

COOL ARC® 25

OPERATOR'S MANUAL



ENGLISH



Lincoln Electric Bester Sp. z o.o.
ul. Jana III Sobieskiego 19A, 58-260 Bielawa, Poland
www.lincolnelectric.eu



12/05

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:	
.....

ENGLISH INDEX

Technical Specifications.....	1
Electromagnetic Compatibility (EMC)	2
Safety.....	3
Installation and Operator Instructions	5
WEEE	12
Spare Parts.....	12
Authorized Service Shops Location	12
Electrical Schematic	12
Accessories	13
Dimension Diagram.....	14

Technical Specifications

NAME		INDEX	
COOL ARC® 25		K14037-1	
INPUT			
Input Voltage U ₁	Rated current		Frequency
230 ± 10% single phase	0,95A		50 Hz
RATED OUTPUT AT 40°C			
Flow range		0,5 to 3,3 l/min	
MIG		with torch 4,5m: 1,7 ÷ 1,8 l/min	
TIG		with torch 3,8m: 1,3 ÷ 1,4 l/min	
Open flow		3,3 l/min	
PARAMETERS OF THE COOLER'S RESERVOIR			
Reservoir size		8,5 l	
COOLANT			
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.		
	Automotive anti-freeze. These coolants will damage the pump and block of the heat exchanger, affecting cooling performance.		
PHYSICAL DIMENSIONS			
Height	Width	Length	Weight
748 mm	238 mm	248 mm	17 Kg
OTHERS			
Protection Rating	Operating Temperature		Storage Temperature
IP23	-10°C to +40°C		-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

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

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

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

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.

Product Description

COOL ARC® 25 cooler is a stand alone recirculating cooling system designed for use with water cooled TIG, MIG, PAC (Plasma Arc Cutting) and PAW (Plasma Arc Welding). Additional applications include resistance welding, water cooled inductive heating.

The fittings located on the back of the **COOL ARC® 25** are two a female left-hand threaded quick water fittings. (type 21KATS09MPX). Quick Connect Water Adapter converting quick water fitting to a male 5/8"-18 left hand hose fitting is supplied with each **COOL ARC® 25**. The cooler is also equipped with a bracket so it can be mounted at the rear of a Lincoln power source, to the dual cylinder undercarriage.

COOL ARC® 25 cooler is designed for use with all water-cooled TIG and medium duty MIG torches and guns.

The **COOL ARC® 25** coolers bring new technology in the areas of pump, heat exchanger and reservoir designs to the water cooler market. These technologies allow the **COOL ARC® 25** coolers to be lighter in weight, lower in energy consumption.

Warranty

Warranty for this product is 3 year after the date of purchase. For any warranty claim, contact a certified Lincoln service center.

Installation

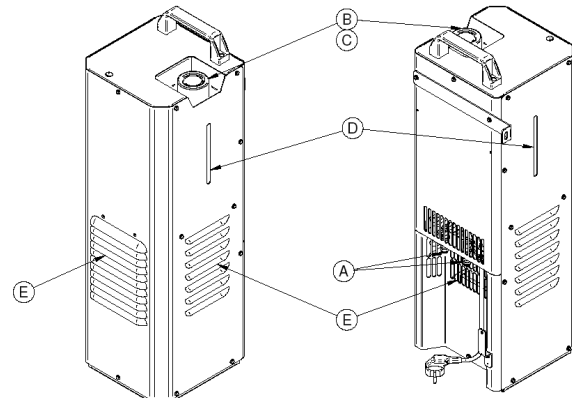


Figure 1

Coolant INLET and OUTLET fittings are placed at the rear of the unit (A). The right side fitting is marked "coolant out" (supplies coolant to the welding equipment); the left side one is marked "coolant in" (takes warm coolant from the welding equipment).

The FILL CAP of the coolant reservoir is on the top of the unit (B). Fill Cap can be removed by twisting it off.

