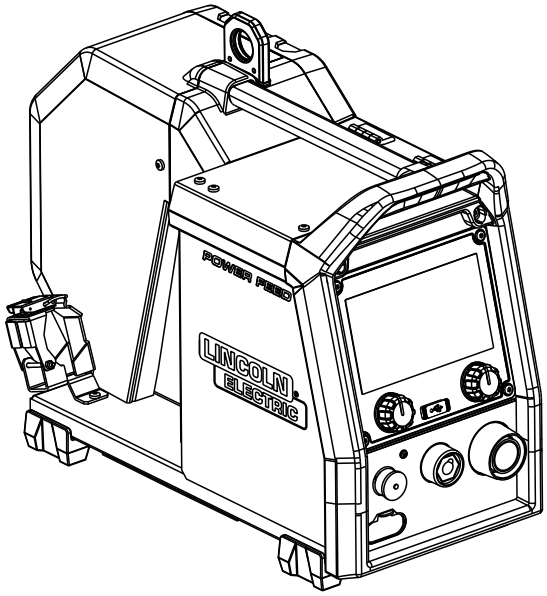
INSTRUCTION MANUAL

Power Feed® 56



For use with Product/Code Numbers:

50766

Save for future reference

Date Purchased

Code: (ex: 10859)

Serial: (ex: U1060512345)

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ONLINE ACCESS TO INSTRUCTION MANUAL

The current version of the instruction manual is available online at the following link:

https://www.lincolnelectric.com/en-GB/Operators-Manuals

It is recommended to use the online version as the most up-to-date source of information.

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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

WEEE



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!

ELECTROMAGNETIC COMPATIBILITY (EMC)

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.

⚠ WARNING



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

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

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

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

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

⚠ WARNING



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

⚠ WARNING



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

INSTALLATION

INSTALLATION AND OPERATOR INSTRUCTIONS

⚠ WARNING

Read this entire section before installing or operating the machine.

Read and understand this instruction manual before installing, operating, or servicing this equipment.

Keep this instruction manual available for future reference.

⚠ WARNING

Do not operate with covers removed.

Do not operate if cables are wet or immersed in water.

Do not touch electrically “hot” parts inside the machine.

Have qualified personnel do the installation, maintenance and troubleshooting work.

⚠ CAUTION

Risk from electrical current!

If welding is carried out alternately using different methods and if a welding torch and an electrode holder remain connected to the machine, the open-circuit/welding voltage is applied simultaneously on all cables.

The torch and the electrode holder should therefore always be placed on an insulated surface before starting work and during breaks.

Do not touch two welding guns, two electrode holders, or a welding gun and an electrode holder at the same time.

DECLARATION OF CONFORMITY

Devices with the CE label meet the requirements of all valid EU Directives, such as:

- Directive 2014/30/EU on electromagnetic compatibility
- Directive 2014/35/EU Low Voltage Directive
- Directive 2014/53/EU Radio Equipment Directive
- RoHS Directive 2011/65/EU
- Ecodesign Directive 2009/125/EC and COMMISSION REGULATION (EU) 2019/1784

The full text of the EU Declaration of Conformity is available at: https://www.lincolnelectric.com/en/Operators-Manuals

RADIO PARAMETERS

Compliance with directive 2014/53/EU - Radio Equipment Directive (RED).

The following table provides information on the frequency bands used and the maximum HF transmission power of Lincoln Electric wireless radio products sold in the EU, in accordance with Articles 10.8 (a) and 10.8 (b) of the RED.

Radio Specifications :

Frequency Bands

802.11b/g/n (WLAN, 2.4GHz), WPAN:

- 2.4 GHz to 2.483 GHz

802.11a/n/ac (WLAN, 5 GHz):

- 5.15 GHz to 5.35 GHz
- 5.47 GHz to 5.725 GHz
- 5.725 GHz to 5.85 GHz

NFC:

13,553 MHz to 13,567 MHz

Maximum Radio-Frequency Power

802.11b/g/n (WLAN, 2.4 GHz): 16.5 dBm

802.11a/n/ac (WLAN, 5 GHz): 16 dBm

WPAN, (2.4 GHz): 7 dBm

TECHNICAL SPECIFICATIONS

NAME			INDEX
Power Feed® 56			**K14464-1**
INPUT			
Input Voltage U_1	**Input Current I_1**		**EMC Class**
40 Vdc	4 Adc		A
RATED OUTPUT AT 40°C			
Duty Cycle (based on a 10 min. period)		**Output Current I_2**	
100%		420 A	
60%		500 A	
OUTPUT RANGE			
Welding Current Range		**Peak Open Circuit Voltage**	
5÷500 A		113 Vdc or Vac peak	
DIMENSIONS AND WEIGHT			
Height	**Width**	**Length**	**Weight**
460 mm	245 mm	600 mm	17 kg
WIRE FEED SPEED RANGE / ROLLS TYPE			
WFS range	**Drive rolls**	**Drive roll diameter**	
1.5÷25 m/min	4	∅37	
WIRE DIAMETER			
Solid Wires	**Aluminum Wires**	**Cored Wires**	
0.6÷1.6 mm	1.0÷1.6 mm	0.9÷1.6 mm	
OTHERS			
Operating Temperature	**Storage Temperature**	**Protection Rating**	**Maximum Gas Pressure**
from -10 °C to +40 °C	from -25 °C to 55°C	IP23	0.5 MPa (5 bar)

INTRODUCTION

Power Feed® 56 is a digital wire feeder designed for use with compatible Lincoln Electric power sources and cooling units:

- **SPEEDTEC® 400S**
- **SPEEDTEC® 500S**
- **Cool Arc® 60s**

The wire feeder is equipped with a User Interface consisting of a 7-inch color display, a Home button, and two rotary control knobs. The User Interface enables parameter monitoring, setup, and system configuration from a single operator interface.

Communication between the power source and the wire feeder is established through the **ArcLink®** protocol, providing reliable data exchange throughout the welding system. Operating parameters, system status, and configuration settings are displayed on the User Interface located on the front panel.

When connected to a compatible power source, the system supports the following welding processes:

- GMAW (MIG/MAG)
- FCAW-GS / FCAW-SS
- SMAW (MMA)
- GTAW (lift TIG)
- CAG (gouging).

The complete package includes:

- Wire feeder
- USB memory device containing the Operator’s Manual
- Easy Start Guide
- Gun holder
- Welder/operator identification card; 1 EA
- Supervisor identification card; 1 EA

Recommended equipment is listed in the ACCESSORIES AND OPTIONS on page E-1 section and is available for separate purchase.

EXPLOITATION CONDITIONS

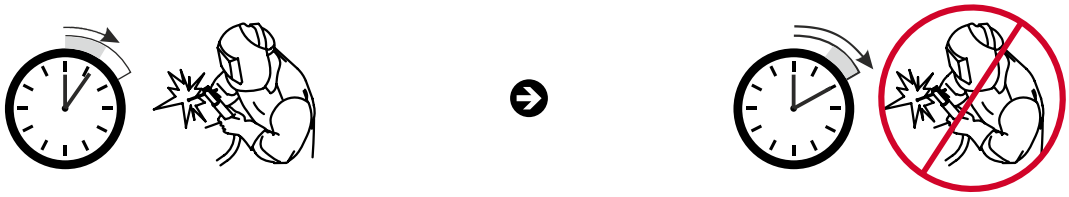
This machine can operate in harsh environments. However, it is important to use the following simple preventive measures that will ensure its long life and reliable operation:

- Do not place or operate this machine on a surface with an incline higher than 15° from horizontal.
- Do not use this machine for pipe thawing.
- This machine must be located where there is free circulation of clean air without restrictions for air movement. Do not cover the machine with paper, cloth or rags when switched on.
- Dirt and dust that can be drawn into the machine should be kept away from the item.
- This machine has a protection rating of IP23. Keep it dry when possible and do not place it on a wet ground or in puddles.
- Locate the machine away from a radio controlled machinery. Normal operation may adversely affect the operation of a nearby radio controlled machinery, which may result in injury or equipment damage. Read the section on electromagnetic compatibility in this manual.
- Do not operate in areas with an ambient temperature greater than 40°C.

DUTY CYCLE AND OVERHEATING

The duty cycle of a welding machine is the percentage of time in a 10 minute cycle at which the user can operate the machine at rated welding current.

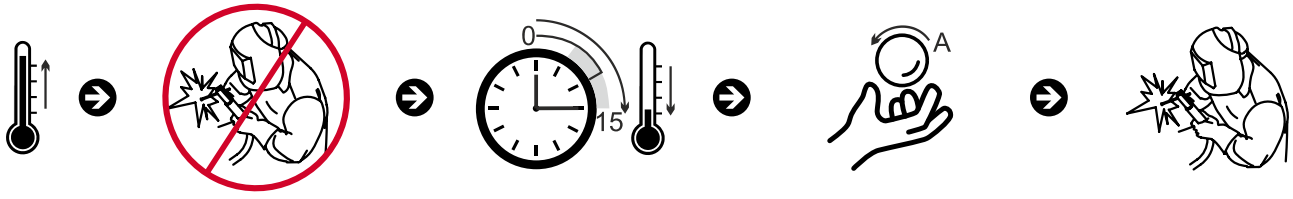
Example: 60% duty cycle:



Welding for 6 minutes

Break for 4 minutes

Excessive extension of the duty cycle will cause the thermal protection circuit to activate.



Minutes

or decrease Duty Cycle

INPUT SUPPLY CONNECTION

Check the input voltage, phase, and frequency of the power source that will be connected to this wire feeder. The acceptable level of input voltage is indicated in the TECHNICAL SPECIFICATIONS on page A-3 and on the rating plate of the power source. Verify the connection of grounding wires from the power source to the input source.

TRANSPORT AND LIFTING

Note: During transportation and storage, the ambient temperature must be within the recommended range (refer to TECHNICAL SPECIFICATIONS on page A-3 section).

⚠ CAUTION



To prevent freeze damage and coolant leakage, drain the coolant from the cooler reservoir before transport.

⚠ WARNING



Observe all safety precautions when lifting the equipment.

Follow all applicable local regulations.

⚠ WARNING



Falling equipment can cause injury and damage to the unit.

Preparation to transport and lifting

- Switch off the equipment and disconnect it from the power supply.
- Drain the coolant completely.
- Remove the wire feeder, wire spool, gas cylinder, and all loose components before transport.

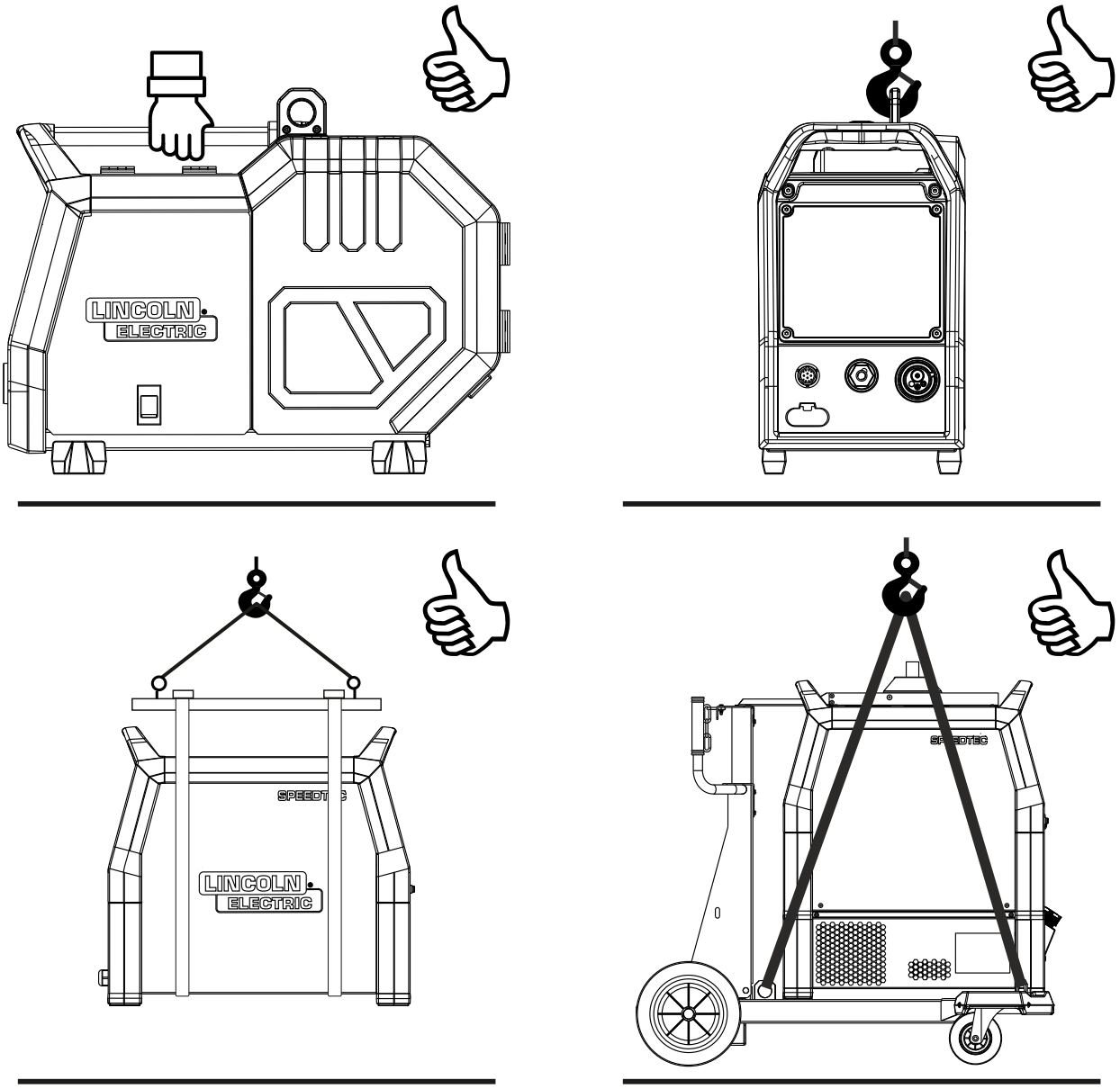
After transport and lifting

- Inspect the equipment for visible damage before commissioning.
- Do not operate the equipment if it is damaged.
- Have all repairs performed by qualified personnel before use.

