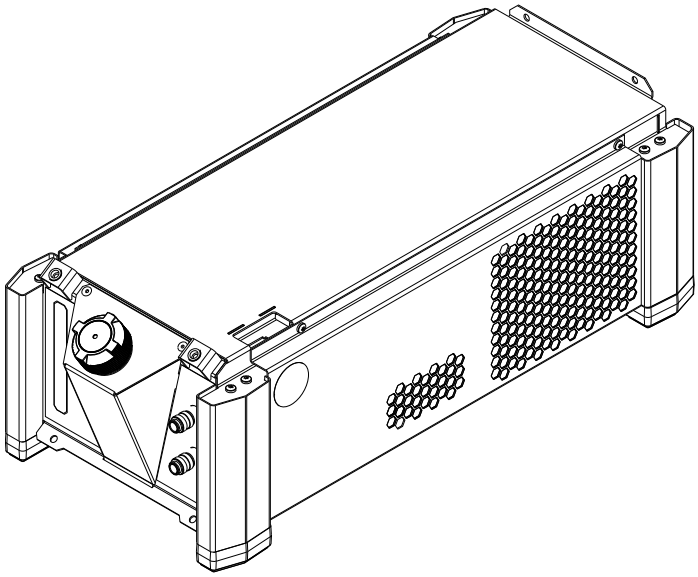
INSTRUCTION MANUAL

Cool Arc® 60s



For use with Product/Code Numbers:

50775

Save for future reference

Date Purchased

Code: (ex: 10859)

Serial: (ex: U1060512345)

IM3239-A | Issue Date July - 2026
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Lincoln Electric Bester Sp. z o.o.
ul. Jana III Sobieskiego 19A, 58-260 Bielawa, Poland
www.lincolnelectric.eu



ISO OERLIKON AG Schweisstechnik
CH-5737 Menziken AG – Tel. +41 (0)62 771 83 05
E-Mail info@iso-oerlikon.ch – www.iso-oerlikon.ch

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!

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.

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



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.

⚠ WARNING



HOT COOLANT can burn skin

Always be sure coolant is NOT HOT before servicing the cooler.

TECHNICAL SPECIFICATIONS

NAME	INDEX
Cool Arc® 60s	**K14469-1**
INPUT	
Input Voltage U_1	400V±15%
Input Current I_{1max}	1 A
EMC Class	A
Frequency	50/60Hz
PARAMETERS RATING	
Cooling capacity at a coolant flow rate of 1 L/min at a temperature of 25°C	1,2 kW
Cooling capacity at a coolant flow rate of 1 L/min at a temperature of 40°C	0,61 kW
Maximum pressure rate P_{max}	0,505 MPa
PARAMETERS OF THE COOLER'S RESERVOIR	
Maximum reservoir capacity	4,5 liters
Minimum required reservoir capacity	3 liters
COOLANT	
Recommended coolant	W000010167 - FREEZCOOL
Do not use!!	Do not use conductive cooling liquids.
	Pre-packaged welding industry coolants. These coolants may contain oil-based substances, which attack the plastic components of the cooler. Once added to the cooler, these substances are impossible to purge from the water lines and heat exchanger.
	Automotive anti-freeze. These coolants will damage the pump and block of the heat exchanger, affecting cooling performance.
DIMENSIONS AND WEIGHT	
Height	224mm
Width	291mm
Length	663mm
Weight	18,2 kg
OTHERS	
Protection Rating	IP23
Operating Temperature	from -10°C to +40°C
Storage Temperature	from -25°C to +55°C
Operating Humidity (t=20°C)	≤ 90 %

INTRODUCTION

The **Cool Arc® 60s** is a closed loop cooling system designed to work with Lincoln Electric power sources and wire feeders:

- **SPEEDTEC® 400S**
- **SPEEDTEC® 500S**
- **Power Feed® 52**
- **Power Feed® 56**

The complete package includes:

- **Cool Arc® 60s**
- USB memory with operator's manual
- Closing loop / bypass hose for filling procedure (150 mm)

The **Cool Arc® 60s** is delivered without the coolant.

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

UNPACKING

The cooler packaging is designed to withstand transport conditions and includes a cardboard liner surrounding the unit. If any shipping damage has occurred, contact your authorized Lincoln distributor or service center. When unpacking the unit, do not use sharp objects that may penetrate the carton liner and damage the plastic reservoir.

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.

INPUT SUPPLY CONNECTION

The **Cool Arc® 60s** is supplied from a welding power source. The connection and installation must be carried out by a qualified electrician and comply with the applicable National Electrical Code and local regulations.

⚠ CAUTION



Do not operate the cooler if the reservoir is not filled or if the torch/gun hoses are disconnected from the cooling unit. Failure to observe this warning may result in internal damage to the cooler.

COOLER INSTALLATION WITH POWER SOURCE

The **Cool Arc® 60s** is designed for operation with compatible power sources:

- **SPEEDTEC® 400S**
- **SPEEDTEC® 500S**

The cooler is intended to be installed as part of a system consisting of a transport cart, cooler, power source, and wire feeder. Refer to the ACCESSORIES AND OPTIONS on page D-1 section for compatible equipment.

⚠ WARNING



Installation must be performed by a qualified electrician in accordance with applicable standards and local regulations.

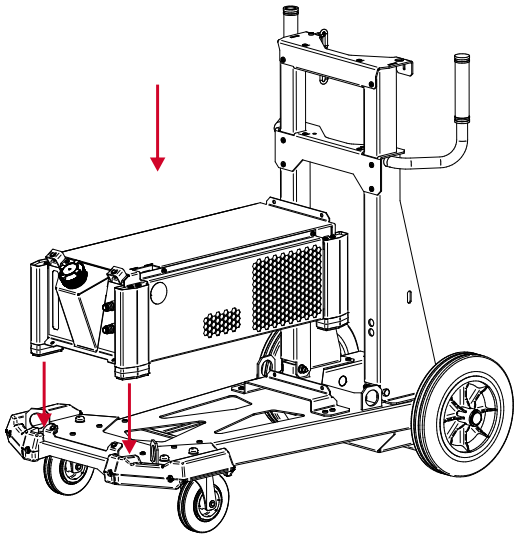
⚠ CAUTION



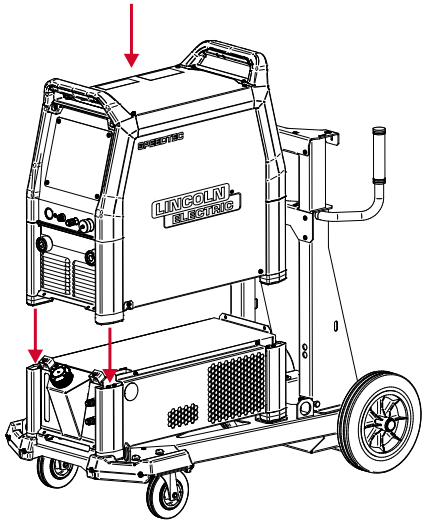
Before installation, switch OFF the power source and disconnect it from the input power supply.

