TURBINE

TURBINE ESSENTIAL TE35

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE

N° W000278334

EDITION : EN
REVISION : D
DATE : 09-2022

Instructions for use

REF : **8695 8465**

Original instructions

LINCOLN ELECTRIC

Thank for the trust you have expressed by purchasing this equipment, which will give you full satisfaction if you follow its instructions for use and maintenance.

Its design, component specifications and workmanship comply with applicable European directives.

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

The manufacturer will not be held responsible where items not recommended by themselves are associated with this product.

For your safety,there follows a non-restrictive list of recommendations or requirements, many of which appear in the employment code.

Finally we would ask you kindly to inform your supplier of any error which you may find in this instruction manual.

CONTENTS

LINCOLN ELECTRIC reserves the right to modify its machines without notice.

Illustrations, descriptions and specifications are given for guidance only and are not binding on the manufacturer.

After starting up the machine, the maintenance department must keep these instructions for future reference.

Introduction

Dear Madam/Sir,

Thank you very much for purchasing **LINCOLN ELECTRIC** equipment for the extraction and filtration of grinding/welding/cutting dust.

LINCOLN ELECTRIC has extensive experience and is renowned for its welding and cutting equipment and products.

The improvement of the working environment of welders has always been one of its priority concerns.

Quality hinges on the quality of the environment and the well-being of workers.

This document contains the instructions for use and safety relating to the equipment, and also the assembly and maintenance instructions and commercial part numbers relating to this product.

CONFORME CE

Machinery Directive:	2006/42/CE
Electromagnetic Compatibility Directive:	2014/30/UE
RoHS Directive :	2011/65/UE

REVISIONS

REVISION C 01/20

DESIGNATION	PAGE
Created in English	

REVISION D 09/22

DESIGNATION	PAGE
“Operating principle” updated	11
“Electrical connection” page added	13
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“Spare parts” page added	25

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

TURBINE ESSENTIAL TE35

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 differing assembly or modification will void the validity of this certificate. That is why the manufacturer must be called in for any modification. Failing that, the contractor making the changes must offer new certification. We shall not be liable in any way in the event of such new certification. This document must be submitted to your technical or purchasing department for filing.

DESCRIPTION	**Turbine ESSENTIAL TE 35**
TYPE	**W000278334**
NUMBER	**See identification plate**

2) This equipment complies with European Directives.

Machinery Directive :	2006/42/CE
Electromagnetic Compatibility Directive :	2014/30/UE
RoHS Directive:	2011/65/UE

3) Using the following harmonised standards:

EN ISO 12100:2010
EN ISO 13850:2008
EN ISO 13857:2008
EN 60204-1:2006/AC:2010
EN 61000-6-2:2005
EN 61000-6-3:2007

4) The Air Treatment Products Manager, authorised to prepare the technical construction document.

Mr. Patrick DEGROOTE
LINCOLN ELECTRIC FRANCE SAS
Avenue Franklin Roosevelt
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5) Manufacturer.

LINCOLN ELECTRIC FRANCE SAS
Avenue Franklin Roosevelt
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CERGY, date: 29/10/2019

A - INTRODUCTION

USING THE MANUAL

Please read this manual before you start handling, installing or using the machine. Keep the manual safe in a place known to the user of the machine and maintenance personnel till the machine is finally destroyed.
This manual explains how to transport, install, use and maintain the filter. It cannot in any event replace the experience of the user for operations of varying difficulty.
Before the filter 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 departments of **LINCOLN ELECTRIC**.

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 contact the technical department for any requests.

HOT LINE (+33) 825 132 132

DESCRIPTION OF PICTOGRAMS

To make this document easier to understand, it contains pictograms with the meanings given below:

DANGER: indication used when failure to follow the instructions could lead to a serious hazard for personnel.

WARNING: indication used when failure to follow the instructions could lead to damage to the machine, associated elements or the surroundings.

This symbol shows that the description is intended for specialised personnel.

B - GENERAL SAFETY INSTRUCTIONS

ELECTRICAL SAFETY

Connection to the mains

Before you connect your machine, 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 single-phase or 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, the earth connection if there is one, may never be cut off by the system offering protection from electric shocks.
— The switch, if there is one, is set to OFF.

Operating position

Arc welding and cutting requires strict compliance with safety requirements in respect of electrical currents (Order of 14.12.88).

Servicing

Before any internal checking or repairs, make sure that the machine has been disconnected from the electrical installation by locking it out:
— Accidental connection of the cable of a fixed installation has been made impossible
— Cutting off by means of a fixed connection device relates to all poles (phase and neutral. It must be in the OFF position, with no possibility of being put into service by mistake
Some machines have an HV.HF arc strike circuit (indicated by a plate). Never work inside such a box.
Any work on electrical installations must be carried out by persons qualified for that purpose (Decree 88-1056 of 14 November 1988, Section VI, Art 46).

Maintenance

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 enclosures and ducts may not be carried out in a haphazard manner (Section VI, Art. 47 Decree 88-1056 of 14 November 1988).
— 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.
Any fans placed in a circuit in which the air is laden with dust must be cleaned from time to time. That is because the turbine may be fouled and become unbalanced, leading to increased noise and premature wear and tear of bearings. Maintenance is required at least after every six months, depending on the type of dust treated.

The turbine is an essential element of your extraction system.

Incorrect operating or inadequate maintenance could make the operating position less safe. The fan must therefore be maintained in perfect condition.

your machine has been selected for a specific application. The turbine is characterised by an extraction rate operating point (air speed in the pipes), load loss.

in accordance with the regulations of CARSAT and INRS, the installation must be inspected from time to time to make sure that it continues to comply with its reference values.

PERSONAL PROTECTION

Risks of external injury relating to welding operations

Whole body

— The operator must be clothed and protected to suit the requirements of the job.

— Make sure that no part of the bodies of operators and helpers can come in contact with metal pieces or parts that are live or are liable to become live accidentally.

— Do not wind electricity cables around the body.

— Keep safety guards and panels in place.

— The operator must always wear personal insulating protection (Order of 14 December 1988, Section III).

— The protection must be kept dry to prevent electric shocks if it is wet, or ignition in the presence of oil.

Personal protective equipment worn by operators and their helpers - gloves, aprons, safety shoes - offer the added benefit of protecting them from burns due to hot pieces, splattering and slag.

Make sure the PPE is in good condition and replace it before it ceases to offer protection.

Face and eyes

It is indispensable to protect the following:

— Eyes, from arc injury (dazzling due to visible light from the arc, and infrared and ultraviolet radiation).

