

Clemas & Co Ltd

**Industrial Cleaning Equipment
Sales – Hire - Service**

Gansy

Pedestrian Scrubber Dryer Operator Manual



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ENGLISH

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2. GENERAL INFORMATION



Read this manual carefully before carrying out any work on the machine¹.

2.1. Scope of the manual

This manual has been written by the Manufacturer and is an integral part of the machine. It defines the purpose for which the machine has been designed and constructed and contains all the information required by operators.

In addition to this manual containing all user information, other publications are available providing specific information for maintenance personnel.

Constant respect for the instructions guarantees the safety of the operator and the machine, low running costs and high quality results and extends the working life of the machine. Failure to respect the instructions may lead to damage to the operator, machine, floor being washed and environment.

To find the topic that interests you more rapidly, consult the list of contents at the beginning of the manual.

Parts of the text requiring special attention are highlighted in bold and preceded by the symbols illustrated and described here.

! DANGER

Indicates the need for attention in order to avoid a series of consequences which could cause death or damage to the health of the operator.

👉 IMPORTANT

Indicates the need for attention in order to avoid a series of consequences which could cause damage to the machine or work environment or financial loss.

i INFORMATION

Particularly important instructions.

In line with the company's policy of constant product development and updating, the Manufacturer reserves the right to make modifications without warning.

Although your machine may differ appreciably from the illustrations in this document, safety and the information contained in this manual are guaranteed.

1.1.1.1.1. _____

¹ The definition "machine" replaces the trade name covered by this manual.

2.2. Identifying the machine

The rating plate (fig.B, ref.2) provides the following information:

- model;
- power supply;
- total nominal power;
- serial number;
- year of fabrication;
- weight fully loaded;
- maximum slope;
- barcode with serial number;
- manufacturer's identification.

2.3. Documentation provided with the machine

- user manual;
- guarantee certificate;
- EC certificate of conformity.

3. TECHNICAL INFORMATION

3.1. General description

This machine is a scrubber drier for sweeping, washing and drying flat, horizontal, smooth or moderately rough, even and obstacle free floors in civil and industrial premises.

The scrubber drier spreads a solution of water and detergent in the correct concentration on the floor and then scrubs it to remove the dirt. By carefully choosing the detergent and brushes (or abrasive discs) from the wide range of accessories available, the machine can be adapted to a wide range of combinations of types of floor and dirt.

A suction system incorporated in the machine dries the floor after washing by means of the low pressure generated in the dirty water tank by the suction motor. The squeegee connected to the tank collects the dirty water.

3.2. Legend

The main parts of the machine are as follows (fig. A):

- the detergent tank (fig. A, ref. 1): contains and transports the mixture of clean water and cleaning product;
- the dirty water tank (fig. A, ref. 2): collects the dirty water picked up from the floor while washing;
- the head assembly (fig. A, ref. 3): the main element is the brush which distributes the detergent solution on the floor and removes the dirt;
- the squeegee assembly (fig. A, ref. 4): wipes and dries the floor by collecting the water.

3.3. Danger zones

A - Tank assembly: when using certain detergents, danger of irritation for eyes, skin, mucous membranes and respiratory tract and of asphyxia. Danger represented by the dirt collected from the environment (germs and chemical substances). Danger of crushing between the two tanks when the dirty water tank is replaced on the detergent tank.

B - Control panel: danger of short circuit.

C - Bottom of washing head: danger due to brush rotation.

D - Rear wheels: danger of crushing between the wheel and chassis.

E - Battery compartment: danger of short circuit between the battery poles and presence of hydrogen during charging.

4. SAFETY INFORMATION

4.1. Safety regulations



Read the "User manual" carefully before start-up and use, or before performing maintenance or any other work on the machine.

IMPORTANT

Rigorously respect all instructions in the Manual (in particular those relating to danger and important information) and on the safety plates fitted to the machine. The Manufacturer declines all liability for damage to people or things resulting from failure to observe the instructions.

The appliance must be used exclusively by persons trained in its use and/or who have demonstrated their ability and have been expressly instructed to use the appliance.

The machine must not be used by minors.

The machine must not be used for purposes other than those for which it was expressly designed. Scrupulously respect all safety standards and conditions applicable to the type of building in which the machine is to be operated (eg: pharmaceutical companies, hospitals, chemicals, etc).

