

DL4000 DUST COLLECTOR

INSTRUCTION MANUAL



CE

Read this manual before operating machine

405068 Rev A

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 until this is scrapped. 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.

The subjects dealt with in this manual are those expressly required by "**Machine Directive 2006/42/EC**" and the technical details shown are those provided by the manufacturer at the time of compilation.

This manual must be kept in a place accessible to all the personnel charged with operating and servicing the dust collector.

In case of any doubts, immediately contact **NFE Technical Service**.

NFE CUSTOMER SERVICE

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

Please call 1-800-245-0267

The manual must be kept with the dust collector in case of resale!

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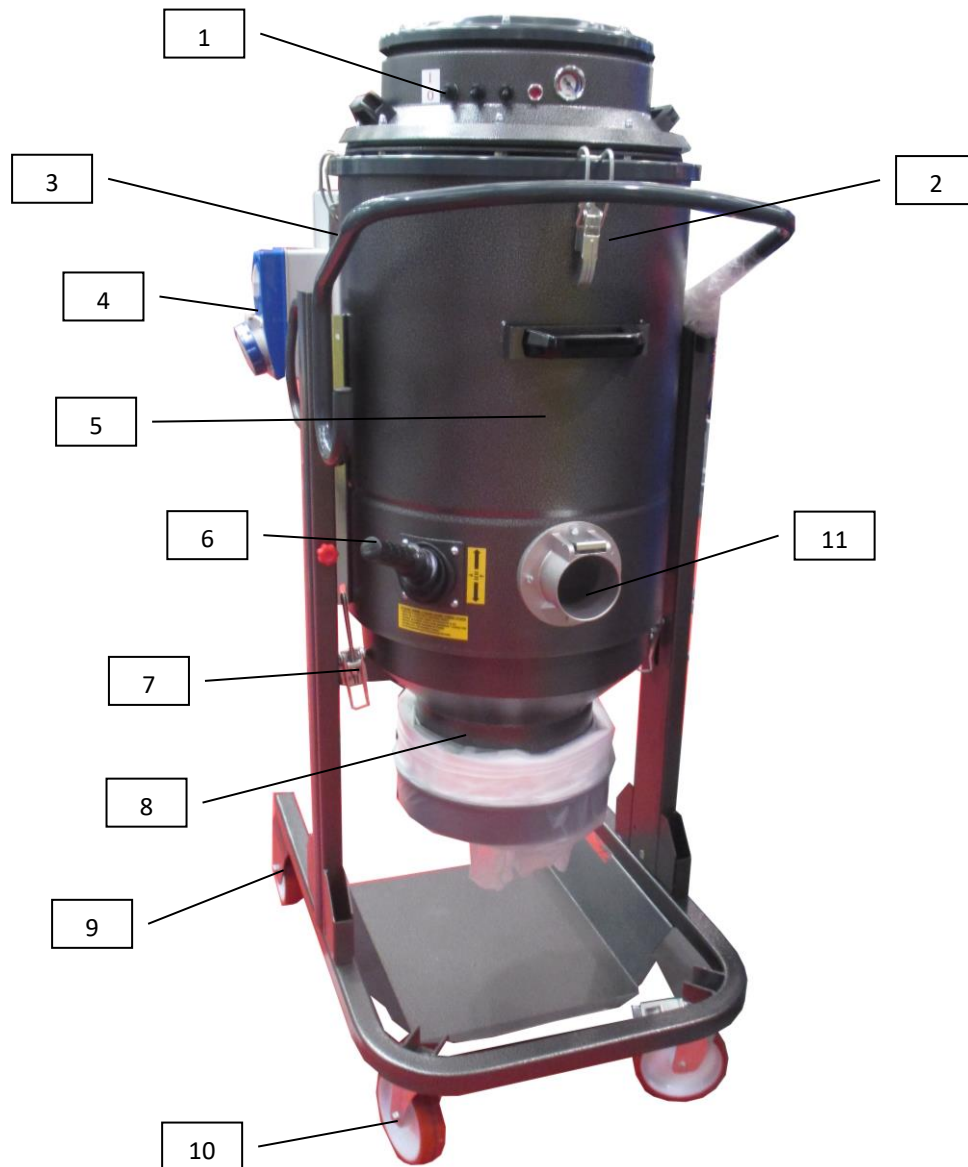
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1.1 Identification of main parts



- 1) Motor head
- 2) Clamp release
- 3) Push handle
- 4) Socket for auxiliary equipment connection
- 5) Filter chamber
- 6) Filter shaking lever
- 7) Fastener for hopper release (when using dust bin)
- 8) Longopac® container
- 9) Fixed wheels
- 10) Casters
- 11) Suction pipe coupling point

1.2 Replaceable filters



402469 – Filter, Primary



402472 – Filter, HEPA

Remark: These filters must be checked every six months. In case they are worn it will be necessary to replace them with new ones, to be requested as spare parts to **NFE**.

