# DL3000P & DL4000P DUST COLLECTORS OPERATING & SERVICE MANUAL



ntroduction 4   Features and Specifications 5   General Information 7   Marking Plate 7   Intended Uses 7   Allowed Environmental Conditions 7   Noise Level 7   Storage 7   Handling 7   Safety 8   General Rules for Safe Operation 8   Dust Collector Safety Guidelines 9   Safety Warnings 10
General Information 7   Marking Plate 7   Intended Uses 7   Allowed Environmental Conditions 7   Noise Level 7   Storage 7   Handling 7   Safety 8   General Rules for Safe Operation 8   Dust Collector Safety Guidelines 9
General Information 7   Marking Plate 7   Intended Uses 7   Allowed Environmental Conditions 7   Noise Level 7   Storage 7   Handling 7   Safety 8   General Rules for Safe Operation 8   Dust Collector Safety Guidelines 9
Marking Plate 7   Intended Uses 7   Allowed Environmental Conditions 7   Noise Level 7   Storage 7   Handling 7   Safety 8   General Rules for Safe Operation 8   Dust Collector Safety Guidelines 9
Intended Uses
Allowed Environmental Conditions
Noise Level 7   Storage 7   Handling 7   Safety 8   General Rules for Safe Operation 8   Dust Collector Safety Guidelines 9
Storage
Handling
Safety 8   General Rules for Safe Operation 8   Dust Collector Safety Guidelines 9
General Rules for Safe Operation 8   Dust Collector Safety Guidelines 9
Dust Collector Safety Guidelines
Recommended Electrical Practices
Safety Plates and Symbols
Outstanding Risks
nstallation16
Dperation
Description of Controls
Work Cycle
Removal and Placing of the Waste Bag
Discharging Compressed Air
Pnuemactic Filter Cleaning
Froubleshooting Guide
Dust Collector
Compressor
Vaintenance
Informative Notes
General Safety Warnings
Maintenance Operations
Replacing the Filter
Filter Replacement Schedule
Parts List and Diagrams
Filters
Recommended Spare Parts
Accessories
Parts Diagrams - DL3000P
Parts Diagrams - DL4000P
Narranty

## Introduction

This manual provides all the information needed to use and service your dust collector. Good operation and durability depend on proper maintenance and careful use.

Before leaving the factory, this particular model has undergone stringent tests to ensure utmost reliability. Always check however to make sure the dust collector has not been damaged during transport in such a way as to affect operation and safety.

This manual should be considered an integral part of the dust collector and must be kept together with the unit. In case of loss of or damage to the manual, ask **National Flooring Equipment (NFE)** for a new copy.

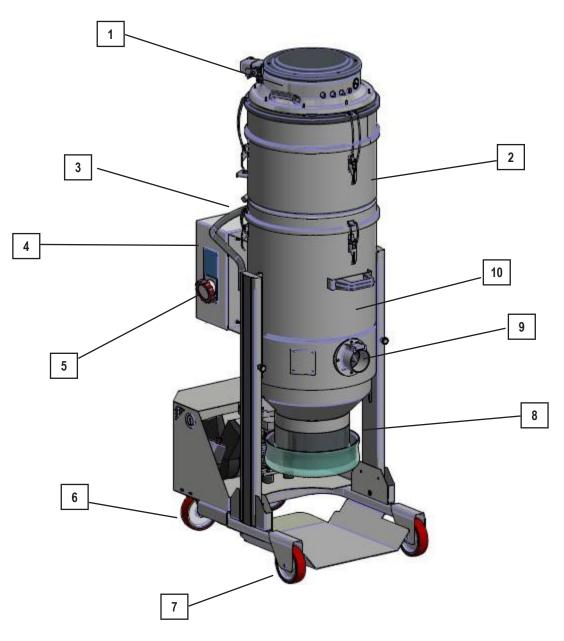
Some details shown in the illustrations in this manual may be different from those of your dust collector. Some component parts may have been removed for greater clarity.

In case of any doubts, immediately contact NFE Customer Service.

### NFE CUSTOMER SERVICE

Our engineers are available to help you in case any problem occurs.

Please call 1-800-245-0267



### FEATURES

- 1. Motor head
- 2. Clamp release
- 3. Push handle
- 4. Switchboard
- 5. Socket for auxiliary equipment connection (DL4000P model)
- 6. Casters
- 7. Fixed wheels
- 8. Longopac® system
- 9. Suction pipe coupling point
- 10. Filtering chamber

## Features & Specifications

Product Specifications					
Vacuum Pressure	Air Movement	Noise Emission	Primary Filter	Secondary Filter	Inlet
98.4" H2O (2,500 mm H2O)	318 CFM (540 m3/h)	76 dBA	3 Cartridges TF H500 Filter cartridge 8,835 in² (57,000 cm²)	H14 with 99.925% efficiency HEPA Absolute filter 4,108 in <sup>2</sup> (26,500 cm <sup>2</sup> )	3.15" (80 MM)

		Product Specif	ications		
Power	Input Power	Width	Height	Length	Weight
2 45 100	230V 1-phase / 50-60 Hz (DL3000P)	25.6"	69.3" (176 cm)	35.8"	309 lbs (140 kg) (DL3000P)
3.45 kW	230V 3-phase / 50-60 Hz (DL4000P)	(65 cm)	Max Height 79.5" (202 cm)	(91 cm)	320 lbs (145 kg) (DL4000P)

### MARKING PLATE

When contacting the manufacturer or dealer, always quote the details shown on the marking plate.

#### INTENDED USES

This dust collector has been designed, built and protected for vacuuming dusts and solid materials only.



Any other use is considered **IMPROPER**. The dust collector is intended for professional industrial use.

### ALLOWED ENVIRONMENTAL CONDITIONS

To ensure proper operation of the dust collector, avoid exposing machine to rain, hail, snow, fog, etc. Environmental running temperature is between 41°F (5°C) and 113°F (45°C) and relative humidity not above 70%. The work environment must be devoid of explosive atmosphere.

### NOISE LEVEL

Noise level readings were taken in accordance with the provisions of Machine Directive 2006/42/CE standards.

Sound tests performed on this specific dust collector model have been taken from a distance of 3.3 feet (1 meter) and from a height of 5.25 feet (1.6 meters), showing an acoustic pressure no higher than:

#### 76 DB (A)

The vibrations transmitted by the machine are lower than 8.2 ft/s2 (2.5 m/s2).

### ATTENTION!

PURSUANT TO ARTICLES L.D. 81/08, WORKERS EXPOSED TO SOUND PRESSURE LEVELS ABOVE 85 DB (A) MUST BE PROTECTED BY SPECIAL INDIVIDUAL PROTECTION DEVICES.

IT IS THEREFORE NECESSARY, IF SUCH WORKING CONDITIONS EXIST, TO PROVIDE WORKERS WITH SUCH APPROVED INDIVIDUAL PROTEC-TION DEVICES AND TO INFORM THEM OF THE RISKS RELATING TO NOISE EXPOSURE.

### STORAGE

Remove the filter and clean it, replace the Longopac® bag and store the dust collector in a place protected against moisture with a temperature between 32°F (0°C) and 104°F (40°C). Cover with a nylon sheet to prevent accumulation of dust.

### HANDLING

If the need arises to lift and transport the dust collector, this operation must be performed under the responsibility of the user. The user is therefore responsible for properly securing the load to prevent machine damage or injury to personnel.

### **GENERAL RULES FOR SAFE OPERATION**

Before use, anyone operating or performing maintenance on this equipment must read and understand this manual, as well as any labels packaged with or attached to the machine and its components. Read the manual carefully to learn equipment applications and limitations, as well as potential hazards associated with this type of equipment. Keep manual near machine at all times. If your manual is lost or damaged, contact National Flooring Equipment (NFE) for a replacement.

### PERSONAL

#### Dress properly and use safety gear.

Do not wear loose clothing; it may be caught in moving parts. Anyone in the work area must wear safety goggles or glasses and hearing protection. Wear a dust mask for dusty operations. Hard hats, face shields, safety shoes, etc. should be worn when specified or necessary.

#### Maintain control; stay alert.

Keep proper footing and balance, and maintain a firm grip. Observe surroundings at all times. Do not use when tired, distracted, or under the influence of drugs, alcohol, or any medication that may cause decreased control.

#### Keep hands away from all moving parts and tooling.

Wear gloves when changing tooling. Remove tooling when machine is not in use and/or lower cutting head to the floor.

#### Do not force equipment.

Equipment will perform best at the rate for which it was designed. Excessive force only causes operator fatigue, increased wear, and reduced control.

#### ENVIRONMENT

#### Avoid use in dangerous environments.

Do not use in rain, damp or wet locations, or in the presence of explosive atmospheres (gaseous fumes, dust, or flammable materials). Remove materials or de bris that may be ignited by sparks. Keep work area tidy and well-lit - a cluttered or dark work area may lead to accidents. Extreme heat or cold may affect performance.

#### Protect others in the work area and be aware of surroundings.

Provide barriers or shields as needed to protect others from debris and machine operation. Children and other bystanders should be kept at a safe distance from the work area to avoid distracting the operator and/or coming into contact with the machine. Operator should be aware of who is around them and their proximity. Support personnel should never stand next to, in front of, or behind the machine while the machine is running. Operator should look behind them before backing up.

### Do not come within 3 ft. of the machine's perimeter during operation.

#### Guard against electric shock.

Ensure that machine is connected to a properly grounded outlet. Prevent bodily contact with grounded surfaces, e.g. pipes, radiators, ranges, and refrigerators. When scoring or making cuts, always check the work area for hidden wires or pipes.

#### **MAINTENANCE & REPAIRS**

Begin maintenance work only when the machine is shut down, unplugged, and cooled down.

#### Use proper cleaning agents.

Ensure that all cleaning rags are fiber-free; do not use any aggressive cleaning products.

#### Schedule regular maintenance check-ups.

Ensure machine is properly cleaned and serviced. Remove all traces of oil, combustible fuel, or cleaning fluids from the machine and its connections and fittings. Retighten all loose fittings found during maintenance and repair work. Loose or damaged parts should be replaced immediately; use only NFE parts.

Do not weld or flame-cut on the machine during repairs, or make changes to machine without authorization from NFE.

### EQUIPMENT

#### Use proper parts and accessories.

Only use NFE-approved or recommended parts and accessories. Using any that are not recommended may be hazardous.

#### **Ensure accessories are properly installed and maintained.** Do not permanently remove a guard or other safety device when

installing an accessory or attachment.

#### Inspect for damaged parts.

Check for misalignment, binding of moving parts, loose fasteners, improper mounting, broken parts, and any other conditions that may affect operation. If abnormal noise or vibration occurs, turn the machine off immediately. Do not use damaged equipment until repaired. Do not use if power switch does not turn machine on and off. For all repairs, insist on only identical NFE replacement parts.

#### Maintain equipment and labels.

Keep handles dry, clean, and free from oil and grease. Keep cutting edges sharp and clean. Follow instructions for lubricating and changing accessories. Motor and switches should be completely enclosed at all times with no exposed wiring. Inspect cord regularly. Labels carry important information; if unreadable or missing, contact NFE for a free replacement.

#### Avoid accidental starting; store idle equipment.

When not in use, ensure that the machine is unplugged; do not turn on before plugging in. Store in a dry, secured place. Remove tooling when storing, and keep away from children.

### DUST COLLECTOR SAFETY GUIDELINES

Before use, anyone operating this equipment must read and understand these safety instructions.

### SAFETY DETAILS

The person in charge of safety shall be responsible for informing workers about the risks associated with dust collector operation.

The obligation also exists of training workers so they are able to protect themselves and others.

Failure to observe basic safety regulations and warnings could cause accidents during dust collector operation, maintenance and repair. Accidents can often be avoided by recognizing potentially dangerous situations before these occur. Operators should be aware of potential hazards and be trained and skilled enough. They should also have the tools necessary to perform these duties properly.

NFE shall under no circumstances be deemed liable for accidents or damage caused by use of the dust collector by personnel not properly trained or who use it in an improper manner, as well as by even partial failure to comply with the safety regulations and intervention procedures indicated in this manual.

