

# COOL ARC® 24

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## OPERATOR'S MANUAL



ENGLISH



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

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

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

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# Technical Specifications

NAME		INDEX		
COOL ARC® 24		K14190-1		
INPUT				
	Input Voltage U <sub>1</sub>		Input Amperes I <sub>1max</sub>	
COOL ARC® 24	390 Vdc		0,8 A	
	Frequency		EMC Class	
COOL ARC® 24	50/60 Hz		A	
PARAMETERS RATING				
	The cooling power of flow 1liter per minute at temperature of 25°C		Maximum pressure rate	
COOL ARC® 24	0,87 kW		0,43 MPa	
PARAMETERS OF THE COOLER'S RESERVOIR				
	Maximum reservoir capacity		Minimum required reservoir capacity	
COOL ARC® 24	2,27 liters		1,51 liters	
COOLANT				
COOL ARC® 24	Recommended coolant	FREEZCOOL - W000010167		
COOL ARC® 24	Do not use!!	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 and conductive cooling liquids. These coolants will damage the pump and block of the heat exchanger, affecting cooling performance.		
PHYSICAL DIMENSIONS				
	Weight	Height	Width	Length
COOL ARC® 24	18 kg	276 mm	246 mm	540 mm
OTHERS				
Protection Rating		Operating Humidity (t=20°C)	Operating Temperature	Storage Temperature
IP23		≤ 90 %	from -10 °C to +40 °C	from -25 °C to +55 °C



# Electromagnetic Compatibility (EMC)

11/04

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



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

Lincoln Electric.

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

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

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

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

## **WARNING**

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 may be potential difficulties in ensuring electromagnetic compatibility in those locations, due to conducted as well as radiated disturbances.












## WARNING

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

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



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

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



## Introduction

The **COOL ARC® 24** is a cooling system designed for use with water-cooler torches and guns:

- GTAW torches.

The following equipment has been added to **COOL ARC® 24**:

- Hose with quick water connector – 0,2m.

**COOL ARC® 24** is delivered empty with no coolant in the system.

Recommended equipment, which can be bought by user, was mentioned in the chapter "Accessories".

## Unpacking

### Unpacking the COOL ARC® 24

The packaging of the Cooler is designed to withstand shipping abuse, and contains a cardboard liner that surrounds the unit. If any shipping damages have been occurred, contact your certified Lincoln distributor or service center.

When unpacking the unit, avoid thrusting sharp objects through the carton liner, which may puncture the plastic reservoir. Save the manual instruction and service directory supplied with the **COOL ARC® 24** for parts orders and future maintenance service.

## Installation on Power Source

The **COOL ARC® 24** need to be mounted directly to the chassis of TIG welding power source that lists the **COOL ARC® 24** as an approved accessory.



#### WARNING

Always place the **COOL ARC® 24** on a level surface to avoid toppling and pouring out coolant through the hole in the cap.



#### WARNING

Only a qualified electrician can connect the welding machine to the supply. Installation had to be made in accordance with the appropriate National Electrical Code and local regulations.



#### WARNING

Before connecting **COOL ARC® 24** turn off the power source and disconnect it from the input supply.