The coolant FLOW INDICATOR is accessed by removal of the reservoir fill cap. Actual return flow is directly visible by the fill opening (C) with the unite in the vertical position.

Coolant volume can be monitored through sight window on the front panel (D). The maximum coolant level is indicated by the upper marker, the minimum level by the lower one.

Air flow louvers (E): Design of the front case allows for ease access to internal parts at repairing. Air flow louvers secure adequate air circulation. The louvers on the front of the case allow to suck in cold air from bottom of the unit. Hot air is removed by the side and rear louvers.

Filling The Reservoir

Proper Coolant Addition

FREEZCOOL - W000010167 is recommended coolant for **COOL ARC® 25**.

For use above freezing: Tap, distilled, deionized, mineral water. For use below freezing: water and pure ethylene glycol mixture (10% glycol between at 0°C and 30% at -15°C).



WARNING

DO NOT USE PREPACKAGED WELDING INDUSTRY COOLANTS. These coolants may contain oil-based substances which attack the plastic components in the pump of the **COOL ARC® 25** cooler and severely reduce pump life. Once added to the cooler, the substances are virtually impossible to purge from the water lines and heat exchanger.

To avoid freeze damage and water leakage in shipment, every **COOL ARC® 25** unit is delivered empty with no coolant in the system. To fill the unit, locate the plastic reservoir fill cap at the front middle of the unit.

NOTE: The unit can be filled only vertically.



WARNING

UNPLUG THE COOLER BEFORE FILLING THE RESERVOIR.

Filling:

Tilt the unit backward and pour 8,5 liters of coolant into the reservoir fill hole through a funnel.



WARNING

AVOID SPILLING COOLANT INTO THE FRONT CASING OF THE UNIT.

Unit will be full when coolant lies just below the reservoir opening with the unit in its upright position.

NOTE: DO NOT ADD MORE THAN 8.5 LITERS OF COOLANT INTO THE RESERVOIR.

The fill cap contains a pressure release air hole which must not be blocked by overfilling the reservoir with coolant.

Be certain to replace the reservoir fill cap when the reservoir is full. Operation of the **COOL ARC® 25** cooler without the fill cap in place can cause poor cooling efficiency, evaporation loss of coolant, and low product life.

Water Hoses Connection

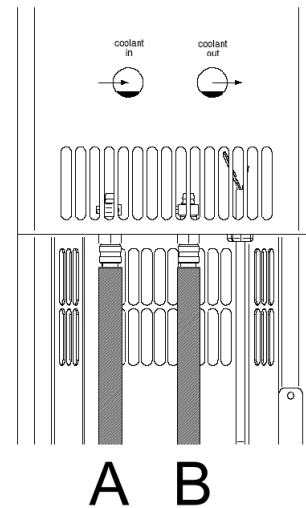


Figure 2 Water Hoses Connection Diagram

A. FROM HEAT SOURCE (RED)

B. TO HEAT SOURCE (BLUE)

Water hoses connection is made with quick water fittings (type 21KATS09MPX). In case of hoses with 5/8"-18 left hand nut, you have to use Quick Connect Water Adapter, which is delivered with the unit. In this case, firstly you should connect the adapters to the water hoses and then connect them to the quick water fittings of the cooler.

In case of disconnection water hoses from the cooler, firstly you should disconnect quick water fittings, which are equipped with the automatic outflow blockade.

If you firstly unplug the connection quick water fitting - 5/8"/18 nut, it can cause coolant outflow from the cooler reservoir.

Before water hoses installing to the cooler, you should check if the tread of the connector water hose nut matches the quick water connectors placed in the connector block on the back of the unit.