— Hair, face and eyes from welding splatter and projection of slag during weld cooling

the welding mask, when used under or without a helmet, must always be equipped with a protective filter, the shade of which depends on the intensity of the welding arc current (Standards NF s77-104a 88-221 a88-222).

the coloured filter may be protected from impacts and splatter by a transparent glass located on the front of the mask.

if the filter is replaced, use another one with the same part number (shade number).

persons in the vicinity of the operator, especially any helpers, must be protected by means of suitable screens, anti-UV goggles or, if needed, masks with suitable protective filters (EN 139).

Specific case of chlorine solvents in welding: (used for cleaning or degreasing).
— The fumes from these solvents can be changed into toxic gases when subjected to arc radiation, including from a distance.
— Such solvents may therefore not be used in locations where electric arcs occur, if the solvents are not in a sealed enclosure.

Work in confined spaces

Examples :

— Mine roads
— Piping and pipelines
— Ship docks, pits, manholes, cellars
— Tanks
— Ballast tanks
— Silos
— Reactors

Special precautions must be taken before undertaking welding operations in such enclosures, where suffocating and poisoning and fire and explosion risks are very great.
A work permit procedure setting out all the safety measures must systematically be set up.

Make sure that ventilation is appropriate, paying special attention to:
— under-oxygenation
— over-oxygenation
— excess fuel gas

Grinding operations

During grinding operations, the operator must wear their personal protective equipment, namely auditory and face protection.
Care must be taken to not leave any inflammable material or product in the flow of incandescent grinding particles.

FILTRATION OF FUMES AND DUST

Important

Mechanical or electrostatic filtration systems are effective for the filtration of solid but not gaseous particles (exterior discharge).

If recycling is effective (not recommended), make sure the workplace where the machine or machines are placed is properly ventilated, so as to not reach the OELV (occupational exposure limit values) of gaseous pollutants relating to the specific pollution generated by the method (welding, cutting).

Field of use

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

— Zinc, paper, flour, plant leaves, graphite, alumina 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 machine 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 filter (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.

Additional instructions for the use of the « Filter Clean » part no W000342878

(Cleaning agent for electrostatic filters and metal pre-filters)

Labour/Health code

On the basis of the information available, this product does not have to be labelled under the legislation relating to hazardous chemicals of 21/02/1988 as amended. The usual measures relating to chemicals are to be applied.

Storage and handling

Precautions for storage and handling.

Personal protective measures:

Respiratory protection: Nil

Eye protection: Use of goggles

Hand protection: Use of appropriate gloves

Special protective measures:

Avoid extended contact with the skin and mucous membranes.

Specific protective measures for fire-fighting : Nil

Waste disposal :

With the approval of the local authorities, apply a special disposal system: neutralisation

Inflammation and explosion

Measures after leaks or spills Nil

Appropriate extinguishing means : Nil

First-aid measures

Eyes: Rinse with running water for 10 minutes if necessary.

Skin: Rinse with running water.

Ingestion: Rinse the mouth and seek medical attention

C - OVERALL DESCRIPTION

TE35 extraction units are particularly studied for extracting welding fumes with a fume extraction torch or a nozzle with a magnetic stand.

The turbine output/pressure specifications are fully adapted to the required result, that of extracting fumes without disturbing the gaseous protection of the weld pool.

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

BENEFITS

— High air flow.

— Low sound level.

— Simple to install, compact design.

— Minimum maintenance.

FIELD OF USE

The following applications are not within the field of use of the turbine**TE35**:

Zinc, paper, flour, plant leaves, graphite, alumina and other such dust, because electrostatic discharge or welding splatter would present a risk for those using the turbine.

The air flow taken in must not be at a temperature above 80°C.

The equipment 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 torch or nozzle).

Take particular care to:

Not obstruct the air outlet of the machine.

Replace the hoses if they are pierced.

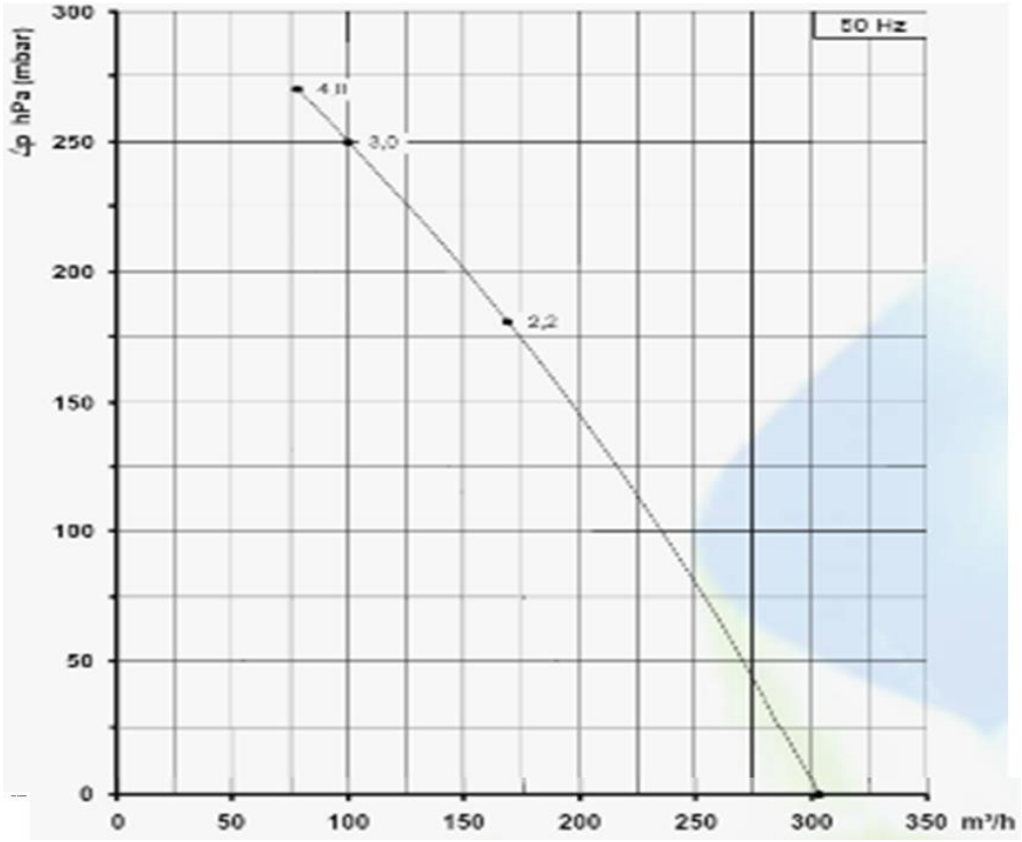
Regularly clean the metal pre-filter

TECHNICAL SPECIFICATIONS

DESCRIPTION	UNIT	TURBINE TE 35
Mains power supply	V	400
Mains frequency	Hz	50
Power	kW	3.0
Air flow rate (no load)	m³/h	304
Sound level	dB(A)	71.3