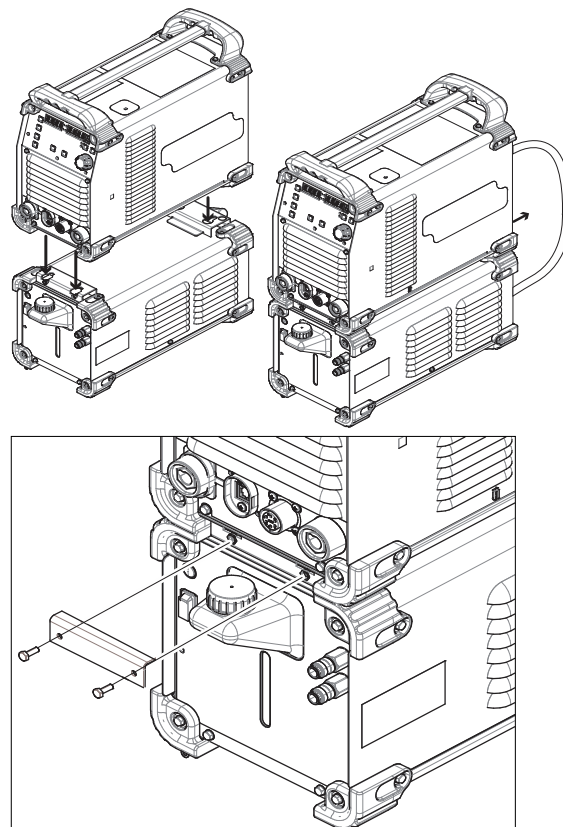


Figure 1



# Installation and Operator Instructions

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

## **WARNING**

### **ELECTRIC SHOCK can kill.**

- Do not operate with covers removed.
- Do not operate if cables are wet or immersed in water.



### **MOVING PARTS can injure.**

- Moving parts can injure. Never place fingers into openings of Cooler.



### **HOT COOLANT can burn skin.**

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



## **Location**

This machine will operate in harsh environments. However, it is important that simple preventative measures are followed to assure long life and reliable operation.

- Do not place or operate this machine on a surface with an incline greater 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 to and from the air vents. 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 to a minimum. This machine has a protection rating of IP23. Keep it dry when possible and do not place it on wet ground or in puddles.
- Locate the machine away from radio controlled machinery. Normal operation may adversely affect the operation of 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 higher than 40°C. The ambient air temperature influences the parameters of cooling. If the ambient temperature is higher, the cooling system will be less effective

## **WARNING**

Avoid placing the cooler near areas of extreme heat.

## **Recommended power source**

The **COOL ARC® 24** is designed for use with water-cooled torches. The **COOL ARC® 24** must be used with a TIG welding power source that lists the **COOL ARC® 24** as an approved accessory.

## **Input Supply Connection**

The **COOL ARC® 24** must be supplied by a welding power source in accordance with installation procedure that can be done only by qualified electrician. Installation must be made in accordance with the appropriate National Electrical Code and local regulations.

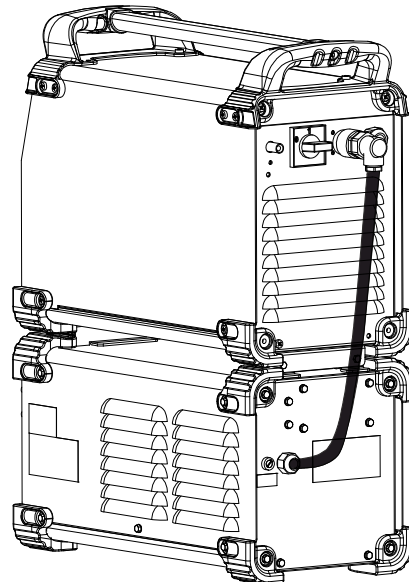
The **COOL ARC® 24** could be supplied by welding power source using 9-PIN socket (see Figure 2).

To connect the input supply to the **COOL ARC® 24**, turn off the power to the welding power source and disconnect it from the input supply.

The allowable input voltages is 390Vdc. Make sure that the supply voltage of the unit matches the cooler's rated voltage.

## **WARNING**

Do not run cooler if the reservoir was not filled and the torch's/gun's hoses are disconnected from the cooling unit. Not observing this warning may cause internal damage to the cooler unit.



