

HIGH VACUUM EXTRACTION TURBINE

LINC EXTRACTOR

SAFETY INSTRUCTIONS FOR OPERATING AND MAINTENANCE

No EM61000624



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Instructions

REF: 8695 8469

Original instructions

LINCOLN[®]
ELECTRIC

Thank you very much for the trust you have shown by choosing this piece of equipment. It will give you trouble-free service if it is used and maintained as recommended.

Its design, component specifications and manufacturing are in accordance with applicable European directives.

Please refer to the CE declaration enclosed to identify the directives applicable to it.

The manufacturer shall not be liable for any combination of parts not recommended by it.

For your safety, please follow the non-limitative list of recommendations and obligations, a large part of which are included in the Labour Code.

Please inform your supplier if you find any error in this instruction manual.

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INFORMATION

This technical literature is intended for the following machines or products:

- **LINC EXTRACTOR** ➤ extraction turbine EM61000624



This manual and the product with which it is associated refer to the applicable standards in force.



Use of the equipment:

Please read this manual before you start handling, installing or using the machine. Keep the manual safe in a place known to the machine user and maintenance personnel until the machine is finally destroyed.

This manual explains how to transport, install, use and maintain the machine. It cannot in any event replace the experience of the user for operations of varying difficulty. Before the machine is used by a new user, make sure that they have read this manual and understood all the explanations provided.

For any further information, please feel free to contact the technical staff of **LINCOLN ELECTRIC**.



Display and pressure gauge:

Measurement instruments or displays of voltage, intensity, speed, accuracy etc. are to be considered as indicators, whether they are analogue or digital.



In spite of all the measures applied, invisible residual risks may still remain. Residual risks can be reduced if the safety instructions are observed, the machine is used as recommended and general service instructions are followed.



Machine guarantee:

This machine is guaranteed for 12 months from the date of purchase.

During the first 12 months of use, defective parts shall be replaced free of charge providing the damage is not the result of improper use of the machine.

The machine guarantee shall cease automatically when the machine is no longer the property of the original buyer.

The terms of validity of the guarantee shall be subject to verification and acceptance by our sales department.

Any nonconforming use that could damage the machine shall not be covered by the guarantee.

For the guarantee to operate, the equipment must be inspected by our technical department.




























Assistance:

LINCOLN ELECTRIC is at your disposal for any work on your equipment. Please send any requests to the technical department.

HOT LINE (+33) 825 132 132

MEANING OF SYMBOLS

	Reading the manual/instructions for use is mandatory.		Indicates a hazard.
	Mandatory use of safety shoes.		Warning of an electricity risk or hazard.
	Mandatory use of hearing protection.		Warning of a risk or hazard due to an obstacle on the floor.
	Mandatory use of a safety helmet.		Warning of a risk or hazard of falling with a level change.
	Mandatory use of safety gloves.		Warning of a risk or hazard due to suspended loads.
	Mandatory use of safety glasses.		Warning of a risk or hazard due to a hot surface.
	Mandatory use of a safety visor.		Warning of a risk or hazard due to moving mechanical parts.
	Mandatory use of safety clothing.		Warning of a risk or hazard due to a closing movement of mechanical parts of a machine.
	Make sure you clean the working zone.		Warning of a risk or hazard due to laser radiation.
	Mandatory use of breathing protection.		Warning of a risk or hazard due to an obstacle at a height.
	Visual inspection required.		Warning of a risk or hazard due to the presence of a pointed part.
	Indicates a lubrication operation.		Wearers of pacemakers may not be admitted in the designated area.
	Requires maintenance action.		

DECLARATION OF CONFORMITY



LINCOLN ELECTRIC FRANCE SAS
Avenue Franklin Roosevelt
76120 – LE GRAND QUEVILLY

High Vacuum Extraction Turbine

CE DECLARATION OF CONFORMITY

1) CE/EU DECLARATION OF CONFORMITY

Dear customer,

This CE/EU declaration of conformity certifies that the supplied equipment complies with applicable laws and regulations when used in accordance with the enclosed instructions. Any other assembly or modification would void our certification. That is why you are asked to call in the manufacturer for any modifications you wish to make. Failing that, the company responsible for the modification must repeat the certification process. In that case, we would not be liable for the new certificate in any way. Please hand this document over to your technical department or purchasing department for filing.

DESCRIPTION: LINC EXTRACTOR Turbine

TYPE: EM61000624

NUMBER: See name plate

2) This equipment complies with European directives.

☒ **2006/42/EC**

☒ **2011/65/EU**

☒ **2014/30/EU**

3) Based on the following harmonised standards:

- **EN ISO 12100: 2010**
- **EN ISO 13857: 2019**
- **EN ISO 12499**
- **EN 60204-1**

4) Air Treatment Products Manager, authorised to compile the technical manufacturing document.

Mr Patrick DEGROOTE
LINCOLN ELECTRIC FRANCE SAS
Avenue Franklin Roosevelt
76120 – LE GRAND QUEVILLY

5) The Manufacturer.

LINCOLN ELECTRIC FRANCE SAS
Avenue Franklin Roosevelt
76120 – LE GRAND QUEVILLY

LE GRAND QUEVILLY,
17/07/2023

REVISION

REVISION : B DATE : 01/25

DESCRIPTION	PAGE
Update	

A - IDENTIFICATION

The information below should be provided in all correspondence.



1 - Limits of use of the machine or the installation



The limits of use of the machine (or installation) are provided in the different documents; please review them carefully before starting to use the machine (or installation).

For safety reasons, and in the light of our current knowledge of customer processes, the working area may be occupied only by one individual.

The machine (or installation) may only be operated by a single person above the age of 18 and trained in operating and use-related risks.

The machine (or installation) may only be used for welding or cutting applications; any other use of the machine is forbidden.

The machine (or installation) is designed for indoor use.
It may not be used outdoors.

Mechanical or electrostatic filtration systems are effective for the filtration of solid particles, but not gaseous particles.

The machine is designed for outdoor discharge.

If the fumes are discharged indoors (not recommended), the workshop in which fumes are discharged must be ventilated so as to not reach the professional exposure limit value of pollutants (fumes and gases).

The workshop must be adequately lit and ventilated.

Field of application:

Filtration of solid particles and dry dust, non-flammable gas, with no risk of explosion.

- Zinc, paper, flour, plant leaves, graphite, aluminium from grinding and sanding etc. and other such dust is to be excluded, because electrostatic discharge or welding splatter would present a risk for those using the filter.
- The air flow through the filter medium must not be at a temperature above 80 °C.
- This machine is not designed for extracting chemicals.
- The choice of equipment is made to suit the pollutants to treat. Extraction at source of the pollutant is only effective if the machine is operating at its nominal power (air flow at the nozzle).

Take particular care to:

- Not obstruct the air outlet of the machine.
- Not introduce external elements into the equipment (paper, cloths, cigarette butts etc.)
- Replace the filter medium with new original LINCOLN ELECTRIC medium, which alone can guarantee the filtration characteristics.
- Replace the hoses if they are pierced.
- Regularly clean the metal pre-filter on those machines that have one.

Specific case of chlorine solvents (used for cleaning or degreasing):

- The fumes of such solvents turn into toxic gas when they are subjected to arc radiation.
- Such solvents may not be used with parts to weld, cut or grind, as they cannot be filtered by the machine.

The energy supply must imperatively comply with recommendations.

A padlockable disconnector for the power supply and a self-shutting quick connect system for the supply of compressed air are supplied on the **LINC EXTRACTOR**.

The machine (or installation) is designed for professional use.

Before use, the operator must make sure that there is no risk of collision with personnel.

**Before using the machine. Make sure that the guard covers of the electrical and mechanical parts are in place before starting up the equipment.
All guard covers must be screwed in.**

No climbing on the structure of the machine.

To access equipment at heights, the user must use accessing means in accordance with the regulations, such as a safe mobile gangway, an aerial lift etc.”.

Never modify the machine.

The machine is not designed for anchoring handling equipment.

The use of Personal Protective Equipment (PPE) and work clothing covering the body is mandatory in the work area. Do not wear a tie and keep your hair tied back securely.



For any extended absence, the operator must shut off the supply of utilities (electricity and fluids).

Maintenance may only be carried out by experienced personnel who are trained in machine-related risks.

Access to the machine (or installation) must be left free for maintenance (e.g. no workpiece etc.).

The frequency of such maintenance is indicated for production in one work shift per day (i.e. 8 hours a day).

Machine maintenance must be carried out with all the energy supplies switched off.

The disconnection and padlocking of all energy sources is mandatory.

Consumables (filter) must be changed based on their wear and tear.

Visually inspect the overall condition of the installation and the working area twice a shift, or with every change of production.

Clean the working area from time to time.

The maintenance schedule must absolutely be followed.

We recommend putting in place a traced system for tracking all your maintenance operations.

All maintenance must be carried out by specialised personnel who have read and understood these instructions.

Electricity technician

Qualified operator with the ability to work in normal conditions on electrical parts for regulation, maintenance and repair.

Mechanical technician

Specialised technician authorised to carry out complex and exceptional mechanical operations.

2 - Residual risks

Based on the results of the risk assessment, a few elements have emerged where there was no “technical” solution for eliminating risk or making it negligible.

In spite of all the care that has gone into the designing of our machines (or installations), some risk areas remain. To control these risks, the customer must pay particular attention to them, ensure that the instructions are applied and define any additional measures that may be necessary in view of its own internal operating procedures.

Therefore, you will find below a guidance list of residual risks.

Training of operators in safety and in the use of the machine from their operating position will better address these residual risks.

We recommend putting place workstation instructions that remind users of the presence or otherwise of residual risks in the working area.

2.1 - Residual risks - General

☛ Environment risk - slipping and/or falling



The working and safety area must be clear of all obstacles.

The working area must be kept clean and cleaned regularly.

The machine must undergo periodic maintenance (see maintenance instructions of each piece of equipment). In particular, welding, cutting or grinding dust around the machine must be cleaned.

Waste consumables must be cleaned.

The operator must pay special attention to cables and rolling tracks on the ground.

The operator must use the necessary personal protective equipment (helmet, gloves, safety shoes, mask and work clothing).

While unpacking the machine, the area around the **LINC EXTRACTOR** must be sufficiently large and clear, in order to avoid falls.

Falling from heights:

In order to be protected from falling from heights and for access to high parts, the operator or technician must use access means that comply with applicable standards (e.g. during the assembly, disassembly or maintenance of ducts).

For all work at heights, the use of personal protective equipment (helmet, gloves, safety shoes, mask, ear muffs and harness) is indispensable.

For all work at heights, the operator must be trained in the use of means for accessing high locations.

☛ Mechanical risk - Impacts, shearing, crushing



The operator may not wear loose clothing or a tie, must have their hair tied back and use personal protective equipment (helmet, gloves, safety shoes, mask and work clothing).

The operator must make sure that nobody else is close to the machine before starting.

The **LINC EXTRACTOR** must not operate when any of the extraction components (pre-filter, filter) are missing. The operator must make sure that all the machine guards are in place before using it.

Before any work on a part of the extraction system (electrical or other), the system must be disconnected using the disconnecting switch.

Even after taking that precaution, mind the fan components, which can remain in motion due to the windmill effect (blades driven by air flow).

The operator's working position is before the control console.

The machine safety areas must not be crossed.

The operator must be trained in the use of the machine, and all personnel must be aware of residual risks.

Tipping over of the **LINC EXTRACTOR** during installation or movement, presence of a worker under the load.

Any change in the machine location must be infrequent and exceptional and carried out by personnel trained in handling.

The weight of the machine and its centre of gravity have been indicated in this document. The handling equipment must be rated for those requirements.

Any change in the machine location must be infrequent and exceptional and carried out by personnel trained in handling.

The operator must be trained in the use of the machine, and all personnel must be aware of residual risks.

The operator must use personal protective equipment, (helmet, gloves, safety shoes, mask and work clothing).

The operator's working position is before the control console.

The operator must make sure nobody is present in the machine working area or safety area before using it.

Anchoring failure of handling equipment

The machine may not be modified.

The machine is not designed for anchoring lifting equipment.

☛ **Mechanical risk - Puncturing or piercing**



The use of personal protective equipment (helmet, gloves, safety shoes, mask, ear muffs) is indispensable, particularly while installing fume ducts (sharp parts).

The operator must be trained in the use of the machine and all personnel must be aware of residual risks.

☛ **Noise risk - Fatigue**



Process noise

The use of personal protective equipment (helmet, gloves, safety shoes, mask, ear muffs) is indispensable.

The operator must be trained in the use of the machine and all personnel must be aware of residual risks.

2.2 - Residual risks during operation or simple maintenance

☛ **Electrical risk - Electric shock or electrocution**



Contact with electrical parts

Access to the electrical cabinet must be restricted to authorised personnel.

Before any work on a part of the extraction system (electrical or other), the system must be disconnected using the disconnecting switch.

From time to time, check that the machinery and its electrical accessories - connectors, flexible cables and extension cords - are correctly insulated and connected.

Work for maintaining and repairing insulating ducts and enclosures may not be carried out in a haphazard manner.

- All repairs are to be carried out by specialists, or better yet, defective accessories should be replaced.
- Regularly check that the electrical connections are tight, with no heating

The use of personal protective equipment (helmet, gloves, safety shoes, mask, ear muffs, fire-resistant work clothing) is indispensable.

The operator must be trained in the use of the machine, and all personnel must be aware of residual risks.

☛ Ergonomics risk - Fatigue



Changing/emptying containers

The operator must use appropriate handling means.

The operator must be trained in the use of the machine, and all personnel must be aware of residual risks.

☛ Material and product risks - Poisoning



Emission of fumes/dust

Important: while changing the filter cartridge or cleaning the metal pre-filter, the extraction system must be disconnected from the electricity source. The application of an emergency stop is not sufficient. Indeed, unclogging can start away from turbine operation.

The use of personal protective equipment (helmet, gloves, safety shoes, mask, ear muffs, work clothing) is indispensable.

The efficiency of the extraction system must be inspected regularly and corrected if it is not adequate (e.g. by cleaning the pre-filter, changing the filter cartridge, inspecting all extraction hoses).

The extraction turbine is an essential element of your extraction system.

Incorrect operating or inadequate maintenance could make the operator less safe. That is why the extraction turbine must be maintained in perfect condition.

Your installation has been selected for a specific application. The turbine is characterised by an operating point based on extraction speed (speed of air in the piping) and head loss.

In accordance with applicable regulations, the installation must be inspected from time to time to make sure that it continues to comply with its reference values.

Used filter cartridges, metal pre-filters and dust in the containers must be placed in appropriate locations and then reprocessed in accordance with the standards of the country in which the system is installed.

The operator must be trained in the use of the machine, and all personnel must be aware of residual risks.

☛ Mechanical risk - Puncturing or piercing



Contact with a part of the pneumatic circuit that is under pressure

Before any work on the pneumatic circuit, the pneumatic supply must be switched off and the circuit must be purged to avoid any accidental lashing of the hoses.

The use of personal protective equipment (helmet, gloves, safety shoes, mask, ear muffs) is indispensable.

The operator must be trained in the use of the machine and all personnel must be aware of residual risks.

☛ Thermal risk - Burns



Part of the body in contact with a hot component (while emptying containers, changing filters)

The use of personal protective equipment (helmet, gloves, safety shoes, mask, ear muffs) is indispensable.

The operator must be trained in the use of the machine and all personnel must be aware of residual risks.

1 - Overall description



For your safety and optimum performance, please read this manual carefully before using the filter.



