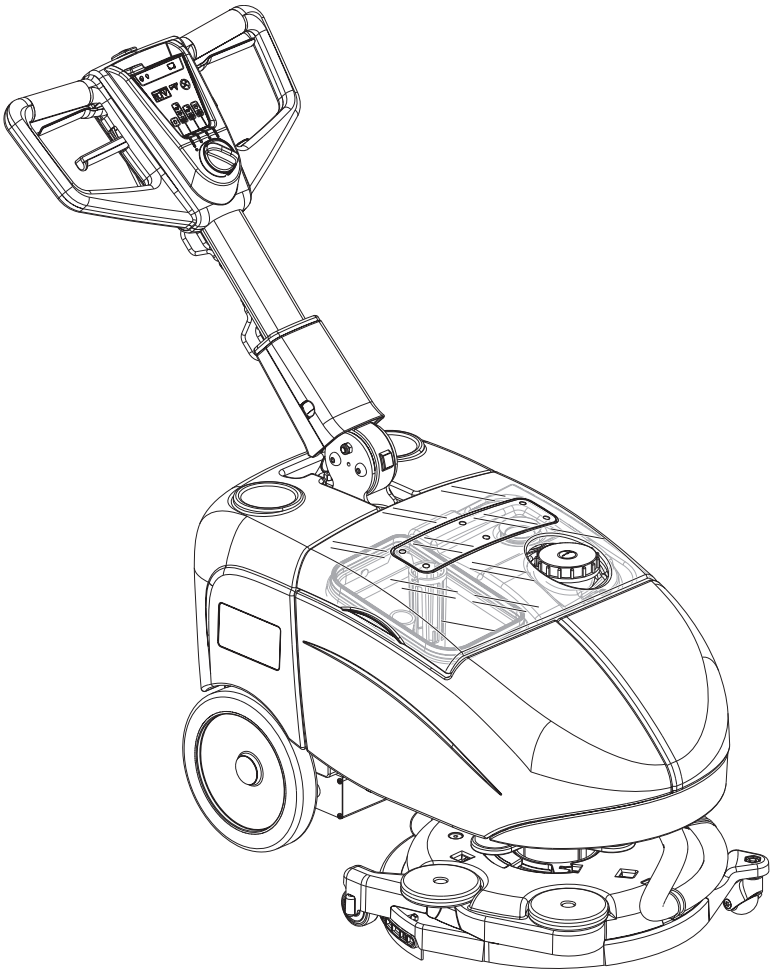
SC351
Instructions for use

Bedienungshandbuch
Instructions d'utilisation
Instructions for use
Gebruiksaanwijzing

03/2013 Revised 11/2014
(3)
9099864000

Deutsch
Français
English
Nederlands



Model:
9087340020 - 9087341020 - 9087346020

Nilfisk

Сертификат за съответствие
Osvědčení o shodě
Konformitätserklärung
Overensstemmelsescertifikat
Declaración de conformidad
Vastavussertifikaat
Déclaration de conformité
Yhdenmukaisuustodistus
Conformity certificate

Πιστοποιητικό συμμόρφωσης
Megfelelősségi nyilatkozat
Potvrda sukladnosti
Dichiarazione di conformità
Atitikties deklaracija
Atbilstības deklarācija
Konformitetssertifisering
Conformiteitsverklaring
Declaração de conformidade

Deklaracja zgodności
Certificat de conformitate
Заявление о соответствии
Överensstämmelsecertifikat
Certifikát súladu
Certifikat o ustreznosti
Uyumluluk sertifikası

CE

Модел / Model / Modell / Model / Modelo / Mudel / Modèle / Malli / Model / Μοντέλο / Modell / Model / Modello / Modelis / Modelis / Modell / Model / Modelo / Model / Model / Модель / Modell / Model / Model / Model :

SC351

Тип / Typ / Typ / Type / Tipo / Tüüp / Type / Tyyppi / Type / Τύπος / Típus / Vrsta / Tipo / Tipas / Tips / Type / Type / Tipo / Typ / Tip / Тип / Typ / Typ / Tip / Tip :

SCRUBBER-DRYER

Сериен номер / Výrobní číslo / Seriennummer / Serienummer / Número de serie / Seerianumber / Numéro de série / Sarjanumero / Serial number / Σειριακός αριθμός / Sorozatszám / Serijski broj / Numero di serie / Serijos numeris / Sērijas numurs / Serienummer / Serienummer / Número de série / Numer seryjny / Număr de serie / Серийный номер / Serienummer / Výrobné číslo / Serijska številka / Seri Numarası :

Година на производство / Rok výroby / Baujahr / Fabrikationsår / Año de fabricación / Väljalaskeaasta / Année de fabrication / Valmistusvuosi / Year of construction / Έτος κατασκευής / Gyártási év / Godina izgradnje / Anno di costruzione / Pagaminimo metai / Izgatavošanas gads / Byggeår / Bauwjaar / Ano de fabrico / Rok produkcji / Anul fabricaţiei / Год выпуска / Tillverkningsår / Rok výroby / Leto izdelave / Leto izdelave/İmal yılı :

BG Долуподписаният потвърждава, че гореспоменатият модел е произведен в съответствие със следните директиви и стандарти. Техническият файл е съставен от производителя.