WEIGHT AND DIMENSIONS

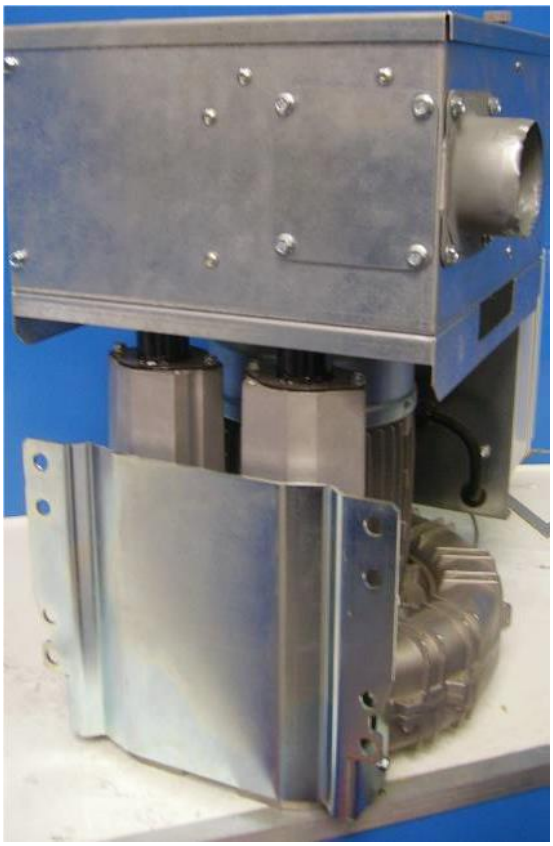
DESCRIPTION	UNIT	TURBINE TE 35
Weight	kg	52
Width	mm	360
Depth	mm	500
Height	mm	650



Curve at nominal speed of the turbine motor

D - INSTALLATION AND COMMISSIONING

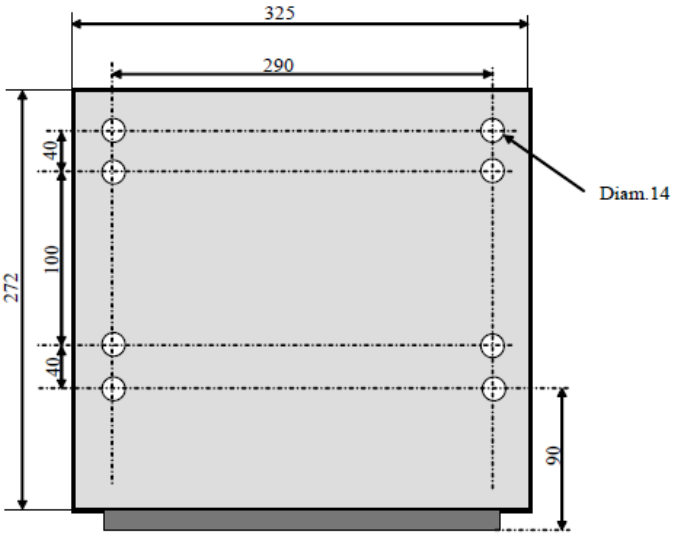
TURBINE FASTENING



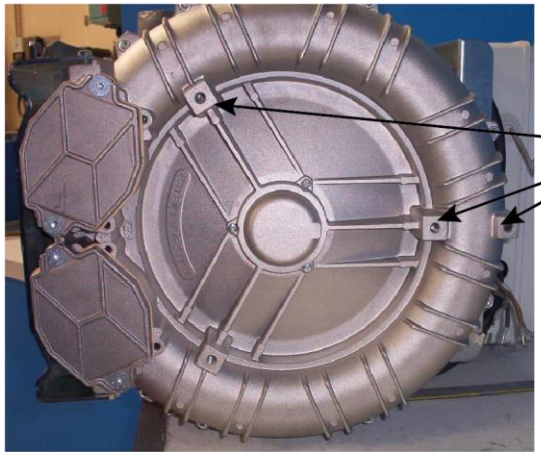
The turbine may be fastened in two different ways :

- Wall mounting: use the support at the rear of the turbine (see dimensions on the drawing below)

***Turbine support sides* ESSENTIAL**

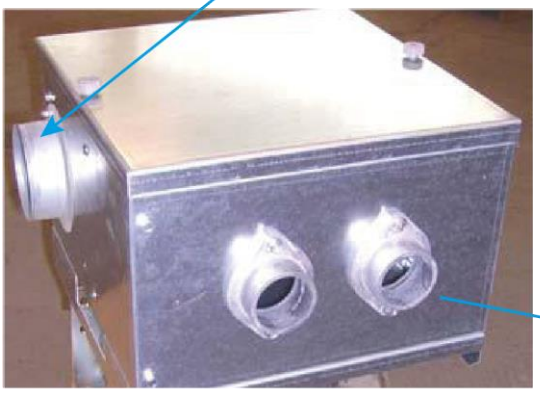


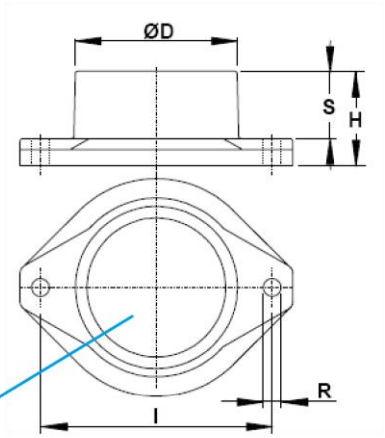
- Vertical fastening: use the enclosed flexible bushes.



CONNECTING THE EXTRACTION SYSTEM

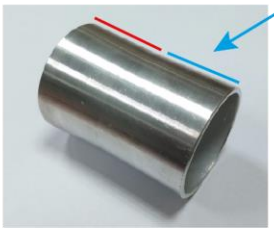
Connecting diameter for oulet hose:80 mm





Extraction hose flanges:

OD:	60 mm
ID:	50 mm
S :	25 mm
H :	35 mm
I :	85 mm



Insert the adapter W000385618 for a 50 mm hose (blue side) from inside the flange, so that the flared side (red) is blocked in the body of the flange.

If needed, add a self-tapping screw in the flange and adapter.

Connect the diameter 50 mm extraction hose to the adapter.

OPERATING PRINCIPLE

Two operating modes:

The working of the**TE 35** extraction unit may be either manual (continuous operation) or automatic (controlled by the welding machine through a current sensing clamp).

