COOL ARC® 26

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 & When	e Purchased:	

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Technical Specifications

NAME		INDEX					
	COOL ARC® 26			K14	182-1		
INPUT							
	Input Voltage U₁			Input Amperes I _{1max}			
		230 V ± 15%				1,5	
COOL ARC® 26			± 15%		1A		
	440 V ± 15% 0,9A						
Frequency			EMC C	Class			
COOL ARC® 26			0 Hz			A	
PARAMETERS RATING							
The cooling power of flow 1 liter per minute at							
		temperatu			Maximum pressure rate		
COOL ARC® 26	0,84 kW			0,47 MPa		ИРа	
		PARAMET	ERS O FTHE	COOLER'S	RESERVOIR		
	Maximum reservoir capacity			Minimum required reservoir capacity			
COOL ARC® 26	26 4 liters			3 liters			
	COOLANT						
COOL ARC® 26 Recommended coolant FREEZCOOL - W000010167							
							polants may contain oil- ponents of the cooler.
COOL ARC® 26	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							
		Weight Height			Width		Length
COOL ARC® 26			150 mm				
	OTHERS						
Protection Rati	ng	Operating (t=68°F=		Operating Temperature Storage Tem		torage Temperature	
IP23	IP23 ≤ 90 %		%	from 14 °F to 104 °F from -13 °F to 131 °F (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.

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

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



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.





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.



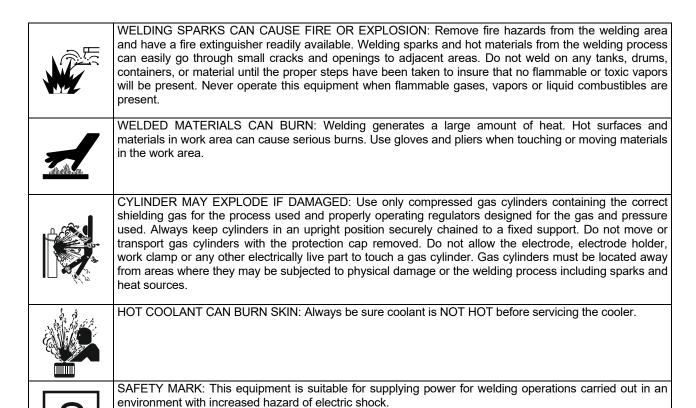
ARTIFICIAL OPTICAL RADIATION: According with the requirements in 2006/25/EC Directive and EN 12198 Standard, the equipment is a category 2. It makes mandatory the adoption of Personal Protective Equipments (PPE) having filter with a protection degree up to a maximum of 15, as required by EN169 Standard.



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.



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

Introduction

COOL ARC® 26 cooler is a stand alone recirculating cooling system designed to use with MIG welding power sources that lists the **COOL ARC® 26** as an approved accessory.

The following equipment is included with the COOL ARC® 26:

- Hose with quick water connector:
 - Blue (115 mm), Red (150 mm) hose for connection to a welding source.
 - Black hose that will be used in filing procedure (200 mm)
- M5x20 screw for fixing to the power source by spanner size 8.

The **COOL ARC® 26** is delivered empty with no coolant in the system. FREEZCOOL - W000010167 is recommended.

Unpacking

Unpacking the COOL ARC® 26

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® 26** for parts orders and future maintenance service.

Installation on Power Source

The COOL ARC® 26 need to be mounted directly to the chassis of MIG welding power source that lists the COOL ARC® 26 as an approved accessory.

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® 26** turn off the power source and disconnect it from the input supply.

INSTALATION:

- Unscrew the side panel (Figure 1).
- Remove the side panel (Figure 2).
- Unscrew and remove the cover bracket (Figure 3).
- Place cooler in the base positioning pins (Figure 4).
- Screw the cable holder bracket (Figure 5).
- Connect the 10-pin plug to receptacle and screw protective earth green/yellow wire terminal (Figure 6).
- Screw side panel (Figure 7).
- Screw side panel. (Figure 8).
- Final assembly (Figure 9).



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

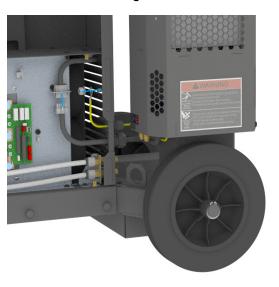


Figure 6



Figure 7



Figure 8

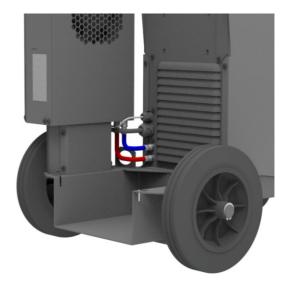


Figure 9

Installation and Operator Instructions

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

NARNING

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.