The safety warnings and warning notices are indicated in this manual and on the product.

Unless these hazard messages are heeded, the operator could become involved in accidents with serious consequences for him/ herself and for other people.



**WARNING:** UNLESS THESE MESSAGES ARE HEEDED, OPERATOR INJURIES COULD OCCUR.



**CAUTION:** UNLESS THESE MESSAGES ARE HEEDED, DUST COLLECTOR DAMAGE COULD OCCUR.

**NFE** cannot foresee all possible circumstances capable of representing a potential hazard. The warnings in this manual and on the products should not therefore be deemed exhaustive. In the event of tools, procedures, work or machining methods being used that are not explicitly recommended by NFE, make sure no hazards exist for operators and others.

### ONLY EVER USE ORIGINAL NFE SPARE PARTS.

## NFE DECLINES ALL LIABILITY IN THE EVENT OF NON-ORIGINAL SPARE PARTS BEING USED.



**ATTENTION!** THE FOLLOWING INDICATIONS ARE, BY THEMSELVES, NOT ENOUGH TO FULLY PROTECT AGAINST ALL THE HAZARDS THAT COULD ARISE DURING DUST COLLECTOR OPERATION. THESE WILL HAVE TO BE INTEGRATED WITH COMMON SENSE AND THE EXPERIENCE OF THE OPERATOR, BOTH OF WHICH ARE CRUCIAL FACTORS FOR PREVENTING ACCIDENTS. EACH SECTION OF THIS MANUAL LISTS FURTHER SPECIFIC SAFETY WARNINGS FOR THE VARIOUS OPERATIONS. MAINTENANCE JOBS MUST ALWAYS BE PERFORMED WITH THE POWER PLUG DETACHED FROM THE POWER SOURCE.

### SAFETY WARNINGS

The employer must inform and train the user according to the provisions of applicable laws.

Before using the machine, prepare and train yourself by reading this manual carefully. Use of the machine by untrained and unauthorized persons is forbidden.

Using the machine to vacuum toxic substances is forbidden unless this has been equipped with special filters required for the specific type of dusts. Such filters must be explicitly requested by you.

If the machine is used to vacuum toxic-harmful substances, the container must be emptied and the filters cleaned using adequate individual protection devices, selected according to the type of substances to be vacuumed.

Do not vacuum flammable materials or substances or which could cause explosions (fuels, solvents, etc.). To vacuum such materials, the machine must be built with Anti-explosion Motor and Electric System and this must be requested by you explicitly.

Do not vacuum corrosive substances unless the machine is equipped with containers suitable for this purpose (Stainless-steel AISI 304).

Use of the machine without the supplied filters is not recommended.

If the filters are correctly fitted, the machine will not emit any dust.

Never rest miscellaneous materials on the horizontal protection guard.

The machine casing containing moving parts must not be removed by the user.

When using the machine, mind other people, especially children.

Use the machine cautiously on slopes and ramps.

Do not change direction on gradients.

Make sure the parked machine remains stable by operating the braked wheel.

During cleaning operations, maintenance jobs or when changing parts, the starter switch must be off and the machine must be disconnected from the power mains by removing the cable from the socket.

Only skilled persons should carry out repairs.

During use, protect the power supply cables from damage and avoid crushing or pulling the cables.

Periodically check the main power cable and outgoing power cable to ensure they are not damaged.

In the event of the cable being damaged, the machine must not be used.

In the event of the cable, plugs or couplings being replaced, make sure these are protected against water spray and check mechanical strength.

Never pull the machine by means of the power cable and the dust collector pipe.

Replace the motor brushes every 800 hours. Always use original spare parts.

The user is responsible for disposing of vacuumed substances in accordance with applicable laws.

The machine is supplied with operating and service manuals.

In the event of Customers fitting a tool to the machine not supplied by NFE, make sure the safety conditions required by Machine Directive 2006/42/EC are complied with and in any event, NFE is unable to accept liability for any problems arising from use of such tool.

The dust collector must not be operated in a corrosive or explosive environment.

Always make sure the dust collector is free of all foreign materials such as debris, oil, equipment and other objects that could affect operation and cause injury to persons.

Avoid using flammable or toxic solvents such as gasoline, benzene, ether and alcohol for cleaning.

Avoid prolonged contact with solvents and inhaling their vapors. Avoid use close to open flames or sources of heat.

### SAFETY WARNINGS CONT.

Never use the dust collector without the filter.

Do not vacuum lit cigarette ends or burning material. The filter could be damaged and the machine could start on fire.

Do not vacuum gasoline or flammable liquids in general.

Make sure all the guards and protection devices are in place and that all the safety devices are in place and working properly.

Do not wear loose or hanging clothing such as ties, scarves or torn garments that could become trapped and be sucked up by the cleaner.

Do not open the vacuum container with the machine running.

Structural damage and improper alterations or repairs could change the protection capacity of the dust collector and therefore void the warranty.

Any alterations to the machine must only be made by NFE technical support.

During maintenance jobs, affix a notice to the appliance indicating "MACHINE BEING SERVICED, DO NOT START".

Climbing on the dust collector is forbidden.

Never touch electric wires, switches, buttons, etc. with wet hands.

Before connecting to the power mains, make sure the power voltage and frequency are those shown on the machine plate.

Make power connections to a mains supply with proper grounding.

If an extension cord is used, make sure it is the appropriate wire gage and insulation level for the dust collector input.

After service or maintenance is performed, the appointed personnel should make sure all removed parts are properly reinstalled.

Only adult persons should use the dust collector.

During vacuuming operations, always use the caster wheel brakes to prevent the machine from rolling.

In case of vacuums with grounding system, connect the grounding clamp with a conductive surface connected with the earth.

### For LONGOPAC Dust Collectors:

- If the machine is used to vacuum toxic-harmful substances, the Longopac® container must be emptied and the filters cleaned using adequate individual protection devices, selected according to the type of substances to be vacuumed.
- Do not open the Longopac® container with the machine running.

### ELECTRICAL PRACTICES



WARNING: ELECTRICAL CORDS CAN BE HAZARDOUS. MISUSE CAN RESULT IN FIRE OR DEATH BY ELECTRICAL SHOCK. READ CAREFULLY AND FOLLOW ALL DIRECTIONS.



**CAUTION:** ALWAYS FOLLOW APPLICABLE ELECTRICAL CODES, STANDARDS AND/OR REGULATIONS. CONSULT YOUR LOCAL ELECTRICAL AUTHORITY OR A LICENSED ELECTRICIAN BEFORE ATTEMPTING TO MODIFY AN ELECTRICAL INSTALLATION. ENSURE THAT CIRCUIT AND GROUND FAULT PROTECTION DEVICES AND ALL OTHER ELECTRICAL SAFETY EQUIPMENT ARE FUNCTIONING PROPERLY.

### EXTENSION CORD REQUIREMENTS

Ensure the cord type is suitable for the application and location. If you are unsure about your cord type, consult a qualified electrical professional or electrician.



**WARNING:** GROUND YOUR EQUIPMENT. THE EQUIPMENT MUST BE PLUGGED INTO AN APPROPRIATE OUTLET, ONE WHICH IS PROPERLY INSTALLED AND GROUNDED IN ACCORDANCE WITH ALL CODES AND ORDINANCES. DO NOT MODIFY THE PLUG PROVIDED WITH THE EQUIPMENT. NEVER REMOVE THE GROUNDING PRONG FROM THE PLUG.



WARNING: DO NOT REMOVE, BEND OR MODIFY ANY METAL PRONGS OR PINS OF THE PLUG. MODIFICATIONS TO POWER CORDS AND/OR PLUGS MAY RESULT IN INJURY AND/OR EQUIPMENT DAMAGE.

- FULLY INSERT plug into outlet.
- Do not use excessive force to make connections.
- Never unplug by pulling the cord from the outlet. Pull plug rather than cord to reduce the risk of damage.
- Regularly examine your extension cord and ensure it is in good electrical condition. Never use a damaged cord—either replace it or have it repaired by a qualified person.
- Protect your extension cords from sharp objects, excessive heat and damp or wet areas. Keep the cord away from oil, cutting edges and moving parts.
- Do not drive, drag or place objects over cord.
- Avoid overheating. Uncoil cord and do not cover it with any material.
- Avoid accidental starting. Be sure equipment is turned off before plugging in. Do not use equipment if the power switch does not turn the equipment on and off.
- Make sure equipment is not running before disconnecting cord.
- Unplug equipment. When not in use and before changing accessories or performing maintenance, unplug the machine.

### EXTENSION CORD SELECTION

All cords should be sized appropriately to reduce the risk of damage, fire or reduced performance. Reference the table in this section for cord sizes.

### HOW TO USE THIS TABLE

- 1. Determine your supply voltage.
- 2. Determine the total length of your cord including all extension cords.
- 3. Determine the maximum amp draw for your machine.
- 4. Trace your voltage across the top of the table to the first length that is greater than or equal to your cord length.
- 5. Follow the column down to the first row that contains a maximum amp draw greater than or equal to yours.
- 6. This cell contains the minimum wire size for your application.

### ELECTRICAL PRACTICES (CONT'D)

### EXAMPLE

**Application:** Max Amps = 11A, Length = 40ft, Voltage = 120V 1ph

**Solution:** 40ft is between the 25ft and 50ft columns, so the larger of the two columns is chosen. Likewise, 11A is between the 10A and 12A rows, so the larger of the two rows is chosen. 14 AWG (2.5mm<sup>2</sup>) is the minimum wire size for this example.

			Single I	Phase Equi
Max	120V Supply	25ft (7.5m)	50ft (15m)	75ft (25
Length	230V Supply	50ft (15m)	100ft (30m)	150ft (4
Max Amps				Μ
8		16 AWG (1.5mm <sup>2</sup> )	16 AWG (1.5mm <sup>2</sup> )	16 AWG (1
10		16 AWG (1.5mm <sup>2</sup> )	16 AWG (1 5mm <sup>2</sup> )	16 AWG (1
12		14 AWG (2.5mm <sup>2</sup> )	14 AWG (2.5mm <sup>2</sup> )	14 AWG (2
14		14 AWG (2.5mm <sup>2</sup> )	14 AWG (2.5mm <sup>2</sup> )	14 AWG (2
	40	44 41410 (0 5	44 ANNO (0 E	44 0000 10

### **EXTENSION CORD SIZES**

			Single I	Phase Equipment			
Max	120V Supply	25ft (7.5m)	50ft (15m)	75ft (25m)	100ft (30m)	150ft (45m)	200ft (60m)
Length	230V Supply	50ft (15m)	100ft (30m)	150ft (45m)	200ft (60m)	300ft (90m)	400ft (120m)
Ma	ax Amps			Minimum	Wire Size		
	8	16 AWG (1.5mm <sup>2</sup> )	14 AWG (2.5mm <sup>2</sup> )	14 AWG (2.5mm <sup>2</sup> )			
	10	16 AWG (1.5mm <sup>2</sup> )	14 AWG (2.5mm <sup>2</sup> )	12 AWG (4mm <sup>2</sup> )			
	12	14 AWG (2.5mm <sup>2</sup> )	12 AWG (4mm <sup>2</sup> )	12 AWG (4mm <sup>2</sup> )			
	14	14 AWG (2.5mm <sup>2</sup> )	12 AWG (4mm <sup>2</sup> )	10 AWG (6mm <sup>2</sup> )			
	16	14 AWG (2.5mm <sup>2</sup> )	12 AWG (4mm <sup>2</sup> )	10 AWG (6mm <sup>2</sup> )			
	18	14 AWG (2.5mm <sup>2</sup> )	14 AWG (2.5mm <sup>2</sup> )	14 AWG (2.5mm <sup>2</sup> )	12 AWG (4mm <sup>2</sup> )	12 AWG (4mm <sup>2</sup> )	10 AWG (6mm <sup>2</sup> )
	20	12 AWG (4mm <sup>2</sup> )	10 AWG (6mm <sup>2</sup> )	10 AWG (6mm <sup>2</sup> )			
	25	12 AWG (4mm <sup>2</sup> )	10 AWG (6mm <sup>2</sup> )	8 AWG (10mm <sup>2</sup> )			
	30	10 AWG (6mm <sup>2</sup> )	8 AWG (10mm <sup>2</sup> )	8 AWG (10mm <sup>2</sup> )			

	3 Phase Equipment						
	230V Supply	25ft (7.5m)	50ft (15m)	75ft (25m)	100ft (30m)	150ft (45m)	200ft (60m)
Max Length	400V Supply	40ft (12m)	80ft (25m)	120ft (35m)	160ft (50m)	250ft (75m)	325ft (100m)
	480V Supply	50ft (15m)	100ft (30m)	150ft (45m)	200ft (60m)	300ft (90m)	400ft (120m)
Ma	ax Amps			Minimum	Wire Size		
	20	10 AWG (6mm <sup>2</sup> )					
	30	8 AWG (10mm <sup>2</sup> )					
	40	6 AWG (16mm <sup>2</sup> )					
	50	4 AWG (25mm <sup>2</sup> )					
	60	4 AWG (25mm <sup>2</sup> )					
	70*	6 AWG (16mm <sup>2</sup> )*					
	80*	4 AWG (25mm <sup>2</sup> )*					
	90*	4 AWG (25mm <sup>2</sup> )*					
	100*	4 AWG (25mm <sup>2</sup> )*					

### \* 75°C TYPE W CORD OR EQUIVALENT

**Note:** The table is based on a <10% voltage loss, data from the U.S. National Electrical Code Tables 400.5(A) & 400.5(B) and typical resistances for copper wire.