The innovative design of the **LINC EXTRACTOR** turbine allows:

- The extraction of welding fumes by MIG and TIG fume extraction torches.
- Control of the extraction rate depending on the configuration of the piece to weld with our **LINC GUN FX** Dual Flow fume extraction torch.

INNOVATIVE:

The colour and touch HMI interface controls the working of the

LINC EXTRACTOR in several languages and offers a high choice of uses and customisation to suit your needs.

EFFICIENT:

Operating is controlled by a PLC and a frequency variator

RELIABLE:

Offers welder protection while ensuring productivity and high adaptability to your needs.

The mobile **LINC EXTRACTOR** unit is particularly designed to collect welding fumes by means of a fume extraction torch with a variable flow, during MIG/MAG or TIG welding.

The Dual Flow system varies the extraction speed and reduces the extraction rate of the torch in confined areas, which is fully in line with what is required, namely collecting fumes without disrupting the gas shield of the weld pool.

Further, the fume filter cartridge with an automatic unclogging facility, both of which are supplied as standard, keep the extraction efficient over time.

Benefits:

- Use with air or water cooled MIG/TIG torches.
- Torch extraction rate adjustment for welding in confined areas (MIG Dual Flow)
- Monitoring of vacuum levels and automatic unclogging of the filter cartridge.
- Dust recovery container
- Automatic starting of extraction, controlled by the electric arc or by an external contact.
- High air flow that is adjustable and stable over time, thanks to the speed variator which makes up for filter cartridge fouling.
- Simple installation, mobile unit and compact design.
- Minimum maintenance.

Main characteristics:

- Compatible with MIG and TIG fume extraction torches.
- Diameter of connection to extraction: Ø 50mm or Ø 38mm.
- Control by frequency variator and PLC.
- 4.3 inch HMI control screen, touch and colour.
- Manual/Automatic (current sensor or external contact) operating mode
- Metal pre-filter - Class EU2.
- Fine polyester filter - ISO 16890 – ePM10 70%.
- Automatic and manual blast unclogging.
- Connection of a second torch in some conditions.
- Compressed air regulator filter kit.
- Large dust recovery container.
- Mobile assembly.
- Vertical discharge, Ø 80mm.
- Turbine 3 kW

Delivery:

The mobile **LINC EXTRACTOR** unit is delivered strapped on a half pallet.
Two workers are required for placing it on the ground.

The **LINC EXTRACTOR** unit is delivered with the following as standard:

- Metal pre-filter
- Filter cartridge
- Electric arc control by current sensor
- Compressed air regulator/pressure gauge/unclogging solenoid valve kit.
- Connections for extraction hoses of MIG torches with diameter Ø50mm or TIG torches with diameter 38mm.
- 5 m long power supply cable.

The following are not included with the **LINC EXTRACTOR**:

- Torch connection hoses with diameter 50mm or 38mm are to be ordered with the fume extraction torches
- Connection hoses with diameter 80mm for extraction discharge.

The duct system for outdoor discharge or towards a centralised recovery system will depend on the configuration of the end user's workshop, and can thus be supplied on request.



The extraction unit is to be connected to a low-pressure duct system to carry the pollutants (fumes and gas) generated by welding outside the factory.

2 - Operating principle of extraction unit

The **LINC EXTRACTOR** allows you to extract welding fumes from MIG or TIG fume extraction torches and control the extraction rate depending on the configuration of the piece to weld with the Dual Flow range of fume extraction torches.

The extraction unit is set up and controlled from a multilingual colour touch interface.

The power is controlled by a frequency variator that controls the extraction turbine, and the assembly is managed by a PLC.

2.1 Extraction in Manual or Automatic mode

When the **LINC EXTRACTOR** has been set up for a MIG or TIG torch, you can select from Manual or Automatic use.

If activated, the Automatic mode puts the machine under the control of the welding machine by means of a current sensor or an external source.

Manual:

- Continuous turbine service.

Automatic:

- As soon as the arc is struck, the extraction system starts up; when the arc goes off, the fan stops (stopping delayed by 25 seconds by default).

2.2 Patented Dual Flow function

Dual Flow: Control of the extraction rate depending on the configuration of the piece to weld.

The Dual Flow mode, available with **LINC GUN FX Dual Flow** MIG torches, offers the possibility to instantaneously regulate the extraction rate directly from the fume extraction torch while welding.

Depending on the welding applications carried out with a fume extraction torch, the induced extraction speed, which must be 0.35 m/s at the point of emission, can be too high while welding in corners or confined areas and could lead to poor weld quality by disturbing the gas shield.

To address that potential problem, **LINCOLN ELECTRIC** has developed a range of patented fume extraction torches known as Dual Flow torches, which allow the welder to determine the extraction power to suit the type of welds being made.



3 - Part numbers

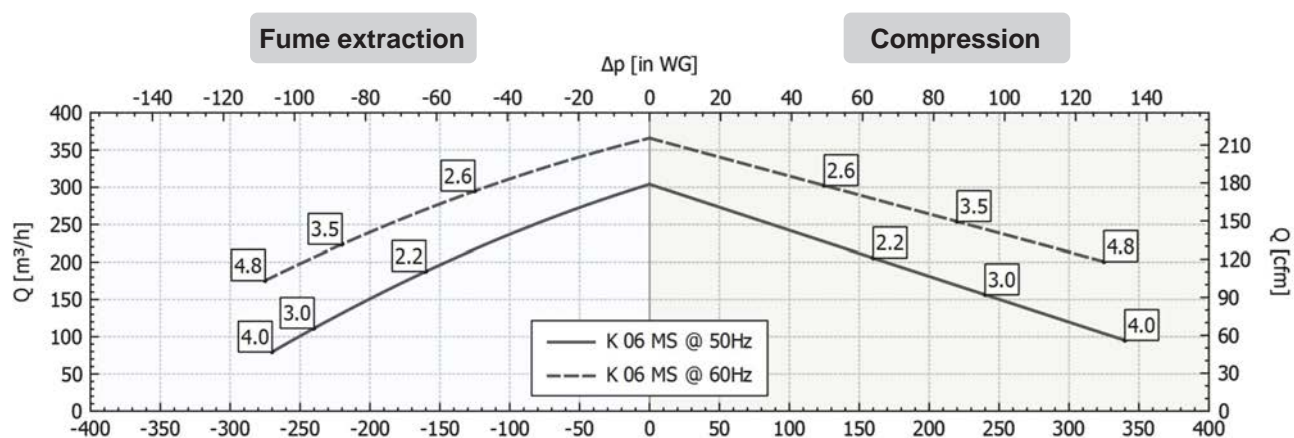
High vacuum extraction turbine for MIG and TIG		Part number
LINC EXTRACTOR turbine, 400 V/3 Phases – 50 Hz		EM61000624

4 - Technical data

4.1 Technical specifications

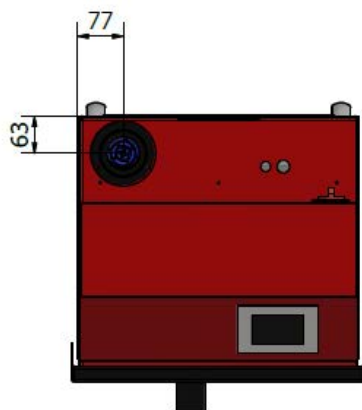
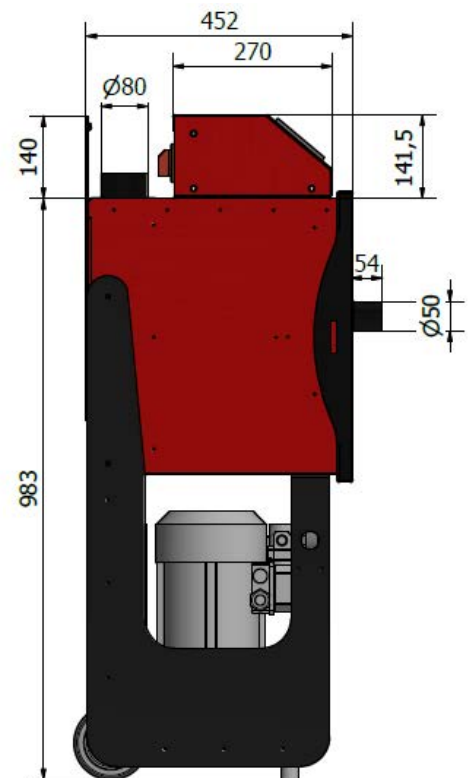
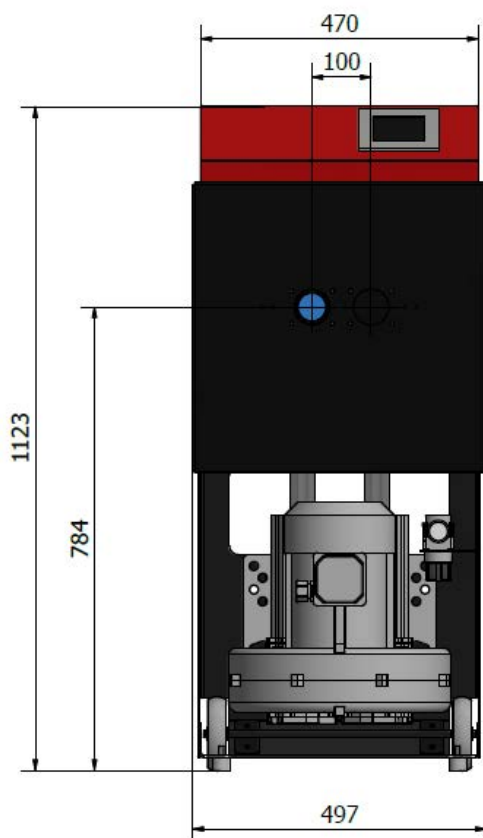
Description	Unit	LINC EXTRACTOR
Machine power rating	kW	3
Power supply voltage	V	400 - 3 Phases
Max. vacuum	kPa	24
Free flow rate	m ³ /h	304
Inlet connection	mm	38 TIG/50 MIG
Outlet connection	mm	80
Noise	dB	70

4.2 Turbine curves



4.3 Weight and dimensions

Description	Unit	LINC EXTRACTOR
Machine weight	kg	110
Machine body width	mm	497
Machine body depth	mm	452
Machine body height	mm	1123



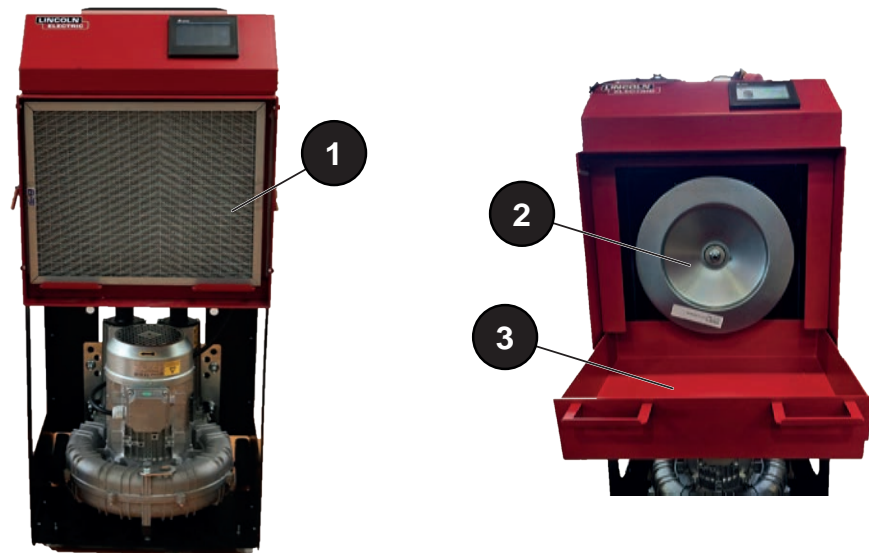
5 - Composition of LINC EXTRACTOR

5.1 Description of external elements



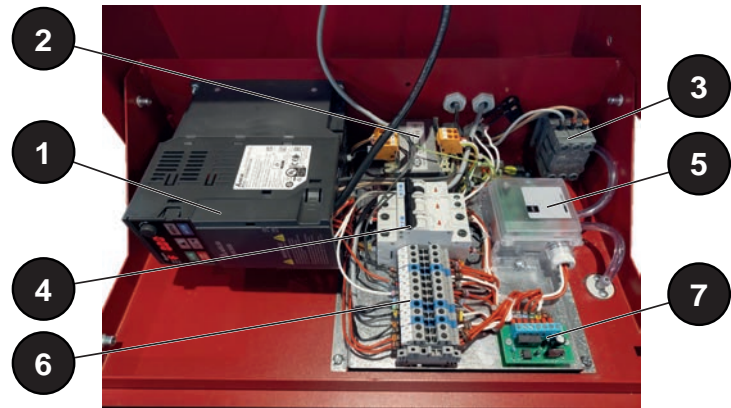
Reference		Description
1		HMI control screen
2		Electrical cabinet
3		Fitting for torches, 38mm or 50mm
4		Pre-filter/filter cartridge extraction box
5		Turbine 3 kW
6		Electrical fittings
7		Compressed air regulator
8		Padlockable disconnecter
9		Dual Flow torch control
10		Current sensor
11		Solenoid valve control
12		Mains power cable
13		Turbine power cable
14		External control input

5.2 Description of internal elements



Reference		Description
1		Metal pre-filter
2		Filter cartridge
3		Dust recovery container

5.3 Description of electrical cabinet



Reference		Description
1		3kW variator
2		400V/24V transformer
3		Disconnecting switch
4		Circuit breakers D1 – 400V power supply/D2 – 24V power supply
5		Vacuum probe
6		Connecting terminal block
7		Current sensor printed circuit board

1 - Installation conditions



The machine must be located in accordance with safety standards to keep personnel safe.



Arrangement of cables and hoses

The customer must provide a means to support and protect cables and flexible hoses from mechanical, chemical or thermal damage.

2 - Handling of LINC EXTRACTOR

The **LINC EXTRACTOR** unit is on wheels, which will make it easier to put the turbine in place in the identified location in the workshop.

While moving it, please take account of the surface condition of the floor, considering the weight of the **LINC EXTRACTOR** (110kg) and its maximum tilt angle of 15°.



Please note that this extraction unit must be connected by a 80mm diameter hose to a low-pressure duct network for outdoor discharge (along cladding or from the roof) or a network of collecting ducts with ventilation.

The customer is responsible for regularly checking the condition of the hoses. Weekly visual maintenance. The cost of any damage to the hose over time is to be paid by the end user, based on the maintenance plan.

3 - Safety warning

Pre-fiter:

The turbine must not operate without a pre-filter, as that would destroy it.

Mechanical components:

The turbine is mechanically protected, so the operator cannot come in contact with the hot parts of the turbine.

Further, the turbine is driven directly by the motor, minimising maintenance and allowing the automation of the welding process.



Before making any connections to the mains, make sure that the information on the identification plate matches the electricity distribution system.



Make sure that there is electrical protection before the electrical connection, with rating that complies with the given extractor plates and a catchment system with an earth connection.



Before you connect your machine to the 400 V system, please make sure that:

- The meter, the overintensity protection system and the electrical installation are compatible with its maximum power rating and its supply voltage.
- It can be connected in a three-phase with earth system, to a socket compatible with the plug on its power cord (mobile equipment).
- If the cable is connected to a fixed point and there is an earth connection, the current may never be cut off by the system offering protection from electric shocks.
- The switch, if there is one, is set to OFF.



Upon powering up:

Check the extraction and discharge direction of the turbine, which is normally tested in the factory.

If inverted, change over two phases at the variable drive OUTPUT.



The customer is responsible for installing the earth connection.

The machine MAY NOT BE connected to an electrical system with no earthing.