Transport and lifting requirements

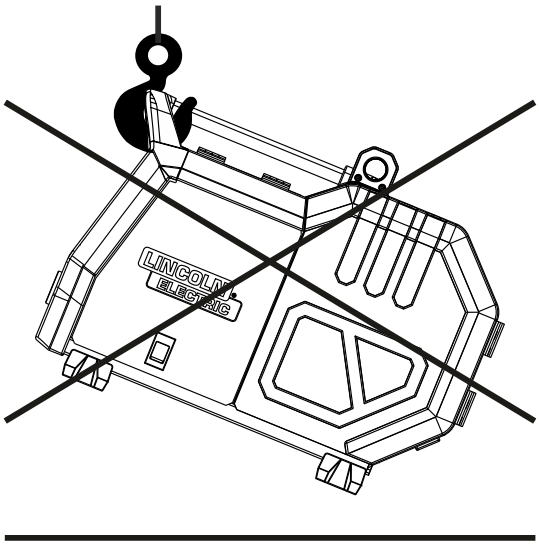
- Use only approved lifting equipment with sufficient rated capacity.
- Inspect all lifting equipment before use.
- Ensure that the equipment is stable and properly secured during transport.
- Ensure that the load is stable and evenly distributed before lifting.
- Use a spreader beam (traverse) and appropriately rated lifting slings when lifting with a crane.
- Attach lifting chains or straps only to designated lifting points.
- Use the dedicated lifting eye.
- Keep personnel clear of the equipment during lifting operations.

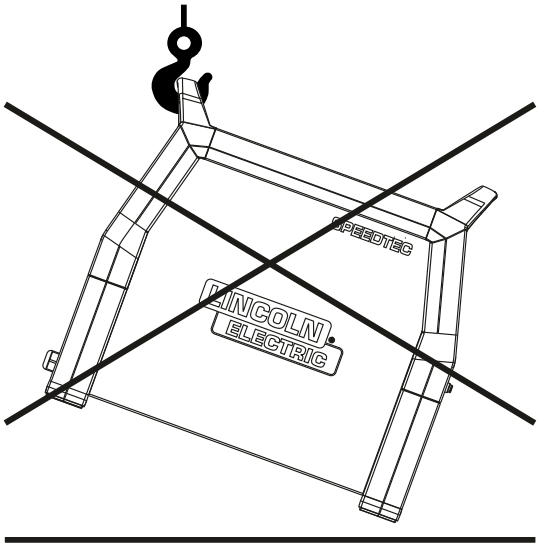
- Perform lifting operations only by trained and authorized personnel.

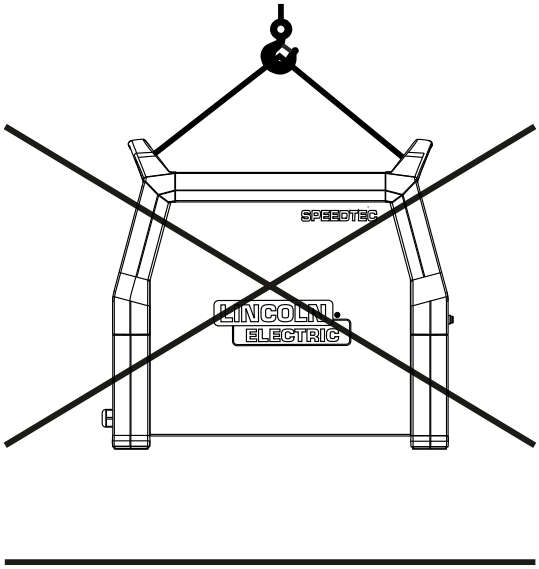


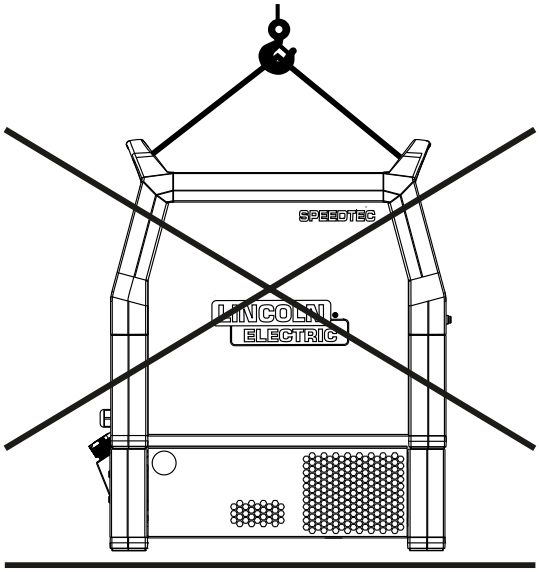
Prohibited actions

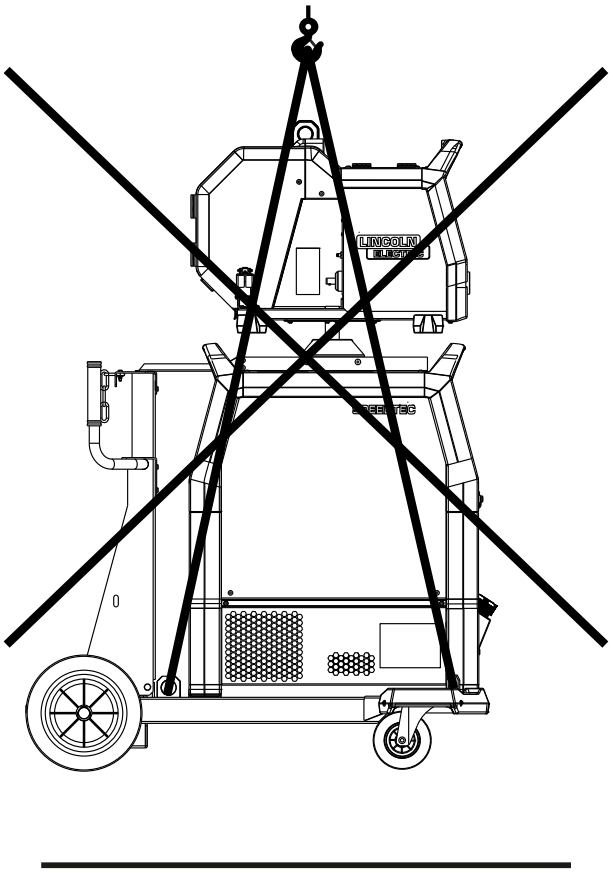
- Do not lift any equipment using transport handles.
- Do not use handles for lifting by crane or hoist.
- Do not use unauthorized lifting points.
- Do not lift equipment that is not properly secured.
- Do not lift equipment with loose components attached.
- Do not lift the system if a gas cylinder or wire feeder is installed on the transport cart.
- Do not stand under or near suspended loads.
- Do not attempt to lift the equipment unless the load is stable and balanced.

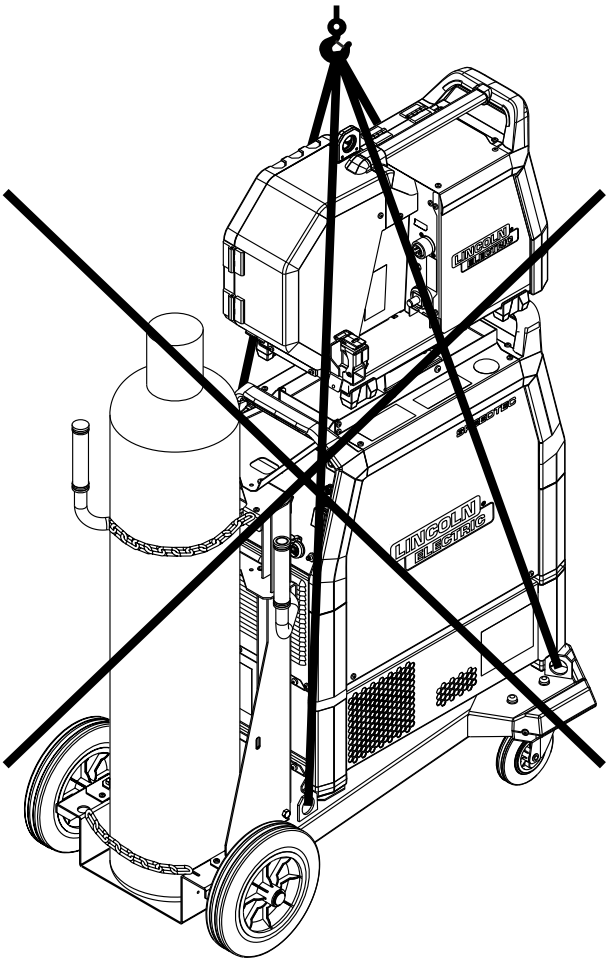

LINCOLN
ELECTRIC

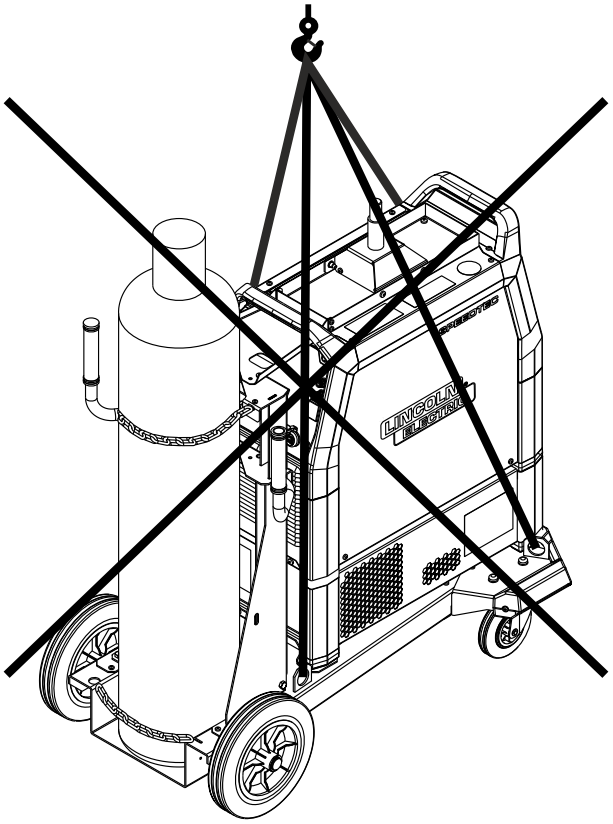

SPEEDTEC
LINCOLN
ELECTRIC


SPEEDTEC
LINCOLN
ELECTRIC


SPEEDTEC
LINCOLN
ELECTRIC

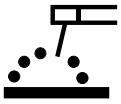






OPERATION

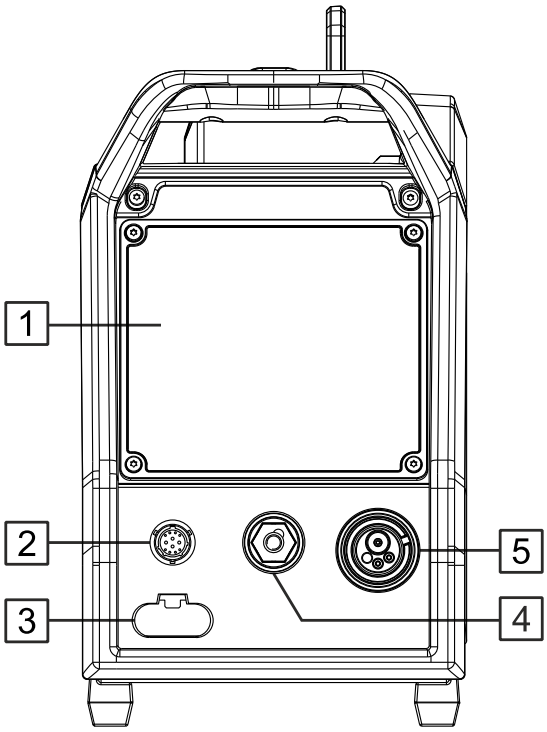
MACHINE SYMBOLOGY

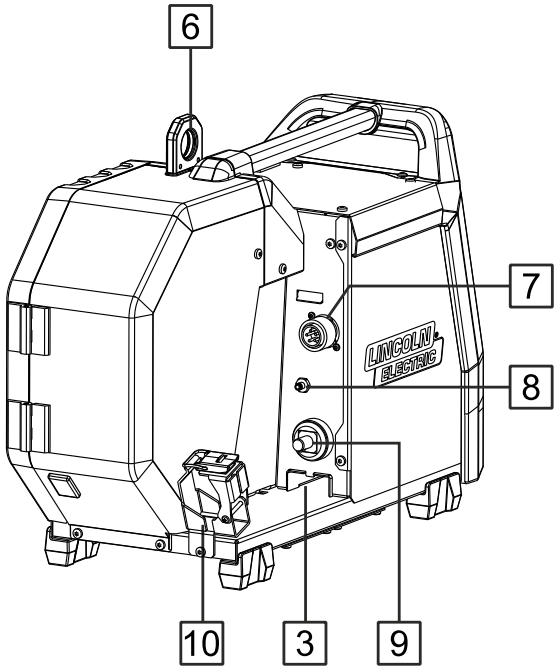
GRAPHIC SYMBOLS THAT APPEAR ON THIS MACHINE OR IN THIS MANUAL			
	WARNING OR CAUTION		READ INSTRUCTION MANUAL
	ELECTRIC SHOCK CAN KILL		SHOCK HAZARD
	ARC RAYS CAN BURN		ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS
	FUMES AND GASES CAN BE DANGEROUS		WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION
	WELDED MATERIALS CAN BURN		CYLINDER MAY EXPLODE IF DAMAGED
	MOVING PARTS ARE DANGEROUS		MOVING PARTS ARE DANGEROUS
	EURO SOCKET		SMAW / CAG OUTPUT SOCKET
	COOLANT INLET		COOLANT OUTLET
	INPUT VOLTAGE		GAS INLET
	COLD INCH		GAS PURGE
	REMOTE CONTROL		

