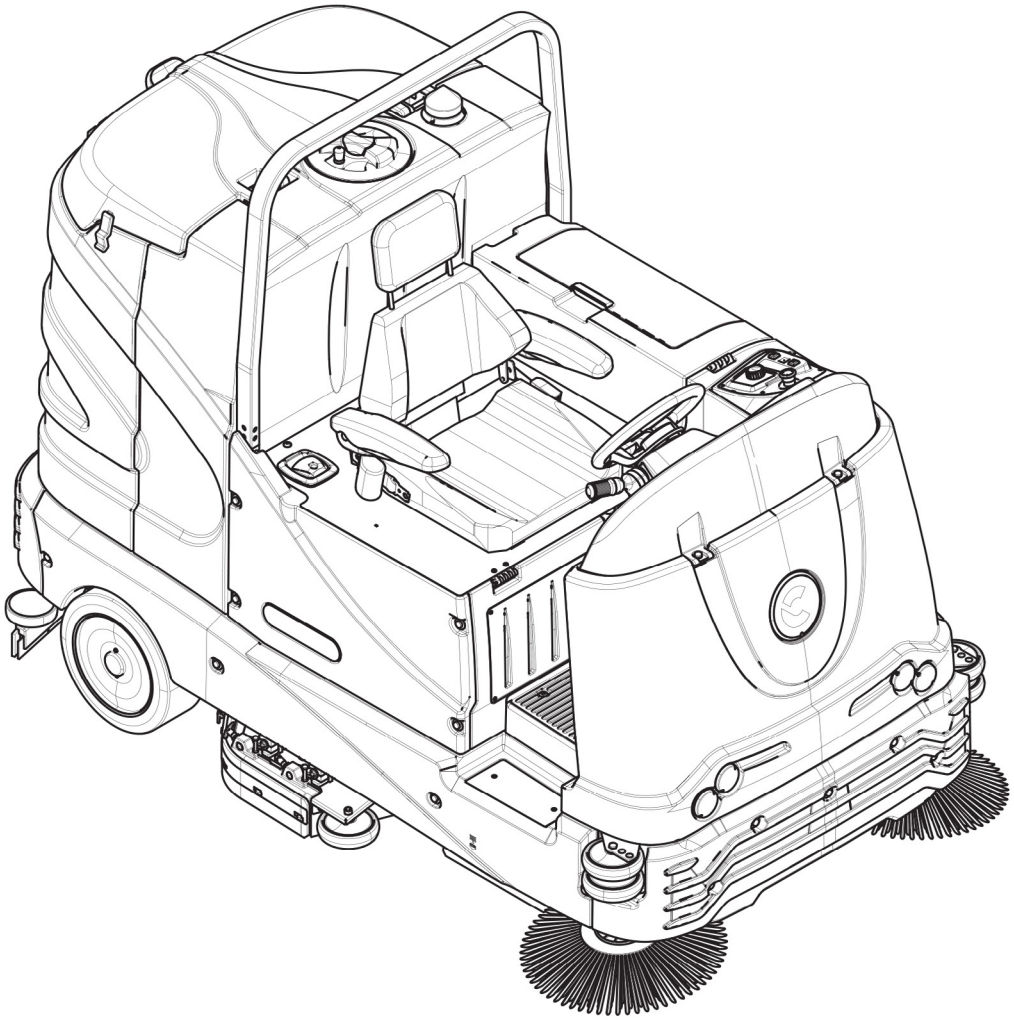
C120 biFuel essential



SCRUBBING MACHINES

USE AND MAINTENANCE MANUAL

comac
professional people

ORIGINAL INSTRUCTION DOC. 10132672 VER.AA 12-2023

CONTENTS

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GENERAL SAFETY REGULATIONS

Before using the machine, please read the following document carefully and follow the instructions contained herein, along with the instructions in the document supplied with the machine itself, "GENERAL SAFETY REGULATIONS" (document code 10083659).

SYMBOLS USED IN THE MANUAL

Open book symbol with an "i":
Indicates the need to consult the instruction manual.

Open book symbol:
Tells the operator to read the user manual before using the device.

Covered place symbol:
The operations preceded by this symbol must always be carried out in a dry, covered area.

Information symbol:
Indicates additional information for the operator, to improve the use of the device.

Warning symbol:
Carefully read the sections preceded by this symbol meticulously following the instructions indicated for the safety of the operator and the device.

Danger symbol (corrosive substances):
The operator should always wear protective gloves to avoid the risk of serious injury to the hands caused by corrosive substances.

Danger symbol (battery acid leakage):
Indicates the danger of leaking acid or acid fumes from the batteries while they are being recharged.

Danger symbol (moving carriages):
Indicates that the packed product should be handled with suitable carriages that conform to legal requirements.

Mandatory room ventilation symbol:
Informs the operator that the room must be ventilated while the batteries are being recharged.

Symbol indicating the compulsory use of protective gloves:
Indicates that the operator should always wear protective gloves, to avoid the risk of serious injury to his hands from sharp objects.

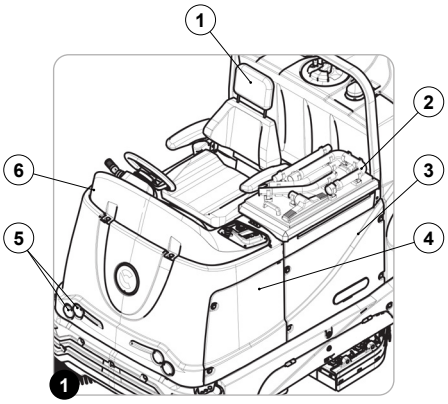
Symbol indicating the compulsory use of tools:
Informs the operator of the need to use tools not included with the machine.

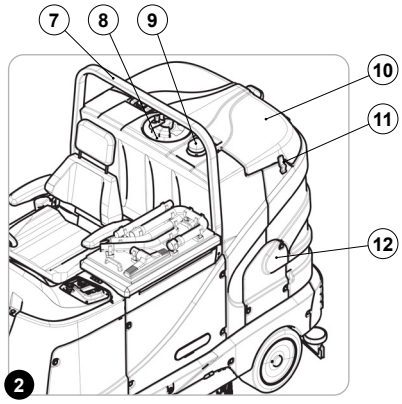
Symbol indicating a treading ban:
Informs the operator that it is forbidden to tread on machine components, as this could lead to serious injury.

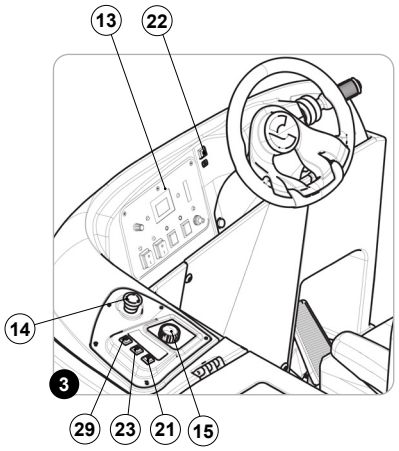
Recycling symbol:
Tells the operator to carry out the operations in compliance with environmental regulations in force in the place where the appliance is being used.

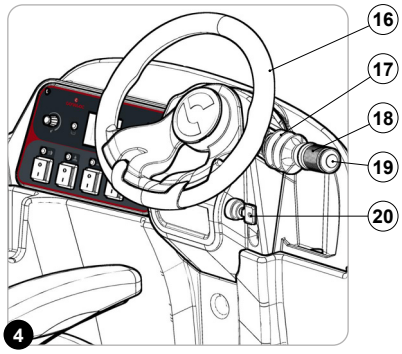
Disposal symbol:
Carefully read the sections marked with this symbol for disposing of the appliance.

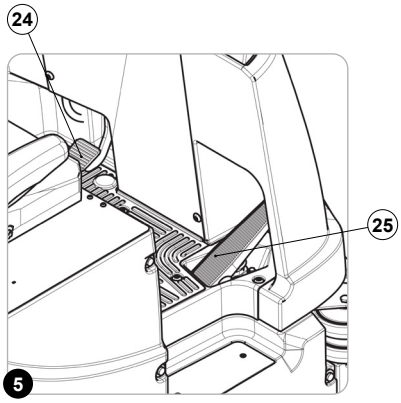
MAIN MACHINE COMPONENTS

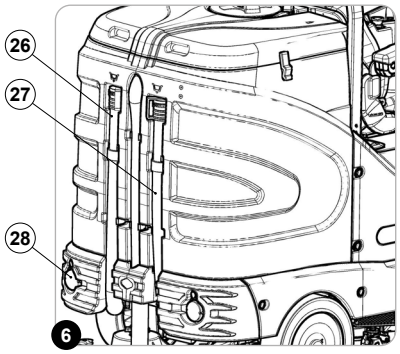


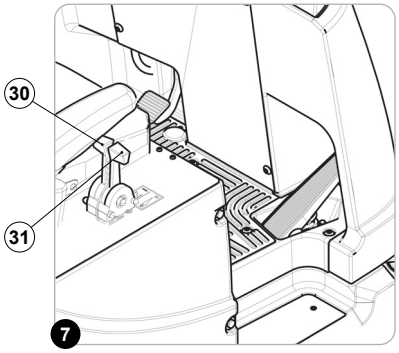










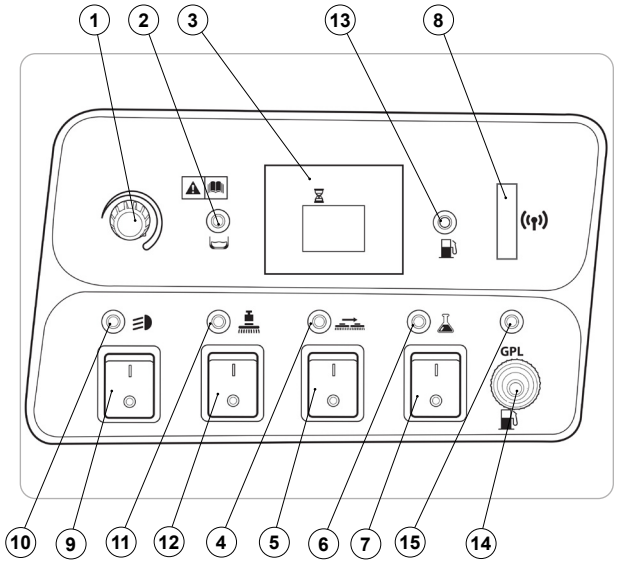


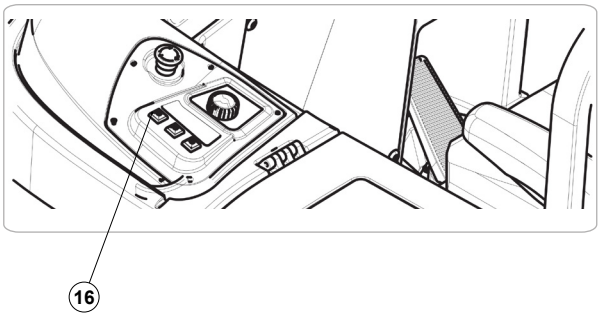
The machine's main components are the following:

1. Seat
2. Liquid vacuum wand.
3. LPG cylinder compartment cover
4. Electrical system panel carter
5. Front headlights
6. Instrument panel carter
7. Continuous float kit (optional)
8. Water filler cap
9. Blinking light
10. Tank cover
11. Tank cover closure hook
12. Suction motor carter
13. Control panel.
14. Emergency stop
15. Working program selector (Drive Select)
16. Steering wheel
17. Travel direction selector lever
18. Forward speed selector knob
19. Buzzer button
20. Main key switch
21. Liquid vacuum wand kit control button.
22. Maintenance lights control button
23. Spray gun kit control button.
24. Service brake pedal
25. Forward drive pedal
26. Detergent solution compartment drainage tube
27. Recovery solution compartment drainage tube
28. Rear headlights
29. Sweeping head activation button
30. Endothermic engine starter control lever.
31. Endothermic engine speed control lever.

CONTROL PANEL COMPONENTS

The control panel components on the Essential version are as follows:





1. Detergent solution flow adjustment knob
2. Low detergent solution level red warning light (valid for versions without the automatic detergent dosing kit), or low water level warning (valid for versions with the automatic detergent dosing kit)
3. Command display
4. Green indicator light signalling activation of brush head body lateral movement
5. Command switch for brush head body lateral movement
6. Green indicator light signalling activation of detergent pump (valid for versions with automatic detergent dosing kit)
7. Detergent pump command switch
8. Badge slot (valid for versions with automatic fleet management system)
9. Working headlights command switch
10. Green indicator light signalling activation of working headlights
11. Green indicator light signalling activation of brush head body extra pressure function
12. Command switch for activation of brush head body extra pressure function
13. Red indicator light. Indicates the limited amount of fuel in the tank (reserve).
14. Selector: used to switch the fuel supply from petrol to LPG and vice versa.
15. Indicator light: indicates the start-up phase.
16. Sweeping head activation button

PURPOSE AND CONTENT OF THE MANUAL

The aim of this manual is to provide customers with all the information needed to use the machine in the safest, most appropriate and most autonomous way. This includes information concerning technical aspects, safety, operation, downtime, maintenance, spare parts and scrapping. The operators and qualified technicians must carefully read the instructions in this manual before carrying out any operations on the machine. If in doubt about the correct interpretation of instructions, contact your nearest Customer Service Centre to obtain the necessary clarifications.