Installation procedure:

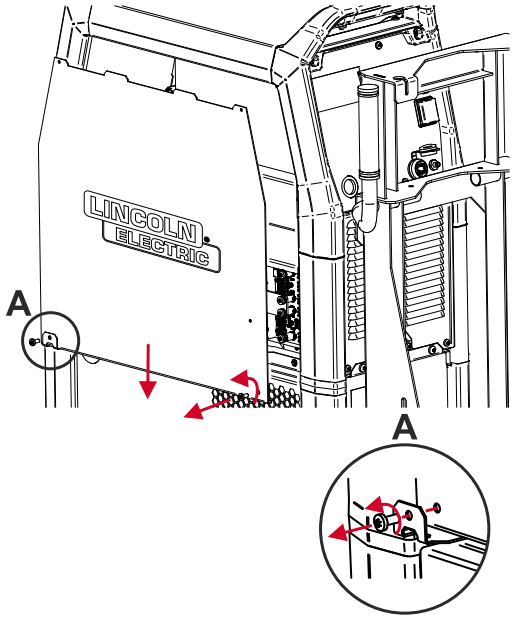
1. Place the **Cool Arc® 60s** on the transport cart.



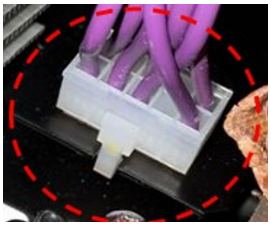
2. Position the **SPEEDTEC®400S/500S** power source on top of the cooler.

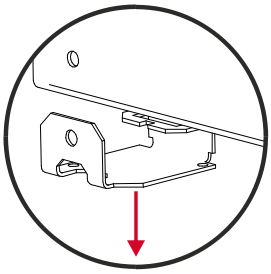


3 Remove the side cover of the power source. Disconnect the PE cable connector from the side cover.

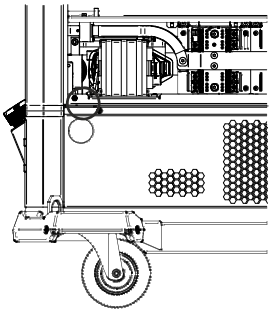


4 Disconnect the cooler socket and remove the mounting bracket.





5 Connect the cooler socket to the corresponding connector inside the power source.





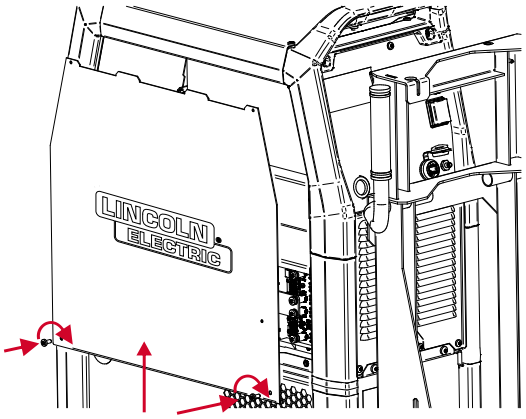
Reinstall the side cover without the mounting bracket using the screws removed in Step 3.

Note: Reconnect the PE cable to the grounding point on the side cover.

6

⚠ CAUTION

After installation, it is recommended to perform a continuity test of the protective conductor in accordance with EN IEC 60974-4. The resistance between the protective contact at the plug and the side cover shall not exceed 0,3 Ω.



TRANSPORT AND LIFTING

Note: During transportation and storage, the ambient temperature must be within the recommended range (refer to TECHNICAL SPECIFICATIONS on page A-2 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

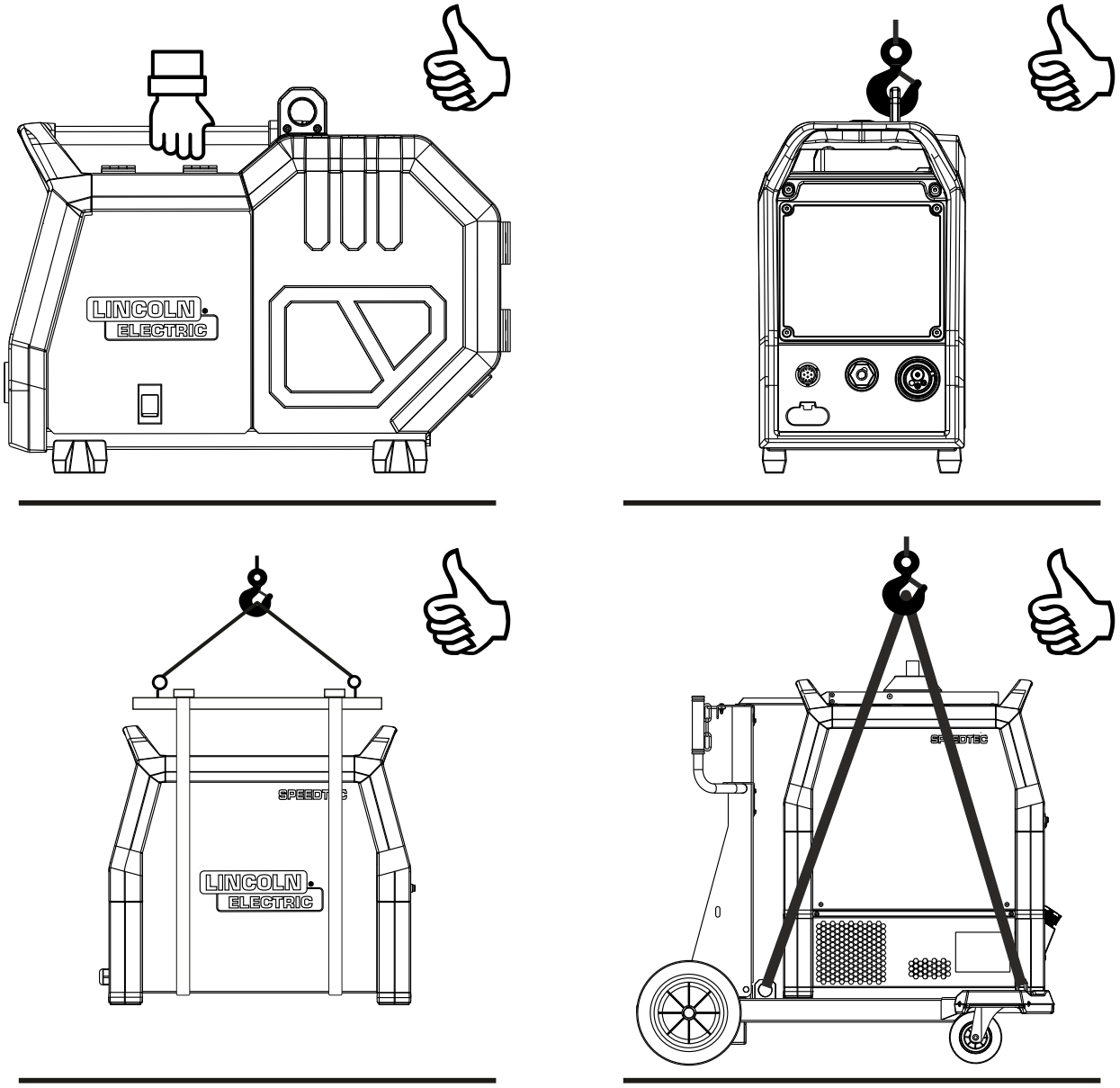
- Switch off the equipment and disconnect it from the power supply.
- Drain the coolant completely.
- Remove the wire feeder, wire spool, gas cylinder, and all loose components before transport.