Do not use the machine in places with inadequate lighting or explosive atmospheres, on public roads, in the presence of dirt hazardous to health (dust, gas, etc) and in unsuitable environments.

The machine is designed for temperatures of between +4°C and +35°C when in use and between +0°C and +50°C when not in use.

The machine is designed to work in a humidity of between 30% and 95%.

Never use or pick up flammable liquids or explosives (e.g. petrol, fuel oil, etc), flammable gases, dry dusts, acids and solvents (e.g. paint solvents, acetone etc) even if diluted. Never pick up flaming or incandescent objects.

Never use the machine on slopes or ramps of more than 2%. In the case of slight slopes, do not use the machine transversally, always manoeuvre with care and do not reverse. When transporting the machine on steeper ramps or slopes, take the utmost care to avoid tipping up and/or uncontrolled acceleration. Move the machine on ramps and/or steps only with the brush head and squeegee raised.

Never park the machine on a slope.

The machine must never be left unattended with the motor or engine on. Before leaving it, turn the motor or engine off, make sure it cannot move accidentally.

Always pay attention to other people, children in particular, present in the place where you are working.

Never use the machine to transport people or things or to tow things. Do not tow the machine.

Never rest objects of any weight on the machine for any reason.

Never obstruct ventilation and heat dispersion slits.

Never remove, modify or circumvent safety devices.

Numerous unpleasant experiences have shown that a wide range of personal objects may cause serious accidents. Before beginning work, remove jewellery, watches, ties, etc.

The operator must always use personal protection devices: protective apron or overalls, non-slip waterproof shoes, rubber gloves, protective goggles and ear protectors and mask to protect the respiratory tract.

Keep the hands away from moving parts.

Never use detergents other than those specified. Follow the instructions on the relative safety sheet. We recommend keeping detergents out of reach of children. In the event of

contact with the eyes, wash immediately with abundant water. If ingested, consult a doctor immediately.

Make sure the power sockets used for the battery charger are connected to a suitable earth system and protected by differential thermal solenoid switches.

Make sure the electrical characteristics of the machine (voltage, frequency, absorbed power) given on the rating plate are the same as those of the mains electricity supply. The machine with cable has a three-wire cable and a three pin earthed plug for use in an appropriate earthed socket. The earth wire is yellow and green. Never connect this wire to anything other than the earth contact of the socket.

It is indispensable to respect the battery manufacturer's instructions and current legislation. The batteries should always be kept clean and dry to avoid surface leakage current. Protect the batteries from impurities such as metal dust.

Never rest tools on the batteries as this could cause short circuit and explosion.

When using battery acid, always follow the relative safety instructions scrupulously.

In the presence of particularly strong magnetic fields, assess the possible effect on the control electronics.

Never wash the machine with water jets.

The fluids collected contain detergent, disinfectant, water and organic and inorganic material. They must be disposed off in accordance with current legislation.

In the case of breakdown and/or faulty operation, turn the machine off immediately, disconnect from the mains power supply or batteries and do not tamper. Contact a service centre authorised by the Manufacturer.

All maintenance operations must be performed in an adequately lit place and only after disconnecting the machine from the power supply.

All work on the electrical system and all maintenance and repair operations other than those explicitly described in this manual must be performed by specialised personnel expert in the sector only.

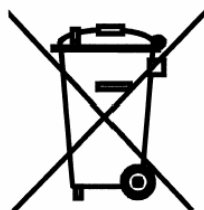
Only original accessories and spare parts supplied by the Manufacturer may be used in order to guarantee safe problem-free operation of the machine. Never use parts removed from other machines or from other kits.

While using the machine, keep the rotating brush away from the power cable (cable powered version).

Check the power cable regularly. If damaged, do not under any circumstances use the machine. Replace it with one of the same type or contact a specialised service centre (cable powered version).

This machine has been designed and constructed to provide ten years' service from the fabrication date shown on the rating plate. After this time, whether the machine has been used or not, it should be disposed of according to current legislation in the country in which it is used:

- the machine must be disconnected from the power supply, emptied of liquids and cleaned;
- the product is classified as WEEE type special waste and is covered by the requisites of the new environmental protection regulations (2002/96/EC WEEE). It must be disposed of separately from ordinary waste in compliance with current legislation and standards.