TARGET GROUP

This manual is written both for operators and for qualified machine maintenance technicians. Operators must not perform operations that should be carried out by qualified technicians. The manufacturer is not liable for damages resulting from failure to comply with this veto.

STORING THE USE AND MAINTENANCE MANUAL

The Use and Maintenance Manual must be stored in its special pouch close to the machine, protected from liquids and anything else that could compromise its legibility.

ON CONSIGNMENT OF THE MACHINE

When the machine is consigned to the customer, an immediate check must be performed to ensure all the material mentioned in the shipping documents has been received, and also to check the machine has not suffered damage during transportation. If this is the case, the carrier must ascertain the extent of the damage at once, informing our customer service office. It is only by prompt action of this type that the missing material can be obtained, and compensation for damage successfully claimed.

INTRODUCTORY COMMENT

Any floor scrubbing machine can only work properly and effectively if used correctly and kept in full working order by performing the maintenance operations described in the attached documentation. We therefore suggest you read this instruction booklet carefully and read it again whenever difficulties arise while using the machine. If necessary, remember that our assistance service (organised in collaboration with our dealers) is always available for advice or direct intervention.

IDENTIFICATION DATA

For technical assistance or to request replacement parts, always give the model, the version and the serial number (written on the relevant plate).

TECHNICAL DESCRIPTION

The **C120 Bifuel** is a floor scrubbing machine which, using the mechanical action of three disc brushes, with the addition of the chemical action of a water-detergent solution, is able to clean a wide range of floors and types of dirt, collecting the removed dirt and the detergent solution not absorbed by the floor during its forward movement. **The machine must only be used for this purpose**.

INTENDED USE

This scrubbing machine was designed and built for the cleaning (scrubbing and drying) of smooth, compact flooring in the commercial, residential and industrial sectors by a qualified operator in proven safety conditions. The scrubbing machine is not suitable for cleaning rugs or carpet floors. The scrubber machine is suitable for indoor use only.

ATTENTION: *the machine is not suitable for use in the rain, or under water jets.*

IT IS FORBIDDEN *to use the machine for picking up dangerous dusts or inflammable liquids in places with an explosive atmosphere. In addition, it is not suitable as a means of transport for people or objects.*

IT IS FORBIDDEN *to start or use the machine in poorly ventilated areas without taking the necessary precautions to avoid a concentration of exhaust gases from the endothermic engine.*

IT IS FORBIDDEN *to circulate on public roads as the machine is not approved for circulation on public roads.*

SAFETY INFORMATION

Operator cooperation is paramount for accident prevention. No accident prevention programme can be effective without the full cooperation of the person directly responsible for machine operation. The majority of occupational accidents that happen either in the workplace or whilst moving are caused by failure to respect the most basic safety rules. An attentive, careful operator is most effective guarantee against accidents and is fundamental in order to implement any prevention programme.

REGULATIONS

All references to forwards and backwards, front and rear, right and left indicated in this manual should be understood as referring to the operator in a driving position with his hands on the steering wheel.

LABELS USED ON THE MACHINE

Main switch symbol:
Applied to the control panel, positioned on the front of the machine, to indicate the main switch.

Acoustic signalling device control label:
Applied in the vicinity of the steering column to indicate the acoustic signalling device's control button.

Label for detergent solution tap command:
Applied in the vicinity of the control column to identify the detergent solution tap's control lever.

Label indicating the need to read the Use and Maintenance Manual:
Applied in the vicinity of the steering column in order to remind the operator to read the user and maintenance manual before using the machine.

Treading ban label:
Located on the machine, to identify the surfaces that must not be trodden on (risk of personal injury or damage to the machine).

Label warning about the risk of crushed hands:
Indicates danger to hands due to crushing between two surfaces.

Warning label:
Affixed to the machine in order to warn the operator to read the user and maintenance manual (this document) before using the machine for the first time.

Forbidden to vacuum - collect label:
Affixed to the machine in order to warn the operator that it is forbidden to use the machine to collect and/or vacuum powders and/or liquids that are flammable and/or explosive, or incandescent particles.

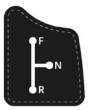
Solution tank filter daily care warning label:
Applied to the machine to remind the operator to clean the solution tank after each use.

Vacuum motor filter label:
Applied inside the vacuum cover to identify the vacuum motor intake air filter, and also serves to remind the operator to clean the filter after each machine use.

Braking system oil level check label:
Located near the braking system oil basin, to remind the operator to check the level of oil in the basin.
The bottom part of the label shows the recommended oil for the braking system.

Label indicating maximum temperature for filling the solution tank:
Located on the upper part of the solution tank, to indicate the maximum temperature of the water for filling the solution tank safely.

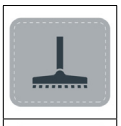
Scrubbing brush head in motion danger warning label:
Affixed to the brush head to warn the operator that the brush head could move sideways.



Label indicating machine direction selector button:
Affixed near the steering wheel to indicate how to move the machine travel direction control lever.

Courtesy lights (optional) control label:
Affixed near the steering wheel to indicate the position of the courtesy lights control button.

Spray gun (optional) position label:
Affixed to the rear of the machine to identify the spray gun support.



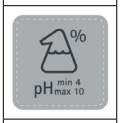
Liquid vacuum wand kit (optional) position label:
Affixed to the machine to identify the liquid vacuum wand holder compartment.

Label indicating the position of the detergent tank (CDS versions):
Affixed to the machine to indicate the position of the detergent tank.

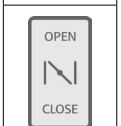
Label indicating positioning of the cornering speed adjustment sensor:
Affixed to the machine to explain how to correctly position the sensor which enables machine speed around corners to be reduced.

Label indicating percentage of detergent use (CDS versions):
Affixed near the detergent tank to indicate the usage instructions for standard or concentrated detergents.

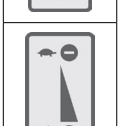
Water system usage warning label (CDS versions):
Affixed to the machine in order to warn the operator to read the user and maintenance manual (this document) before using the appliance with the automatic detergent solution dosing system.



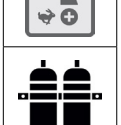
pH label (CDS versions):
Affixed above the detergent tank to indicate the pH range of the detergent to be utilized.



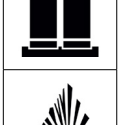
Endothermic engine starter label:
this is applied near the starter lever of the endothermic engine.



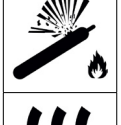
Endothermic engine speed adjustment label:
this is applied near the endothermic engine speed adjustment lever.



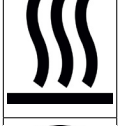
LPG cylinder fixing label:
this is applied near the LPG cylinder to indicate the obligation to secure the cylinder with appropriate fasteners.



Explosive compressed gas hazard label:
this is applied near the LPG cylinder to indicate that the cylinder contains compressed, highly explosive gas.



Label warning about the risk of burns:
this is applied near the endothermic engine to indicate the danger of burns if certain surfaces are touched.



Label indicating the prohibition to extinguish fires with water:
this is applied near the fuel tank of the endothermic engine to indicate not to use water to extinguish fires.

Label indicating the prohibition to approach with open flames:
this is applied near the fuel tank of the endothermic engine to indicate not to approach with any type of naked flame.

Fuel label (petrol):
this is applied near the fuel filler neck.

SYMBOLS USED ON THE MACHINE

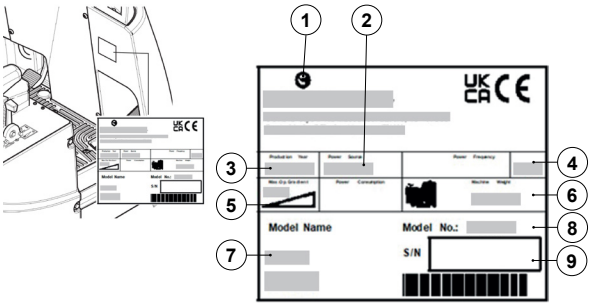
Recovery tank drainage hose symbol:
Applied to the back of the machine to identify the recovery tank's drainage hose.

Solution tank drainage cap symbol:
Applied to the back of the machine to identify the solution tank's drainage cap.

LPG symbol:
this is silk-screen-printed on the control panel and indicates the position the selector switch must take to supply the machine with LPG.

Fuel Symbol:
this is silk-screen-printed on the control panel and indicates the position the selector switch must take to supply the machine with petrol.

SERIAL NUMBER PLATE



1. Name and address of the manufacturer
2. Nominal power in W
3. Year of manufacture of the machine
4. IP rating of the machine's electrical system.
5. The maximum grade that the appliance can handle during work activities (expressed in percent).
6. Total machine mass
7. Machine trade name
8. Model number of the machine.
9. Serial number of the machine

EC DECLARATION OF CONFORMITY

The undersigned manufacturer:
COMAC S.p.A.
Via Maestri del Lavoro, 13
37059 Santa Maria di Zevio (VR)
declares under its sole responsibility that the products

SCRUBBING MACHINES - mod.
C120 BI-FUEL

comply with the provisions of Directives:

- 2006/42/EC: Machinery Directive.
- 2014/30/EU: Electromagnetic compatibility directive.

They also comply with the following standards:

- EN 60335-1:2012/A11:2014/A13:2017/A1:2019/A14:2019/A2:2019/A15:2021
- EN 60335-2-72:2012
- EN 12100:2010
- EN 61000-6-2:2005/AC:2005
- EN 61000-6-3:2007/A1:2011/AC:2012
- EN 62233:2008/AC:2008

The person authorized to compile the technical file:

Mr. Giancarlo Ruffo
Via Maestri del Lavoro, 13
37059 Santa Maria di Zevio (VR) - ITALY

Santa Maria di Zevio (VR), 01/12/2023

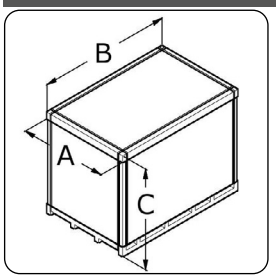
Comac S.p.A.
Legal representative
Giancarlo Ruffo

TECHNICAL DATA	U/M [KMS]	C120 Bi-Fuel
Rated machine power	W	6430
Theoretical productivity up to	sq.m./h	14300
Working width (scrubbing brush head)	mm	1230
Working width (sweeping brush head)	mm	1430
Volume of waste debris hopper	l	15
Squeegee width	mm	1350
Central brush head brushes (number -Ø external bristles)	No. / mm	3 - 430
Sweeping brush head brushes (number - Ø external bristles)	No. / mm	2 - 160
Endothermic engine (5)		HONDA
Type of fuel		Gasoline
Fuel tank capacity	l	20
LPG cylinder overall dimensions	mm	Ø 320 x 700
Scrubbing brush head motor [number - (voltage - nominal power)]	V / W	3 - (36 - 750)
Sweeping brush head motor [number - (voltage - nominal power)]	V / W	2 - (36 - 350)
Number of scrubbing brush head brush revolutions	rpm	180
Number of sweeping brush head brush revolutions	rpm	650
Sideways movement of brush head	mm	75
Weight exerted on the brush head	kg	60÷150
Traction motor (voltage / rated power)	V / W	36 / 2000
Gradeability (“transport” program with tanks empty)	%	19
Maximum speed (with transport program)	km/h	10
Maximum operating speed	km/h	7,7
Suction motor [number - (voltage - power)]	V / W	2 - (36 - 650)
Vacuum on vacuum head	mBar	190
Maximum solution tank capacity	l	320
Maximum recovery tank capacity	l	320
Maximum detergent tank capacity (CDS versions)	l	16
Steering space for a 180° turn (without bumpers on front and rear and on squeegee body)	mm	3200
Machine dimensions (length - width(1) - height)	mm	2420-1310-1830
Machine weight(2)	kg	923
Machine weight during transport(3)	kg	949
Machine weight during work operations(4)	kg	1376
Sound pressure level (ISO 11201, EN 60335-2-72) (LpA)	dB (A)	87
Sound power level	dB (A)	102
Uncertainty Kpa	dB (A)	1.5
Vibration level on the operator's arms (ISO 5349-1, EN 60335-2-72)	m/s2	< 2.5
Vibration level on the operator's body (ISO 2631-1, EN 60335-2-72)	m/s2	< 0.5
Vibration measurement uncertainty		1.5%

Remarks:

(1) Machine width: refers to the width of the machine without the squeegee fitted.
(2) Machine weight: refers to the overall weight of the machine: fuel tank empty; tanks (solution - dirty water recovery) empty and without operator on board.
(3) Machine weight during transport: refers to the overall weight of the machine; with full fuel tank; with the tanks (solution - dirty water recovery) empty and without operator on board.
(4) Machine weight during work operations: refers to the overall weight of the machine; with full fuel tank; with full solution tank and with operator on board (75 kg).
(5) Please refer to the engine manufacturer's use and maintenance manual for endothermic engine technical data.