CZ Níže podepsaný stvrzuje, že výše uvedený model byl vyroben v souladu s následujícími směrnicemi a normami. Autorem technického listu je výrobce.

D Der Unterzeichner bestätigt hiermit dass die oben erwähnten Modelle gemäß den folgenden Richtlinien und Normen hergestellt wurden. Die technische Dokumentation wird vom Hersteller erstellt.

DK Undertegnede attesterer herved, at ovennævnte model er produceret i overensstemmelse med følgende direktiver og standarder. Den tekniske fil er udarbejdet af fabrikanten.

E El abajo firmante certifica que los modelos arriba mencionados han sido producidos de acuerdo con las siguientes directivas y estandares. El fascículo técnico está redactado por el fabricante

EST Allakirjutanu kinnitab, et ülalnimetatud mudel on valmistatud kooskõlas järgmiste direktiivide ja normidega. Tehnilise dokumentatsiooni koostab tootja.

F Je soussigné certifie que les modèles ci-dessus sont fabriqués conformément aux directives et normes suivantes. Le dossier technique est rédigé par le fabricant.

FIN Allekirjoittaia vakuuttaa että yllämainittu malli on tuotettu seuraavien direktiivien ja standardien mukaan. Valmistaja kääntää teknisen tiedoston.

GB The undersigned certify that the above mentioned model is produced in accordance with the following directives and standards. The technical file is compiled by the manufacturer.

GR Ο κάτωθι υπογεγραμμένος πιστοποιεί ότι η παραγωγή του προαναφερθέντος μοντέλου γίνεται σύμφωνα με τις ακόλουθες οδηγίες και πρότυπα. Το τεχνικό αρχείο συντάσσεται από τον κατασκευαστή.

H Alulírottak igazoljuk, hogy a fent említett modellt a következő irányelvek és szabványok alapján hoztuk létre. A műszaki fájlt a gyártó készítette.

HR Potpisani potvrđujem da gore spomenuti model proizveden u skladu sa sljedećim direktivama i standardima.Tehničku dokumentaciju sastavlja proizvođač.

I Il sottoscritto dichiara che i modelli sopra menzionati sono prodotti in accordo con le seguenti direttive e standard. Il fascicolo tecnico è redatto dal costruttore.

LT Toliau pateiktu dokumentu patvirtinama, kad minėtas modelis yra pagamintas laikantis nurodytų direktyvų bei standartų. Techninę bylą sudarė gamintojas.

LV Ar šo tiek apliecināts, ka augstākminētais modelis ir izgatavots atbilstoši šādām direktīvām un standartiem. Tehnisko aprakstu ir sastādījis ražotājs.

N Undertegnede attesterer att ovennevnte modell är produsert i overensstemmelse med följende direktiv og standarder. Den tekniske filen er opprettet av produsenten.

NL Ondergetekende verzekert dat de bovengenoemde modellen geproduceerd zijn in overeenstemming met de volgende richtlijnen en standaards. Het technische bestand is door de fabrikant samengesteld.

P A presente assinatura serve para declarar que os modelos supramencionados são produtos em conformidade com as seguintes directivas e normas. A ficha técnica é redigida pelo fabricante.

PL Niżej podpisany zaświadcza, że wymieniony powyżej model produkowany jest zgodnie z następującymi dyrektywami i normami. Dokumenty techniczne zostały przygotowane przez producenta.

RO Subsemnatul atest că modelul sus-menţionat este produs în conformitate cu următoarele directive şi standarde. Fişierul tehnic este redactat de către producător.

RUS Настоящим удостоверяется, что машина вышеуказанной модели изготовлена в соответствии со следующими директивами и стандартами. Техническая документация составлена производителем.

S Undertecknad intygar att ovannämnda modell är producerad i överensstämmelse med följande direktiv och standarder. Den tekniska filen är sammanställd av tillverkaren.

SK Dolu podpísaný osvedčuje, že hore uvedený model sa vyrába v súlade s nasledujúcimi smernicami a normami. Technický súbor vytvoril výrobca.

SLO Spodaj podpisani potrjujem, da je zgoraj omenjeni model izdelan v skladu z naslednjimi smernicami in standardi. Spis s tehnično dokumentacijo pripravi izdelovalec.

TR Aşağıda İmzası olan kişi, yukarıda bahsedilen model cihazın aşağıda verilen direktiflere ve standartlara uygunlukta imal edildiğini onaylar. Teknik dosya üretici tarafından derlenmiştir.

EC Machinery Directive 2006/42/EC	**EN ISO 12100, EN ISO 13857, EN 349, EN 982**
	EN 60335-1, EN 60335-2-72, EN 50366
EC EMC Directive 2004/108/EC	**EN 55022, EN 55014-2, EN 61000-6-2**

Производителя / Výrobce / Hersteller / Fabrikanten / Fabricante / Tootja / Fabricant / Valmistaja / Manufacturer / Κατασκευαστή / Gyártó / Proizvođač / Costruttore / Gamintojas / Ražotājs / Produsenten / Fabrikant / Fabricante / Producenta / Producător / Производителем / Tillverkaren / Výrobca / Izdelovalec / Üretici :

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Authorized signatory: Sergio Coccapani, R&D Director
Date: Signature:

FACSIMILE

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INTRODUCTION

NOTE
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 operator 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 (1).
Product code and year of production are marked on the same plate (Date code: A16, means January 2016).
The machine model year is written also in the declaration of conformity.
This information is useful when requiring machine spare parts. Use the following table to write down the machine identification data.