NFE will accept no responsibility in case of use of **NON-ORIGINAL** filters.

1.3 Intended uses

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

| |
|---|
| <p>Warning! Always use specific filters for the type of dust or materials to be vacuumed.</p> |
|---|

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

1.4 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.

1.5 Storage

Remove the filter and clean it, empty the container (in case of Longopac vacuums, replace the 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.

1.6 Technical details

| | | |
|---------------------------|--|--|
| Power | <i>kW</i> | 3.45 |
| Voltage | <i>Volts</i> | 230 3-phase / 50-60 Hz |
| Max. vacuums rate | <i>in H₂O (mm H₂O)</i> | 98.4 (2,500) |
| Max. air flow rate | <i>cfm (m³/h)</i> | 318 (540) |
| Noise level (*) | <i>dB (A)</i> | 76 |
| Filter type | | Polyester M+H |
| Filter surface | <i>in² (cm²)</i> | 4,650 (30,000) |
| Capacity | | Longopac |
| Suction inlet Ø | <i>in (mm)</i> | 3.15 (80) |
| Dimensions | <i>in (cm)</i> | 25.2 x 37.8 x 55.1; 63.0 max. height (64 x 96 x 140; 160 max. height) |
| Weight | <i>lbs (kg)</i> | 260 (118) |

(*) Noise level

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

Sound tests performed on this specific dust collector model have been taken from a distance of 3.28 ft (1 m) and from a height of 5.25 ft (1.6 m), showing an acoustic pressure no higher than the one indicated in the table.

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 protection devices and to inform them of the risks relating to noise exposure.

1.7 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.

2.1 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.

The safety messages are highlighted by the following symbols:

Attention!

Unless these messages are heeded, operator injuries could occur.

Warning!

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 use original NFE spare parts.

NFE declines all liability in the event of non-original spare parts being used.

2.2 Safety warnings

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.

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 eject any objects.

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.

Motor brushes must be replaced according to maintenance schedule. Always use original spare parts.

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

The machine is supplied with an instruction manual.

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.

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.

2.3 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 NFE.

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 cleaner or doing any maintenance jobs.

WARNING!

➤ **ONLY SHAKE THE FILTER WHEN THE MACHINE IS TURNED OFF**

IMPORTANT

**DO NOT BREATHE IN INFLAMMABLE
AND/OR EXPLOSIVE LIQUIDS OR POWDERS**

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!

2.4 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 cleaner 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 1.4 *Allowed environmental conditions.*

Risk of erroneous interpretation of the safety pictograms.

Having identified the various outstanding risks, the manufacturer has affixed to the cleaner 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.

Attention!

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.

2.5 Applied directives

The following directives apply to the dust collector described in this manual:

- ***2006/42/EC Machine Directive***
- ***2014/30/EU Electromagnetic compatibility directive***
- ***2014/35/EU Low-voltage directive***

3.1 Installation

Warning!

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.

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.

Contact your dealer for information relating to the different types of **optional accessories** available for this specific dust collector model.

Fit the supplied pipe on the connector.



Fit the supplied connector on the pipe union.



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.

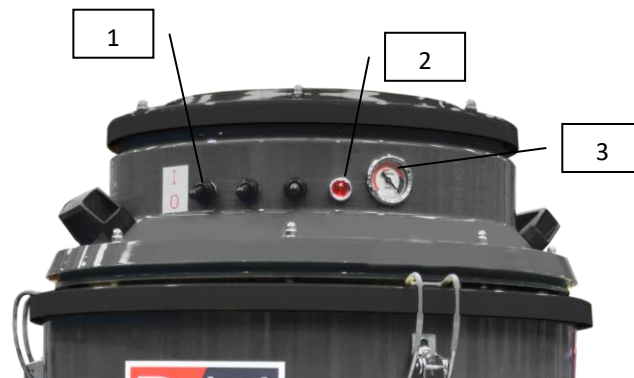
In the event of an extension cord being used, make sure this is in perfect condition, in compliance with **CE** standards and with cable cross section suitable for the power input of the dust collector.

- Pull the red handle on the left side of the dust collector and unlock the sliding system.