HANDLING THE PACKAGED MACHINE



Gross weight of machine with packaging is:
- C120 Bifuel= 1053kg

The overall dimensions of the package are: A= 1860 mm B= 2450mm C= 1610mm

ATTENTION: It is recommended that all the packaging components be kept for any future machine transportation.

ATTENTION: Move the packaged product with handling equipment that complies with legal requirements regarding the size and mass of the packaging.

HOW TO UNPACK THE MACHINE

The machine is shipped in specific packaging. To remove it, proceed as follows:

1. Place the lower part of the outer packaging in contact with the floor.

N.B.: use the pictograms printed on the box as a reference.

2. Remove the outer package.

WARNING*: the machine is contained in specific packaging materials, whose elements (plastic bags, staples, etc.) can pose potential hazards, and must not be left within reach of children, disabled persons, etc.*

CAUTION*: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

3. Insert a ramp in the rear part of the machine.

ATTENTION: *the ramp gradient must not be such as to cause damage to the machine as it comes down.*

4. The machine is fastened to the platform with wedges, remove these wedges.
5. Take the machine off the pallet via the ramp.

CAUTION*: during this operation, check there are no people or objects near the machine.*

HOW TO MOVE THE MACHINE

To transport the machine safely, proceed as follows:

1. Check to make sure that the solution tank and the recovery tank are empty. If this is not the case, empty them (see the sections titled “EMPTYING THE SOLUTION TANK” and “EMPTYING THE RECOVERY TANK”).
2. Place the machine on the transport vehicle.

WARNING*: secure the device according to the directives in force in the country of use (ex. 2014/47/EU), , so that it cannot slide or tip over.*

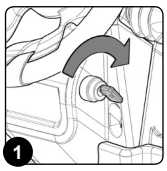
MACHINE SAFETY

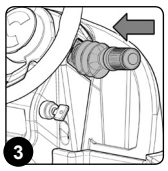
The procedure for securing the machine, thus allowing the operations to be performed under conditions of complete safety; are the following.

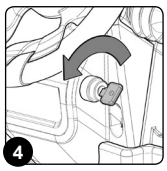
1. Make sure the solution tank is empty. If this is not the case, empty it (read "EMPTYING THE SOLUTION TANK").
2. Make sure the recovery tank is empty. If this is not the case, empty it (read "EMPTYING THE RECOVERY TANK").
3. Make sure the drawer is empty. If this is not the case, empty it (read "EMPTYING OF THE SWEEPING BRUSH HEAD BODY DRAWER").
4. Turn the key**(Fig.1**) and start the endothermic engine.
5. Act on the i-drive control panel**(Fig.2**).
   Select the transfer program (see paragraph “DRIVE SELECT SELECTOR”).

N.B.*: in this way, both the brush head body and the squeegee body will move to their idle position.*

6. Move the lever to the 'neutral' position; move the lever in the direction indicated by the arrow **(Fig. 3**).
7. Turn the key to position '0' **(Fig. 4**).







PREPARATION OF MACHINE

BATTERY MAINTENANCE AND DISPOSAL

For battery maintenance and recharging, respect the instructions provided by the battery manufacturer.
When the batteries are dead, they must be disconnected by trained and specialised personnel.

***N.B.**: dead batteries are classified as dangerous waste and as such must be delivered to an authorised body for disposal.*

TYPE OF FUEL TO BE UTILIZED

In order to determine which fuel must be utilized to power the machine, please refer to the endothermic engine's use and maintenance manual.

REFUELLING

***DANGER:** petrol is extremely flammable and explosive.*
Shut off the engine and allow it to cool before refuelling.

***DANGER:** The refuelling place must be well aired.*
Never refuel the engine inside a building where petrol fumes can come into contact with flames and sparks.

***DANGER:** Petrol is extremely and easily flammable.*
Keep a safe distance from fires and do not stir any fuel.
Don't smoke in the refuelling area!
Discharge your body's static electricity before approaching the fuel tank.

WARNING: *it is recommended to always wear protective gloves before handling fuel to avoid serious injuries to your hands.*
Fuels may contain substances similar to solvents.
Avoid any contact of mineral oil products with the skin and eyes.
Use gloves when refuelling.
Change your protective clothes frequently, and clean them.

WARNING: *always open the tank cap carefully, to slowly discharge the overpressure and prevent fuel from spurting out.*

WARNING: *do not inhale fuel vapours.*

WARNING: *for environmental protection, take care that fuel does not penetrate the ground.*

WARNING: *if fuel is spilled, clean the machine immediately.*

WARNING: *tighten the tank cap after refuelling.*
Tighten it firmly, but without using tools.
The cap must not come loose while the machine is being used.

WARNING: *check the tank for any leaks or ineffective seals.*
If you notice a fuel leakage, do not switch on or use the machine.

WARNING: *keep the fuel in containers that meet the legal requisites and bear an identification label.*

WARNING: *the endothermic engine must be powered exclusively with the fuel described in the use and maintenance manual of the engine itself, a document attached to the following booklet.*

WARNING: *do not overfill the fuel tank.*
If too much fuel is added, it could spill out while the vehicle is being driven.
Fuel leakage may also occur if the volume expands in the presence of high ambient temperatures.

WARNING: *carefully consult the use and maintenance manual of the endothermic engine to make sure you use the correct type of fuel for refuelling.*
The use of an incorrect type of fuel for the refuelling operations could cause serious damage to the engine and the fuel delivery system.

WARNING: *in the event of refuelling with the wrong type of fuel, it is essential to request the intervention of a qualified technician before starting the engine. In fact, the engine and the fuel delivery system could be seriously damaged if the engine is started.*

To refuel, proceed as described.

1. Bring the machine to the refuelling area.
2. Make sure the machine is in a safe condition (read "MACHINE SAFETY").
3. Remove the fuel tank cap (1) (**Fig. 23**), before removing it, turn the key (2) a quarter of a turn to the left.
4. Fill the tank with the appropriate fuel.
5. Tighten in the tank cap (1) **(Fig. 1**) and turn the key (2) a quarter turn to the right.

LPG CYLINDER REPLACEMENT

DANGER: *replacing the LPG cylinder must not be carried out in the presence of naked flames, embers, or electrical appliances in operation.*

DANGER: *before replacing the cylinder, make sure that the tap of the cylinder to be replaced and that of the full cylinder are closed.*

DANGER: *LPG cylinders must always be purchased from authorised dealers,*
It is dangerous and prohibited by legislation to fill cylinders from car LPG stations or by suitable means.
Only authorised companies may fill the cylinders.
Unauthorized filling is subject to criminal penalties and a pecuniary fine.
The penalty is imposed on the offending user.

WARNING: *the endothermic engine must be powered exclusively with the LPG described in the use and maintenance manual of the engine itself supplied with this manual.*

CAUTION: *These operations must be carried out using gloves to protect yourself from possible contact with the edges or tips of metal objects.*

To insert the cylinder into the machine, perform the steps described.
1. Bring the machine to the refuelling area.
2. Make sure the machine has been secured (see the chapter entitled "SECURING THE MACHINE").
3. Grip the handle (1) and lift the guard **(Fig. 24**).
4. Lock the guard in place with the device (2).
5. Open the guard (3)**(Fig. 25**).
6. Close the cylinder valve.
7. Disconnect the LPG supply hose from the cylinder valve.
8. *Disconnect the chain (4) to release the LPG cylinder.*

⚠ ***ATTENTION**: we recommend lifting and moving the cylinder only with lifting and transport means for its mass and size.*

9. Remove the cylinder.
10. Position the new cylinder.
11. Connect the chain to secure the new cylinder.

⚠ ***ATTENTION**: remember to place the gasket between the LPG supply hose and the valve*

12. Connect the supply hose to the cylinder valve.

⚠ ***ATTENTION**:After each replacement of the cylinder, carry out a leak test on the connections with soapy water (never with a flame) before trying to turn on the machine..*

FILLING THE SOLUTION TANK

Before filling the solution tank, carry out the following steps:

1. Take the machine to the usual place for filling the solution tank.
2. Make sure the machine is in a safe condition (see chapter "MACHINE SAFETY MEASURES").
3. Check that the solution tank drainage cap is closed. If this is not the case, close it (**Fig.2**).
4. Check to make sure that the water system filter cap, located on the front left-hand side of the machine, is closed. If this is not the case, close it (**Fig.3**).

The solution tank can be filled with water in two different ways:

- Removing the cap and filling the solution tank by means of a rubber hose or a bucket (**Fig.4**). Remember to check that the filter is correctly positioned above the filler opening (**Fig.5**).
- Remove the cap above the quick connector (**Fig.6**). Connect the quick connector on the water hose to the quick connector on the machine; remember to remove the cap to enable the air to be vented correctly.

5. Fill with clean water, at a temperature no higher than 50°C (122°F) and no lower than 10°C (50°F).

DETERGENT SOLUTION (VERSION WITHOUT CDS)

After filling the solution tank with clean water add the liquid detergent to the tank in the concentration and manner indicated on the detergent manufacturer's label. To prevent the formation of an excessive amount of foam that could damage the vacuum motor, use the minimum percentage of detergent required.

⚠ ***CAUTION**: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

⚠ ***ATTENTION:** always use detergents whose manufacturer's label indicates their suitability for scrubbing machines. Do not use acid or alkaline products or solvents without this indication.*

ⓘ ***N.B.**: always use low-foam detergent. To avoid the production of foam, put a minimum quantity of anti-foam liquid in the recovery tank before starting to clean. Do not use pure acids.*

FILLING THE DETERGENT CANISTER (VERSIONS WITH CDS)

After filling the solution tank with clean water, proceed as follows:

1. Bring the machine to the area designated for refilling the solution tank.
2. Make sure the machine is in a safe condition (see chapter "MACHINE SAFETY MEASURES").

⚠ ***CAUTION**: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

3. Grip the handle (1) and turn the guard **(Fig. 26**).
4. Block the guard in the open position with the device (2).
5. Open the cap (3) and fill with the desired detergent. The amount of liquid in the tank is visible from the level indicator (4).

⚠ ***ATTENTION:** always use detergents whose manufacturer's label indicates their suitability for scrubbing machines. Do not use acid or alkaline products or solvents without this indication.*

⚠ ***ATTENTION:** the dosing system is suitable for frequent maintenance cleaning. Acid or alkaline maintenance detergent tank be used with pH values between 4 and 10 and that do not contain: oxidising agents, chlorine or bromine, formaldehyde, mineral solvents. The detergents used must be suitable for use with scrubbing machines. Wash the circuit with water after use if the system is not used daily. The system can be excluded. In case of sporadic use of detergents with pH between 1-3 or 11-14, use the floor scrubbing machine in the traditional way by adding the detergent in the clean water tank and excluding the dosing circuit.*

⚠ ***ATTENTION:*** *always use low-foam detergent. To avoid the production of foam, put a minimum quantity of anti-foam liquid in the recovery tank before starting to clean. Do not use pure acids.*

6. Close the cap correctly to prevent liquid leaking out when working.
7. Turn the guard to the working position.

INSERTING WATER SYSTEM FILTER

Before using the machine for the first time the water system filter needs to be reset, for shipping reasons the filter cartridge and the cap have been removed. To insert the filter cartridge in the water system filter body proceed as follows:

1. Take the machine to the maintenance area.
2. Make sure the machine has been secured (see the chapter entitled "SECURING THE MACHINE").

⚠ ***CAUTION****: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

3. Close the outlet flow of the tap, rotate the lever near the user's seat downwards (**Fig.8**).
4. Insert the filter cartridge in the housing on the cap (**Fig.9**).

ⓘ ***N.B.:*** *The O-ring gasket in the filter cartridge should be inserted into its seat in the cap.*

5. Screw the cap onto the body of the detergent solution filter (**Fig.3**).

ASSEMBLING THE SCRUBBING BRUSH HEAD BODY BRUSHES

To fit the brush on the brush head body, proceed as follows:

1. Take the machine to the maintenance area.
2. Make sure the machine has been secured (see the chapter entitled "SECURING THE MACHINE").

⚠ ***CAUTION****: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

3. Position yourself on the right side of the machine and remove the right splash guard, move the fixing anchors present in the brush head body to the maintenance position (**Fig.10**).
4. With the brush head in the high position, insert the brush into the seat of the plate under the brush head, turning it until the three pins enter the recesses of the plate itself.
5. Turn until the pin on the brush is pushed towards the coupling spring and is locked into place (**Fig. 11**).

ⓘ ***N.B.*** *: the image (**Fig.11**) shows the direction of rotation for the connection of the right brush.*

6. Go to the front left-hand side of the machine and lift the casing (**Fig. 12**).
7. Remove the left splash guard, move the fixing anchors on the brush head body to the maintenance position (**Fig.13**).
8. Unlock the lever and remove the brush holder (**Fig.14**).
9. Insert the central brush into the seat of the plate under the brush support carriage, turning it until the three pins enter the recesses of the plate itself.
10. Turn until the pin on the brush is pushed towards the coupling spring and is locked into place (**Fig. 15**).
11. Insert the left brush into the seat of the plate under the brush support carriage, turning it until the three pins enter the recesses of the plate itself.
12. Turn until the pin on the brush is pushed towards the coupling spring and is locked into place (**Fig. 16**).

