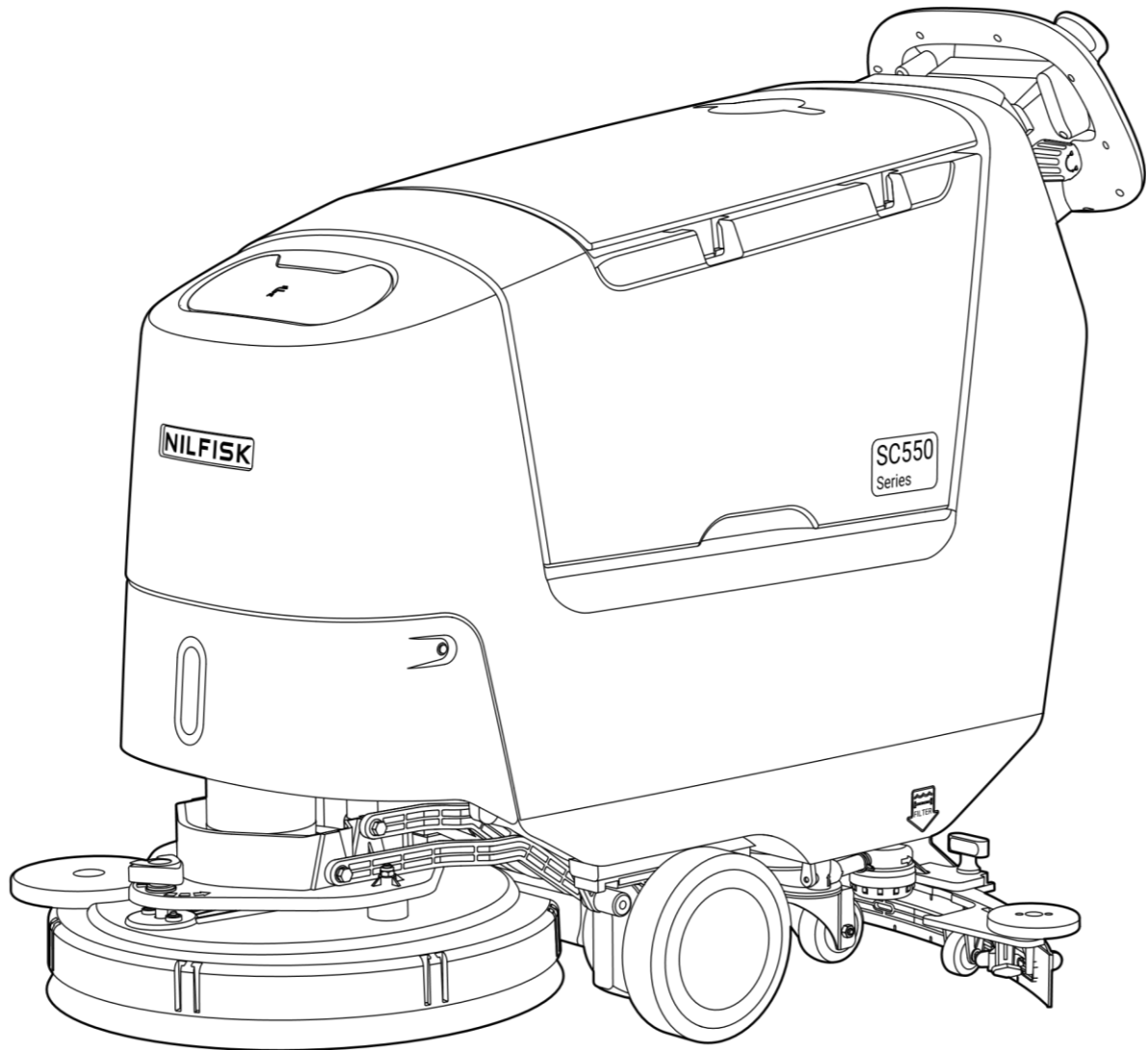


INSTRUCTIONS FOR USE

SC550 Series



55944900 (09.2024)

Models No.:
50000670, 50000671, 50000672, 50000673



NILFISK



FCC Supplier's Declaration of Conformity

47 CFR § 2.1077 Compliance Information

Unique Identifier: FC - Floor Scrubber/Sweeper - Battery

Type: SC550

Responsible Party – U.S. Contact Information:

Nilfisk, Inc
9435 Winnetka Ave N
Brooklyn Park
Minnesota
MN-55442
USA

www.nilfisk.com

FCC Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Users are not permitted to make changes or modify the device in any way. Changes or modifications not expressly approved by Nilfisk, Inc. will void the users authority to operate the equipment.

Brooklyn Park
Aug 1, 2024

A handwritten signature in black ink, appearing to read "Jamie O'Neill".

Jamie O'Neill
Senior Vice President, USFC Sales, EMEA Americas Sales



IC Supplier's Declaration of Conformity

ICES-Gen

Unique Identifier: FC - Floor Scrubber/Sweeper - Battery

Type: SC550

Responsible Party – Contact Information:

Nilfisk Canada Company
240 Superior Boulevard
Mississauga
Ontario
L5T 2L2
Canada

www.nilfisk.com

IC Compliance Statement

This device complies with Industry Canada ICES-003. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Mississauga
Aug 1, 2024

A handwritten signature in dark ink, appearing to read "SS", located below the date.

Steven Surtel
General Manager

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INTRODUCTION



The numbers in brackets refer to the components shown in Machine Description chapter.

MANUAL PURPOSE AND CONTENTS

The purpose of this Manual is to provide the operator with all necessary information to use the machine properly, in a safe and autonomous way. It contains information about technical data, safety, operation, storage, maintenance, spare parts and disposal. Before performing any procedure on the machine, the operators and qualified technicians must read this Manual carefully. Contact Nilfisk in case of doubts concerning the interpretation of the instructions and for any further information.

TARGET

This Manual is intended for operators and technicians qualified to perform the machine maintenance. The operators must not perform procedures reserved for qualified technicians. Nilfisk will not be answerable for damages coming from the non-observance of this prohibition.

HOW TO KEEP THIS MANUAL

The Instructions for Use Manual must be kept near the machine, inside an adequate case, away from liquids and other substances that can cause damage to it.

DECLARATION OF CONFORMITY

The Declaration of Conformity, supplied with the machine, certifies the machine conformity with the law in force.



NOTE

Two copies of the original declaration of conformity are provided together with the machine documentation.

IDENTIFICATION DATA

The machine serial number and model name are marked on the plate (14).
Year of production (Date code: A17 means January 2017) and model number are marked on the same plate.
This information is useful when requiring machine spare parts. Use the following table to write down the machine identification data.

Model
Model number
Serial number

OTHER REFERENCE MANUALS

- Electronic battery charger Manual, to be considered as integral part of this manual.
- Spare Parts List (supplied with the machine)
- Service Manual (that can be consulted at Nilfisk Service Centers)

SPARE PARTS AND MAINTENANCE

All necessary operating, maintenance and repair procedures must be performed by qualified personnel or by Nilfisk Service Centers. Only original spare parts and accessories must be used.
Contact Nilfisk for service or to order spare parts and accessories, specifying the model name, model number and serial number.

CHANGES AND IMPROVEMENTS

Nilfisk constantly improves its products and reserves the right to make changes and improvements at its discretion without being obliged to apply such benefits to the machines that were previously sold.
Any change and/or addition of accessory must be approved and performed by Nilfisk.

OPERATION CAPABILITIES

The SC550 scrubber-dryer is used to clean (scrubbing and drying) smooth and solid floors, in commercial or industrial environment, under safe operation conditions by a qualified operator.
The scrubber-dryer cannot be used for fitted carpet and carpet cleaning.

CONVENTIONS

Forward, backward, front, rear, left or right are intended with reference to the operator's position, that is to say in driving position with the hands on the handlebar (15).

UNPACKING/DELIVERY

To unpack the machine, carefully follow the instructions on the packing.

When the machine is delivered, check that the packing and the machine were not damaged during transportation.

In case of visible damages, keep the packing and have it checked by the carrier that delivered it. Call the carrier immediately to fill in a damage claim.

Please check that the following items have been supplied with the machine:

Technical documents:

- Scrubber-dryer Instructions for Use Manual and Spare Parts List
(You can also scan the QR code on the right to obtain it.)
- Electronic battery charger manual (if installed)



WARNING!

The Products sold with this Manual contain or may contain chemicals that are known to certain governments (such as the State of California, as identified in its Proposition 65 Regulatory Warning Law) to cause cancer, birth defects or other reproductive harm. In certain locations (including the State of California) purchasers of these Products that place them in service at an employment job site or a publicly accessible space are required by regulation to make certain notices, warnings or disclosures regarding the chemicals that are or may be contained in the Products at or about such work sites. It is the purchaser's responsibility to know the content of, and to comply with, any laws and regulations relating to the use of these Products in such environments. The Manufacturer disclaims any responsibility to advise purchasers of any specific requirements that may be applicable to the use of the Products in such environments.

SAFETY

The following symbols indicate potentially dangerous situations. Always read this information carefully and take all necessary precautions to safeguard people and property.

The operator's cooperation is essential in order to prevent injury. No accident prevention program is effective without the total cooperation of the person responsible for the machine operation. Most of the accidents that may occur in a factory, while working or moving around, are caused by failure to comply with the simplest rules for exercising prudence. A careful and prudent operator is the best guarantee against accidents and is essential for successful completion of any prevention program.

VISIBLE SYMBOLS ON THE MACHINE



WARNING!

Read all the instructions carefully before performing any operation on the machine.



WARNING!

Do not wash the machine with direct or pressurized water jets.



WARNING!

Do not use the machine on slopes with a gradient exceeding that is defined in the specification.

SYMBOLS THAT APPEAR ON THIS MANUAL**DANGER!**

It indicates a dangerous situation with risk of death for the operator.

**WARNING!**

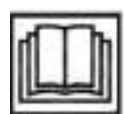
It indicates a potential risk of injury for people.

**CAUTION!**

*It indicates a caution or a remark related to important or useful functions.
Pay attention to the paragraphs marked by this symbol.*

**NOTE**

It indicates a remark related to important or useful functions.

**CONSULTATION**

It indicates the necessity to refer to the Instruction for Use manual before performing any procedure.

GENERAL INSTRUCTIONS

Specific warnings and cautions to inform about potential damages to people and machine are shown below.

**DANGER!**

- Before performing any maintenance, repair, cleaning or replacement procedure, turn off the machine and disconnect the battery connector.
- This machine must be used by properly trained operators only.
- Do not wear jewels when working near electrical components.
- Do not work under the lifted machine without supporting it with safety stands.
- Do not operate the machine near toxic, dangerous, flammable and/or explosive powders, liquids or vapors. This machine is not suitable for collecting dangerous powders.
- When using lead (WET) batteries, keep sparks, flames and smoking materials away from the batteries. During the normal operation explosive gases are released.
- When using lead (WET) batteries, battery charging produces highly explosive hydrogen gas. During battery charging, lift the recovery tank and perform this procedure in well-ventilated areas and away from naked flames.
- Keep the battery away from sparks, flames and incandescent material. During the normal operation explosive.
- Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electrical shock, fire and/or serious injury.
-

**WARNING!**

- Carefully read all the instructions before performing any maintenance/repair procedure.
- Do not use any other type of batteries; only use the one supplied with the machine or its original spare part.
- Before each use, check if the machine is damaged.
- Do not soak in liquids.
- Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.

- When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.
- Do not use a battery pack or appliance that is damaged or modified. Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.
- Follow all charging instructions and do not charge the battery pack or appliance outside of the temperature range specified in the instructions. Charging improperly or at temperatures outside of the specified range may damage the battery and increase the risk of fire.
- Do not expose a battery pack or appliance to fire or excessive temperature. Exposure to fire or temperature above 130°C may cause explosion.
- Have servicing performed by a qualified repair person using only identical replacement parts. This will ensure that the safety of the product is maintained.
- Do not modify or attempt to repair the battery.
- Do not store, use or recharge in environments with a temperature higher than 45°C.
- Do not recharge with temperatures lower than 0°C.
- Due to the risk of short-circuit, do not store the battery with metal objects.
- If the battery is damaged, take it to a Nilfisk Service Centre.
- Before decommissioning the machine, remove the battery.
- Store the battery charger in a dry place.
- If the battery charger or the cable are wet, do not use it.
- Do not use the battery charger in environments where there are flammable powders and/or explosive materials.
- Do not cover the battery charger.
- Always use the battery charger supplied with the machine or the original spare part. Firstly, turn off the machine. And then disconnect the battery pack from the appliance before making any adjustments, changing accessories, or storing appliance. Such preventive safety measures reduce the risk of starting the appliance accidentally.
- Use appliances only with specifically designated battery packs. Use of any other battery packs may create a risk of injury and fire.
- Keep the battery pack, including the ventilation channels and contact areas clean from dirt and moisture.
- Avoid that dirt and moisture is getting inside the battery pack during cleaning.
- Before using the battery charger, ensure that frequency and voltage values, indicated on the machine serial number plate, match the electrical mains voltage.
- Do not pull or carry the machine by the battery charger cable and never use the battery charger cable as a handle. Do not close a door on the battery charger cable, or pull the battery charger cable around sharp edges or corners. Do not run the machine on the battery charger cable.
- Keep the battery charger cable away from heated surfaces.
- Do not use the machine if the battery charger cable or plug is damaged. If the machine is not working as it should, has been damaged, left outdoors or dropped into water, return it to the Service Center.
- To reduce the risk of fire, electric shock, or injury, before performing any maintenance procedure, disconnect the battery charger cable from the electrical mains.
- Do not smoke while charging the battery.
- Always protect the machine against the sun, rain and bad weather, both under operation and inactivity condition. This machine must be used and stored indoors in dry conditions, it must not be used or kept outdoors in wet conditions.
- Before using the machine, close all doors and/or covers as shown in the Instructions for User Manual.
- This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.
- Children should be supervised to ensure that they do not play with the machine.
- Close attention is necessary when used near children.
- Use only as shown in this Manual. Use only Nilfisk's recommended accessories.
- Check the machine carefully before each use, always check that all the components have been properly assembled before use. If the machine is not perfectly assembled it can cause damages to people and properties.
- Take all necessary precautions to prevent hair, jewels and loose clothes from being caught by the machine moving parts.
- Do not use the machine on slopes with a gradient exceeding that is defined in the specification.
- Do not tilt the machine more than the angle indicated on the machine itself, in order to prevent instability.
- Do not use the machine in particularly dusty areas.
- Use the machine only where a proper lighting is provided.
- While using this machine, take care not to cause damage to people or objects.
- Do not bump into shelves or scaffoldings, especially where there is a risk of falling objects.
- Do not lean liquid containers on the machine, use the relevant can holder.
- The machine working temperature must be between 0 °C and +40 °C.
- The machine storage temperature must be between 0 °C and +40 °C.
- The humidity must be between 30% and 95 %.
- When using floor cleaning detergents, follow the instructions on the labels of the detergent bottles.
- To handle floor cleaning detergents, wear suitable gloves and protections.
- Do not use the machine as a means of transport.
- Do not allow the brush to operate while the machine is stationary to avoid damaging the floor.