**Figure 2**



## Controls and Operational Features

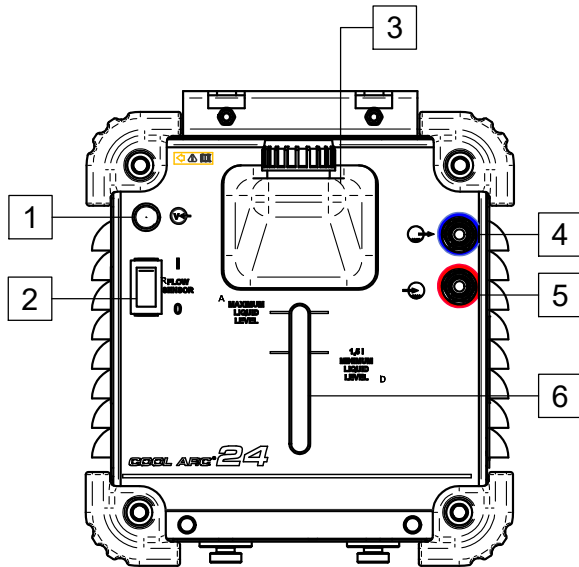


Figure 3

1. **Power Indicator Light:** This lamp will illuminate when the pump and internal fan are on. The light does not indicate the **COOL ARC® 24** is being supplied by the power source.
2. **Flow Sensor Switch:** The **COOL ARC® 24** comes equipped with a flow sensor that triggers an error code to the machine to protect the TIG Torch from overheating when inadequate coolant flow is detected through the flow sensor. The Error Code fault (Error 11) could indicate a possible kink in the torch lines, damage and/or a leak in the TIG Torch coolant lines, or signal the need to use a TIG Torch that is of a higher amperage capacity and rating. The flow sensor can be turned off 'O' or on 'I'. The default position is on when first powered on out of the box. When in 'O' off position, the flow sensor is inactive: in this condition the missing coolant flow is not detected.



### WARNING

Incorporated into the cooler is an automatic flow sensor to detect low or no coolant flow. A low or no flow condition will cause welding output to automatically stop to protect the torch.

3. **Reservoir for Coolant with Cap:** The translucent reservoir enables control of volume of the coolant. A tank filter to catch 400um dust material is located in opening tank. See Maintenance section for more details.
4. **Quick Connect Coupling:** Coolant outlet (supplies cool coolant to the torch/gun).
5. **Quick Connect Coupling:** Coolant inlet (takes warm coolant from torch/gun).
6. **Minimum and maximum Liquid Level:** The minimum recommended liquid level is 1,51 liters.
7. **Airflow Slots:** Enable proper circulation of air cooling

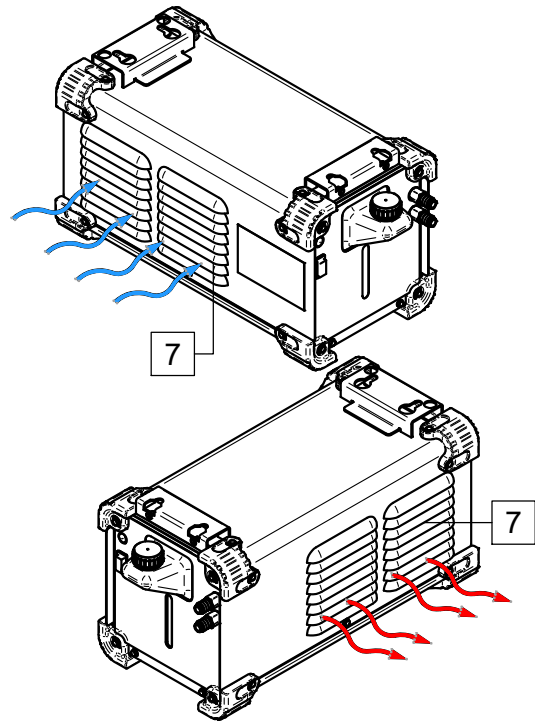


Figure 4

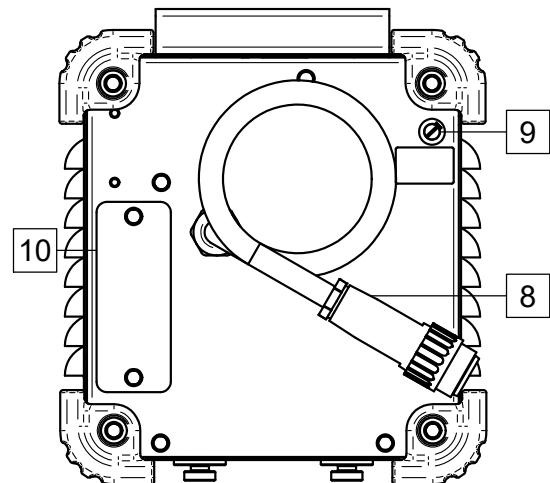


Figure 5

8. **Power Lead with 9-pin connector.** Table below indicates the Pin-out and description:

Pin #	Signal name	Description
1	COM	Reference
2	+15V/1	Aux. power supply
3	Coolant Error	Coolant flow error
4	Presence	To indicate to Power generator CA24 is active
5	NC	Not used
6	VBUS	Power supply 390Vdc
7	NC	Not used
8	ON_OFF	To enable pump and cooling
9	EARTH	Earth ground



9. Fuse Receptacle: A 2A fuse is present to protect the motor pump.
10. Removable Strainer: The pump is equipped with a 150um strainer: an external cover is supplied to protect the accessible strainer. See Maintenance section for more details.