N WARNING

Avoid placing the cooler near areas of extreme heat.

RECOMMENDED POWER SOURCE

The COOL ARC® 26 is designed for use with water-cooled torches. The COOL ARC® 26 must be used with a MIG welding power source that lists the COOL ARC® 26 as an approved accessory.

Input Supply Connection

The COOL ARC® 26 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.

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.

Controls and Operational Features

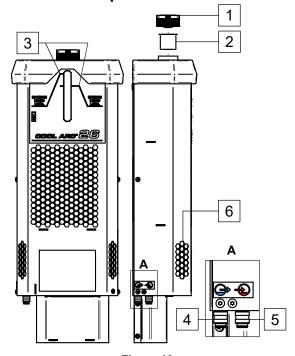


Figure 10

The COOL ARC® 26 comes equipped with a flow sensor that triggers an error code to the machine to protect the Torch from over-heating when inadequate

coolant flow is detected through the flow sensor. The Error Code fault (Error 0092) can indicate a possible kink in the torch lines, damage and/or a leak in the Torch coolant lines.

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

- 1. Reservoir for Coolant with Cap: The translucent reservoir enables control of the coolant level.
- 2. Reservoir filter: 400µm.
- 3. <u>Minimum and maximum Liquid Level</u>: The minimum recommended liquid level is 3 liters.
- 4. Quick Connect Coupling: Coolant outlet (supplies cool coolant to the torch/gun).
- 5. <u>Quick Connect Coupling:</u> Coolant inlet (takes warm coolant from torch/gun).
- 6. Airflow Slots: Enable proper circulation of air cooling.

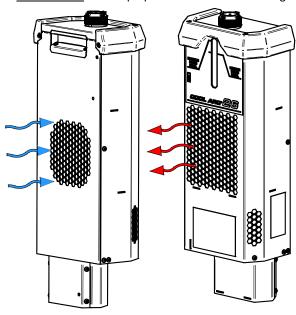


Figure 11

Circulation of Coolant in the Cooler

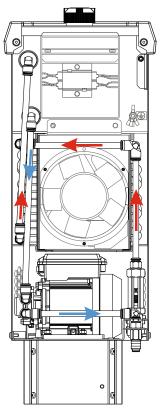


Figure 12

! WARNING

Avoid kinking or putting sharp bends in any water lines.

! WARNING

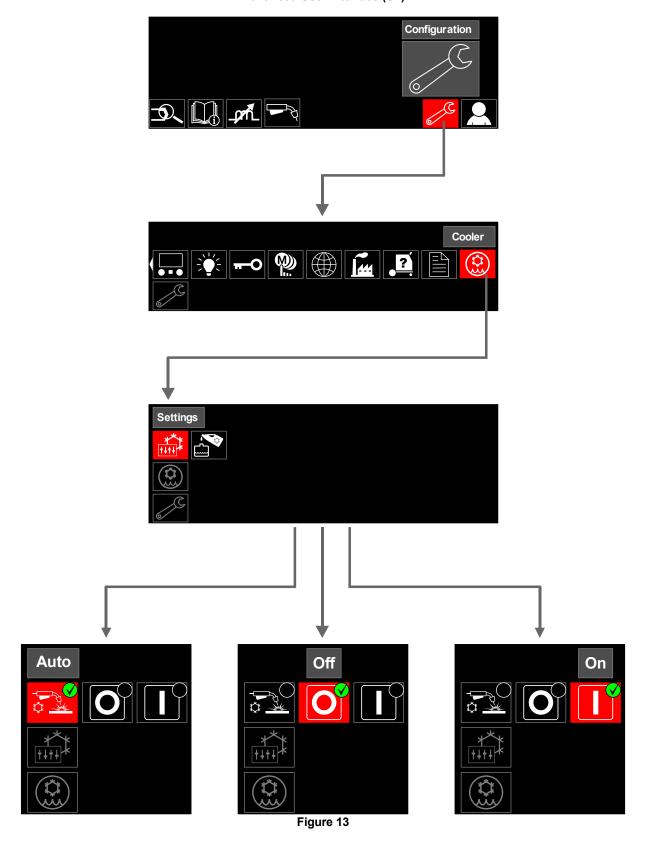
Never operate the cooler with case off.