- *In case of fire, use a powder fire extinguisher, not a water one.*
- *Do not tamper with the machine safety guards and follow the ordinary maintenance instructions scrupulously.*
- *Do not allow any object to enter into the openings. Do not use the machine if the openings are clogged. Always keep the openings free from dust, hairs and any other foreign material which could reduce the air flow.*
- *Do not remove or modify the plates affixed to the machine.*
- *To manually move the machine, the electromagnetic brake must be disengaged. After moving the machine manually, engage the electromagnetic brake again. Do not use the machine when the electromagnetic brake handwheel is screwed down.*
- *When the machine is to be pushed for service reasons (missing or discharged batteries, etc.), the speed must not exceed 4 km/h.*
- *This machine cannot be used on roads or public streets.*
- *Pay attention during machine transportation when temperature is below freezing point. The water in the recovery tank or in the hoses could freeze and seriously damage the machine.*
- *Use only the brushes supplied with the machine or those specified in the Instructions for Use Manual. Using other brushes could reduce safety.*
- *In case of machine malfunctions, ensure that these are not due to lack of maintenance. If necessary, request assistance from the authorised personnel or from an authorised Service Center.*
- *If parts must be replaced, require ORIGINAL spare parts from an Authorised Dealer or Retailer.*
- *To ensure machine proper and safe operation, the scheduled maintenance shown in the relevant chapter of this Manual, must be performed by the authorised personnel or by an authorised Service Center.*
- *Do not wash the machine with direct or pressurised water jets, or with corrosive substances.*
- *The machine must be disposed of properly, because of the presence of toxic-harmful materials (batteries, etc.), which are subject to standards that require disposal in special centres (see Scrapping chapter).*
- *This machine is only to be used with the power supply unit provided with the appliance.*
- *The machine must only be supplied at safety extralow voltage corresponding to the marking on the appliance.*
- *This machine is intended for commercial use, for example in hotels, schools, hospitals, factories, shops, offices and rental businesses.*
- *Operators shall be adequately instructed on the use of these machines.*
- *Observe the Gross Vehicle Weight, GVW, of the machine when loading, driving, lifting or supporting the machine.*
- *Do not look at the laser beams used by the machine. Permanent eye damage could result. Lasers are eye-safe if viewed briefly, such as to determine that they are functioning. Do not look directly into lasers or stare at them without wearing protective laser safety glasses.*
- *In order to prevent unauthorized use of the machine, the power source shall be switched off or locked, for example by turn off the machine.*
- *Machines left unattended shall be secured against unintentional movement.*

Nilfisk products approved against 61000-6-8 shall include below statements in the manual:

This equipment meets the requirements for commercial and light-industrial locations when professionally installed and maintained.

Installation and maintenance shall be performed by an EMC professional.

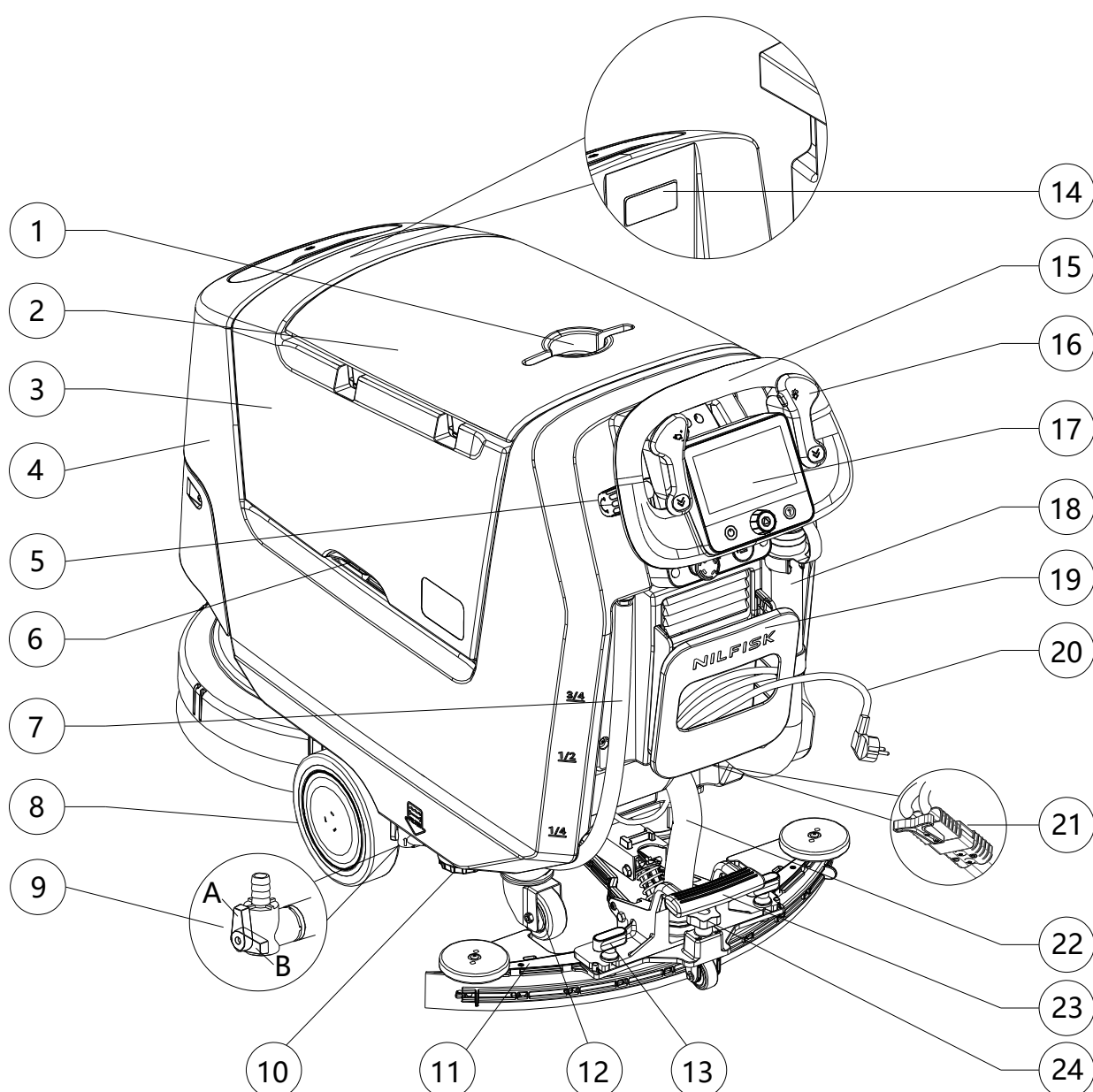
The professional installer shall evaluate the EMC situation before installation, if the equipment is installed closer than 30 m to a residential location.

Caution: This equipment is not intended for use in residential locations and will not guarantee to provide adequate protection to radio reception in such locations.

MACHINE DESCRIPTION

MACHINE STRUCTURE

1. Can holder
2. Recovery tank cover
3. Recovery tank
4. Solution tank
5. Handlebar lock knob (T)
6. Tank lifting handle
7. Solution drain and level check hose
8. Front driving wheels
9. Solution valve:
 - A) Open valve (T)
 - B) Closed valve (T)
10. Solution filter (T)
11. Squeegee
12. Rear pivoting wheels
13. Squeegee mounting handwheels (T)
14. Serial number plate/technical data/conformity certification
15. Drive handlebar
16. Forward/reverse gear and activation paddle
17. Control panel
18. Recovery water drain hose (T)
19. Battery charger cable housing and document holder
20. Battery charger cable
21. Battery connector (red).
22. Squeegee vacuum hose
23. Squeegee lifting/lowering pedal
24. Squeegee adjusting knob (T)
- (T) Touch point with blue color

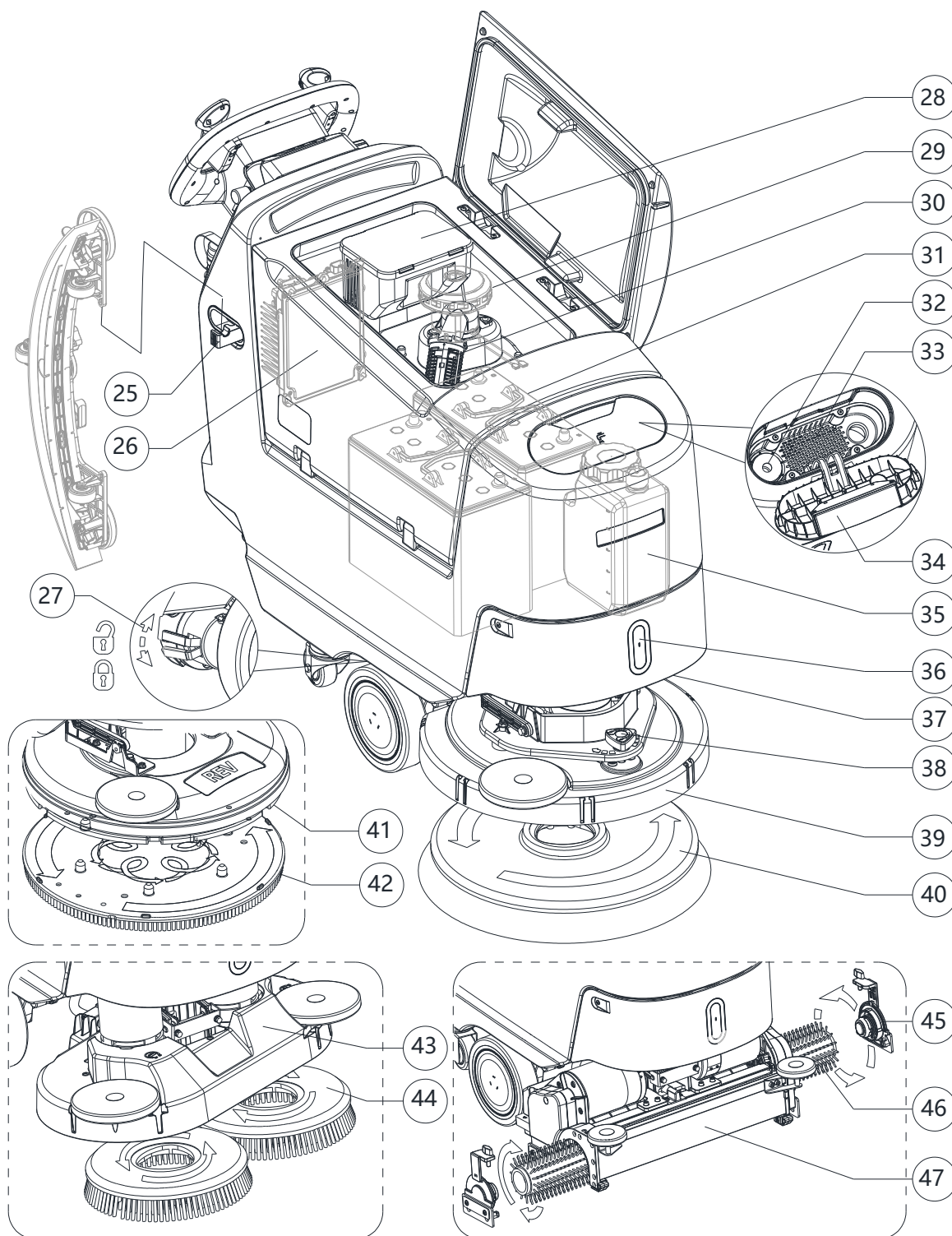


MACHINE STRUCTURE (Continues)