MACHINE model .....
PRODUCT code .....
MACHINE 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 machine model, product code 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.

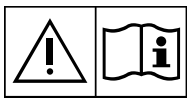
OPERATION CAPABILITIES
This scrubber-dryer is used to clean (scrubbing and drying) smooth and solid floors, in civil or industrial environment, under safe operation conditions by a qualified operator.
The scrubber-dryer cannot be used for fitted carpet and carpet cleaning.

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 (2).

UNPACKING/DELIVERY
To unpack the machine, carefully follow the instructions on the packing.
Upon delivery carefully check that the machine and its packing have not been 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
  - Battery Charger Manual
  - Scrubber-dryer Spare Parts List
  - No. 2 lamellar fuses

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!
Carefully read all the instructions 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 the specifications.

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 or damage to objects.

CAUTION!
It indicates a caution or a remark related to important or useful functions. Pay careful 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 Instructions 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 cleaning, maintenance, repair or replacement procedure, turn the function selection knob to "0" 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 vapours: This machine is not suitable for collecting dangerous powders.***
- ***Keep the battery away from sparks, flames and incandescent material. During the normal operation explosive gases are released.***
- ***Battery charging produces highly explosive hydrogen gas. Keep the cover open during battery charging and perform this procedure in well-ventilated areas and away from naked flames.***

WARNING!
- ***Carefully read all the instructions before performing any maintenance/repair procedure.***
- ***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, do not leave the machine unattended when it is plugged in. 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. Store the machine indoors, in a dry place: This machine must be used 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 use Manual.***

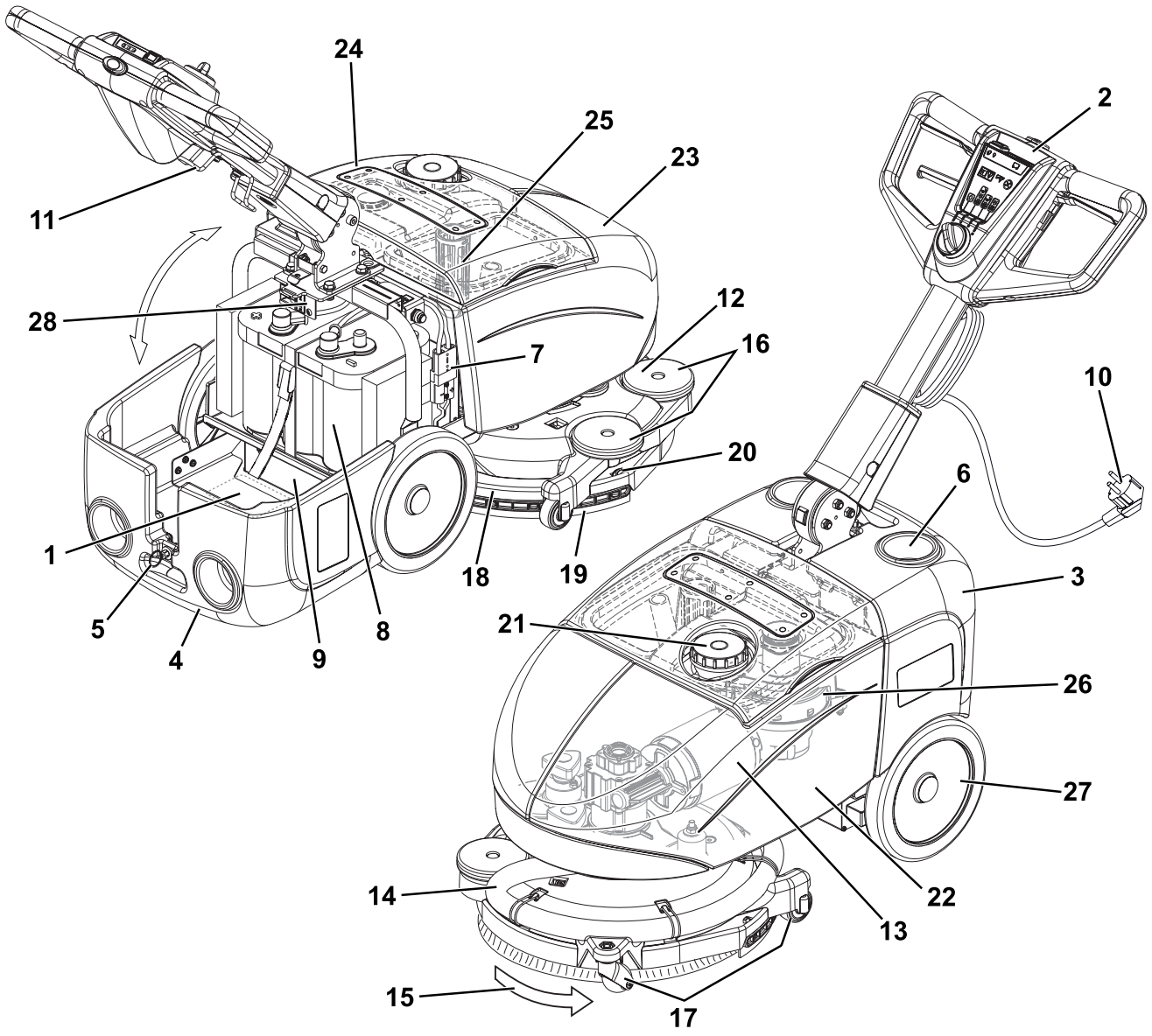
WARNING!