Modes of operation

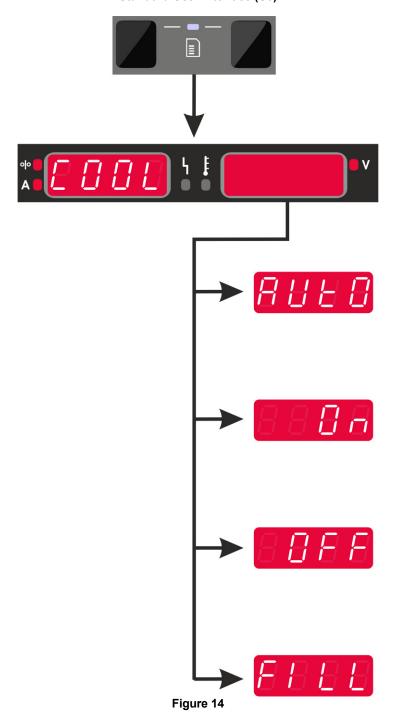
COOL ARC® 26 can be operate using two interfaces. The standard version U0 (Figure 14) uses two LED displays. While the advance version U7 (Figure 13) uses a 7 " display. The method of operating both interfaces is describe in the operating instructions for the dedicated power source. COOL ARC® 26 can be set in modes:

Status	Description
Auto (default)	The cooler switches on after starting of the welding and turns off after the time that is required to cool down the torch after welding.
OFF	Cooler is turned off.
ON	Cooler is permanently on.

Advanced User Interface (U7)



Standard User Interface (U0)



Filling the reservoir and water lines



! WARNING

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

The cooler should be filled and used only in the vertical 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.



Never operate the cooler with the reservoir empty.

N WARNING

Do not start the cooler with less than 3 liters of coolant. Operating without enough coolant can prevent full priming of the system and may damage the pump.

- Assemble the welding setup (see Installation on Power Source chapter).
- Turn the power source on. If COOL ARC® 26 is connected properly, power source will recognize it.
- When the COOL ARC® 26 was connected for a first time welding source automatically starts the filling procedure (Figure 15 or 24). Remove the reservoir cap to prevent generating a partial vacuum.
- Fill the coolant reservoir to the maximum level 4 liters
 (Figure 16 or 25).
- Connect the short black hose with quick water connectors (BYPASS included with the equipment) to blue outlet socket on front of the power source. Observe the coolant circuit, wait till the coolant starts leak from the BYPASS. For a coolant overflow recommended is to use FREEZCOOL reservoir -(Figure 17 or 26).
- When coolant will start leaking from BYPASS, connect second quick connector of BYPASS to red inlet socket on front of the power source - (Figure 18 or 27).
- Wait until the coolant fully circulates through the cooling system and returns into the reservoir -(Figure 19 or 28).
- Disconnect the BYPASS.
- Connect the torch hoses and interconnection cable when using power source with separate wire feeder – (Figure 20 or 29).
- Wait until the coolant fully circulates through the cooling system - (Figure 21 or 30).
- Check the coolant level and add if required fill in coolant to reach level between minimum and maximum, which is present on front label COOL ARC® 26 - (Figure 22 or 31).
- · Tighten the cap.
- If the filling process is successful (Figure 23 or 32), the cooler switches to AUTO mode.

Advanced User Interface (U7)