ⓘ ***N.B.****: the images (**Fig.15**) and (**Fig.16**) show the direction of rotation for attaching the central brush and the left brush.*

13. Slide the brush support carriage into the sweeping brush head body and secure it with the lever (**Fig.17**).
14. Fit the splash guard and bring it into working position (**Fig.18**).
15. Close the casing (**Fig.19**).

ASSEMBLY OF THE SWEEPING BRUSH HEAD BODY BRUSHES AND SIDE BRUSHES

To fit the brush on the brush head body, proceed as follows:

1. Take the machine to the maintenance area.
2. Make sure the machine is in a safe condition (see chapter "MACHINE SAFETY MEASURES").

⚠ ***CAUTION****: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

3. Go to the front left-hand side of the machine and lift the casing (**Fig. 12**).
4. Unscrew the knobs and remove the cover (**Fig.20**).
5. Insert the brushes into the sweeping brush head body until they are locked onto the shafts of the motors (**Fig.21**).

***NB**: Fit the brush with red bristles at the rear of the sweeping brush head body.*

6. Position the cover and tighten the knobs (**Fig.22**).
7. Close the casing (**Fig.19**).

To fit the side brushes, carry out the operations described.

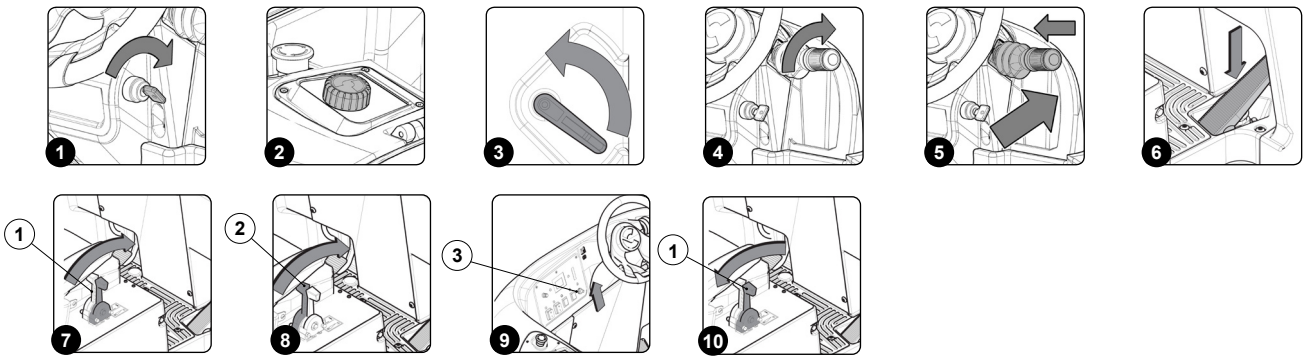
8. Position and hold the brush (1) together with the washer (2) on the brush holder.
9. Screw in the knob (3) (**Fig.23**).

PREPARING TO WORK

Before beginning to work, it is necessary to:

1. Make sure the recovery tank is empty. If this is not the case, empty it (read "EMPTYING THE RECOVERY TANK").
2. Check that the quantity of detergent solution in the solution tank is right for the type of work to be carried out. If necessary, fill the tank (for versions without CDS, read "FILLING THE SOLUTION TANK" and "DETERGENT SOLUTION (VERSION WITHOUT CDS)"; for versions with CDS, read "FILLING THE SOLUTION TANK" and "FILLING THE DETERGENT CANISTER (VERSIONS WITH CDS)").
3. Check that the squeegee rubbers are in good working condition. If not, carry out maintenance (see "REPLACING THE SQUEEGEE BODY RUBBER BLADES").
4. Check that the splash guard rubber blades on the scrubbing brush head body are in good working condition. If this is not the case, replace them (see "REPLACING THE SCRUBBING BRUSH HEAD BODY SPLASH GUARD").
5. Check that the splash guard rubber blades on the sweeping brush head body are in good working condition. If this is not the case, replace them (see "REPLACING THE SWEEPING BRUSH HEAD BODY SPLASH GUARD").
6. Check that the brushes are in good working condition. If this is not the case, replace them (see "REPLACING THE SCRUBBING BRUSH HEAD BODY BRUSHES").
7. Check that the generator connector is connected to the machine's general system connector; if this is not the case, perform this operation.

WORK



1. Make all the checks listed in "PREPARING TO WORK".
2. Sit on the driver's seat.

***N.B.**: the machine is equipped with a dead man's micro-switch underneath the seat, which prevents the machine from moving if the driver is not properly seated.*

3. Check to make sure that the accelerator lever (1) is set to minimum, otherwise shift it upwards (**Fig.7**).
4. Check to make sure that the starter lever (2) is set to "OPEN", otherwise shift it upwards (**Fig.8**).

***N.B.**: Shift the lever (2) to its "CLOSED" position if the endothermic engine is cold, if it has not been used for a long time, or if the ambient air temperature in the location where you are attempting to start the machine is not sufficiently warm.*

5. Using the fuel selection lever (3), select gasoline, for example, as the fuel to be injected into the endothermic engine. Shift the lever (3) in the direction indicated by the arrow (**Fig.9**).
6. Insert the key into the main switch on the control panel (**Fig.1**).
7. Set the main switch to "I" by turning the key a quarter turn clockwise (**Fig.1**). Turn the key farther to the right to bring the main switch to its START position, and hold it there until the engine starts. you can now release the key.

***N.B.**: Do not use the starter for more than 5 seconds at a time. If the engine does not start up, release the key and wait for 10 seconds before making a new attempt.*

8. In order to ensure the machine's proper functionality, once the endothermic engine has been running for a few seconds, move the lever (1) to the end of its stroke (**Fig.10**). In this manner, the accelerator will be set to its maximum position.

***N.B.**: Once the endothermic engine's speed is sufficient for generating a voltage greater than 30V, the "Transfer" screen (or the screen relative to the i-drive selector's position) will be automatically displayed.*

9. Turn the knob and select the desired working program (see "DRIVE SELECT SELECTOR") (**Fig.2**).
10. Open the detergent solution flow into the machine's water system by turning the tap control lever in the direction indicated by the arrow (**Fig.3**).
11. Select the speed level (e.g. "step-01") and turn the handle on the direction selection lever (**Fig.4**) under the steering wheel.

***N.B.:** adjust the forward speed to suit the adhesion conditions.*

12. Select the direction in which you want to move the machine. For example, if you want to move forward, shift the direction selector lever in the direction shown by the arrow (**Fig.5**).

***N.B.:** To select the forward gear (F) you need to first shift the lever up and then in the direction indicated by the arrow (**Fig.5**).*

13. Press the drive pedal to begin moving the machine (**Fig.6**).

If the working mode selected is "SCRUBBING WITH DRYING", the squeegee and brush head will lower until they touch the floor. As soon as the drive pedal is pressed, the traction motor, brush head motor and vacuum motor will start working. As a result, the solenoid valve will also be activated and detergent solution will be dispensed onto the brushes.
During the first few metres, check that there is sufficient solution and that the squeegee is drying correctly.
At this point the machine will begin operating at maximum efficiency until either the detergent solution or both fuels have run out.

***N.B.:** Before cleaning, pick up large pieces of waste. Pick up wire, tape, string, large pieces of wood or other refuse that could wrap around the brushes or become entangled. Drive the machine in a straight line. Avoid hitting obstacles and scratching the sides of the machine. Overlap the cleaning track by a few centimetres. Avoid turning the steering wheel abruptly when the machine is moving. The machine responds rapidly to the movements of the steering wheel. Avoid hairpin turns, except in emergencies. Adjust the speed of the machine, the pressure of the brushes and the flow of the solution according to the type of cleaning to be carried out. Drive the machine slowly on inclines. Use the brake pedal to control the speed when going down an incline. Where there is a slop, carry out the scrubbing by moving the machine upwards rather than downwards.*

***ATTENTION:** when you use the machine, slow down on ramps and slippery surfaces. Do not use the machine in areas where the ambient temperature is higher than 43 ° C (110° F). Do not use the scrubbing functions in areas where the ambient temperature is less than freezing 0 °C (32 °F).*

DRIVE SELECT SELECTOR

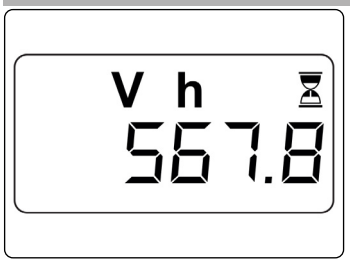
The knob on the control panel (**Fig.2**) can be used to select one of the following working modes:

	**Transfer:** movement of the machine without working.
	**Drying:** using the squeegee only.
	**Scrubbing with Drying:** using both the brushes and the squeegee.
	**Scrubbing only :** using only the brushes in the brush head.

***N.B.:** The working mode is selected when the corresponding indicator light is illuminated.*

ATTENTION: If you want to pass from a working mode with floor washing (washing only or washing with drying) to the transfer mode, always remember to select the vacuum mode for the time needed to collect the detergent solution on the ground.

HOUR METER



The control display is located on the control panel, and the screen that appears after the start-up screen displays the machine's total usage time.
The digits that precede the "." symbol identify hours, whilst the digit that follows it indicates hour decimals (an hour decimal corresponds to six minutes).
When the "hour glass" symbol is flashing, it indicates that the hour meter is counting the appliance operating time.

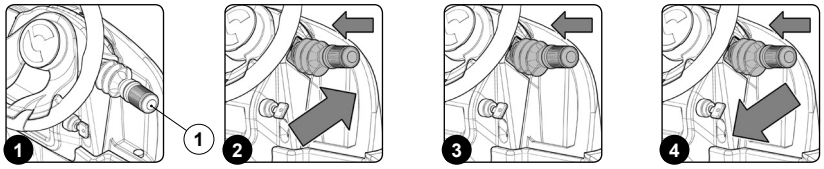
SELECTING THE OPERATING DIRECTION

The machine has a lever for selecting the travel direction (1) under the steering wheel (**Fig.1**).

N.B.: *To select the forward gear you need to first shift the lever up and then in the direction indicated by the arrow (**Fig.2**).*

N.B.: *To go from forward to neutral, first move the lever in the direction indicated by the arrow (**Fig.3**).*

ATTENTION: *To select the reverse gear, you need to first shift the lever up and then in the direction indicated by the arrow (**Fig.4**). With reverse gear engaged if you press the drive pedal a buzzer will sound and the white rear lights come on.*



CAUTION: *the reverse speed is lower than the forward speed to comply with current health and safety standards.*

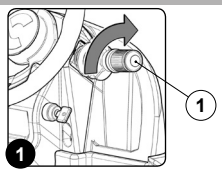
N.B.: *In order to disengage the reverse gear, disengage the lever (1) underneath the steering wheel (**Fig.1**).*

N.B.: *Once the lever (1) has been engaged in the reverse position, the acoustic signalling device will be activated in order to signal that the machine's reverse gear has been engaged.*

N.B.: *If the reverse gear is engaged with the squeegee in its working position, once the drive pedal is pressed, the machine will begin to move in reverse and the squeegee body will be raised into its resting position.*

N.B. : *If the reverse gear is engaged with the brush head in its working position, once the drive pedal is pressed, the machine will begin to move in reverse and the brush head will remain in its working position, but the solenoid valve will stop dispensing detergent solution to the brushes.*

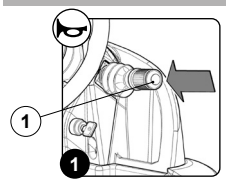
ADJUSTING THE OPERATING SPEED



To adjust the operating speed, use the knob (1) on the gear lever (**Fig.1**).

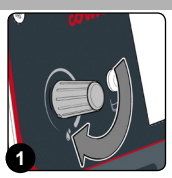
CAUTION: *adjust the forward speed to suit the adhesion conditions.*

BUZZER



The machine is equipped with a buzzer. if you need to sound a warning, just press the button (1) on the gear lever (**Fig.1**).

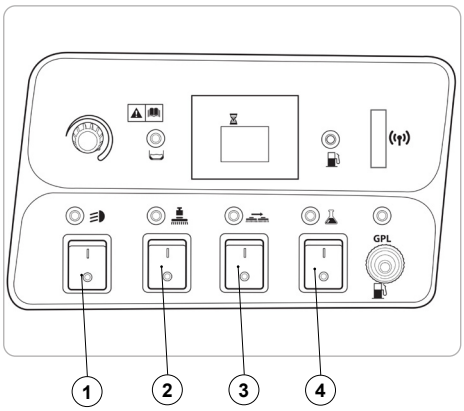
ADJUSTMENT OF THE DETERGENT SOLUTION FLOW



If it becomes necessary to adjust the delivery flow of detergent solution to the brushes while working, simply turn the knob on the control panel (**Fig.1**).

N.B.: *Turning the knob clockwise will increase the flow of detergent solution into the machine's water system, while turning it the other direction will reduce the quantity of detergent solution present in the machine's water system.*

N.B.: *Turning the knob fully in an anticlockwise direction will stop the flow of detergent solution into the machine's water system.*



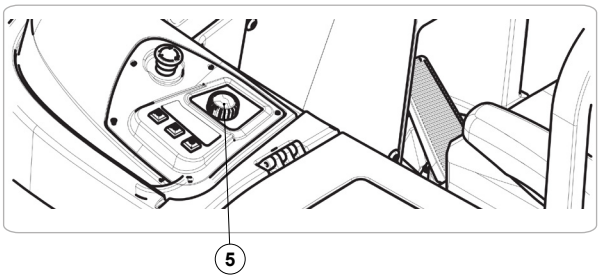
WORK LIGHT FUNCTION

The machine is equipped with front and rear working lights. To activate them, move the switch (1) on the control panel to the “I” position.