Special waste. Do not dispose of with ordinary waste.

Alternatively the machine must be returned to the Manufacturer for a complete overhaul.

If you decide to stop using the machine, you are recommended to remove the batteries and dispose of them at an authorised collection centre.
You should also make sure that all parts of the appliance which could represent a hazard, particularly to children, are made safe.

5. HANDLING AND INSTALLATION

5.1. Lifting and transporting the packaged machine

IMPORTANT

During all lifting operations, make sure the packaged machine is firmly anchored to avoid it tipping up or being accidentally dropped.

Always load/unload lorries in adequately lit areas.

The packaged machine must be loaded using suitable equipment (see EC Directive 2006/42/CEE and subsequent amendments and/or additions) onto the transporting vehicle. At destination, it must be unloaded using similar means.

A fork lift truck must always be used to lift the packaged body of the machine. Handle with care to avoid knocking or overturning the machine.

5.2. Checks on delivery

When the carrier delivers the machine, make sure the packaging and machine are both whole and undamaged. If the machine is damaged, make the carrier is aware of the damage and before accepting the goods, reserve the right (in writing) to request compensation for the damage.

5.3. Unpacking – Assembly

IMPORTANT

When unpacking the machine, the operator must be provided with the necessary personal protection devices (gloves, goggles, etc) to limit the risk of accident.

Unpack the machine as follows:

- cut and remove the plastic straps using scissors or nippers;
- remove the cardboard;
- clean the outside of the machine in respect of safety regulations;
- move the machine away from the packaging and install the various components following this sequence:
 1. extract the two tanks from the chassis.
 2. remove the lid from the tank
 3. extract the squeegee raising lever from the tank
 4. mount the squeegee raising lever using the screw, nut and washers provided (fig. B, ref. 1).
 5. position the detergent tank on the chassis and connect the detergent tank hydraulic circuit to the hydraulic circuit of the machine (fig. C, ref. 1).
 6. mount the lid on the detergent tank (fig. D).
 7. install the filter on the detergent tank lid (fig. D).
 8. fit the dirty water tank on top of the detergent tank (fig. D)
 9. block the dirty water tank as follows:
 - lift the dirty water tank (fig. S, ref. 1) and lean it towards the front of the machine.
 - rotate the detergent tank (fig. S, ref. 2) handle (fig. S, ref. 3).
 - insert the handle (fig. S, ref. 3) into the hook on the dirty water tank (fig. S, ref. 1).
 - rest the dirty water tank (fig. 2, ref. 1) on the detergent tank (fig. S, ref. 2).
 10. rotate the cowling (fig. D, ref. 1) .
 11. extract the dirty water tank lid and mount it on the tank (fig. D).
 12. rotate the detergent tank tap lever to open (fig. C, ref. 1)
 13. release and adjust the handle using the two knobs (fig. D, ref. 2).
 14. install the battery, respecting the safety instructions given in the manual (fig. E, ref. 1).
 15. Fit the two suction hoses to the dirty water tank lid (fig. F, ref. 1).

16. Mount the squeegee (see section "Mounting and adjusting the squeegee") (fig. G, ref. 1).
17. Install the brush (see section "Mounting and changing the brush/abrasive disks")

The packaging may be kept as it can be reused to protect the machine if it is moved to another site or to a repair workshop.

Otherwise it must be disposed off in compliance with current legislation.

! DANGER

Failure to observe these instructions could cause possibly serious damage to people and things and invalidates the guarantee.

5.4. Batteries

Two different types of battery may be installed on these machines:

- **wet batteries:** the electrolyte level must be checked regularly. When necessary, top up with distilled water until the plates are covered. Do not over fill (5 mm max. above the plates).
- **AGM-gel batteries:** this type of battery requires no maintenance.

The technical characteristics must correspond to those indicated in the section on the technical specification of the machine. The use of heavier batteries could seriously jeopardise manoeuvrability and lead to the brush motor overheating. Batteries with a lower capacity and weight will require recharging more frequently.

They must be kept charged, dry and clean and the connections must be tight.