Figure 15

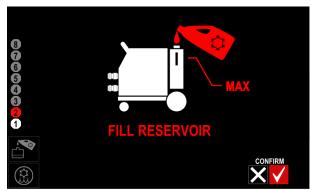


Figure 16

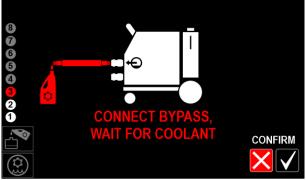


Figure 17

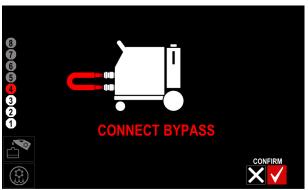


Figure 18

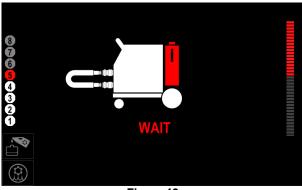


Figure 19

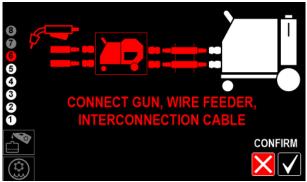


Figure 20

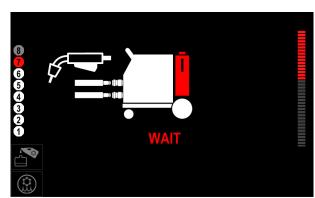


Figure 21

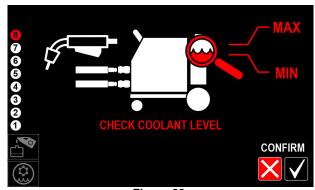


Figure 22

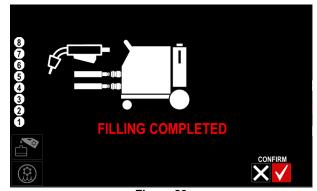


Figure 23

Standard User Interface (U0)



Figure 24



Figure 25



Figure 26



Figure 27



Figure 28



Figure 29



Figure 30



Figure 31



Figure 32



If different **COOL ARC® 26** is connected, filling procedure should be started manually.

First follow as shown Figure 33 or 34 and then repeat steps shown on Figure 15 or 24 to Figure 23 or 32.



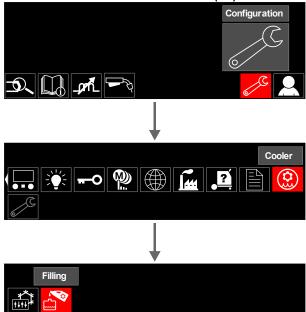
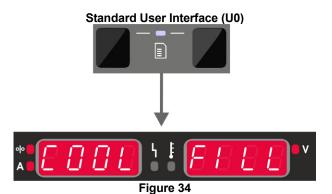


Figure 33



Filling procedure failed

Filling the reservoir and water lines first time

If procedure can not be finished at the first time, an image will be shown on the screen as on Figure 35 or 36.

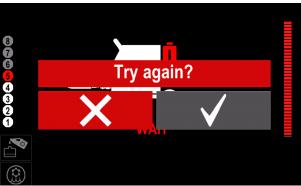


Figure 35



If during the second attempt filling procedure failed (Figure 37 or 38) please turn the power source off and check:

- cooling system hoses conditions (bent or damaged);
- coolant level.



Figure 37



After review turn on the power source. Machine will automatically start with filling procedure again.



If the filling procedure fails, contact with the nearest Technical Service Center or Lincoln Electric. Machine usage without proper functioning of COOL ARC® 26 can cause thermal damage of water torch or COOL ARC® 26 machine.

Error Message - lack coolant flow

If coolant flow is not detected by system during welding, an image will be shown on the screen as on Figure 39 or 40, machine will protect itself by automatically stop welding output.



Figure 39



Figure 40

Press the left button / knob to delete error message. If **COOL ARC® 26** is in **ON** mode machine reset is required to continue welding. This behavior is to protect the pump from damage and the torch from overheating.

WARNING

If during next welding attempts machine still display error 0092 Figure 39 please contact with the Technical Service Center or Lincoln Electric.

Transport

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

Maintenance



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.

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.



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		
	Power lead unplugged.	Plug in power lead.		
	No power at outlet.	Check outlet circuit breaker.		
Cooler does not	Power lead is damaged.	Repair damaged lead or order new lead set.		
operate	Water lines blocked or crimped.	Clear blockage in hose. Avoid kinking or putting sharp bends in water lines.		
	Leak in gun or water hoses.Reservoir empty.	Repair leak.Fill reservoir.		
	Blown fuse.	Replace fuse.		
	Hose clamp loose on one of internal hoses.	Tighten or replace hose clamp.		
Internal water leak	Internal hose punctured.Heat exchanger leaking.	Replace punctured hose with new hose.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.Fan not operating.	Move unit away from hot air.Reference fan section.		
Fan operates but there	Leak in torch/gun or hoses.Torch/gun or hoses partially obstructed.	Repair leak. Clear obstruction.		
is low coolant flow	Reservoir empty or very low.	Refill reservoir.		
Fan operates but there is no coolant flow	Pump failure.Pump seized.	Replace pump.Replace pump.		
Pump operates, but fan does not	Fan blade contacting heat exchanger.Fan motor failure.	Replace fan.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.Faulty flow sensor.	Fill reservoir.Replace flow sensor.		

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

2/05

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

W000010167	FREEZCOOL (coolant)
T-5041-003-1R	RED HOSE (150 mm)
T-5041-004-1R	BLUE HOSE (115 mm)
D-2218-150-1R	BYPASS HOSE (200 mm)