IP	INGRESS PROTECTION CODE	⎓	DIRECT CURRENT
X	DUTY CYCLE	I_2	OUTPUT CURRENT
U_1	INPUT VOLTAGE	I_1	INPUT CURRENT
CE	COMPLIANCE WITH EU DIRECTIVES	EAC	COMPLIANCE WITH EAEU REGULATIONS
UK CA	COMPLIANCE WITH UK REGULATIONS		DO NOT DISPOSE OF WITH HOUSEHOLD WASTE

CONTROLS AND OPERATIONAL FEATURES

Front and Rear Panel

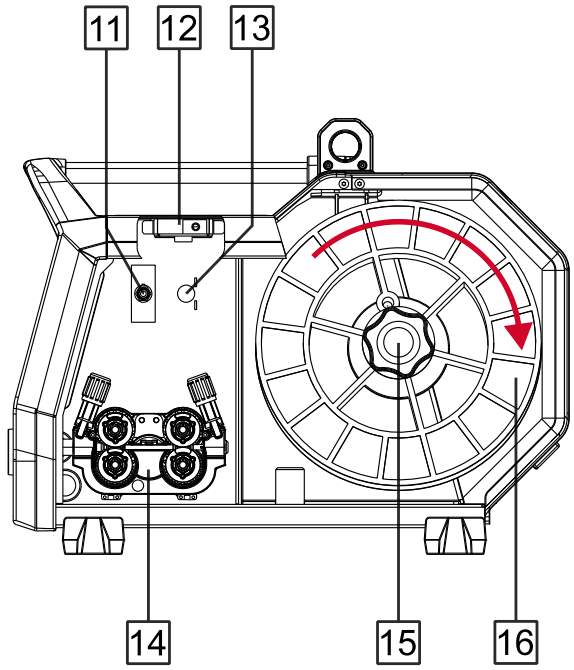




1. **User Interface:** Operator interface for system control and status indication. Refer to the User Interface Operator's Manual.
2. **Remote Control Socket:** For connecting a Remote Control (USER INTERFACE PENDANT BOX or TIG ADAPTOR). Refer to the ACCESSORIES AND OPTIONS on page E-1 section.
3. **Water Hose Guide.**
4. **Output Socket for SMAW and CAG welding:** Depending on the selected process:
   - SMAW: Connect the Electrode Holder with the welding lead to the output socket.
   - CAG: Connect the Gouging Torch to the output socket.
5. **EURO Socket:** For connecting a welding gun used in GMAW or FCAW processes.
6. **Lifting Eye:** For lifting and transporting the wire feeder.
7. **Control Socket:** A 5-pin socket for connecting the control cable. The **ArcLink®** protocol is used for communication between the power source and the wire feeder.
8. **Gas Connector:** For connecting the gas hose from the interconnection cable.

   Note: The machine allows the use of all suitable shielding gases at a maximum pressure of 5 bar.
9. **Current Socket:** For connecting current output power source cable.
10. **Strain Relief Holder:** Clamp for the interconnection cable harness.

Inside wire feeder (wire feeder cabinet)



11. **Switch: Cold Inch / Gas Purge:** This switch allows wire feeding (wire test) and gas flow (gas test) without switching on the output voltage.
12. **Door Switch Indicator:** Indicates the status of the wire feeder door safety function. Depending on system configuration, the welding output may be inhibited when the wire feeder door is open. Refer to the User Interface Operator's Manual.
13. **Gas Flow Regulator Plug:** Gas Flow Regulator can be purchased separately. Refer to the ACCESSORIES AND OPTIONS on page E-1 section. More information about the GFR option is provided in Gas Flow Regulator section.
14. **Wire Drive:** Four-roll wire drive assembly.
15. **Wire Spool Support and Brake:** Designed for wire spools weighing up to 16 kg. The holder allows mounting plastic, steel, and fiber spools on a 51 mm spindle.
16. **Spool with Wire:** Not supplied as standard.

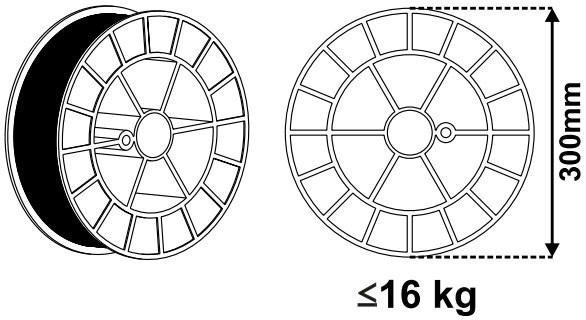
LOADING THE WIRE SPOOL

⚠ CAUTION

Turn the input power OFF at the welding power source before installing or changing the wire spool.

The holder can accommodate a wire spool with a **maximum weight of 16 kg** without an adapter. Plastic, steel, and fiber spools may be mounted on the 51 mm spindle.

Other spool types can be used with the appropriate adapter, available for separate purchase (refer to the ACCESSORIES AND OPTIONS on page E-1 section).



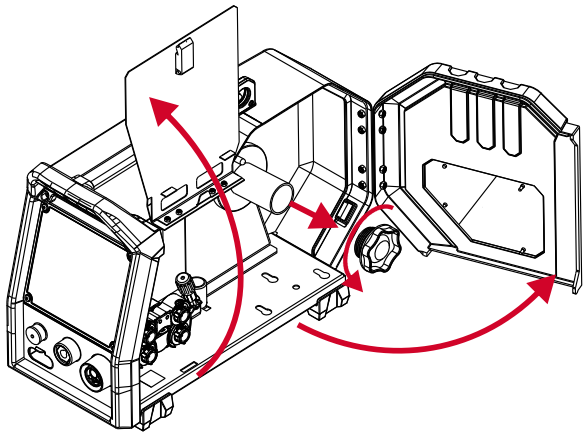
LOADING THE ELECTRODE WIRE

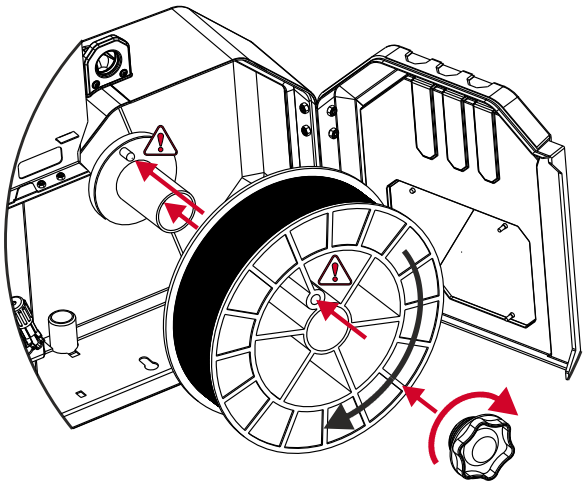
⚠ CAUTION

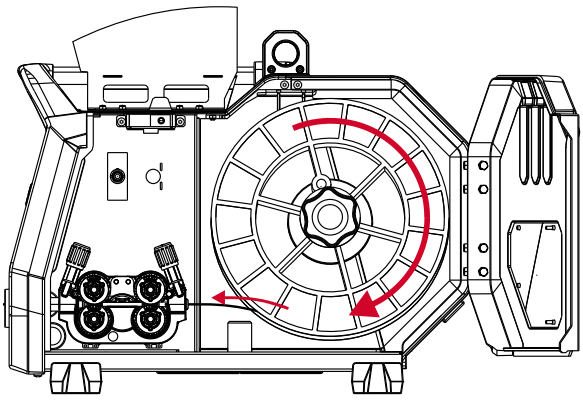
Sharp end of the wire can hurt.

To install wire spool and electrode wire:

- Turn the input power OFF.
- Open the wire feeder door and the spool wire case.
- Unscrew the locking nut from the spindle.
- Place the wire spool onto the spindle so that the wire feeds clockwise into the wire feeder.
- Ensure the spindle brake pin engages the locating hole in the wire spool.
- Reinstall and tighten the locking nut.
- Ensure that the correct drive rolls are installed according to the wire type and diameter.
- Release the pressure arms of the wire drive.
- Free the end of the wire and cut off the bent end making sure it has no burr.
- Rotate the wire spool clockwise and insert the wire into the inlet guide, feeding it toward the drive rolls.
- Push the wire manually through the guide tubes, over the drive rolls, and through the Euro Socket guide tube into the gun liner. The wire should feed smoothly without resistance.
- Close and secure the pressure arms.
- Adjust the pressure roll force properly.
- Ensure that the wire is properly aligned in the guides and drive rolls.

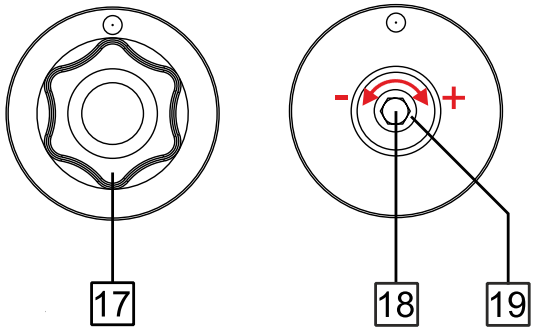






Note: Ensure that the selected drive rolls are suitable for the welding wire being used. Refer to the ACCESSORIES AND OPTIONS on page E-1 section.

ADJUSTING THE BRAKE TORQUE OF THE SLEEVE



17.Locking Nut

18.Adjusting Screw M10: To adjust wire brake pressure

19.Pressing Spring

To prevent the welding wire from unrolling unintentionally, the sleeve is equipped with a brake. The adjustment is made by rotating the M10 screw located inside the sleeve frame, after loosening the brake locking nut.

Turning the M10 screw clockwise increases the spring tension and increases the brake torque.

Turning the M10 screw anticlockwise decreases the spring tension and decreases the brake torque.

After completing the adjustment, tighten the brake locking nut.

ADJUSTING PRESSURE ROLL FORCE

The pressure arm controls the amount of force the drive rolls exert on the wire.

Pressure force is adjusted by turning the adjustment nut:

- Clockwise to increase force
- Counterclockwise to decrease force

Proper adjustment of the pressure arm ensures optimal welding performance.

NOTE



If the roll pressure is too low, the roll will slip on the wire. If the roll pressure is too high, the wire may deform, causing feeding problems during welding.

To set the correct pressure:

1. Gradually decrease the pressure until the wire just begins to slip on the drive roll.
2. Then increase the force slightly by turning the adjustment nut one full turn.

INSERTING ELECTRODE WIRE INTO WELDING GUN

- Turn the welding machine OFF.
- Depending on the welding process, connect the proper welding gun to the euro socket. Ensure that the rated parameters of the gun and welding machine match.
- Depending on the type of gun, remove the nozzle and contact tip, or the protection cap and contact tip.
- Turn the welding machine ON.
- Hold the Cold Inch/Gas Purge Switch or press the gun trigger until the wire appears at the threaded end of the gun.
- When the Cold Inch Switch or gun trigger is released, the wire spool should not unwind.
- Adjust the wire spool brake if necessary.
- Turn the welding machine OFF.
- Install the proper contact tip.
- Depending on the welding process and the type of gun, install the nozzle (for GMAW process) or the protection cap (for FCAW process).

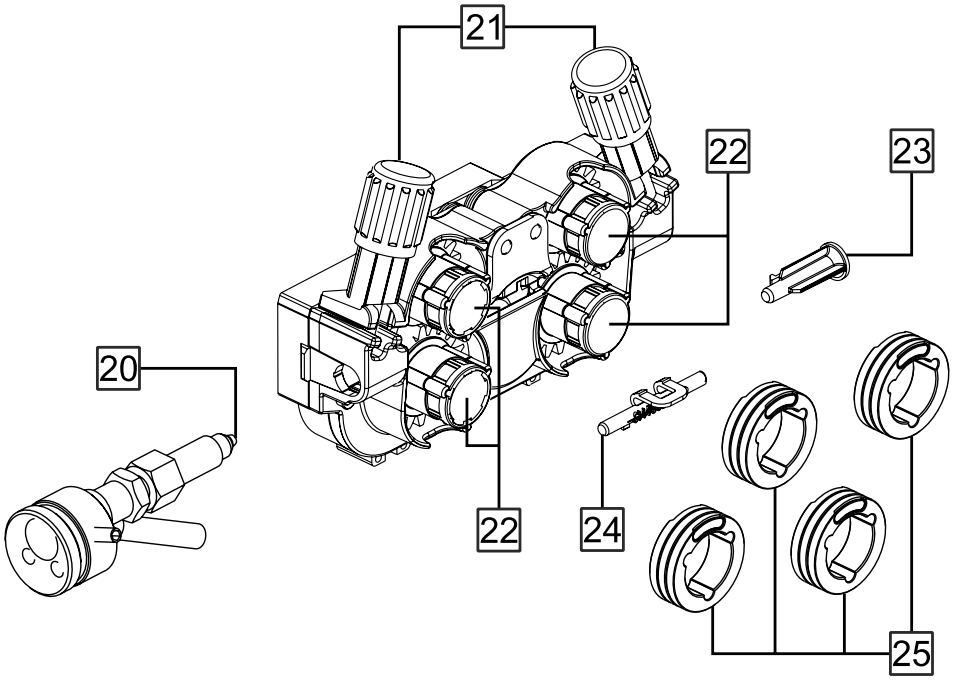
⚠ CAUTION



Keep eyes and hands away from the end of the gun while the wire is coming out of the threaded end.

CHANGING DRIVING ROLLS

Wire Drive Assembly (4-rolls system)



20.Outlet Guide: Guides the welding wire from the wire drive assembly into the welding gun connection (Euro Socket). Ensures smooth and accurate feeding of the wire into the gun liner and minimizes friction during operation.

21.Wire Drive Tension Pressure Adjustment (pressure arms): Used to secure the drive rolls in position. Adjusts the pressure applied by the pressure arm to the drive rolls.