- 25. Squeegee hook (T)
- 26. Battery charger
- 27. Electromagnetic brake locking/unlocking lever
- 28. Debris collection tank (T)
- 29. Vacuum system motor
- 30. Vacuum grid with automatic shut-off float
- 31. Batteries
- 32. Water removable filler hose (T)
- 33. Solution tank front filler
- 34. Solution tank front filler cap (T)
- 35. EcoFlex detergent canister
- 36. Front light/Front light with laser (*)
- 37. Front panel
- 38. Straight forward movement adjusting knob

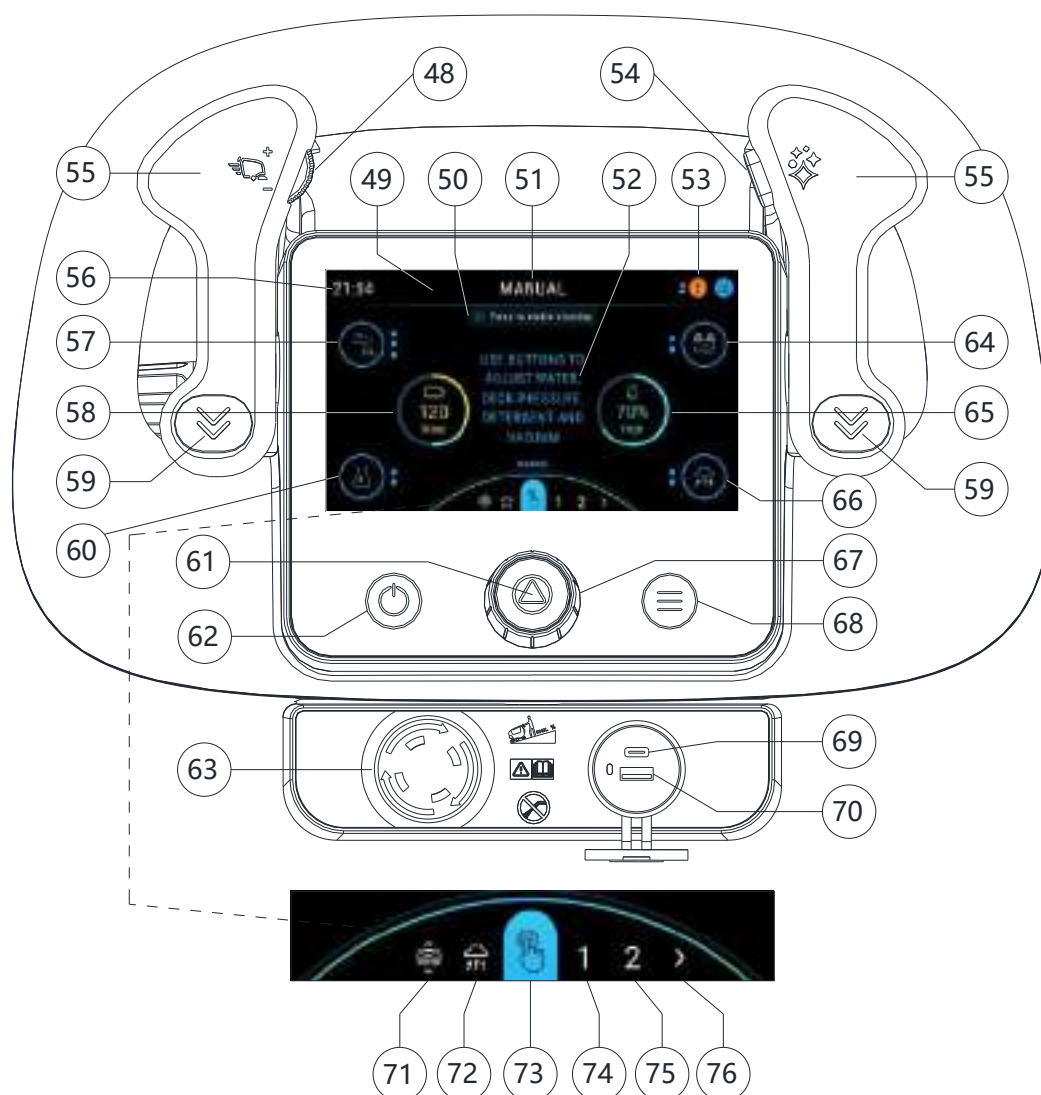
- 39. Disc brush deck
- 40. Single disc brush
- 41. REV deck (R)
- 42. REV brush (R)
- 43. Dual disc brush deck (D)
- 44. Dual disc brush (D)
- 45. Cylindrical brush side hook (C)
- 46. Cylindrical brush (C)
- 47. Cylindrical brush deck (C)

- (*) Optional for BASIC version
- (R) For REV version only
- (D) For Dual disc version only
- (C) For Cylindrical version only
- (T) Touch point with blue color



CONTROL PANEL

- | | |
|--|---|
| 48. Speed control dial (T) | 64. Deck pressure button (Only in manual mode) |
| 49. Header | 65. Water level graphic |
| 50. Prompts area | 66. Vacuum button (Only in manual mode and vacuum mode) |
| 51. Preset name | 67. Smart dial (T) |
| 52. Information area | 68. Menu button |
| 53. Status area | 69. Type-C |
| 54. Burst of power button (T) | 70. USB-A |
| 55. Forward paddle | 71. Brush click on / off mode (Brush disc machine only) |
| 56. Clock | 72. Vacuum only mode |
| 57. Water level button (Only in manual mode) | 73. Manual mode |
| 58. Battery level graphic | 74. Presets mode 1 |
| 59. Reverse paddle | 75. Presets mode 2 |
| 60. Detergent level button (Only in manual mode) | 76. More presets |
| 61. Start / stop / select button | |
| 62. Power button | |
| 63. Emergency stop button | |
- (T) Touch point with blue color



ACCESSORIES/OPTIONS

In addition to the standard components, the machine can be equipped with the following accessories/options, according to the machine specific use:

- | | |
|------------------------------------|----------------------------|
| – GEL batteries / Li-ion batteries | – Splash guard |
| – Electronic battery charger | – Other blades material |
| – Brushes of different materials | – EcoFlex |
| – Pads of different materials | – Automatic filling system |
| – Connectivity device | – FOB KIT |
| – Caddy | – Mop holder |

For further information concerning the optional accessories, contact an authorised Retailer.

TECHNICAL DATA

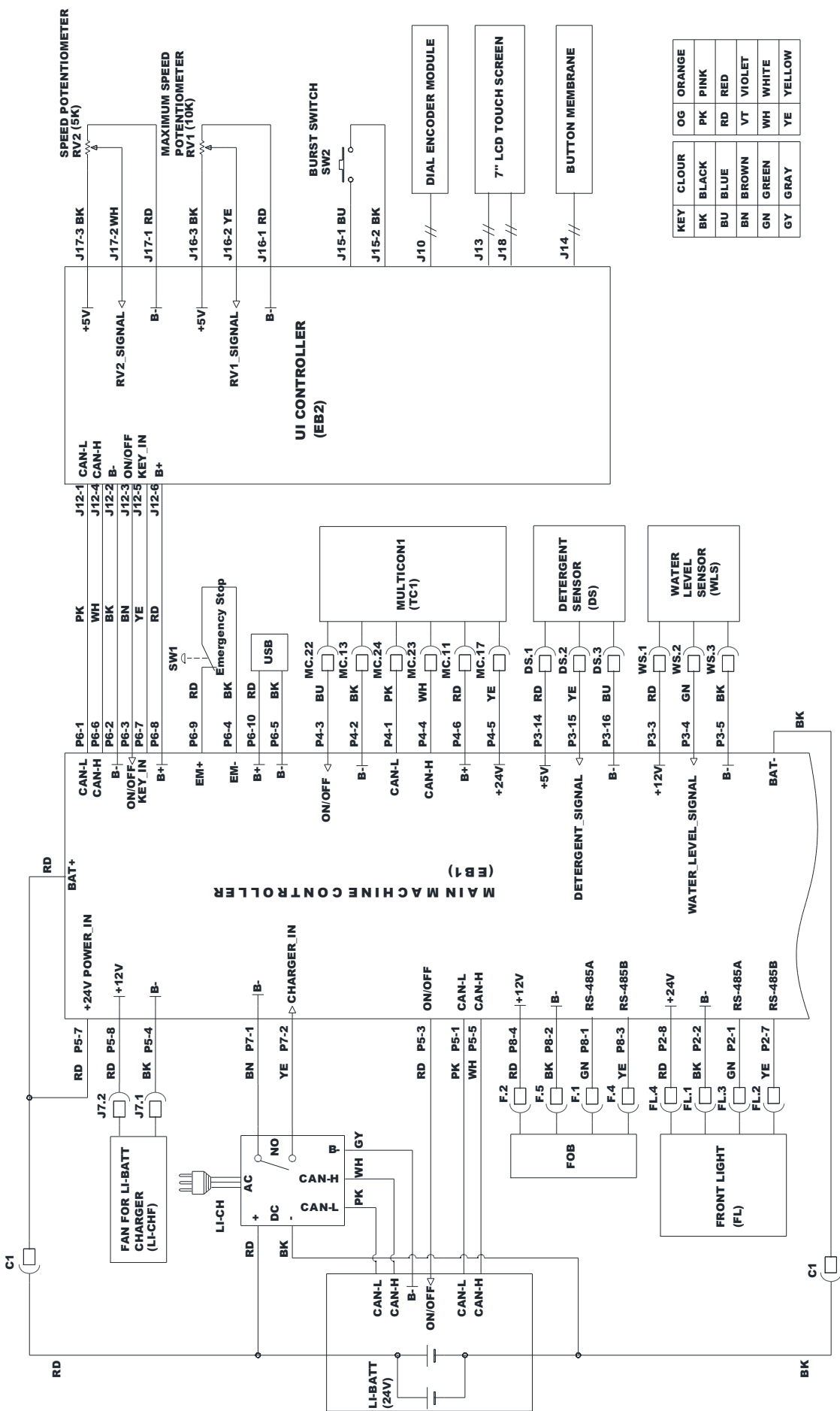
Model	SC550 20D	SC550 24D	SC550 20C	SC550 20R
Solution tank	13.2 US gal (50 liters)			
Recovery tank	13.2 US gal (50 liters)			
Machine dimensions (L x w x h)	52.36x21.3x41.3 in (1330x540x1050 mm)	52.8x26.8x41.3 in (1340x680x1050 mm)	50.8x23.2x41.3 in (1290x590x1050 mm)	53.5x21.3x41.3 in (1360x540x1050 mm)
Squeegee width	29in (730mm)	32 in (810mm)		29in (730mm)
Scrubbing width	21 in/20 in (530 mm/508 mm)	24 in (610 mm)	20 in (508 mm)	20 in (508 mm)
Driving wheel diameter	7.8 in (200 mm)			
Max Driving wheel specific pressure on the floor (GVW)	75 psi (0.52 N/mm2)	74 psi (0.51 N/mm2)	73 psi (0.5 N/mm2)	71 psi (0.49 N/mm2)
Rear wheel diameter	3.2 in (80 mm)			
Max Rear wheel specific pressure on the floor (GVW)	297 psi (2.05 N/mm2)	203 psi (1.4 N/mm2)	280 psi (1.93 N/mm2)	284 psi (1.96 N/mm2)
Brush pressure stand/max	33 lb/66 lb (15 kg/30 kg)	55 lb /66 lb (25 kg/30 kg)	48.5 lb (22 kg)	48.5 lb /66 lb (22 kg/30 kg)
Solution flow values	0,75/1,5/3,0 cl/meter	0,90/1,8/3,6 cl/meter	1,0/1,83/2,8 cl/meter	0,38/0,75/1,5 cl/meter
Solution full flow mode	0.98 gpm (3,7 liter/minute)			
EcoFlex system detergent percentage	Ratio 1:400 ÷ 1:33 (0.25 % ÷ 3 %)			
Sound pressure level at workstation (ISO 11201, ISO 4871, EN 60335-2-72) (LpA) Normal mode/ Silent mode	63±3 dB(A)/ 56±3 dB(A)	65±3 dB(A) / 61±3 dB(A)	65±3 dB(A)/ 59±3 dB(A)	65±3 dB(A) / 62±3 dB(A)
Machine sound power level (ISO 3744, ISO 4871, EN 60335-2-72) (LwA) Normal mode/ Silent mode	75 dB(A) / 71dB(A)	80 dB(A) / 75 dB(A)	77 dB(A) / 76 dB(A)	78 dB(A) / 77 dB(A)
Vibration level at the operator's arms (ISO 5349-1, EN 60335-2-72)	< 98.4 in/s2 (< 2.5 m/s2)			
Maximum gradient when working (*1)	10 %			
Drive system motor power	24V/0.27 hp (24V/200 W)			
Driver speed	0 - 3.1 mi/h (0 - 5 km/h)			
Vacuum motor	24V/0.48 hp (24V/350 W)			
Vacuum system circuit capacity	Normal: 29.9 in H ₂ O (760 mm H ₂ O) Silent: 16.1 in H ₂ O (410 mm H ₂ O)			
Brush motor	24V/0.6 hp (24V/450 W)	(2x) 24V/0.6 hp ((2x) 24V/450 W)	(2x) 24V/0.4 hp ((2x) 24V/300 W)	24V/0.48 hp (24V/350 W)
Brush speed	120 rpm	120 rpm	600 rpm	-
Rated power input (W)(*2)	1.1 hp (830 W)	0.85 hp (630 W)	0.9 hp (680 W)	0.76 hp (560 W)
IP protection class	X4			
Protection class (electric)	III			
Battery compartment size (L x w x h)	13.8x13.8x10.2 in (350x350x260 mm)			
System voltage	24V			
Li-ion Standard batteries 50Ah*1	24V 50Ah			
Li-ion Battery charger	24V 27.1A			
Li-ion 50Ah Max. running time (*) ECO mode (50Ah 1pcs)	3.7 hour	3.4 hour	3.6 hour	3.8 hour
Li-ion 50Ah Max. running time (*) Normal mode (50Ah 1pcs)	3.6 hour	3 hour	2.8 hour	3.2 hour
Weight without batteries and with empty tanks	231 lb (105 kg)	254 lb (115 kg)	245 lb (111kg)	234 lb (106 kg)
Gross vehicle weight with Li-ion Battery (50Ah) (GVW)	381 lb (173 kg)	403 lb (183 kg)	395 lb (179 kg)	384 lb (174 kg)
Shipping weight with Li-ion Battery (50Ah) (full package)	326 lb (148 kg)	348 lb (158 kg)	340 lb (154 kg)	329 lb (149 kg)