- **Manual:** Continuous turbine service.

- **Automatic:** As soon as the arc is struck, the filtration system starts up; after the arc stops, the fan stops (stopping delay adjustable from 2 seconds to 9 minutes).

  The unit will operate as soon as the welding arc appears and will stop after a time that is preset to 3 minutes. That delay allows the torch to cool and avoids accidental stopping and starting that could make the thermal relay trip during tack welding.

  The unit is supplied as standard with a current sensor for starting it up under the control of welding (5 m long cable).

  The front control panel has two luminous indicators:
  - A white indicator shows the network connection of the impeller,
  - A green indicator shows that the impeller is operating.

SAFETY SYSTEMS

Pre-filter:

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

Mechanical:

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 a rating that complies with the given cleaner plates and a catchment system with an earth connection.

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

— 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:

Verify the extraction and discharge rotation direction, 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.

ELECTRICAL CONNECTIONS

- Three-phase 400V power supply without neutral – 50 Hz

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

Recommendation

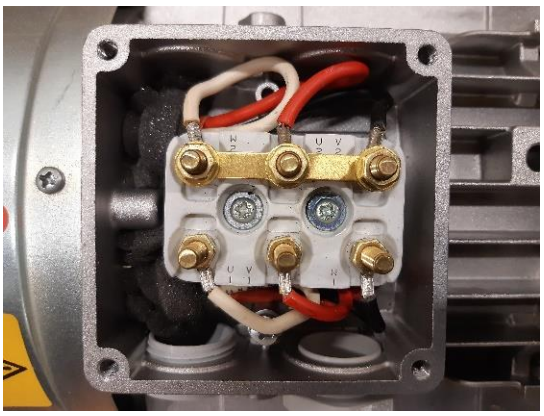
POWER (kW)	50HZ SYSTEM VOLTAGE		
	230V single phase	230 3PH	400 3PH
	Section (mm²)		
0,18	3x1,5	4x1,5	4x1,5
0,25	3x1,5	4x1,5	4x1,5
0,37	3x1,5	4x1,5	4x1,5
0,55	3x1,5	4x1,5	4x1,5
0,75	3x1,5	4x1,5	4x1,5
1,1	3x1,5	4x1,5	4x1,5
1,5	3x1,5	4x1,5	4x1,5
2,2		4x2,5	4x1,5
3		4x2,5	4x1,5
4		4x2,5	4x1,5

Electrical cables

Cable section	Part no
3x1.5 mm²	W000010098
3x2.5 mm²	W000010099
4x2.5 mm²	W000010100
4x4 mm²	W000010101
4x6 mm²	W000010102
4x10 mm²	W000010103

Before making the connections, check the system voltage and wire the extraction unit accordingly.

TE35 extraction units are wired for 400V in the factory.



400V star connection

CONNECTING THE FUME EXTRACTION TORCH

Connect the extraction hose with a 50 mm diameter between the connecting tee of the torch and the turbine inlet.

Comments:
The torch may never be used without the extraction system, and without liquid cooling where applicable, or it may be destroyed. That is because the extraction system also cools the torch.

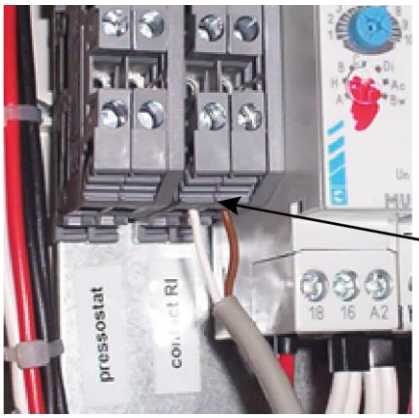
CONNECTING THE CURRENT SENSOR

The turbine is supplied with a clamp type current sensor, part no . W000380662

➔ **That current sensor only detects direct current (DC) above 80 A**

The ground cable must pass through the current sensor, and the sensor clamp must be correctly closed as shown in the photograph above.

The current sensor must be connected to the ground cable of the welding power source and connected to the electrical cabinet of the turbine.



The two wires of the current sensor are connected to this terminal blocked named ‘contact RI’

E - USE

CONTROL UNIT

- Padlockable insulating switch for CE conformity.
- The front comprises :

REFERENCE	DESCRIPTION
1	Padlockable main disconnecting switch
2	White power on indicator
3	Fault indicator
4	Manual, Stop, Automatic selection
5	Current sensor

The turbines are supplied as standard with a current sensor with a 5 m long cable for putting starting up under the control of welding

Note :
- **The current sensor only operates with direct current (DC) above 80 A**
- **The current sensor is fixed on the welding ground cable**
- **The clamp must be closed and the cable routed through it.**

AUTOMATIC OPERATION

Selection of **Manual operation**, **Off**, **Automatic operation** of nominal torch extraction.

In the automatic position, the turbine is started up by the current sensor that detects the welding current, or by an outside contact type signal (NO contact).

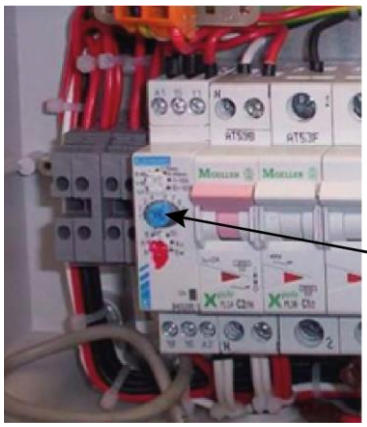
The turbine stops after a 0 to 3 minute delay

SETTING THE DELAYED TURBINE STOPPING TIME

The turbine is delivered with a stopping delay that is factory set to 3 minutes. That delay is very useful while making small welds, or during tack welding or metal framework welding.

In order to avoid restarting with each ark strike, the turbine is kept operating.
If the delay is too long or short, it can be modified with the help of the potentiometers.

Using a small screwdriver (work to be carried out by a qualified electrician), you can increase the time by turning the potentiometers to the required value.



F - 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.

All routine and/or exceptional maintenance must be carried out with the machine disconnected from the supply system.

Advice for machine users: maintenance is to be carried out as described in the manual.

1. Electrical risks
2. Cutting and abrasion risks in filter area.

Mind the maintenance of the electrical frame. Hazards are indicated by a plate saying “HAZARDOUS VOLTAGE”.
In order to ensure the proper working of the machine, defective spare parts must be replaced with original spare parts from **LINCOLN ELECTRIC**.

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

Hazards relating to rotating turbines: cutting or shearing.
The openings on the machine and its cover allow access to the rotating turbine after the manifolds or blind flanges are removed.
Never put your hands or any other object through those openings.