NB: *if the function is active, the corresponding green LED will be illuminated.*

N.B.*: the sidelights come on when the machine is started.*

N.B.*: If you wish to switch off the working lights, move the switch (1) to position “0”.*



SWEEPING BRUSH HEAD ACTIVATION FUNCTION

If you need to activate the working function 'Sweeping brush head activation' during work, press the button (5).

N.B.*: if you want to deactivate the function, press the button (5) again.*

EXTRA PRESSURE FUNCTION

If it becomes necessary to activate the “EXTRA PRESSURE ON BRUSH HEAD BODY” function while working, move the switch (2) to position “I”.

N.B.*: If you wish to deactivate the function, move the switch (2) to position “0”.*

LATERAL MOVEMENT OF BRUSH HEAD BODY FUNCTION

If it becomes necessary to activate the “BRUSH HEAD BODY LATERAL MOVEMENT” function while working, move the switch (3) to position “I”.

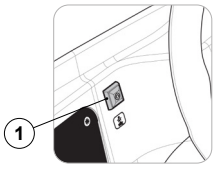
N.B.*: If you wish to deactivate the function, move the switch (3) to position “0”.*

AUTOMATIC DETERGENT DOSING FUNCTION (VERSION WITH CDS)

If it becomes necessary to activate the “AUTOMATIC DETERGENT DOSING” function while working, move the switch (4) to position “I”.

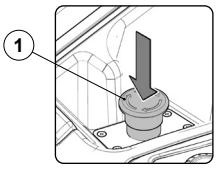
N.B.*: If you wish to deactivate the function, move the switch (4) to position “0”.*

COURTESY LIGHTS (OPTIONAL)



The machine can be equipped with courtesy lights to increase visibility of the parts which may need to be checked by the operator. To activate these lights, simply press the switch (1) located on the steering column (**Fig.1**).

EMERGENCY STOP BUTTON

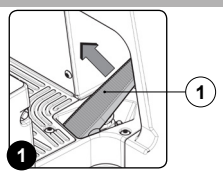


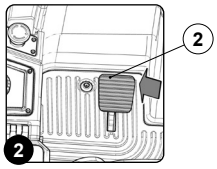
If any serious problems are encountered during the work operations, press the battery disconnect button (1) on the electrical system carter.

***CAUTION**: This command interrupts the electrical circuit between the batteries and the machine system.*

***N.B.**: To recommence work having stopped and once the problem has been resolved, switch off the machine and turn the knob (1) in the direction of the arrows indicated on it.*

BRAKING CONTROL

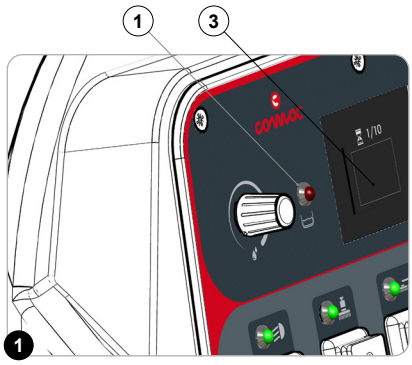




The machine has an encoder to help braking and also a mechanical brake.

- If the machine is moving and the accelerator pedal (1) (**Fig.1**) is released, la the machine brakes decelerating softly, until it stops the encoder. Only when the encoder has stopped is the electric brake engaged.
- If the machine is moving and the brake pedal (2) (**Fig.2**) is pressed, the machine according to braking force of the mechanical system. Only when the encoder has stopped is the electric brake engaged.

***CAUTION**: The electro-brake on the machine only serves as a parking brake.*



SOLUTION TANK CAPACITY LOW

The machine is equipped with an electronic device (float) located inside the detergent tank; when the tank is empty, this activates the solution tank float indicator light (1) on the control panel (**Fig.1**).

If this is the case, proceed as follows:

1. Using the "DRIVE SELECTION" selector knob on the control panel, select the “TRANSPORT” working program (A). The brush motors and solenoid valve will stop working, and after a few seconds the brush head bodies will lift up from the floor. The squeegee will remain in contact with the floor for a few seconds, to allow the drying to finish, after which it will lift up off the floor. A few seconds after the squeegee has reached its idle position, the vacuum motors will stop working; this is to allow all the liquid in the vacuum tube to be vacuumed off.
2. Bring the machine to the maintenance area and fill the solution tank with detergent solution (refer to the section titled “FILLING THE SOLUTION TANK”).

***ATTENTION**: When filling the solution tank, it is good practice to drain the recovery tank using the special drainage tube.*

DETERGENT TANK CAPACITY LOW

The machine is equipped with an electronic device (float) located inside the detergent tank; when the tank is empty, this activates an alarm signal on the control display (2) (**Fig.1**).

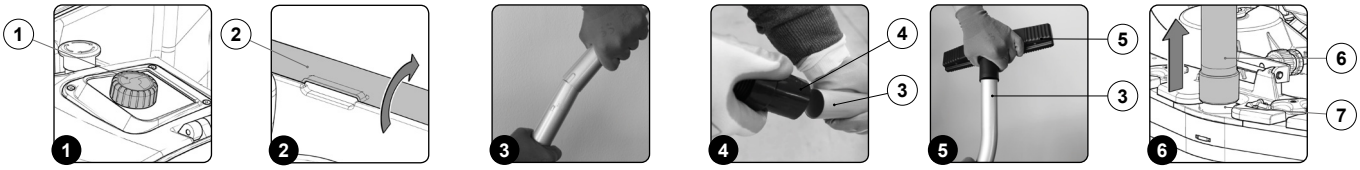
If this is the case, proceed as follows:

1. Using the "DRIVE SELECTION" selector knob on the control panel, select the “TRANSPORT” working program (A). The brush motors and solenoid valve will stop working, and after a few seconds the brush head bodies will lift up from the floor. The squeegee will remain in contact with the floor for a few seconds, to allow the drying to finish, after which it will lift up off the floor. A few seconds after the squeegee has reached its idle position, the vacuum motors will stop working; this is to allow all the liquid in the vacuum tube to be vacuumed off.
2. Bring the machine to the maintenance area and fill the detergent tank with the chemical product used (read the paragraph entitled “FILLING THE DETERGENT TANK, VERSION WITH CDS”).

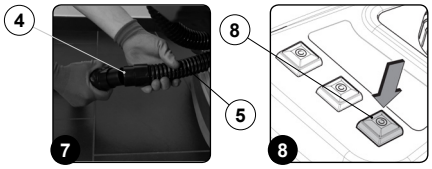
LIQUID VACUUM WAND KIT (OPTIONAL)

Upon request, the machine can be fitted with the LIQUID VACUUM WAND system that vacuums up the detergent solution more accurately.
To start it do as follows.

1. Using the knob (1) of the DS selector (**Fig.1**), select the “transfer” program.
2. Open the storage compartment flap (2) (**Fig.2**), positioned on the left-hand side of the operator seat, and remove all components of the liquid vacuum wand kit.
3. Assemble the steel extension tube (**Fig.3**).
4. Connect the vacuum tube (4) to the extension tube (3) (**Fig.4**).
5. Insert the vacuum brush (5) in the extension tube (3) (**Fig.5**).
6. Remove the vacuum tube (6) from the sleeve (7) in the squeegee body (**Fig.6**).



7. Connect the liquid vacuum wand kit vacuum tube (4) to the squeegee vacuum tube (5) (**Fig.7**).
8. For Essential versions, activate the liquid vacuum wand kit by pressing the switch (8) on the steering column (**Fig.8**)



***NB**: As soon as the switch (8) or button (9) is pressed, the suction motor will be activated, and the drying operation can be performed.*

***WARNING**: Never pick up solid matter such as dust, cigarette stubs, paper, etc.*

***CAUTION**: Never collect gases, explosive/inflammable liquids or powders, nor acids and solvents! These include gasoline, paint thinners and fuel oil (which, when mixed with the vacuum air, can form explosive vapours or mixtures), and also non-diluted acids and solvents, acetones, aluminium and magnesium powders. These substances may also corrode the materials used to construct the machine.*

***CAUTION**: If the machine is used in dangerous areas (e.g. petrol stations), the relative safety standards must be observed. It is forbidden to use the machine in environments with a potentially explosive atmosphere.*

9. Once the work is completed, dismantle the kit and place it in the storage compartment

TANK CLEANING KIT (OPTIONAL)

On request, the machine can be equipped with the SPRAY GUN system; to activate this, proceed as follows.

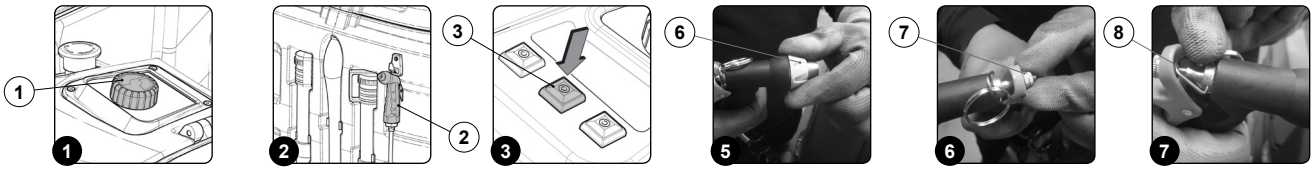
***CAUTION**: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

1. Using the knob (1) of the DS selector (**Fig.1**), select the “transfer” program.
2. Release the tank cleaning accessory (2) (at the back of the machine) from the retainers (**Fig.2**).
3. Activate the optional tank cleaning kit by pressing the button (3) located on the steering column (**Fig.3**).
4. Activate the solution jet by pressing the lever in the tank cleaning accessory. Take care to direct the solution jet in the desired direction.

***NB**: To adjust the solution jet from the* tank cleaning accessory, turn the knob (6) on the accessory itself *(**Fig.5**)*.

***N.B.**: To adjust the intensity of the solution jet from the* tank cleaning accessory, turn the knob (7) on the accessory itself *(**Fig.6**)*.

***N.B.**: To stop the solution jet,* use the lever (8) on the tank cleaning accessory *(**Fig.7**)*.



AT THE END OF THE WORK

At the end of the work, and before carrying out any type of maintenance, perform the following operations:

1. Using the "DRIVE SELECTION" selector knob on the control panel, select the “TRANSPORT” working program (A). The brush motors and solenoid valve will stop working, and after a few seconds the brush head bodies will lift up from the floor. The squeegee will remain in contact with the floor for a few seconds, to allow the drying to finish, after which it will lift up off the floor. A few seconds after the squeegee has reached its idle position, the vacuum motors will stop working; this is to allow all the liquid in the vacuum tube to be vacuumed off.
2. Bring the machine to the designated place for draining off the dirty water, and empty the recovery tank (see “EMPTYING THE RECOVERY TANK”).
3. Carry out all the procedures listed in the paragraph “RECOMMENDED PERIODIC MAINTENANCE” indicated in the section “DAILY; BEFORE A LONG PERIOD OF INACTIVITY”.
4. Once the maintenance operations are complete, take the machine to the designated storage location.

⚠ ***ATTENTION****: Park the machine in an enclosed place, on a flat surface, and at a safe distance from any objects that could either damage it or be damaged due to contact with the machine itself.*

5. Make sure the machine is in a safe condition, see chapter “MACHINE SAFETY MEASURES”.

RECOMMENDED MAINTENANCE OPERATIONS

INTERVAL	MACHINE COMPONENTS	PROCEDURE
DAILY; BEFORE A LONG PERIOD OF INACTIVITY	Squeegee	Clean the vacuum chamber; the squeegee rubber blades; the vacuum nozzle (see "CLEANING THE SQUEEGEE BODY").
	Scrubbing brush head body side splash guard rubber blades	Clean the scrubbing brush head body side splash guard rubber blades (see "CLEANING THE SCRUBBING BRUSH HEAD SIDE SPLASH GUARD RUBBER BLADES").
	Scrubbing brush head body brushes	Clean the brushes on the scrubbing brush head body (see "CLEANING THE SCRUBBING BRUSH HEAD BODY BRUSHES").
	Recovery tank	At the end of every working day, empty the recovery tank (see "EMPTYING THE RECOVERY TANK").
		At the end of every working day, after having emptied the recovery tank, clean the vacuum system filters (see "CLEANING THE RECOVERY TANK FILTER").
	Solution tank	At the end of every working day, empty the solution tank (see "EMPTYING THE SOLUTION TANK").
	Sweeping brush head body brushes and side brushes	Clean the brushes on the sweeping brush head body and the side brushes (see "CLEANING OF SWEEPING BRUSH HEAD BODY BRUSHES AND SIDE BRUSHES").
	Sweeping brush head drawer	At the end of each working day, empty the drawer (see paragraph "EMPTYING THE SWEEPING BRUSH HEAD BODY DRAWER".).
WEEKLY	Machine water system	Clean the filter in the machine's water system (see "CLEANING THE WATER SYSTEM FILTER").
	Squeegee rubber blades	Check that the rubber blades on the squeegee body are intact and inspect for wear; if necessary, replace these (see "REPLACING THE SQUEEGEE BODY RUBBER BLADES").
	Sweeping brush head body splash guard rubber blades	Check that the splash guard rubber blades on the sweeping brush head body are in good working condition. If this is not the case, replace them (see "REPLACING THE SWEEPING BRUSH HEAD BODY SPLASH GUARD").
	Sweeping brush head body brushes and side brushes	Check the correct integrity and wear of the brushes on the sweeping brush head body and side brushes and replace them if necessary (see paragraph "REPLACEMENT OF THE SWEEPING BRUSH HEAD BODY BRUSHES AND SIDE BRUSHES ").
MONTHLY	Squeegee rubber blade levelling	Check that the rubber blades on the squeegee body are level and if necessary, adjust these (see "ADJUSTING THE SQUEEGEE BODY RUBBER BLADES").
	Levelling of the sweeping brush head body splash guard rubber blades	Check the correct levelling of the sweeping brush head body splash guard rubber blades, and adjust if necessary (read paragraph "ADJUSTMENT OF SIDE SWEEPING BRUSH HEAD BODY SIDE SPLASH GUARDS").