#### **WARNING**

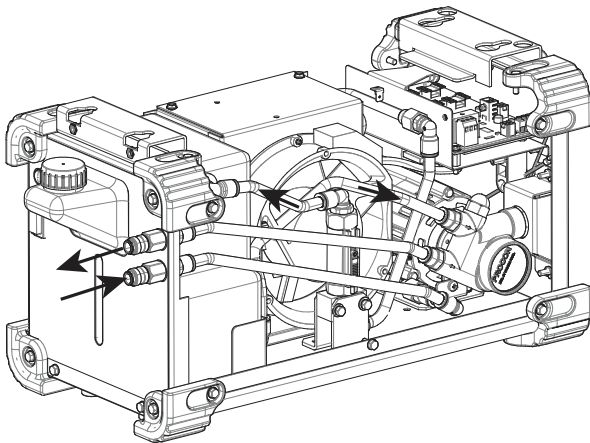
Moving parts can injure. Never place fingers into the openings of the Cooler.



#### **WARNING**

Avoid placing the cooler near a flux hopper or an area where dust build-up is extreme.

## **Circulation of Coolant in the Cooler**



**Figure 6**



#### **WARNING**

The ambient air temperature influences the parameters of cooling. If the ambient temperature is higher, the cooling system will be less effective.



#### **WARNING**

Avoid kinking or putting sharp bends in any water lines.



#### **WARNING**

Never operate the cooler with case off.



#### **WARNING**

Avoid placing the cooler near areas of extreme heat.


## **Preparation COOL ARC® 24 to Work**

- Fill the coolant reservoir.
- Connect **COOL ARC® 24** to power source.
- Turn the power source on.  
**Warning:** First use the cooler require the pump is primed by coolant.
- Turn power source off.
- Connect the water-cooler hoses to the cooler's inlet [5] and outlet [4] socket (Figure 3).
- Turn the power source on.  
**Warning:** The water-cooler hoses can require bleeding.

## **Filling the reservoir and water lines**



#### **WARNING**

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



#### **WARNING**

Before filling the coolant reservoir, disconnect cooler's power lead to the power source.

Warning: The cooler can be filled and used only in the horizontal position.

Use only recommended coolant FREEZCOOL - W000010167

**Do not use** 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.

**Do not use** automotive anti-freeze. These coolants will damage the pump and block of the heat exchanger, affecting cooling performance.



#### **WARNING**

The coolant reservoir can be filled maximum 2,27l coolant. Minimum 1,51l of coolant has to be poured into the reservoir.



#### **WARNING**

Never operate the cooler with the reservoir empty.



#### **WARNING**

Do not start the cooler with less than 1,50 liters of coolant. Operating without enough coolant can prevent full priming of the system and may damage the pump.



## Priming Pump (only first use the cooler) and Bleeding the Cooling System

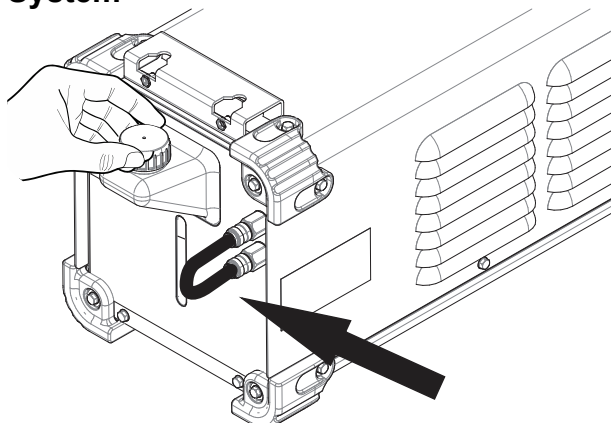


Figure 7

- Assemble the welding setup.
- Connect the hose with quick water connector (added to the equipment) to the cooler's inlet and outlet socket (Figure 5).
- Fill the coolant reservoir – minimum 2l.
- Undo the nut.