5.4.1. Batteries: preparation

! DANGER

While installing or performing maintenance on the batteries, the operator must be provided with the necessary personal protection devices (gloves, goggles, overalls, etc) to limit the risk of accident. Keep away from naked flames, avoid short circuiting the battery poles, avoid sparks and do not smoke.

The batteries are normally supplied filled with acid and ready for use.

If the batteries are dry, before mounting them on the machine, proceed as follows:

- remove the caps and fill all elements with specific sulphuric acid solution until the plates are entirely covered (this requires at least a couple of passes for each element);
- leave for 4-5 hours to allow the air bubbles to come to the surface and the plates to absorb the electrolyte;
- make sure the level of electrolyte is still above the plates and if necessary top up with sulphuric acid solution;
- close the caps;
- mount the batteries on the machine (following the procedure described below).

Before starting up the machine for the first time, charge the batteries. Follow the instructions in the relevant section.

5.4.2. Batteries: installation and connection

! DANGER

Check that all switches on the control panel are in the "0" (off) position. Make sure you connect the terminal marked with a "+" to the positive pole of the battery. Do not check the battery charge by sparking. Meticulously follow the instructions given below as short circuiting the batteries could cause them to explode.

- rotate the cowling
- Place the battery in the battery compartment on the machine (fig. E, ref. 1).

IMPORTANT

**Mount the batteries on the machine using lifting means suitable for their weight.
The positive and negative poles have different diameters.**

- paying attention to the polarity, connect the electrical wiring to the battery terminals, tighten the terminals and cover with Vaseline.
- rotate the cowling
- When using the machine, follow the instructions below.

5.5. The battery charger

IMPORTANT

Never allow the batteries to become excessively flat as this could damage them irreparably.

5.5.1. Choosing the battery charger

Make sure the battery charger is compatible with the batteries to be charged:

- **tubular lead batteries:** an automatic charger is recommended
- **AGM-gel batteries:** use a charger specific for this type of battery.
- Consult the battery charger manufacturer and manual to confirm the choice.

5.5.2. Preparing the battery charger

If you wish to use a battery charger not provided with the machine, you must fit it with the connector supplied with the machine.

To install the connector, proceed as follows:

- remove about 13 mm of protective sheath from the red and black wires of the battery charger;
- insert the wires into the connector contacts and squeeze them forcefully with suitable pliers;
- respect the polarity (red wire + black wire –) when inserting the wires into the connector.
- Insert the wired-up connector into the connector on the battery side of the machine (fig. P)

5.5.3. ON BOARD battery charger

If the on-board battery charger has already been installed on the scrubber dryer, the only operation required when the battery is flat is to connect the battery charger power cable to a mains socket (fig. Q, ref. 1). To control the state of charge of the battery, check the battery charger indicator lights (see the battery charger use and maintenance manual) (fig. Q, ref. 2).

INFORMATION

Follow the instructions below to set the type of battery installed on the machine's electronic control board:

1. Turn the machine off.
2. Set the JUMPER to the following positions:

JUMPER OPEN = AGM-GEL BATTERY (fig. H, ref. 1) (Default : AGM / GEL)
JUMPER CLOSED = WET BATTERY (fig. H, ref. 2)

5.6. Lifting and transporting the machine

IMPORTANT

All phases must be performed in an adequately lit room and adopting the safety measures most appropriate to the situation.

The operator must always use personal protection devices.

To load the machine onto a means of transport, proceed as follows:

- remove the brush (see section "Mounting and changing the brush/abrasive disks")
- rotate the detergent tank tap lever to closed (fig. C, ref. 1)
- empty the dirty water tank (fig. A, ref. 2):
- disconnect the rapid coupling (fig. C, ref. 2) in the hydraulic circuit connecting the detergent tank with the head assembly (fig. A, ref. 3).
- empty the detergent tank and insert the two tanks one inside the other.
- place the detergent tank lid on top of the two tanks.
- position the tanks on the chassis (fig. I).
- place the dirt water tank lid inside the cowling (fig. I).
- using the two red knobs, rotate the handle forwards and rest it on the cowling (fig. I).
- disconnect the suction hose coupling from the squeegee (fig. G, ref. 2)
- remove the squeegee (see section "Mounting and adjusting the squeegee") (fig. G, ref. 1).
- remove the battery.
- Lift the machine by the chassis handle (fig. I, ref. 1).

