FAN

PORTABLE FAN
ESSENTIAL 2100

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE

N° W000374014 - W000374015 - W000374016

EDITION : EN
REVISION : A
DATE : 09-2021

Instructions for use

REF : **8695 8592**

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.

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PORTABLE FAN

FAN **ESSENTIAL 2100**

TYPE: W000374016 - W000374015 – W000374014

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	TYPE
Essential 2100 fan– 230 V– 1 Phase – 50 Hz	**W000374016**
Essential 2100 fan– 230 V– 3 Phase – 50 Hz	**W000374015**
Essential 2100 fan– 400 V– 3 Phase – 50 Hz	**W000374014**

NUMBER: See identification plate

2) This equipment complies with European directive.

◙ 2006/42/EC ◙ 2011/65/EU ◙ 2014/30/EU

3) Using the following directive:
ERP 2009/125EC

4) Air Treatment Products Manager, authorised to compile the technical manufacturing document.
M. Patrick DEGROOTE
LINCOLN ELECTRIC FRANCE SAS
Avenue Franklin Roosevelt
76120 – LE GRAND QUEVILLY

5) The Manufacturer.
LINCOLN ELECTRIC FRANCE SAS
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A - GENERAL 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.

Workstation

Arc welding and cutting requires strict compliance with safety requirements in respect of electrical currents (Order of 14 December 1988).

Working on the machine

Before any internal checking or repairs, make sure that the machine has been disconnected from the electrical system by locking it out:

— Accidental connection of the cable of a fixed system 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 impeller 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 fan is an essential element of your extraction system.

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

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

— DO NOT touch the electrode wire (or nozzle) and the piece at the same time.

— 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 parts, splatter 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 S77-104 A 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 (NF S771-4 A 1-5).

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.

Pressure reducer

— Do not forget to bleed the cylinder valves before connecting the pressure reducer valve.
— Make sure that the pressure reducer screw is unscrewed before connecting to the cylinder.
— Open very slowly only, giving it a fraction of a turn.
— In case of a leak, never loosen a fitting under pressure; first shut the cylinder.

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

Field of application

Extracting or blowing air with a small charge in solid particles and dry non-flammable dust *(mind the mixture of dry dust combined with oil fumes with a low flash point)* and dust that does not present an explosion risk.

— Dust or gas that is covered by ATEX regulation, such as zinc, paper, flour, plant leaves, graphite, aluminium and other such dust is to be excluded, because electrostatic discharge or welding splatter would present a risk for those using the filter.
— The temperature of the air flow taken in or blown may not be above 50°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 or inlet of the machine.
— Not introduce elements external to the fan (paper, cloths, cigarette butts etc.)
— Replace any damaged components with original new parts from **LINCOLN ELECTRIC**, which alone can guarantee the operating characteristics of machines.
— Replace the hoses if they are pierced.
— Regularly clean the fan impeller to avoid a loss of balance.

Maintenance frequency depends on the type and concentration of the extracted dust, and also whether or not oil fumes are present. Preventive visual inspection is required when the machine is first put into service so as to determine the frequency, and also if the type of filtered dust were to change (change from dry dust to dust with grease)

IMPORTANT: never remove the protective grilles located at the fan inlet and outlet.
Removing them would cancel the CE certification of the fans and LINCOLN ELECTRIC FRANCE would not be liable for any accident.

These fans are not intended to be placed in enclosed metal enclosures (see regulations relating to the use of electrical equipment)
If such use is necessary, please enquire for a model with an extra low-voltage 48V motor.

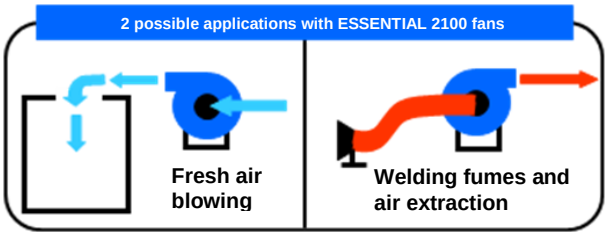
B - OVERALL DESCRIPTION

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

Use

ESSENTIAL 2100 low-pressure centrifugal fans are designed to extract clean air or air with a low dust and fumes content.