4 - Connection to the electrical and pneumatic systems

4.1 Connection to the mains

400V - three phase, no neutral + Earth – 50/60 Hz power supply



All the operations relating to the installation, such as those for assembly, putting into service and maintenance, are to be carried out by qualified personnel under the control of a responsible technician.



The **LINC EXTRACTOR** must **NECESSARILY** be isolated from all utility supplies when it is connected.

The disconnection and padlocking of all energy sources is **mandatory**.

The **LINC EXTRACTOR** is supplied with a three-phase + earth power cable (no neutral), 4x2.5mm and 5m long.

The cable must be connected to the socket of your electrical system, or it may be wired directly in the electrical cabinet to the terminals dedicated to the extraction unit.

4.2 Connection to the pneumatic system



Use the self-shutting quick connect system supplied with the **LINC EXTRACTOR**.



The compressed air must be dry, free from impurities or humidity.

For all other information, please contact the technical staff of **LINCOLN ELECTRIC**.

- Compressed air system supply 5 Bars minimum.
- Compressed air connection: self-shutting quick connect system supplied with the **LINC EXTRACTOR** for pipe with inner Ø 6.3mm. Male fitting on the air regulator, self-shutting female fitting mounted on the customer's hose.
- Compressed air pressure regulated to 3.5 bars.

E - STARTING UP



First of all, make sure that all the panels of the extraction unit are shut and locked.



Refer to the electrical diagram of the extraction system and the machine for the wiring.

1 - Verification while starting up

Set the main disconnecter located on the rear of the extraction unit to position 1.
The **LINC EXTRACTOR** is now powered and the HMI screen will be initialised.



Press the Manual button on the HMI screen and the turbine will start.



Press the Manual button on the HMI screen once again and the turbine will stop.

Check the motor rotation direction:

If, at the torch extraction fitting, the **LINC EXTRACTOR** is blowing air instead of sucking it in, change over two phases at the extraction unit variable drive output.

2 - Connecting the fume extraction torches

Connect the fume extraction torch

- to the feeder for the welding part,
- to the water cooling circuit of the feeder if necessary,
- on the front of the **LINC EXTRACTOR** extraction unit for the extraction part.

The **LINC EXTRACTOR** is supplied with two different connections suitable for the extraction hoses of **LINC GUN FX** MIG torches (Ø50mm) or **Linc Torch FX** TIG torches (Ø38mm).

The 50mm diameter connection is mounted as standard, for MIG fume extraction torches
A second Ø 38mm connection for TIG torches is provided. It is to be mounted instead of that for MIG torches.



Water-cooled MIG or TIG torches must necessarily be connected to the cooling circuit of the feeder.



The torch may never be used without the extraction system, or without coolant where applicable, or it may be destroyed.
Indeed, the extraction system also takes charge of cooling the fume extraction torch.

3 - Connecting Dual Flow fume extraction torches

Dual Flow fume extraction torches allow the adjustment of the extraction rate depending on the type of the parts to weld.

To that end, their handles have a pushbutton for adjusting the extraction rate, and a control cable to connect to the rear of the electrical cabinet.

- Connect the extraction hose of the fume extraction torch to the connection on the front of the **LINC EXTRACTOR**.
- Connect the water cooling circuit of the torch to the feeder if it has one.

- Connect the control of the Dual Flow fume extraction torch to the 6.3mm jack at the rear of the electrical cabinet.



The setup of the Dual Flow control in 2Temps or 4Temps mode is made from the HMI screen of the **LINC EXTRACTOR**.

10m long extensions of Dual Flow control cables are available as an option, part no W000381156

4 - Connecting the current sensor (automatic starting up)

An inductive current sensor, part W000379696, is supplied as standard with the **LINC EXTRACTOR**.

It can detect direct (DC) and alternating (AC) currents above 40A.

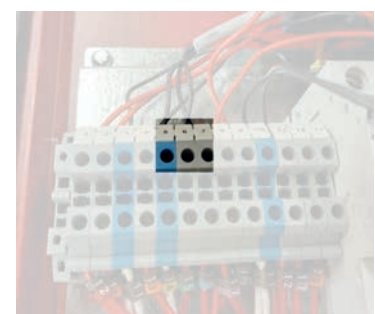
The ground cable must be firmly attached along the current sensor.



The end of the current sensor is wired inside the electrical cabinet to the following terminals:



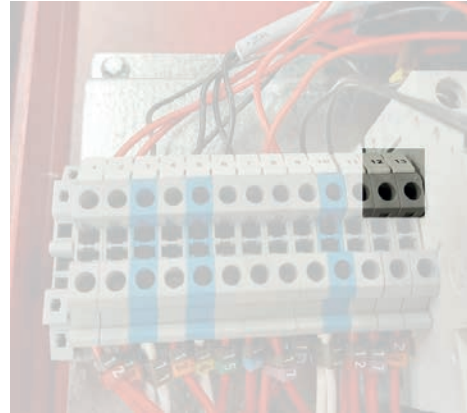
<u>For three-wire sensors</u>	<u>For four-wire sensors</u>
<ul style="list-style-type: none">• X5 for cable 1,• X6 for cable 2,• X7 for cable 3.	<ul style="list-style-type: none">• X5 for cable 1,• X6 for cable 2,• X7 for cable 4 <p>(cable 3 needing insulation)</p>



5 - Connecting an external input (automatic starting)

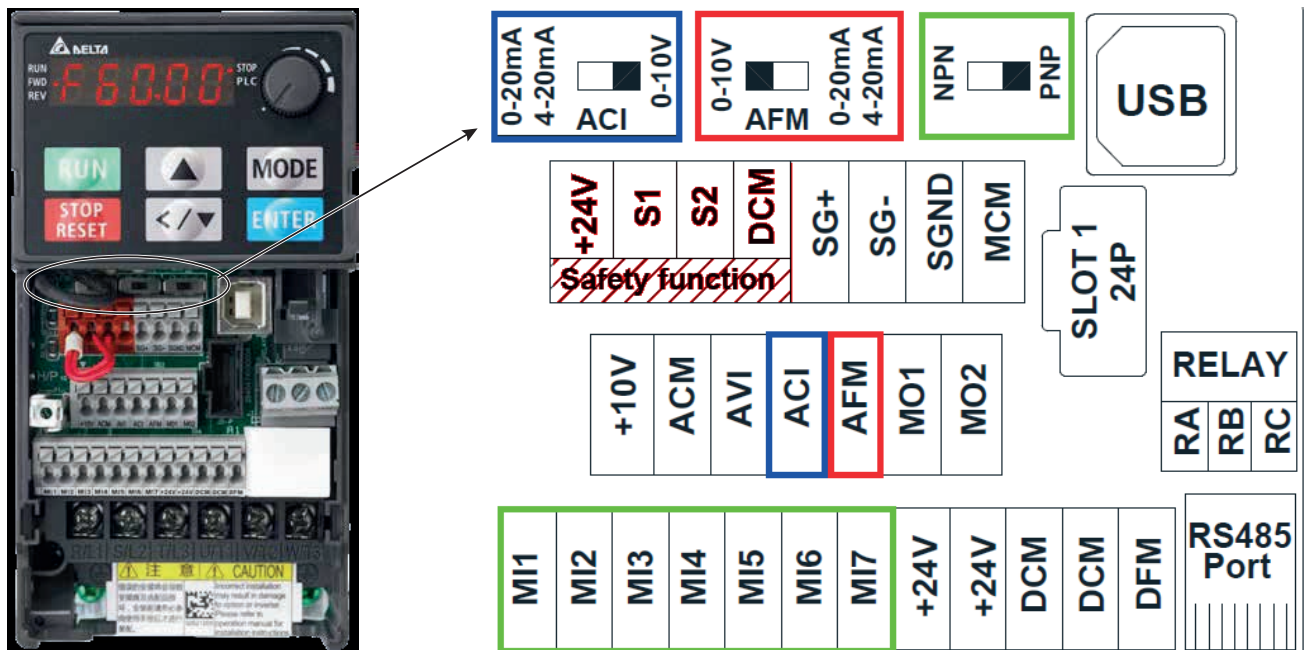
The automatic starting up of the **LINC EXTRACTOR** can be put under the control of any robotic, automated or other machines, by adding an external dry contact (contact closed = ON/contact open = OFF).

Just wire that dry contact through the cable gland provided on terminals **X12/X13** of the electrical cabinet.



6 - Setting up the frequency variator

6.1 Configuration of the internal microswitches of the variator



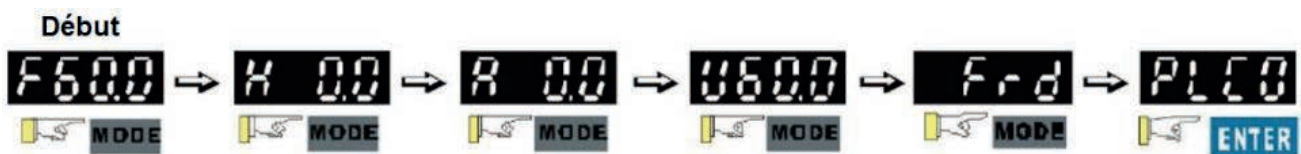
The switches for setting up the variator inputs and outputs must be set as follows:

- 0/10V for the switch of the analogue input **ACI**
- 0/10V for the switch of the output **AFM**
- Position **PNP** for setting up the inputs on the third switch

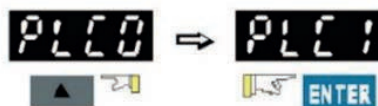
6.2 Programming the variator

In order to communicate with the HMI screen, the variator must be set up as follows:

- ☛ From the variator screen, press **MODE** several times till you reach the PLC setting. Once PLC is displayed on the screen, press **ENTER**



- ☛ Select **PLC1** with the up arrow and then **ENTER**

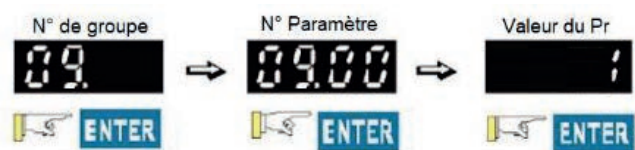


The variator is now set to **PLC1** (PLC RUN mode)

- ☛ Back on the home screen, press **MODE** several times once again till you reach the **FRD** setting and then press **ENTER**



- ☛ Using the up arrow,
 - go to group 09, and click on **ENTER**,
 - go to setting 09.00 and click on **ENTER**,
 - enter the value 1 and click on **ENTER**.



- ☛ Do the same with setting **09.01** and enter the value **115.2**
- ☛ Do the same with setting **09.35** and enter the value **2**

Group	Setting	Value	Description
PLC1	/	1	Activation of PLC mode
09	09.00	1	COM1 communication address
09	09.01	115.2	COM1 transmission speed in Kbps
09	09.35	2	PLC address

1 - Setting up the LINC EXTRACTOR

1.1 System setup menu

Access to the configuration settings of the **LINC EXTRACTOR** is locked and you must log in as a Lincoln user to access it.

Press the LINCOLN ELECTRIC logo and an identification request will open.

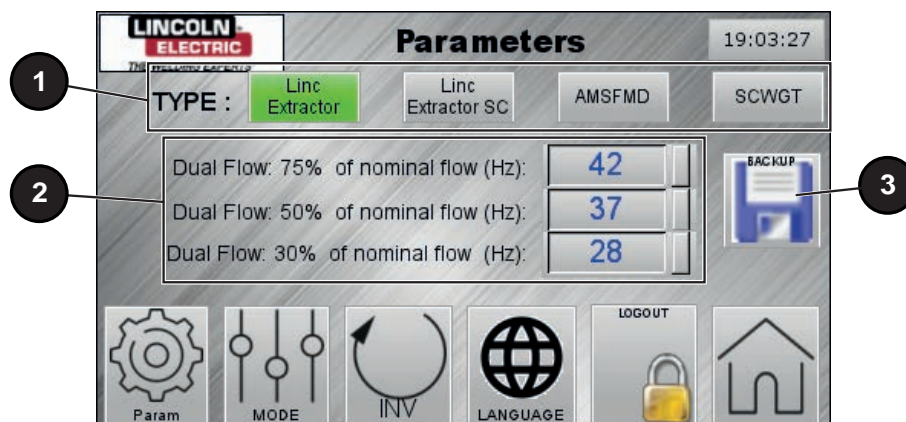
Enter the login and password and press on OK.

- Account: LINCOLN
- Password: MAINT



1.2 Settings

Once you have been identified, you can access the system settings pages menu. The first page is the Settings page.



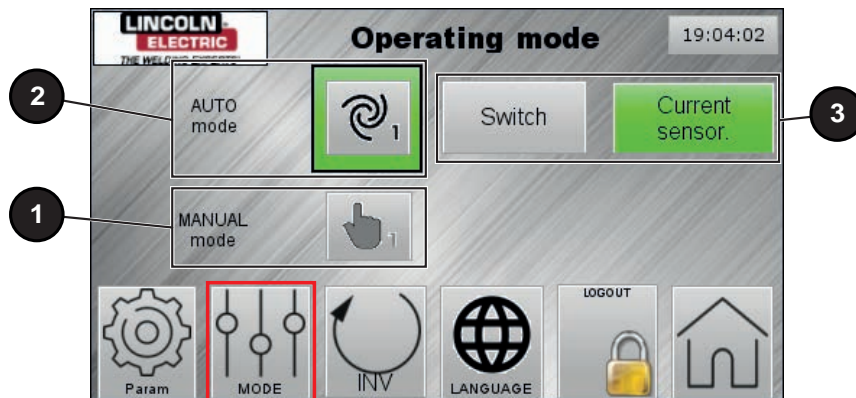
1	TYPE: Extraction unit configuration (setting locked in the factory)
2	Dual Flow mode operating frequency to be configured in order to be able to pre-select the second speed on the Setpoints page
3	Access to modes for saving or loading the configuration of the LINC EXTRACTOR

1.3 Operating mode screen

The Mode page is used for selecting the principle for starting up extraction by the LINC EXTRACTOR.

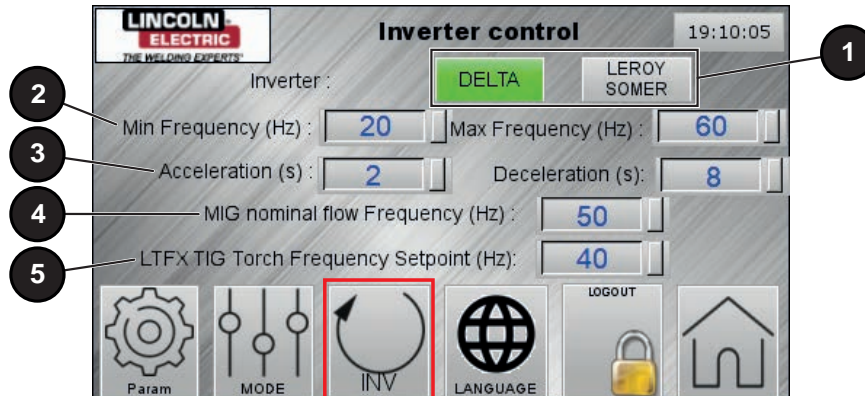
- Manual starting by pressing a button on the front of the home screen
- Automatic starting up as soon as the welding arc strikes, by a current sensor on the ground cable or an external normally-open dry contact.