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.

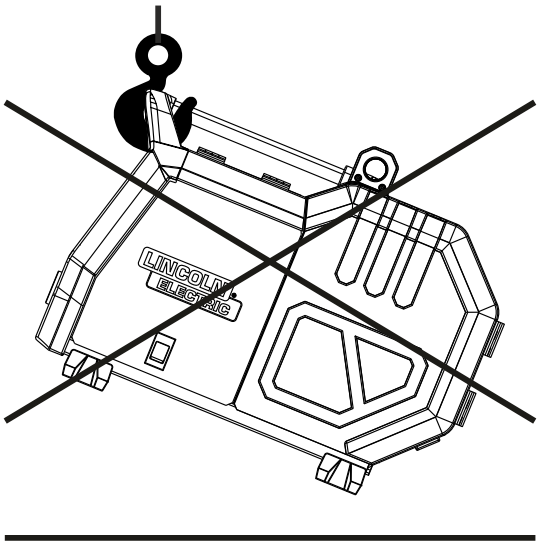
Transport and lifting requirements

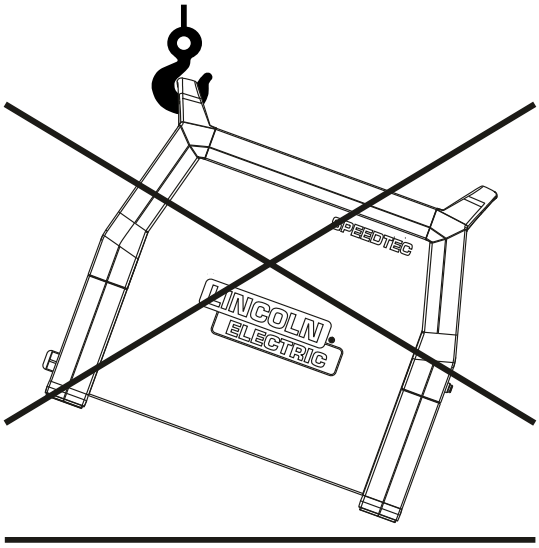
- Use only approved lifting equipment with sufficient rated capacity.
- Inspect all lifting equipment before use.
- Ensure that the equipment is stable and properly secured during transport.
- Ensure that the load is stable and evenly distributed before lifting.
- Use a spreader beam (traverse) and appropriately 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.

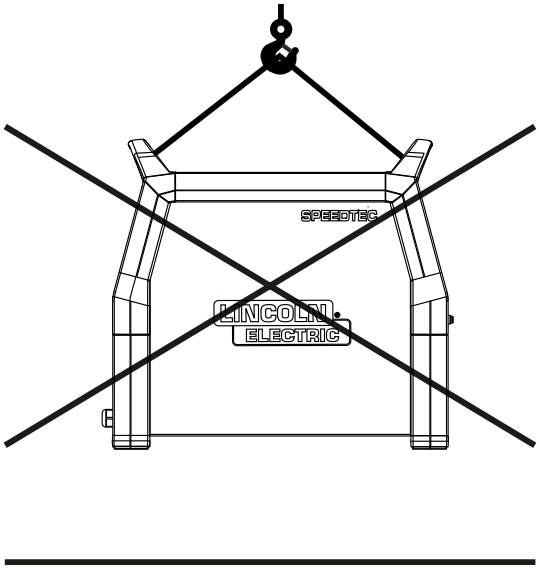


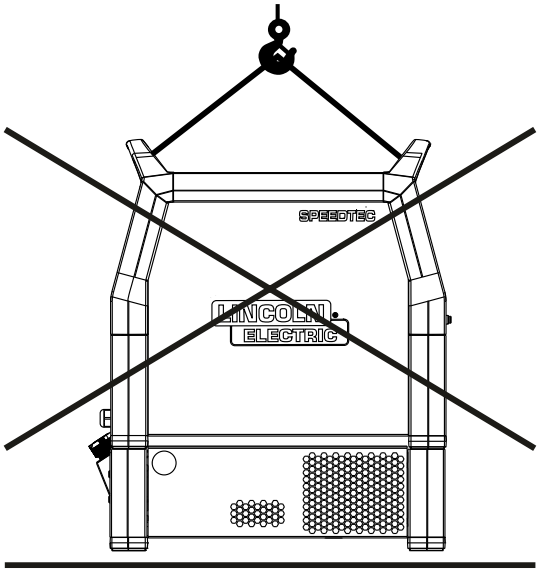
Prohibited actions

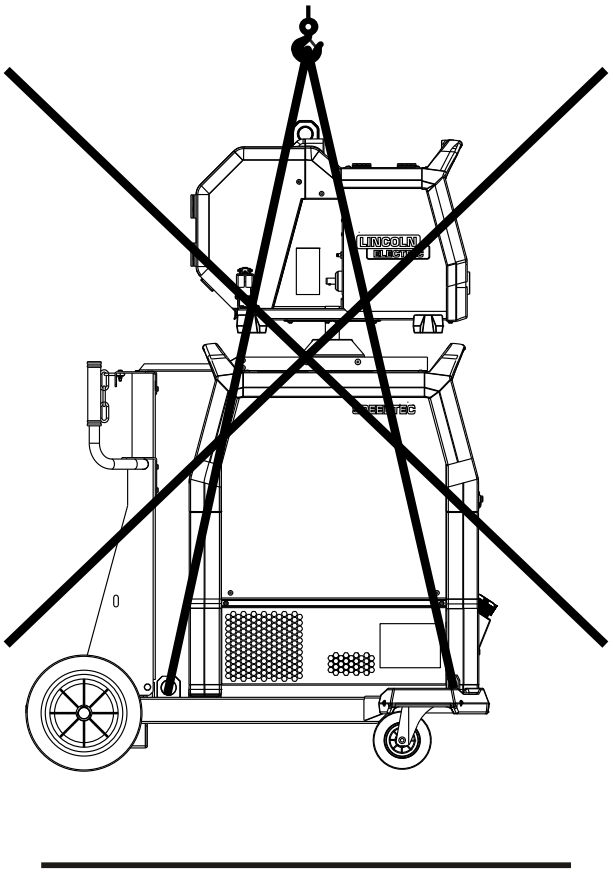
- Do not lift any equipment using transport handles.
- Do not use handles for lifting by crane or hoist.
- Do not use unauthorized lifting points.
- Do not lift equipment that is not properly secured.
- Do not lift equipment with loose components attached.
- Do not lift the system if a gas cylinder or 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.