All Lincoln products have water hoses which are equipped with 5/8"-18 left hand nuts so hose connectors must be matched the quick water fittings on the back of the cooler, in the following way:

- Take the two quick connect water adapters (5/8-18 left hand hose fitting to quick water fitting) supplied with the cooler and thread hoses nuts into the adapters. Secure the connector nuts of the hoses tightly with a wrench so that leaking does not occur. Then take the INLET hose (colored or tagged blue on most hoses) and attach it into the coolant OUT line located on the right side of the connector block at the back of the cooler. Then take the OUTLET hose (colored or tagged red on most hoses) and attach it into the coolant IN line located on the left side of the connector block.

For products having water hoses equipped with quick water fittings which mate with fittings on the connector block at the back of the cooler, you should:

- Save the two quick water adapters for future use. Take INLET hose (colored or tagged blue on most hoses) and attach it into the coolant OUT line located on the right side of the connector block at the back of the cooler. Then take the OUTLET hose (colored or tagged red on most hoses) and attach it into the coolant IN line located on the left side of the connector block.

WARNING

BE CERTAIN THAT NO LEAKS EXIST WHEN COOLER IS TURNED ON. A LEAK WILL DEplete RESERVOIR VOLUME, CAUSE POOR OR COOLING PERFORMANCE AND REDUCE GUN, TORCH OR PUMP LIFE.

NOTE: Be certain that only 5/8"-18 left hand male nuts with clean and smooth threads are used on your water hoses. Wrong nuts and bad connections can cause coolant leaking, cooling system efficiency reducing and at last the cooler damaging.

Mounting

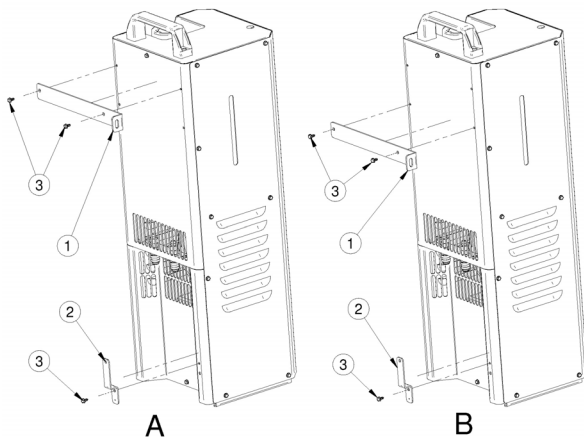


Figure 3A Bracket Mounting Depending on the Power Source Height

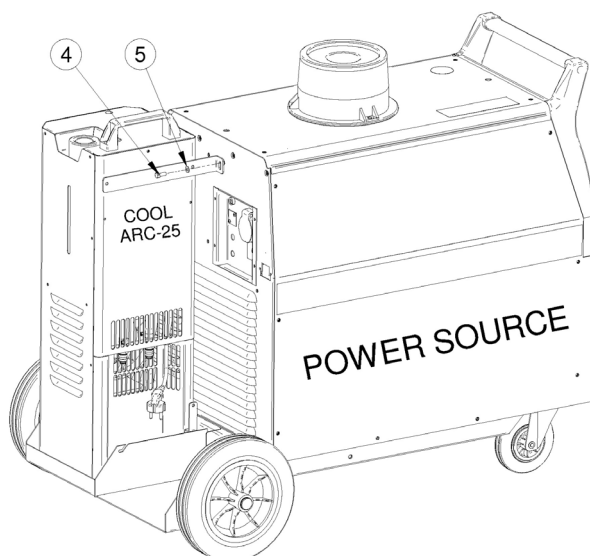


Figure 3B COOL ARC® 25 Mounting to the Power Source Diagram

1. Main Mounting Bracket
2. Water Hoses Bracket
3. Blackened Screw B6P 4,8x13
4. Bolt M6x16 S6K
5. Plain Washer M6 P/M-82005

Before mounting **COOL ARC® 25** to the power source firstly you must mount the water hoses bracket. Use blackened screw B6P 4,8x13 and thread the water hoses bracket to the power source case, paying attention to the bracket stamp which must be fit into the hole below the hole for the blackened screw. After mounting you should hang the water hoses on it. It allows to arrange water hoses without squeezing or sharp bends.