(*) Values reflect standard operating conditions (EN 60335-2-72)

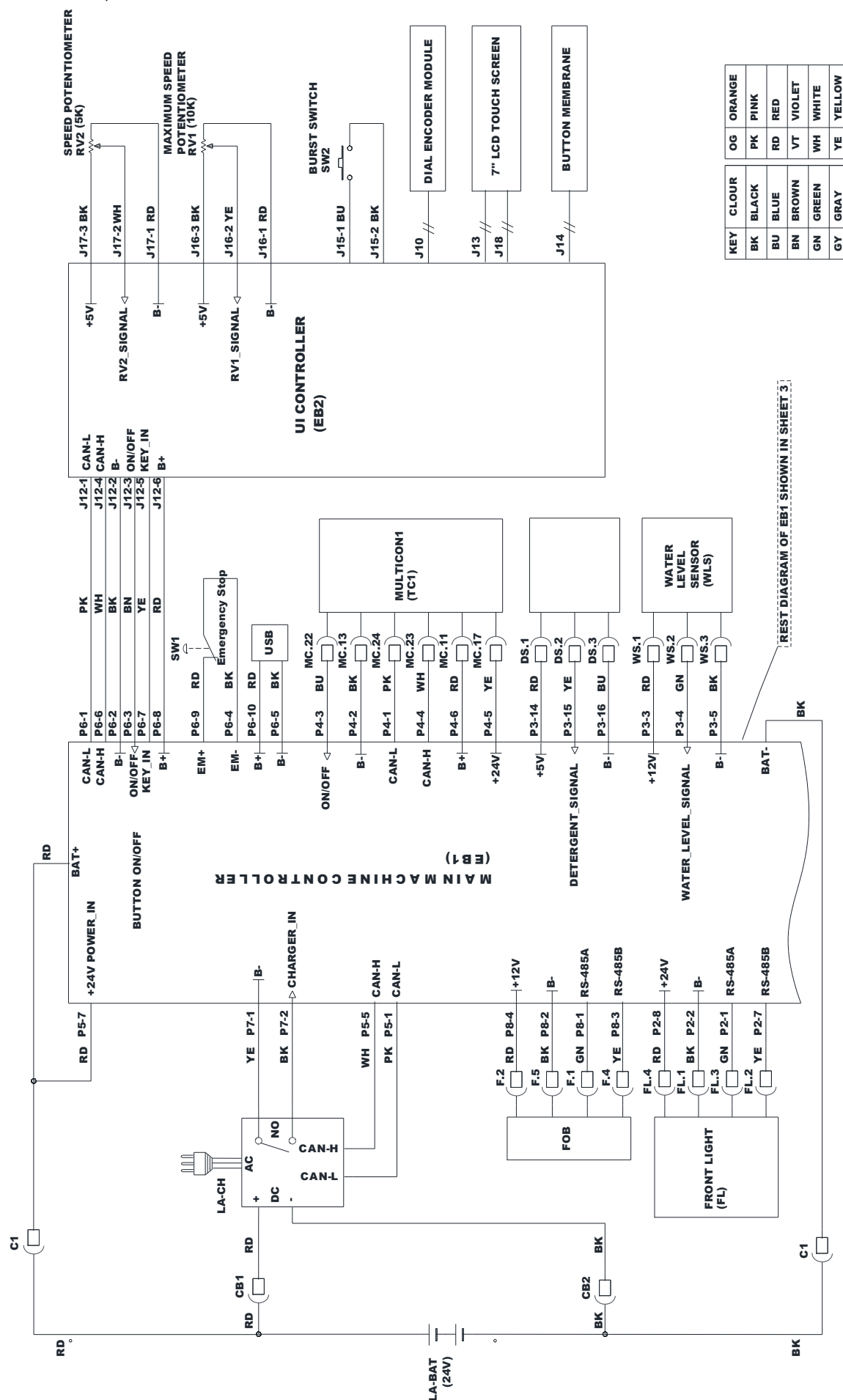
(*1) The maximum length of continuous use on the slope shall be less than 20 meters.

WIRING DIAGRAM

(LI-ION BATTERY SYSTEM)



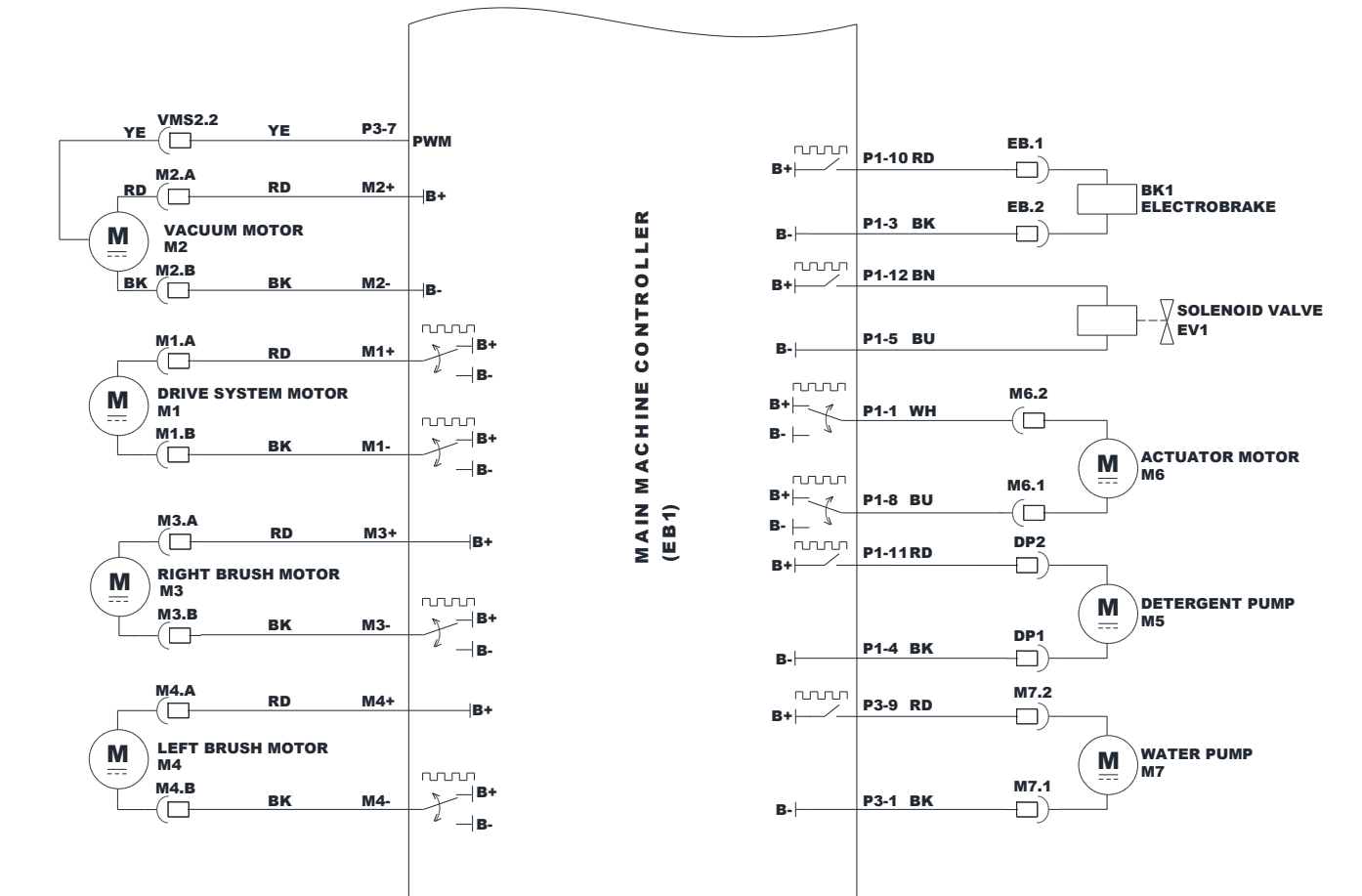
(LEAD BATTERY SYSTEM)



KEY	COLOR	OG	ORANGE
BK	BLACK	PK	PINK
BU	BLUE	RD	RED
BN	BROWN	VT	VIOLET
GN	GREEN	WH	WHITE
GY	GRAY	YE	YELLOW

REST DIAGRAM OF EB1 SHOWN IN SHEET 3

WIRING DIAGRAM
(COMMON PARTS)



Key	
LI-BAT	LI-ION BATTERY (24V 50Ah) SIP
LI-CH	LI-ION BATTERY CHARGER 24V 27A SIP
LI-CHF	DC FAN SIP
LA-BAT	LEAD BATTERY
LA-CH	LEAD BATTERY CHARGER
FOB	FOB KIT
FL	FRONT LIGHT W LASER SIP
	FRONT LIGHT SIP
EB1	MAIN MACHINE CONTROLLER SIP
EB2	UI MODUL SIP
TC1	CONNECTIVITY DEVICE
DS	DETERGENT LEVEL SENSOR SIP
WLS	SENSOR WATER LEVEL SIP
RV1	PADDLE F SPEED ADJUST KIT
RV2	POTENTIOMETER 5K SIP
M3	MOTOR ELECTRIC 350W 24V SIP
	REDUCTION GEARMOTOR 450W 24V SIP
	REDUCTION GEARMOTOR 450W 24V SIP
	CYL MOTOR 24V 300W 1500RPM SIP
Colour codes	
BK	BLACK
BU	BLUE
BN	BROWN
GN	GREEN
GY	GRAY
OG	ORANGE

M4	REDUCTION GEARMOTOR 450W 24V SIP
	CYL MOTOR 24V 300W 1500RPM SIP
M1	TRACTION MOTOR 24V 200W KIT
M2	VACUUM MOTOR BLDC 24V 350W SIP
M5	PUMP DETERG. MIX PERISTALTIC 24V SIP
	ACTUATOR 24V 550N 105MM SIP
M6	ACTUATOR LINEAR 24V DC STRK 120MM SIP
	ACTUATOR LINEAR 24V DC STRK 98MM SIP
M7	SOLUTION PUMP 24V 3.8L/MIN 40PSI SIP
EV1	SOLENOID VALVE 24V SIP
BK1	ELECTROMAGNETIC BRAKE SIP
USB	USB PORT SIP
DIAL ENCODER MODULE	UI MODUL SIP
BUTTON MEMBRANE	UI MODUL SIP
7" LCD TOUCH SCREEN	UI MODUL SIP
SW1	SWITCH EMERGENCY KIT
SW2	PADDLE F HIGH PERFORMANCE KIT
PK	PINK
RD	RED
VT	VIOLET
WH	WHITE
YE	YELLOW

USE/OPERATION



WARNING!

On some points of the machine there are some adhesive plates indicating:

- **DANGER**
- **WARNING**
- **CAUTION**
- **CONSULTATION**

While reading this Manual, the operator must pay particular attention to the symbols shown on the plates (see Visible Symbols on The Machine paragraph).

Do not cover these plates for any reason and immediately replace them if damaged.

NEW USER CREATION AND LOGIN INTERFACE

1. When the machine is first activated, the machine will guide the creation of a "SUPERVISOR USER" account. This is the highest authority of the machine, and the operator must complete the creation of this account to proceed to the next step. "SUPERVISOR USER" can create more users in the settings/ user access interface. (see the MENU INTERFACE paragraph in Maintenance chapter)
 - "TRAINEE USER" password (0000) For first time use / new operator. Main difference is starts in training mode with all pop ups enabled.
 - "BASIC USER" password (Creating by "SUPERVISOR USER") For general user, only presets enabled by supervisor are available. (No manual mode available).
 - "ADVANCED USER" password (Creating by "SUPERVISOR USER") Manual mode available. Ability to change detergent ratios / settings.
 - "SUPERVISOR USER" password (Create when the machine is first activated or creating by exist "SUPERVISOR USER") All settings and presets setups available, ability to add new users, change deck configuration, change batteries etc.
2. After restarting the machine, the machine will enter the password login interface shown in Figure 1, then enter your password to start the machine.



Figure 1

BATTERY CHECK/SETTING ON A NEW MACHINE



WARNING!

The electric components of the machine can be seriously damaged if the batteries are either improperly installed or connected.

The batteries must be installed by qualified personnel only.

Check the batteries for damage before installation.

Handle the batteries with great care.