- *This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the machine by a person responsible for they safety.*
  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 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.*
- *Pay attention to the machine moving parts. When using the machine, the deck can abruptly turn by 180°.*
- *Do not use the machine on incline.*
- *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.*
- *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 brushes and pads supplied with the machine or those specified in the Instructions for use Manual. Using other brushes or pads 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 (battery, etc.), which are subject to standards that require disposal in special centres (see Scrapping chapter).*

MACHINE DESCRIPTION

MACHINE STRUCTURE

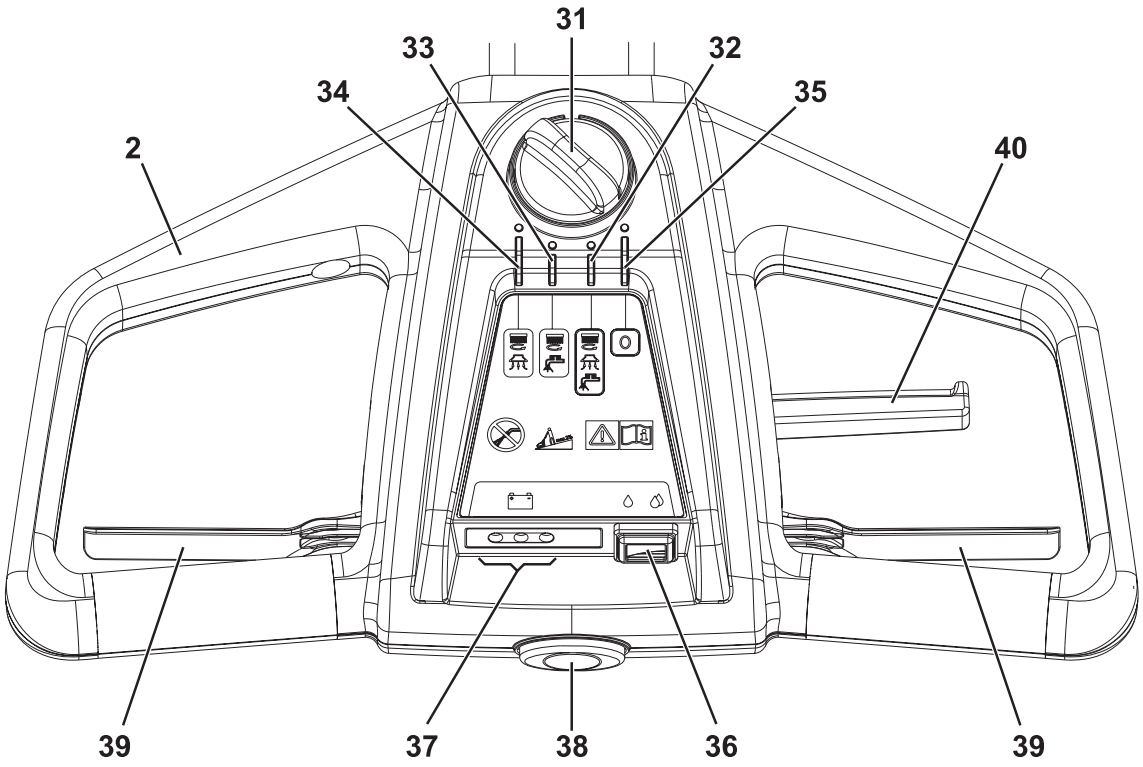
1. Serial number plate/technical data/conformity certification
2. Handlebar with control panel (see the following paragraph)
3. Accessory and battery compartment cover (closed)
4. Accessory and battery compartment cover (open)
5. Cover latch
6. Can holder
7. Battery connection connector. This connector also works as EMERGENCY push-button, to stop immediately all functions.
8. GEL/AGM battery
9. Battery charger
10. Battery charger cable
11. Battery charger cable holder
12. Brush/pad-holder deck
13. Brush deck gearmotor
14. Squeegee vacuum hose
15. Brush rotation direction
16. Deck bumper wheels
17. Brush deck wheels
18. Squeegee
19. Squeegee blades assembly
20. Squeegee fasteners
21. Solution tank filler plug
22. Solution tank
23. Recovery tank
24. Transparent cover with vacuum grid
25. Vacuum grid with automatic shut-off float
26. Vacuum system motor
27. Rear wheels on fixed axle
28. Fuses