Vertical Installation COOL ARC® 25 on a Power Source with a Cylinder Undercarriage

For the **COOL ARC® 25** vertically mounted on a power source with a cylinder undercarriage, you should use the main mounting bracket. For proper installation, you should see Figure 3A and Figure 3B. Using provided blackened screws and proper holes in the cooler case, fasten the bracket to the cooler back. Then place the cooler on the undercarriage on its left side. Align the holes of the cooler bracket with the holes on the rivet nut in the back of the power source. Using provided bolt M6x16 S6K and plain washer M6 PN/M-82005 fasten the cooler bracket to the power source back. After installation you should check if the connection is firm.

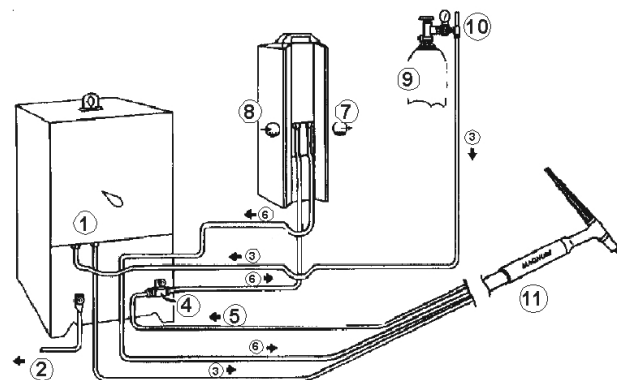


Figure 4 Water Cooled TIG Torch Connection

1. Gas In/Out
2. to Work
3. Gas
4. Power Cable Adapter
5. Hot Coolant from the Torch
6. Coolant
7. Coolant Out
8. Coolant In
9. Argon Gas Cylinder
10. Regulator Flowmeter
11. TIG Torch

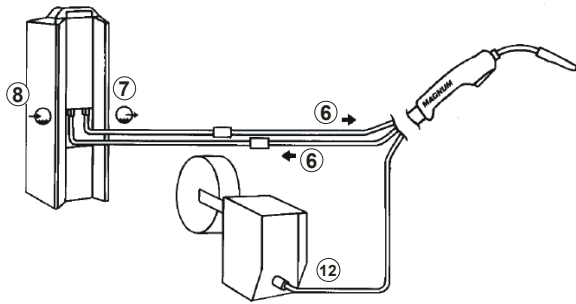


Figure 5 Water cooled MIG gun connection

- 6. COOLANT
- 7. COOLANT OUT
- 8. COOLANT IN
- 12. GUN CABLE

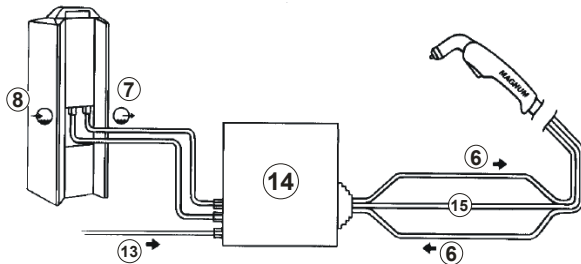


Figure 6 Water cooled Plasma system connection

- 6. COOLANT
- 7. COOLANT OUT
- 8. COOLANT IN
- 13. AIR
- 14. PLASMA, CUTTING, POWER SOURCE
- 15. ELECTRODE CABLE & AIR

The following should always be observed when operating the **COOL ARC® 25**:

- Never operate the cooler with case off.
- Immersion in water around electrical lines can cause electrical shock.
- Never place fingers into openings of cooler. Moving parts can injure.
- Unplug the cooler before filling the reservoir.
- Never operate the cooler with the reservoir fill cap off.
- Never operate the cooler with the reservoir empty.