### SAFETY PLATES AND SYMBOLS

Plates are affixed to the dust collector showing safety symbols and/or messages.



**ATTENTION!** MAKE SURE ALL THE SAFETY MESSAGES ARE LEGIBLE. CLEAN THESE WITH A CLOTH, SOAP AND WATER. DO NOT USE SOLVENTS, DIESEL FUEL OR GASOLINE. REPLACE THE DAMAGED PLATES WITH NEW ONES SUPPLIED BY NATIONAL FLOORING EQUIPMENT. IF A PLATE IS AFFIXED TO A REPLACED PART, MAKE SURE A NEW PLATE IS AFFIXED TO THE NEW PART.



**ATTENTION!** READ THE OPERATOR'S AND MAINTENANCE MANUAL CAREFULLY BEFORE USING THE MACHINE OR DOING ANY MAINTENANCE JOBS.

WARNINGI

DO NOT BREATHE IN FLAMMABLE AND/OR EXPLOSIVE LIQUIDS OR POWDERS



WARNING: GRINDING/CUTTING/DRILLING OF MASONRY, CONCRETE, METAL AND OTHER MATERIALS CAN GENERATE DUST, MISTS AND FUMES CONTAINING CHEMICALS KNOWN TO CAUSE SERIOUS FATAL INJURY OR ILLNESS, SUCH AS RESPIRATORY DISEASE, CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. IF YOU ARE UNFAMILIAR WITH THE RISKS ASSOCIATED WITH THE PARTICULAR MATERIAL BEING CUT, REVIEW THE MATERIAL SAFETY DATA SHEET AND/OR CONSULT YOU EMPLOYED.



AND CLAR MATERIAL BEING CUT, REVIEW THE MATERIAL SAFETY DATA SHEET AND/OR CONSULT YOU EMPLOYER THE MATERIAL MANUFACTURER/SUPPLIER, GOVERNMENTAL AGENCIES SUCH AS OSHA AND NIOSH AND OTHER AUTHORITIES ON HAZARDOUS MATERIALS. CALIFORNIA AND SOME OTHER AUTHORITIES, FOR INSTANCE, HAVE PUBLISHED LISTS OF SUBSTANCES KNOWN TO CAUSE CANCER, REPRODUCTIVE TOXICITY, OR OTHER HARMFUL EFFECTS. CONTROL DUST, MIST AND FUMES AT THE SOURCE WHERE POSSIBLE. IN THIS REGARD USE GOOD WORK PRACTICES AND FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER/SUPPLIER, OSHA/NIOSH, AND OCCUPATIONAL AND TRADE ASSOCIATIONS. WHEN THE HAZARDS FROM INHALATION OF DUST, MISTS AND FUMES CANNOT BE ELIMINATED, THE OPERATOR AND ANY BYSTANDERS SHOULD ALWAYS WEAR A RESPIRATOR APPROVED BY OSHA/MSHA FOR THE MATERIAL BEING CUT.

Η	CAUTION: this machine contains hamiful vacuumed dust. Emptying operations, including the removal of the collection container after due waiting time must only be executed by qualified operators wearing the appropriate safety devices. Do not use the vacuum without filtering systems.	Η			
	This plate is applied to the vacuum when the machine is equipped with a M CLASS anti-static filter and the absolute (HEPA) filter (99,995%. efficiency, on 0,18 micron)				



**WARNING:** RISK OF CRUSHING UPPER LIMBS WHILE FITTING AND LOCKING THE MATERIAL LONGOPAC® CONTAINER ON THE DUST COLLECTOR.

NEVER PLACE HANDS BETWEEN THE MATERIAL LONGOPAC® CONTAINER AND DUST COLLECTOR WHILE LOCKING.

DO NOT PLACE HANDS ON SIDES OF LONGOPAC® CONTAINER NEAR THE GUIDE PINS WHILE LOCKING.

PERFORM THE LONGOPAC® CONTAINER LOCKING OPERATION BY MEANS OF THE LEVERS LOCATED ON THE SIDE, USING BOTH HANDS!

### OUTSTANDING RISKS

Careful analysis of risks performed by the manufacturer and stored in the technical file has made it possible to eliminate most of the risks associated with dust collector operation.

The manufacturer advises carefully following the instructions, procedures and advice contained in this manual as well as applicable safety regulations, including the use of the envisaged protection devices, both those integrated in the dust collector and individual.

Outstanding risks associated with the dust collector could be:

#### RISK OF IMPROPER USE IN THE PRESENCE OF EXPLOSIVE AND FLAMMABLE SUBSTANCES.

The dust collector must not be used in environments containing substances in the form of liquids that could vaporize at room temperature and flammable dusts and gas.

#### **RISKS OF OPERATION IN HUMID ENVIRONMENTS.**

Keep to the limits shown in this manual at section 1.5 Allowed environmental conditions.

#### RISK OF ERRONEOUS INTERPRETATION OF THE SAFETY PICTOGRAMS.

Having identified the various outstanding risks, the manufacturer has affixed to the dust collector a number of hazard labels in compliance with regulations relating to the graphic symbols to be used. The user must immediately replace any safety plates that become illegible due to wear or damage.



**WARNING:** REMOVING THE SAFETY PLATES ON THE DUST COLLECTOR IS STRICTLY FORBIDDEN. THE MANUFACTURER DECLINES ALL LIABILITY IN RELATION TO DUST COLLECTOR SAFETY IN THE EVENT OF FAILURE TO COMPLY WITH THE ABOVE INDICATIONS.



**CAUTION:** BEFORE INSTALLING THE DUST COLLECTOR, CAREFULLY MAKE A SIGHT CHECK TO PINPOINT ANY DAMAGE SUFFERED DURING TRANSPORT.

In the event of any component parts being damaged, do not proceed with installation. Notify the manufacturer and reach an agreement on how to proceed.

### THE DUST COLLECTOR ALREADY FEATURES A SUCTION FILTER.

1. Fit the accessory required for the type of vacuuming operation on the opposite end of the hose.



**NOTE:** No standard accessories (reducers, hoses, nozzles) are included with the machine; accessories must be specified and ordered separately.

- 2. Contact your dealer for information relating to the different types of optional accessories available for these specific dust collector models.
- 3. Fit the supplied pipe on the connector.





4. Fit the supplied connector on the pipe union.



5. Make sure the power supply corresponds to the voltage and frequency indicated on the dust collector plate.

WARNING: DO NOT FIT THE PLUG IN THE POWER SOCKET WITH WET HANDS.

In the event of an extension cord being used, make sure this is in perfect condition, in compliance with CE standards and with cable cross section suitable for the power input of the dust collector.

- 1. In order to raise the dust collector easily, NFE suggests removing the motor head.
- 2. Pull the pins on each side of the dust collector one at a time and turn them until they are in the locked position.





- 3. Lift the machine body using the handle.
- 4. Lock the machine body turning the pins to their initial position.
- 5. If movement becomes difficult, remove the side cover, loosen the screws and if necessary, put some grease on the sliding system.
- 6. To lower the dust collector, reverse the above steps.

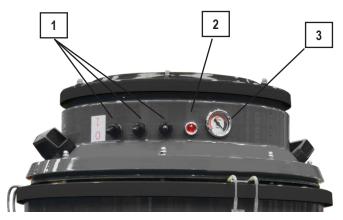


WARNING: BEFORE TRANSPORTING, ALWAYS LOWER THE MACHINE TO TRANSPORT MODE.

## THIS PAGE INTENTIONALLY LEFT BLANK

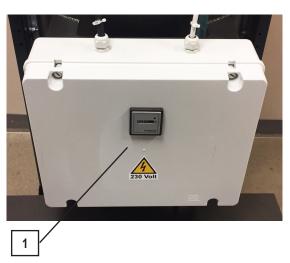
### **DESCRIPTION OF CONTROLS**

- 1. STOP/START switches (one for each motor)
- 2. POWER ON light indicator
- 3. filter PRESSURE DROP guage

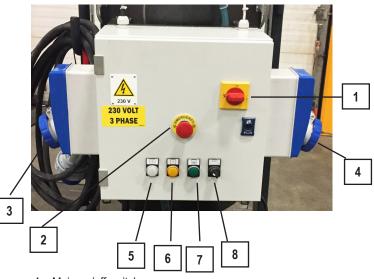


DL3000P

DL4000P



1. Hour Meter



- 1. Main on/off switch
- 2. EMERGENCY STOP BUTTON
- 3. 230v Single Phase socket
- 4. 230v Three Phase socket
- 5. Power on indicator light
- 6. Magnetic thermal release
- 7. Filter cleaning indicator
- 8. Switch for socket selection