P100404

HANDLEBAR WITH CONTROL PANEL

31. Function selection knob
32. Scrubbing and drying program: brush - vacuum system - solution flow activation
33. Scrubbing program: brush - solution flow activation
34. Drying program: brush - vacuum system activation
35. Machine switching off “0”
36. Solution flow switch
    - One drop - “ECO” solution flow
    - Two drops - Maximum solution flow
37. Battery charge LED indicators
    - Green warning light - charged battery
    - Yellow warning light - semi-discharged battery
    - Red warning light - discharged battery
38. Machine start-up enabling push-button
39. Brush levers
40. Handlebar inclination adjusting lever



P100405

ACCESSORIES/OPTIONS

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

– 12V 84AhC5 AGM Battery
– Brushes of different materials
– Pads of different materials

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

TECHNICAL DATA

Description	SC351	SC351 full PKG
Solution tank capacity	11 litres	
Recovery tank capacity	11 litres	
Machine length	770 mm	
Machine width	475 mm	
Min/max machine height at the handlebar	550/1,085 mm	
Minimum width for turnaround	850 mm	
Cleaning width	370 mm	
Diameter of wheels on fixed axle	214 mm	
Wheel pressure on the floor	0.5 N/mm^2	
Brush/pad diameter	370 mm	
Brush/pad pressure on the floor	18 Kg	
Brush/pad pressure with full tank	27 Kg	
Min/max solution flow	One drop, “ECO”: 0.25 litres/min Two drops: 0.5 litres/min	
Sound pressure level at workstation (ISO 11201, ISO 4871, EN 60335-2-72) (LpA)	65 dB(A) ± 3 dB(A)	
Machine sound power level (ISO 3744, ISO 4871, EN 60335-2-72) (LwA)	84 dB(A)	
Vibration level at the operator’s arms (ISO 5349-1, EN 60335-2-72)	< 2.5 m/s^2	
Maximum gradient when working	2 %	
IP protection class	X4	
Protection class (electric)	III	
Vacuum system motor power	200 W	
Vacuuming	710 mmH_2O	
Brush/pad-holder motor power	260 W	
Brush/pad-holder motor speed	120 rpm	
Total absorbed power	0.5 kW	
Battery compartment size	350 x 175 x 240 mm	
Battery voltage	12 V	
Standard battery	-	12V 55AhC20 AGM spiracell
Work autonomy (standard battery)	1 hour	
Weight without battery and with empty tanks	43 kg	43 kg
Gross vehicle weight (GVW)	80 kg	
Shipping weight	48 kg	70 kg

Machine material composition and recyclability

Type	Recyclable percentage	SC351 and SC351 full PKG weight percentage
Aluminium	100%	18%
Electric motors - various	29%	9%
Ferrous materials	100%	20%
Wiring harness	80%	9%
Liquids	100%	0%
Plastic - non-recyclable material	0%	11%
Plastic - recyclable material	100%	18%
Polyethylene	92%	9%
Rubber	20%	7%