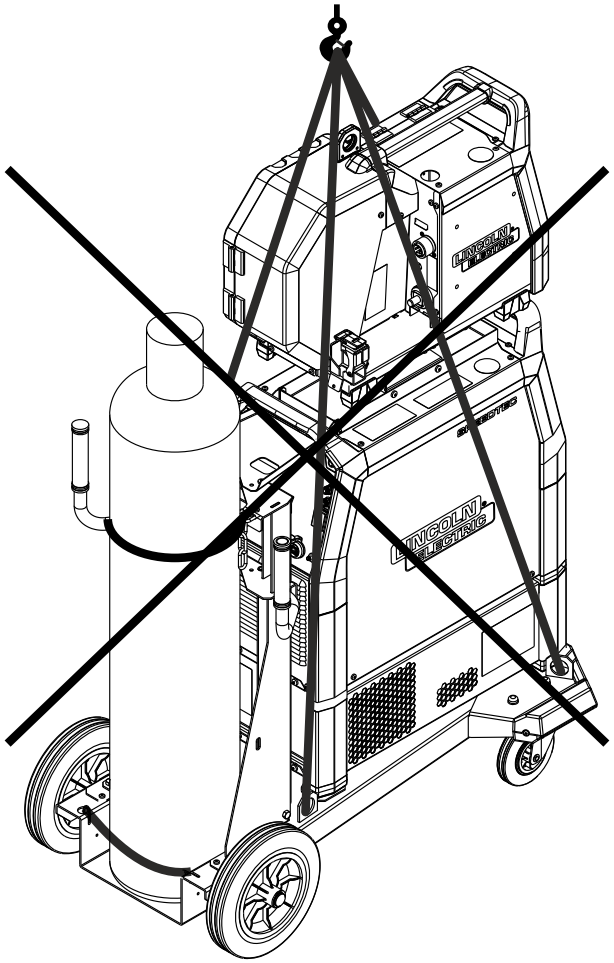

LINCOLN
ELECTRIC


SPEEDTEC
LINCOLN
ELECTRIC


SPEEDTEC
LINCOLN
ELECTRIC

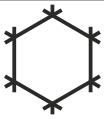

SPEEDTEC
LINCOLN
ELECTRIC



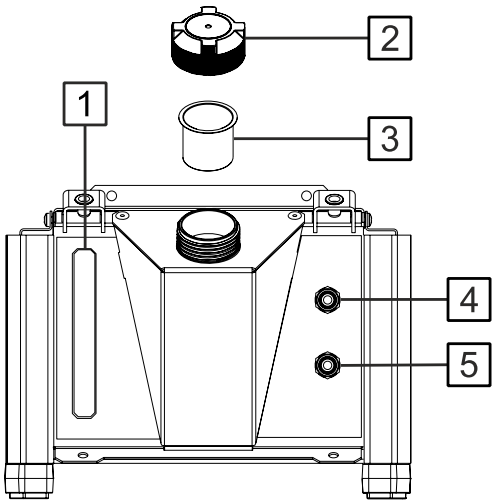


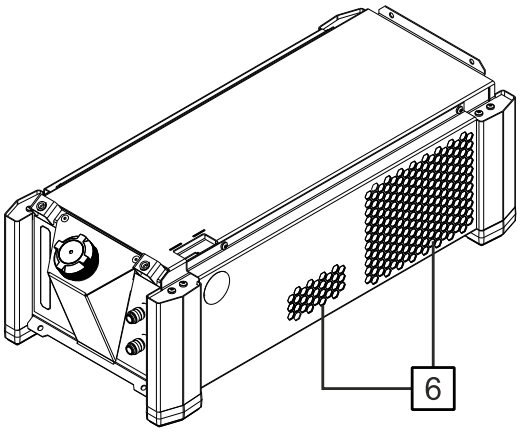
OPERATION

MACHINE SYMBOLOGY

GRAPHIC SYMBOLS THAT APPEAR ON THIS MACHINE OR IN THIS MANUAL			
	WARNING OR CAUTION		READ INSTRUCTION MANUAL
	HOT COOLANT CAN BURN SKIN		MAY CAUSE IRRITATION OR HARM
	ELECTRIC SHOCK CAN KILL		MOVING PARTS ARE DANGEROUS
	COOLER	IP	INGRESS PROTECTION CODE
	AC SUPPLY	2~	TWO-PHASE AC SUPPLY
U_1	INPUT VOLTAGE	I_{1max}	MAXIMUM INPUT CURRENT
P_{max}	MAXIMUM PRESSURE RATE	$P_{1\ l/min}$	COOLING CAPACITY WITH A COOLING LIQUID FLOW OF 1 LITER / MIN
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





1. **Minimum and maximum Coolant Level:**
   - Minimum recommended coolant level: 3 liters.
   - Maximum recommended coolant level: 4.5 liters.
2. **Coolant Reservoir with Cap:**The translucent reservoir allows monitoring of the coolant level.
3. **Reservoir Filter:** Mesh: 400µm.
4. **Coolant Inlet:** Receives warm coolant from the welding torch/gun.
5. **Coolant Outlet:** Supplies cooled coolant to the welding torch/gun.
6. **Airflow Slots:** Provide airflow for proper cooling of internal components.

COOLING AIRFLOW

⚠ WARNING



Do not place the cooler near sources of extreme heat.