ICONA/	DESCRIZIONE	DESCRIPTION	DESCRIPTION	DESCRIPCIÓN	BESCHREIBUNG
ICON/ ICÔNE/ ICONO/ SYMBOL				die -	
	PRESENZA TENSIONE	POWER ON	PRÉSENCE TENSION	TENSIÓN CONECTADA	BETRIEBSBEREIT
	START	START/ON	MARCHE/START	START	START
$\otimes$	STOP	STOP/OFF	ARRÊT/STOP	STOP	STOPP
Î	MARCIA ASPIRATORE	SUCTION ON	MARCHE ASPIRATION	PUESTA EN MARCHA ASPIRADOR	START SAUGER
ł	PROTEZIONE MAGNETO-TERMICA	MAGNETIC-THERMAL PROTECTION	PROTECTION MAGNÉTO-TERMIQUE	PROTECCIÓN MAGNETO-TÉRMICA	MOTORSCHUTZ
$\bigcirc$	FASI ERRATE	WRONG PHASES	ERREUR DE PHASE	FASES INCORRECTAS	FASENFOLGE
	LOCALE/ REMOTO	LOCAL/ REMOTE	local/ à distance	LOCAL/ REMOTO	LOKAL/ ENTFERT
	MANUALE/ AUTOMATICO	MANUAL /AUTOMATIC	MANUEL/ AUTOMATIQUE	MANUAL / AUTOMÁTICO	MANUELL/ AUTOMATISCH
	PULIZIA FILTRO	FILTER CLEANING	NETTOYAGE DU FILTRE	LIMPIEZA FILTRO	FILTER REINIGUNG
RESET	RESET	RESET	REINITIALISATION/ RESET	RESET	RESET
	FILTRO INTASATO	CLOGGED FILTER	FILTRE COLMATÉ	FILTRO BLOQUEADO	FILTER BELEGT
F	FILTRO H (ASSOLUTO) INTASATO	CLOGGED (ABSOLUTE) H FILTER	FILTRE H (ABSOLU) COLMATÉ	FILTRO H (ABSOLUTO) BLOQUEADO	ABSOLUTFILTER BELEGT
	LIVELLO MAX	MAX. LEVEL	NIVEAU MAX.	NIVEL MAX.	FÜLLSTAND MAX.
Ē	LIVELLO MIN	MIN. LEVEL	NIVEAU MIN.	NIVEL MIN.	FÜLLSTAND MIN.
Ţ.	SCARICO CONTENITORE	DISCHARGE OF CONTAINER	DÉCHARGEMENT DE LA CUVE	DESCARGA DEL CONTENEDOR	ENTLEERUNG SAMMELBEHÄLTER
	LIVELLO TRAMOGGIA MAX	HOPPER'S MAX. LEVEL	NIVEAU MAX. DE LA TRÉMIE	NIVEL MAX. TOLVA	FÜLLSTAND VORABSCHEIDER MAX.
$(\Box)$	LIVELLO TRAMOGGIA MIN	HOPPER'S MIN. LEVEL	NIVEAU MIN. DE LA TRÉMIE	NIVEL MIN. TOLVA	FÜLLSTAND VORABSCHEIDER MIN.
(J	SCARICO TRAMOGGIA	HOPPER'S DISCHARGE	DÉCHARGEMENT DE LA TRÉMIE	DESCARGA DE TOLVA	ENTLEERUNG VORABSCHEIDER
	SEPARATORE PIENO	FULL SEPARATOR	SEPARATEUR PLEIN	SEPARADOR COMPLETO	VORABSCHEIDER VOLL
	TRAMOGGIA PRESA PRODOTTO PIENA	DISCHARGE HOPPER FULL	TRÉMIE PLEIN	TOLVA COMPLETA	STECKER VORABSCHEIDER VOLL
AR/PSI	PRESSIONE MAX/MIN	MAX./MIN. PRESSURE	PRESSION MAX./MIN.	PRESIÓN MAX./MIN.	DRUCK MAX./MIN.
	TEMPERATURA ELEVATA	HIGH TEMPERATURE	TEMPÉRATURE ÉLEVÉE	TEMPERATURA ELEVADA	ERHÖHTE TEMPERATUR
	MARCIA POMPA	PUMP ON	POMPE EN MARCHE	BOMBA EN FUNCIONAMIENTO	PUMPE IN BETRIEB
	START POMPA	START PUMP	MISE EN MARCHE POMPE	ARRANQUE DE LA BOMBA	START PUMPE
	STOP POMPA	STOP PUMP	ARRET POMPE	PARADA DE LA BOMBA	STOPP PUMPE

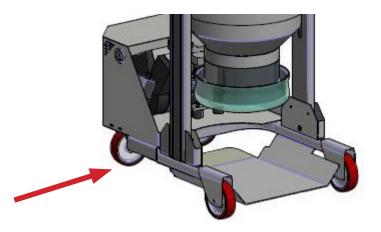
ICONA/	使用说明	MÔ TẢ	DESCRIÇÃO
ICON/ ICÔNE/ ICONO/ SYMBOL	*:	*	
	电源指示灯	BẬT NGUỒN	ALIMENTAÇÃO CONETADA
	启动开关	BẬT	LIGAR
$\otimes$	停止开关	TÅT	DESLIGAR
(	吸尘作业 指示灯	BẮT ĐẦU HÚT	MODO ASPIRADOR LIGADO
ß	热保护	CẢM BIẾN NHIỆT TỪ	PROTEÇÃO MAGNETOTÉRMICA
$\overline{\Omega}$	相序错误	LỆCH PHA	FASES INVERTIDAS
2 Ī	本地/远程控制	BẰNG TAY /REMOTE	LOCAL/REMOTO
	手动/自动	BẰNG TAY/ TỰ ĐỘNG	MANUAL/AUTOMÁTICO
	滤网清洁	VỆ SINH BỘ LỌC	LIMPEZA DO FILTRO
RESET	重置	RESET	RESET
	过滤网堵塞	TẮC NGHĨN BỘ LỌC	FILTRO BLOQUEADO
H	HEPA 过滤网堵塞	TẮC NGHĨN LỌC HEPA	FILTRO H (ABSOLUTO) BLOQUEADO
	最高料位	MỨC CAO NHẤT	NÍVEL MÁX. CONTENTOR
	最低料位	MỨC THẤP NHẤT	NÍVEL MÍN. CONTENTOR
<b>₹</b>	尘桶卸料	THÙNG CHỨA	DESCARGA DO CONTENTOR
	料斗最高料位	PHỄU CHỨA CỰC ĐẠI	NÍVEL MÁX. TREMONHA
$\overline{(7)}$	料斗最低料位	PHỄU CHỨA CỰC TIỂU	NÍVEL MÍN. TREMONHA
	料斗卸料	NƠI XẢ PHỄU CHỨA	DESCARGA DA TREMONHA
	前置料斗已满	THÙNG CHỨA RỜI	SEPARADOR COMPLETO
	前置料斗卸料	XẢ PHỄU CHỨA KHI ĐẦY	TREMONHA COMPLETA
	最大/最小压力	ÁP SUẤT CỰC ĐẠI/CỰC TIỂU	PRESSÃO MÁX./MÍN.
	高温	NHIỆT ĐỘ CAO	TEMPERATURA ELEVADA
	泵通电指示灯	BẬT MÁY BƠM	BOMBA EM FUNCIONAMENTO
	泵启动开关	BẮT ĐẦU BƠM	LIGAR BOMBA
	泵停止开关	DỪNG QUÁ TRÌNH BƠM	DESLIGAR BOMBA

### WORK CYCLE



**WARNING:** BEFORE FITTING THE PLUG, MAKE SURE THE POWER VOLTAGE CORRESPONDS TO THAT ON THE MARKING PLATE. DL3000P MACHINE MUST BE POWERED BY 230V 1-PHASE POWER. DL4000P MACHINE MUST BE POWERED BY 230V 3-PHASE POWER.

- 1. Make sure the power plug is correctly fitted in the power socket.
- 2. Make sure the flexible hose is properly fitted and locked in the suction inlet.
- 3. Make sure the power cable and any extension cord used are integral and in perfect condition.
- 4. Always use the caster wheel brake to prevent the machine from rolling.



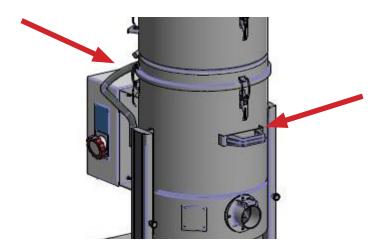
- 5. Grip one end of the flexible hose complete with selected accessory.
- 6. Flip up the Start switches and start vacuuming.
- 7. To stop the dust collector, flip down the Stop switches.
- 8. After finishing work, disconnect the dust collector from the power socket.



9. The DL4000P model is equipped with two sockets for auxiliary equipment connection. (See Description of controls.) On the right side of the dust collector there is a 230V three-phase socket and on the left side a 230V single-phase socket. On the panel there is a switch for socket selection (it is possible to use only one socket at a time). When the dust collector is ON it supplies power to the panel; after having selected the socket to be used, it is possible to connect the auxiliary equipment to the socket selected. Remember that the user cannot use to both sockets simultaneously.

### WORK CYCLE CONT.

10. To move the dust collector, use the large handle.





**WARNING:** THE DUST COLLECTOR CAN BE MOVED ONLY ON FLAT GROUND! IF THE DUST COLLECTOR IS MOVED ON INCLINED GROUNDS, YOU CAN RISK TO LOSE THE CONTROL, BECAUSE OF THE WEIGHT, AND TO DAMAGE PERSONS OR THINGS.

CAUTION: DURING VACUUMING, AVOID ROLLING UP OR BENDING THE FLEXIBLE HOSE.

### REMOVAL AND PLACING OF THE WASTE BAG

- 1. Stop the dust collector motors by flipping the three STOP switches.
- 2. Disconnect the plug from the power socket.
- 3. Use two ties to fasten the collection bag at two points about  $1 2^{\circ}(3 5 \text{ cm})$  from each other, just below the filter chamber.
- 4. Cut off the bag in the position between the two ties.







- 5. Remove the lower part of the bag.
- 6. Pull down a length of new bag from the chamber, until it reaches the bottom support plate







**ATTENTION:** USED BAGS SHOULD BE DISPOSED OF INTO A SPECIAL WASTE DISPOSAL CONTAINER, IN ACCORDANCE WITH LAWS APPLICABLE IN THE COUNTRY WHERE THE DUST COLLECTOR IS USED.

### DISCHARGING THE COMPRESSED AIR

- 1. Open the valve and discharge the compressed air daily to remove moisture from the air tank.
- 2. Remember to close the valve once the tank is drained





### PNEUMATIC FILTER CLEANING SYSTEM

These specific models are equipped with a pneumatic filter cleaning system that automatically cleans the filter cartridges.



**ATTENTION!** THE SETTINGS FOR THE PNEUMATIC FILTER CLEANING SYSTEM ARE PRE-SET BY THE FACTORY TO OPTIMIZE FILTER CLEANING AND THE LONGEVITY OF THE COMPRESSOR. CHANGING THESE SETTINGS MAY REDUCE PERFORMANCE, DAMAGE THE COMPRESSOR AND FILTER CLEANING SYSTEM, AND MAY VOID THE WARRANTY.



CAUTION: NEVER USE THE MACHINE WITH THE FILTER BLOCKED.



**CAUTION:** IF THE ARROW OF THE FILTER PRESSURE DROP GAUGE STAYS IN THE RED AREA EVEN AFTER THE FILTER IS CLEANED, THE HOSE OR SUCTION ACCESSORY COULD BE BLOCKED. IN THIS CASE, CLEAN AND REMOVE THE BLOCKAGE. REPLACING THE OLD FILTER WITH A NEW ONE IS ALSO AN OPTION.

## **Troubleshooting Guide - Dust Collector**

FAULT FOUND	POSSIBLE CAUSE	RECOMMENDED REMEDY	
The dust collector fails to start	No power	Check the power mains supply. Check the integrity of the plug and power cable.	
	Thermal magnetic switch tripped	Reset the thermal magnetic switch	
	Perforated vacuum hose	Replace the hose	
Dust is leaking out	Perforated filter	Replace the filter	
	Filter unsuitable for type of job	Use a suitable filter for the type of material to be vacuumed	
	Hose perforated or blocked	Check the hose and, if necessary, replace it	
	Longopac® bag is full	Replace bag	
	Filter blocked	Perform filter cleaning cycle and, if necessary, replace filter	
The dust collector does not work as it should	Longopac flap not closing	Contact NFE technical support	
	Seals worn	Check the seals and, if necessary, replace them	
	Air leak	Check for any air leaks out of closing fasteners, tightening screws, Longopac® bag or filter chamber	
Motor very noisy	Contact NFE technical support		



IMPORTANT! FOR ANY OTHER PROBLEMS, CONTACT THE NFE TECHNICAL SUPPORT.

## **Troubleshooting Guide - Compressor**

FAULT FOUND	POSSIBLE CAUSE	RECOMMENDED REMEDY
	No power	Power the machine
	Automatic switch tripped or fuse burnt out	Reset the switch or replace the fuses with other suitable ones
Compressor not operating, motor fails to start	Overload switch tripped	Resets automatically after cooling in single- phase version
	Faulty condenser	Change the condenser
	Impeller blocked	Foreign bodies between the fixed and rotating parts of the compressor
Comproses not exercting motor starts	Liquid level dropped and bottom valve no longer under water	Be careful, the mechanical seal could be damaged
Compressor not operating, motor starts	Compressor not filled with liquid or drained due to leaks	Be careful, the mechanical seal could be damaged
Compressor operates at reduced flow rate	Difference in pumping level above compressor capacity or flow resistance too high during suction	Replace the suction pipe with one of bigger diameter. Reduce elbow bends to a minimum. Eliminate deposits.
	Compressor or pipe blockages	Clean or remove blockages
Compressor stops after short periods	Overload switch tripped	Compressor not turning freely Viscous liquid



**IMPORTANT!** FOR ANY OTHER PROBLEMS, CONTACT THE NFE TECHNICAL SUPPORT.

### **INFORMATIVE NOTES**

IN THE CASE OF MAJOR REPAIRS, CONTACT NFE OR AN AUTHORIZED DEALER.