Before performing any routine or extraordinary maintenance operation, proceed as follows:

1. Take the machine to the maintenance area.

***N.B.**: the place designated for this operation must comply with current environmental protection regulations.*

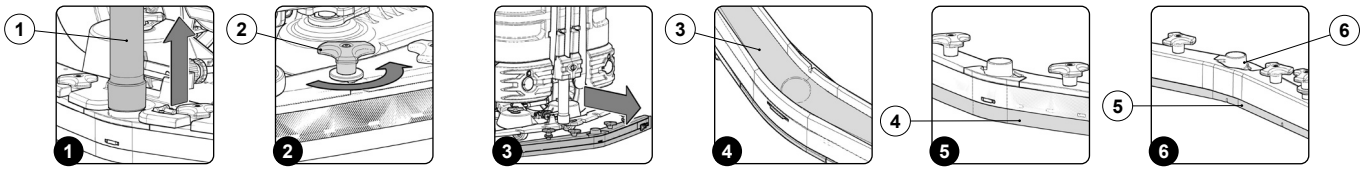
2. Make sure the machine has been secured (see the chapter entitled "SECURING THE MACHINE").

***CAUTION**: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

CLEANING THE SQUEEGEE BODY

The careful cleaning of the whole vacuum unit ensures better drying and cleaning of the floor as well as a longer vacuum motor life. To carry out the cleaning of the squeegee body, proceed as follows:

1. Extract the vacuum hose (1) from the vacuum nozzle on the squeegee body (**Fig.1**).
2. Completely unscrew the knobs (2) in the squeegee body's pre-assembly (**Fig.2**).
3. Remove the squeegee body from the slits in the squeegee connector (**Fig.3**).
4. Thoroughly clean the squeegee body vacuum chamber (3) with a jet of water, and then with a damp cloth (**Fig.4**).
5. Thoroughly clean the squeegee body rear rubber blade (4) with a jet of water, and then with a damp cloth (**Fig.5**).
6. Thoroughly clean the squeegee body front rubber blade (5) with a jet of water, and then with a damp cloth (**Fig.6**).
7. Use a jet of water and then a damp cloth to thoroughly clean the vacuum nozzle (6) (**Fig.6**).
8. If you wish to use the tank cleaning kit to clean the squeegee body, see “TANK CLEANING KIT (OPTIONAL)”.
9. Proceed in the opposite order to reassemble all the parts.



N.B.: *Check the wear of the rear rubber blade (4) on the squeegee body; if the edge of the rubber in contact with the floor is worn, replace it. Refer to "REPLACING THE SQUEEGEE BODY RUBBER BLADES".*

N.B.: *Check the wear of the front rubber blade (5) on the squeegee body; if the edge of the rubber in contact with the floor is worn, replace it. Refer to "REPLACING THE SQUEEGEE BODY RUBBER BLADES".*

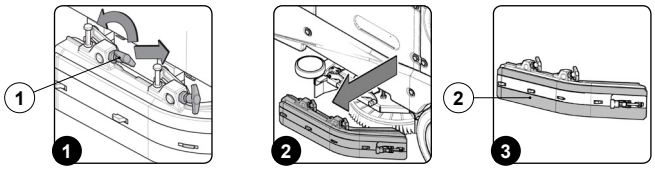
CLEANING THE SCRUBBING BRUSH HEAD LATERAL SPLASH GUARD RUBBER BLADES

Careful cleaning of the side splash guard rubber blades of the scrubbing brush head guarantees better cleaning of the floor. To clean the side splash guard rubber blades, proceed as follows:

1. Go to the left hand side of the machine, and with the brush head raised up from the floor, remove the side splash guard casing from the brush head (**Fig.2**).

N.B.*: Before removing the splash guard casing, turn the fixing anchors (1) on the brush head body to the maintenance position (**Fig.1**).*

2. Use a jet of water and then a damp cloth to thoroughly clean the side splash guard rubber blade (2) (**Fig.3**)
3. Reassemble all parts and repeat the operations described for the right side casing.



CLEANING THE SCRUBBING BRUSH HEAD BODY BRUSHES

Careful cleaning of the brush guarantees better cleaning of the floor as well as a longer lifespan of the gear motor present in the brush head body. To clean the brushes, proceed as follows

1. Go to the right hand side of the machine, and with the brush head raised up from the floor, remove the side splash guard casing from the brush head (**Fig.2**).

N.B.*: Before removing the splash guard casing, turn the fixing anchors (1) on the brush head body to the maintenance position (**Fig.1**).*

2. Press the brush locking pin (2) (**Fig.3**).
3. Keeping the pin (2) pressed, turn the brush clockwise until it is released (**Fig.4**).
4. Turn until the button is pushed towards the outside of the coupling spring and is locked into place.
5. Clean the brush under a stream of running water to remove any impurities from its bristles. Check the wear status of the bristles and replace the brushes if they are excessively consumed (the bristles' protrusion must not be less than 10 mm; this distance is indicated on the brush by the yellow band). For replacing the brushes, refer to “FITTING THE SCRUBBING BRUSH HEAD BRUSHES”.
6. With the brush clean, reassemble it and move on to the left and central one.

***N.B.** : the image (**Fig.4**) shows the direction of rotation for releasing the right brush.*

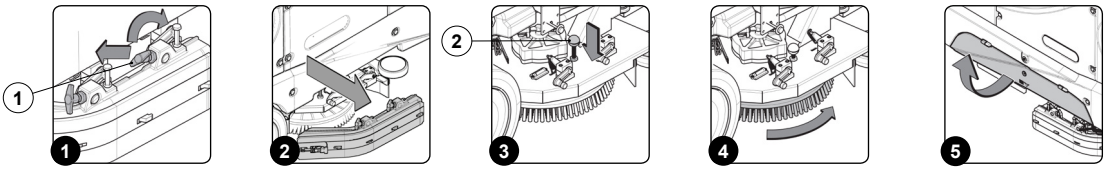
7. Go to the front left-hand side of the machine and lift the casing (**Fig. 5**).
8. Remove the left splash guard, move the fixing anchors on the brush head body to the maintenance position (**Fig.6**).
9. Unlock the lever and remove the brush holder (**Fig.7**).
10. Press the central brush retainer (2) (**Fig.8**).
11. Keeping the pin (2) pressed, turn the brush anti-clockwise until it is locked (**Fig.9**).

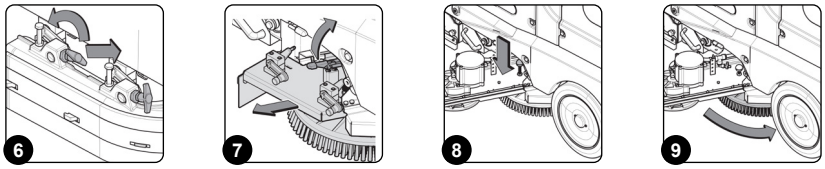
***N.B.**: the image (Fig.9) shows the direction of rotation for releasing the central brush, for the left brush rotate in the same direction.*

12. Carry out the same operations for the left brush.

ATTENTION: If the brushes are not new, and have deformed bristles, it is better to reassemble them in the same position in order to prevent the different inclination of the bristles from overloading the brush motor, as well as to prevent excessive vibrations.

13. If you wish to use the tank cleaning kit to clean the brushes, see “TANK CLEANING KIT (OPTIONAL)”.
14. Proceed in the opposite order to reassemble all the parts.



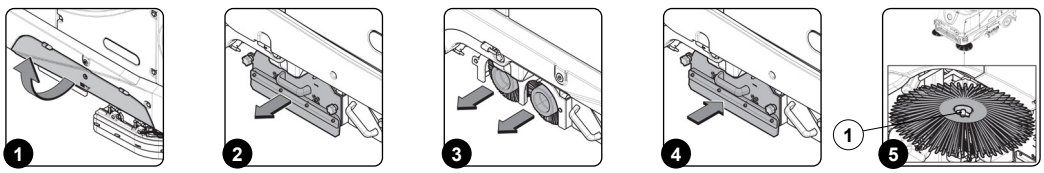


CLEANING OF SWEEPING BRUSH HEAD BODY BRUSHES AND SIDE BRUSHES

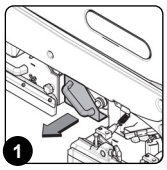
Careful cleaning of the brushes guarantees better cleaning of the floor as well as a longer lifespan of the gear motors present in the brush head body
To clean the brushes, proceed as follows

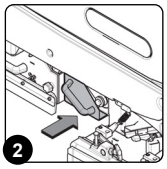
1. Go to the front left-hand side of the machine and lift the casing (**Fig. 1**).
2. Unscrew the knobs and remove the cover (**Fig.2**).
3. Remove the brushes from the sweeping brush head body (**Fig.3**).
4. Clean the brushes under a stream of running water to remove any impurities from the bristles. Check the wear status of the bristles and replace the brushes if they are excessively consumed (the bristles' protrusion must not be less than 10 mm; this distance is indicated on the brush by the yellow band). To replace the brushes, refer to paragraph “FITTING THE SWEEPING BRUSH HEAD BODY BRUSHES AND SIDE BRUSHES”.
5. Reassemble the brushes after cleaning them.
   Position the cover and tighten the knobs (**Fig.4**).

To clean the side brushes proceed as follows
6. Unscrew the knob (1) and remove the brush **(Fig.5**).
7. Clean the brush under a stream of running water to remove any impurities from its bristles. Check the wear status of the bristles and replace the brushes if they are excessively consumed (the bristles' protrusion must not be less than 10 mm; this distance is indicated on the brush by the yellow band). To replace the brushes, refer to paragraph “FITTING THE SWEEPING BRUSH HEAD BODY BRUSHES AND SIDE BRUSHES”.
8. When the brush is clean, reassemble it and move on to the other brush.



EMPTYING OF THE SWEEPING BRUSH HEAD BODY DRAWER

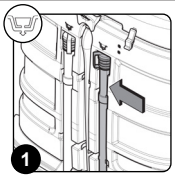


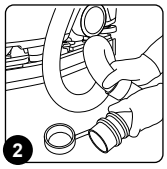


For emptying proceed as follows:

1. Remove the drawer from the sweeping brush head body **(Fig.1**).
2. Empty the drawer.
3. Insert the drawer in the sweeping brush head body **(Fig.2**).

DRAINING THE RECOVERY TANK





Proceed as follows to empty the recovery tank:

1. Remove the drainage hose of the recovery tank from the clamps; it is located at the rear of the machine (**Fig.1**).
2. Bend the end of the drainage tube in order to create a choke and prevent the content from coming out (**Fig.2**), then position the tube on the discharge surface, unscrew the cap, and gradually release the tube.
3. Repeat the operations in reverse order to reassemble all the parts.

CLEANING THE RECOVERY TANK FILTERS

In order to clean the filters present inside the recovery tank, do the following:

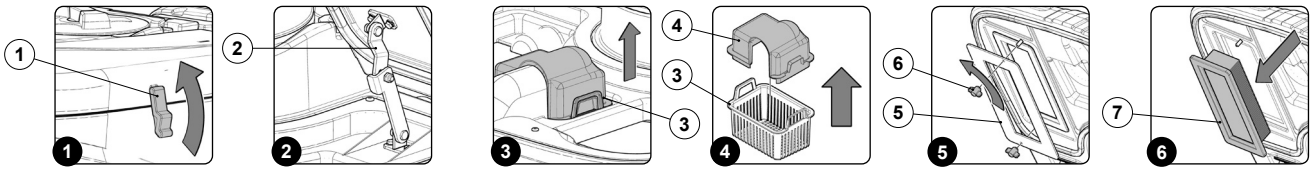
1. Release the retainer hinges (1) on the side of the tank (**Fig.1**).
2. Rotate the recovery tank cover until the prop (2) is in the maintenance position (**Fig.2**).
3. Remove the dirty water basket/filter from the support (3) (**Fig.3**).
4. Remove the basket cover (4) from the basket/filter (3) (**Fig.4**).
5. Clean the basket/filter (3) and the basket cover (4) under a jet of running water.