Field of application



TECHNICAL SPECIFICATIONS

- Extraction and discharge grilles
- Motor : 1.1 kW - Class F - IP55 - 50Hz - 230/400V three-phase - B35
- Impulse : impeller in galvanised steel
- Painted steel: scroll

DELIVERY

The fans are supplied with a 5 metre long power cable; the 230V single-phase version has a standardised CE connector.
The fans have a thermal magnetic circuit breaker rated for the power supply voltage.
The feet have rubber anti-vibration mounts as standard.

ELECTRICAL CONNECTIONS

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

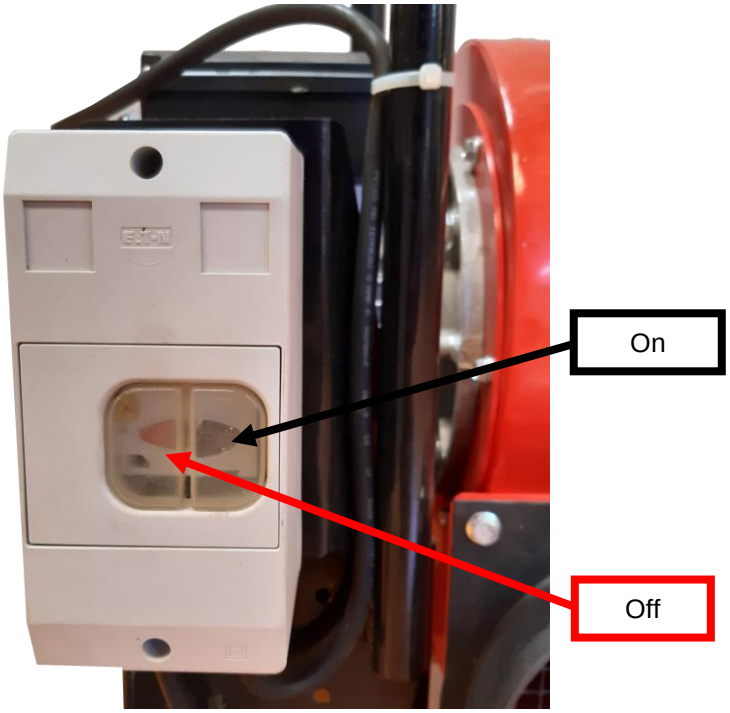
Part numbers of electrical cables	MAINS VOLTAGE 50HZ		
	230V single phase	230 3PH	400 3PH
	Section (mm²)		
0,18	3x1,5	4x1,5	4x1,5
0,25	3x1,5	4x1,5	4x1,5
0,37	3x1,5	4x1,5	4x1,5
0,55	3x1,5	4x1,5	4x1,5
0,75	3x1,5	4x1,5	4x1,5
1,1	3x1,5	4x1,5	4x1,5
1,5	3x1,5	4x1,5	4x1,5
2,2		4x2,5	4x1,5
3		4x2,5	4x1,5
4		4x2,5	4x1,5
5,5		4x2,5	4x1,5
7,5		4x4	4x1,5
9		4x6	4x2,5
11		4x6	4x2,5