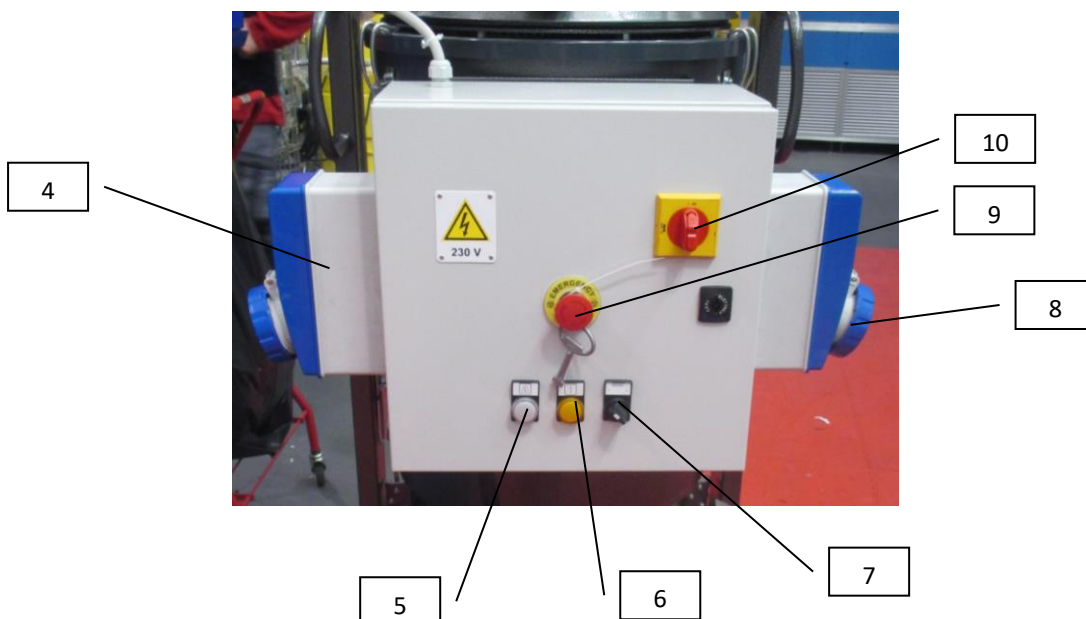


- The dust collector will raise automatically, however it is possible to use the superior handle to guide the movement with a balanced force.
- Pull the dust collector until the lock has reached its position.
- If the operator notes that the movement becomes difficult, remove the side cover, loosen the screws and if necessary put some grease on the sliding system.

3.2 Description of controls



- 1) **START/STOP** BUTTONS
- 2) POWER ON LIGHT INDICATOR
- 3) FILTER PRESSURE DROP GAUGE



- 4) 230V SINGLE PHASE SOCKET
- 5) POWER ON INDICATOR LIGHT
- 6) MAGNETIC-THERMAL RELEASE
- 7) SWITCH FOR SOCKET SELECTION
- 8) 230V THREE-PHASE SOCKET
- 9) EMERGENCY STOP BUTTON
- 10) GENERAL SWITCH

3.3 Work cycle

Warning!

Before fitting the plug, make sure the power voltage corresponds to that on the CE marking plate.

- Make sure the power plug is correctly fitted in the power socket.
- Make sure the flexible hose is properly fitted and locked in the vacuum pipe union.
- Make sure the power cable and any extension used are integral and in perfect condition.
- Always use the caster wheel brakes to prevent the machine from rolling.



- Grip one end of the flexible hose complete with selected accessory.
- Press the **Start** button and start vacuuming.
- To stop the dust collector, press the **Stop** button.

Warning!

Before switching the dust collector back on, make sure the motors have come to a complete halt.

- After finishing work, disconnect the dust collector from the power socket.

- This specific model is equipped with two sockets for auxiliary equipment connection. (See 3.2 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.
- To move the dust collector, use the handles.



Warning!

The dust collector can be moved only on flat ground!

If the dust collector is moved on inclined ground, you can risk to lose the control, because of the weight and to damage persons or things.

Warning!

During vacuuming, avoid rolling up or bending the flexible hose.

3.4 Removal and placing of the waste bag

- Stop the dust collector motors by pressing the relevant **STOP** buttons.

Warning!
Disconnect the plug from the power socket.

- Use two ties to fasten the collection bag at two points about 1 – 2" (3 – 5 cm) from each other, just below the filter chamber.
- Cut off the bag in the position between the two ties.
- Remove the lower part of the bag.



- 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.

3.5 Using the filter shaking system

This operation must only be performed with the machine switched off once the motor has come to a complete halt.

The filter shaking system is best operated every time before use and after prolonged operation.