22.Quick-Change Drive Roll System: Used to secure the drive rolls in position. Allows fast, tool-less replacement of drive rolls.

23.Inlet Guide: Guides the welding wire into the wire drive assembly. Ensures correct alignment of the wire before it enters the drive rolls.

24.Intermediate Guide: Provides additional guidance of the welding wire between the inlet guide and drive rolls. Maintains proper wire alignment within the wire drive system.

25.Drive Rolls: Grooved rolls that grip and drive the welding wire through the wire feeder. Different groove sizes are available to match various wire diameters and types.

Note: Components 20, 23, 24 and 25 may be purchased separately. Ensure that the selected components are compatible with the welding wire type being used. Refer to the ACCESSORIES AND OPTIONS on page E-1 section for available configurations.

⚠ WARNING

Turn the input power OFF before installing or changing drive rolls.

The wire feeder is equipped with drive rolls V1.0/V1.2 for steel wire. For other wire types and sizes, install the proper drive roll kit (refer to the ACCESSORIES AND OPTIONS on page E-1 section) and follow the instructions below:

- Turn the input power OFF.
- Open the wire feeder door and the wire spool case.
- Release the pressure arms.
- Rotate the Quick-Change Drive Roll System to unlock the drive rolls.
- Remove the installed drive rolls.
- Select the appropriate drive rolls according to the wire type and diameter.
- Install the new drive rolls, ensuring correct groove orientation.

  Note: Ensure that the selected drive rolls are suitable for the welding wire being used.

  Note: Ensure that the gun liner and contact tip match the selected wire size.
- Lock the drive rolls by rotating the Quick-Change Drive Roll System.
- Free the end of the wire and cut off the bent end, making sure it has no burr.

  Note: Sharp end of the wire can cause injury.
- Rotate the wire spool clockwise and insert the wire into the inlet guide, feeding it toward the drive rolls.
- Push the wire manually through the guide tubes, over the drive rolls, and through the Euro Socket guide tube into the gun liner. The wire should feed smoothly without resistance.
- Close and secure the pressure arms.
- Ensure that the welding wire is properly aligned in the guides and rolls.

GAS CONNECTION

⚠ WARNING



CYLINDER may explode if damaged.

Always secure the gas cylinder in an upright position using a wall rack or a purpose-made cylinder cart.

Keep the cylinder away from areas where it may be damaged, heated, or exposed to electrical circuits to prevent explosion or fire.

Keep the cylinder away from welding or other live electrical circuits.

Never lift the welder with the cylinder attached.

Never hang a welding torch on a shielding gas cylinder.

Never allow the welding electrode to touch the cylinder.

Accumulation of shielding gas may harm health or cause death. Use in a well-ventilated area to avoid gas buildup.

Close the cylinder valve when the equipment is not in use to avoid leaks.

Use only shielding gas cylinders, regulators, hoses, and fittings suitable for the application.

Only use shielding gas cylinders and accessories that are in good condition.

Follow the cylinder manufacturer's instructions and all applicable regulations.

⚠ CAUTION



The welding machine supports all suitable shielding gases up to a maximum pressure of 5.0 bar.

Ensure that the shielding gas is suitable for the selected welding process.

Gas connection procedure

- Switch OFF input power at the welding power source.
- Install a proper gas flow regulator on the gas cylinder.
- Connect the gas hose to the regulator and secure it with a hose clamp.
- Connect the other end of the gas hose to the Gas Connector on the rear panel of the power source or directly to the quick connector located on the rear panel of the wire feeder. Refer to the power source instruction manual for details.
- Connect the wire feeder and power source using the dedicated interconnection cable (refer to ACCESSORIES AND OPTIONS on page E-1 section).
- Switch ON input power at the welding power source.
- Open the gas cylinder valve.
- Adjust the shielding gas flow using the gas regulator.
- Check gas flow using the Gas Purge Switch.

GAS FLOW REGULATOR (GFR)

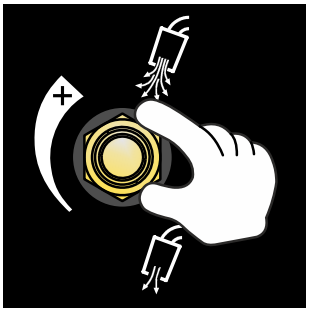
Note: The gas flow regulator is not included in the standard equipment. It is available as an optional accessory. Refer to the ACCESSORIES AND OPTIONS on page E-1 section.

Note: The gas flow regulator must be installed according to the instructions supplied with the kit.

The Gas Flow Regulator (GFR) is a control component integrated with the wire feeder, designed to adjust and stabilize the shielding gas flow supplied to the welding torch.

When installed, the GFR enables:

- Adjustment of shielding gas flow directly on the wire feeder.
- Improved control of shielding conditions.
- Reduction of gas consumption when properly set.



The gas flow is manually adjusted using the control knob located on the unit.

- Clockwise rotation: Increase gas flow.
- Counterclockwise rotation: Decrease gas flow.

⚠ WARNING

Do not perform welding without active shielding gas flow.

Stop operation immediately if a gas leak is detected.

Do not exceed recommended gas flow values.

⚠ CAUTION

Adjust gas flow only while gas is flowing.

Do not force the regulator knob.

Keep the regulator clean and free from contamination.

Use only shielding gas specified for the welding process.

NOTE

Proper gas flow setting directly affects weld quality and gas consumption.

Set the flow rate according to the welding procedure and application requirements.

PENDANT BOX CONNECTION

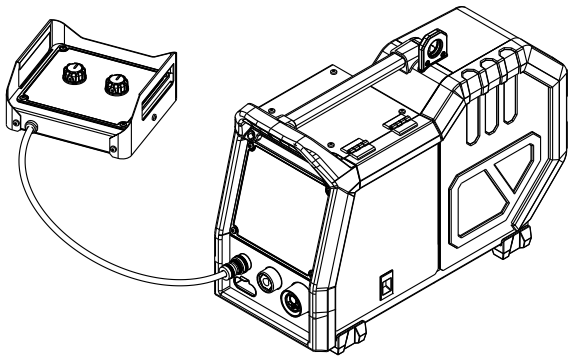
Note: The pendant box is not included in the standard equipment. It is available as an optional accessory. Refer to the ACCESSORIES AND OPTIONS on page E-1 section.

Note: The pendant box must be installed according to the instructions supplied with the pendant box.

After connection, the pendant box takes over the functions of the User Interface.

To connect the pendant box:

1. Assemble the pendant box according to the instructions supplied with the accessory.
2. Locate the 12-pin Remote Control Socket on the front panel of the wire feeder.
3. Connect the pendant box to the Remote Control Socket (12-pin).



USER INTERFACE

OVERVIEW

The **Power Feed® 56** User Interface provides access to system configuration, welding parameters, diagnostics, and status information.

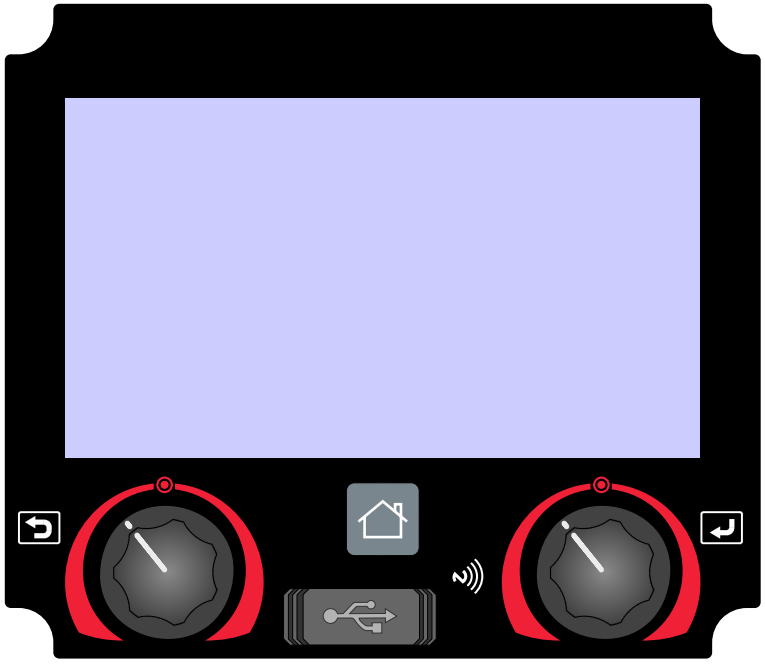
This section provides a brief overview of the User Interface and identifies the main interface components.

For detailed information on User Interface operation, menu structure, features, diagnostics, and parameter settings, refer to the User Interface Operator's Manual.

LOCATION OF THE USER INTERFACE

The User Interface is mounted on the front panel of the wire feeder. It is positioned to allow convenient access during setup and welding operation.

INTRODUCTION



The User Interface provides access to system status information, welding parameters, diagnostics, and machine configuration functions.

The User Interface consists of a 7-inch color display, a Home Button, and two rotary Controls. The Display is used to present system information, messages, and navigation screens. The Home Button and rotary Controls are used for navigation, selection, and adjustment of displayed values.

CONTROL KNOBS

The User Interface is equipped with two rotary control knobs. The rotary control knobs are used to navigate through available screens, select items, and adjust displayed values. Depending on the active screen, rotating or pressing a control knob may perform different actions.

Note: For detailed information regarding screen-specific functions, refer to the User Interface Operator's Manual.

FUNCTION BUTTON

The Home button is located on the front panel of the User Interface. Pressing the Home button returns the User Interface to the Home screen and provides a starting point for navigation within the User Interface.

Note: For detailed information regarding available functions and settings, refer to the User Interface Operator's Manual.

DISPLAY

The User Interface features a 7-inch color display. The display is used to present welding parameters, system status information, messages, and navigation screens. Displayed information depends on the selected process, operating mode, and system configuration.

USER INTERFACE SYMBOLOGY

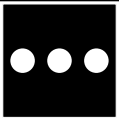
User Interface Symbols and Meanings

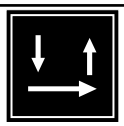
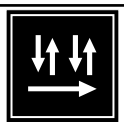
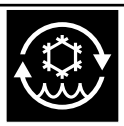
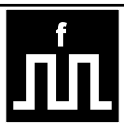
USER INTERFACE NAVIGATION SYMBOLS THAT APPEAR ON THIS INTERFACE OR IN THIS MANUAL			
	RETURN (CANCEL / BACK)		CONFIRM SELECTION
	SETTING MENU / RETURN TO HOME SCREEN		NFC
	USB SOCKET		

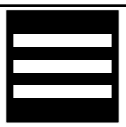
Examples of user interface symbols, welding parameters, and their meanings

The following examples illustrate User Interface symbols and welding parameters that may be displayed or available for adjustment, together with their meanings.

Note: For a complete list of User Interface symbols and parameters, refer to the User Interface Operator's Manual.

GRAPHIC SYMBOLS THAT APPEAR ON THIS INTERFACE OR IN THIS MANUAL			
	MORE SETTINGS		PROCESS SELECT
	GMAW PROCESS		FCAW PROCESS
	SMAW PROCESS		GTAW PROCESS

GRAPHIC SYMBOLS THAT APPEAR ON THIS INTERFACE OR IN THIS MANUAL			
	WIRE TYPE		WIRE DIAMETER
	SHIELDING GAS TYPE		PROCESS TYPE (PROCESS VARIANT)
	2-STEP		4-STEP
	WIFI CONNECTED		WIFI DISCONNECTED
	COOLER		REMOTE CONTROL
	MECHAPULSE™		
	PINCH		UltimArc™
	BACKGROUND CURRENT		FREQUENCY
	ARC FORCE		HOT START
	START / END SETTING		
	RUN-IN WFS		SPOT TIME
	PREFLOW TIME		POSTFLOW TIME
	START TIME		CRATER TIME

GRAPHIC SYMBOLS THAT APPEAR ON THIS INTERFACE OR IN THIS MANUAL			
	SYSTEM MENU		MEMORIES
	BACK		HOME

TERMINOLOGY

The following terms are used to describe welding functions and memory features of the User Interface.

WELDING PROCESS

A welding method, such as GMAW, FCAW, SMAW, GTAW.

WELD MODE

A predefined welding configuration for a specific welding process without stored welding parameters. Weld modes are defined by electrode or wire type, wire size, and shielding gas.

JOB

A Job combines a Weld Mode with user-defined welding parameters. Jobs can be stored in and recalled from User Memory.

USER MEMORY

The user memory provides ten memory slots for storing and recalling jobs. Each Memory Slot stores one Job.

USER INTERFACE CONTROLS AND INDICATORS

This section describes the control elements and indicators of the User Interface.



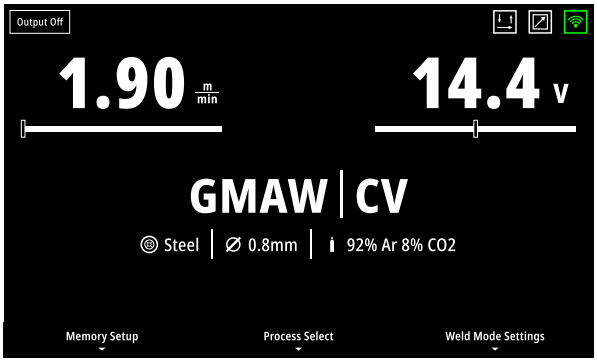
1. **Display:** Permits visualization of welding process and parameters.
2. **Home Button:** Returns the user to the home screen. At the Home Screen, it can be used to select a welding process or configure the machine settings.
3. **Left Control with Active Button:** On the Home Screen, scrolling the knob adjusts the amperage or wire feed speed and clicking it opens Memory Setup. On other screens, clicking the knob functions as a back button.
4. **Right Control with Active Button:** On the Home Screen, scrolling the knob adjusts the voltage and clicking it opens Weld Mode Settings. On other screens, scrolling this knob cycles through options and clicking it acts as a select button.
5. **USB-C Port with cover:** Used for software updates.
6. **NFC Reader:** Enables reading of operator identification cards. It can also be used to enable licensed welding modes and other licensed features.