### **WARNING**

At first using of the **COOL ARC® 24** reservoir's nut has to be removed to avoid generate partial vacuum in cooling system during priming pump.

- Place the flow sensor to the off '0' position.
- Turn the power source on.
- Wait 30 seconds until the coolant fully circulates through the cooling system and returns into the reservoir.
- Turn the power source off.
- Disconnect the hose with quick water connector.
- Connect the water-cooler hoses – Figure 6.
- Turn the power source on.
- Wait 30 seconds until the coolant fully circulates through the cooling system.
- Tighten the nut.
- Return the flow sensor to the on 'I' position.
- Machine is ready to use

### **WARNING**

After priming pump and/or bleeding the cooling system, be sure the reservoir's nut is tightened up. Operation of the cooler without the nut is tightened, can cause poor cooling efficiency, evaporation loss of coolant, and low product life.

- The welding set is ready to work.

## Connecting the Cooling System Hoses

- The power source has to be turned off.
- Connect the "outlet" hose of torch/gun (colored or tagged red on most hoses) into the inlet quick connect coupling [5] located on the front panel of the cooler.
- Connect the "inlet" hose of torch/gun (colored or tagged blue on most hoses) into the outlet quick connect coupling [4] located on the front panel of the cooler.

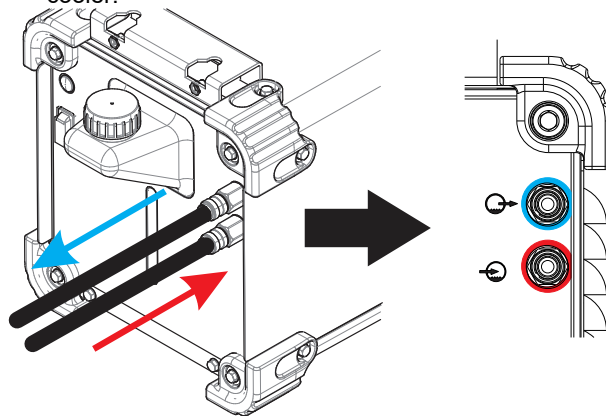


Figure 8

**Warning:** The water-cooler hoses are connected into the quick connect coupling type, which automatically close when hoses are disconnected.

Before installing the hoses to the cooler, verify that the hose connectors match the quick connect couplings located on the front panel of the cooler.

### **WARNING**

Avoid kinking or putting sharp bends in any water lines.

### **WARNING**

Keep all water lines clean and free of any blockage.

### **WARNING**








Keep the reservoir full especially after changing lines.



## Transport

To avoid freeze damage and water leakage during transport, the coolant must be removed from the cooler reservoir.

### Symbols used

Symbol	Description
	Direct Current
	Cooling Power
	Power On
	Flow Sensor ON
	Flow Sensor OFF
	Cooled Coolant Out
	Warm Coolant In

## Maintenance

### **WARNING**

For any repair operations, modifications or maintenance, it is recommended to contact the nearest Technical Service Center or Lincoln Electric. Repairs and modifications performed by unauthorized service or personnel will cause the manufacturer's warranty to become null and void.

Any noticeable damage should be reported immediately and repaired.

### **ROUTINE MAINTENANCE**

- Check the condition of water-cooler hoses and connections of the power lead.
- Check the welding torch / gun condition: replace it, if necessary.
- Check condition and operation of the cooling fan. Keep its airflow slots clean.
- The reservoir volume should be checked daily before using the cooler.
- Keep the reservoir full, especially after disconnecting the water lines or changing the accessory being cooled.
- Clean the tank filter.