If the extraction system is automated, a stopping delay may be programmed from the Threshold settings page



1	Manual mode
2	Automatic mode
3	Automatic mode by normally-open external contact or current sensor.

1.4 Variator screen



1	Type of variator (setting locked in the factory)
2	Min and max frequency adjustment range of variator (in Hertz) Min frequency = 20 Hz/Max frequency = 60 HZ (setting locked in the factory)
3	Turbine acceleration and deceleration setting (setting locked in the factory)
4	Nominal extraction frequency setting for MIG torches ➡ log in as Lincoln user
5	Nominal extraction frequency setting for TIG torches ➡ log in as Lincoln user

1.5 Languages screen

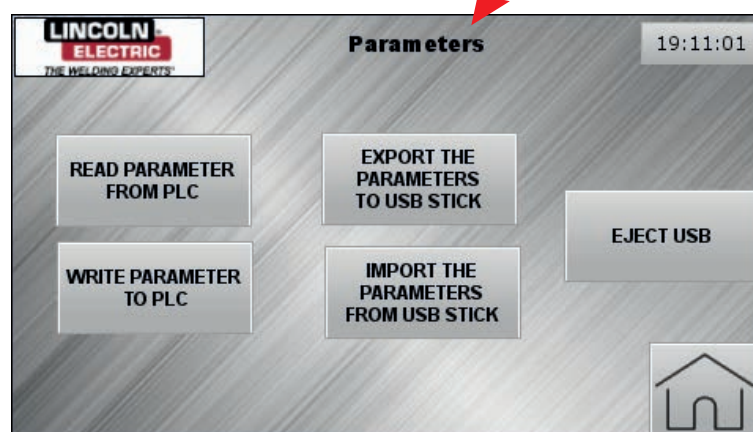
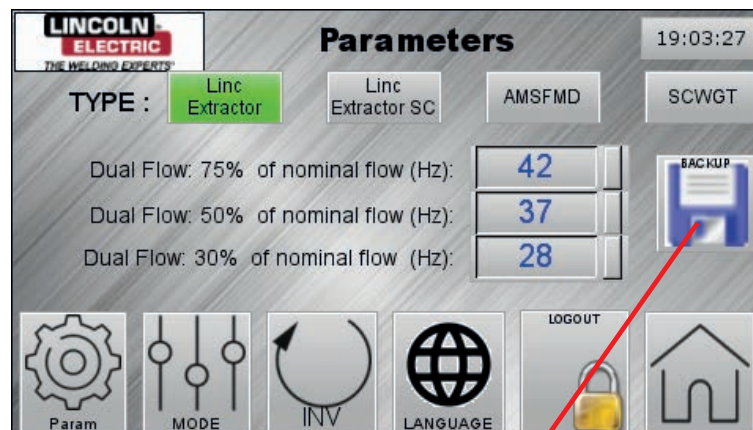
Choice of language depending on the country.



1.6 Backup screen

From the settings screen, you can:

- Copy the settings of the **LINC EXTRACTOR** and back them up to a USB drive
- Import backed up settings, a new configuration or an update from a USB drive, and load them to the **LINC EXTRACTOR**

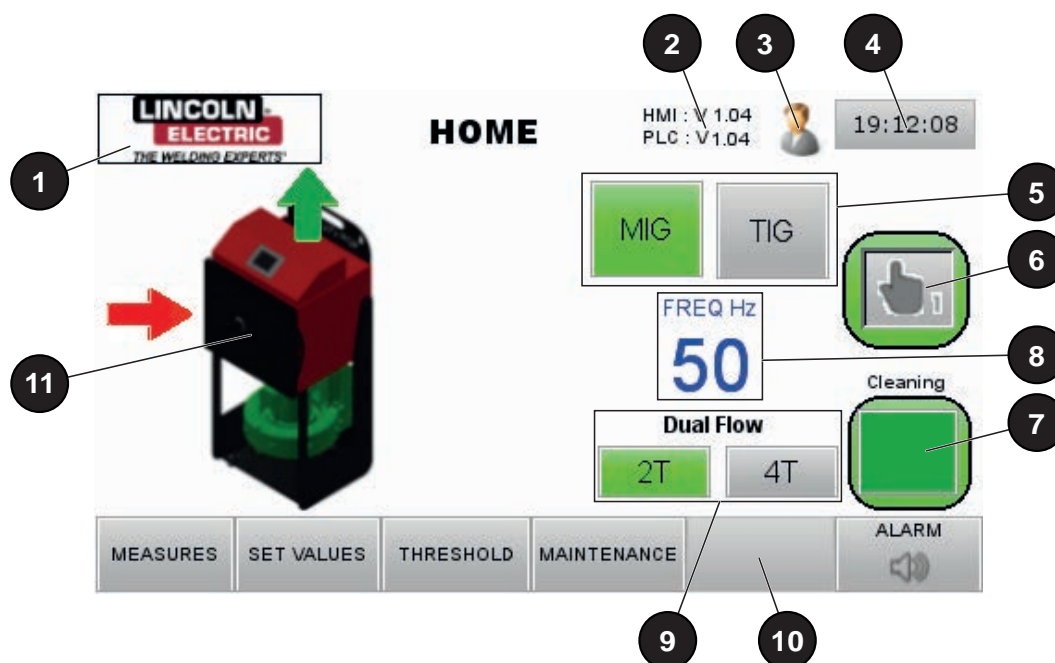


2 - Using the LINC EXTRACTOR

2.1 Home screen

The home screen is used for controlling and setting up the **LINC EXTRACTOR** depending on your needs:

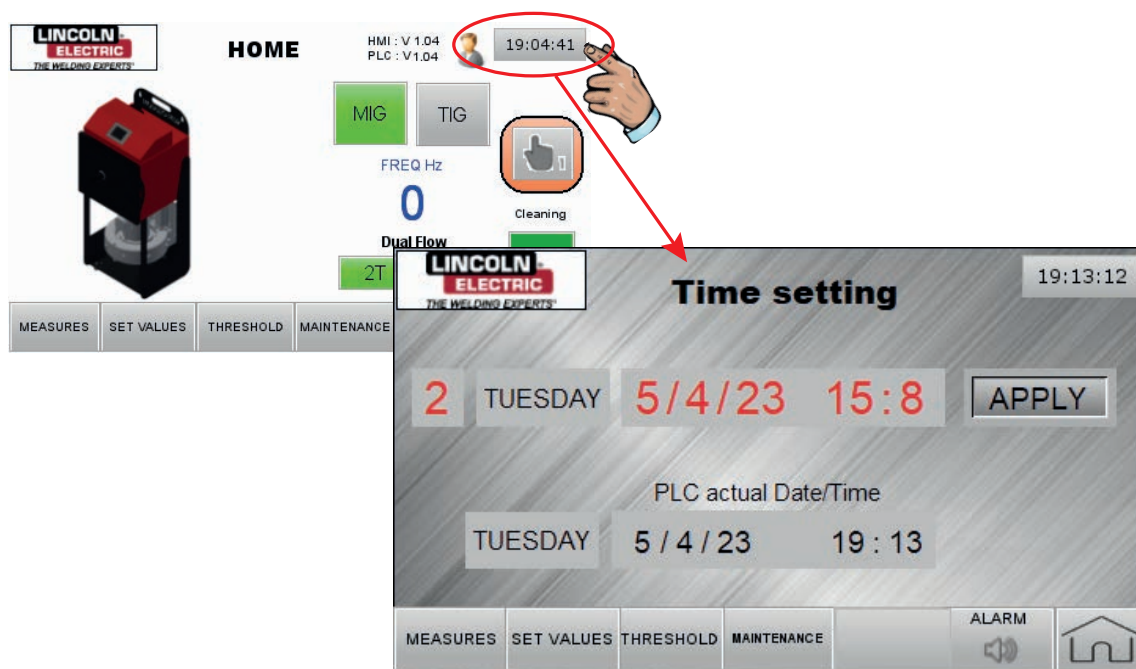
- Selecting the MIG or TIG fume extraction torch
- 2T or 4T mode for **Linc-Gun FX Dual Flow** MIG torch
- Manual starting of the high vacuum extraction turbine
- Starting an unclogging cycle
- Access to the different pages of the HMI screen.



1	Access to Settings
2	Program versions for HMI and PLC
3	Indicates if the operator is identified as a LINCOLN ELECTRIC user or not. Login: LINCOLN/Password: MAINT
4	Date and time setting
5	Selection of MIG/TIG fume extraction torch
6	Operating mode: Manual (shown above)/Automatic
7	Unclogging indication/circled in green if active <ul style="list-style-type: none">• Five unclogging pulses are started automatically at the end of each welding cycle• A manual press will start five unclogging pulses
8	Display of the extraction frequency of the turbine controlled to by the fume extraction torch <ul style="list-style-type: none">• 50 Hz nominal for MIG fume extraction torch• 40 Hz nominal for TIG fume extraction torch
9	Dual Flow 2T or 4T mode selection for MIG Dual Flow fume extraction torches
10	Access to screens: Measurements/Settings/Thresholds/Maintenance/Alarms
11	Representation of the extraction unit in operation

2.2 Date and time screen

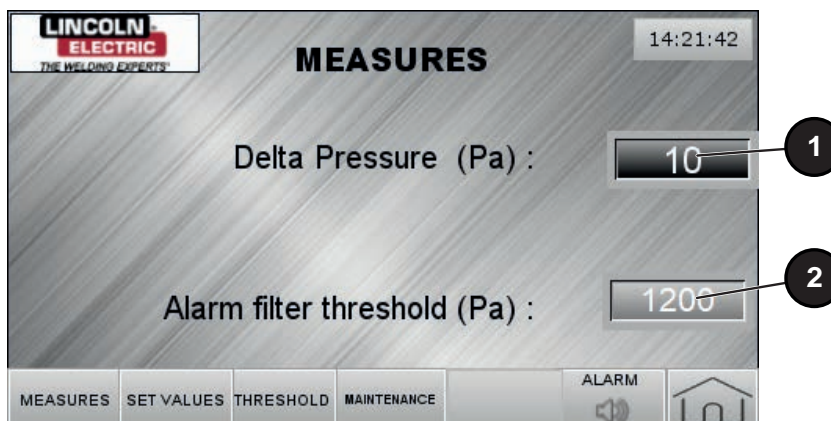
Once you have logged in as the user “Lincoln”, click on the time on the home screen to access the date and time setting screen.



2.3 Measurements screen

The measurement screen shows the pressure difference between the extraction box and the turbine in real time, or the fouling status of the filter cartridge.

An alarm preset to 800Pa indicates that the cartridge or pre-filter is saturated with dust and must either be regenerated with unclogging cycles away from extraction or replaced.

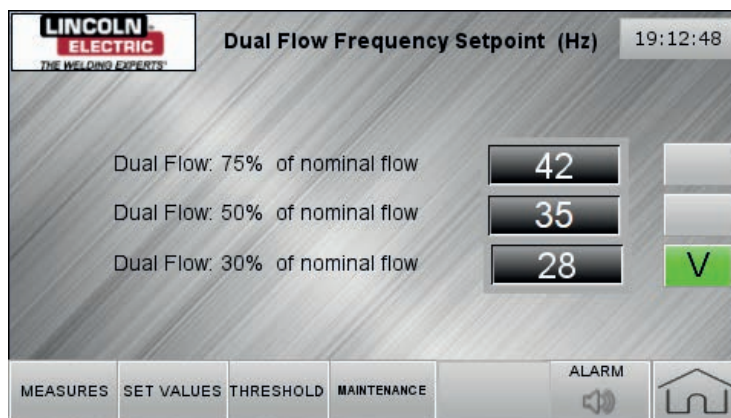


1	Filter cartridge fouling status in Pascal
2	Filter cartridge fouling alarm in Pascal (factory value 1200Pa)

2.4 Dual Flow settings screen

The Dual Flow torch frequency settings screen is only active when the **LINC EXTRACTOR** is set up for MIG torches.

This is the page on which you will need to select the second extraction speed⁽¹⁾ dedicated to the Dual Flow mode. The first speed is the nominal speed of 50Hz by default (1).



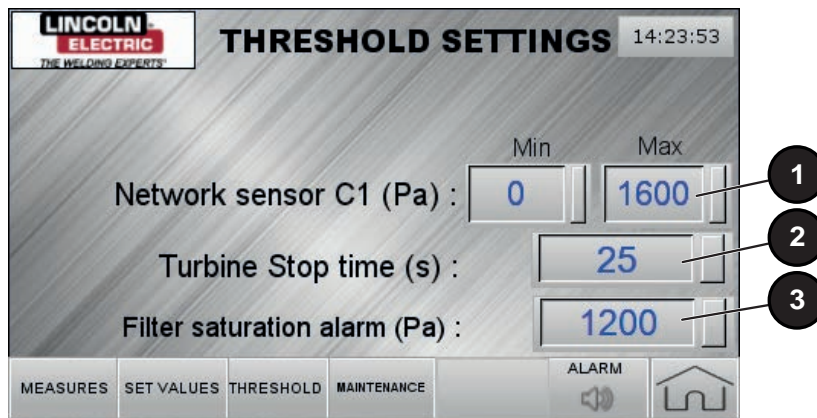
⁽¹⁾: the nominal extraction speed and the second speed dedicated to the Dual Flow mode are preset in the factory. These can however be changed from the Settings and Variator pages of the system configuration menu.

2.5 Thresholds screen

The thresholds adjustment screen is used for setting the delay after welding for stopping the turbine. That delay is only active in Automatic mode and allows the extraction of residual fumes after welding work is completed.

The System sensor threshold is factory set.

The Cartridge saturation alarm threshold is configurable with the Lincoln user login.

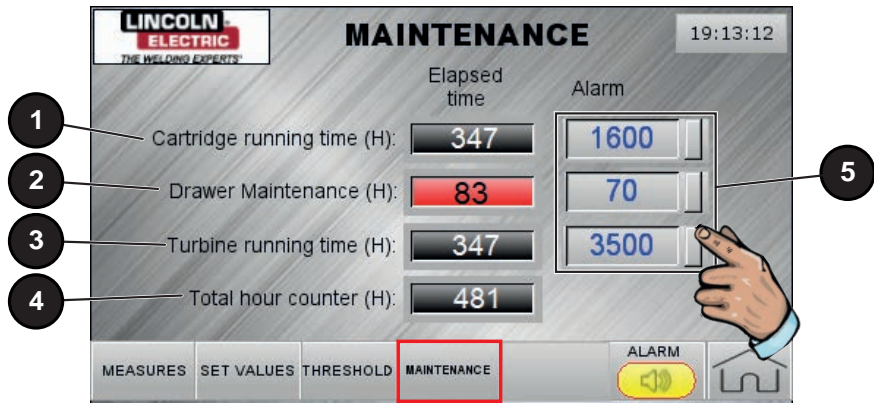


1	Measurement range of vacuum sensor ➡ factory setting (Administrator login) - 0/1600Pa
2	Turbine stopping delay ➡ active in Automatic mode ("Lincoln user" login) - 25s
3	Cartridge saturation alarm threshold setting ➡ factory setting ("Lincoln user" login) - 1200 Pa

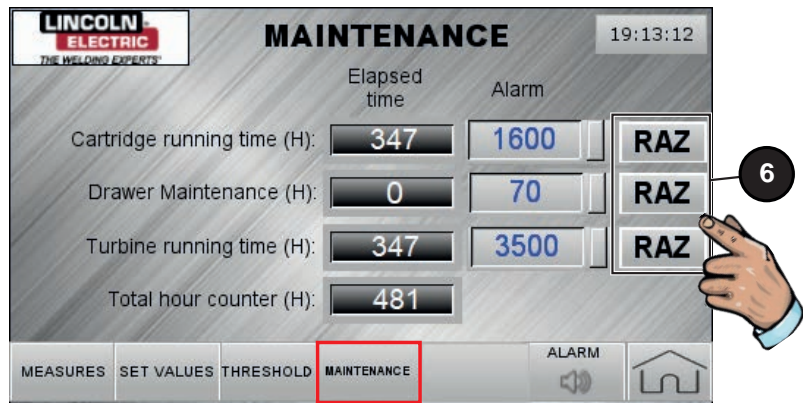
2.6 Maintenance screen

The maintenance screen shows the run times of the different parts of the extraction unit, and a counter indicating the next maintenance operation.