⚠ WARNING



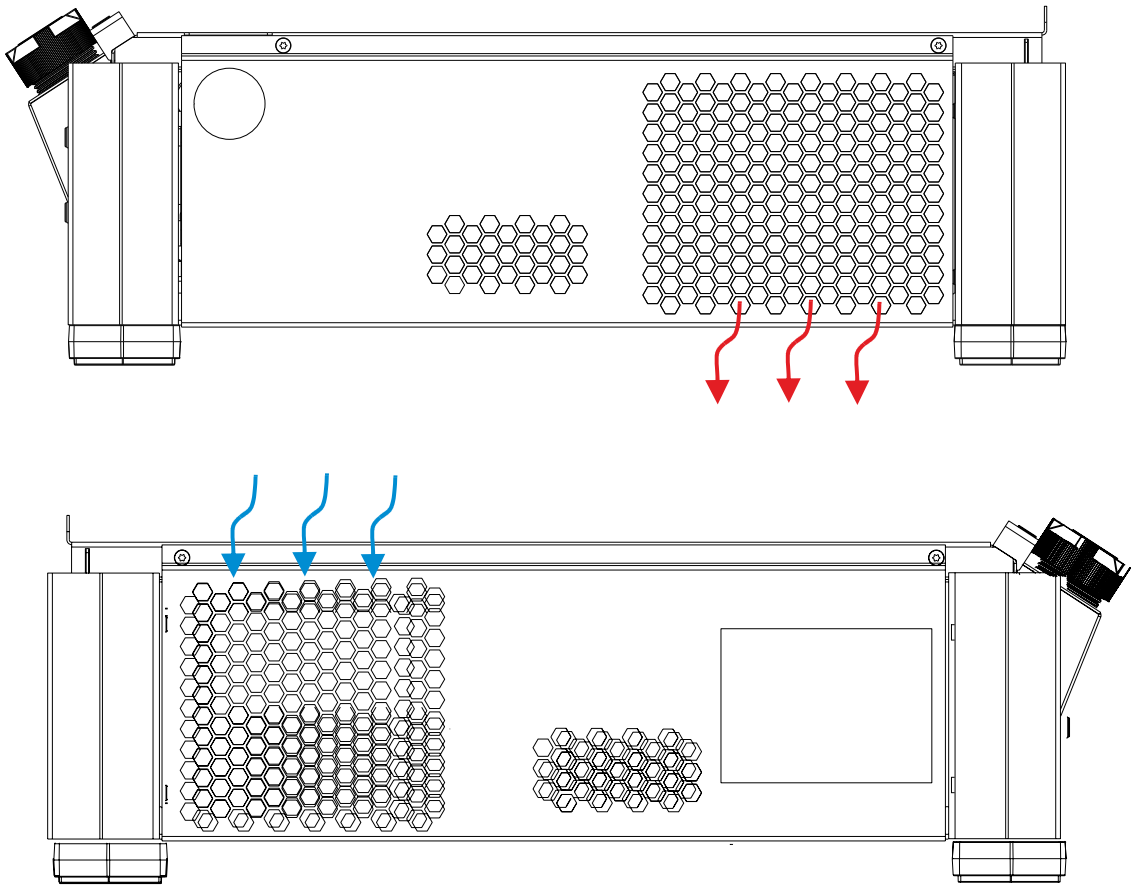
Maintain sufficient clearance around the cooler to allow proper air circulation.

⚠ WARNING

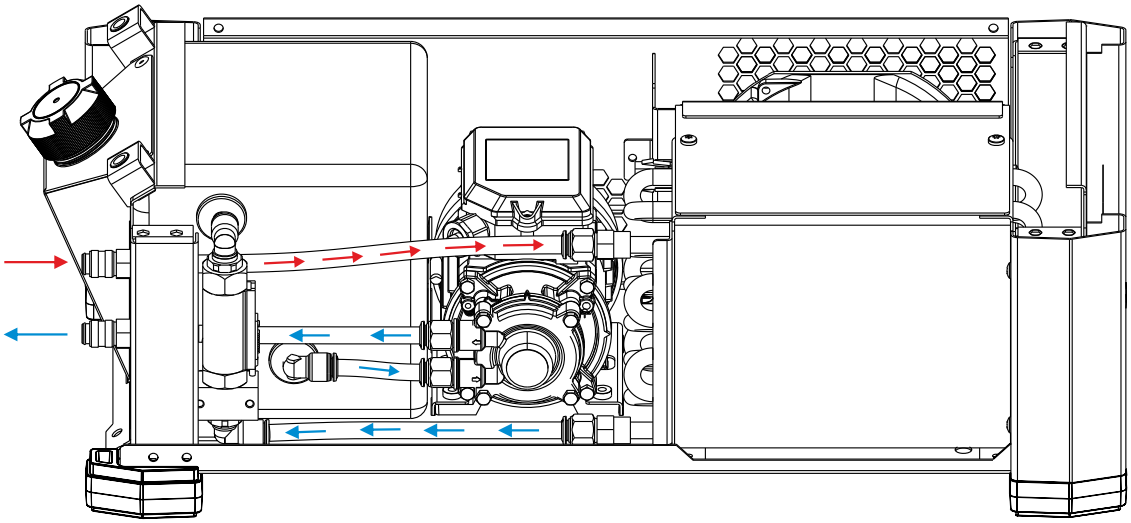


Ensure that the airflow slots are not obstructed.

Air enters the cooler through the airflow slots and exits through the outlet openings.



COOLANT FLOW IN THE COOLER



⚠ CAUTION

Avoid kinking or sharp bends in water lines.

⚠ WARNING

Do not operate the cooler with the case removed.

Failure to follow this instruction may result in equipment damage.

OPERATING MODES

⚠ CAUTION

Do not operate the cooler if the reservoir is not filled or if the torch/gun hoses are disconnected from the cooling unit. Failure to observe this warning may result in internal damage to the cooler.

The **Cool Arc® 60s** can be operated using two interface types:

- Standard version with LED indicators.
- Advanced version with a 7" display.

Note: See the wire feeder instruction manual for interface operation.

Operating Mode:

Status	Description
AUTO	The cooler starts automatically when welding begins and stops after a delay to allow cooling of the torch / gun after welding.
OFF	The cooler remains switched off.
FILL	Initiates the coolant filling procedure.

Note: To fill the cooler with coolant, refer to the FILLING THE RESERVOIR AND WATER LINES on page B-6 section for detailed instructions.

FILLING THE RESERVOIR AND WATER LINES

⚠ CAUTION

Do not operate the cooler if the reservoir is not filled or if the torch/gun hoses are disconnected from the cooling unit. Failure to observe this warning may result in internal damage to the cooler.

⚠ CAUTION



Avoid contact with coolant. Wear waterproof gloves and protective eye protection.

The cooler must be filled with coolant and operated in the horizontal position only.

Never operate the cooler with an empty reservoir!

Do not start the cooler with less than 3 liters of coolant. Insufficient coolant may prevent proper priming and may damage the pump.

Do not add more than 4.5 liters of coolant to the reservoir.

Use only the recommended coolant.

Do not use:

- Welding industry coolants containing oil-based substances. These may damage plastic components and cannot be removed from the system.
- Automotive antifreeze. It may damage the pump and the heat exchanger.