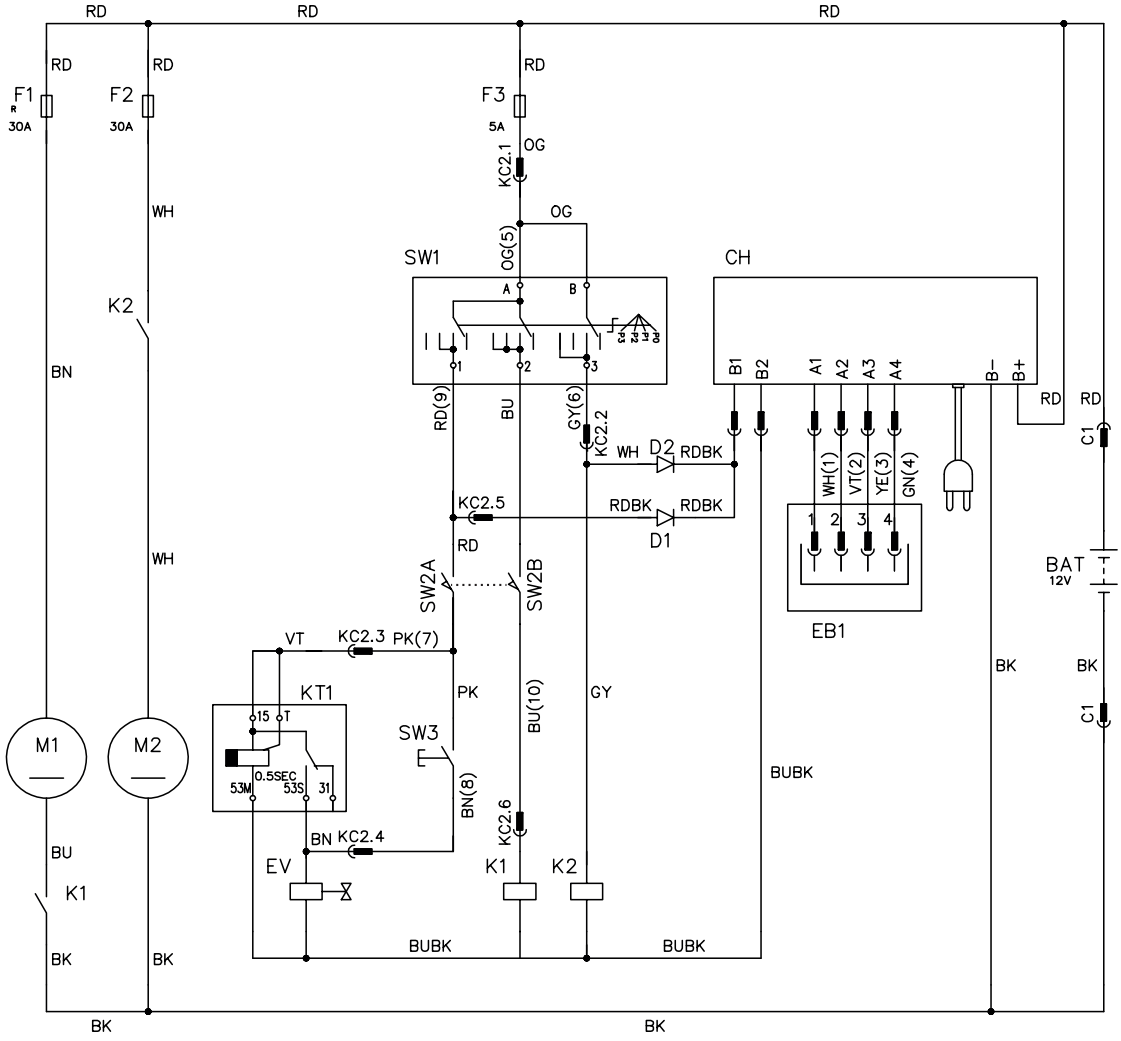
WIRING DIAGRAM

Key

BAT	12 V battery
CH	Battery charger
D1	Diode
D2	Diode
EB1	LED electronic board
EV	Detergent solenoid valve
F1	Brush motor circuit breaker (35 A)
F2	Vacuum system motor fuse (30 A)
F3	Function selector fuse (5 A)
K1	Brush motor relay
K2	Vacuum system motor relay
KT1	Solenoid valve timer
M1	Brush motor
M2	Vacuum system motor
SW1	Function selector
SW2	Brush motor-solenoid valve enabling switch
SW3	Detergent rate switch

Colour codes

BK	Black
BU	Blue
BN	Brown
GN	Green
GY	Grey
OG	Orange
PK	Pink
RD	Red
VT	Violet
WH	White
YE	Yellow



USE

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.

BATTERY CHECK/SETTING ON A NEW MACHINE

WARNING!
The electric components of the machine can be seriously damaged if the battery is either improperly installed or connected. The battery must be installed by qualified personnel only. Check the battery for damage before installation.
Disconnect the battery connector and the battery charger plug.
Handle the battery with great care.
Install the battery terminal protection caps supplied with the machine.

The machine requires 1 12V battery.
The machine can be supplied in one of the following modes:

GEL/AGM battery already installed on the machine
1. Open the cover (4) and check that the battery is connected to the machine with the connector (7).
2. Turn the function selection knob (31) on one of the programs to turn on the machine. If the green warning light (37) turns on, the batteries are ready to be used.
3. If the yellow or red warning light turns on, the battery must be charged (see the procedure in Maintenance chapter).

Without battery
1. Buy appropriate battery (see the Technical Data paragraph).
   For battery choice and installation, apply to qualified battery Retailers.
2. Install the battery (see the following paragraph).
3. Charge the battery (see the procedure in Maintenance chapter).

BATTERY INSTALLATION

DANGER!
This machine requires sealed lead batteries (GEL or AGM technology).
Do not use batteries with liquid electrolyte or not sealed (WET) for any reason.

1. Open the cover (4) and check that the battery connector (7) is disconnected.
2. Install the battery on the machine and fasten it with the relevant belt.
3. Connect the 2 terminals to the battery pins.

WARNING!
Pay special attention when connecting the battery pins. The red cable must be connected to the positive pin (+), the black cable must be connected to the negative pin (-) of the battery.
A wrong connection can damage the battery charger.

4. Connect the battery connector (7) and close the cover (4).
5. Charge the battery (see the procedure in Maintenance chapter).

WARNING!
The installed battery (GEL/AGM) may require a specific charging algorithm: contact a Nilfisk Service Center to set the charging algorithm suitable to the battery.

BEFORE MACHINE START-UP

Brush/pad-holder installation/removal

NOTE
Install either the brush (A, Fig. 1) or the pad-holder (B and C) according to the type of floor to be cleaned.

1. Slightly lift the machine brush deck and place the brush under the deck.
2. Turn the function selection knob (31) to program (32).
3. Press the enabling push-button (38) together with the brush levers (39) to engage the brush/pad-holder.

Remove the brush/pad-holder deck by performing the following procedure:
4. Check that the function selection knob (31) is turned to “0”.
5. Slightly lift the machine brush deck, then manually release the brush/pad-holder from the hub, by turning it abruptly in its normal rotation direction (D).