Once a counter value is reached, a warning message is displayed on the home screen of the **LINC EXTRACTOR** to show that maintenance will be needed soon.



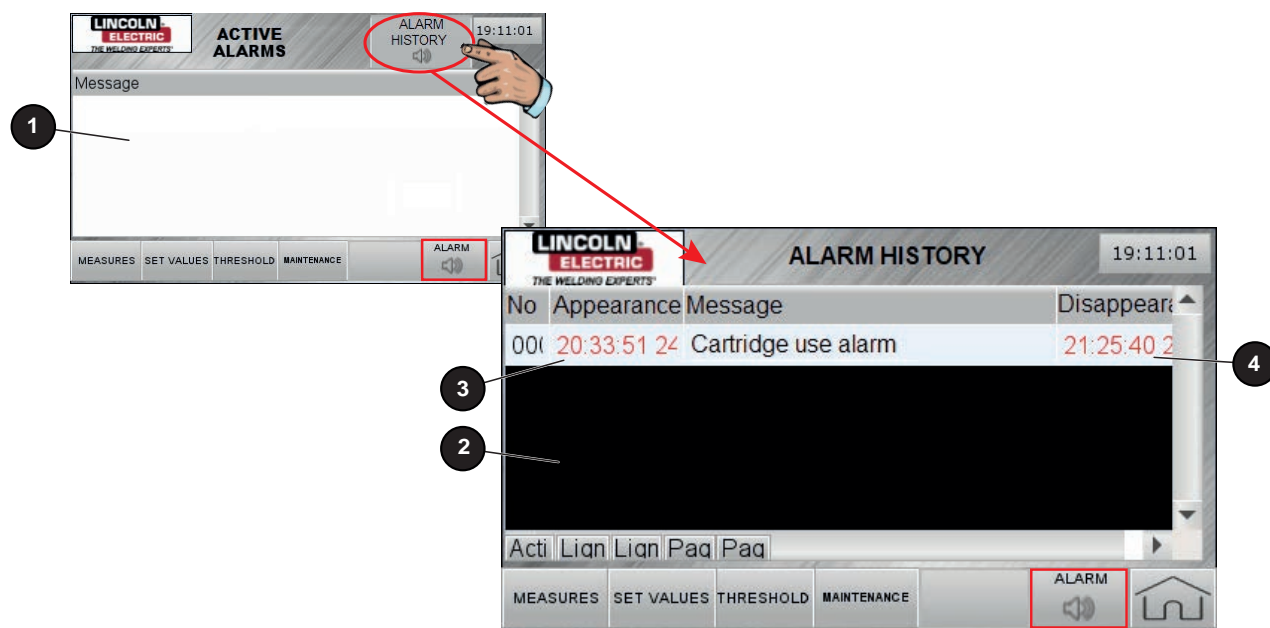
To reset the counter for a new cycle, log in as a Lincoln user by clicking on the active counter and then reset it by clicking on Reset.



1	Filter cartridge run time in hours/number of hours before maintenance alarm
2	Dust container run time in hours/number of hours before maintenance alarm
3	Extraction turbine run time in hours/number of hours before maintenance alarm
4	LINC EXTRACTOR extraction unit run time in hours.
5	Click on the counter to reset and log in as Lincoln user Login: LINCOLN/Password: MAINT
6	Once logged in, the Reset button becomes accessible and is used for resetting, after maintenance is complete.

2.7 Alarms screen

In the Alarms page, you will only find alarms that are active in real time.
Once the alarms have been acknowledged, they are logged on the Alarms history page.



1	Alarms page
2	Alarms history page
3	Alarm occurrence time
4	Alarm acknowledgement time

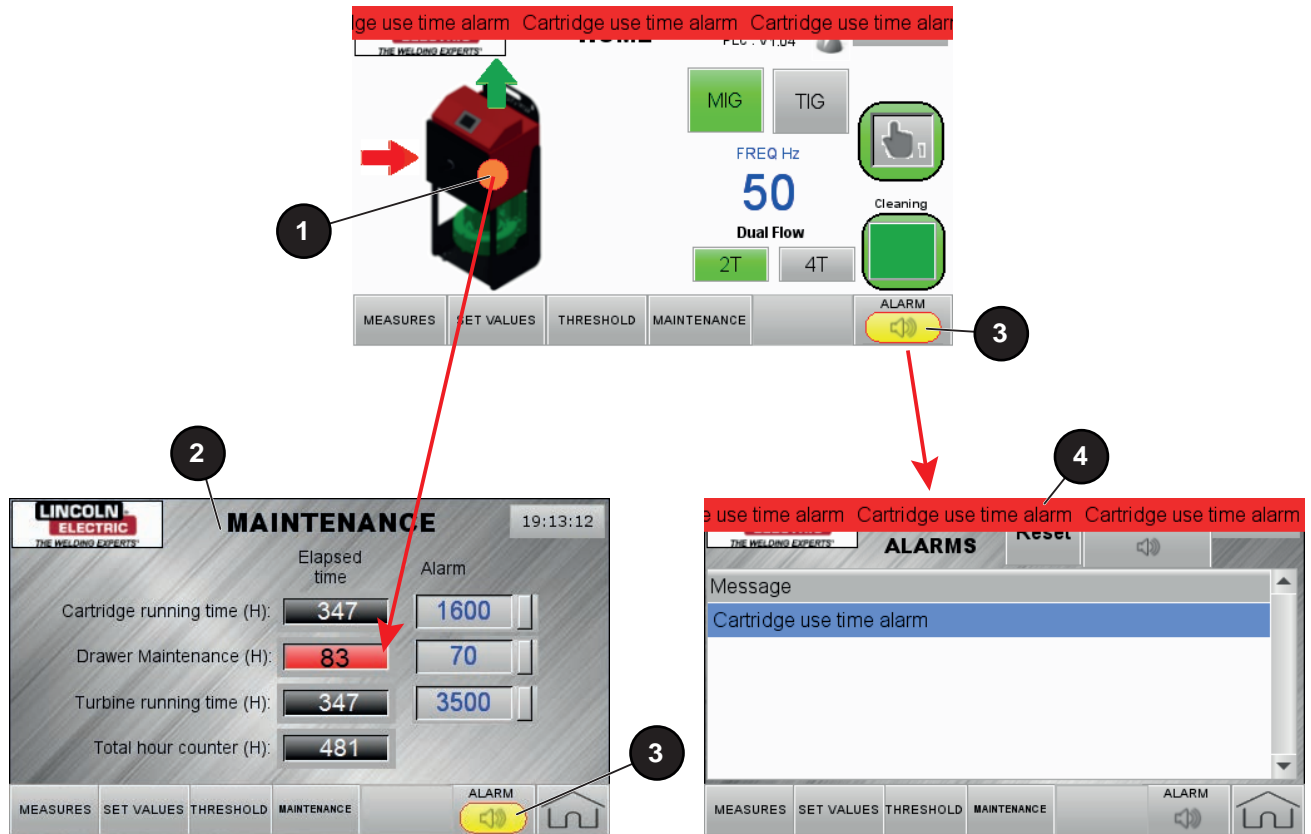
List of possible alarms:

Possible alarms	Possible remedies
C1 sensor fault	Measured values out of range
HMI or PLC battery fault	Change the PLC or HMI battery
Communication fault	Check com connection between PLC and HMI
Filter saturation alarm	Unclog or change the filter cartridge
Turbine run time alarm	Carry out overall maintenance and reset the counter
Cartridge run time alarm	Change the filter cartridge and reset the counter
Drawer maintenance	Empty the dust container and reset the counter
Turbine fault alarm	Turbine failure/variator failure: Note the fault displayed on the variator for more details

2.8 Alarm management

When an alarm is active, there are two possibilities:

- Either click on the orange indicator (maintenance alarm) or red indicator (fault alarm) to open the associated message
- Or click on the Alarms page to view the active alarm or alarms.



1	Orange indicator representing the active alarm
2	Page corresponding to the orange indicator after clicking on it
3	Active alarm indicator and access to Alarms page
4	Active alarms page

1 - Routine maintenance



Please read the manually carefully before you start any servicing work. Maintenance operations may only be carried out by specialised and qualified individuals. Behaviour that does not comply with the safety instructions provided could lead to major hazards for personnel and damage to property and/or the surroundings.



Before working on the machine, it is **MANDATORY** to lock out all the supplies of utilities to the machine (electricity, air, gas etc.). The air circuit must be vented before any work is done on it. Locking an emergency stop button is not sufficient.



CAUTION: All work at heights (maintenance, troubleshooting etc.) must be carried out with appropriate personnel lifting equipment.



For operating instructions, adjustments, troubleshooting and spare parts, please refer to the special instructions for safe operating and maintenance.



Before starting up the machine, make sure that the replaced parts are perfectly installed and that the tools used are removed from the machine.
Make sure that each safety device is in good condition and legible.



MAINTENANCE OF MECHANICAL PARTS

The machine requires negligible mechanical maintenance if it is used correctly in accordance with its technical characteristics.

Before any type of maintenance that is not clearly defined in these instructions, please make inquiries with the technical department of **LINCOLN ELECTRIC**.

The performance of operations that may not be carried out or are contrary to the standards and procedures described in the manual would release **LINCOLN ELECTRIC** from liability for any damage caused and would void the guarantee if it is still valid.

1.1 Maintenance of mechanical parts

The machine requires negligible mechanical maintenance if it is used correctly in accordance with its technical characteristics.

Before any type of maintenance that is not clearly defined in these instructions, please make inquiries with the technical department of **LINCOLN ELECTRIC**.

1.2 Pneumatic maintenance

The regulator and pressure gauge must be inspected from time to time.

The air supply pipes must be inspected (for leaks) and changed if necessary.

Refer to the maintenance counter or cartridge change counter, which is 1600 hours.

1.3 Electrical maintenance

Regularly check the cables and connections.

Tighten the screw connections.

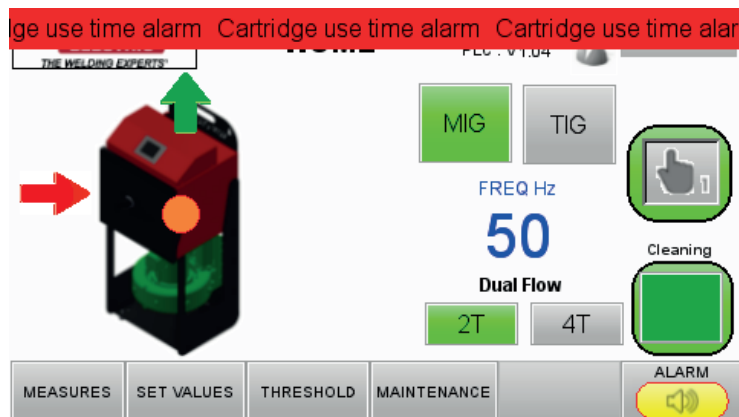
Worn cables must be replaced.

Refer to the maintenance counter of the extraction unit, which is 3500 hours.

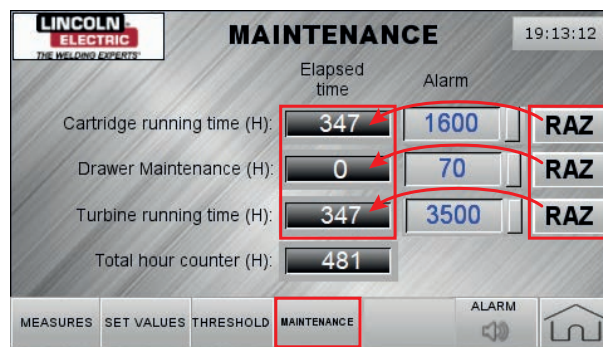
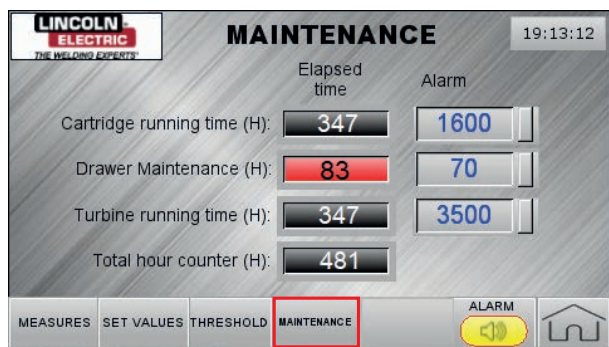
1.4 Maintenance message on the HMI screen

The display of a yellow indicator on filter cartridges or dust containers does not indicate faults, only maintenance alarms.

These may relate to filter cartridge changes, the removal of dust in the dust container, turbine maintenance or general maintenance of the extraction unit.



These maintenance alarms indicate that the run time counter of the relevant part has reached the limit and maintenance is required; the counter must then be reset to the next cycle.



To reset the counter, you must click on the counter and then log in:

- Login: LINCOLN
- Password: MAINT

1.5 HMI screen and PLC software update

For different reasons relating to maintenance, product upgrade or failure, the programs of the PLC and HMI screen can be updated.



Please contact the staff of **LINCOLN ELECTRIC** for these tasks.

2 - Maintenance of filtering elements

2.1 Maintenance of metal pre-filter



The pre-filter must be cleaned with the extraction system disconnected and locked out.

We recommend weekly cleaning at the start. Depending on use and fouling, a monthly cleaning frequency may subsequently be envisaged.



- Access to the metal pre-filter is from the front panel.
- Clean the metal pre-filter with compressed air in a very well ventilated room or by immersion in a solution of water + Filter Clean 20L part no. W000342878 and air dry (dilution depending on fouling, see label on drum).
- Reset the filter cartridge maintenance counter.



2.2 Replacing the filter cartridge



To replace the filter cartridges, always use gloves, safety glasses, respiratory mask and appropriate clothing to prevent the risk of contact with or inhalation of the collected particles. The power supply must always be switched off using the disconnecter and locked out.

We recommend inspecting the surfaces of the cartridges after every 3 months:

- If the dust build-up is excessive, the working of the solenoid valves and the application of offline unclogging cycles must be inspected.
- If there are oily deposits, the filter cartridges must be changed.

After every 1600 hours as indicated by the filter cartridge maintenance counter, or as soon as extraction appears inadequate; change the filter cartridge.



- Open the front panel and remove the metal pre-filter.
- Unscrew the flat nut that holds the cartridge.
- Place a plastic bag around the cartridge and remove it.
- Put the clogged cartridge in the packaging of the new cartridge.
- Put in the new cartridge, screw back the flat nut, put back the metal pre-filter and shut the panel.
- Reset the filter cartridge maintenance counter.



Used filters must be treated using an appropriate process in accordance with local regulations.

2.3 Removal of welding dust



While emptying the dust container, use gloves, protective glasses, a respiratory mask and appropriate clothing in order to avoid any risk of contact with or inhalation of the particles collected. The power supply must always be switched off using the disconnecter and locked out.

As indicated by the dust container maintenance counter.



- Start a manual unclogging cycle to remove the remaining dust from the filter cartridge.
- Power down the **LINC EXTRACTOR** to avoid offline unclogging during the work.
- Open the front panel, remove the metal pre-filter and then extract the container.
- Welding dust must be recycled, and must be stored in an appropriate location for reprocessing according to local requirements.
- Reassemble all the parts and then power up the **LINC EXTRACTOR**.
- In the Maintenance page, reset the dust container maintenance counter.