### **GENERAL SAFETY WARNINGS**

### MAINTENANCE MUST ALWAYS BE PERFORMED BY SKILLED TECHNICIANS. CONTACT NFE FOR AUTHORIZED SERVICE CENTER.

Before doing any maintenance job:

• Make sure the technician is equipped with all approved individual protection equipment needed for the specific operation (gloves, eyewear, shoes, etc.).

Before carrying out maintenance:

• Disconnect the plug from the power socket.

Work done on motors or other electrical component parts must only be performed by a specifically trained electrician.

### **MAINTENANCE OPERATIONS**

**IMPORTANT!** ALL THE DESCRIBED OPERATIONS MUST BE DONE WITH THE PLUG DISCONNECTED FROM THE POWER SOCKET. BEFORE STARTING ANY MAINTENANCE OR VACUUMING JOB, ALWAYS WEAR ADEQUATE PROTECTIVE CLOTHING, EYEWEAR AND/OR GLOVES ACCORDING TO THE TYPE OF JOB TO BE DONE.

### FOR SMOOTH DUST COLLECTOR OPERATION, A NUMBER OF CONTROLS ARE BEST MADE PERIODICALLY:

- Check to see whether the filter is worn or clogged.
- Make sure the sealing gaskets of the motor head base, of the filter-holder ring and of the container are working efficiently.
- The electrical parts (plugs, switches, cables, etc.) must not be damaged.
- The screws and nuts must always be tight.
- Make sure the Longopac bag is not overfilled. The bag should be replaced when the filled portion reaches 1/2 3/4 of the distance between the support plate and the Longopac holder.
- · Check the integrity of the flexible vacuum hose and accessories to be used.
- · If the flexible hose is perforated, the power of the dust collector will be reduced and dust and liquids will leak into the environment.
- For dust collectors with electric panel: A qualified operator must periodically verify the cable connections in the electric components of the electric board. With prolonged use of the dust collector, the vibrations can loosen the connections.
- For compressor maintenance, see the specific manual.
- If compressor fails to run, push reset button to reset.



### MAINTENANCE OPERATIONS CONT.

**IMPORTANT!** Every 30 days of use check the compressor air filter to make sure it is not clogged or damaged. In case of compressor air filter damage, the filter won't properly filter the air resulting in compressor damage. A clogged compressor filter will inhibit flow of compressed air and prevent the dust collector filters from getting cleaned.





ATTENTION: IT IS RECOMMENDED THAT THIS MACHINE BE SERVICED BY NFE OR ITS AUTHORIZED DEALERS.

### **REPLACING THE FILTER**

- 1. Turn off the dust collector by flipping the motor STOP switches.
- 2. Disconnect the dust collector plug from the power socket.



WARNING: WEAR APPROPRIATE PERSONAL PROTECTION EQUIPMENT.

- 3. Set the caster wheel brakes to prevent the machine from rolling.
- 4. Release the fasteners that locks the Longopac® container. Remove the Longopac® container.
- 5. Disconnect the socket that connects the motor head with the electrical panel on the back side (for DL4000P).
- 6. Release the retainers that hold the motor head. Lift the motor head with HEPA filter and place on a flat surface being careful not to damage the power cable.







- 7. To replace HEPA filter, unscrew the threaded bolt holding the HEPA filter in place and remove old filter. Install and fasten the new HEPA filter.
- 8. Empty the compressed air tank using the valve.





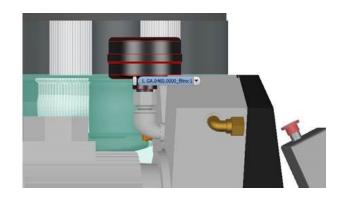
### REPLACING THE FILTER CONT.

- 9. Disconnect and lift the heightening ring (1).
- 10. Unscrew the cartridge fastening disk (2) and remove it.
- 11. Lift and extract the cartridges (3) one by one, then replace the old cartridges with new ones.

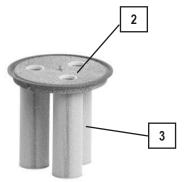


**IMPORTANT!** ALL THE MATERIAL TRAPPED BY THE FILTER AND THE FILTER ITSELF MUST BE DISPOSED OF THROUGH AUTHORIZED CHANNELS IN THE COUNTRY WHERE THE DUST COLLECTOR IS USED.

 To replace compressor air filter, access the compressor, unscrew the old filter and replace with new one.











THE CONTAINER LOCKING OPERATION MUST BE PERFORMED BY ONE PERSON ONLY, WHO MUST GRIP THE HANDLE WITH BOTH HANDS AND PRESS IT FULLY DOWN.

### FILTER REPLACEMENT SCHEDULE

- 406312 Filter Cartridges: Replace every 750 hours
- 402472 HEPA Filter: Replace every 750 hours
- 406313 Compressor Air Filter: Check every 30 days. Replace if clogged or every 200 hours

**IMPORTANT!** ALL WEAR PARTS MUST BE INSPECTED REGULARLY, AS REPLACEMENT TIME VARIES WITH CONDITIONS OF USE. ALSO CHECK GASKETS REGULARLY FOR AIR LEAKS.

### FILTERS

406312 – TF H500 FILTER CARTRIDGE



402472 - HEPA FILTER



### 406313 - COMPRESSOR AIR FILTER WITH CARTRIDGE



NOTE: See maintenance section for information regarding filter replacement. *NFE* will accept no responsibility in case of use of *NON-ORIGINAL* filters.

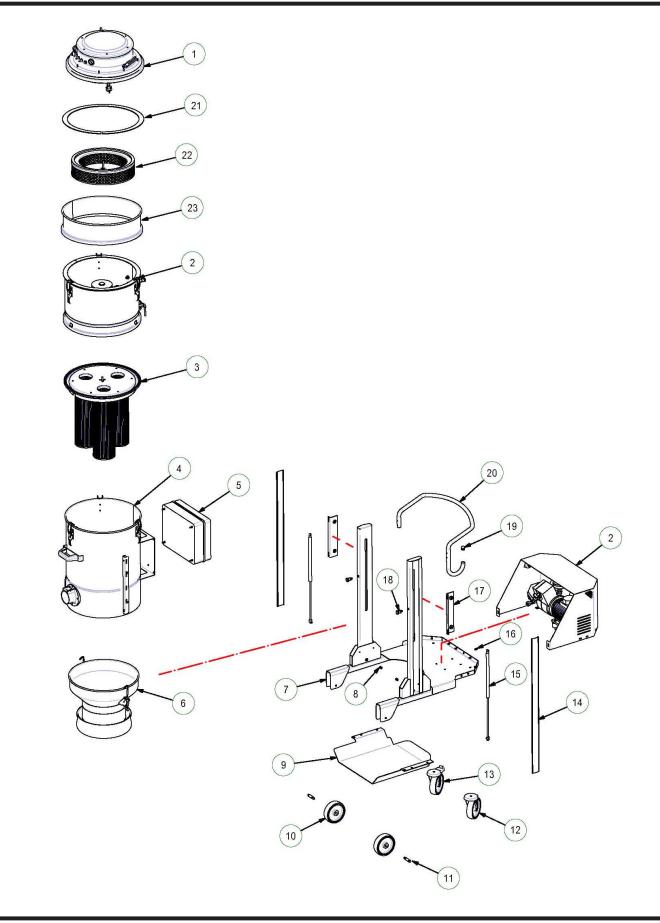
### **RECOMMENDED SPARE PARTS**

PART NUMBER	PART DESCRIPTION
402472	Filter, HEPA, DL3000/6000
402473	Longopac, 4 pack, DL Series
402478	Brush, Motor, 240 Volt
402479	Gasket, Filter Chamber
402482	Gasket, Longopac
402485	Gasket, Container, Cut to Length
402486	Gasket, Inlet, ID 3.5" OD 5.9"
406311	Gasket, Adhesive, 30 x 3
406312	Filter, Cartridge, TF H500
406313	Filter, Air, Cartridge, Compressor

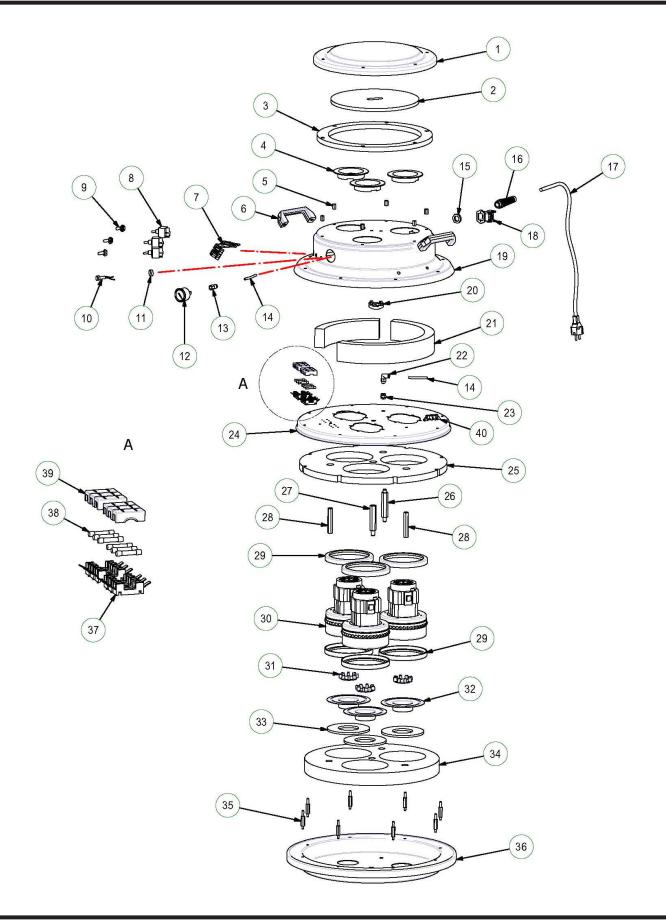
### ACCESSORIES

PART NUMBER	PART DESCRIPTION
402516	Adapter, Y Hose, 50mm
402519	Adapter, Hose, 50mm
402525	Adapter, Hose, Galvanized, 80mm to 50mm
402526	Connector, Hose, 76mm
402527	Hose, Antistatic, 76mm, 7.5m
402528	Wand, Floor, 50mm, Aluminum
402529	Brush, Floor, 50mm, Steel
402530	Wand, Floor, 50mm, Chrome
402531	Brush, Floor, 50mm, Plastic

## Parts Lists and Diagrams - DL3000P

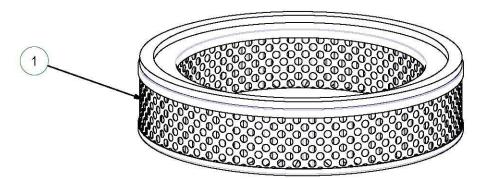


ITEM	QTY	PART #	DESCRIPTION
1	1		M450S PN MOTOR HEAD KIT
2	1		D500 3 CART.PNEUMATIC CLEANING KIT WITH 00 C/COMP.230V S/QE
3	1	406302	Kit, Filter, Antistatic Cartridges
4	1		ESST.1051.0000 CHAMBER KIT
5	1		DM3 PN ELECTRIC SWITCHBOARD
6	1		D460 LONGOPAC HOPPER KIT
7	1		DM3LPMG TROLLEY WITH COMPRESSOR SUPPORT PLATE
8	2		M8 HEXAGONAL INSERT
9	1		ENTRY LEVEL LONGOPAC® SUPPORT PLATE
10	2	406344	Wheel, Caster, 6" x 1-3/4", PU
11	2		RT.0011.0000 WHEEL AXLE KIT
12	1	406342	Caster, Swivel, 6", Hole-Mount, PU
13	1	406343	Caster, Swivel, 6", Hole-Mount, w/ Brake, PU
14	2		MTL202 DS SC LP COLUMNS PROFILE
15	2		DM3ELLP 310N GAS SPRING (STROKE:290)
16	10		M6 HEXAGONAL INSERT
17	2		DM3EL LP MG GALVANIZED SLIDERS
18	2		M12X1.5 L45 SPRING POSITIONING PISTON
19	1		D. 25 HEAD COVER
20	1		DM3 PUSH HANDLE
21	1.7 m	406311	Gasket, Adhesive, 30 x 3
22	1	406303	Kit, Filter, HEPA
23	1		D. 500 H120 HEIGHTENING RING