LI-ION BATTERY VERSION: The machine requires at least a 24 V battery, connected according to the diagram shown in Figure 2.

LEAD BATTERY VERSION :The machine requires 2 12 V batteries, connected according to the diagram shown in Figure 3.

Batteries already installed on the machine

1. Ensure that the battery connector (21) is connected.
2. When first using the machine with new batteries, perform a full charging cycle (see the procedure in Maintenance chapter).

BATTERY INSTALLATION



DANGER!

This machine requires sealed exclusive use Li-ion battery.

Li-ion Battery Installation

1. Turn off the machine with start/stop button (62).
2. Disconnect the battery connector (21).
3. Lift the cover (2) and check that the recovery tank (3) is empty; if not, empty it using the drain hose (18).
4. Close the cover (2).
5. Grasp the handle (6) and carefully lift the tank (3).
6. Loosen the screws to take down the box cover (if have).
7. Operator must disconnect the positive terminal first, second the control cable and then disconnect negative terminal on the battery and lift the battery up a little then can pull it out in the left or right side.
8. Replace the new battery to the machine and reconnect the terminals and control cable to the battery.

DANGER!



For 24V 64Ah Li-ion battery, pay special attention when connecting the battery pins. The black cable must be connected to the negative pin (-) of the battery first, then the control cable and then the red cable must be connected to the positive pin (+). A wrong connection or sequence can damage the battery.

9. Close the box cover and re-lock the screws which are loosened before and then close the cover.

Battery Charging

10. Fully charge the batteries (see the procedure in Maintenance chapter).

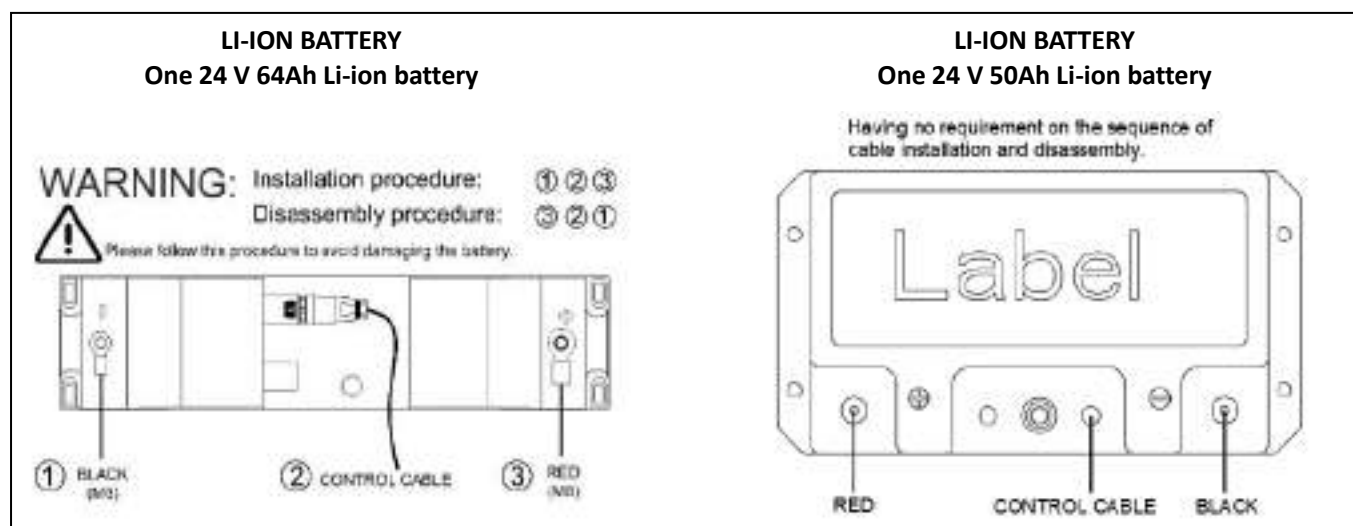


Figure 2

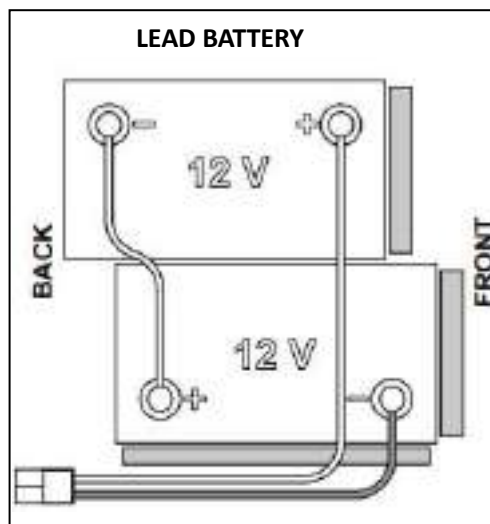


Figure 3

BEFORE MACHINE START-UP**WARNING!**

When starting the machine, make sure that there is no foreign material between the deck and the tank assembly which could obstruct the deck movement. If the machine has been turned off without lifting the deck, the deck would lift automatically at next machine start-up.

Brush or pad-holder removal/installation (Brush disc system)

According to the kind of cleaning to be performed, the machine can be equipped either with the brush (A, Fig. 4) or the pad-holder (B) with pad (C) together with the appropriate deck.

1. Place the brush (A) or the pad-holder (B) under the brush deck (39) / Dual disc deck (43).
2. Press start/stop button (62) and enter password to start machine. Roto dial button (67) to select brush click on/off mode (71), press dial button (61) to confirm.



3. Press the Attach brush(es) button on the screen to lower the deck onto the brush.
4. Brush motors rotate automatically until the brush is engaged.

**CAUTION!**

Make sure the brush is placed directly below and repeat the procedure if it does not install smoothly. Swaying the machine slightly from side to side according to the brush position can improve the success rate of automatic installation.

5. To remove the brush, the deck must be lifted and roto dial button (67) to select brush click on/off mode. Press dial button (61)



to confirm. Press the Release brush(es) button. The brush will run for a few seconds and stop, wait until the brush is lowered onto the floor.

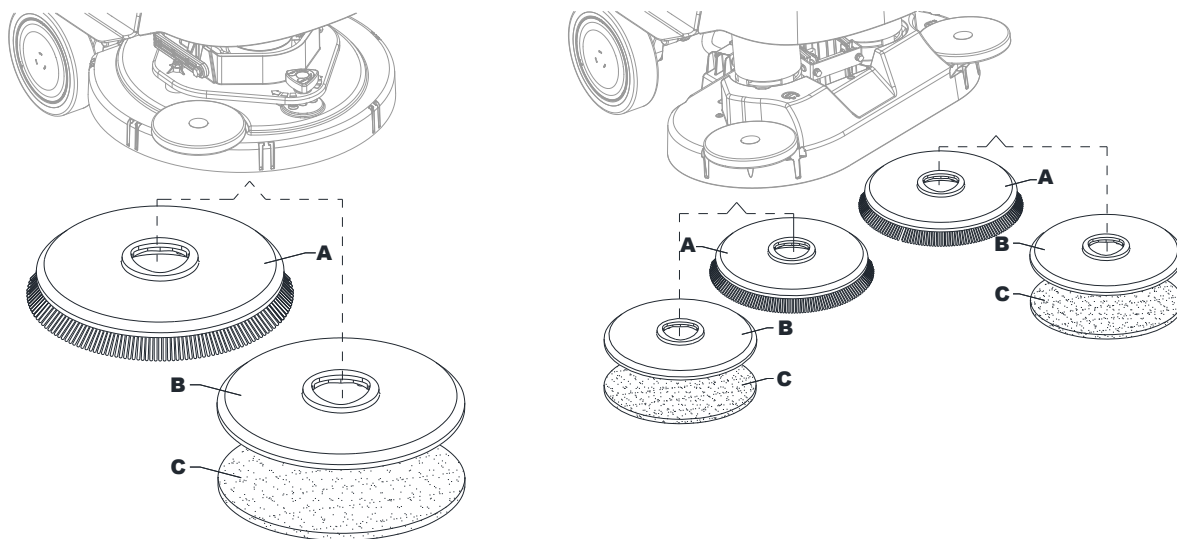


Figure 4

Available brushes and their relevant application guides (suggestions only)

Models	46 GRIT	80 GRIT	180 GRIT	240 GRIT	500 GRIT	PROLENE	PROLITE	UNION MIX
General cleaning:								
Concrete								
Terrazzo floor								
Ceramic tiles/quarrystones								
Marble								
Vinyl tiles								
Rubber tiles								
Polishing:								
Rubber tiles								
Marble								
Vinyl tiles								

Pad-holder removal/installation (REV system)

1. Make sure that the REV deck (41) is lifted.
2. Turn off the machine with the start/stop button (62).
3. According to the kind of cleaning to be performed, install the pad (A, Fig. 5) or the brush (C, optional) and note the following:
 - Place the pad (A) under the deck and press it until it is fastened with the Velcro of the drive disc (B).
 - Place the brush (C, optional) under the deck, and then match the centering pins (D) to the respective holes of the drive disc (B), and then engage the brush with the three mounting screws (E).
4. To remove the pad or brush, proceed in the reverse order.

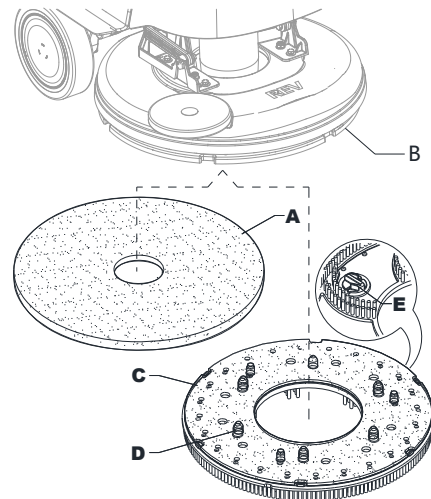


Figure 5

Brush removal/installation (Cylindrical system)

1. Make sure that the cylindrical deck (47) is lifted.
2. Turn off the machine with the start/stop button (62).
3. According to the kind of cleaning to be performed, install the brush (B, Fig. 6) and note the following:
 - Release the screw (A) and remove the side hook (C) from brush deck (D).
 - Install the brush (B) in the deck (D). Install the side hook (C) for brush and lock the screw (A).
4. To remove the brush, proceed in the reverse order.

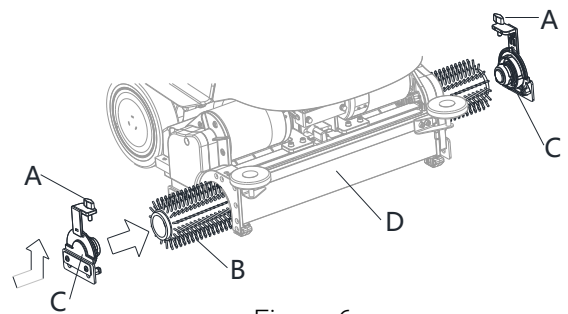


Figure 6

Squeegee installation

1. Install the squeegee (A, Fig. 7) and fasten it to the bracket (C) with the handwheels (B).
2. If necessary, adjust the squeegee with the knob (D) so that the rear blade (E) and front blade (F) touch the floor as shown in the figure.

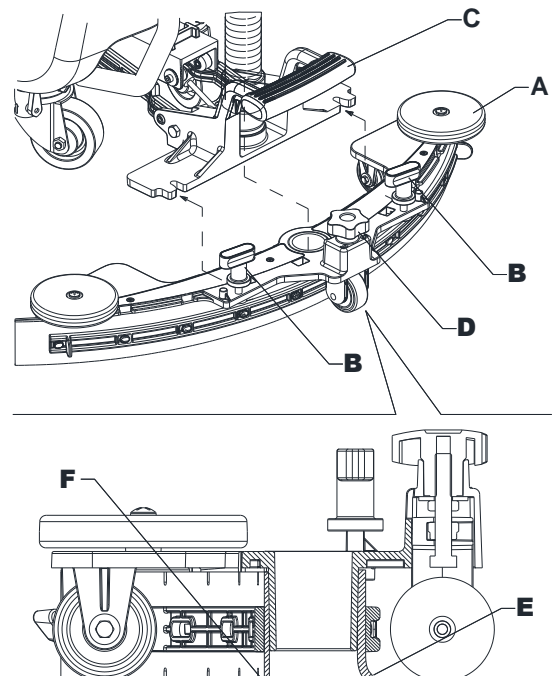


Figure 7



CAUTION!

Use only low-foam and non-flammable detergents, intended for automatic scrubber applications.



WARNING!

When using floor cleaning detergents, follow the instructions on the labels of the detergent bottles. To handle floor cleaning detergents, wear suitable gloves and protections.



NOTE

If the machine is equipped with EcoFlex system pour clean water in the tank, otherwise pour solution.

1. Ensure that the solution valve (9) is open (9-A).
2. To fill the solution tank (4) use the front filler (33).

(For machines without EcoFlex system)

3. Fill the tank (4) with a solution suitable for the work to be performed. Do not fill the tank completely, leave a few inches or CM from the edge. Use the level hose (7) as reference. Always follow the dilution instructions on the label of the chemical product used to prepare the solution. The solution temperature must not exceed 40 °C.

(For machines with EcoFlex system)

4. Fill the tank (4) with clean water. Use the water removable filler hose (32). Do not fill the tank completely, leave a few inches from the edge. Use the level hose (7) as reference. The water temperature must not exceed 40 °C.