   Note: Refer to the ACCESSORIES AND OPTIONS on page E-1 section for available identification cards

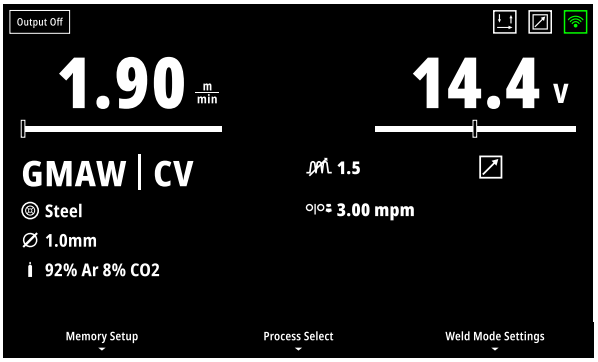
TYPES OF USER INTERFACE VIEWS

Two User Interface views are available:

Simplified View



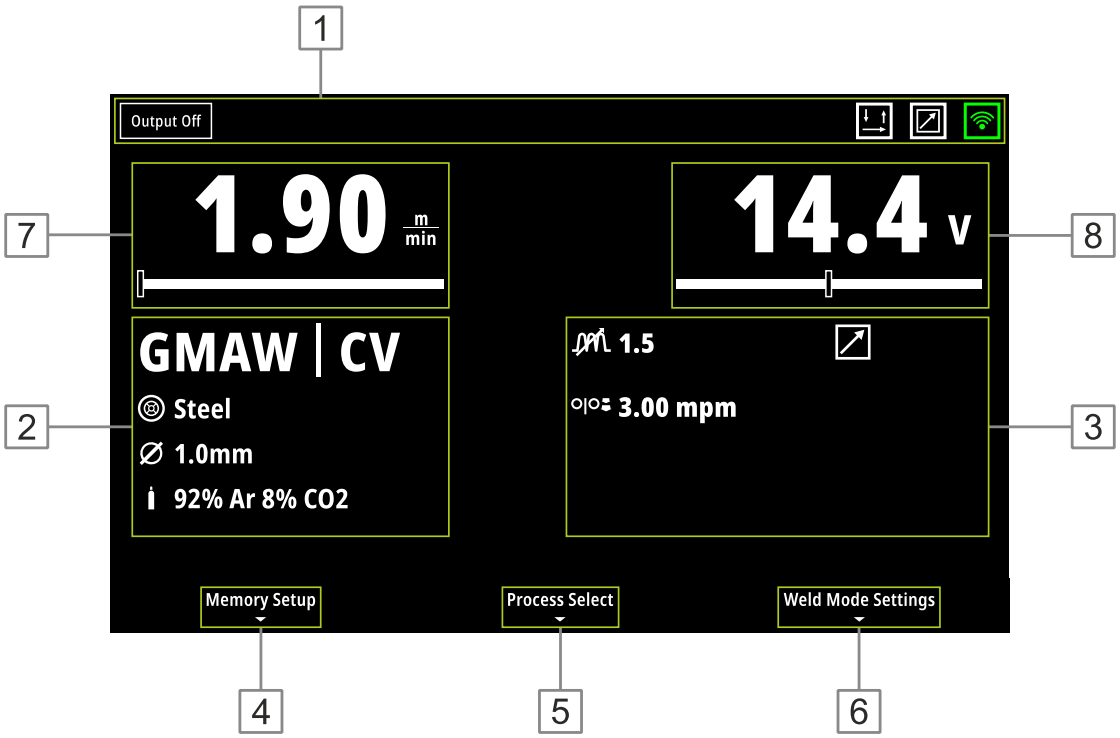
Advanced View



Refer to the User Interface Operator's Manual for instructions on changing the User Interface view.

USER INTERFACE DISPLAY AREAS

The User Interface display is divided into several information areas. The information displayed in each area depends on the selected process, Weld Mode, and system configuration.



1. **Status Bar:** Displays system status information and active indicators.

2. **Weld Mode Information:** Displays information related to the active welding process and Weld Mode.

   Note: The list of available Weld Modes depends on the connected power source.

3. **Weld Mode Parameters Information:** Displays user-defined parameter values for the selected welding process. Factory default values are not displayed.

4. **Memory Menu:** Provides ten memory slots for storing and recalling Jobs. Each Memory Slot stores one Job.

   Note: Only Jobs (Weld Modes combined with their welding parameters) can be stored in User Memory. The list of available Weld Modes depends on the connected power source.

5. **Process Selection Menu (READY.SET.WELD®)**: Allows selection of a Weld Mode.

6. **Weld Mode Settings Menu:** Allows access to the welding parameters for the selected Weld Mode.

7. **Parameter Value:** Displays wire feed speed or welding current. During welding, the actual welding current value is displayed.

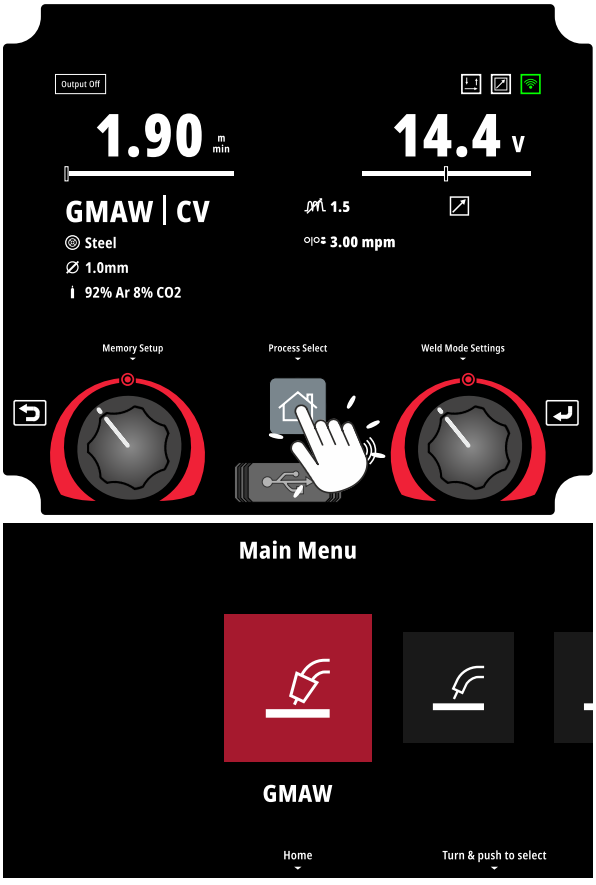
8. **Parameter Value:** Depending on the selected Weld Mode, displays welding voltage in volts or the Trim value. During welding, the actual welding voltage value is displayed.

SELECTING THE WELD MODE (READY.SET.WELD®)

To select the Weld Mode:

1. Press Home Button.

2. Select the welding process. Rotate the Right Control to highlight the desired welding process. Press the Right Control to confirm the selection.

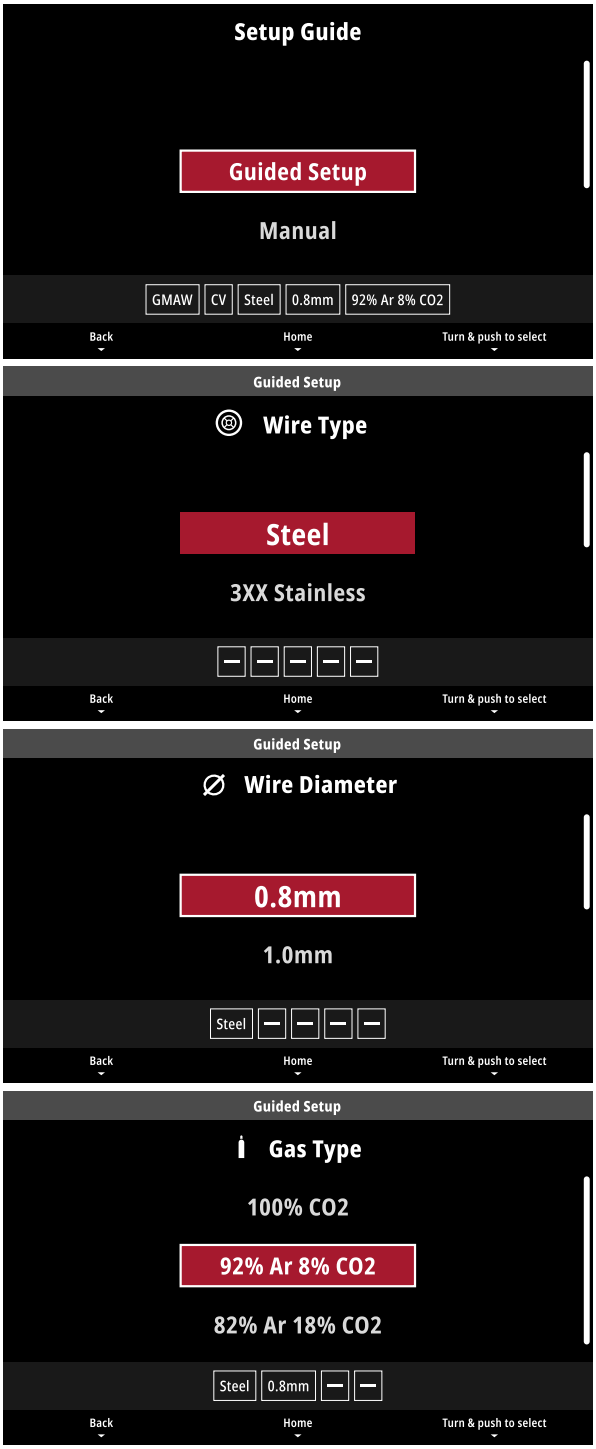


3 Select Guided Setup.

4 Select Wire Type.

5 Select Wire Diameter.

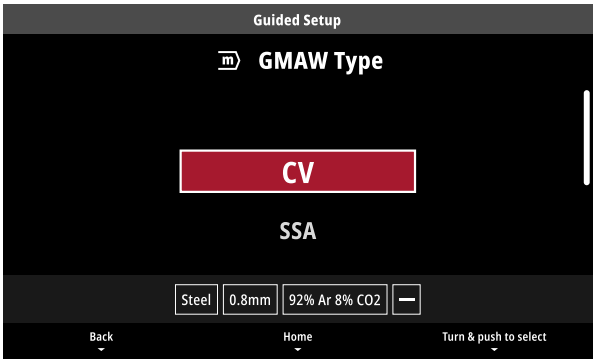
6 Select Gas Type.

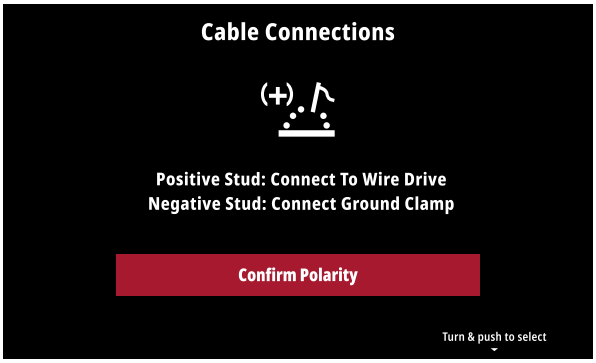


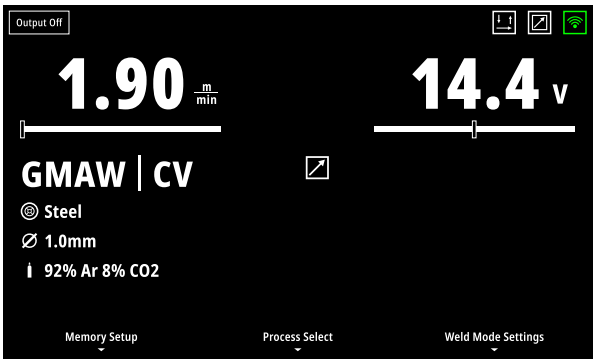
7 Select the desired process variant.

8 Verify the polarity and confirm that all welding cables are connected correctly.

9 The selected Weld Mode is displayed.







WELD MODE SETTINGS

The Weld Mode Settings Menu provides access to:

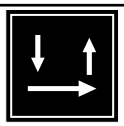
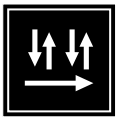
- Process selection
- Trigger Operation Mode (Trigger Interlock)
- The welding parameters for the selected Weld Mode (arc parameters, start parameters, and end parameters)
- System Menu
- Memory

Note: For more detailed information, refer to the User Interface Operator's Manual.

TRIGGER OPERATION MENU (TRIGGER INTERLOCK)

The Trigger Operation Menu allows selection of the trigger operating mode and configuration of spot welding parameters. The selected trigger mode is displayed in the Status Bar.

The Trigger Operating Mode Menu includes:

Parameter	Definition
	**2-Step Trigger Mode** - The 2-step trigger operation turns welding on and off in direct response to the trigger. The welding process starts when the torch trigger is pressed.
	**4-Step Trigger Mode** - 4-step mode allows welding to continue after the torch trigger is released. To stop welding, press the torch trigger again. The 4-step Trigger Mode is intended for long welds. **Note:** 4-step mode is not available for spot welding.

WELD SETTINGS

The available welding parameters and functions depend on the connected system configuration.

Power Feed® 56 is designed for use with compatible Lincoln Electric power sources and optional system components. The availability of specific welding processes, Weld Modes, and settings depends on the connected power source, cooling unit, and installed system options.

Compatible equipment is listed in the INTRODUCTION on page A-4 and ACCESSORIES AND OPTIONS on page E-1 sections

The Weld Settings screen allows the user to adjust advanced welding parameters.

To access the Weld Settings screen, navigate from the Home Screen using the Right Control and select the More Settings icon.

The available settings depend on the selected welding process and Weld Mode. The following section describes the weld settings that may be available.

Any parameter that differs from its default value is indicated on the Home Screen.

Note: For a complete list of available welding parameters and detailed parameter descriptions, refer to the User Interface Operator's Manual.