ITEM	QTY	PART #	DESCRIPTION
1	1		SINGLE-PHASE MOTOR HEAD COVER
2	1		COVER NOISE BUFFERING MATERIAL
3	1		10 PPI SP.15MM FILTER RING
4	3		COOLING RING
5	6		DLFM AIR MOTOR HEAD SPACER
6	2		HANDLE
7	1		SINGLE-PHASE 3 MOTORS HEAD WIRING KIT (MASTER)
8	3	402483	Switch, On/Off
9	3		SINGLE-PHASE SWITCH COATING
10	1	406346	Light, Indicator, Red, 220V
11	1		CHROMED NUT FOR HEAD LIGHT
12	1	406347	Gauge, Vacuum, ABS
13	1		F 1/8 D6 STRAIGHT AIR PIPE COUPLING CONNECTION
14	0.3 m		4X6 98SH TRANSPARENT PU PIPE
15	1		PG 13,5 BLACK POLYAMIDE NUT
16	1		PG 13.5 POLYAMIDE BLACK CABLE FASTENER
17	1	406349	Cord, Power, L6-30P, 15m
18	1		DM3PN-M450PN HEAD CONNECTION KIT
19	1		M450S COVER WITH HOLE FOR ILME CONNECTOR
20	1		SBMMM932 CABLE FASTENER SUPPORT
21	1		SINGLE-PHASE COVER NOISE BUFFERING MATERIAL
22	1		G1/8M - D6 SWIVEL ELBOW PUSH-IN FITTING
23	1		F/F 1/8" CONNECTION
24	1		3 HOLES MOTOR FASTENER
25	1		3 HOLES MOTOR FASTENER NOISE BUFFERING MATERIAL
26	1		SINGLE-PHASE MOTOR HEAD SPACER (M. FASTENER)
27	1		SINGLE-PHASE MOTOR HEAD SPACER (M. FASTENER)
28	2	404007	Standoff, F/F, M6 x80mm
29	6	406348	Gasket, 145x5mm
30	3	402477	Motor, 240 Volt
31	3		DLFM BOTTOM PLATE VALVE
32	3		DLFM MOTORS BOTTOM PLATE (GALVANIZED)
33	3	404828	Gasket, Bottom Plate, By-Pass Motor
34	1		3 HOLES BASE PLATE NOISE BUFFERING MATERIAL
35	8		MASTER MOTOR HEAD SPACER (MOTOR FASTENER )
36	1		3 HOLES TRF BASE PLATE
37	6		30A 250V FUSE HOLDER
38	6		10A 250V 6.3x32 FUSE
39	6		FUSE BLACK COATING
40	1		MTL TERMINAL BOX

#### 406303 HEPA FILTER KIT



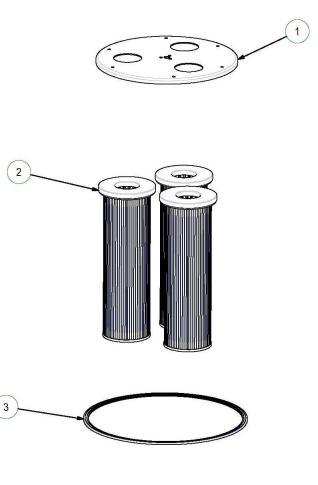


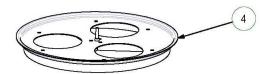


ITEM	QTY	PART #	DESCRIPTION
1	1	402472	Filter, HEPA, DL3000/6000
2	1		GALVANIZED PLAIN WASHER DIN 9021 8X32
3	1		GALVANIZED HEXAGON HEAD BOLT UNI5737 8X65

Note: 402472 is also available separately.

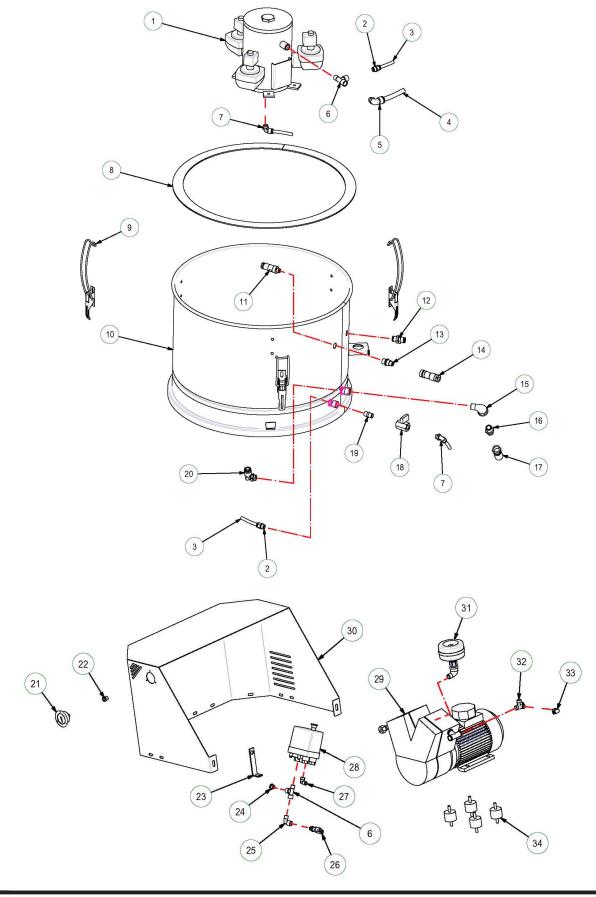
#### 406302 ANTISTATIC CARTRIDGES FILTER KIT



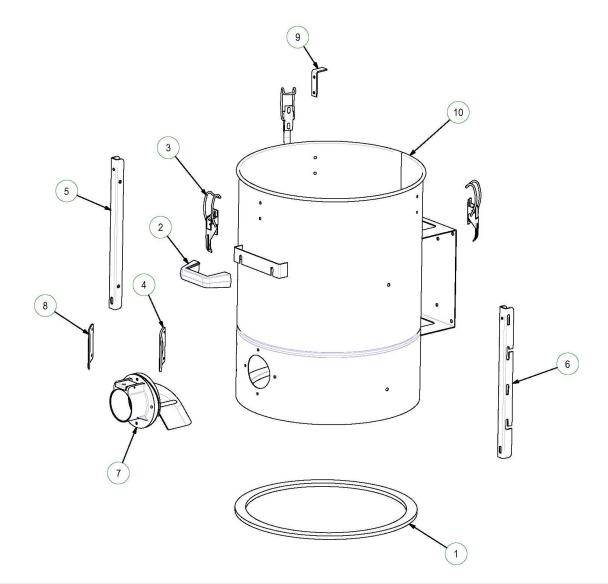


ITEM	QTY	PART #	DESCRIPTION
1	1		D500 FASTENING DISK FOR 3 D150 CARTRIDGES
2	3	406312	Filter, Cartridge, TF H500
3	1	402479	Gasket, Filter Chamber
4	1		D500 HOLDER DISK FOR 3 D150 CARTRIDGES

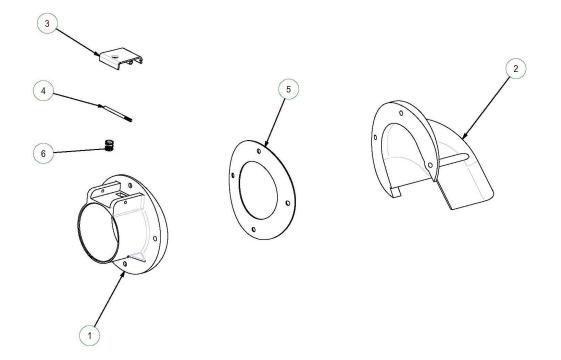
Note: 406312 and 402479 are also available separately.



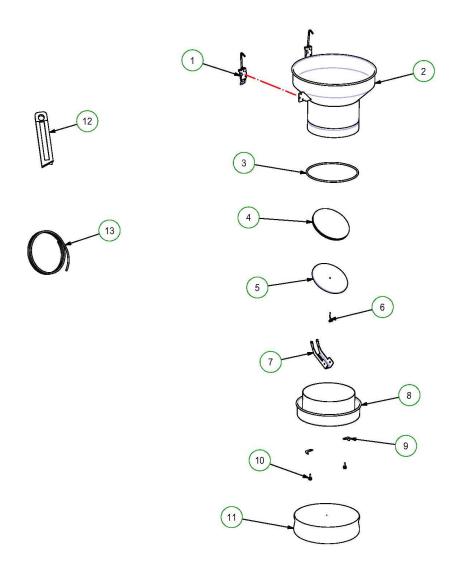
ITEM	QTY	PART #	DESCRIPTION
1	1		VERTICAL AIR TANK WITH 3 OUTLETS AT 125 (24V DC)
2	2		G1/4 M STRAIGHT CONNECTION - D8
3	0.7 m		98SH 6X8 POLYURETHANE TRANSPARENT HOSE
4	1		RILSAN PIPE D12
5	1		G1/4 M - D12 SWIVEL ELBOW PUSH-IN FITTING
6	2		G1/4 FF- R1/4 M TEE CONNECTION
7	2		G1/4 M - D8 SWIVEL ELBOW PUSH-IN FITTING
8	1.7 m	406311	Gasket, Adhesive, 30 x 3
9	3		SNAP FASTENING WITH SAFETY SCREW
10	1		D500 H350 PN-AUT HIGHTENING RING
11	1		IP67 8P STRAIGHT MALE CONNECTOR FOR 6/8 CABLE
12	1		6X8 NYLON BULKHEAD CONNECTION
13	1		M/F 8P M16 IP67 BULKHEAD CONNECTION
14	1		IP67 8P STRAIGHT FEMALE CONNECTOR FOR 8/10 CABLE
15	1		M/F 3/8" - 3/8" "L" CONNECTION
16	1		M/M 3/8" CONIC/CYLINDER NIPPLE
17	1		106 3/8" FF EQUATOR HOSE
18	1		G1/4 FF SMALL BALL VALVE
19	1		R1/4 DOUBLE SCREW NIPPLE
20	1		G3/8 M – D12 SWIVEL ELBOW PUSH-IN FITTING
21	1		D. 40 PRESSURE GAUGE FOR COMPRESSED AIR FILTER-REGULATOR W/FLANGE
22	1		R1/4 - G1/8 MF REDUCER
23	1		PRESSURE SWITCH SUPPORT (XTRACTOR)
24	1		R1/4 HEXAGON HEAD CAP
25	1		R1/4" – G1/4" MF ELBOW CONNECTION
26	1		G1/4 M - D8 SWIVEL Y PUSH-IN FITTING
27	1		G1/8 F - D6 SWIVEL ELBOW PUSH-IN FITTING
28	1		1-10 BAR ADJUSTABLE PRESSURE SWITCH FOR COMPRESSOR PUMP
29	1	406310	Compressor, 1.1kW, 230V/50Hz
30	1		DM3 PN COMPRESSOR PROTECTION CARTER
31	1	406313	Filter, Air, Cartridge, Compressor
32	1		3/8" CHECK VALVE
33	1		G1/8M - D6 SWIVEL ELBOW PUSH-IN FITTING
34	4	404757	Device, Antivibration M8mm