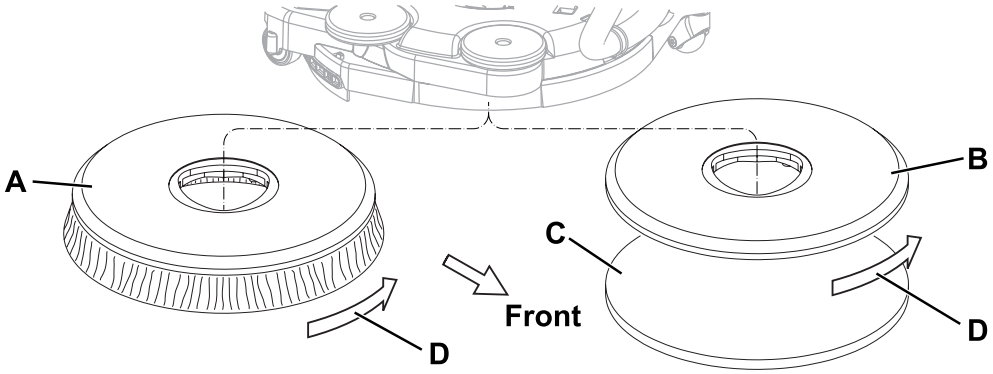


Figure 1

P100407

Available brushes and their relevant application guides (suggestions only)

	Models	MIDLITE GRIT 180	MIDGRIT 240	PROLITE	UNION MIX
General cleaning	Concrete	■	■		
	Terrazzo floor	■	■		
	Ceramic tiles/quarrystones	■	■		
	Marble			■	
	Vinyl tiles	■			
	Rubber tiles			■	
Polishing	Rubber tiles				■
	Marble				■
	Vinyl tiles				■

Solution tank filling

6. Open the plug (21) and fill the tank (22) with a solution suitable for the work to be performed. Do not fill the solution tank completely, leave few centimetres from the edge. 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.

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.

Adjustments

7. Press the lever (40) and adjust the handlebar (2) to reach a comfortable position.

MACHINE START AND STOP

Starting the machine

1. Prepare the machine as shown in the previous paragraph.
2. Turn the function selection knob (31) to turn on the machine and select one of the programs according to the following table:

Position	Symbol	Program
(32)		**Scrubbing and drying.** Brush - vacuum system - solution flow activation
(33)		**Scrubbing.** Brush - solution flow activation
(34)		**Drying.** Brush - vacuum system activation

3. Turn the solution flow control switch (36) to one of the following positions, according to the type of cleaning to be performed:
   - One drop: to scrub/clean floors which are not very dirty; in this condition the machine can work with an autonomy of 50 minutes (0.25 litres/min average).
   - Two drops: to scrub/clean floors which are quite or very dirty; in this condition the machine can work with an autonomy of 25 minutes (0.5 litres/min average).
4. While keeping the hands on the handlebar (2), start the machine by pressing the enabling push-button (38) together with the brush levers (39).

NOTE
If the green warning light (37) turns on, the machine is ready to be used. If the yellow or red warning light turns on, the battery must be charged (see the procedure in Maintenance chapter).

Stopping the machine

5. Release the brush levers (39) and the enabling push-button (38).
6. Turn the function selection knob (31) to “0” to turn off the machine.

CAUTION!
In case of immediate necessity and to stop all machine functions, disconnect the battery connector (7). Reset the machine functions by connecting again the connector.

MACHINE OPERATION (SCRUBBING/DRYING)

1. Start the machine as shown in the previous paragraph.
2. While keeping both hands on the handlebar (2), move the machine and start scrubbing/drying the floor.
3. If necessary, adjust the solution quantity by using the switch (36).
4. When necessary, to use the squeegee in the opposite direction, pry on the handlebar (2) and slightly lift the deck while the brush is turning. When the deck is turned by 180° start to scrub/dry by drawing the machine.
   To resume working in the normal forward direction, push the machine forward until the brush deck (12) returns to the original position.

WARNING!
Pay attention when lifting the deck with the brush turning: The deck will suddenly turn by 180°. Pay attention to the moving part, do not hit and/or damage things, walls or people.

CAUTION!
To avoid damaging the floor surface, do not use the brush without the solution and, when the machine is not operating, stop the brush/pad-holder by releasing the levers (39).

CAUTION!
Before lifting the brush/pad, turn it off by releasing the levers (39).

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 2.

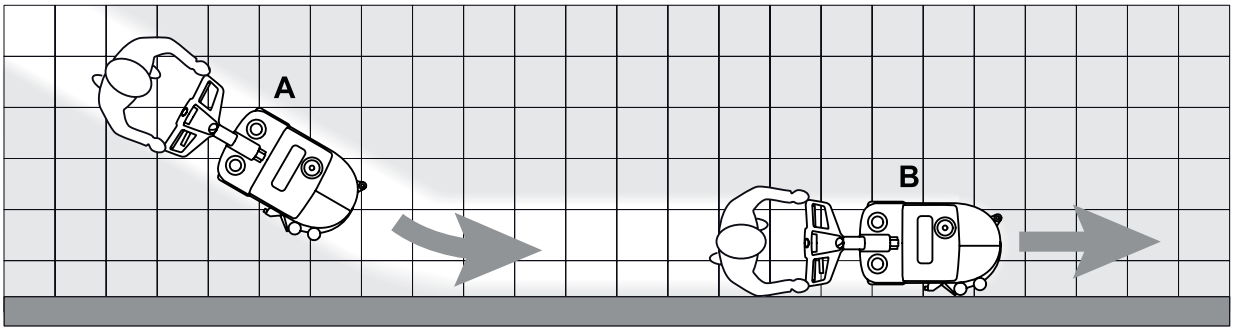


Figure 2

P1004108

Machine speed adjustment

5. The machine speed varies according to the type of floor to be cleaned and the choice of using the brush or the pad. If necessary, it is possible to adjust the machine speed, according to the procedure shown in Maintenance chapter.