Introduction

All routine maintenance operations must be carried out by disconnecting the machine from the electricity supply.

During maintenance work, the operator must wear PPE (gloves, protective goggles, protective mask and protective clothing on the body).

MAINTENANCE OF MECHANICAL PARTS

The mechanical maintenance requirements of the machine are negligible 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 of the “General instructions” section would release **LINCOLN ELECTRIC** from liability for any damage caused and would void the guarantee if it is still valid.

PRE-FILTER

Periodically, as a preventive measure, or whenever extraction does not seem adequate :

CAUTION! All the operations below must be carried out with cut-resistant gloves and a respiratory protection mask.

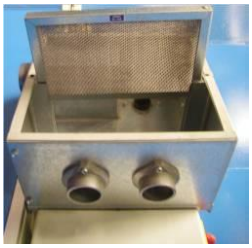
1- Stop the machine and disconnect it with the main disconnector to switch off the On indicator of the turbine.

2- Disconnect the power connector.

3- Open the door by unscrewing the two knurled buttons.

4- Put on cut-resistant gloves and extract the metal pre-filter

5- Check if there are any bodies inside it.



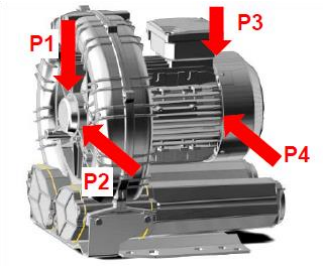
6. Clean with dry compressed air in a well-ventilated area or immerse in a solution made of water and + FILTER CLEAN 20L part number W000342878.

TURBINE

Cleaning the machine :

Every 3 or 6 months depending on the type of work and the usage time (by an approved technician) :

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.



Legend: Machine classification: Class I = SCL with electric motor, power rating ≤15 kW Class II = SCL with electric motor, power rating > 15 kW Evaluation zones: Zone A = vibrations (a) inside this zone are acceptable for long-term operation. Zone B = vibrations (a) inside this zone are unacceptable for continuous long-term operation. The machine may operate in these conditions for a limited period, till an opportunity for appropriate corrective maintenance work arises.	Effective value of vibration speed (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.

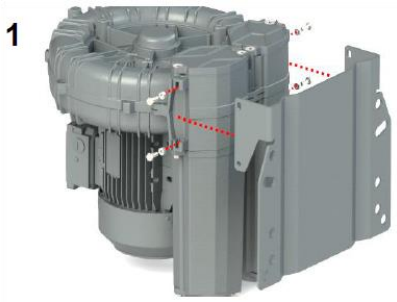
CAUTION! Deposit inside the compressors could lead to:

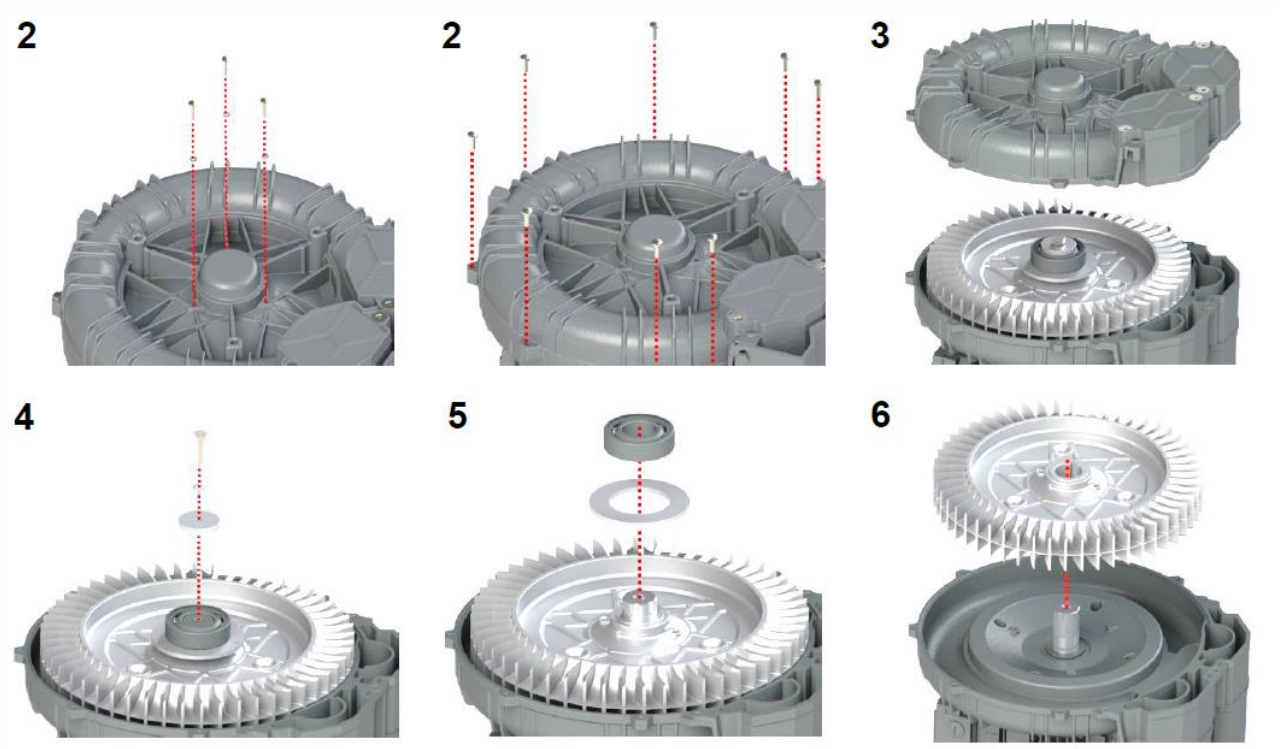
- variations in operating characteristics;
- cancelling of clearance, and therefore seizing;
- rotor unbalance.

Cleaning the inside :

To clean the inside of the machine proceed as follows:

- Set the machine vertical by placing the fan on a flat and stable surface (1).
- Loosen the screws 920 (1).
- Remove the stand 183 (1).
- Loosen the screws of the cover (three Philips head and nine 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 turbine 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



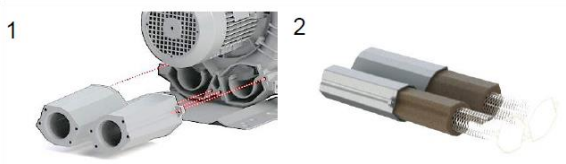


Life of bearings :

In normal working conditions, machine bearings must be replaced every 25,000 hours (operation to be carried out by **LINCOLN ELECTRIC** personnel only) or three years if the 25,000 hours of service are not reached.