6. PRACTICAL GUIDE FOR THE OPERATOR

6.1. Controls - Description

The machine has the following controls and indicator lights:

- **Brush switch** (fig. L, ref. 1): enables/disables head/brush operation.
- **Suction switch** (fig. L, ref. 2): enables/disables operation of the suction motor.
- **Brush lever** (fig. A, ref. 5): enables/disables head/brush operation.
- **Indicator light (battery version)** (fig. L, ref. 3): displays battery charge via a colour code:
 - green LED on, battery charged
 - green LED flashing, battery almost flat
 - red LED on battery flat
 - red LED flashing battery flat, machine shut down.
 - red and green LEDs flashing, over voltage, machine shut down.
- **Indicator light (cable version)** (fig. L, ref. 3): the LED comes on to indicate that the machine is connected to the mains power supply.

6.2. Mounting and adjusting the squeegee

The squeegee (fig. G, ref. 1) is largely responsible for drying the floor.

To mount the squeegee on the machine, proceed as follows:

- 1) slacken the two knobs (fig. G, ref. 3) at the centre of the squeegee;
- 2) insert the two threaded pins into the slots on the support (fig. G);
- 3) fix the squeegee by tightening the two knobs (fig. G, ref. 3).
- 4) insert the suction hose coupling (fig. G, ref. 2) fully into the squeegee;

The squeegee blades scrape the film of water and detergent from the floor and prepare the way for perfect drying. With time, the constant rubbing makes the edge of the blade in contact with the floor rounded and cracked, reducing the drying efficiency and requiring it to be replaced. The state of wear should be checked frequently.

For perfect drying, the squeegee must be adjusted in such a way that the edge of the rear blade bends during operation by about 45° with respect to the floor at every point. Adjust the angle of the blades during operation by regulating the height of the two wheels positioned behind the squeegee.

6.3. Mounting and changing the brush/abrasive disks

IMPORTANT

Never work without the brushes and drive disks perfectly installed.

Mounting the brush: Turn all machine functions on, raise the head by levering on the handle. Rest the brush on the floor in front of the machine and centre it with the guard. Lower the head by levering on the handle and action the brush lever (fig. A, ref. 5) repeatedly. The brush/es fit/s automatically onto the flange hub. If the manoeuvre is not successful, press on the handle again and repeat the centring and repeated actioning of the brush/drive lever.

Using the abrasive disks: mount the abrasive disk on the drive disk then perform the manoeuvres described for mounting the brush/es on the scrubber driver.

Removing the brush (or drive disk) proceed as follows:

raise the head by levering with the handle and action the brush lever (fig. A, ref. 5) repeatedly. After a few pulses, the brush/es (or drive disk) is released and falls to the ground.

6.4. Detergents - Instructions

IMPORTANT

Always dilute the detergent according to the manufacturer's instructions. Do not use sodium hypochlorite (bleach) or other oxidants, particularly in strong concentrations. Do not use solvents or hydrocarbons. The temperature of the water and detergent must not exceed the maximum indicated in the technical specification. They must be free of sand and/or other impurities.

The machine has been designed for use with low-foam biodegradable detergents made specifically for scrubber driers.

For a complete and up-to-date list of the detergents and chemicals available, contact the Manufacturer.

Use products suitable for the floor and dirt to be removed only.

Follow the safety regulations on use of detergents given in the section "Safety regulations".

6.5. Preparing the machine for work

IMPORTANT

Before starting work, wear overalls, ear protectors, non-slip waterproof shoes, mask to protect the respiratory tract, gloves and all other personal protection

devices recommended by the supplier of the detergent used or necessitated by the work environment.

Before starting work, proceed as follows:

- check the battery charge level (recharge if necessary);
- make sure the dirty water tank (fig. A, ref. 2) is empty. If necessary, empty it;
- through the opening with filter, fill the detergent tank (fig. A, ref. 1) with a suitable concentration of clean water and low-foam detergent.
- mount the most suitable brush or abrasive disk for the floor and work to be performed (see the section "Mounting and changing the brush/abrasive disks).
- make sure the squeegee (fig. A, ref. 4) is firmly attached and connected to the suction hose coupling (fig. G, ref. 2). Make sure the back blade is not worn (see the section "Mounting and adjusting the squeegee").
- Open the tap to allow the detergent to flow to the brush (fig. C, ref. 1).

i INFORMATION

If you are using the machine for the first time, we recommend trying it on a large obstacle-free surface first to acquire the necessary familiarity.