Part numbers of electrical cables

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

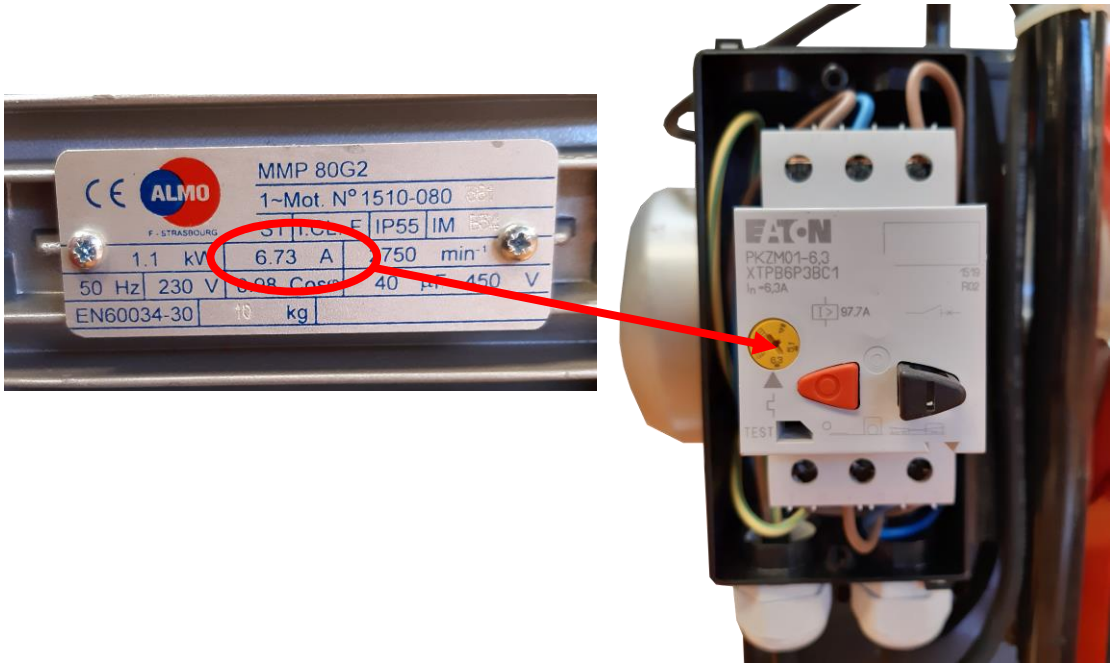
OPERATING

The fan is started and stopped manually.
That is done via a thermal magnetic circuit breaker fitted on the fan frame.



PREREQUISITES

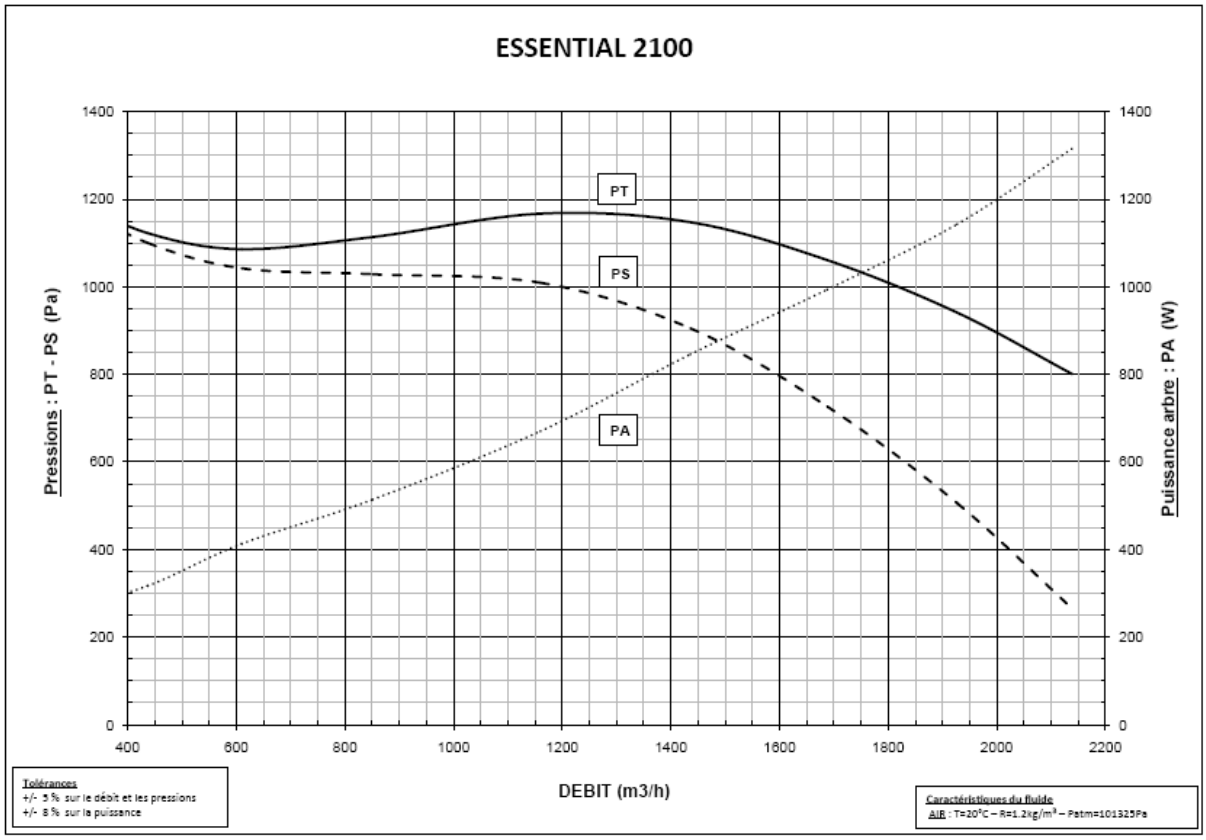
Check that the setting of the circuit breaker matches the motor consumption stated on the identification plate.