### **PERIODIC MAINTENANCE (NOT LESS THAN ONCE A YEAR)**

Perform the routine maintenance and, in addition:

- Keep the machine clean. Using a dry (and low pressure) airflow, remove the dust from the external case and from the heat exchanger inside.
- In dirty or dusty environments or if biological growth occurs in the coolant, it may be necessary to flush the coolant reservoir. Drain the old coolant, rinse the inside of the reservoir and circulate rinsing solution through the coolant system. Add new coolant when cleaning is finished.

### **WARNING**

Hot coolant can burn skin. Always be sure coolant is NOT HOT before servicing the cooler.

### **WARNING**



Special precautions have to be taken when the coolant is removed from the cooler reservoir. The coolant must not be poured out into ground water, sewerage, soil. Read "Material Safety Data Sheet" (coolant used) and contact the local Department of Environmental Protection office to obtain information on recycling coolant.

The frequency of the maintenance operations may vary in accordance with the working environment where the machine is placed.



**! WARNING**

Do not touch electrically live parts.

**! WARNING**

Before the case of machine will be removed, the machine had to be turned off and the power lead had to be disconnected from mains socket.

**! WARNING**

Mains supply network must be disconnected from the machine before each maintenance and service. After each repair, perform proper tests to ensure safety.

**! WARNING**

**Do not touch electrically live parts.**

Before the case of machine will be removed, the machine has to be turned off and the power lead has to be disconnected from mains socket.

### Pump inlet strainer maintenance

Poor cooler performance can usually be traced to a partially or completely blocked pump inlet strainer. This is a user-serviceable item and can be cleaned and reused, or replaced

Continued pump operation with a blocked strainer can cause:

- Voiding of cooler service warranty
- Damage to the pump head's inlet areas
- Torch damage from overheating due to insufficient coolant flow rate.

A new or properly cleaned pump inlet strainer should restore the cooler's performance.

It is recommended to clean or replace the pump's inlet strainer at least once a year.

### Access the strainer

- Disconnect welder and cooler from power.
- The strainer access panel is located on the back lower left, remove two screws – see Figure 9.

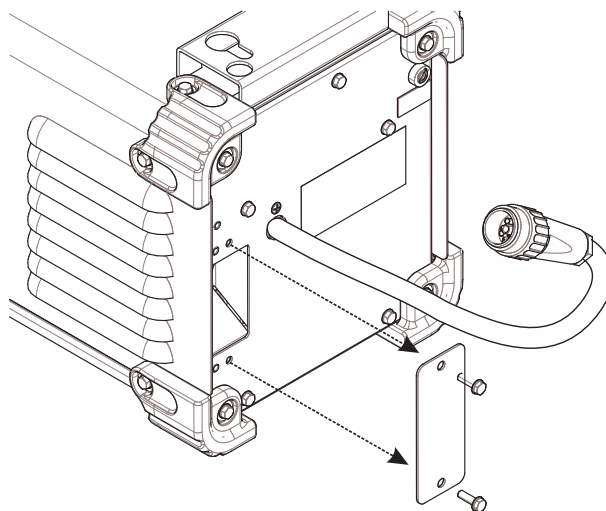


Figure 9

- Next remove the large brass bolt. See Figure 10. A deep well socket or tongue and groove pliers may be used. A small amount of coolant may leak.

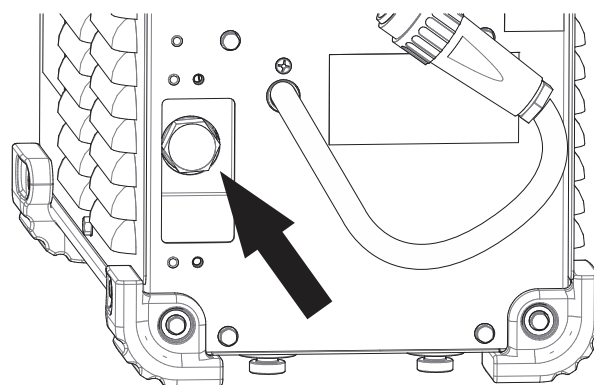


Figure 10



## **Customer Assistance Policy**

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

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

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to [www.lincolnelectric.com](http://www.lincolnelectric.com) for any updated information.



## Troubleshooting

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.



### WARNING

If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact the nearest authorized Technical Service Center or Lincoln Electric for technical troubleshooting assistance before you proceed.