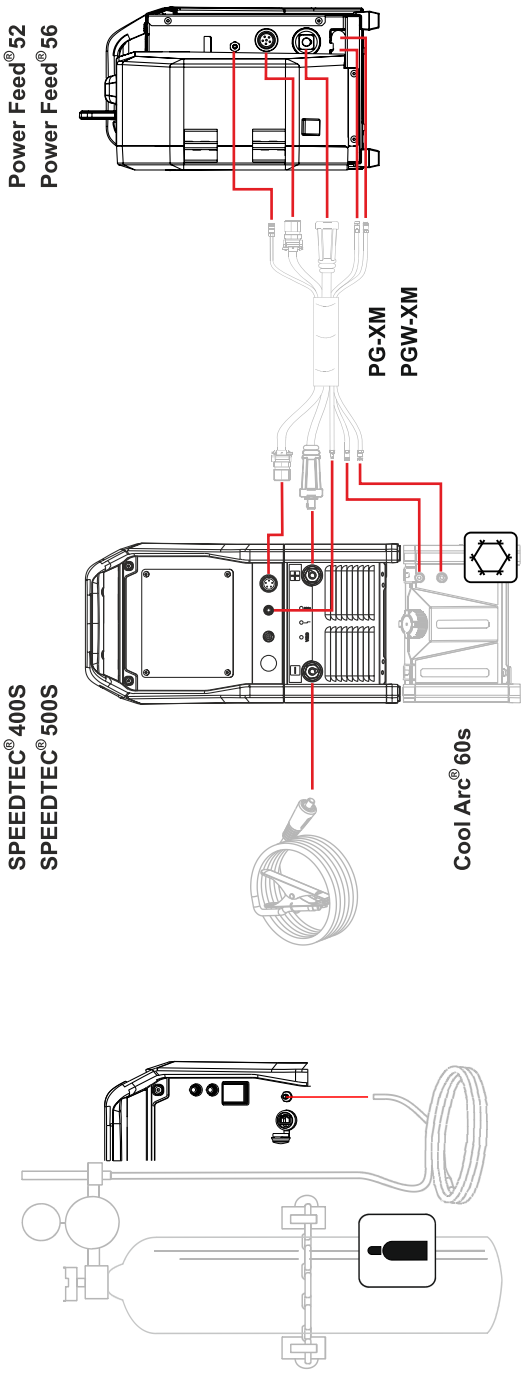
Note: Recommended equipment is listed in the ACCESSORIES AND OPTIONS on page D-1 section and is available for separate purchase.

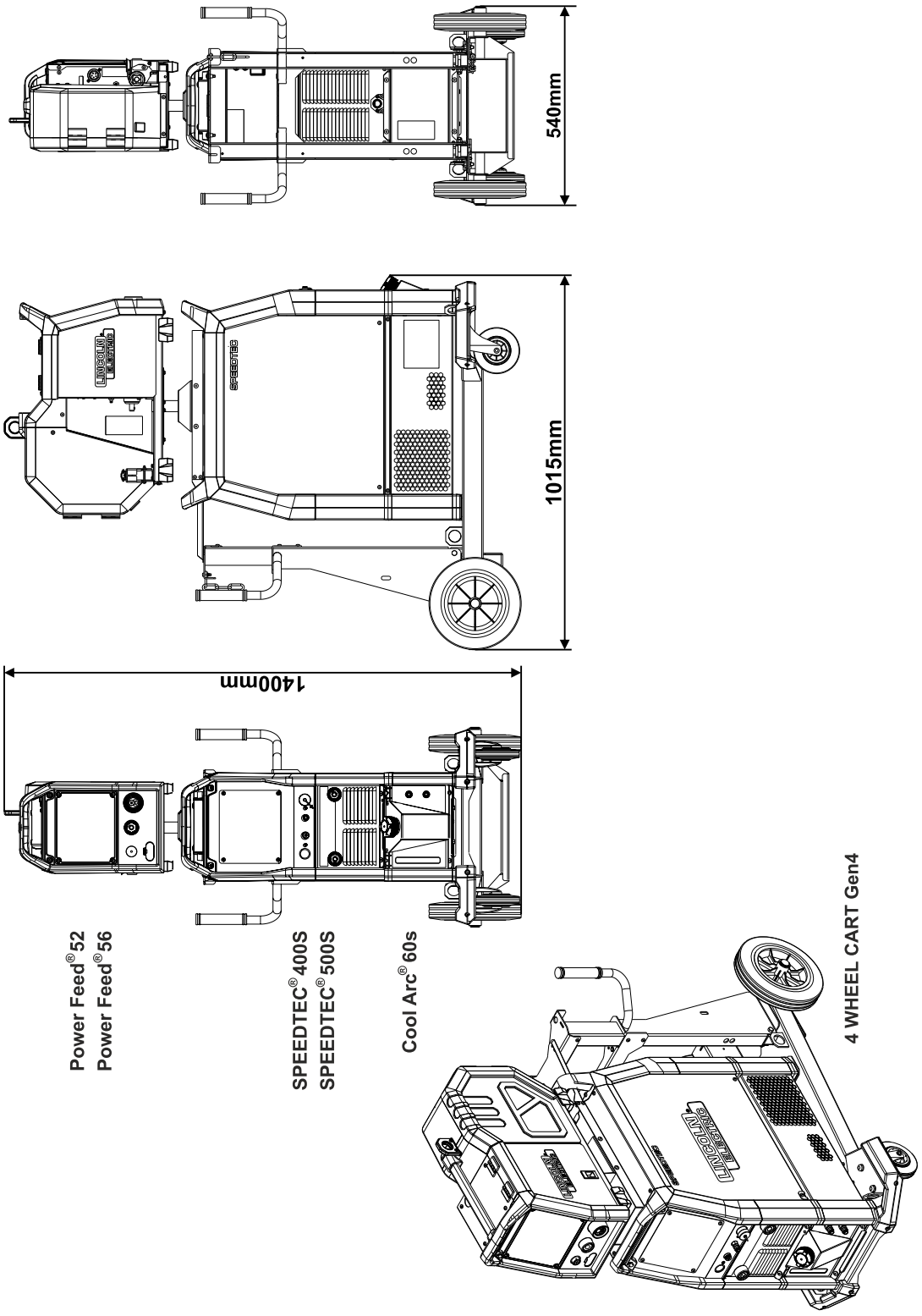
The coolant filling procedure is controlled from the wire feeder interface.