Replacement of sound-proofing boards:

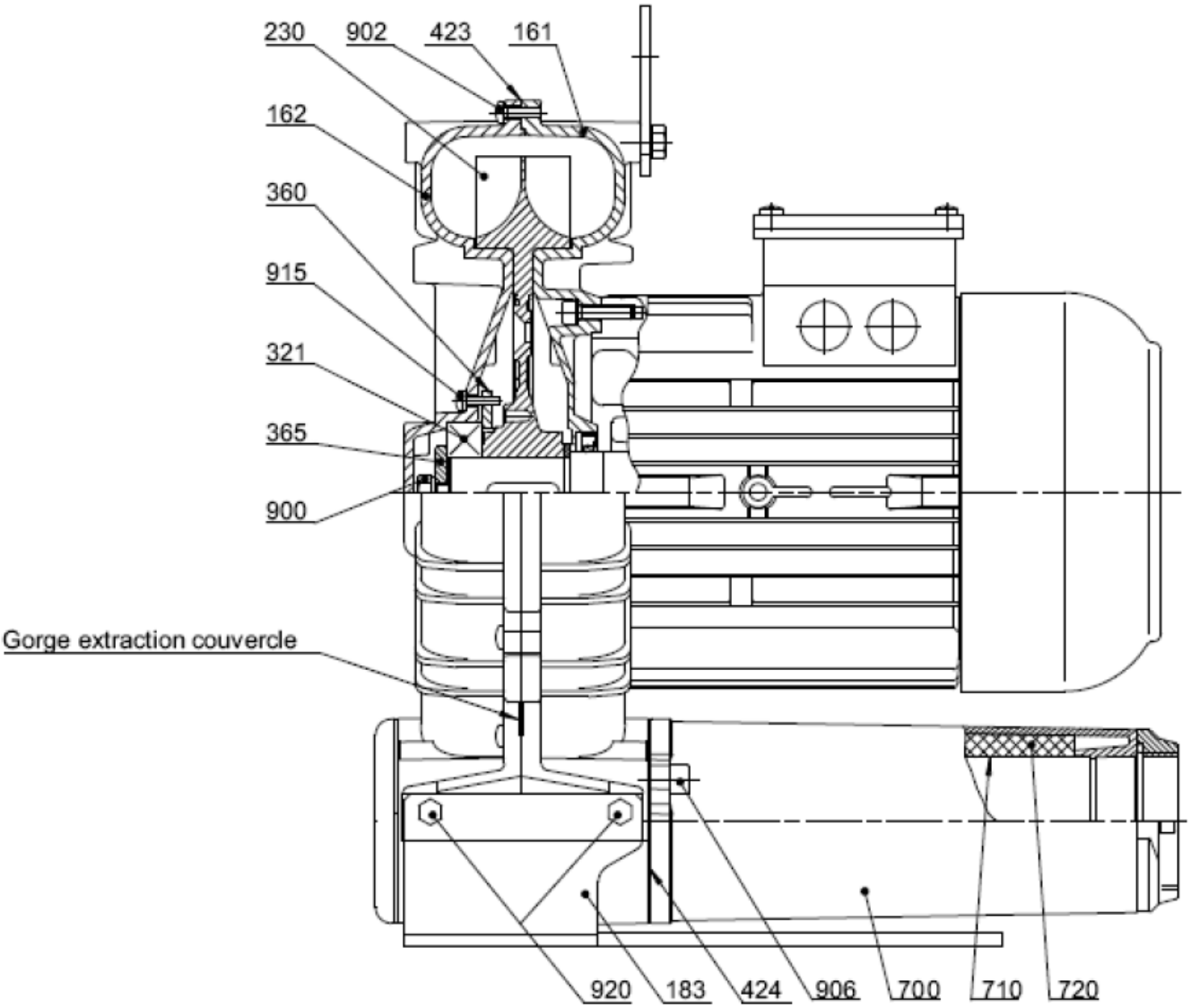
- Loosen the screws 906 (1)
- Remove the unit silencer 700. Take care to not misplace the seals 424.
- Extract the foam 720 from the body of the silencer.
- Collect the meshes 710.
- Replace and put back, in reverse order, and remember the seals 424.



Motor :

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

NB: This unit does not require lubrication.