Detergent tank filling (For machines with EcoFlex system)

5. Lift the cover (2) and check that the recovery tank (3) is empty; if not, empty it using the drain hose (18).
6. Close the cover (2).
7. Grasp the handle (6) and carefully lift the tank (3).
8. Fill the tank (34) with a detergent suitable for the work to be performed (highly concentrated detergent). Do not fill the detergent tank completely, leave a few inches from the edge.

**NOTE**

To accelerate filling of the hoses and system operation (with a new system, if the system has been emptied for cleaning, etc.), it is a good idea to run the Detergent PRUGE program first. (see the procedure in the Maintenance chapter)

Operating handle Angle adjustment

1. Ensure that the machine is off.
2. Unscrew the handle lock knob (5) until the handlebar (B, Fig. 8) can be moved.
3. Adjust to the operating Angle and lock through handle lock knob (A).

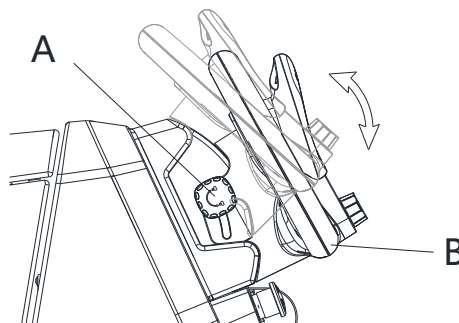


Figure 8

MACHINE START AND STOP**Starting the machine**

1. Prepare the machine as shown in the previous paragraph.
2. Press start/stop button (62). In the first 2 seconds after machine start-up, the screen displays the password interface. Enter password to Start machine.
3. The screen display the main interface.

**NOTE**

Check the battery charge level.

When the screen display battery symbol (58) is low, the batteries have to be charged (see the procedure in Maintenance chapter).

4. Drive the machine to the area it is required by starting it with your hands on the handlebar (15) and pushing the paddle (16) forward to move forward, and backwards to move in reverse. The speed can be adjusted by pressing the paddle (16) more or less. The maximum speed can be set with the speed adjustment knob (48).

Stopping the machine

5. Stop the machine by releasing the paddle (16).
6. Turn off the machine by pressing the start/stop button (62).

**NOTE**

If the machine is on but not working, it automatically turns off after 5 minutes.

7. Make sure that the machine cannot move independently.

**WARNING!**

In the event of an emergency, to stop all machine functions immediately, press the emergency stop button (63).

MACHINE OPERATION (SCRUBBING/DRYING)

1. Start the machine as shown in the previous paragraph.
2. Lower the squeegee (11) with the pedal (23).
3. Press the start/stop button (62) and enter password to start the machine. Roto dial button (67) to select clean mode as follows and press dial button (61) to confirm.
 - Manual mode (73)-Solution flow, detergent flow, brush pressure, vacuum level can be adjusted by screen.
 - Smart clean mode (74) -Presetting, cannot be adjusted by screen.
 - Standard clean mode (75) -Presetting, cannot be adjusted by screen.
 - Deep clean mode/ Floor prep mode (REV only) -Presetting, cannot be adjusted by screen.
4. lower the brush deck and start scrubbing and drying. Start cleaning by maneuvering the machine and pressing the paddle (16) when the brush is lowered to the ground. If necessary, adjust the maximum speed with the speed adjustment knob (48).
5. Adjust the solution flow by pressing the solution flow adjustment button (manual mode only) as necessary, depending on the type of cleaning to be performed.



NOTE

For the first 3 flow levels (Fig. 9), the amount of solution dispensed is automatically adjusted according to the machine speed, in order to obtain a constant amount of solution per linear meter of cleaning.



Version	Solution flow values (cl/meter)				Solution full flow mode gpm (liter/minute) it requires a supervisor user to enable it.
	Lev.0	Lev.1	Lev.2	Lev.3	Lev.4
Disc	OFF	0,75	1,5	3,0	0.98 gpm (3,7 liter/minute)
REV	OFF	0,38	0,75	1,5	
Dual disc	OFF	0,90	1,8	3,6	
Cylindrical	OFF	1,0	1,83	2,8	

Figure 9

6. If necessary, to reduce the noise, turn on the vacuum system mute function by pressing the Vacuum system adjustment/deactivation button (66) (manual mode only).



NOTE

For correct scrubbing/drying of floors at the sides of the walls, Nilfisk suggests to go near the walls with the right side of the machine as shown in figure 10.

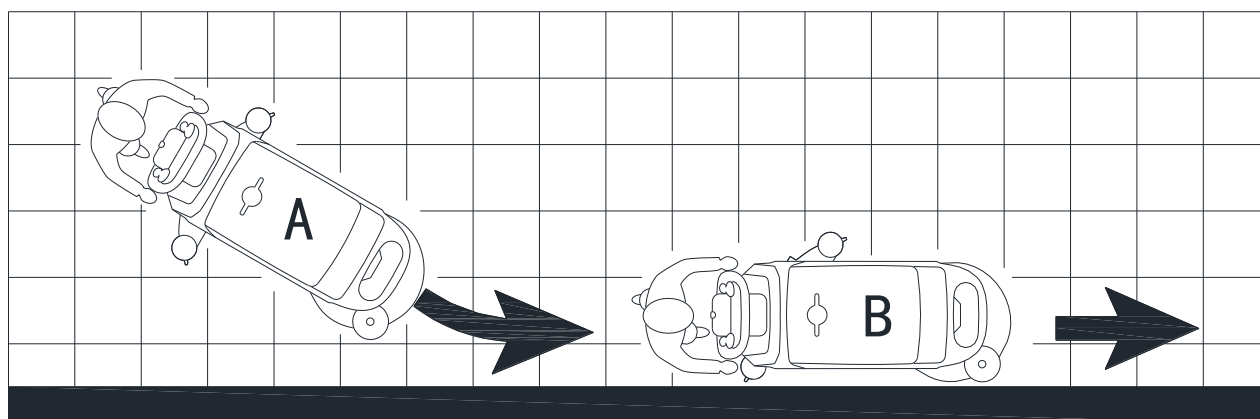


Figure 10



WARNING!

To avoid any damage to the floor surface, turn off the brush when the machine is stationary, especially when the extra pressure function is on.

7. At the end of the work, press the dial button (61) to lift the brush deck. After 10 seconds, the vacuum system turns off too.
8. Lift the squeegee (11) with the pedal (23).

Adjusting of detergent concentration in the cleaning solution (Manual mode only)

- (For machines with EcoFlex system)
- The system for mixing the detergent in the cleaning solution is automatically activated when the brush is running.
- The percentage of detergent added to the cleaning solution is set to level 1 (Fig. 11).
- By pressing the detergent percentage adjustment push-button (60), it is possible to set the percentage level to 2, or reset it to level 0.
- The set percentages are shown on the display (60).



Percentage of detergent		
Lev.0	Lev.1	Lev.2
OFF	0.40% 1:250	0.80% 1:125

Figure 11

Burst of power button

Press the burst of power button(54) when stronger washing power is needed temporarily.

With the burst of power activated, increased solution flow, activation of the extra pressure of the brush and an increase in the solution detergent concentration (level 2 if the level was set to 1 - level 1 if the level was set to 0) is obtained. The screen displays burst of power countdown of 60s. Press the burst of power button (54) again, to restore the original settings.



NOTE

If the burst of power button (54) is not pressed again, the original settings are restored automatically after 60 seconds.



NOTE

All of the above solution flow and detergent concentration values are factory settings. To change these settings, see the Supervisor paragraph in Maintenance chapter.

REV system (for REV version only)

Press the Floor prep mode when a specific washing mode is required.

With the REV system activated the drive speed is decreased, the brush extra pressure is activated, the detergent is stopped and the cleaning solution quantity is reduced.

Working with brush extra pressure function turned on (Manual mode only)

If the floor proves to be particularly difficult to clean, it is possible to turn on the brush extra pressure function, according to the following procedure:

1. Press start/stop button (62) and enter password to start machine. Roto dial button (67) to select manual mode, press dial button (61) to confirm. Lower the brush deck as shown in "Starting The Machine" paragraph.
2. Press the extra pressure button (64). The extra pressure function activation is shown icon on the display (64).
3. To return to normal pressure, press the extra pressure button (64) again to switch.



CAUTION!

In case of brush motor overload, due to foreign bodies which prevent them from turning, or to excessively aggressive floors/brushes, the safety system stops the brush after about one minute of continuous overload. If the overload takes place when the extra pressure function is on, the system automatically turns the extra pressure function off. If the overload persists, the brush stops. To start scrubbing again after a brush stop due to overload, turn off and then on the machine with start/stop button (62).

Battery discharge during operation

When the battery (58) displays low in the screen, it is advisable to charge the batteries, because the residual autonomy will last for a few minutes (depending on battery characteristics and work to be performed). After a few seconds, the brush is automatically tuned off, while the vacuum system and the drive system stay on, to finish drying the floor and drive the machine to the appointed recharging area.



CAUTION!

Do not use the machine with discharged batteries, to avoid damaging the batteries and reducing the battery life.

TANK EMPTYING

An automatic shut-off float system (30) turns off the vacuum system when the recovery tank (3) is full. The vacuum system deactivation is signaled by a sudden increase in the vacuum system motor noise, and the floor is not dried.



CAUTION!

If the vacuum system turns off accidentally (for example, when the float is activated because of a sudden machine movement), to resume the operation: turn off the vacuum system, then open the cover (2) and check that the float inside the grid (30) has gone down. Then close the cover (2) and turn on the vacuum system again.

When the recovery tank (3) is full, empty it according to the following procedure.

Recovery tank emptying

1. Raise the brush deck.
2. Lift the squeegee (11) with the pedal (23).
3. Drive the machine to the appointed disposal area.
4. Turn off the machine with the start/stop button (62).
5. Empty the recovery tank (3) with the drain hose (18). Then, rinse the tank with clean water.

Solution tank emptying

6. Perform steps 1 to 4.
7. Empty the detergent solution tank (4) using the level hose (7). Then, rinse the tank with clean water.

AFTER USING THE MACHINE

After working, before leaving the machine:

1. Remove the brush as shown in the relevant paragraph.
2. Turn off the machine with the start/stop button (62).
3. Empty the tanks (3) and (4) as shown in the relevant paragraphs.
4. Perform the daily maintenance procedures (see the Maintenance chapter).
5. Store the machine in a clean and dry place, with the brush and the squeegee lifted or removed.

MACHINE LONG INACTIVITY

If the machine is not going to be used for more than 30 days, proceed as follows:

1. Perform the procedures shown in After using the machine paragraph.
2. For versions with EcoFlex system, empty the detergent tank (35) and clean the system with a draining cycle (see the procedure in Maintenance chapter).
3. Close the solution tank valve (9-B).
4. Disconnect the battery connector (21).

MAINTENANCE

The lifespan of the machine and its maximum operating safety are ensured by correct and regular maintenance. The following table provides the scheduled maintenance. The intervals shown may vary according to particular working conditions, which are to be defined by the person in charge of the maintenance.



WARNING!

The procedures must be performed with the machine off and the battery disconnected.
Moreover, read carefully the instructions in the Safety chapter before performing any maintenance procedure.

All scheduled or extraordinary maintenance procedures must be performed by qualified personnel, or by an authorised Service Center.



CAUTION!

When the Service icon appears on the display (52), contact an authorised Nilfisk Service Centre for scheduled maintenance.

This Manual describes only the simplest and most common maintenance procedures. For other maintenance procedures shown in the Scheduled Maintenance Table, refer to the Service Manual that can be consulted at any Service Center.

SCHEDULED MAINTENANCE TABLE

Procedure	Daily, after using the machine	Weekly	Every six months	Yearly
Battery Charging				
Squeegee Cleaning				
Brush/pad cleaning				
Recovery tank, debris tray, and vacuum grid with float cleaning, and cover gasket, and CYL debris hopper check				
Detergent System cleaning and washing (optional)				
Squeegee blade check				
Solution Filter Cleaning				
Squeegee blade replacement				
Drive and brush motor vent check and cleaning			(1)	
Brush motor carbon brush check or replacement				(1)
Drive system motor carbon brush check or replacement				(1)
Brush deck vibration-damper replacement (only for REV version)				(1)

(1) This maintenance procedure must be performed by an authorised Nilfisk Service Center.

BATTERY CHARGING



NOTE

Charge the batteries when displays low (58) in the screen, or at the end of the shift. Keeping the batteries charged make their life last longer.



CAUTION!

When the batteries are discharged, charge them as soon as possible, as that condition makes their life shorter. Check for battery charge at least once a week.



CAUTION!

If the machine is not equipped with on-board battery charger, choose an external battery charger suitable for the type of batteries installed.



WARNING!

When using lead (WET) batteries, battery charging produces highly explosive hydrogen gas. Charge the batteries in well-ventilated areas and away from naked flames.

Do not smoke while charging the batteries. Keep the recovery tank lifted until the battery charging cycle is over.



WARNING!

Pay careful attention when charging batteries as there may be battery fluid leakages. The battery fluid is corrosive. If it comes in contact with skin or eyes, rinse thoroughly with water and consult a physician.

1. Drive the machine to the appointed recharging area.
2. Ensure that the machine is off.
3. Lift the cover (2) and check that the recovery tank (3) is empty; if not, empty it using the drain hose (18).
4. Close the cover (2).
5. Grasp the handle (6) and carefully lift the tank (3).
6. (For WET CELL batteries only) Check the level of electrolyte inside the batteries. If necessary, unscrew the caps and top up. When the correct level is restored, close the caps and clean the tops of the batteries.