NB

With three-phase fans, mind the motor rotation direction (see arrow on the casing of the cooling rotor).
A centrifugal fan extracts air in both rotation directions, but the air flow efficiency is significantly lower and the noise greater if the fan rotation direction is incorrect.
If that happens, revert two of the three power phases to invert the motor rotation direction.

FAN AIR FLOW CHARACTERISTICS



Fan

- Type : **ESSENTIAL 2100** – 1,1kW
- Output : 2100 m³/h at 2500 PA
- Voltages : 230V / 50Hz single-phase + earth
  230V / 50Hz three-phase with no neutral + earth
  400V / 50Hz three-phase with no neutral + earth
- Rotation speed : 2800tr/min
- Noise : 75dB (connected inlet and outlet)
- Hose connection inlet and outlet diameter : 160mm

C - MAINTENANCE

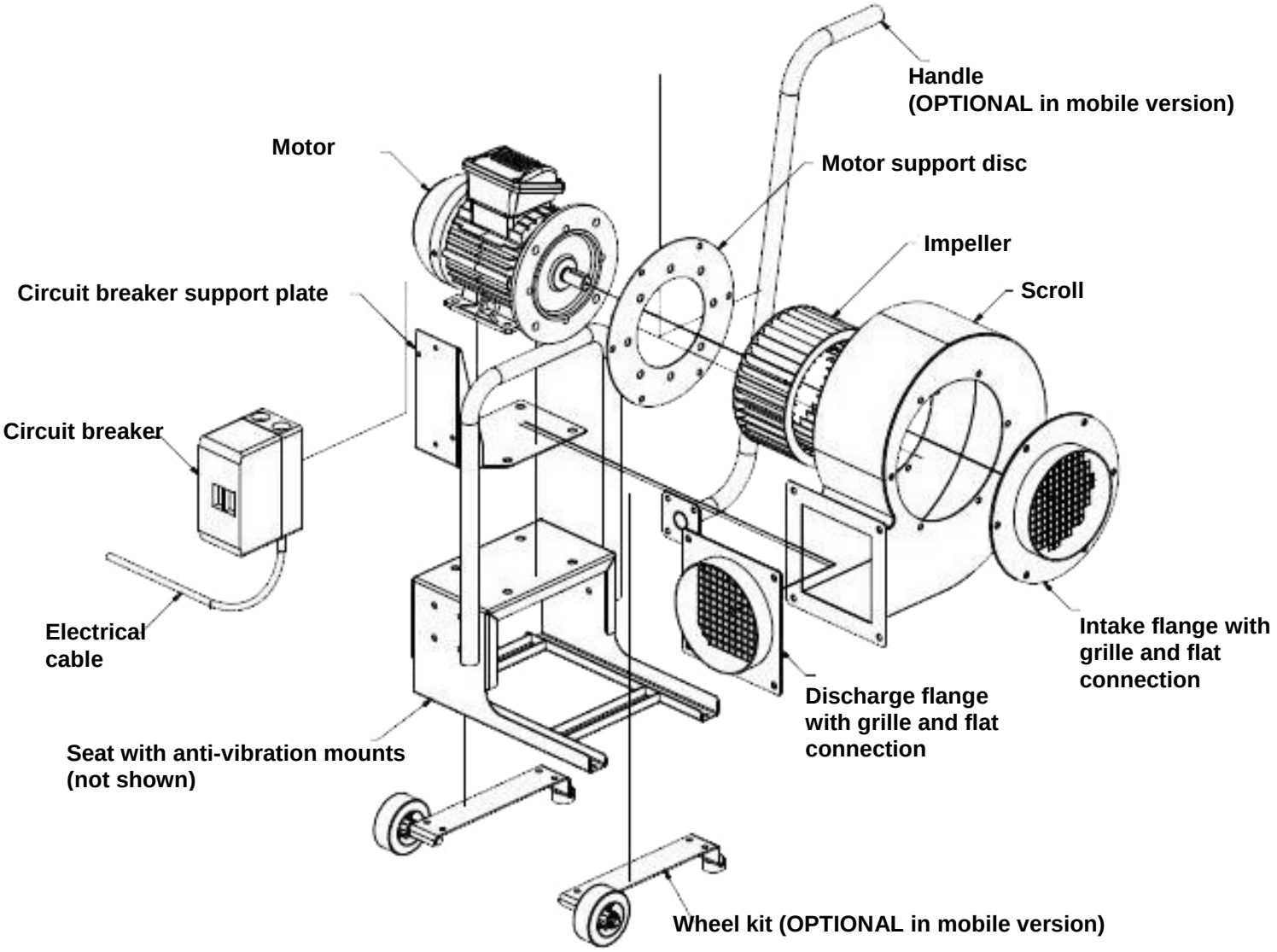
SPARE PARTS

Designation	Reference
Fan **ESSENTIAL 2100** - 230 V - 1 Ph - 50 Hz	W000374016
Fan **ESSENTIAL 2100** - 230 V - 3 Ph - 50 Hz	W000374015
Fan **ESSENTIAL 2100** - 400 V - 3 Ph - 50 Hz	W000374014

Supplement	Reference
Fan wheel kit	W000374097

Spare parts	Reference
Box 230 V - 1 Ph - 50 Hz – 1.1KW	W000342526
Box 230 V - 3 Ph - 50 Hz – 1.1KW	W000342526
Box 400 V - 3 Ph - 50 Hz – 1.1KW	W000342523

Accessories		Reference
	Metal nozzle with magnet. 80x250mm extraction section. Nozzle with deflectors and handle. **Capture nozzle with magnet.** • Ø 160 mm connection	W000380596