Dust bags must be treated using an appropriate process in accordance with local regulations

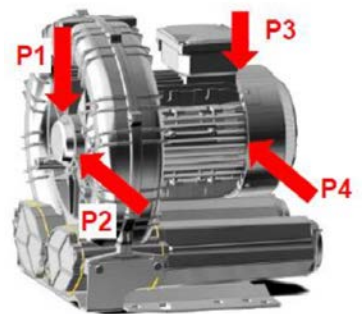
3 - Extraction turbine maintenance



The rotating parts of fans (wheel, shaft, pulley) are very hazardous.

After every 3500 hours as indicated by the turbine maintenance counter (work by an authorised technician)

- Check turbine vibration while starting up. They must comply with ISO 14694 according to the tables below. If they are not conforming, please contact us. Such regular inspection is required to protect the integrity of the turbine
- Reset the dust container maintenance counter.



3.1 Vibration measurement

To determine the vibration speed (mm/s), use an electronic vibration meter and apply it to the following points:

Points P1 and P2 (front bearing): Place the vibration meter close to the front bearing and log the highest value.

Points P3 and P4 (rear bearing): Place the vibration meter on the frame of the electric motor, near the bearing housing (not on the fan guard) and log the highest value.

<p>Key: Machine classification: Class I = SCL with electric motor, power rating ≤ 15 kW Class II = SCL with electric motor, power rating > 15 kW</p> <p>Assessment zones: Zone A = vibrations (a) inside this zone are acceptable for long-term operation.</p> <p>Zone B = vibrations (a) inside this zone are acceptable for continuous short-term operation. The machine may operate in these conditions for a limited period, till an opportunity for appropriate corrective maintenance work arises.</p>	Effective vibration speed value (mm/s)	Class I (≤ 15 kW)
	$a < 1.8$	A
	$1.8 < a < 4.5$	B

Vibration values above zone B may not be considered to be acceptable as they could damage the machine seriously.



Deposits inside the turbine could lead to

- variations in its operating characteristics,
- and cancelling of clearance, therefore seizing,
- rotor unbalance.

3.2 Cleaning the inside



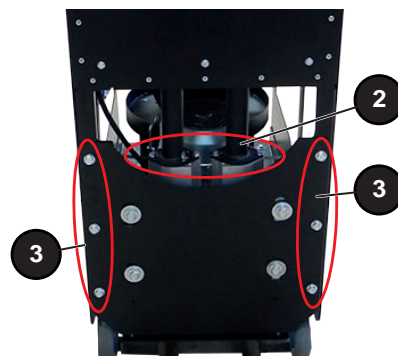
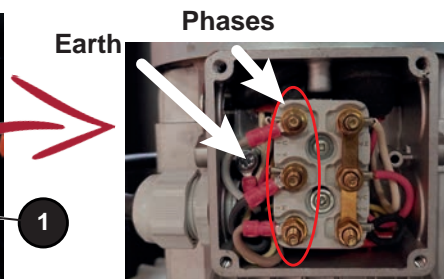
Any work on the **LINC EXTRACTOR** must **NECESSARILY** be carried out after it has been isolated from all utility supplies. The disconnection and padlocking of the electricity supply is mandatory.

To clean the inside of the turbine, proceed as follows:

1 - Separating the turbine from the LINC EXTRACTOR.

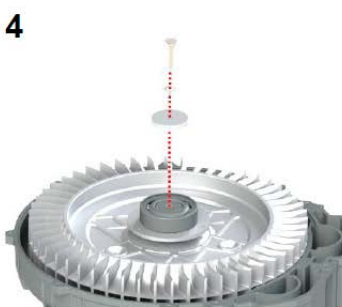
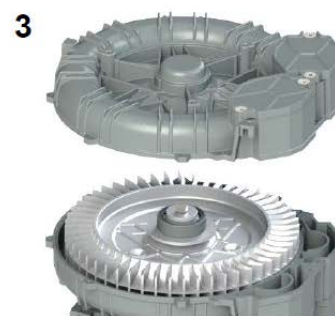
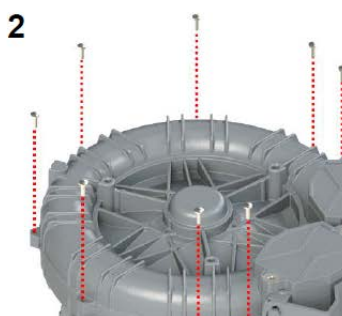
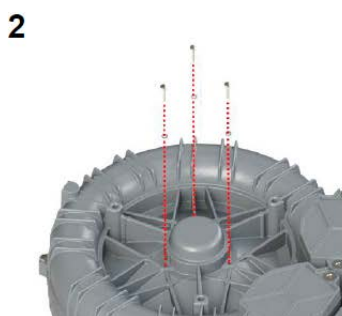
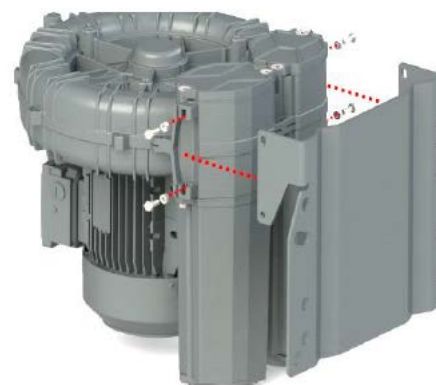
- 1 - Disconnect the electricity supply from the turbine terminal plate - three phases and earth - and then extract them from the gland.
- 2 - Take off the intake and exhaust pipes.
- 3 - Unscrew the turbine from the frame

Weight of turbine: 37 kg



2 - Opening the turbine for maintenance

- Set the machine vertical by placing the fan on a flat and stable surface (1).
- Loosen the screws 920 and remove the stand 183 (1).
- Loosen the screws of the cover (3 Philips head and 9 Allen screws (2)).
- Lever up the two grooves located between the body 161 and the cover 162 (3) to remove the cover.
- Loosen the screws 900 and remove the washer 365 (4).
- Remove the bearing 321 and the cover 360 of the bearing using an extractor (5).
- Remove the impeller 230 (6).
- Clean and reassemble, in reverse order of assembly.
- Make up the seal 423 with Loctite 598 or the like after carefully cleaning the surfaces of the previous seal

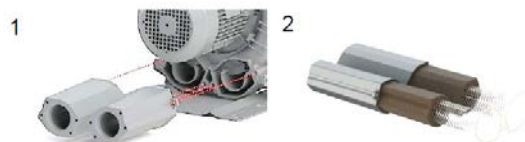


Life of bearings:

In normal operating conditions, the machine bearings must be replaced after every 25000 hours or every 3 years.

3.3 Replacing the sound-proofing panels

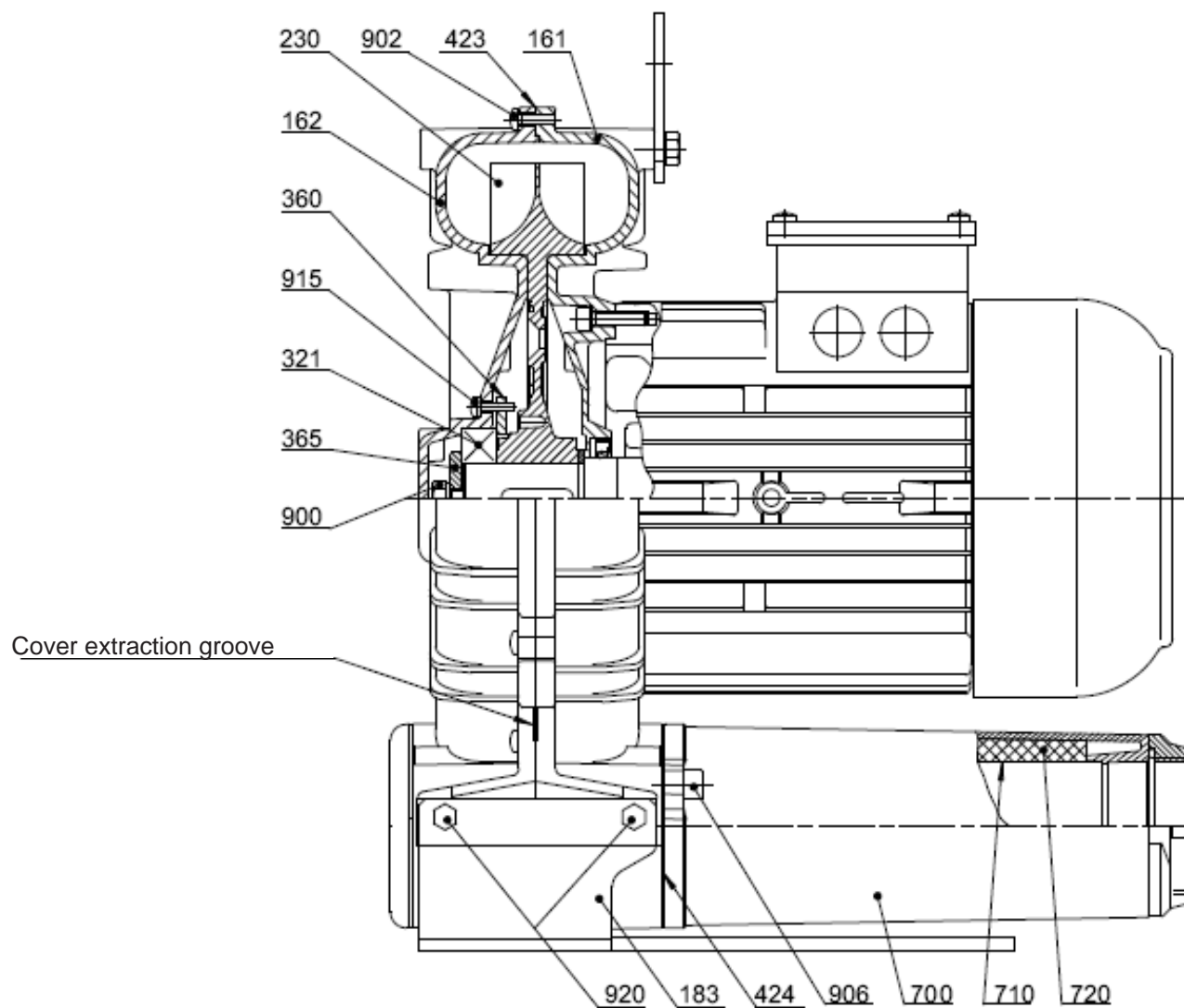
- Loosen the screws 906 (1)
- Remove the unit silencer 700.
- Take care to not misplace the seals 424.
- Extract the foam 720 from the body of the silencer (2)
- Collect the meshes 710.
- Replace and put back, in reverse order, and remember the seals 424.



3.4 Motor cooling

Clean the motor cooling impeller blades (after every 6 months).

NB: This unit does not require lubrication.



4 - Troubleshooting

Problem	Cause	Solution
The unit does not start	The electrical wiring is not correct.	Make sure that the electrical connections match the diagram indicated in the terminal box.
	The power supply voltage is not suitable.	Make sure that the power supply voltage measured at the motor terminals is equal to $\pm 5\%$ of the nominal voltage.
	The impeller is blocked.	Cause the machine to be repaired by qualified personnel.
No or inadequate air flow	The rotation direction is incorrect.	Make sure that the rotation direction is as indicated on the casing protecting the motor fan.
	The extraction filter is clogged.	Clean or replace the cartridge.
Current consumption above the acceptable value	Wiring not correct.	Make sure that the electrical connections match the diagram indicated in the terminal box.
	Power supply voltage drop.	Restore the power supply voltage of the terminals with the acceptable values.
	The extraction filter is clogged.	Clean or replace the cartridge.
	Deposits have built up inside the unit.	Cause the inside of the machine to be cleaned by qualified personnel.
	The unit is operating with pressure and/or vacuum above the acceptable value.	Adjust the installation and/or the adjustment valve to reduce the pressure differences.
Discharge air temperature high	The unit is operating with pressure and/or vacuum above the acceptable value.	Adjust the installation and/or the adjustment valve to reduce the pressure differences.
	The extraction filter is clogged.	Clean or replace the cartridge.
	Deposits have built up inside the unit.	Cause the inside of the machine to be cleaned by qualified personnel.
	The extraction and/or discharge pipes are blocked.	Remove the obstructions.
	Temperature of extracted air above 40°C	Use heat exchangers to reduce the temperature of the extracted air.
Abnormal noise	The soundproofing panel is damaged.	Replace the soundproofing panel.
	The turbine is rubbing against the frame a) The unit is operating with pressure and/or above the acceptable value b) Reduction of assembly clearances due to internal deposits (dust, impurities on tubes, process residues etc.)	Adjust the installation to reduce the pressure differences. Cause the inside of the machine to be cleaned by qualified personnel.
	Bearing worn.	Replace the bearing.
	The unit is not installed in a suitable position.	Install the units on structures that cannot transmit or amplify noise (tanks, metal plates etc.).

Abnormal vibrations	The impeller is damaged.	Replace the impeller.
	Deposit has built up inside the impeller.	Cause the inside of the machine to be cleaned by qualified personnel.
	The unit is not fastened correctly.	Fasten the unit with anti-vibration systems.

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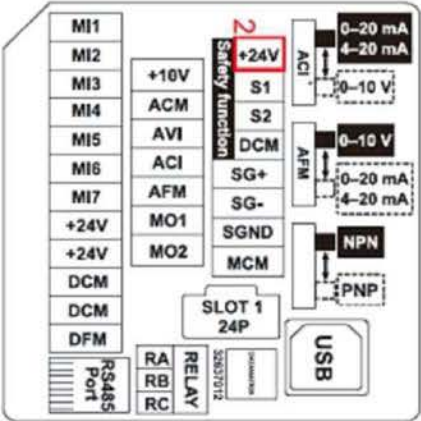
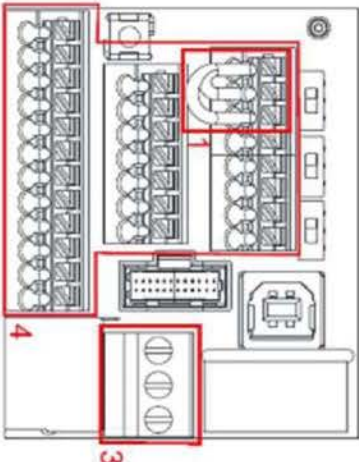
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TERMINAL BLOCK DELTA MS300