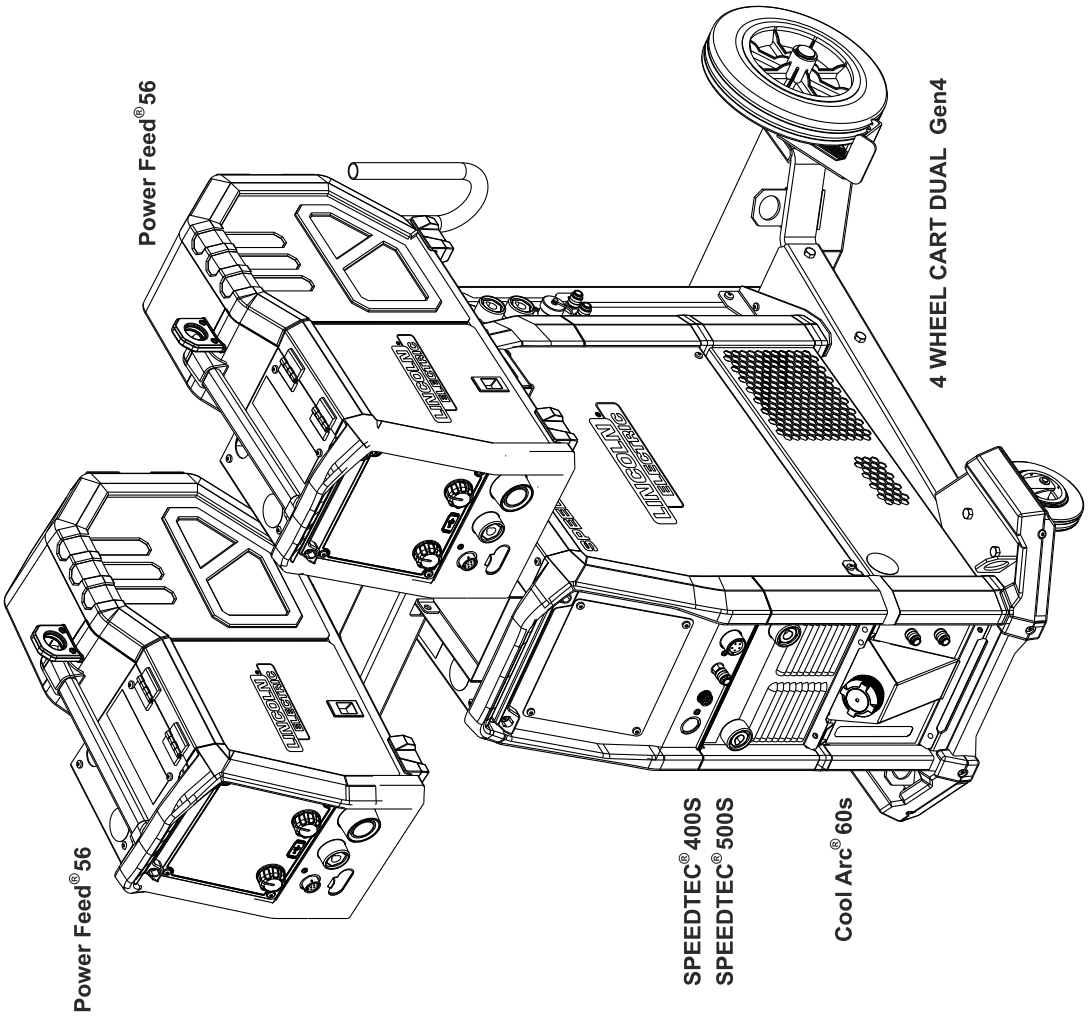
Refer to the wire feeder instruction manual for detailed instructions on filling the reservoir and water lines.

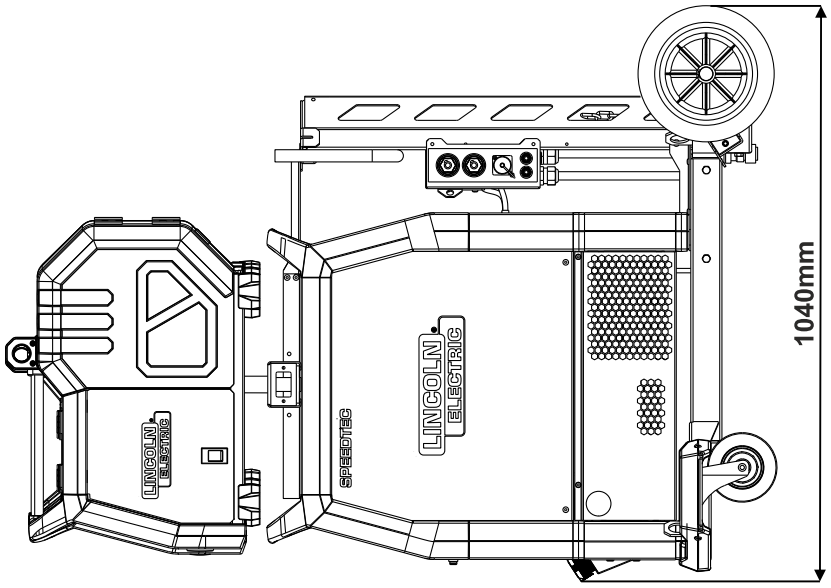
CONNECTION OVERVIEW

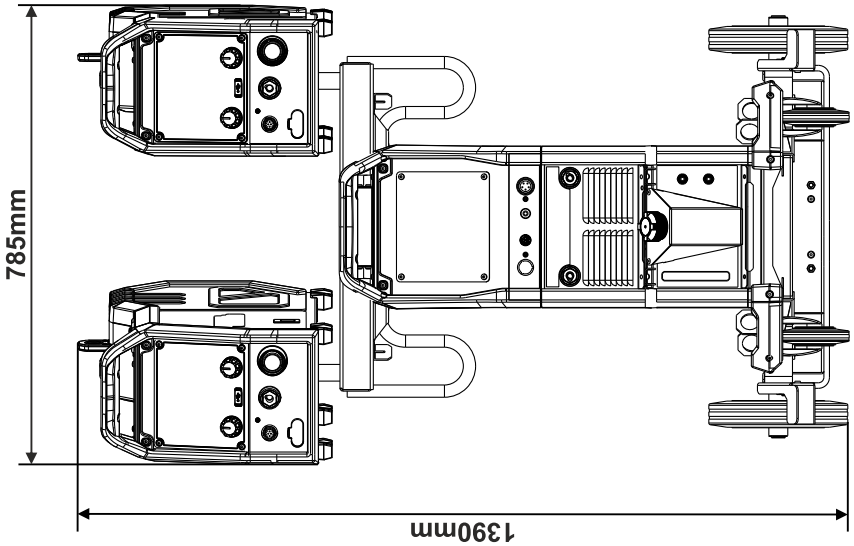
CONNECTION OVERVIEW




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


Power Feed® 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 WIRE FEEDER	
Part No.	**Description**
K14462-1	**Power Feed® 52**
K14464-1	**Power Feed® 56**
COMPATIBLE COOLING UNIT AND COOLANT	
Part No.	**Description**
W000010167	FREEZCOOL 9,6L (coolant)
T-5041-003-1R	CLOSING LOOP HOSE FOR FILLING PROCEDURE (150 mm)
ACCESSORIES & OPTIONS	
Part No.	**Description**
K14477-1	4 WHEEL CART DUAL Gen4
K14479-1	4 WHEEL CART Gen4
INTERCONNECTION CABLES	
Part No.	**Description**
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

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.