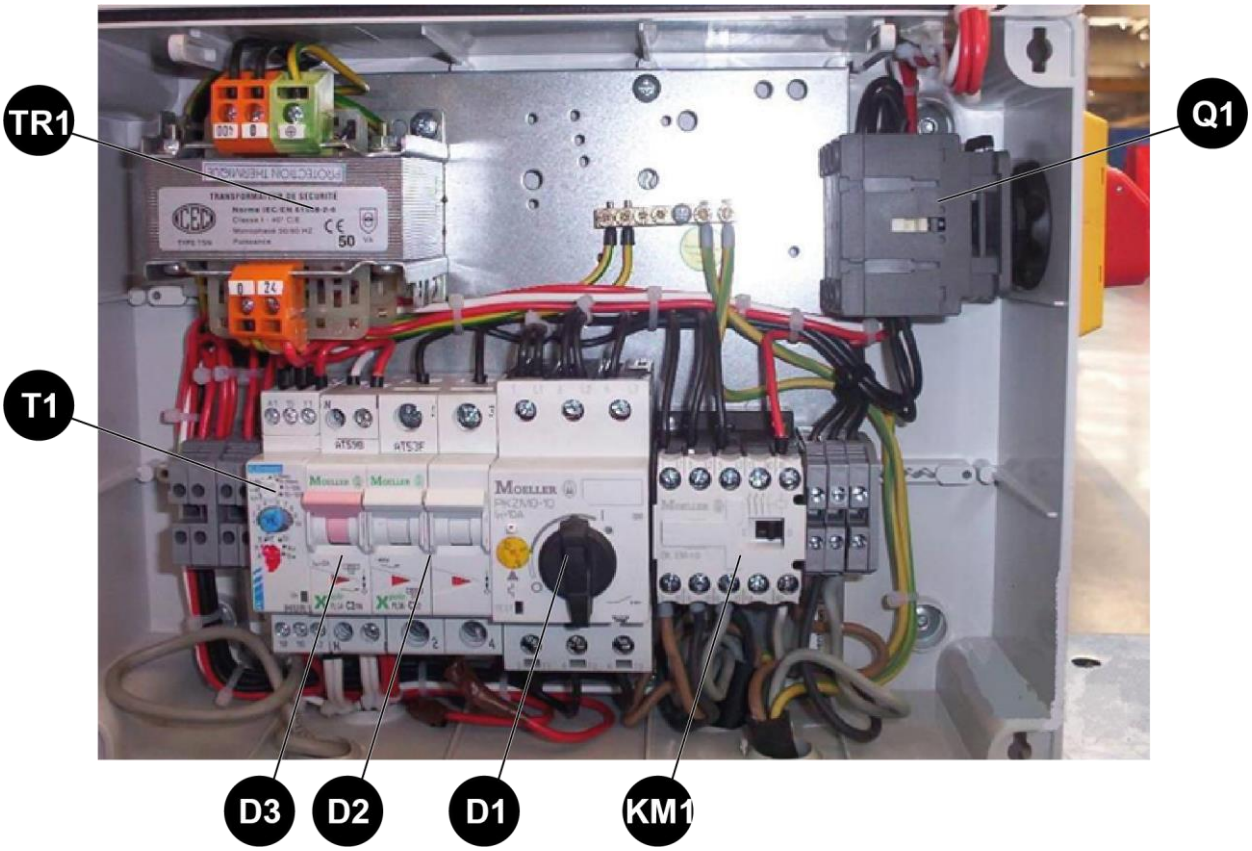
TROUBLESHOOTING

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 +/-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 impeller is rubbing against the frame. a) The unit is operating with pressure and/or above the acceptable value. b) Reduction of assembly gaps 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.

ELECTRICAL COMPARTMENT

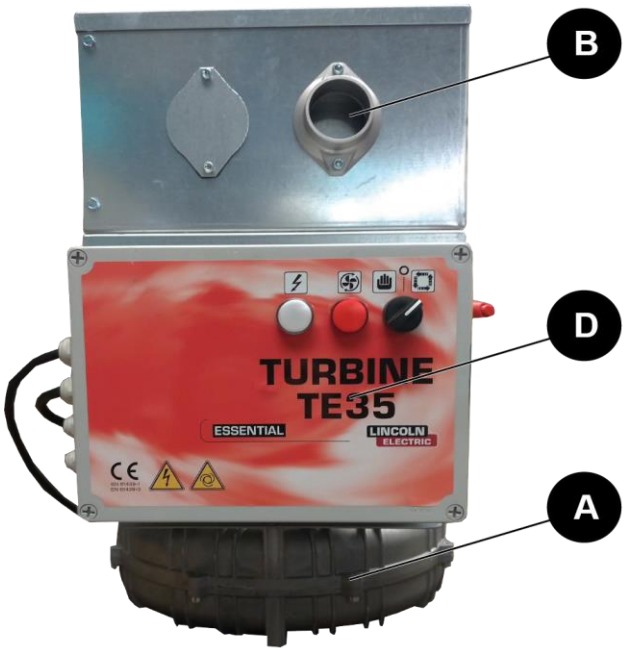
LIST OF ELECTRICAL PARTS

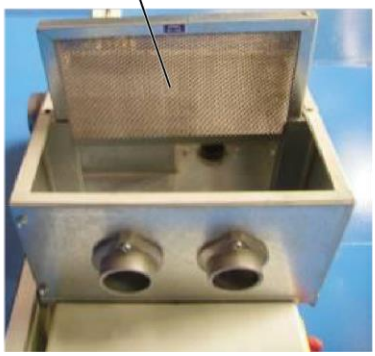
Description	Reference	Characteristics	Reference
Transformer	**TR1**	40VA 230/400V 24V MONO	W000403084
Main disconnector	**Q1**	TE VCF 02	W000403086
Contactor	**KM**	TE LC1D09B7	W000403087
Motor circuit breaker	**D1**	Three pole 6.3/10 A	W000374606
Auxiliary power circuit breaker	**D2**	Two pole 1 A	Please enquire
Control circuit breaker	**D3**	Phase/Neutral 2 A	Please enquire
Timer	**T1**	Multifunction	Please enquire



SPARE PARTS

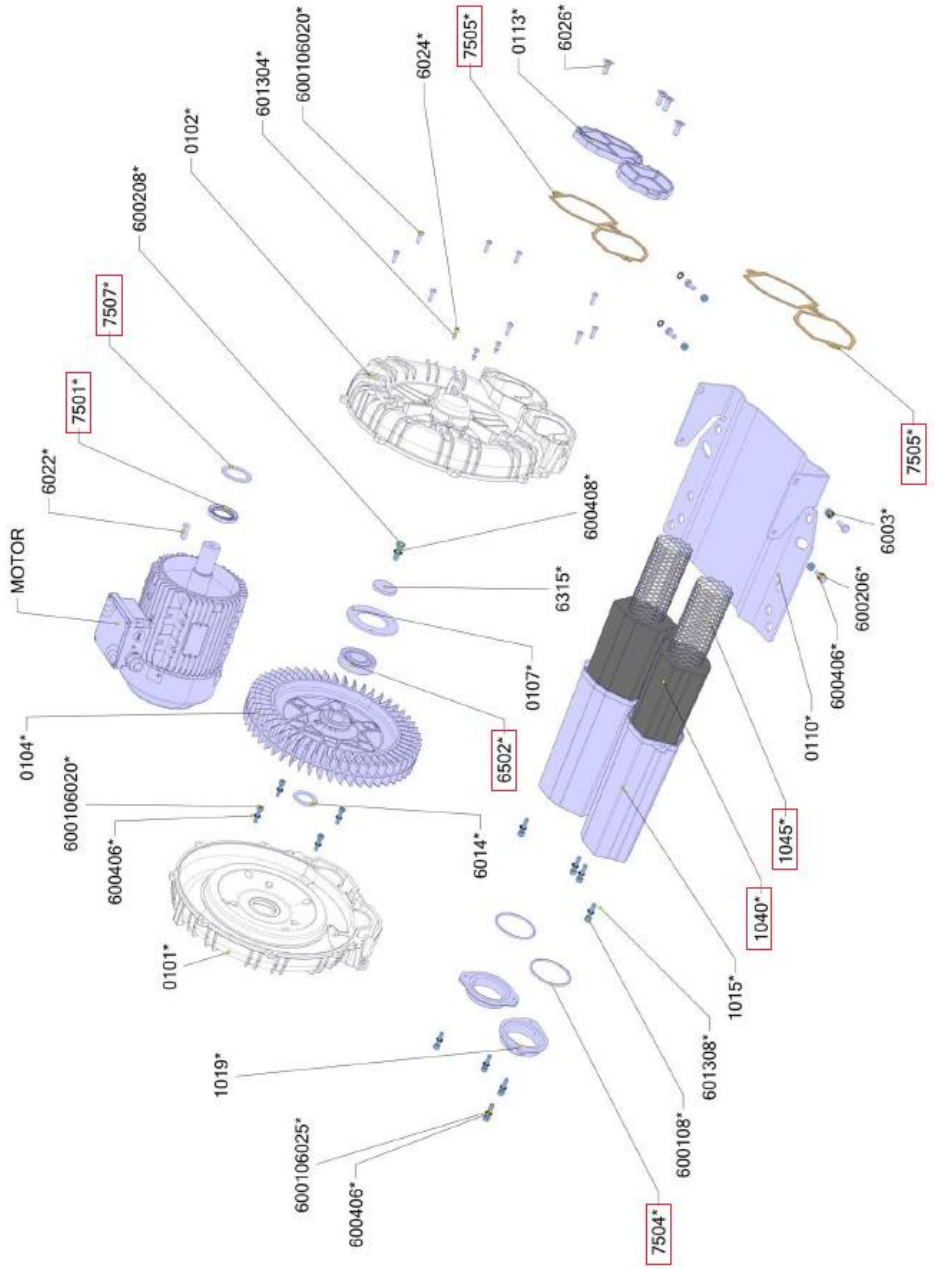
Description	Reference	Reference
Turbine SCL K05 MS	**A**	W000278615
Smooth flange MP 6 - 2''	**B**	W000278616
Current sensor clamp	**C**	W000380662
Electrical cabinet 3 kW	**D**	W000278703
Metal pre-filter	**E**	W000278617