ITEM	QTY	PART #	DESCRIPTION
1	1.6 m	402485	Gasket, Container, Cut to Length
2	1		L=140 HANDLE
3	3		LATCH TOGGLE CLAMP
4	1		MOUSSE BR150 98X98 GASKET WITH Ø50 HOLE
5	1		GALVANIZED D. 500 CHAMBER LEFT "U" PROFILE
6	1		GALVANIZED D. 500 CHAMBER RIGHT "U" PROFILE
7	1		D. 420 DIE-CAST INLET KIT
8	1		FILTER SHAKER FLANGE
9	1		INNER GALVANIZED DG PN CENTERING PLATE
10	1		D500 H650 FILTERING CHAMBER WITH ELECTRIC SWITCBOARD SUPPORT

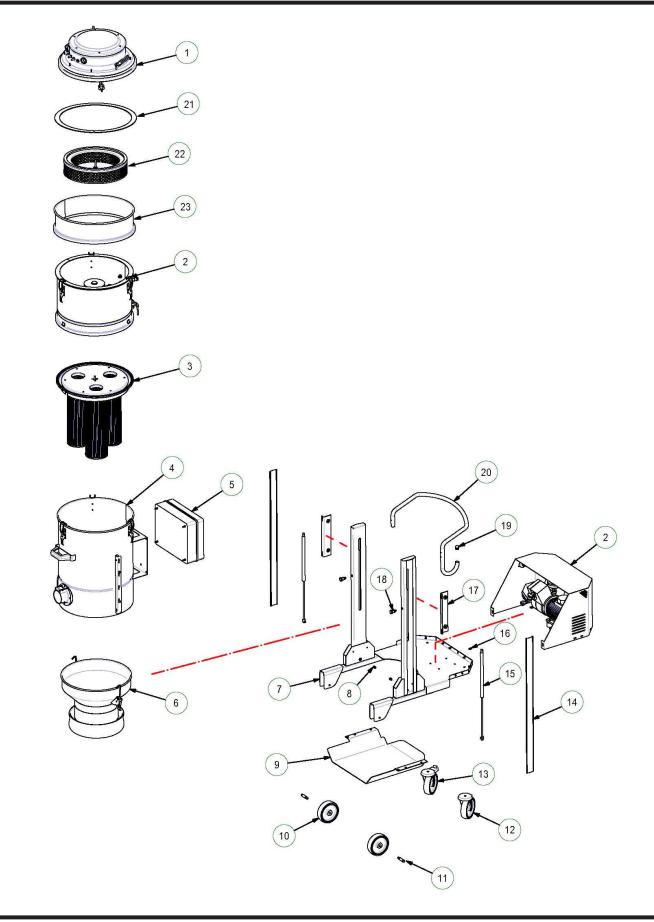


ITEM	QTY	PART #	DESCRIPTION
1	1		D. 80 DIE-CAST INLET
2	1		DIE-CAST DEFLECTOR
3	1		DIE CAST INLET PAWL
4	1		DIE CAST INLET PAWL PIN
5	1	402486	Gasket, Inlet, ID 3.5" OD 5.9"
6	1		PAWL SPRING

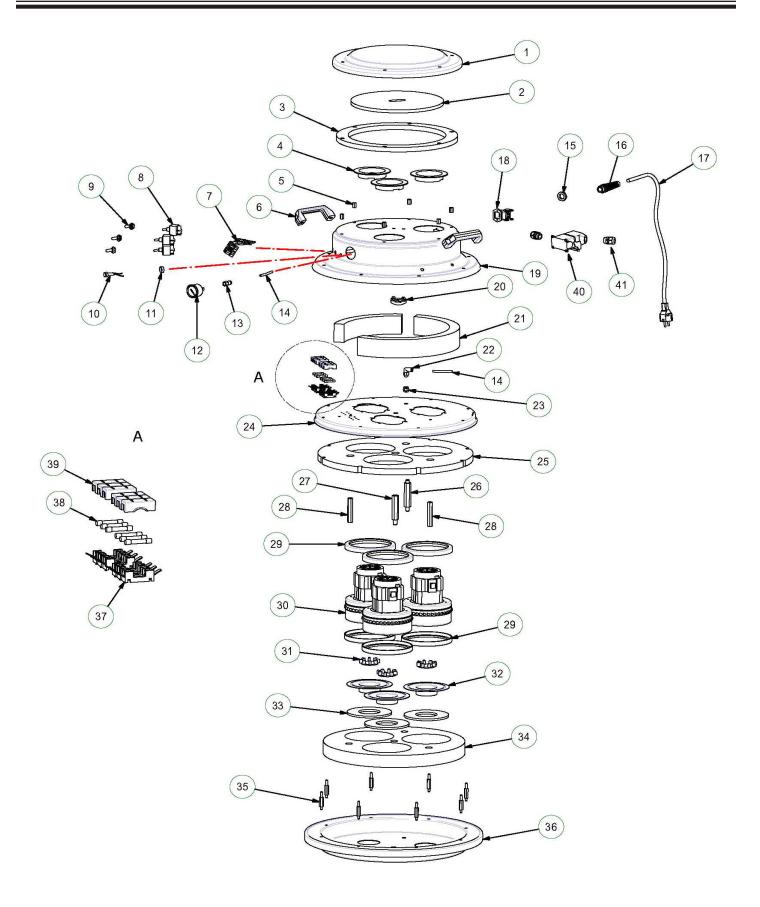


ITEM	QTY	PART #	DESCRIPTION
1	2		ASFIXE GALVANIZED FASTENER LEVER (DM3LPMG-001)
2	1		D460 LONGOPAC HOPPER WITH D170 DISCHARGE (GAS SPRING SYSTEM)
3	1	402482	Gasket, Longopac
4	1	404054	Gasket, Longopac Flap
5	1	404925	Arm, Flap, Longopack
6	1	404926	Spring, Regulation
7	1	404924	Flap, Longopac
8	1	404742	Holder, Longopac
9	2		STAINLESS STEEL LONGOPAC CONTAINER SUPPORT
10	2	404765	Knob, M6x20
11	0.25 m	402473	Longopac, 4 pack, DL Series
12	1		CUTTER WITH AUTOMATIC SPRING
13	1		3 MM STAINLESS STEEL CABLE COIL

## THIS PAGE INTENTIONALLY LEFT BLANK

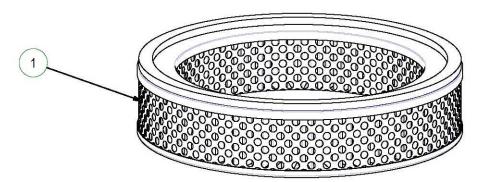


ITEM	QTY	PART #	DESCRIPTION
1	1		MOTOR HEAD KIT
2	1		D500 3 CART.PNEUMATIC CLEANING KIT WITH 00 C/COMP.230V S/QE
3	1	406302	Kit, Filter, Antistatic Cartridges
4	1		ESST.1051.0000 CHAMBER KIT
5	1		DM3 PNMG DUAL SOCKET ELECTRIC SWITCHBOARD
6	1		D460 LONGOPAC HOPPER KIT
7	1		DM3LPMG TROLLEY WITH COMPRESSOR SUPPORT PLATE
8	2		M8 HEXAGONAL INSERT
9	1		ENTRY LEVEL LONGOPAC® SUPPORT PLATE
10	2	406344	Wheel, Caster, 6" x 1-3/4", PU
11	2		RT.0011.0000 WHEEL AXLE KIT
12	1	406342	Caster, Swivel, 6", Hole-Mount, PU
13	1	406343	Caster, Swivel, 6", Hole-Mount, w/ Brake, PU
14	2		MTL202 DS SC LP COLUMNS PROFILE
15	2		DM3EL 400N GAS SPRING (STROKE:290)
16	10		M6 HEXAGONAL INSERT
17	2		DM3EL LP MG GALVANIZED SLIDERS
18	2		M12X1.5 L45 SPRING POSITIONING PISTON
19	1		D. 25 HEAD COVER
20	1		DM3 PUSH HANDLE
21	1.7 m	406311	Gasket, Adhesive, 30 x 3
22	1	406303	Kit, Filter, HEPA
23	1		D. 500 H120 HEIGHTENING RING

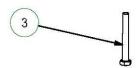


ITEM	QTY	PART #	DESCRIPTION
1	1		SINGLE-PHASE MOTOR HEAD COVER
2	1		COVER NOISE BUFFERING MATERIAL
3	1		10 PPI SP.15MM FILTER RING
4	3		COOLING RING
5	6		DLFM AIR MOTOR HEAD SPACER
6	2		HANDLE
7	1		SINGLE-PHASE 3 MOTORS HEAD WIRING KIT (MASTER)
8	3	402483	Switch, On/Off
9	3		SINGLE-PHASE SWITCH COATING
10	1	406346	Light, Indicator, Red, 220V
11	1		CHROMED NUT FOR HEAD LIGHT
12	1	406347	Gauge, Vacuum, ABS
13	1		F 1/8 D6 STRAIGHT AIR PIPE COUPLING CONNECTION
14	0.3 m		4X6 98SH TRANSPARENT PU PIPE
15	1		PG 16 BLACK POLYAMIDE NUT
16	1		Pg21 D.13/18 CABLE FASTENER
17	1		4G2,5 H07RNF POWER SUPPLY CABLE
18	1		DM3PN-M450PN HEAD CONNECTION KIT
19	1		COVER WITH ILME SUPPORT
20	1		SBMMM932 CABLE FASTENER SUPPORT
21	1		SINGLE-PHASE COVER NOISE BUFFERING MATERIAL
22	1		G1/8M - D6 SWIVEL ELBOW PUSH-IN FITTING
23	1		F/F 1/8" CONNECTION
24	1		3 HOLES MOTOR FASTENER
25	1		3 HOLES MOTOR FASTENER NOISE BUFFERING MATERIAL
26	1		SINGLE-PHASE MOTOR HEAD SPACER (M. FASTENER)
27	1		SINGLE-PHASE MOTOR HEAD SPACER (M. FASTENER)
28	2	404007	Standoff, F/F, M6 x80mm
29	6	406348	Gasket, 145x5mm
30	3	402477	Motor, 240 Volt
31	3		DLFM BOTTOM PLATE VALVE
32	3		DLFM MOTORS BOTTOM PLATE (GALVANIZED)
33	3	404828	Gasket, Bottom Plate, By-Pass Motor
34	1		3 HOLES BASE PLATE NOISE BUFFERING MATERIAL
35	8		MASTER MOTOR HEAD SPACER (MOTOR FASTENER )
36	1		3 HOLES TRF BASE PLATE
37	6		30A 250V FUSE HOLDER
38	6		10A 250V 6.3x32 FUSE
39	6		FUSE BLACK COATING
40	1		M/F 6 POLE-CONNECTOR
41	1		Pg16 D.7/12 CABLE FASTENER

#### 406303 HEPA FILTER KIT







ITEM	QTY	PART #	DESCRIPTION
1	1	402472	Filter, HEPA, DL3000/6000
2	1		GALVANIZED PLAIN WASHER DIN 9021 8X32
3	1		GALVANIZED HEXAGON HEAD BOLT UNI5737 8X65

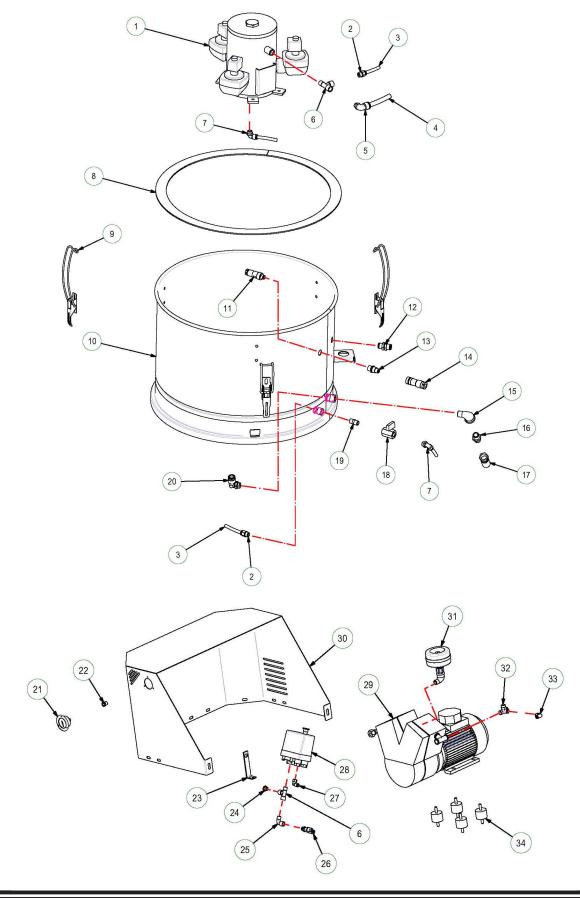
Note: 402472 is also available separately.