⚠ CAUTION



Hot coolant can cause burns.

Ensure the coolant has cooled before servicing

⚠ CAUTION



Special precautions must be taken when removing coolant from the cooler reservoir. Do not dispose of coolant into groundwater, sewage systems, or soil. Refer to the Safety Data Sheet (SDS) for the coolant used. Contact the local environmental protection authority for information on proper disposal or recycling.

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

⚠ WARNING



This Troubleshooting Guide is designed to be used by the machine Owner/Operator. 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, please observe all safety notes and precautions detailed in the Safety Section of this manual to avoid electrical shock or danger while troubleshooting this equipment

Troubleshooting Table

LOCATE PROBLEM (SYMPTOM).	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
Cooler does not operate	• Power lead unplugged.	• Plug in power lead.
	• No power at outlet.	• Check outlet circuit breaker.
	• Power lead is damaged.	• Repair damaged lead or order new lead set.
	• Water lines blocked or crimped.	• Clear blockage in hose. Avoid kinking or putting sharp bends in water lines.
	• Leak in gun or water hoses.	• Repair leak.
	• Reservoir empty.	• Fill reservoir.
	• Blown fuse.	• Replace fuse.
Internal water leak	• Hose clamp loose on one of internal hoses.	• Tighten or replace hose clamp.
	• Internal hose punctured.	• Replace punctured hose with new hose.
	• Heat exchanger leaking.	• Replace heat exchanger.
Leak at inlet/outlet connector block	• Hose clamp loose.	• Tighten hose clamp onto hose.
Torch or gun runs hot	• Unit placed by area of extreme heat.	• Move unit away from hot air.
	• Fan not operating.	• Refer to the fan section.
Fan operates but there is low coolant flow	• Leak in torch/gun or hoses.	• Repair leak.
	• Torch/gun or hoses partially obstructed.	• Clear obstruction.
	• Reservoir empty or very low.	• Refill reservoir.
Fan operates but there is no coolant flow	• Pump failure.	• Replace pump.
	• Pump seized.	• Replace pump.
Pump operates, but fan does not	• Fan blade contacting heat exchanger.	• Replace fan.
	• Fan motor failure.	• Replace fan.
Cooler trips outlet circuit breaker	• Circuit overloaded.	• Check outlet circuit breaker in the power source.
	• Cooler electrical component failure.	• Replace electrical component.
Weld output disabled	• Low or no coolant flow.	• Fill reservoir.
	• Faulty flow sensor.	• Replace flow sensor.

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 1 :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.

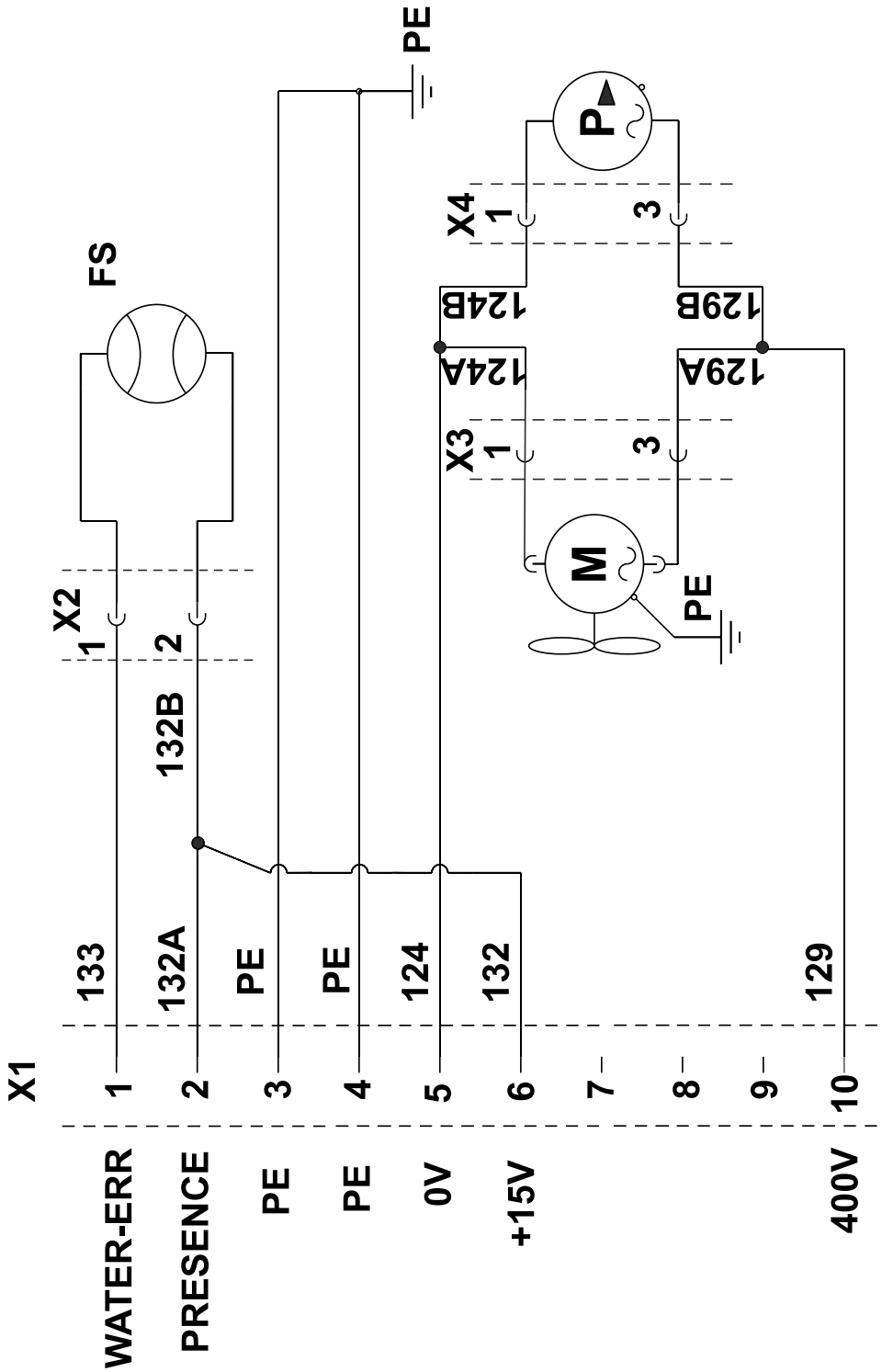
18	Configuration error	The machine could not properly configure the devices that are attached to it. This configuration problem could be caused by the type of devices that are connected to the machine or a required device that is not connected.	• Consult the Operator's Manual for proper device configuration. • 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

APPENDIX

WIRING DIAGRAM

WIRING DIAGRAM - CODE: 50775



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.