SPARE PARTS

DESCRIPTION	PART NO	
Rotor - 0104	EM61000449	
Impeller maintenance kit	ATS61000203	
Including:	***reference***	***quantity***
Impeller bearing	6502	1
Motor sealing ring	7501 & 7508	3
Sliding bearing	7507	1
Silencer seal	7505	4
Flange seal	7504	2
Silencer mesh	1045	2
Silencer foam	1040	2



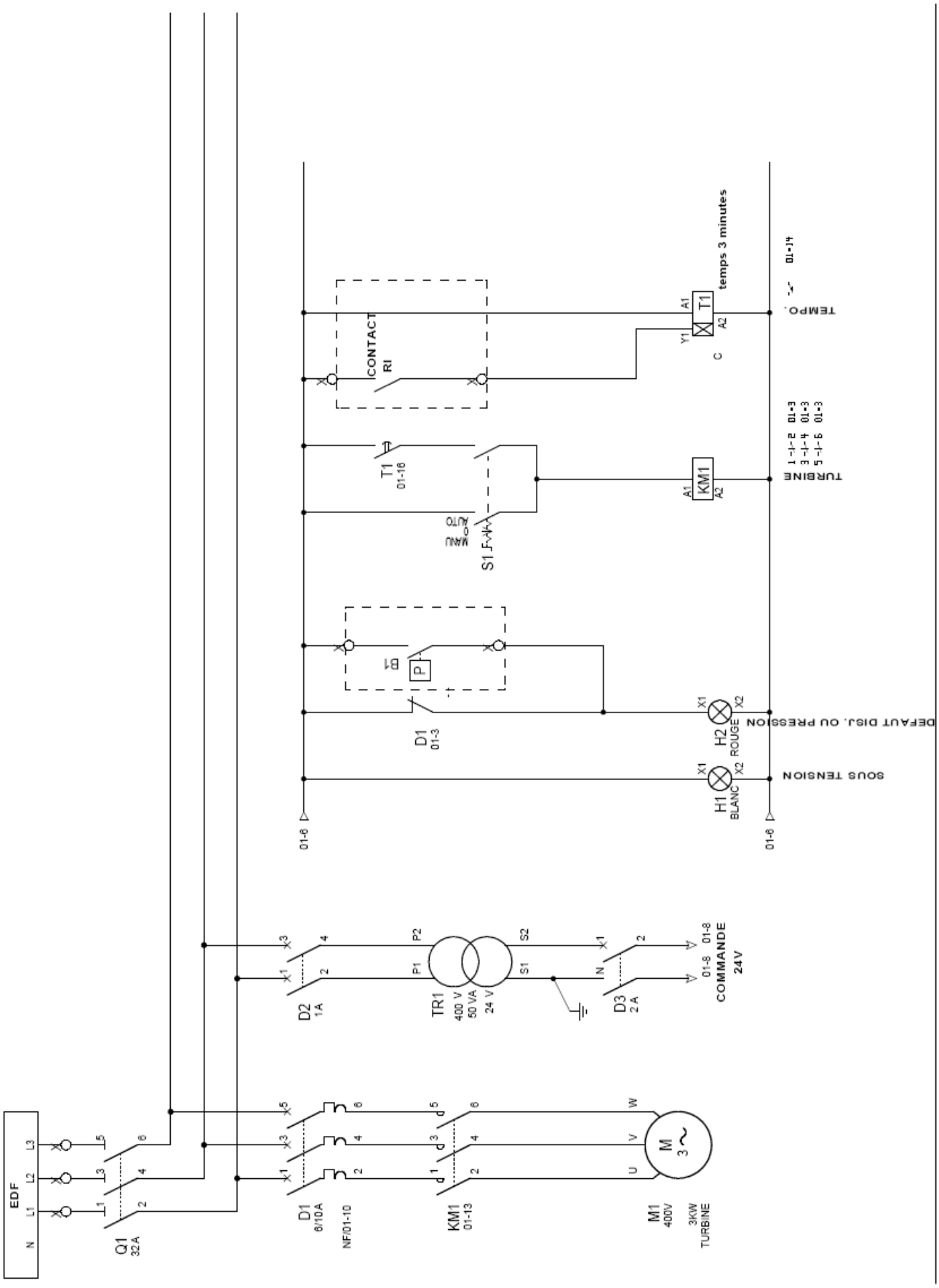
PART NUMBERS

✓ Turbine **TE 35** – 400 V – 3 Phases	W000278334
✓ Hose VAC Ø 50 mm length 5 m with end fittings	W000402140
✓ Hose VAC Ø 50 mm length 10 m with end fittings	W000402142
✓ Hose Ø 50 mm length 15 m with end fittings	W000375488
✓ Set of 2 end fittings for hose VAC 50	W000375489
✓ Flexible adapter 50 for turbine **TE35**	W000385618
✓ Discharge hose Ø 80 mm length 5 ml	W000386139
✓ Discharge hose Ø 80 mm length 10 ml	W000386140
✓ Discharge hose Ø 80 mm length 15 ml	W000386141
✓ Long nozzle 300 mm with magnetic stand, diameter 50 mm	W000403082
✓ Contact type torch support	W000279767

Basic equipment:

- Metal pre-filter class EU2.	W000278617
- Control by the electric arc using a clamp sensing current fixed on the ground cable.	W000380662

ELECTRICAL DIAGRAM



PERSONAL NOTES

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