***NB**: Use a spatula or brush to eliminate any dirt that is particularly difficult to remove.*

6. Use a dry cloth to dry the basket/filter (3) and the basket cover (4) and place them back inside the recovery tank.
7. Remove the filter support (5), fully unscrew the locking wing nuts (6) (**Fig.5**).
8. Remove the suction motor filter (7) (**Fig.6**).
9. Clean the suction motor filter (7) with an air jet from a distance of more than 20cm.

***NB**: If the dirt will not shift, use a vacuum cleaner.*

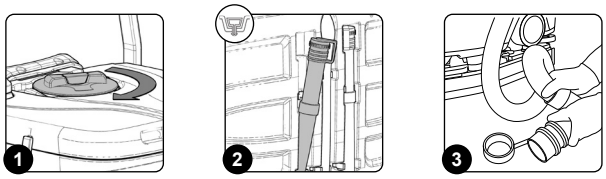
10. If you wish to use the tank cleaning kit to clean the brushes, see "TANK CLEANING KIT (OPTIONAL)"
11. Repeat the operations in reverse order to reassemble all the parts.



EMPTYING THE SOLUTION TANK

Proceed as follows to empty the solution tank:

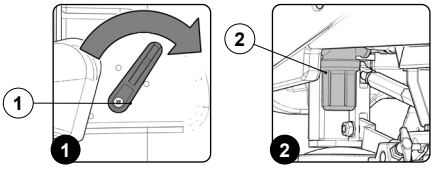
1. Remove the solution tank filler cap (**Fig.1**).
2. Remove the drainage hose of the solution tank from the clamps; it is located at the rear of the machine (**Fig.2**).
3. Bend the end of the drainage tube in order to create a choke and prevent the content from coming out (**Fig.3**), then position the tube on the discharge surface, unscrew the cap, and gradually release the tube.
4. Repeat the operations in reverse order to reassemble all the parts.



CLEANING THE WATER SYSTEM FILTER

In order to clean the water system's filter, do the following:

1. Close the tap's output flow, and shift the knob (1) on the left hand side of the steering column (**Fig.1**) downward.
2. Unscrew the detergent solution filter cap (3) (**Fig.2**).

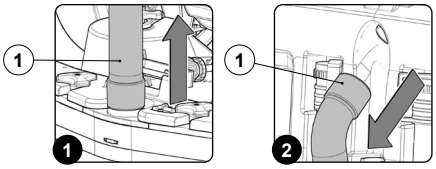


3. Remove the cartridge from the filter body and rinse under a jet of running water, and use a brush to eliminate any impurities, if necessary.
4. Once the filter cartridge is clean, repeat the operations in the opposite order to reassemble all the parts.

CLEANING THE VACUUM TUBE

Careful cleaning of the vacuum hose guarantees better cleaning of the floor as well as a longer vacuum motor life. Proceed as follows to clean the vacuum hose:

1. Extract the vacuum tube (1) from the vacuum nozzle on the squeegee body (**Fig.1**).
2. Remove the vacuum tube (1) via the hole on the back of the recovery tank (**Fig.2**).
3. The vacuum hose from the retainers present inside the recovery tank.
4. Rinse the inside of the vacuum hose with a jet of running water.
5. If you wish to use the tank cleaning kit to clean the vacuum tube, see "TANK CLEANING KIT (OPTIONAL)"
6. Repeat the operations in reverse order to reassemble all the parts.



EXTRAORDINARY MAINTENANCE WORK

Before performing any routine or extraordinary maintenance operation, proceed as follows:

1. Take the machine to the maintenance area.

***NB**: the place designated for this operation must comply with current environmental protection regulations.*

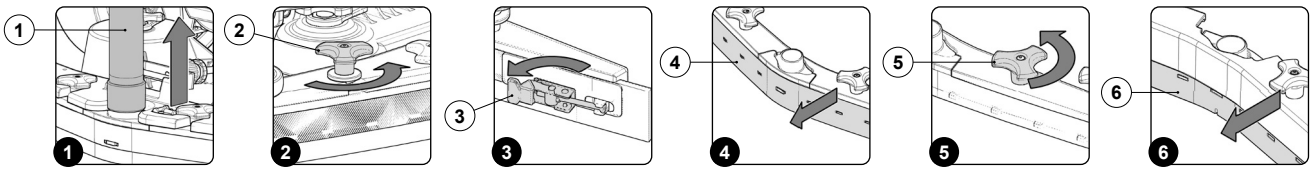
2. Make sure the machine has been secured (see the chapter entitled "SECURING THE MACHINE").

***CAUTION**: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

REPLACING THE SQUEEGEE BODY RUBBER BLADES

Ensuring the integrity of the squeegee body's rubber blades guarantees better floor cleaning and drying results, as well as a longer service life for the vacuum motor. In order to replace the squeegee body's rubber blades, do the following:

1. Extract the vacuum hose (1) from the vacuum nozzle on the squeegee body (**Fig.1**).
2. Completely unscrew the knobs (2) in the squeegee body's pre-assembly (**Fig.2**).
3. Remove the squeegee body from the slits in the squeegee connector.
4. Remove the rear rubber blade compression plate, and release the stopper (3) at the rear of the squeegee (**Fig. 3**).
5. Remove the rear rubber blade (4) from the squeegee body (**Fig. 4**).
6. Completely unscrew the knobs (5) in the squeegee body pre-assembly (**Fig.5**).
7. Remove the front rubber blade (6) from the squeegee's internal body (**Fig. 6**).



8. Repeat the operations in reverse order to reassemble all the parts.

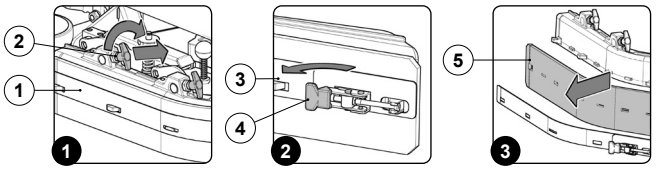
***NB**: before using the machine, remember to adjust the squeegee body. Read "ADJUSTING THE SQUEEGEE BODY RUBBER BLADES".*

***NB**: it is good practice to replace both squeegee blades, to ensure good results when drying the floor.*

REPLACING THE SCRUBBING BRUSH HEAD BODY SPLASH GUARD

If the splash guard rubber blades of the brush head side carter are damaged they cannot work properly, namely they cannot convey the dirty detergent solution towards the squeegee, therefore the splash guard rubber blades need to be checked. To replace the brush head splash guards, proceed as follows:

1. Stand on the left side of the machine.
2. Remove the left splash guard body (1), move the fixing anchors (2) on the brush head body to the maintenance position (**Fig.1**).
3. Remove the rear rubber blade compression plate (3), and release the stopper (4) on rubber blade compression plate (**Fig.2**).
4. Remove the splash guards (5) from the left splash guard body and replace it with a new one or else turn it around (**Fig.3**).

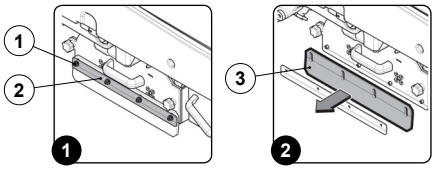


5. Repeat the operations in reverse order to reassemble all the parts.
6. Repeat the operations just carried out also for the right side carter as well.

REPLACING THE SWEEPING BRUSH HEAD BODY SPLASH GUARD

To replace the brush head splash guards, proceed as follows:

1. Unscrew the nuts (1) and remove the rubber blade compression plate (2)**(Fig.1**).
2. Remove the splash guard (3) and replace it with a new one **(Fig.2**).



3. Position the rubber blade compression plate and tighten the nuts.
4. Repeat the same operations to replace the splash guard on the other side.

REPLACING THE SCRUBBING BRUSH HEAD BODY BRUSHES

If the scrubbing brush head brushes are damaged they cannot work properly, or more specifically, they cannot remove the dirt from the floor; as such, the condition of these must be checked. To replace the scrubbing brush head brushes, proceed as follows

1. Go to the right hand side of the machine, and with the brush head raised up from the floor, remove the side splash guard casing from the brush head (**Fig.2**).

***N.B.**: Before removing the splash guard casing, turn the fixing anchors (1) on the brush head body to the maintenance position (**Fig.1**).*

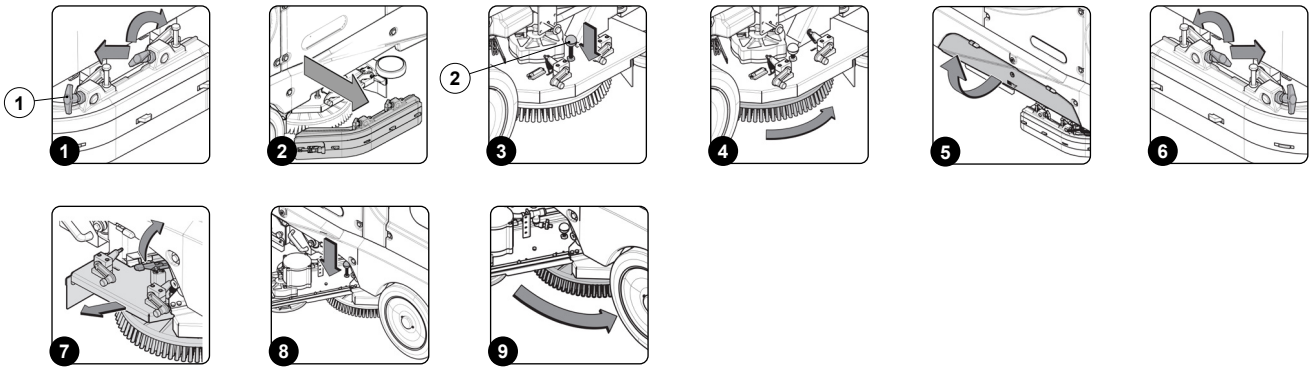
2. Press the brush locking pin (2) (**Fig.3**).
3. Keeping the pin (2) pressed, turn the brush anti-clockwise until it is locked (**Fig.4**).
4. Turn until the button is pushed towards the outside of the coupling spring and is locked into place.
5. Check the wear status of the bristles and replace the brushes if they are excessively consumed (the bristles' protrusion must not be less than 10 mm; this distance is indicated on the brush by the yellow band). For replacing the brushes, refer to "FITTING THE SCRUBBING BRUSH HEAD BRUSHES".

***N.B.**: the image (**Fig.4**) shows the direction of rotation for releasing the right brush.*

6. Go to the front left-hand side of the machine and lift the casing (**Fig. 5**).
7. Remove the left splash guard, move the fixing anchors on the brush head body to the maintenance position (**Fig.6**).
8. Unlock the lever and remove the brush holder (**Fig.7**).
9. Press the central brush retainer (2) (**Fig.8**).
10. Keeping the pin (2) pressed, turn the brush anti-clockwise until it is locked (**Fig.9**).

***N.B.**: the image (**Fig.9**) shows the direction of rotation for releasing the central brush, for the left brush rotate in the same direction.*

11. Carry out the same operations for the left brush.



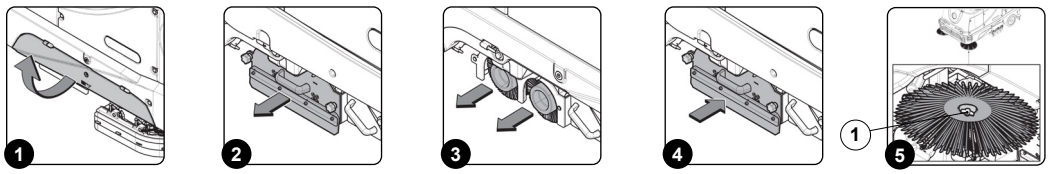
REPLACEMENT OF THE SWEEPING BRUSH HEAD BODY BRUSHES AND SIDE BRUSHES

If the sweeping brush head brushes and the side brushes are damaged they cannot work properly, or more specifically, they cannot remove the dirt from the floor; as such, the condition of these must be checked.
To replace the sweeping brush head brushes and side brushes, proceed as follows

1. Go to the front left-hand side of the machine and lift the casing (**Fig. 1**).
2. Unscrew the knobs and remove the cover (**Fig.2**).
3. Remove the brushes from the sweeping brush head body (**Fig.3**).
4. Check the wear status of the bristles and replace the brushes if they are excessively consumed (the bristles' protrusion must not be less than 10 mm; this distance is indicated on the brush by the yellow band). To replace the brushes, refer to paragraph "FITTING THE SWEEPING BRUSH HEAD BODY BRUSHES AND SIDE BRUSHES".
5. Position the cover and tighten the knobs (**Fig.4**).

To replace the side brushes proceed as follows

6. Unscrew the knob (1) and remove the worn brush **(Fig.5**).
7. Fit the new brush and tighten the knob (1) (**Fig.5**).
8. Carry out the same operations to replace the other side brush.