Charging the Batteries with an External Battery Charger

1. Check that the external battery charger is suitable by referring to the relevant Manual. The battery charger voltage rating must be 24 V.
2. Disconnect the battery connector (21), which is fitted with a handle, and connect it to the external battery charger.
3. Connect the battery charger to the electrical mains.
4. After charging, disconnect the battery charger from the electrical mains and from the battery connector (21).
5. Connect the battery connector (21) to the machine.
6. Carefully lower the recovery tank (3).



WARNING!

Never connect the external battery charger to the opposing part of the connector fixed to the machine. The electronic system could be irreparably damaged.

Battery charging with battery charger installed on the machine

1. Plug the battery charger (20) into the mains electricity supply (the mains voltage and frequency must be compatible with the battery charger values shown on the machine serial number plate).



NOTE

When the battery charger is connected to the electrical mains, all machine functions are automatically cut off. The screen shows charging.

2. When the screen power is 100%, the battery charging cycle is complete.
3. Disconnect the battery charger plug (20) from the mains and place it in its holder (19).
4. Carefully lower the recovery tank (3).
5. Now the machine is ready to be used.



NOTE

For further information about the operation of the battery charger (26), see the relevant Manual.

MENU INTERFACE FOR DIFFERENT USERS

The machine contains four types of users, and the menu pages for each user will be different.

- TRAINEE USER
- BASIC USER
- ADVANCED USER
- SUPERVISOR USER

Menu Interface (Fig. 12)

1. Press start/stop button (62) and enter password to start machine.
2. Press the setting button (68) into the menu interface.
3. Select the item you want to set through the touch screen.



Figure 12

Machine Help Interface (Fig. 13 a)

It contains the following modules, which can help the operator quickly familiarize with the machine.

1. QUICK START (Simple and clear view instructions)
2. HOW TO VIDEOS (Video operating instruction)
3. TRAINING MODE (Step-by-step guidance)
4. USER MANUAL (Detailed electronic manual.)



Figure 13 a

Machine Settings Interface (Fig. 13 b)

The following items allow you to make settings.

1. SCREEN BRIGHTNESS
2. TIME & REGION
3. LANGUAGE
4. DETERGENT PURGE (Cleaning the piping systems and pre-filling operations of new pipelines.)
5. MACHINE INFO



Figure 13 b

Machine Settings Interface (Fig. 13 c) Only for SUPERVISOR USER

The following items allow you to make settings.

1. MACHINE SETTINGS
2. USER ACCESS
3. TIME & REGION
4. LANGUAGE
5. CONNECTIVITY (option)
6. PRESET SETTINGS
7. KEY FOB SETUP (option)
8. MACHINE INFO



Figure 13 c

Machine Error log Interface (Fig. 13 d)

Help the operator understand the status of the machine and the history of error reporting.



Figure 13 d

MODIFIABLE PARAMETERS					
Code	Description		Min. Value	Factory Setting	Max. Value
CHM1	Detergent concentration level 1		1:500 (0.25 %)	1:250(0.40%)	1:33 (3 %)
CHM2	Detergent concentration level 2		1:500 (0.25 %)	1:125 (0.80 %)	1:33 (3 %)
CHAS	Detergent alarm sound		OFF	ON-Always	ON
				ON-30sec	
P1/P3	Level 1 solution flow rate in relation to level 3 (see section "System for Flow Rate Regulation as Function of Speed")	Single	0 %	25 %	100 %
		Dual	0 %	21 %	100 %
			0 %		
		REV	0 %	25 %	100 %
P2/P3	Level 2 solution flow rate in relation to level 3 (see section "System for Flow Rate Regulation as Function of Speed")	Cylindrical	0 %	36 %	100 %
		Single	0 %	50 %	100 %
		Dual	0 %	50 %	100 %
		REV	0 %	50 %	100 %
P3	Level 3 solution flow rate	Cylindrical	0 %	77 %	100 %
		Single	1.0 cl/m	3.0 cl/m	5.0 cl/m
		Dual	1.0 cl/m	3.6 cl/m	5.0 cl/m
		REV	1.0 cl/m	1.5 cl/m	5.0 cl/m
P4	Level 4 solution flow enable	Cylindrical	1.0 cl/m	2.8 cl/m	5.0 cl/m
		Single	1.0 cl/m	2.8 cl/m	5.0 cl/m
SPT	EcoFlex function timer		0 (disabled)	60 sec.	300 sec.
FVMIN	Minimum forward speed		0 %	5%	100 %
FVMAX	Maximum forward speed		10 %	100 %	100 %
RVMAX	Maximum reverse speed		10 %	40 %	50 %
WVMAX	Maximum working speed		10%	100%	100%
BRMAX	Maximum brush speed		0%	90%	100%
BAT	Installed battery type		0	10(ACE)	10
TOFF	Inactivity Time		0 (disabled)	4mins	10mins
BRGH	Screen Brightness		1	16	16
VRID	Vacuum power in silent mode (value of PWM)		10%	20%	80%
VRIN	Vacuum power in normal mode (value of PWM)		10%	38%	80%
RPM1	Reduced brush rpm activation threshold		5	9	20
RPM2	Reduced brush rpm activation threshold		5	15	20
RESET	Restore factory settings for all parameters		OFF	OFF	ON

SQUEEGEE CLEANING**NOTE**

The squeegee must be clean and its blades must be in good conditions in order to get a good drying.

**WARNING!**

It is advisable to wear protective gloves when cleaning the squeegee because there may be sharp debris.

1. Drive the machine on a level floor.
2. Ensure that the machine is off.
3. Loosen the handwheels (13) and remove the squeegee (11).
4. Wash and clean the squeegee. In particular, clean the compartments (A, Fig. 14) and the vacuum hole (B). Check the condition of the front (C) and rear (D) blades, ensuring there are no cuts and tears; if necessary, replace them as shown below.
5. Install the squeegee in the reverse order of removal.

SQUEEGEE BLADE CHECK AND REPLACEMENT

1. Clean the squeegee as shown in the previous paragraph.
2. Check the condition of the front (C, Fig. 14) and rear (D) blades, ensuring there are no cuts and tears; if necessary, replace them as shown below. Check that the front corner (E) of the rear blade is not worn; otherwise, turn the blade to replace the worn corner with one of the three remaining intact corners. If the other corners are worn too, replace the blade according to the following procedure:
 - Using the tab (F), release and remove the elastic strap (G) from the fasteners (H), then turn or replace the rear blade (D).
 - Install the blade in the reverse order of removal. Fasten the elastic strap (G) to the fasteners (H) starting from one side. To make the fastening procedure easier, secure the fasteners one at a time, by locking the strap before the fastener with one hand (M) and pulling it with the other hand (N).
 - Unscrew the handwheels (I) and remove the strap (J), then turn or replace the front blade (C).
 - Install the blade in the reverse order of removal.
3. Install the squeegee (11) and screw down the handwheels (13).
4. Lower the squeegee to the floor to check the height of the blades, proceeding as follows:
 - Check that the lip (K) of the front blade (C) and the lip (L) of the rear blade (D) are resting as shown in the figure.
 - Use the knob (24) to make adjustments.

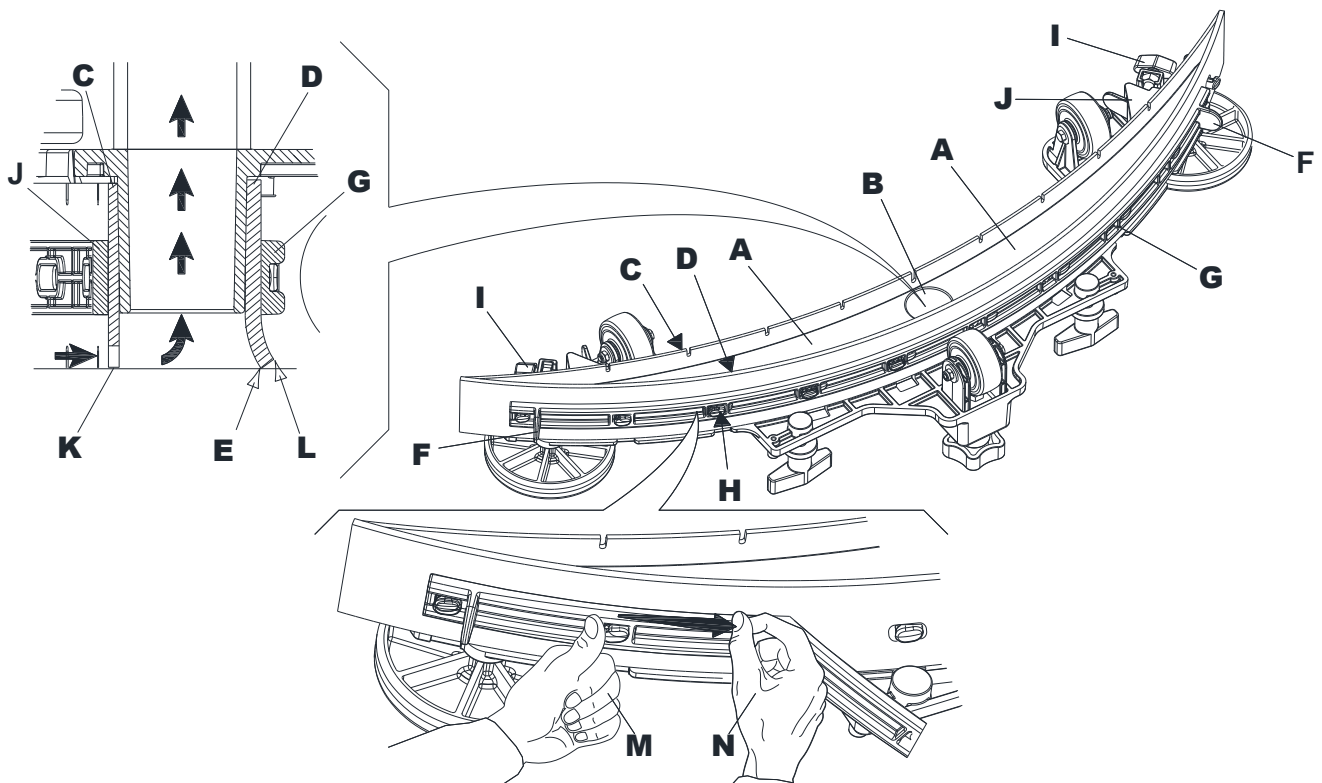


Figure 14

CLEANING THE BRUSH



WARNING!

It is advisable to wear protective gloves when cleaning the brush because there may be sharp debris.

1. Remove the brush as shown in Use/Operation chapter.
2. Clean the brush with water and detergent.
3. Check the condition of the brush bristles, ensuring they are not excessively worn; if necessary, replace the brush.

RECOVERY TANK CLEANING

1. Drive the machine to the appointed disposal area.
2. Turn off the machine with press start/stop button (62).
3. Raise the cover (2).
4. Wash the inside of the tank (3) and the cover with clean water.
5. Drain the water in the tank through the hose (18).
6. Clean the vacuum grid (30), release the fasteners (A, Fig. 15), open the grid (B) and recover the float (C) then clean it carefully and reinstall it.
7. Remove the debris collection tank (D) and open its cover, then clean it carefully and reinstall it on the vacuum hose.
8. Check the condition of the tank cover gasket (E). If necessary, replace the gasket (E) by removing it from its housing (F). When fitting the new gasket, position the joint (G) in the lower area, as shown in the figure.



NOTE

The gasket (E) allows the creation of a vacuum in the tank, which is necessary to suck up the recovery water.

9. Check that the seating surface (H) of the gasket (E) is in good condition, clean and suitable to form a seal with the gasket itself.
10. Close the cover (2).