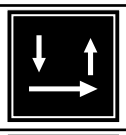
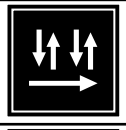
SMAW weld parameters

Symbol	Definition
	**ARC FORCE** - Temporarily increases output current to prevent electrode sticking and improve arc stability.
	**HOT START** - Temporarily increases the nominal current during arc initiation to improve arc starting when using electrodes.

GTAW weld parameters

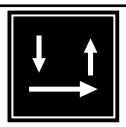
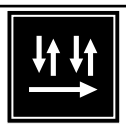
Symbol	Definition
	**Postflow Time –** Sets the time during which shielding gas continues to flow after arc termination.
	**Frequency –** Affects arc width, shape, and heat input to the weld. Available in GTAW Weld Mode only.
	**Background Current** - Percentage value of nominal welding current. Adjusts the overall heat input to the weld and influences the shape of the back bead.
	**Start Time** – controls the WFS (or value in ampere units) and Volts (or Trim) for a specified time at the beginning of welding. During the Start Time, the machine will ramp up or down from the Start Procedure to the preset welding parameter.
	**Crater Time** - controls the WFS (or value in ampere units) and Volts (or Trim) for a specified time at the end of the welding after the trigger was released. During the crater time, the machine will ramp up or down from the Weld Procedure to the Crater Procedure.

GMAW weld parameters (non-synerging)

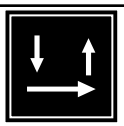
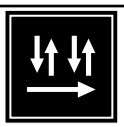
Symbol	Definition
	**2-Step Trigger Mode** - The 2-step trigger operation turns welding on and off in direct response to the trigger. The welding process starts when the torch trigger is pressed.
	**4-Step Trigger Mode** - 4-step mode allows welding to continue after the torch trigger is released. To stop welding, press the torch trigger again. The 4-step Trigger Mode is intended for long welds.
	**Pinch** - Controls arc characteristics during short-circuit welding. Increasing the Pinch value produces a crisper arc and may increase spatter. Decreasing the Pinch value produces a softer arc with reduced spatter.
	**HOT START** - Temporarily increases the nominal current during arc initiation to improve arc starting when using electrodes.
	**Preflow Time –** the time that shielding gas flows after the torch trigger was pressed before wire feeding.
	**Run-in WFS –** sets the wire feed speed from the time the torch trigger is pressed until an arc is established.
	**Start Time** – controls the WFS (or value in ampere units) and Volts (or Trim) for a specified time at the beginning of welding. During the Start Time, the machine will ramp up or down from the Start Procedure to the preset welding parameter.

Symbol	Definition
	**Crater Time** - controls the WFS (or value in ampere units) and Volts (or Trim) for a specified time at the end of the welding after the trigger was released. During the crater time, the machine will ramp up or down from the Weld Procedure to the Crater Procedure.
	**Postflow Time –** Sets the time during which shielding gas continues to flow after arc termination.
	**Spot Time** – Sets the total welding time even if the torch trigger remains pressed. This function does not work in 4-step trigger mode.

GMAW synergic (CV), SSA™, HPS™ weld parameters

Symbol	Definition
	**2-Step Trigger Mode** - The 2-step trigger operation turns welding on and off in direct response to the trigger. The welding process starts when the torch trigger is pressed.
	**4-Step Trigger Mode** - 4-step mode allows welding to continue after the torch trigger is released. To stop welding, press the torch trigger again. The 4-step Trigger Mode is intended for long welds.
	**Pinch** - Controls arc characteristics during short-circuit welding. Increasing the Pinch value produces a crisper arc and may increase spatter. Decreasing the Pinch value produces a softer arc with reduced spatter.
	**Preflow Time –** the time that shielding gas flows after the torch trigger was pressed before wire feeding.
	**Run-in WFS –** sets the wire feed speed from the time the torch trigger is pressed until an arc is established.
	**Start Time** – controls the WFS (or value in ampere units) and Volts (or Trim) for a specified time at the beginning of welding. During the Start Time, the machine will ramp up or down from the Start Procedure to the preset welding parameter.
	**Crater Time** - controls the WFS (or value in ampere units) and Volts (or Trim) for a specified time at the end of the welding after the trigger was released. During the crater time, the machine will ramp up or down from the Weld Procedure to the Crater Procedure.
	**Postflow Time –** Sets the time during which shielding gas continues to flow after arc termination.
	**Spot Time** – Sets the total welding time even if the torch trigger remains pressed. This function does not work in 4-step trigger mode.

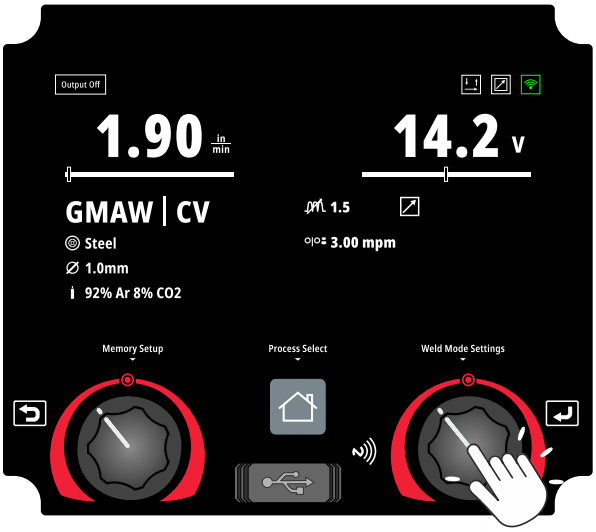
GMAW-PULSE, SSP™ weld parameters

Symbol	Definition
	**2-Step Trigger Mode** - The 2-step trigger operation turns welding on and off in direct response to the trigger. The welding process starts when the torch trigger is pressed.
	**4-Step Trigger Mode** - 4-step mode allows welding to continue after the torch trigger is released. To stop welding, press the torch trigger again. The 4-step Trigger Mode is intended for long welds.
	**UltimArc™** - Available in GMAW-PULSE Weld Modes only. Adjusts the welding arc focus and shape. Suitable for high-speed sheet metal welding.
	**Preflow Time –** the time that shielding gas flows after the torch trigger was pressed before wire feeding.
	**Run-in WFS –** sets the wire feed speed from the time the torch trigger is pressed until an arc is established.
	**Start Time** – controls the WFS (or value in ampere units) and Volts (or Trim) for a specified time at the beginning of welding. During the Start Time, the machine will ramp up or down from the Start Procedure to the preset welding parameter.
	**Crater Time** - controls the WFS (or value in ampere units) and Volts (or Trim) for a specified time at the end of the welding after the trigger was released. During the crater time, the machine will ramp up or down from the Weld Procedure to the Crater Procedure.
	**Postflow Time –** Sets the time during which shielding gas continues to flow after arc termination.
	**Spot Time** – Sets the total welding time even if the torch trigger remains pressed. This function does not work in 4-step trigger mode.

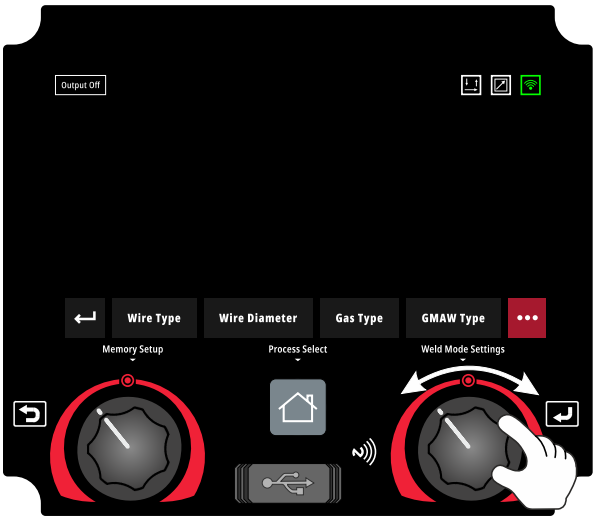
To set the welding parameters

1. Select the Weld Mode (refer to SELECTING THE WELD MODE (READY.SET.WELD) on page C-7 section).

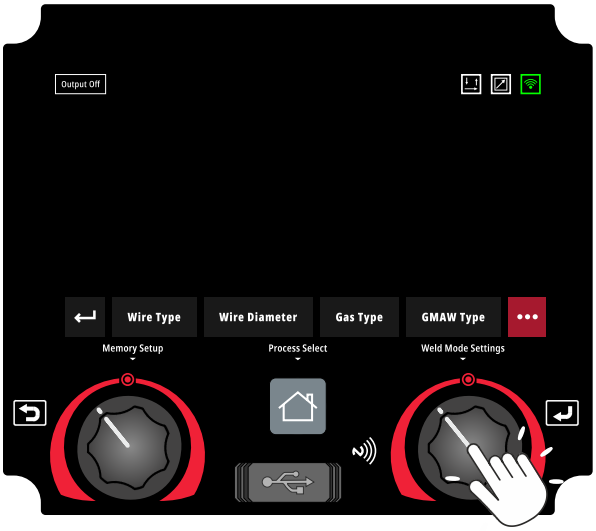
2 Press the Right Control.



3 Weld Mode Settings Menu is active. Turn the Right Control to select the More Settings.



4 Press the Right Control.



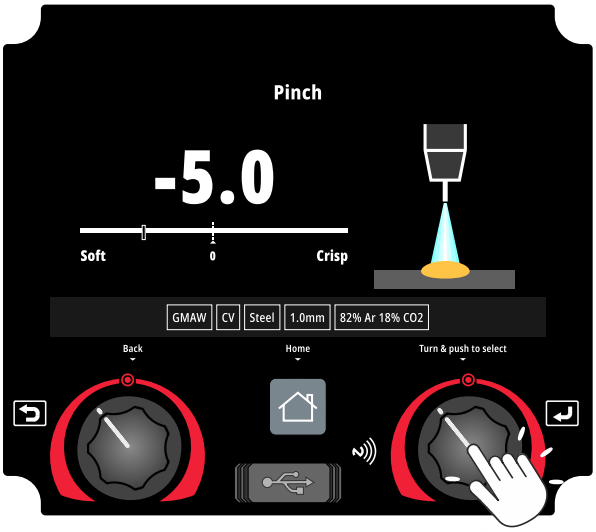
5 In the More Settings menu, use the Right Control to highlight the desired welding parameter.

6 Press the Right Control to confirm the selection.

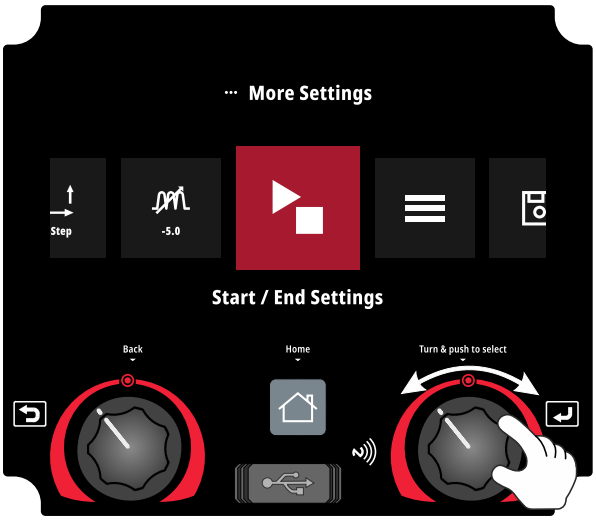
7 Use the Right Control to set the parameter value.