LOCATE PROBLEM (SYMPTOM).	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
Cooler does not operate.	<ul style="list-style-type: none"> <li>Power lead unplugged.</li> <li>No power at outlet.</li> <li>Power lead is damaged.</li> <li>Water lines blocked or crimped.</li> <li>Leak in gun or water hoses.</li> <li>Reservoir empty.</li> </ul>	<ul style="list-style-type: none"> <li>Plug in power lead.</li> <li>Check outlet circuit breaker.</li> <li>Repair damaged lead or order new lead set.</li> <li>Clear blockage in hose. Avoid kinking or putting sharp bends in water lines.</li> <li>Repair leak.</li> <li>Fill reservoir.</li> </ul>
Internal water leak.	<ul style="list-style-type: none"> <li>Hose clamp loose on one of internal hoses.</li> <li>Internal hose punctured.</li> <li>Heat exchanger leaking.</li> </ul>	<ul style="list-style-type: none"> <li>Tighten or replace hose clamp.</li> <li>Replace punctured hose with new hose.</li> <li>Replace heat exchanger.</li> </ul>
Leak at inlet/outlet connector block.	<ul style="list-style-type: none"> <li>Hose clamp loose.</li> </ul>	<ul style="list-style-type: none"> <li>Tighten hose clamp onto hose.</li> </ul>
Torch or gun runs hot.	<ul style="list-style-type: none"> <li>Unit placed by area of extreme heat.</li> <li>Low coolant flow.</li> <li>No coolant flow.</li> <li>Fan not operating.</li> </ul>	<ul style="list-style-type: none"> <li>Move unit away from hot air.</li> <li>See Low Coolant Flow Section.</li> <li>See No Coolant Flow Section.</li> <li>Reference fan section.</li> </ul>
Fan operates but there is low coolant flow.	<ul style="list-style-type: none"> <li>Leak in torch/gun or hoses.</li> <li>Torch/gun or hoses partially obstructed.</li> <li>Reservoir empty or very low.</li> </ul>	<ul style="list-style-type: none"> <li>Repair leak.</li> <li>Clear obstruction.</li> <li>Refill reservoir.</li> </ul>
Fan operates but there is no coolant flow.	<ul style="list-style-type: none"> <li>Pump failure.</li> <li>Pump seized.</li> </ul>	<ul style="list-style-type: none"> <li>Replace pump.</li> <li>Replace pump.</li> </ul>
Pump operates, but fan does not.	<ul style="list-style-type: none"> <li>Fan blade contacting heat exchanger.</li> <li>Fan motor failure.</li> </ul>	<ul style="list-style-type: none"> <li>Replace fan.</li> <li>Replace fan.</li> </ul>
Cooler trips outlet circuit breaker.	<ul style="list-style-type: none"> <li>Circuit overloaded.</li> <li>Cooler electrical component failure.</li> </ul>	<ul style="list-style-type: none"> <li>Check outlet circuit breaker.</li> <li>Replace suppressor assembly and rectifier inside of cooler.</li> </ul>



## WEEE

07/06



Do not dispose of electrical equipment together with normal waste!

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

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

## Spare Parts

12/05

### Part List reading instructions

- Do not use this part list for a machine if its code number is not listed. Contact the Lincoln Electric Service Department for any code number not listed.
- Use the illustration of assembly page and the table below to determine where the part is located for your particular code machine.
- Use only the parts marked "X" in the column under the heading number called for in the assembly page (# indicate a change in this printing).

First, read the Part List reading instructions above, then refer to the "Spare Part" manual supplied with the machine, that contains a picture-descriptive part number cross-reference.

## Authorized Service Shops Location

01/19

- The purchaser must contact Lincoln Electric or Authorized Service Facility about any defect claimed under warranty period.
- Contact your local Sales Representative for assistance in locating the nearest Authorized Service Facility.

## Electrical Schematic

Refer to the "Spare Part" manual supplied with the machine.



## Accessories

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W000010167	FREEZCOOL (coolant)
W000404213	PRESTOTIG 200 AC/DC
W000404214	CITOTIG 200 AC/DC
K14189-1	ASPECT 200



Dimension Diagram

08/2023