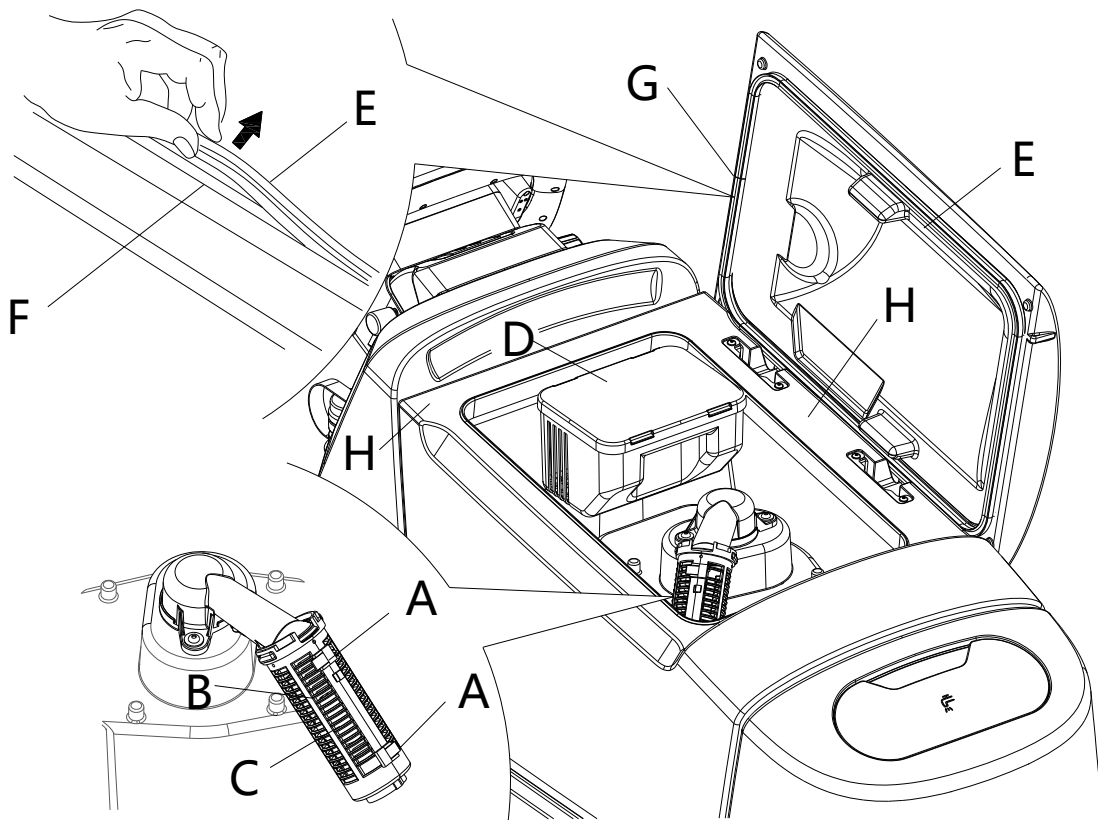


Figure 15

SOLUTION FILTER CLEANING

1. Drive the machine on a level floor.
2. Ensure that the machine is off.
3. Close the detergent solution tank valve (A, Fig. 16). The valve is closed when it is in position (B) and it is open when it is in position (C).
4. Remove the filter cover (D) and the gasket (E), then remove the filter strainer (F). Wash and rinse them, then refit them carefully onto the filter support (G).



NOTE

Be careful to prevent the loss of the gasket (E) during cleaning. Make sure the gasket (E) is installed in the correct position on the filter cover (D).

5. Open the valve (A).

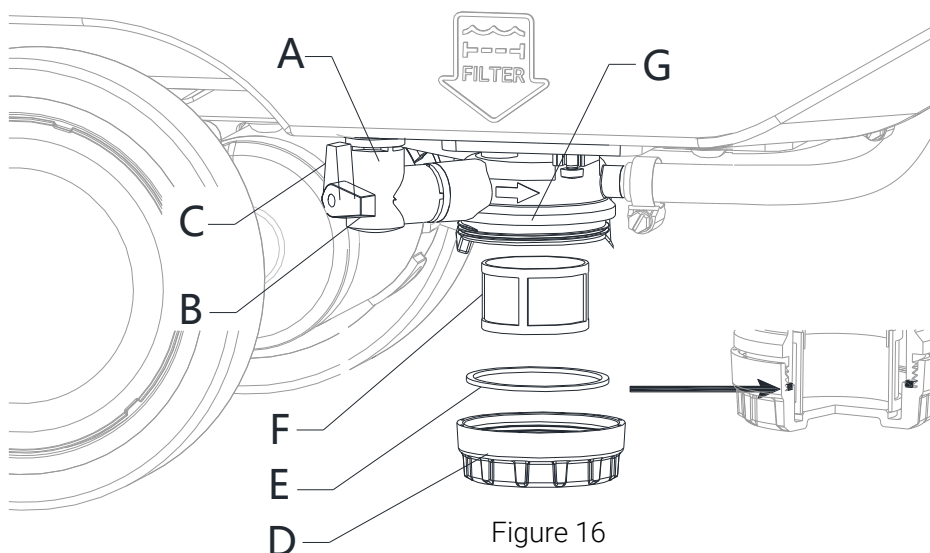


Figure 16

DEBRIS HOPPER CLEAN (FOR CYLINDRICAL DECK ONLY)

1. Drive the machine on a level floor.
2. Ensure that the machine is off.
3. Pull the debris hopper (A, Fig. 17) from the side, then clean it carefully and reinstall it on the deck. Suggest clean it at the end of the shift.
4. Pull up rubber cover (B) and clean sink (C) to make sure all holes are not blocked. Reinstall the rubber cover (B) after cleaning.

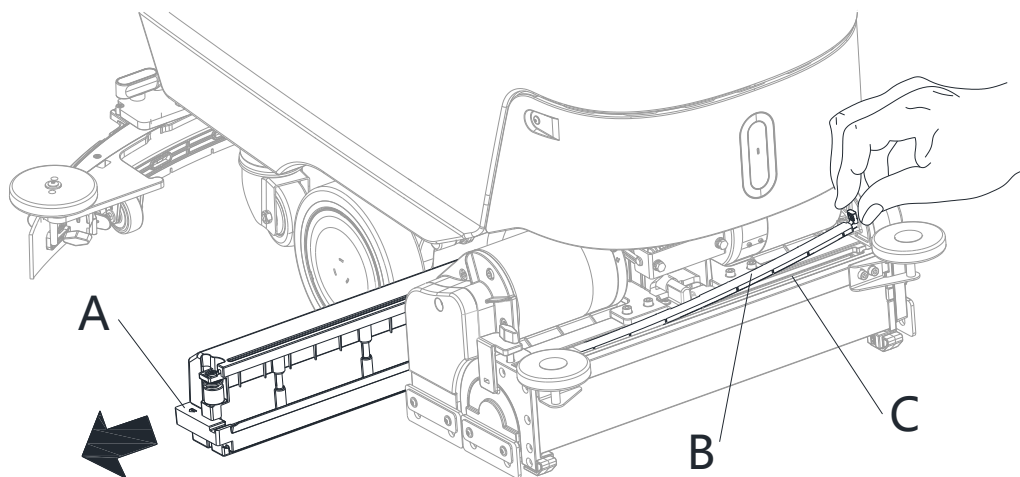


Figure 17

MACHINE TRACKING ADJUSTMENT

(For single disc only)

The machine tracking (straight movement) may vary according to the type of floor to be cleaned and depending on whether the brush or the pad is used.

If it is difficult to keep the machine moving straight as it tends to pull to the left or to the right with the brush deck lowered and during cleaning, adjust the handwheel (38) by turning it clockwise or counter-clockwise to correct this pull and obtain a generally neutral straight-ahead movement.

DETERGENT TANK CLEANING

(For machines with EcoFlex system)

Clean the detergent tank (35) as follows.

1. Drive the machine to the appointed disposal area.
2. Ensure that the machine is off.
3. Lift the cover (2) and check that the recovery tank (3) is empty; if not, empty it using the drain hose (18).
4. Close the cover (2).
5. Grasp the handle (6) and carefully lift the tank (3).
6. Unscrew the cap (A, Fig. 18) from the detergent tank (B).
7. Remove the detergent tank (B).
8. Rinse and wash out the tank with clean water in the appointed disposal area.
9. Replace the detergent tank (B) as shown in the figure, then refit the plug (A).
10. When the detergent tank has been drained, it may be necessary to drain the EcoFlex system too (see procedure in following section).

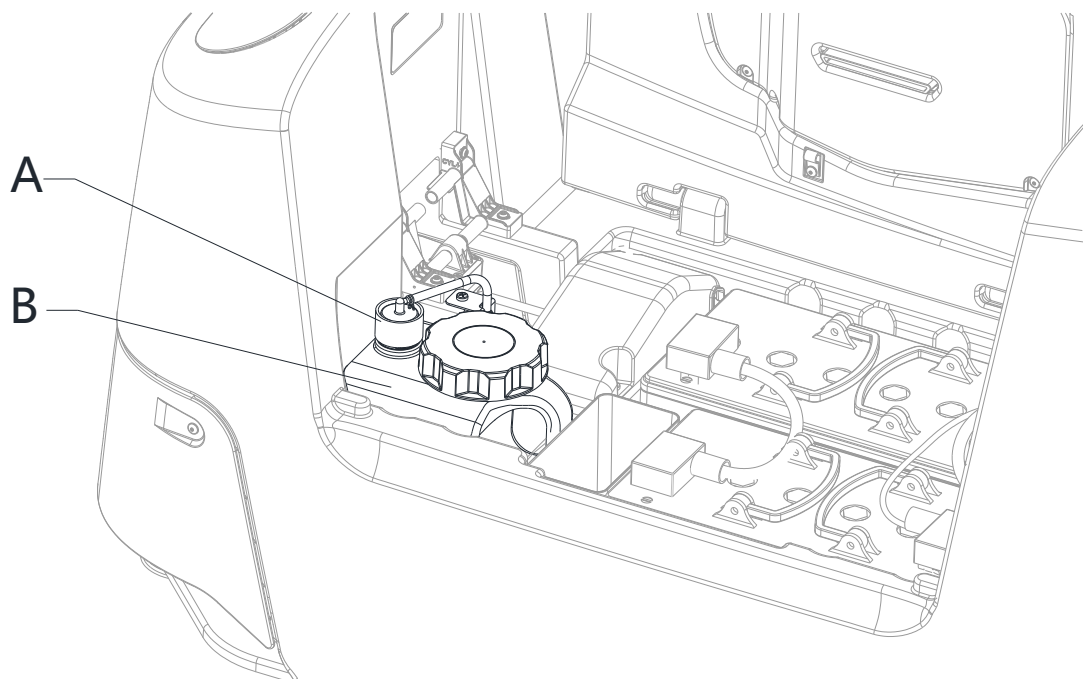


Figure 18


DRAINING THE ECOFLEX SYSTEM


(For machines with EcoFlex system)

Clean the detergent tank as shown in the previous section.

To remove residual detergent from the detergent hoses and pump, proceed as follows.

1. Check that the detergent quantity by visual inspection. Make sure the tank is half full of clean water.
2. Press start/stop button (62) and enter password to start machine.

3. Press the setting button (68) into the menu interface. Select the DETERGENT PURGE  in setting interface. Complete the

cleaning process according to the on-screen instructions. When the program is finished, this icon  will appear and will return to the setting interface after 2 seconds.

4. Turn off the machine with start/stop button (62).
5. Raise the tank (3), then check that the detergent tank hose (35) is empty; if not, perform steps 2 to 5 again.

NOTE



The draining cycle lasts about 30 seconds. The draining cycle can also be performed with the detergent tank (35) full of water, thus cleaning the system thoroughly. It is advisable to perform DETERGENT PURGE to clean the EcoFlex system from dirt and deposits if the machine has not been used/cleaned for a long time. The DETERGENT PURGE can also be performed to quickly fill the detergent supply hose when the tank (35) is full but the system is still empty. If necessary, the DETERGENT PURGE can be performed several times in succession.

FUSE CHECK/REPLACEMENT

NOTE



All machine electrical circuits are protected by auto-resettable electronic devices. The safety fuses activates only in case of serious damage. It is recommended to have the fuses replaced by qualified personnel only. Refer to the Service Manual available at any Nilfisk Retailer.

TROUBLESHOOTING

TROUBLE	POSSIBLE CAUSE	REMEDY
The dirty water vacuuming is insufficient.	The recovery tank is full.	Empty the tank.
	The vacuum grid is clogged or the float is stuck closed.	Clean the vacuum grid.
	Debris collection filter container clogged.	Clean.
	The hose is disconnected from the squeegee.	Connect.
	The squeegee is dirty or the squeegee blades are worn or damaged.	Clean the squeegee or overturn/replace the blades.
	The tank cover is not properly closed, or the gasket is damaged.	Correctly close the cover or clean/replace the gasket.
The solution flow is insufficient.	Empty detergent solution tank.	Refill.
	The solution filter is dirty.	Clean the filter
	The EcoFlex system tank (optional) is dirty/encrusted.	Clean with the drain cycle.
The squeegee leaves marks on the floor.	There is debris under the squeegee blades.	Remove the debris.
	The squeegee blades are worn, chipped or torn.	Overturn or replace the blades.
	The squeegee has not been balanced with the handwheel.	Adjust the squeegee.
The display (52) shows an alarm message of the following type: WARNING ALARM Code	The screen will display the possible causes.	Operate according to the on-screen prompts. Turn off the machine and then turn it on again. If the problem persists, contact an authorised Service Center.

**NOTE**

If the machine has been purchased with an on-board battery charger, the machine cannot operate if this device is not on board. In case of battery charger malfunction, contact an authorised Service Center

For any further information, contact Nilfisk Service Centers.

SCRAPPING

Have the machine scrapped by a qualified scrapper.

Before scrapping the machine, remove and separate the following materials, which must be disposed of properly according to the Law in force:

- Batteries
- Brushes
- Plastic hoses and components
- Electrical and electronic components (*)

(*) Refer to the nearest Nilfisk Center especially when scrapping electrical and electronic components.

Machine material composition and recyclability

Type	Recyclable percentage	Weight %			
		Single disc deck	Dual disc deck	CYL deck	REV deck
Aluminum	100%	8 %	8 %	8 %	8 %
Electric motors - various	29 %	30 %	35 %	33 %	29 %
Ferrous materials	100%	4 %	4 %	4 %	5 %
Wiring harness	80 %	3%	2%	3%	3%
Liquids	100%	0 %	0 %	0 %	0 %
Plastic - non-recyclable material	0 %	3%	2%	3%	3%
Plastic - recyclable material	100%	12 %	11 %	11 %	12 %
Polyethylene	92 %	37 %	35 %	35 %	37 %
Rubber	20 %	2 %	2 %	2 %	2 %