	Flame retardant hose (M2). High resistance to UV rays and ozone. Temperature range: -10 to +80°C. **PVC hoses with embedded metal spiral, for extraction or discharge.** • 5 m hose, Ø 160 mm • 10 m hose, Ø 160 mm • 15 m hose, Ø 160 mm • Set of 6 flat clamps, Ø 160 mm	W000380641 W000380642 W000380643 EM61000370
	Hose with glass fabric wall with PVC coating, fire retardant. High resistance to flying sparks. High resistance to UV rays and ozone. Temperature range: -20° to +90°C **Glass fabric hoses with PVC coating with external metal spiral offering very high resistance to friction, for extraction and discharge.** • Clip hose, 5 m Ø 160 mm • Clip hose, 10 m Ø 160 mm • Clip hose, 15 m Ø 160 mm • Set of 4 clamps with offset turns, Ø 160 mm	W000380636 W000380637 W000380638 W000380639
	This sleeve is used to connect two hoses with Ø 160 mm in order to increase the length of the extraction or blowing hose. **Flexible connecting sleeve, Ø 160 mm, with 2 clamps**	W000380640


Handle
(OPTIONAL in mobile version)
Motor
Motor support disc
Impeller
Circuit breaker support plate
Scroll
Circuit breaker
Electrical
cable
Intake flange with
grille and flat
connection
Discharge flange
with grille and flat
connection
Seat with anti-vibration mounts
(not shown)
Wheel kit (OPTIONAL in mobile version)

PERSONAL NOTES

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