8 Press the Right Control to confirm the settings.



9 Repeat the procedure as required.

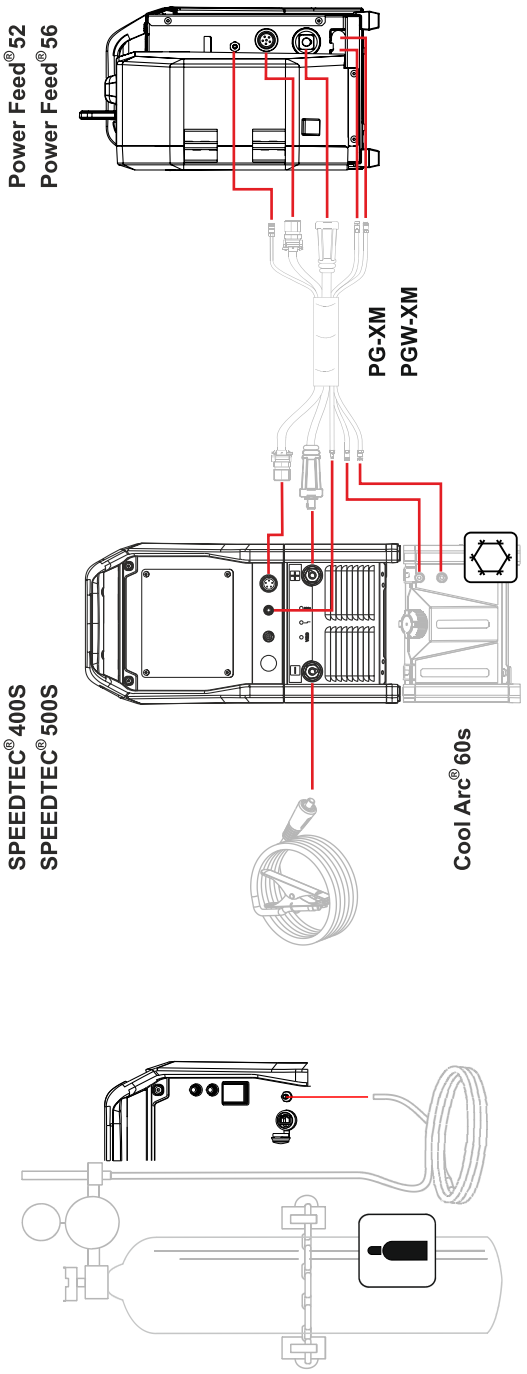


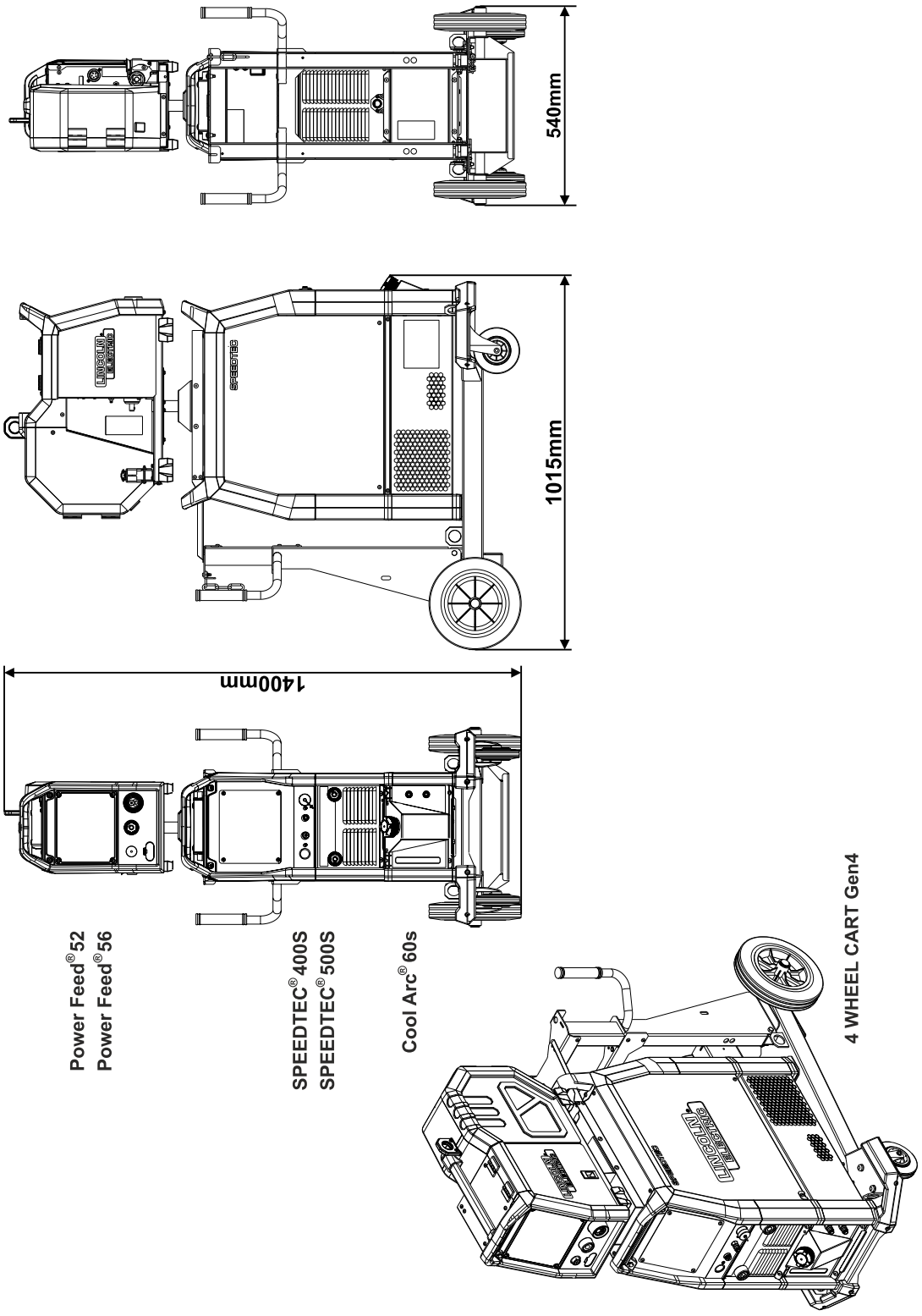
WIFI CONNECTION

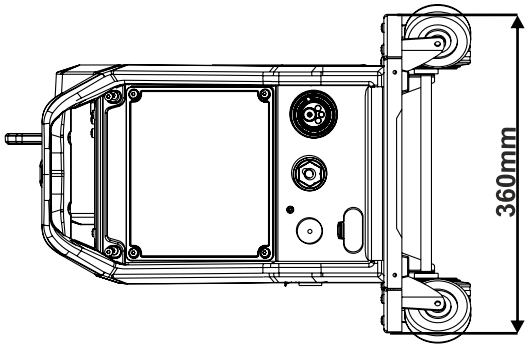
Note: Refer to the Power Wave® Manager Operator's Manual for Wi-Fi connection setup and configuration instructions.

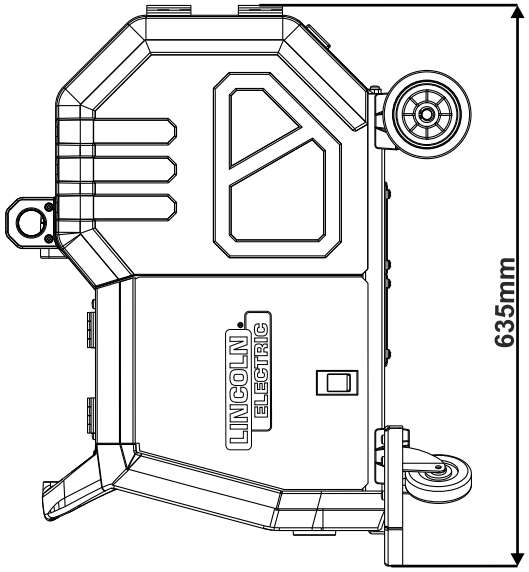
CONNECTION OVERVIEW

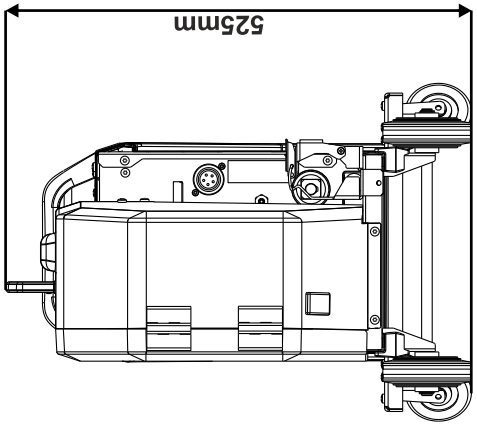
CONNECTION OVERVIEW



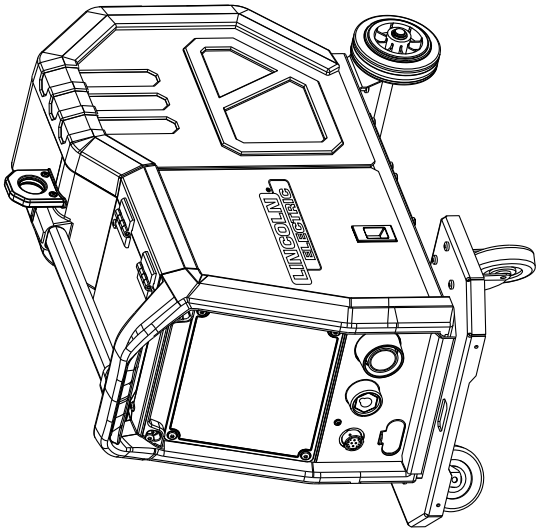

540mm
1015mm
1400mm
Power Feed® 52
Power Feed® 56
SPEEDTEC® 400S
SPEEDTEC® 500S
Cool Arc® 60s
4 WHEEL CART Gen4



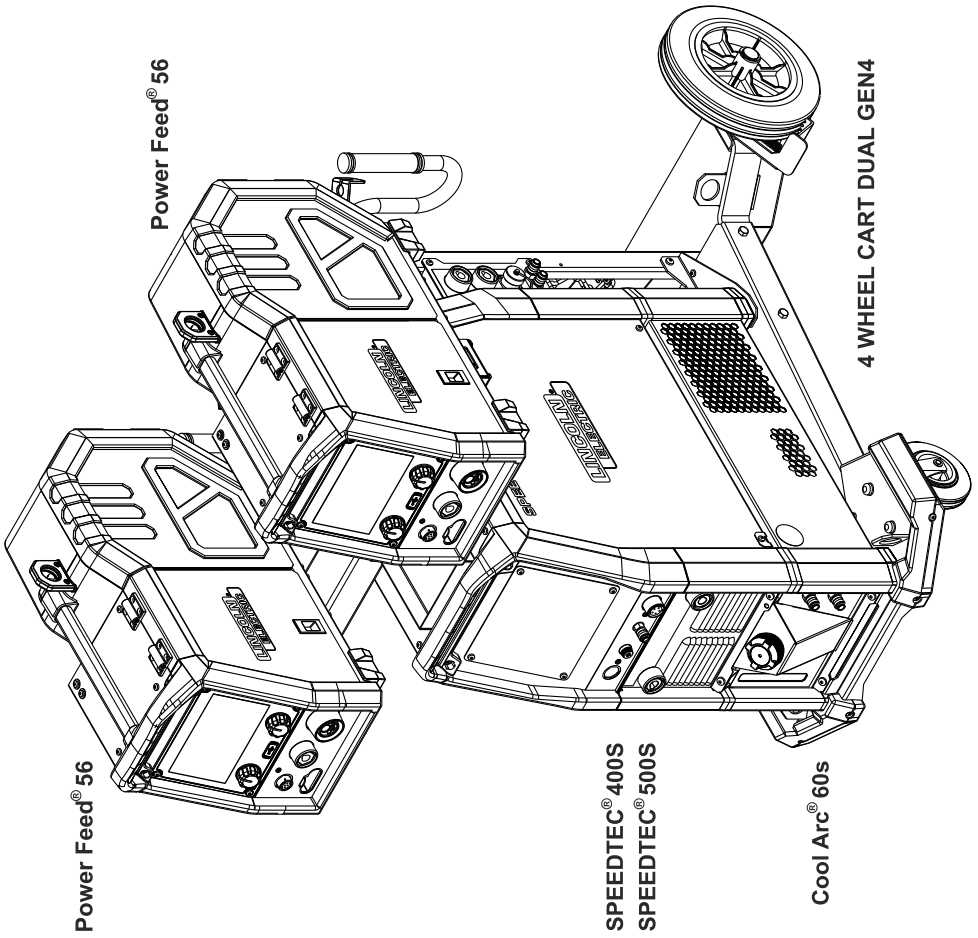


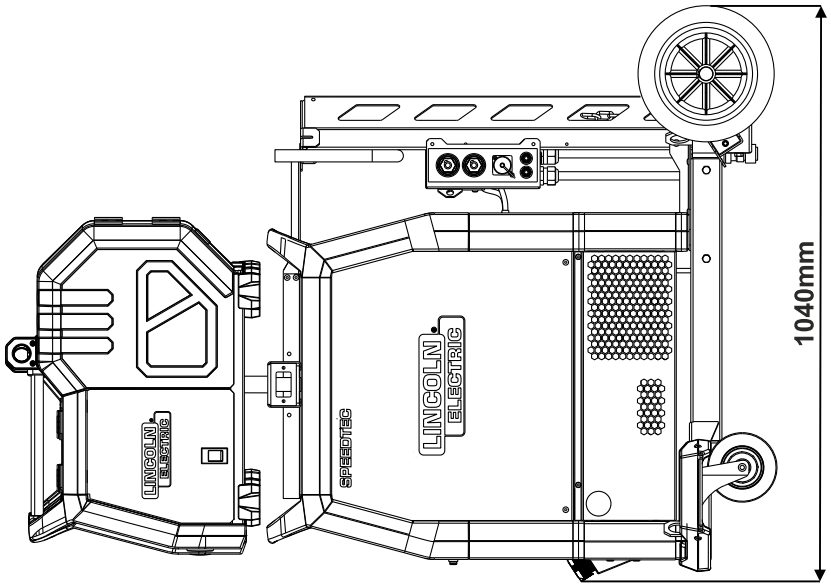


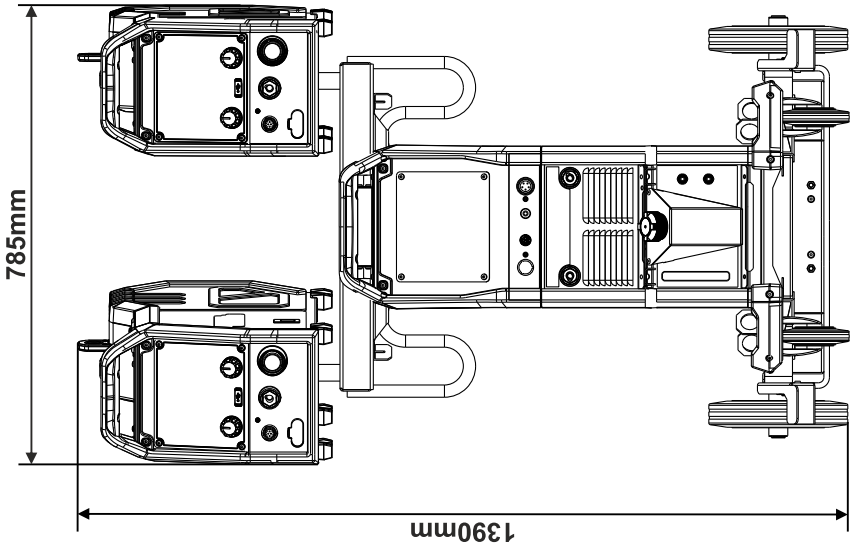
Power Feed®52
Power Feed®56



Power Feed®WHEELS KIT


Power Feed® 56
4 WHEEL CART DUAL GEN4
Power Feed® 56
SPEEDTEC® 400S
SPEEDTEC® 500S
Cool Arc® 60s