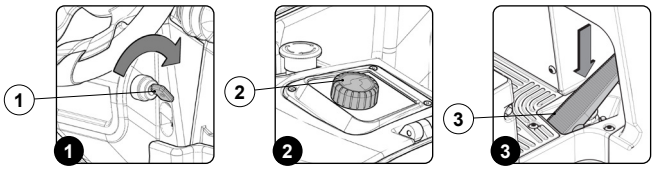


ADJUSTMENT INTERVENTIONS

ADJUSTING THE SQUEEGEE BODY'S RUBBER BLADES

The careful adjustment of the squeegee body rubber blades guarantees better cleaning of the floor.
To adjust the squeegee body blades, proceed as follows:

1. Sit on the driver's seat.
2. Insert the key (1) into the main switch on the control panel. Set the main switch to "I" (**Fig.1**).
3. Using the knob (2) on the control panel (**Fig.2**), select the "SCRUBBING WITH DRYING" work program.
4. Press the drive pedal (3) (**Fig.3**) to begin moving the machine.



5. As soon as the brush head and the squeegee have reached their working positions, perform the procedure for securing the machine (see the chapter "MACHINE SAFETY MEASURES").

***CAUTION**: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

6. Stand at the back of the machine.

Adjusting the height of the squeegee body:

7. Release the stopper lever (3) for the squeegee's height adjustment knob (4) (**Fig.3**).
8. Adjust the height of the rubber blade in relation to the floor by loosening or tightening the knobs (4) (**Fig. 4**).

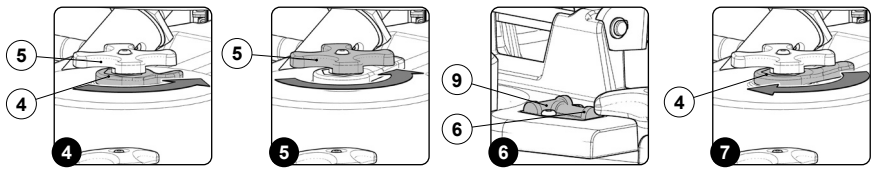
***N.B.**: Figure 4 indicates the rotation direction for decreasing the distance between the squeegee support and the floor. This distance can be increased by turning it in the opposite direction.*

***N.B.**: By decreasing the distance between the squeegee support and the floor, the rubber blades present in the squeegee body move closer to the floor.*

***N.B.**: The right-hand and left-hand knobs must be rotated the same number of times, so that the squeegee is parallel to the floor when it is working.*

***N.B.**: Make sure the adjustment is correct by looking at the instrument (5) on the squeegee body (**Fig.5**).*

9. Once the adjustment has been completed, engage the stopper lever (4) (**Fig.7**).



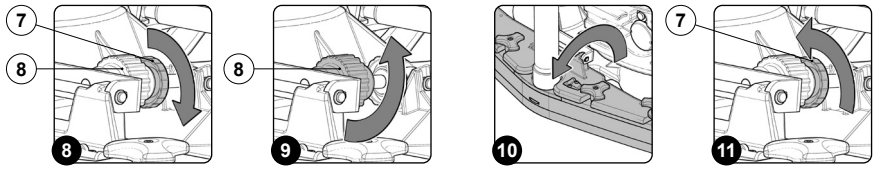
Adjusting the tilt of the squeegee body:

10. Loosen the stopper knob (7) for the squeegee's tilt adjustment knob (8) (**Fig.8**).
11. Adjust the tilt of the squeegee body's rubber blades in relation to the floor, tighten or loosen the knob (8) (**Fig.9**) until the squeegee body's rubber blades are bent outwards by about 30° in relation to the floor, in an even manner along their entire length.

***N.B.**: Figure 9 indicates the direction of rotation for tilting the squeegee towards the rear of the machine (**Fig.10**). Turn it in the opposite direction to rotate the squeegee towards the front of the machine.*

***N.B.**: Check for proper adjustment by looking at the instrument (9) positioned on the squeegee body (**Fig. 6**).*

12. Once the adjustment has been completed, tighten the stopper knob (7) (**Fig.11**).



ADJUSTING THE SCRUBBING BRUSH HEAD SIDE SPLASH GUARD

If the side splash guards of the brush head body are not positioned correctly they cannot do their work properly, namely convey the dirty detergent solution towards the squeegee, therefore the height of the splash guard needs to be adjusted.
This operation can be done with the brush head body in the work position, proceeding as follows:

1. Sit on the driver's seat.
2. Insert the key (1) into the main switch on the control panel. Set the main switch to "I" (**Fig.1**).
3. Using the knob (2) on the control panel (**Fig.2**), select the "SCRUBBING WITH DRYING" work program.
4. Press the drive pedal (3) (**Fig.3**) to begin moving the machine.

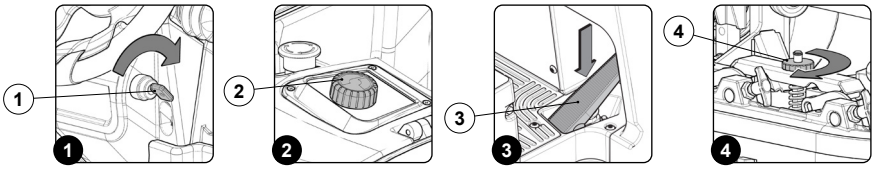
5. As soon as the brush head and the squeegee have reached their working positions, perform the procedure for securing the machine (see the chapter "MACHINE SAFETY MEASURES").

***CAUTION**: it is recommended to wear the appropriate PPE (Personal Protective Equipment) for the work to be carried out.*

6. Go to the front left-hand side of the machine.
7. Adjust the height of the splash guard with respect to the floor, tighten or loosen the knob (4) until the splash guard touches the floor along its entire length (**Fig.4**).

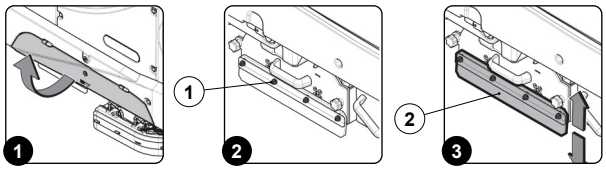
***N.B.**: Both the front and rear of the splash guard need to be at the same height off the floor.*

8. Repeat the operations just carried out also for the right side centre as well.



ADJUSTING THE SWEEPING BRUSH HEAD SIDE SPLASH GUARD

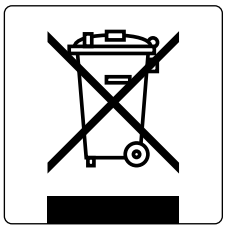
1. Go to the front left-hand side of the machine and lift the casing (**Fig. 1**).
2. Loosen the nuts (1) (**Fig.2**).
3. Adjust the height of the splash guard (2) in relation to the floor **(Fig.3**).
4. Ensure that the splash guard touches the floor along its entire length.
5. Tighten the nuts (1) (**Fig.2**).
6. Carry out the same operations to adjust the right splash guard.



DISPOSAL

To dispose of the machine, take it to a demolition centre or an authorised collection centre. Before scrapping the machine, it is necessary to remove and separate out the following materials, then send them to the appropriate collection centres in accordance with the environmental hygiene regulations currently in force:

- Brushes
- Felt
- Electric and electronic parts*
- Batteries.
- Plastic parts.
- Metallic parts.



(*) In particular, contact your distributor when scrapping electric and electronic parts.

CHOOSING AND USING BRUSHES

POLYPROPYLENE BRUSH (PPL)
Used on all types of floors. Good resistance to wear and tear, and hot water (no greater than 50°C.). PPL is non-hygroscopic and therefore retains its characteristics even when working in wet conditions.

ABRASIVE BRUSH
The bristles of this type of brush are charged with highly aggressive abrasives. It is used to clean very dirty floors. To avoid floor damage, work only with the pressure strictly necessary.

BRISTLE THICKNESS
Thicker bristles are more rigid and are therefore used on smooth floors or floors with small joints.
On uneven floors or those with deep joints, it is advisable to use softer bristles which can enter the gaps more easily.
Remember that when the bristles are worn and therefore too short, they will become rigid and are no longer able to penetrate and clean deep down. In this case, like with over-large bristles, the brush tends to jump.

PAD HOLDER
The pad holder is recommended for cleaning shiny surfaces.
There are two types of pad holder:

1. The traditional pad holder is fitted with a series of anchor points that allow the abrasive floor pad to be held and dragged while working.
2. the CENTRE LOCK type pad holder not only has anchor points, but also a snap-type central locking system in plastic that allows the abrasive floor pad to be perfectly centred and held without any risk of it becoming detached. This type of pad holder is recommended above all for machines with more than one brush, where the centring of the abrasive discs is difficult.

RED PAD
Suitable for frequent use on relatively clean floors. Even cleans without water, and polishes by removing marks.

GREEN PAD
Suitable for removing surface layers of wax and for preparing the flooring for subsequent treatments. For wet use.

BLACK PAD
Suitable for wet scraping heavy layers of wax. Removes the old finish, and eliminates burrs in concrete.

MACHINE	NO. OF BRUSHES	CODE	TYPE OF BRISTLES	Ø BRIS-TLES	Ø BRUSH-ES	NOTES
C120 Bi-Fuel	3	405562	PPL	0.3	430mm	BLUE BRUSH
	3	405563	PPL	0.6	430mm	WHITE BRUSH
	3	405564	PPL	0.9	430mm	BLACK BRUSH
	3	405565	ABRASIVE	-	430mm	GREY BRUSH
	3	421819	-	-	430mm	PAD HOLDER WITH CENTRE LOCK
	2	455430	PPL	0.3	PPL	CYLINDRICAL BRUSH

TROUBLESHOOTING

This chapter lists the most common problems linked with the use of the machine. If you are unable to resolve the problems with the information given here, please contact your nearest assistance centre.

PROBLEM	POSSIBLE CAUSE	SOLUTION
The machine does not start	The main switch is set to “0”	Make sure that the main switch is at "I", if not turn the key a quarter turn to right.
	Generator connector disconnected from the electrical system connector	Connect the generator connector to the electrical system connector of the machine
	Low quantity of fuel inside the tank	Refuel (read paragraph “REFUELLING”)
	LPG cylinder empty	Replace the LPG cylinder (read paragraph “LPG CYLINDER REPLACEMENT”)
	Starter battery flat	Contact the nearest assistance center to replace the starter battery
Detergent solution collection low or absent.	The squeegee rubber blades are worn.	Replace the squeegee body rubber blades; see “REPLACING THE SQUEEGEE BODY RUBBER BLADES”.
	The squeegee body is not properly adjusted.	Adjust the squeegee body; read the paragraph “ADJUSTING THE SQUEEGEE BODY RUBBER BLADES”.
	The squeegee body is clogged.	Clean the squeegee body; see “CLEANING THE SQUEEGEE BODY”.
	The vacuum tube is clogged.	Clean the vacuum tube; see “CLEANING THE VACUUM TUBE”.
	The vacuum tube is not connected correctly.	Connect the vacuum tube to the nozzle on the squeegee body and insert into the hole in the rear part of the recovery tank.
	The suction motor filter is obstructed.	Clean the suction motor filter; see “CLEANING THE RECOVERY TANK FILTERS”.
	The recovery tank cover is not closed correctly.	Tighten the hinges on the side of the recovery tank or check that there are no obstructions that prevent these from tightening.
The vacuum motor does not start.	Check which working program is in use.	Select one of the working programs from: SCRUBBING WITH DRYING or DRYING.
	Recovery tank full.	Empty the recovery tank, read the paragraph “EMPTYING THE RECOVERY TANK”.
	Recovery tank full of foam.	Empty the recovery tank, read the paragraph “EMPTYING THE RECOVERY TANK”.
		Use less detergent, or change the detergent type.
		Use an anti-foaming agent.

PROBLEM	POSSIBLE CAUSE	SOLUTION
The flow of detergent solution to the brushes is too low, or absent.	Solution tank empty.	Refill the solution tank; read the paragraph “FILLING THE SOLUTION TANK”.
	Detergent solution flow deactivated.	Turn the tap control lever to the ON position.
		Check the command display to ensure that the flow of detergent solution has not been reduced to zero.
	Detergent solution delivery lines clogged.	Rinse the machine water system.
	Water system filter clogged or blocked.	Rinse the filter cartridge, see “CLEANING THE WATER SYSTEM FILTER”.
Insufficient cleaning.	Debris trapped in the brushes.	Remove the debris from the brushes, see “CLEANING THE SCRUBBING BRUSH HEAD BODY BRUSHES”
	Incorrect type of brush for the work to be carried out.	Contact a Comac assistance centre for help in choosing the type of brush to be used for the work to be performed.
	Worn bristle of scrubbing brush head body brushes.	Replace the brushes; read the paragraph “REPLACING THE SCRUBBING BRUSH HEAD BRUSHES”.
	Excessive pressure on the brushes.	Reduce the power exerted on the brush head body.
	Sweeping brush head drawer full.	Emptying drawer, read paragraph "EMPTYING THE SWEEPING BRUSH HEAD BODY DRAWER".
	Worn sweeping brush head body brushes and side brushes bristles.	Replace the brushes, read the paragraph “REPLACING THE SWEEPING BRUSH HEAD BRUSHES AND SIDE BRUSHES”.

NOTES

NOTES

professional people

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