#### 406302 ANTISTATIC CARTRIDGES FILTER KIT

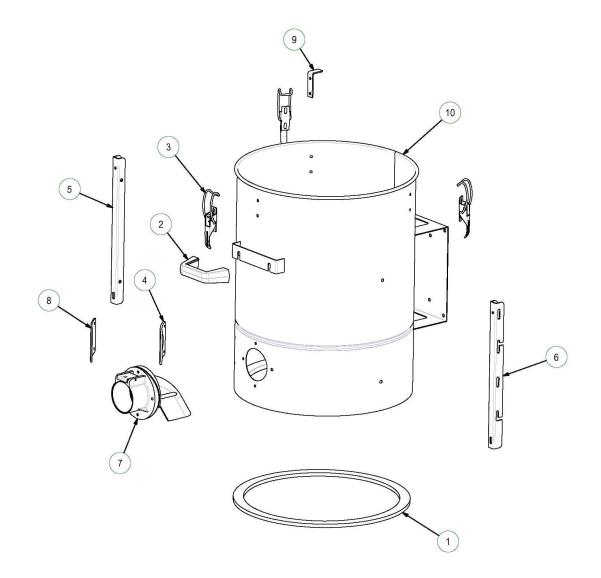


ITEM	QTY	PART #	DESCRIPTION
1	1		D500 FASTENING DISK FOR 3 D150 CARTRIDGES
2	3	406312	Filter, Cartridge, TF H500
3	1	402479	Gasket, Filter Chamber
4	1		D500 HOLDER DISK FOR 3 D150 CARTRIDGES

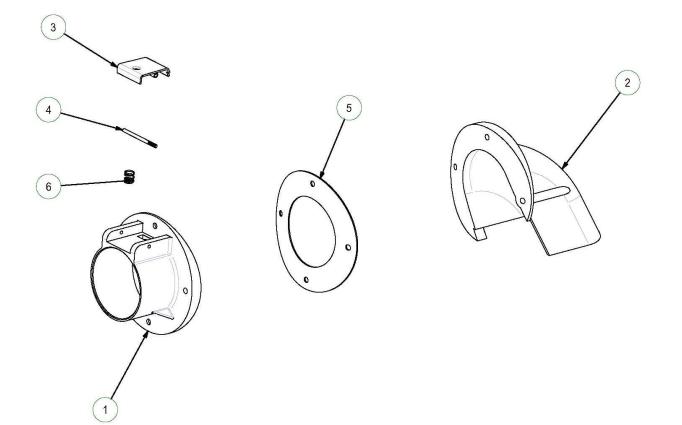
Note: 406312 and 402479 are also available separately.



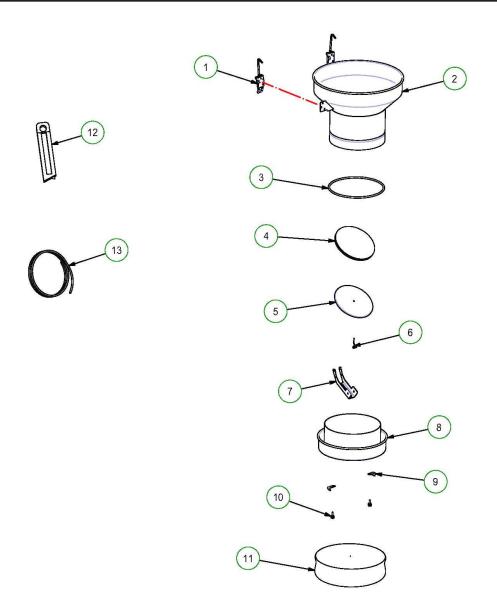
ITEM	QTY	PART #	DESCRIPTION
1	1		VERTICAL AIR TANK WITH 3 OUTLETS AT 125 (24V DC)
2	2		G1/4 M STRAIGHT CONNECTION - D8
3	0.7 m		98SH 6X8 POLYURETHANE TRANSPARENT HOSE
4	1		RILSAN PIPE D12
5	1		G1/4 M - D12 SWIVEL ELBOW PUSH-IN FITTING
6	2		G1/4 FF- R1/4 M TEE CONNECTION
7	2		G1/4 M - D8 SWIVEL ELBOW PUSH-IN FITTING
8	1.7 m	406311	Gasket, Adhesive, 30 x 3
9	3		SNAP FASTENING WITH SAFETY SCREW
10	1		D500 H350 PN-AUT HIGHTENING RING
11	1		IP67 8P STRAIGHT MALE CONNECTOR FOR 6/8 CABLE
12	1		6X8 NYLON BULKHEAD CONNECTION
13	1		M/F 8P M16 IP67 BULKHEAD CONNECTION
14	1		IP67 8P STRAIGHT FEMALE CONNECTOR FOR 8/10 CABLE
15	1		M/F 3/8" - 3/8" "L" CONNECTION
16	1		M/M 3/8" CONIC/CYLINDER NIPPLE
17	1		106 3/8" FF EQUATOR HOSE
18	1		G1/4 FF SMALL BALL VALVE
19	1		R1/4 DOUBLE SCREW NIPPLE
20	1		G3/8 M – D12 SWIVEL ELBOW PUSH-IN FITTING
21	1		D. 40 PRESSURE GAUGE FOR COMPRESSED AIR FILTER-REGULATOR W/FLANGE
22	1		R1/4 - G1/8 MF REDUCER
23	1		PRESSURE SWITCH SUPPORT (XTRACTOR)
24	1		R1/4 HEXAGON HEAD CAP
25	1		R1/4" – G1/4" MF ELBOW CONNECTION
26	1		G1/4 M - D8 SWIVEL Y PUSH-IN FITTING
27	1		G1/8 F - D6 SWIVEL ELBOW PUSH-IN FITTING
28	1		1-10 BAR ADJUSTABLE PRESSURE SWITCH FOR COMPRESSOR PUMP
29	1	406310	Compressor, 1.1kW, 230V/50Hz
30	1		DM3 PN COMPRESSOR PROTECTION CARTER
31	1	406313	Filter, Air, Cartridge, Compressor
32	1		3/8" CHECK VALVE
33	1		G1/8M - D6 SWIVEL ELBOW PUSH-IN FITTING
34	4	404757	Device, Antivibration M8mm



ITEM	QTY	PART #	DESCRIPTION
1	1.6 m	402485	Gasket, Container, Cut to Length
2	1		L=140 HANDLE
3	3		LATCH TOGGLE CLAMP
4	1		MOUSSE BR150 98X98 GASKET WITH Ø50 HOLE
5	1		GALVANIZED D. 500 CHAMBER LEFT "U" PROFILE
6	1		GALVANIZED D. 500 CHAMBER RIGHT "U" PROFILE
7	1		D. 420 DIE-CAST INLET KIT
8	1		FILTER SHAKER FLANGE
9	1		INNER GALVANIZED DG PN CENTERING PLATE
10	1		D500 H650 FILTERING CHAMBER WITH ELECTRIC SWITCBOARD SUPPORT



ITEM	QTY	PART #	DESCRIPTION
1	1		D. 80 DIE-CAST INLET
2	1		DIE-CAST DEFLECTOR
3	1		DIE CAST INLET PAWL
4	1		DIE CAST INLET PAWL PIN
5	1	402486	Gasket, Inlet, ID 3.5" OD 5.9"
6	1		PAWL SPRING



ITEM	QTY	PART #	DESCRIPTION
1	2		ASFIXE GALVANIZED FASTENER LEVER (DM3LPMG-001)
2	1		D460 LONGOPAC HOPPER WITH D170 DISCHARGE (GAS SPRING SYSTEM)
3	1	402482	Gasket, Longopac
4	1	404054	Gasket, Longopac Flap
5	1	404925	Arm, Flap, Longopack
6	1	404926	Spring, Regulation
7	1	404924	Flap, Longopac
8	1	404742	Holder, Longopac
9	2		STAINLESS STEEL LONGOPAC CONTAINER SUPPORT
10	2	404765	Knob, M6x20
11	0.25 m	402473	Longopac, 4 pack, DL Series
12	1		CUTTER WITH AUTOMATIC SPRING
13	1		3 MM STAINLESS STEEL CABLE COIL

National Flooring Equipment Inc. (referred to as "The Company") warrants that each new unit manufactured by The Company to be free from defects in materials and workmanship in normal use and service for a period of twelve (12) months from date of shipment from The Company to the end user. If shipment to end user is from a Distributor, The Company may honor warranty for up to 15 months from initial shipment from the Company if the end user can provide documentation of receipt date. Accessories or equipment furnished and installed on the product by the Company but manufactured by others, including but not limited to: engines, motors, electrical components, transmissions etc., shall carry the accessory manufacturers own warranty. Battery warranties are prorated over the warranty period. Customer is responsible for the inspection of equipment or parts upon delivery. **Freight damages are excluded from this warranty**.

The Company, at its determination of defect, will repair or replace any product or part deemed to be defective in material or workmanship within specified warranty time period. All product determinations and / or repairs will take place at The Company repair facility or at a certified warranty location designated by The Company. The Company will coordinate and be responsible for all freight expenses associated with valid warranty claims. Freight and shipping expenses associated with abuse or misuse will be back charged to the Distributor/Customer. The Company reserves the right to modify, alter or improve any part / parts without incurring any obligation to replace any part / parts previously sold without such modified, altered or improved part / parts. In no event shall the seller or manufacturer of the product be liable for special, incidental, or consequential damages, including loss of profits, whether or not caused by or resulting from the negligence of seller and / or the manufacturer of the product unless specifically provided herein. This warranty shall not apply to any products or portions there of which have been subjected to abuse, misuse, improper installation or operation, lack of recommended maintenance, electrical failure or abnormal conditions, and to products which have been tampered with, altered, modified, repaired, reworked by anyone not approved or authorized by the Company or used in any manner inconsistent with the provisions of the above or any instructions or specifications provided with or for the product. Any and all unauthorized onsite warranty work conducted by unauthorized personnel or any outside person(s), is not covered by The Company unless the work has been pre-authorized by a predetermined manufacturer representative. This warranty excludes wearable parts and/or consumables.

Defective or failed material or equipment shall be held at the purchaser's premises until authorization has been granted by The Company to return or dispose of defective products. Products returned to The Company for inspection must be returned with a manufacturer authorized Return Material Authorization (RMA), and must be packaged to The Company's specifications to avoid damage during shipment. Any unauthorized return of equipment will be declined at the dock by The Company. Any non-approved items returned with approved returned items are subject to rejection and will not be credited. Credit will be issued for material found to be defective upon The Company's inspection based on prices at time of purchase.

TO OBTAIN SERVICE CONTACT NATIONAL FLOORING EQUIPMENT, INC. TOLL FREE AT 800-245-0267 FOR A REPAIR AUTHORIZATION NUMBER. COD FREIGHT RETURNS WILL NOT BE ACCEPTED. FREIGHT COLLECT SHIPMENTS WILL NOT BE ACCEPTED. WARRANTY REPAIRS MUST BE ACCOMPANIED BY DATE OF PURCHASE RECEIPT AND A RETURN/ REPAIR AUTHORIZATION NUMBER.

#### RETURN/REPAIRAUTHORIZATIONNUMBER:

#### MACHINE SERIAL NUMBER: \_



Made in America Since 1968 9250 Xylon Avenue N • Minneapolis, MN 55445 • U.S.A. Toll-free 800-245-0267 • Phone 763-315-5300 • Fax 800-648-7124 • Fax 763-535-8255 Web Site: www.nationalequipmentdirect.com • E-Mail: info@nationalequipment.com