Control Terminal Distribution Diagram

Control Terminal Location Diagram

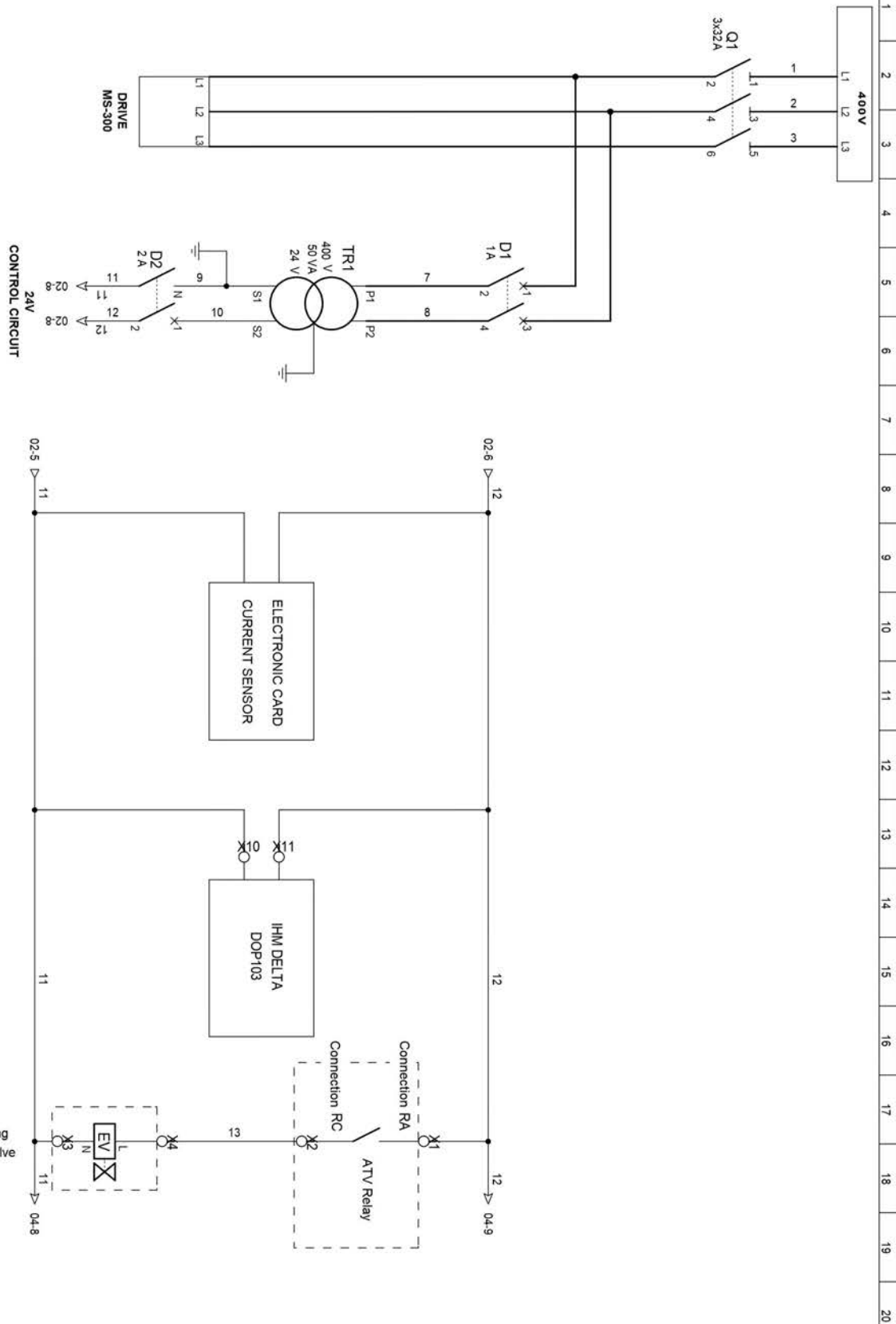


	DATE	NOM	LINCOLN® ELECTRIC	LINC EXTRACTOR TERMINAL BLOCK DELTA MS300	FOLIO 01 ◀ 01 02 ▶
DESSINE	20/03/2023	c.a.			
REALISATEUR					
APPROUVE		c.a.			

N°:

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User's guide



	DATE	NOM
DESSINE	20/03/2023	flo
REALISATEUR		flo
APPROUVE		flo

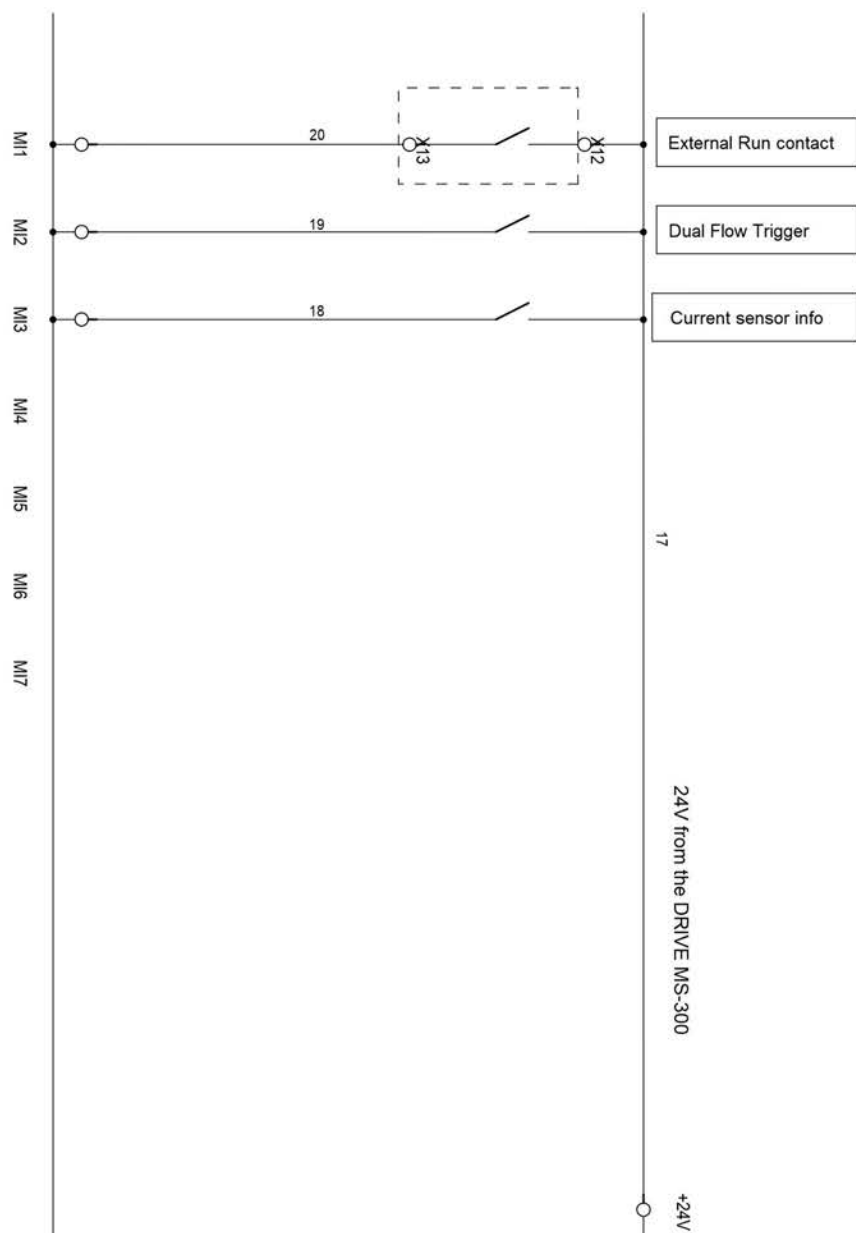
LINCOLN ELECTRIC
N°:

LINC EXTRACTOR
POWER

FOLIO
02

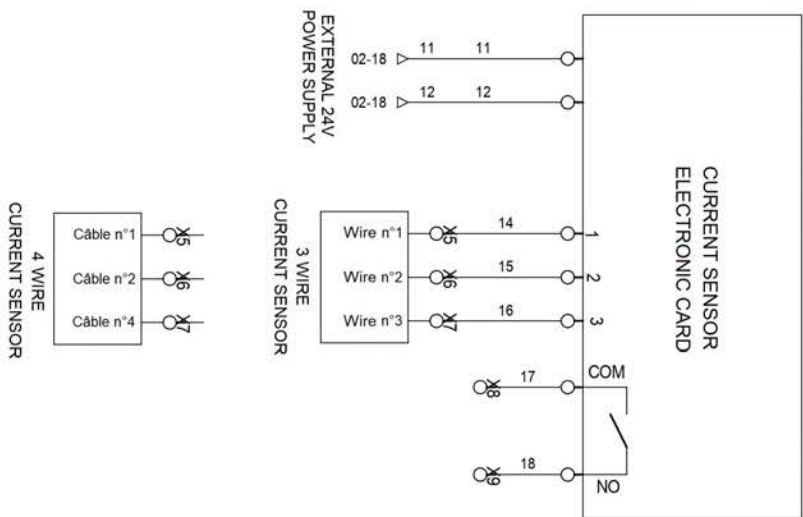
◀ 01 03 ▶

ON-OFF INPUTS DRIVE DELTA MS-300



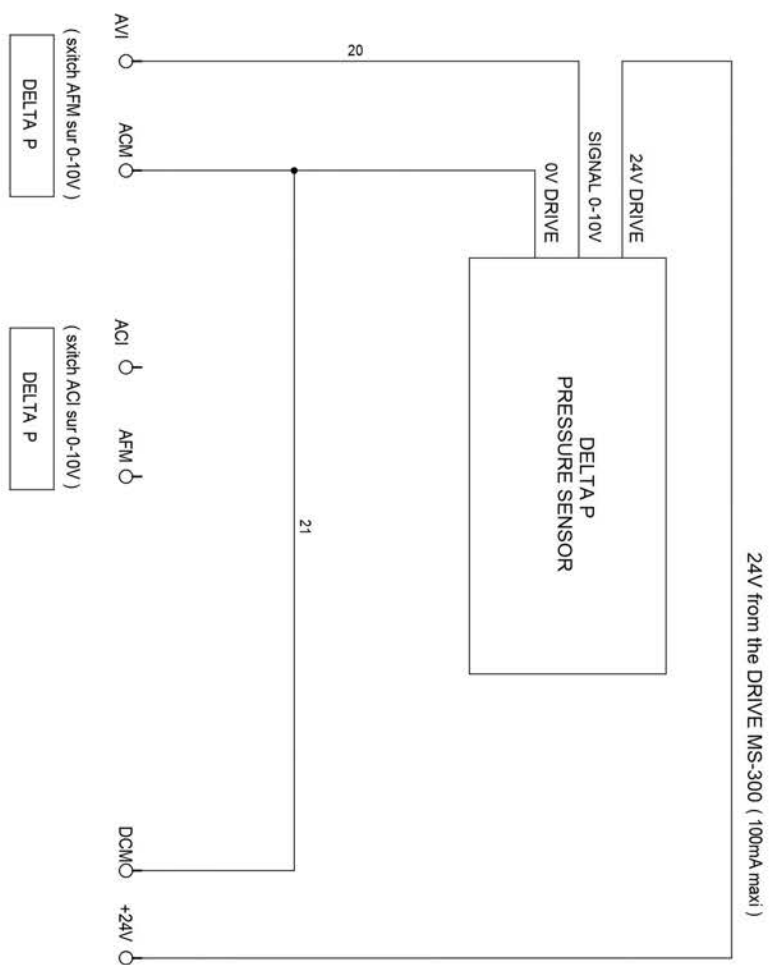
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DESSINE	20/03/2023	flo			
REALISATEUR		flo			
APPROUVE		flo			

CURRENT SENSOR ELECTRONIC CARD



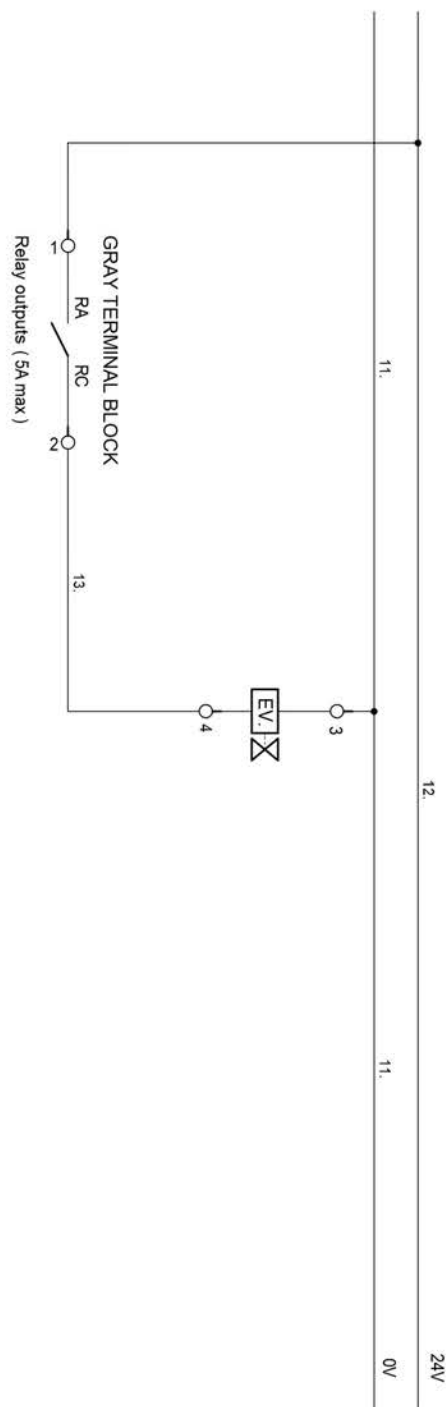
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	DESSINE	flo			
	REALISATEUR	flo			
	APPROUVE	flo			

ANALOG INPUTS DRIVE DELTA MS-300



				LINCOLN[®] ELECTRIC	LINC EXTRACTOR ANALOG INPUTS	FOLIO 05 ◀ 04 06 ▶
	DATE	NOM				
DESSINE	20/03/2023	flo		N°:		
REALISATEUR		flo				
APPROUVE		flo				

ON-OFF OUTPUTS DRIVE DELTA MS-300



MO1 ☐ MO2 ☐ MCM ☐

FREE FREE COMMON OUTPUTS

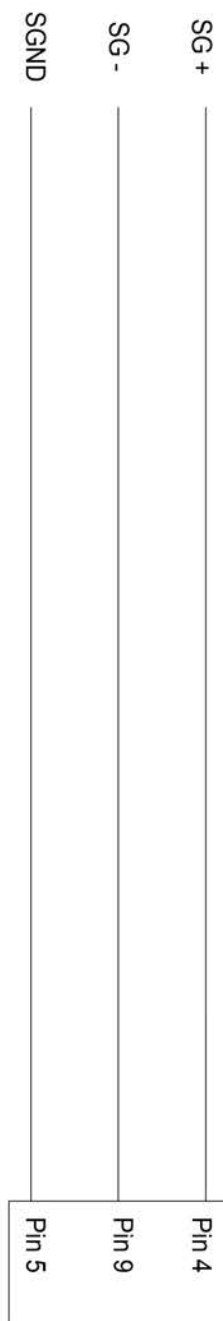
Transistor outputs 50mA max

		DATE	NOM	LINCOLN ELECTRIC	LINC EXTRACTOR ON-OFF OUTPUTS DELTA MS-300	FOLIO 06 ◀ 05 07 ▶
	DESSINE	20/03/2023	flo			
	REALISATEUR		flo			
	APPROUVE		flo			