Operating Precautions

The following should always be observed when operating any **COOL ARC® 25** cooler:

- Check the reservoir daily.
- Keep the reservoir full especially after changing any water lines.
- Never operate the cooler with the reservoir fill cap removed.
- Avoid placing the cooler near areas of extreme heat.
- Avoid placing the cooler near a flux hopper or an area where dust build-up is extreme.
- Avoid kinking or putting sharp bends in any water lines.
- Keep all water lines clean.

Turning The System ON

After filling the reservoir and connecting the coolant hoses to the **COOL ARC® 25** cooler per the Installation Sections, plug the unit into an electrical receptacle for start-up operation. Be certain that the power input into the unit matches the cooler's rated input. **COOL ARC® 25** cooler cordsets contains a 90 angled CEE 7/4, 7/7 Schuko compatible plug. The plug mates with an auxiliary receptacle located at the back of many international Lincoln power sources for power supply to a **COOL ARC® 25** cooler.

You will be able to hear the fan running and feel air flow out of the back of the unit when the cooler is operating. When first starting the unit, check all of the water lines to insure that no water leaks are present. Water leakage causes poor welding performance, poor cooling performance, low welding component and pump life and potential electrical safety hazards.

Cooling Efficiency

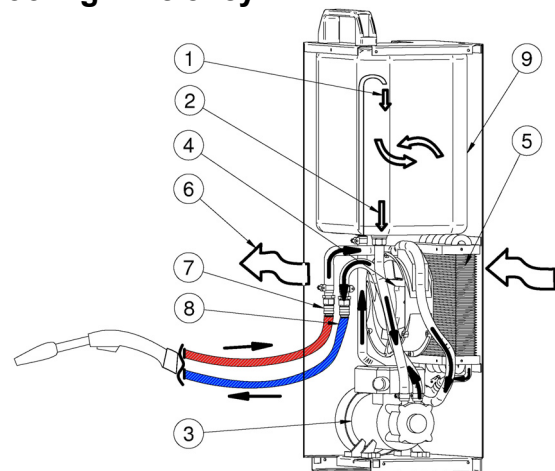


Figure 7 Circulation of COOL ARC® 25

- 1. COOLANT RETURN
- 2. COOLANT IN TAKE
- 3. PUMP
- 4. FAN
- 5. HEAT EXCHANGER
- 6. HEATED AIR OUT
- 7. COOLANT OUT
- 8. COOLANT IN
- 9. RESERVOIR

The high cooling efficiency **COOL ARC® 25** offers a cooler, more comfortable weld than conventional air-cooled procedures as well as leading competitors water cooled systems. The corrugated radiator of the heat exchanger improves heat convection with minimal air flow restriction. This design ensures a durable construction which is able to withstand impact of different objects through air slots. Figure 7 shows work principles of the **COOL ARC® 25**.

The **COOL ARC® 25** cooler effectively removes the heat of the arc away from the gun or torch handle and places it into the exiting air flow at the back of the cooler. Ambient air temperature can affect the cooling parameters of the **COOL ARC® 25**.

For example:

- COOL day (50°F, 10°C): More HEAT is transferred from the water in the heat exchanger to the air. The water is COOLER and more HEAT is transferred from the gun or torch to the water.

RESULT: THE GUN OR TORCH FEELS COOLER

- •HOT day (100°F, 38°C): Less HEAT is transferred from the water in the heat exchanger to the air. The water is HOTTER and less HEAT is transferred from the gun or torch to the water.

RESULT: THE GUN OR TORCH FEELS HOTTER.

Unlike other water coolers that depend on bulky reservoir size, the high efficiency components of **COOL ARC® 25** cooler allows the reservoir size to be small. The result is a lightweight, portable unit.

Cooling Efficiency - Recommended Values

COOL ARC® 25 ref: K14037-1	
Max welding current TIG 100% duty cycle	350A
Max welding current MIG 100% duty cycle	350A

Transport

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

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.