Always empty the dirty water tank before filling the detergent tank again.

For effective cleaning and to extend the working life of the machine, follow a few simple rules:

- prepare the work area by removing all possible obstacles;
- begin working from the furthest point to avoid walking on the area you have just cleaned;
- choose the straightest possible working routes;
- divide large floors into parallel rectangular sections.

If necessary, finish off by passing a mop or rag rapidly over parts inaccessible to the scrubber drier.

6.6. Working

Starting up:

Prepare the machine as described above.

When starting up the machine, follow the sequence below precisely:

1. take the machine to the work area with the head raised (once the head has been raised to a certain height using the handle, the machine has a system which keeps it in the raised position). To lower the head, first raise it using the handle. This releases it and it can then be lowered to the work position.
2. press the brush switch (fig. L, ref. 3)
3. press the suction switch (fig. L, ref. 2)
4. lower the squeegee
5. use the brush lever (fig. A, ref. 5)

When the brush switch is in the "1" position and the brush lever is pulled, the motor which turns the brush and moves the machine starts up. A special mechanical drive device uses the friction between the brush and floor to generate a forward movement. When the mechanical drive lever is released, the brush motor shuts down and the machine stops.

If the machine pulls to one side, restore a straight course by using the direction regulation knob (fig. M, ref. 1).

IMPORTANT

To avoid damaging the surface of the floor to be treated, avoid rotating the brushes/pads with the machine stationary.

IMPORTANT

To avoid damaging the batteries and shortening their working life, do not continue using the machine once the batteries are flat.

IMPORTANT

Empty the dirty water tank each time you fill the detergent tank.

! DANGER

Use suitable personal protection devices.

Emptying the dirty water tank:

1. There is a float in the dirty water tank which turns off suction when the tank is full.
2. Stop the machine by releasing the brush lever (fig. A, ref. 5)
3. Turn off all machine functions using the brush and suction motor button (fig. L, ref. 2-3).
4. remove the lid from the dirty water tank
5. lift the tank by the handle and empty the contents. At the end of work, rinse the tank with clean water.

Emptying the detergent tank:

- Proceed as described in points 1 to 5.
- Disconnect the detergent tank hydraulic circuit from the hydraulic circuit of the machine (fig. C, ref. 1).
- lift the tank using the handle and empty the contents. At the end of work, rinse the tank with clean water.

Stopping:

- action the brush lever (fig. A, ref. 5)
- press the brush switch (fig. L, ref. 3)
- press the suction switch (fig. L, ref. 2)
- raise the squeegee
- raise the head

7. PERIODS OF INACTIVITY

If the machine is not used for some time, remove the squeegee and brush (or abrasive disks), wash them and put them away in a dry place (preferably in a bag or wrapped in plastic film) away from dust.

Park the machine with the head raised.

Make sure the tanks are completely empty and perfectly clean.

Completely recharge the batteries before storing them. During long periods of inactivity, you should charge the batteries regularly (at least once every two months) to keep them constantly at maximum charge.

IMPORTANT

If you do not charge the batteries regularly, they may be irrevocably damaged.

8. BATTERY MAINTENANCE AND CHARGING

! DANGER

**Do not check the battery by sparking.
The batteries give off flammable fumes. Put out all fires and hot embers before
checking or topping up the batteries.
Perform the operations described above in a ventilated room.**

Recharge the batteries (see the section "THE BATTERY CHARGER").

9. MAINTENANCE INSTRUCTIONS

! DANGER

**Never perform any maintenance operations without first disconnecting the battery
from the machine's electrical circuit (battery version).**

**Never perform any maintenance operations without first unplugging the machine
from the mains (cable version).**

**Maintenance on the electrical circuit and all other operations not explicitly
described in this manual must be performed by specialised personnel only, in
compliance with current safety legislation and as described in the maintenance
manual.**

9.1. Maintenance - General rules

Performing regular maintenance according to the Manufacturer's instructions improves performance and extends the working life of the machine.