Cables for connecting the Drive MS-300 to the HMI screen

TERMINAL BLOCK DRIVE MS-300

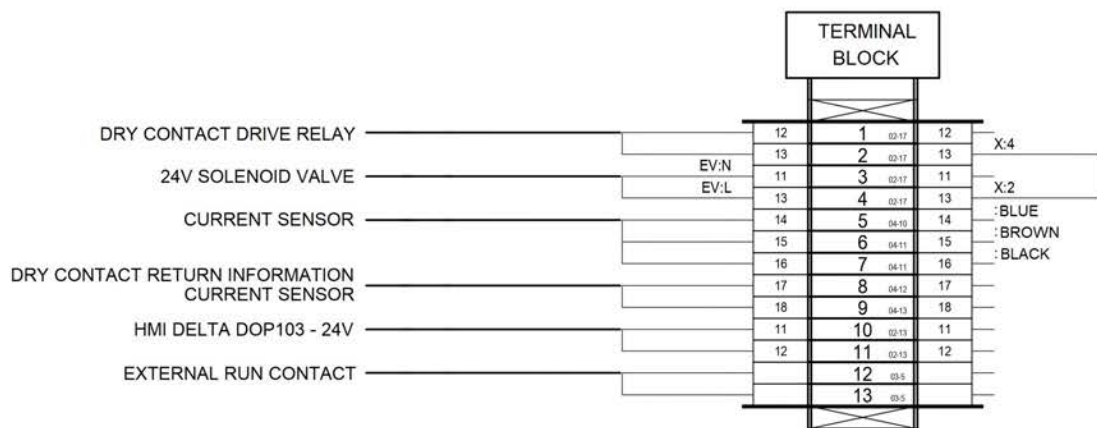
CONNECTOR DB9 MALE



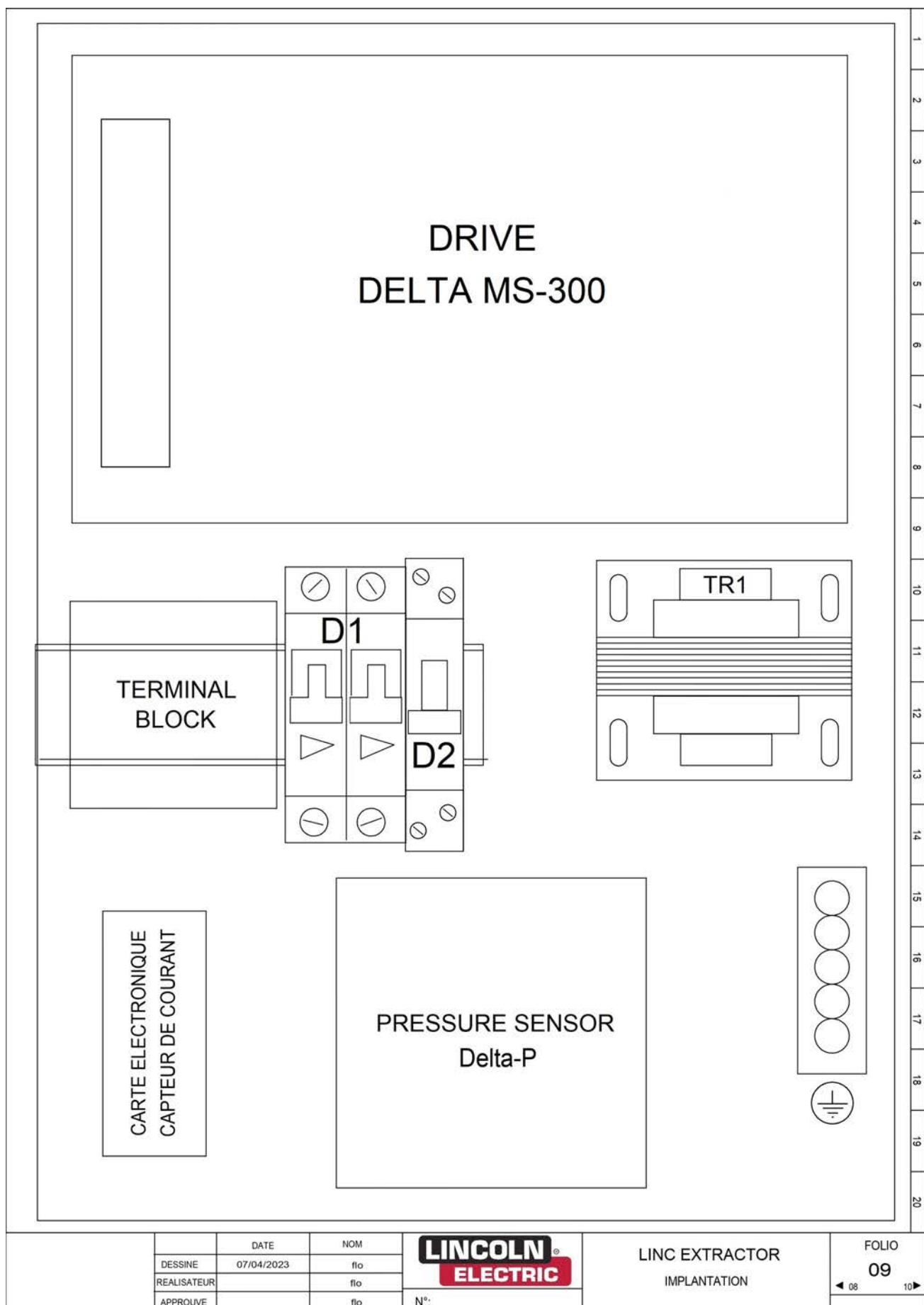
		DATE	NOM	LINCOLN ELECTRIC	LINC EXTRACTOR CONNECTION DRIVE MS-300 / HMI	FOLIO 07 ◀ 06 08 ▶
DESSINE	20/03/2023	flo				
REALISATEUR		flo				
APPROUVE		flo				

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TERMINAL BLOCK



	DATE	NOM	LINCOLN ELECTRIC	LINC EXTRACTOR TERMINAL BLOCK X - 1/1	FOLIO 08 ◀ 07 09 ▶
DESSINE	02/05/2023	flo			
REALISATEUR	02/05/2023	flo			
APPROUVE	02/05/2023	flo			



6 - Spare parts

Ordering procedure:

Almost all the parts of a machine or installation are referenced in the photographs and sketches.

The descriptive tables contain three types of items:

- items normally held in stock: ✓
- items not held in stock: ✕
- articles upon request: no reference

(For such parts, please complete the list of parts page and send us a copy. In the Order column, state the number of parts required and indicate the type and number of your equipment.)

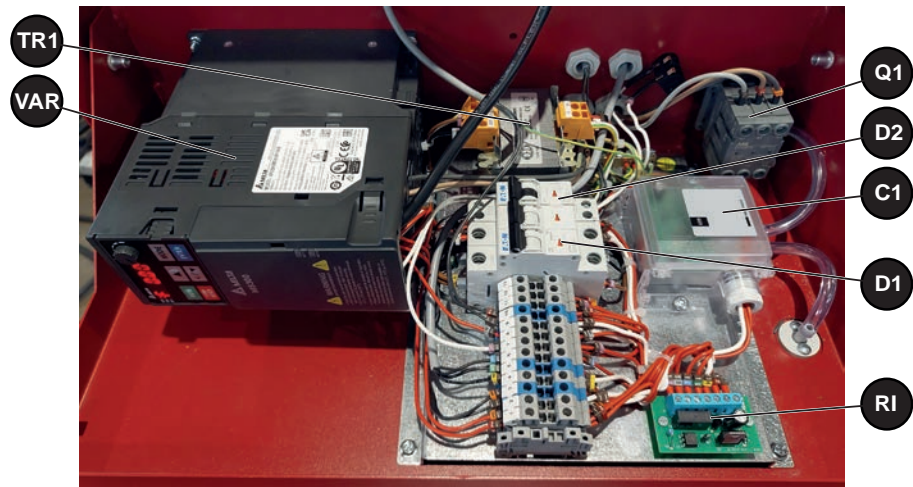
For items referenced in the photographs or sketches but not included in the tables, please send us a copy of the relevant page and highlight the relevant reference.

Example:

		✓	normally held in stock.		
		✕	not in stock		
			upon request.		

Ref	Part no	Stock	Order	Description	Qty
A1	W000XXXXXX	✓		Machine interface board	
A2	W000XXXXXX	✕		Flow meter	
A3	P9357XXXX			Printed front plates	

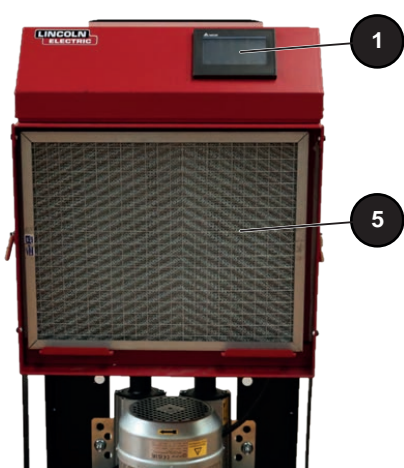
6.1 Electrical cabinet



✓	normally held in stock.
✗	not in stock
	upon request.

Ref	Part no	Stock	Order	Description	Qty
VAR	EM61000703	✓		Frequency variator - DELTA MS300	1
TR1	W000403084	✗		400V/24V transformer	1
Q1	EM61000707	✗		Disconnecting switch Q1 – 32A three phase	1
D1	EM61000708	✗		Circuit breaker D1 – 1A	1
D2	EM61000709	✗		Circuit breaker D2 – 2A	1
C1	W000276149	✓		Pressure switch C1 – 5000PA	1
	EM61000483	✗		Plastic pressure connector	2
	EM61000493	✗		Crystal tube Ø10 – L10m	1
RI	W000384776	✓		Current sensor printed circuit board	1

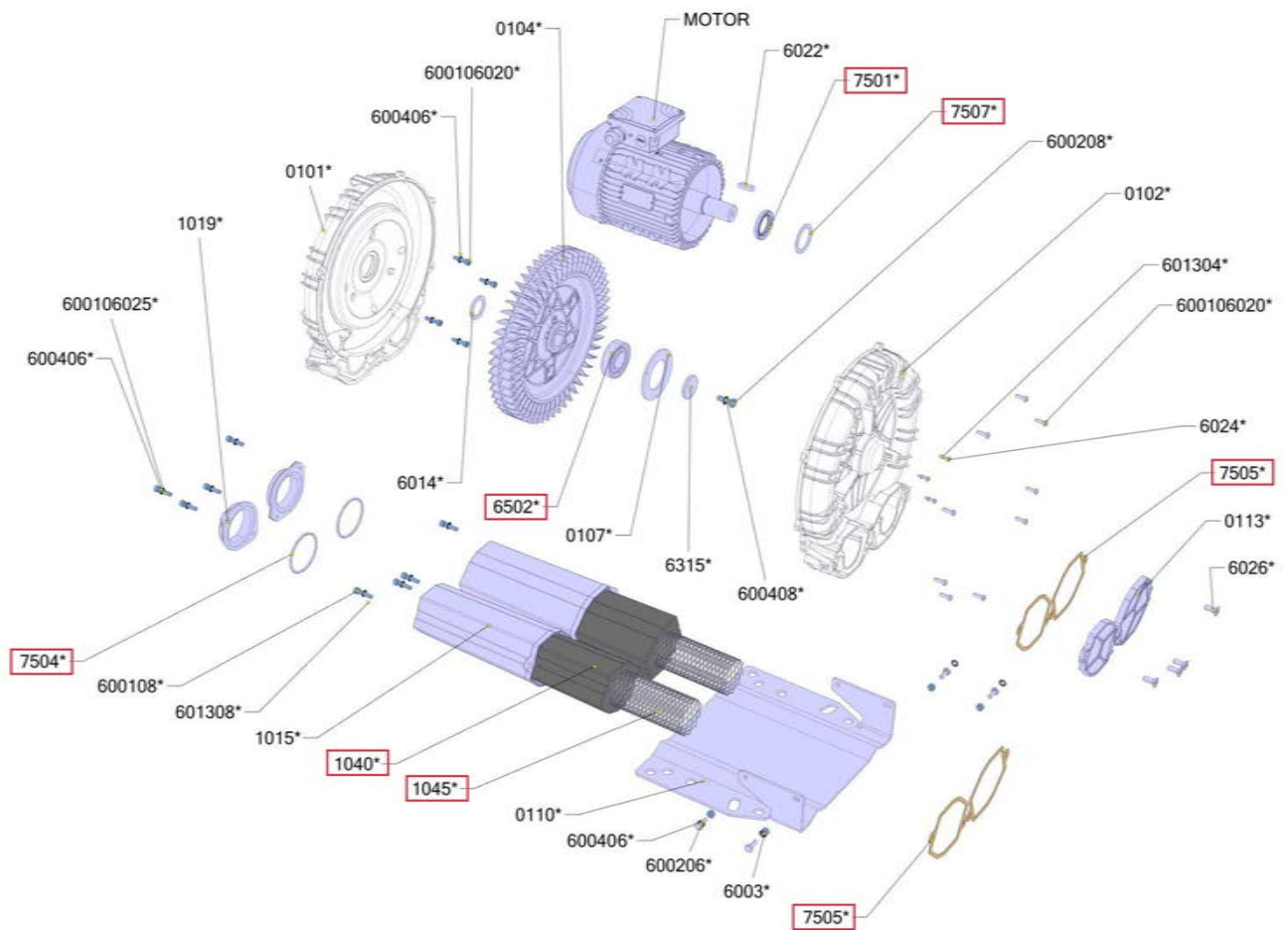
6.2 External spare parts



✓	normally held in stock.
✗	not in stock
	upon request.

Ref	Part no	Stock	Order	Description	Qty
1	EM61000704	✓		HMI screen – DELTA DOP 103	1
2a	W000403083	✗		Ø 50 mm extraction connection	1
2b	EM61000634	✗		Ø 38 mm extraction connection	1
3	W000278615	✓		Complete turbine, K06MS – 3KW	1
4	EM61000626	✓		Compressed air regulator kit	1
5	W000340600	✓		Metal pre-filter	1
6	W000382775	✓		Polyester filter cartridge (standard)	1
	EM61000746	✓		PTFE membrane filter cartridge (optional)	1
	S94002086	✓		Unclogging solenoid valve	1
	EM61000705	✗		Unclogging mechanism	1
	W000379696	✓		AC/DC current sensor for ground cable	1

6.3 Turbine





✓	normally held in stock.
✗	not in stock
	upon request.

Ref	Part no	Stock	Order	Description	Qty
	W000278615	✓		Complete turbine, K06MS – 3KW	1
0104	EM61000449	✗		Blade wheel	1
	EM61000203	✗		Turbine maintenance kit including:	1
6502				Turbine bearing	1
7501				Motor sealing ring	3
7507				Sliding bearing	1
7505				Silencer seal	4
7504				Flange seal	2
1045				Silencer mesh	2
1040				Silencer foam	2

6.4 Additional accessories

✓	normally held in stock.
✗	not in stock
	upon request.

Ref	Part no	Stock	Order	Description	Qty
	W000402140	✓		Hose, VAC Ø 50mm 5m with end fittings	1
	W000402142	✓		Hose, VAC Ø 50mm 10m with end fittings	1
	W000375488	✓		Hose, VAC Ø 50mm 15m without end fittings	1
	W000375489	✓		Set of 2 end fittings, VAC 50	1
	EM61000410	✓		Hose, VAC Ø 38mm 5m with end fittings	1
	EM61000411	✓		Hose, VAC Ø 38mm 10m with end fittings	1
	W000386139	✓		Discharge hose, Ø 80mm 5m	1
	W000386140	✓		Discharge hose, Ø 80mm 10m	1
	W000386141	✓		Discharge hose, Ø 80mm 15m	1
	EM61000353	✓		Long nozzle, 300 mm, with magnetic stand, Ø 50mm	1
	W000279767	✓		Contact type MIG torch rest	1
	EM61000580	✗		Contact type TIG torch rest	1
	EM61000235	✗		Ø 80mm discharge kit for discharge along wall cladding: <ul style="list-style-type: none"> • 1 Ø 80 mm spiral duct • 1 Ø 80mm 90° bend • 1 Ø 80mm meshed whistle • 2 Ø 80mm cleanliness plates • 1 Ø 80mm - 1 m long polyurethane hose • 1 set of assembly accessories 	1
	EM61000236	✗		Ø80 mm roof discharge kit: <ul style="list-style-type: none"> • 1 Ø 80 mm spiral duct • 2 Ø 80mm 90° bend • 1 Ø 80mm meshed whistle • 1 roof waterproofing guard • 1 Ø 80mm - 1 m long polyurethane hose • 1 set of assembly accessories. 	1