Heat Exchanger Maintenance

To maintain maximum efficiency, the heat exchanger should be kept clean from dust and dirt buildup. Clean the heat exchanger periodically using a vacuum hose or low pressure air line. Avoid placing the unit near a flux hopper or a flux waste container. A clean heat exchanger offers better cooling performance and longer product life. If extremely dirty conditions exist, it may be necessary to remove the heat exchanger completely from the cooler for a thorough soap and water cleaning of the cooling fins. Use care to avoid damaging the fins.

Reservoir Maintenance

The reservoir volume should be checked daily before using the cooler. You can do it by observation the level of the coolant in the sight window on the front panel. The unit is full when the coolant level reaches upper marker. Keep the reservoir full especially after changing the water lines. The cooler should always be operated with the reservoir fill cap on. In areas where dust can be introduced into the reservoir through water lines or reservoir fill cap removal, periodically flush the unit out. Dump the old coolant and rinse the inside of the reservoir. Add new coolant when finished.

A reservoir free from particle buildup and dirt offers better cooling efficiency and longer pump, gun and torch life.

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.

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, or 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 has to be turned off and the power lead has 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.

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 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 with power switch on (Switch pushed to "1" position).	<ul style="list-style-type: none"> • Power cord unplugged. • No power at outlet. • Power cordset damaged. • Water lines blocked or crimped. • Leak in gun or water hoses. • Reservoir empty. • Power switch faulty. 	<ul style="list-style-type: none"> • Plug in power cord. • Check outlet circuit breaker. • Repair damaged cord or order new cordset. • Clear blockage in hose. Avoid kinking or putting sharp bends in water lines. • Repair leak. • Fill reservoir. • Replace power switch.
Internal water leak.	<ul style="list-style-type: none"> • Hose clamp loose on one of internal hoses. • Internal hose punctured. • Heat exchanger leaking. 	<ul style="list-style-type: none"> • Tighten or replace hose clamp. • Replace punctured hose with new hose. • Replace heat exchanger.
Leak at inlet/outlet connector block.	<ul style="list-style-type: none"> • Loose connector fitting. • Hose clamp loose. 	<ul style="list-style-type: none"> • Tighten connector nut. (5/8-18 left hand thread). • Tighten hose clamp onto hose.
Torch or gun runs hot.	<ul style="list-style-type: none"> • Unit placed by area of extreme heat. • Low coolant flow. • No coolant flow. • Fan not operating. 	<ul style="list-style-type: none"> • Move unit away from hot air. • See Low Coolant Flow Section. • See No Coolant Flow Section. • Reference fan section.
Fan operates but there is low coolant flow.	<ul style="list-style-type: none"> • Leak in torch/gun or hoses. • Torch/gun or hoses partially obstructed. • Reservoir empty or very low. 	<ul style="list-style-type: none"> • Repair leak. • Clear obstruction. • Refill reservoir.
Fan operates but there is no coolant flow.	<ul style="list-style-type: none"> • Pump failure. • Pump seized. 	<ul style="list-style-type: none"> • Replace pump. • Replace pump.
Pump operates, but fan does not.	<ul style="list-style-type: none"> • Fan blade contacting heat exchanger. • Fan motor failure. 	<ul style="list-style-type: none"> • If fan blades are plastic, replace. Reset fan clearance and secure fan to motor shaft. • Replace fan motor with Fan Motor and Mount Assembly.
Cooler trips outlet circuit breaker.	<ul style="list-style-type: none"> • Circuit overloaded. • Cooler electrical component failure. 	<ul style="list-style-type: none"> • Check outlet circuit breaker. • Replace suppressor assembly and rectifier bridge inside of cooler.

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, which contains a picture-descriptive part number cross-reference).

Authorized Service Shops Location

09/16

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

Electrical Schematic

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

Accessories

W000010167	FREEZCOOL (coolant)
------------	---------------------

Dimension Diagram

07/2023