When cleaning the machine, respect the following:

- avoid the use of high pressure washers. Water could penetrate the electrical compartment or motors leading to damage or the risk of short circuit;
- do not use steam to avoid the heat warping plastic parts;
- do not use hydrocarbons or solvents as they could damage the cowling and rubber parts.

9.2. Routine maintenance

9.2.1 Detergent tank filter: cleaning

- Remove the dirty water tank lid
- Raise the dirty water tank and rest it on the ground
- Remove the detergent tank lid
- Check the state of the filter (fig. O, ref. 1) and clean if dirty.

9.2.2 Squeegee blades: replacing

The squeegee blades collect the film of water and detergent from the floor and prepare the way for perfect drying. With time, the constant rubbing makes the edge of the blade

in contact with the floor rounded and cracked, reducing the drying efficiency and requiring it to be replaced.

Turning or replacing the blades:

- remove the squeegee (fig. G ref. 1) from its support by completely unscrewing the two knobs (fig. G ref. 3).
- remove the suction hose coupling (fig. G, ref. 2) from the squeegee;
- release the clip (fig. N ref. 3 or 6);
- remove the two blade retainers (fig. N ref. 2 or 7) by first pushing them towards the outside of the body of the squeegee (fig. N ref. 1) then extracting them;
- remove the blade (fig. N ref. 4 or 5);
- reuse the same blade by reversing the edge in contact with the floor until all four edges are worn out, or replace with a new blade, fitting it onto the screws on the body of the squeegee (fig. N ref. 1);
- reposition the two blade retainers (fig. N ref. 2 or 7) by centring the widest part of the slots over the fixing screws on the squeegee body (fig. N ref. 1), then pushing the blade retainers inwards;
- refasten the clip (fig. N ref. 3 or 6);

Replace the squeegee in its support following the instructions in the section "Mounting and adjusting the squeegee".

9.2.3 Fuses: replacing

- stop the machine and turn off all functions (brush rotation and suction)
- disconnect the machine from the batteries or the mains electricity supply (cable version)
- rotate the cowling
- remove the electrical installation guard (fig. R, ref. 1).
- remove the electrical installation support (fig. R, ref. 1).
- check the fuses
- install a new fuse.
- replace the electrical installation support (fig. R, ref. 1).
- replace the electrical installation guard (fig. R ref. 1).

Fuse table: For the complete fuse table, see the spare parts catalogue.

IMPORTANT

Never use a fuse with a higher amperage than specified.

If a fuse continues to blow, the fault in the wiring, boards (if present) or motors must be identified and repaired. Have the machine checked by qualified personnel.

9.3. Routine maintenance

9.3.1. Daily operations

- After each day's work, proceed as follows:
- empty the dirty water tank and clean if necessary;
- clean the squeegee blades and check for wear. If necessary, replace.
- check that the suction hole in the squeegee is not blocked. If necessary remove encrusted dirt;
- recharge the batteries according to the procedure described.

9.3.2. Weekly operations

- clean the dirty water tank float and make sure it is working correctly;
- clean the suction hose;

- clean the dirty water and detergent tanks;
- check the level of battery electrolyte and top up with distilled water if necessary.

9.3.3. Six monthly operations

Have the electrical circuit checked by qualified personnel.

10. TROUBLESHOOTING AND ERROR CODES

10.1. How to resolve possible problems

Possible problems affecting the whole machine.