Caution!
During vacuuming, avoid rolling up or twisting the flexible hose

On the front of the dust collector, a filter pressure drop gauge indicates the degree of vacuum inside. If the gauge indicates a high drop in pressure (while the dust collector is working and the collecting inlet is disconnected from any equipment or accessories), the filter will have to be shaken by means of the special lever. If the pressure gauge remains high, clean or replace the filter.

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 cleaning the filter, the hose or suction accessory could be blocked. In this case, clean and remove the blockage.

4.1 Informative notes

In the case of major repairs, contact NFE or an authorized dealer.

4.2 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.

4.3 Maintenance operations

Attention!

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 container is not overfilled. This should be emptied when the vacuumed material has reached 3/4 of maximum capacity.
- 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.

Warning!

All maintenance and repair jobs must be performed directly by NFE or its authorized dealers.

4.4 Replacing the filters

To replace the filters, proceed as follows:

- Turn off the dust collector by pressing the motor **STOP** buttons.
- Disconnect the dust collector plug from the power socket.

Important!
Wear individual protection devices.

- Always use the caster wheel brakes to prevent the machine from rolling.
- Release the fasteners that locks the Longopac® container. Remove the Longopac® container.



- Disconnect the socket that connects the motor head with the electrical panel on the back side.



- Release the retainers that hold the motor head. Lift the motor head and rest this on a flat surface being careful not to damage the power cable.



- From underneath the dust collector remove the pin (A) and spring pin (B) that fasten the filter to the shaking lever.



- Lift the filter complete with support.



- Loosen the clamp and remove the support ring with seal.



- Remove the knots and take out the pocket filter. Fit the new filter, put everything back together carefully and fit the cap back on.

Important!

All the material trapped by the filter and the filter itself must be disposed of through authorised channels in the country where the dust collector is used.

The container locking operation must be performed by one person only, who must grip the handle with both hands and press it fully down.

Warning!

Hand crushing hazard!

4.5 Cleaning the filters

- Remove filter from machine by following the steps in “Replacing the Filters”.
Note: HEPA filters are NOT washable.
- Gently tap filter to dislodge loose contaminants. Use a garbage bag or other suitable container to catch the material, keeping in mind the type of material that was picked up during operation.
- Rinse filter with warm, running water from the inside out.
- Let filter soak for 10-20 minutes in warm water with a mild dishwashing soap.
- Gently wash filter by rolling it through the water. A soft brush can also be used to clean the pleats, but be careful to not tear the filter.
- Rinse filter with clean, running, warm water and let air dry.
Note: The filter must be completely dry before using again. Do NOT use compressed air to dry the filter.
- When filter is completely dry, re-install it on the machine.

Keep in mind that filters do have a life span and washing won't get them back to like-new performance; however, it will be better than using dirty filters. Inspect filters regularly for any damage to the filter media. If the media is damaged, replace the filter.

4.6 Troubleshooting

| <i>Fault found</i> | <i>Possible fault</i> | <i>Recommended remedy</i> |
|--|-----------------------------------|--|
| <i>The dust collector fails to start</i> | 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 |
| <i>Dust is leaking out</i> | Perforated vacuum pipe | Replace the pipe |
| | Perforated filter | Replace the filter |
| | Filter unsuitable for type of job | Fit a suitable filter for the type of material to be vacuumed |
| <i>The dust collector does not work as it should</i> | Pipe perforated or blocked | Check the pipe and, if necessary, replace it |
| | Container full | Empty container |
| | Filter blocked | Clean the filter and if necessary change it |
| | Seals worn | Check the seals and, if necessary, replace them |
| | Air leak | Check for any air leaks out of closing fasteners, tightening screws, container or filter chamber |
| <i>Motor is very noisy</i> | Contact NFE technical support | |

Warning!
For any other problems, contact the NFE technical support.

5.1 Recommended spare parts

| Code | Description |
|---------------|----------------------------------|
| 402485 | Gasket, Container, Cut to Length |
| 402469 | Filter, Primary |
| 402472 | Filter, HEPA |
| 402479 | Gasket, Filter Chamber |
| 402470 | Filter, Pleated Teflon |
| 402473 | Longopac, 4 Pack |
| 402477 | Motor, 240 Volt |
| 402478 | Brushes, Motor, 240 Volt |
| 402480 | Lever, Filter Shaker |
| 402481 | Sheath, Filter Shaker Lever |
| 402482 | Gasket, Longopac |
| 402483 | Switch, On/Off |
| 402486 | Gasket, Inlet |

402498 Motor Head, 240 Volt

402501 Assembly, Filter

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



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