1040mm
LINCOLN ELECTRIC
SPEEDTEC
LINCOLN ELECTRIC


785mm
1390mm

ACCESSORIES AND OPTIONS

ACCESSORIES AND OPTIONS

COMPATIBLE POWER SOURCES	
Part No.	**Description**
K14457-1	**SPEEDTEC® 400S**
K14458-1	**SPEEDTEC® 500S**
COMPATIBLE COOLING UNIT AND COOLANT	
Part No.	**Description**
K14469-1	**Cool Arc® 60s**
W000010167	FREEZCOOL 9.6L (coolant)
ACCESSORIES & OPTIONS	
Part No.	**Description**
KP10519-8	TIG ADAPTOR
K10158-1	ADAPTER FOR SPOOL TYPE B300
K10158	ADAPTER FOR SPOOL TYPE B300
R-1019-125-1/08R	ADAPTER FOR SPOOL S200
K14200-1	CONTROL PANEL COVER KIT
K14203-1	WIRE FEEDER DRUM QUICK CONNECTOR
K14467-1	WHEELS KIT SET FOR PF FEEDERS
K14468-1	GAS FLOW REGULATOR KIT
K14473-1	USER INTERFACE PENDANT BOX 7M
K14476-1	MIG GUN BALANCED ARM Gen4
K14477-1	4 WHEEL CART DUAL Gen4
K14479-1	4 WHEEL CART Gen4
K14484-1	STT® LICENSE CARD PERPETUAL
K14485-1-TRIAL	STT® LICENSE CARD TRIAL
K14486-1	RapidArc® LICENSE CARD PERPETUAL
K14487-1-TRIAL	RapidArc® LICENSE CARD TRIAL
K14488-1	CheckPoint® LICENSE CARD PERPETUAL
K14489-1	CheckPoint® LICENSE CARD 1 YEAR
K14490-1-TRIAL	CheckPoint® LICENSE CARD TRIAL
K14491-1-DEMO	WAVEFORM DEMONSTRATION ACCESS
K14492-1	WELDER/OPERATOR IDENTIFICATION CARD
K14493-1	SUPERVISOR IDENTIFICATION CARD
WELDING CABLES	
Part No.	**Description**
W000260682	KIT ARC 50C50 PLUS
W000010136	FLAIR® 600 GOUGING TORCH with airflow regulated on the torch
W100000376	LINCGUN® PUSH-PULL 400W 8M
INTERCONNECTION CABLES	
Part No.	**Description**
K14472-PG-2M	CABLE PACK 5PIN G 95MM2 2M
K14472-PG-5M	CABLE PACK 5PIN G 95MM2 5M
K14472-PG-10M	CABLE PACK 5PIN G 95MM2 10M

INTERCONNECTION CABLES	
Part No.	**Description**
K14472-PG-15M	CABLE PACK 5PIN G 95MM2 15M
K14472-PG-20M	CABLE PACK 5PIN G 95MM2 20M
K14472-PG-25M	CABLE PACK 5PIN G 95MM2 25M
K14472-PG-30M	CABLE PACK 5PIN G 95MM2 30M
K14473-PGW-2M	CABLE PACK 5PIN W 95MM2 2M
K14473-PGW-5M	CABLE PACK 5PIN W 95MM2 5M
K14473-PGW-10M	CABLE PACK 5PIN W 95MM2 10M
K14473-PGW-15M	CABLE PACK 5PIN W 95MM2 15M
K14473-PGW-20M	CABLE PACK 5PIN W 95MM2 20M
K14473-PGW-25M	CABLE PACK 5PIN W 95MM2 25M
K14473-PGW-30M	CABLE PACK 5PIN W 95MM2 30M
ROLL KIT FOR SOLID WIRES	
Part No.	**Description**
KP14466-0608SW	DRIVE ROLL KIT 0.6-0.8
KP14466-0911SW	DRIVE ROLL KIT 0.9-1.1
KP14466-1012SW	DRIVE ROLL KIT 1.0-1.2
KP14466-1216SW	DRIVE ROLL KIT 1.2-1.6
KP14466-1420SW	DRIVE ROLL KIT 1.4-2.0
KP14466-1624SW	DRIVE ROLL KIT 1.6-2.4
ROLL KIT FOR CORE WIRES	
Part No.	**Description**
KP14466-1012CW	DRIVE ROLL KIT 1.0-1.2
KP14466-1216CW	DRIVE ROLL KIT 1.2-1.6
KP14466-1420CW	DRIVE ROLL KIT 1.4-2.0
KP14466-1624CW	DRIVE ROLL KIT 1.6-2.4
ROLL KIT FOR ALUMINUM WIRES	
Part No.	**Description**
KP14466-0810AW	DRIVE ROLL KIT 1.0-1.2
KP14466-1216AW	DRIVE ROLL KIT 1.2-1.6
GUIDE	
Part No.	**Description**
R-2010-006-1R	OUTLET GUIDE KIT Ø 2mm
0744-000-318R	INLET AND INTERMEDIATE GUIDE Ø 0.6-1.6mm
0744-000-319R	INLET AND INTERMEDIATE GUIDE Ø 1.6-2.8mm

MAINTENANCE

MAINTENANCE

⚠ WARNING



For any repair operations, modifications, or maintenance activities, it is recommended to contact the nearest Technical Service Center or Lincoln Electric. Repairs or modifications performed by unauthorized personnel will result in the loss of the manufacturer's warranty.

⚠ WARNING



Any noticeable damage should be reported immediately and repaired.

Routine maintenance (daily):

- Check the condition of insulation and connections of the work leads and the insulation of the power lead. If any damage is found, replace the lead immediately.
- Remove spatter from the welding gun nozzle. Spatter buildup may interfere with proper shielding gas flow.
- Check the condition of the welding gun and replace it if necessary.
- Check the condition and operation of the cooling fan. Ensure that all airflow openings are clean and unobstructed.

Periodic maintenance (every 200 operating hours, but at least once per year):

- Keep the machine clean. Using dry, low-pressure compressed air, remove dust from the external surfaces and from inside the machine.
- If required, clean and tighten all welding terminals.

The frequency of maintenance operations may vary depending on the operating environment.

⚠ WARNING



Do not touch electrically live parts.

⚠ WARNING



Before removing any covers, switch off the equipment and disconnect the power lead from the mains supply.

⚠ WARNING



The mains supply must be disconnected before performing any maintenance or service work. After each repair, perform appropriate safety checks before returning the equipment to operation.

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

Machine Status Light Indications

Table 1 :Machine Status Light Indications

Indicator state	Indicator Condition	Meaning
Steady Green	Normal operation	Indicates that the system is operating correctly and is ready for use.

Indicator state	Indicator Condition	Meaning
Flashing Green	Initialization	Indicates that the system is initializing after power-up or reset. Normal for first 1-10 seconds after power is turned on, or if the system configuration is changed during operation.
Alternating Green / Red	Fault condition	A system fault has been detected. Individual code digits are flashed in red with a long pause between digits. If more than one code is present, the codes will be separated by green light. Read the error code before the machine is turned off. If occurs, to clear the error try to turn Off the machine, wait for a few seconds, then turn ON again. If the error remains, a maintenance is required. Please contact the nearest authorized technical service center or Lincoln Electric and report the error code read.
Steady Red	Error / No communication	Indicates a system error or loss of communication with a connected device.

Note: If an error occurs, switch the machine OFF, wait a few seconds, and switch ON again. If the error persists, contact an authorized service center and report the displayed error code.

Error Codes

The table below lists basic fault conditions that may occur. For a complete list of fault codes, contact an authorized Lincoln Electric Service Facility.

Table 2 :Error Codes

Error Code	Error Description	Cause	Recommended Course of Action
6	Power source is not connected.	The User Interface cannot seem to communicate with the Power Source.	• Check cable connections between the power source and the user interface.
18	Configuration error	The machine could not properly configure the devices that are attached to it. This configuration problem could be caused by the type of devices that are connected to the machine or a required device that is not connected.	• Consult the Operator's Manual for proper device configuration. • Verify all devices in the system are properly powered.

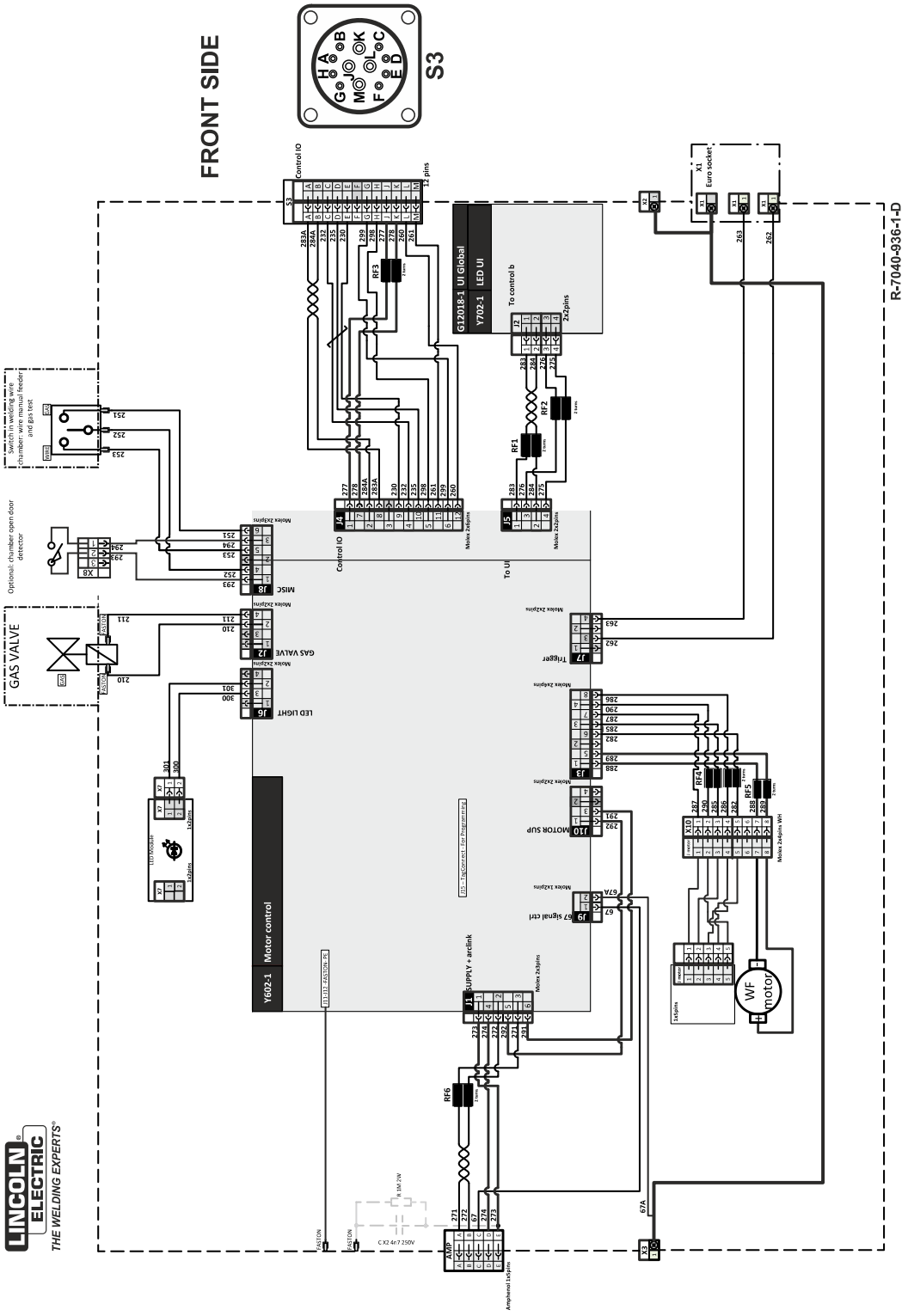
36	The machine has shut down because it has overheated.	System detected a temperature level beyond the normal system operating limit.	• Be sure process does not exceed duty cycle limit of the machine. • Check the setup for proper air flow around and through the system. • Check that the system has been properly maintained, including removal of accumulated dust and dirt from the intake and outlet louvers. • When the machine has cooled down to a safe level, the interface signals this by flashing two LEDs next to Button or start welding operation by the torch trigger.
46, 54	Output current exceeded	The average value of the output current has been exceeded.	• Verify that the welding circuit does not have a short in it. • Verify stick out, wire size, and gas are correct for the process that is selected. • Decrease the value of the output parameters. • Check the weld circuit for short circuits and other leakage paths that may result in excessive current.
49	Lack of phase	Single phase input operation has been detected.	• Verify all fuses are good. • Verify all three legs of the input power are present at the input contactor. When the contactor closes, be sure all three legs are present on the output side as well (toward the rectifier). • Check the condition of the electrical system.
71	Output power exceeded	The machine detected excessive output power.	• Verify stick out, wire size, and gas are correct for the process that is selected. • Decrease the value of the output parameters. • Check the weld circuit for short circuits and other leakage paths that may result in excessive current.

81	Motor overload, long term.	The wire drive motor has overheated. Check that the electrode slides easily through the gun and cable.	• Remove tight bends from the gun and cable. • Check that the spindle brake is not too tight. • Verify the adequacy of the electrode to the welding process. • Verify a high quality electrode is being used. • Check drive rolls alignment and gears. • Wait for the error to reset and the motor to cool (approximately 1 minute).
92	No coolant flow	There is no coolant flow in the cooler after 3 seconds of welding.	• Make sure there is enough coolant in the tank and that auxiliary power is supplied. • Make sure the pump is working. When the trigger is pulled the pump should run.
262	Incompatible equipment	Required configuration could not be found in the machine. Verify the configuration and the status of the devices connected to the machine.	• Check if the connected power source is in the list of compatible power sources. • Update the system with the latest firmware.
269	Arc was lost or never established	An arc was not established within the amount of time specified by setup parameter P.22 after the trigger was pulled or if the trigger remained pulled after an arc was lost. This error detection is only active in wire welding modes and is intended to prevent an electrically hot wire from being fed in the absence of an arc.	• Adjust P.22 based on weld WFS, run-in WFS, etc. if arc error detection is needed • Set P.22 to OFF if arc error detection is not needed
713	Supply overvoltage	The supply Voltage is too high	• Check the supply voltage level.
714	Supply undervoltage	The supply Voltage is too low	• Check the supply voltage level.

APPENDIX

WIRING DIAGRAM

WIRING DIAGRAM - CODE: 50766



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.