PROBLEM	CAUSE	REMEDY
The machine does not function	The battery is disconnected	Connect the battery to the machine
	The battery is flat.	Recharge the battery
	Logic board power supply fuse blown.	Replace fuse
The brushes do not turn	The brush button has not been pressed	Press the brush button
	The brush lever has not been pulled	Pull the brush lever
	The brush motor fuse has blown	Check and remove the causes of the blown fuse, then replace
	Logic board power supply fuse blown.	Replace fuse
	The motor thermal cutout has tripped (battery version)	Wait for the motor to cool down
	Brush motor contactor broken	Replace contactor
	The batteries are flat	Recharge the batteries
	Motor malfunction	Replace the motor
	Control board fault	Replace control board
The machine does not clean evenly	The brushes or abrasive disks are worn	Replace
No detergent is delivered	The tap upstream of the head is closed	Open the tap
	Solenoid valve fault	Replace the solenoid valve
	The detergent tank is empty	Fill the detergent tank.
	Detergent tank filter dirty	Detergent tank filter cleaned
	The hose delivering the detergent to the brush is blocked	Remove the obstruction to open the hose
The detergent flow does not stop	Solenoid valve fault	Replace the solenoid valve
The flow of detergent is interrupted during operation	Solenoid valve fault	Replace the solenoid valve
	Detergent tank filter dirty	Detergent tank filter cleaned
	The hose delivering the detergent to the brush is blocked	Remove the obstruction to open the hose
The suction motor does not start.	The suction switch has not been turned on	Turn the suction switch on
	Motor malfunction	Replace the motor
	The brush motor fuse has blown	Check and remove the causes of the blown fuse, then replace
	Logic board power supply fuse blown.	Replace fuse
	Suction motor contactor broken	Replace contactor
	The batteries are flat	Recharge the batteries
	Control board fault	Replace control board
The squeegee does not clean or suction is ineffective	The edge of the rubber blades in contact with the floor is worn	Replace the rubber blade
	The squeegee or hose is blocked or damaged	Remove the obstruction and repair the damage
	The float switch has tripped (dirty water tank full), is blocked with dirt or is faulty	Empty the dirty water tank or repair the float
	The suction hose is blocked	Unblock the hose
	The hose is not connected to the squeegee or is damaged	Connect or repair the hose
	The battery does not last	The battery poles and terminals are dirty and oxidised

as long as usual	The level of electrolyte is low	Add distilled water, topping up each element according to the instructions
	The battery charger does not work or is not adequate	See the battery charger instructions
	There are considerable differences in density between the various elements of the battery	Replace the damaged battery
The battery runs down too rapidly during use, even though it has been charged with the correct procedure and at the end of charging it is evenly charged when tested by a hydrometer.	The battery is new and does not provide 100% of the expected performance	The battery must be run in by performing 20-30 complete charging and running down cycles to obtain the maximum performance
	The machine is used for the maximum of its power for continuous periods and the run time is insufficient	When permitted and possible, use batteries with a higher capacity or replace the batteries with others already charged
	The electrolyte has evaporated and does not completely cover the plates	Add distilled water, topping up each element until it covers the plates then recharge the battery
The battery runs down too rapidly during use, charging with the electronic battery charger is too fast and at the end the battery provides the correct voltage (about 2.14 V per element without load), but appears to be uniformly not charged when tested with a hydrometer	The battery supplied by the manufacturer already filled with acid has been stored too long before being charged and used for the first time	If recharging with the normal battery charger is not effective, perform a double charge: - charge it slowly over a 10 hour period at a current of 1/10 the nominal capacity for 5 hours (e.g. for a 100Ah(5) battery the current must be set at 10A, using a manual battery charger); - rest for one hour; - charge it with the normal battery charger.
At the end of charging with the electronic battery charger, the battery does not provide the correct voltage (about 2.14 V per element without load) and appears to be uniformly not charged when tested with a hydrometer	The battery has not been connected to the battery charger (for example, because the low voltage battery charger connector has been incorrectly connected to the machine connector)	Connect the battery charger to the battery connector
	The battery charger and socket to which it is connected are not compatible.	Make sure the characteristics of the power supply shown on the battery charger rating plate are the same as those of the mains electricity supply.
	The battery charger has not been correctly installed	Taking into account the actual voltage available at the power socket, make sure that the connections of the primary of the transformer inside the battery charger are correct (consult the battery charger manual)
	The battery charger does not work	Make sure there is voltage to the battery charger, that the fuses are not blown and that the current reaches the battery; try charging with another rectifier. If the battery charger is not working, contact the technical service centre and indicate the serial number of the battery charger
At the end of charging with the electronic battery charger, the battery does not provide the correct	One or more elements are damaged	If possible, replace the damaged elements. For 6 or 12 V single block batteries, replace the entire battery

voltage (about 2.14 V per element without load) and only one or a few elements appear flat when tested with the hydrometer		
The electrolyte in the battery is turbid	The battery has reached the end of the charging/discharging cycles declared by the manufacturer	Replace the battery
	The battery has been charged with too high a current	Replace the battery
	The battery has been charged beyond the maximum limit recommended by the manufacturer	Replace the battery