Battery discharge during operation

6. Until the green warning light (37) stays on, the batteries allow the machine to work normally. When the green warning light turns off and the yellow and red warning lights turn on, it is necessary to charge the battery as the machine residual autonomy is at the minimum level.

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

MACHINE TRANSPORT/PARKING

To transport/park the machine, proceed as follows.

1. Check that the function selection knob (31) is turned to “0”.
2. Grab the handlebar (2) and slightly lift the machine brush deck. While holding the machine in this position, drive it to the transport/parking area.
3. When finishing working, it is advisable to remove the brush/pad in order not to drag it on the floor and leave wet marks.

TANK EMPTYING

An automatic float shut-off system (25) turns off the vacuum system when the recovery tank (23) is full.
The vacuum system shutdown is signalled by an increase in the vacuum system motor noise, moreover 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 machine with the function selection knob (31) turned to "0", check that the float inside the grid (25) has gone down to the water level. Then turn on the vacuum system by pressing the function selection knob (31).

When the recovery tank (23) is full, empty it as shown.

Recovery tank emptying

1. Check that the function selection knob (31) is turned to "0".
2. Drive the machine to the appointed disposal area.
3. Remove the transparent cover (24).
4. Grab the handle (A, Fig. 3) and lift the recovery tank (B).
5. Drain the recovery tank. Then, rinse the tank with clean water.
6. Place the tank back again on its housing in the frame and install the transparent cover.

Solution tank emptying

7. Perform steps 1 to 3.
8. Grab the handle (C, Fig. 3) and lift the solution tank (D).
9. Open the plug (E) and drain the solution tank. Then, rinse the tank with clean water.
10. Place the tank back again on its housing in the frame and install the transparent cover.

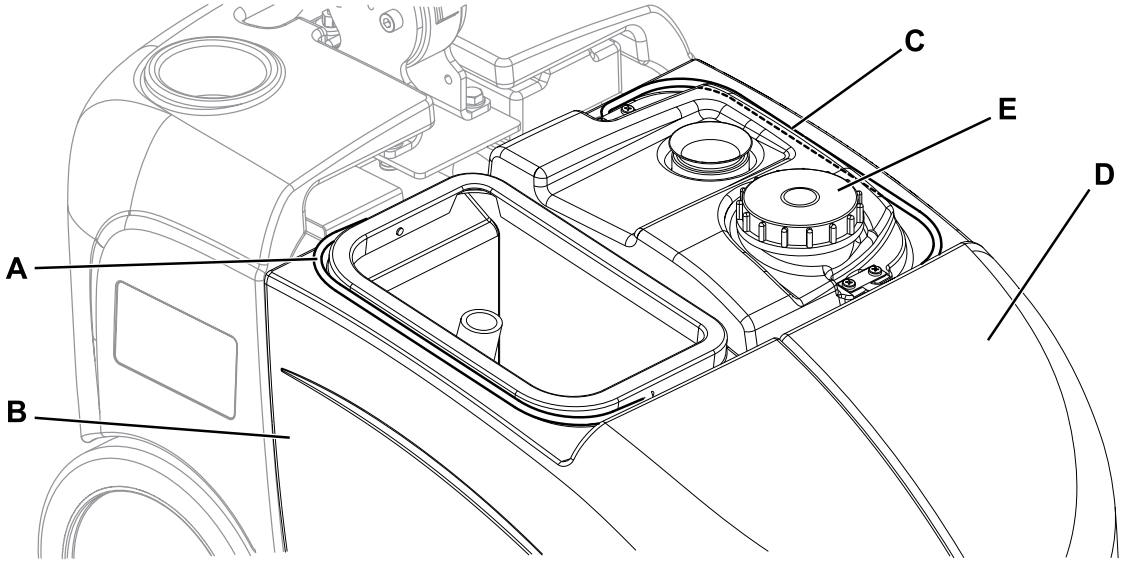


Figure 3

P100409

AFTER USING THE MACHINE

After working, before leaving the machine:

1. Empty the tanks (23 and 22) as shown in the previous paragraph.
2. Perform the daily maintenance procedures (see the Maintenance chapter).
3. Store the machine in a clean and dry place, with the brush/ pad-holder and the squeegee blades 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 described in the previous paragraph.
2. Open the cover (4) and disconnect the battery connector (7).
3. Store the machine in a clean and dry place.
4. To safeguard the brush or squeegee blades, bend the handlebar (2) forward and park the machine as shown in figure 4.

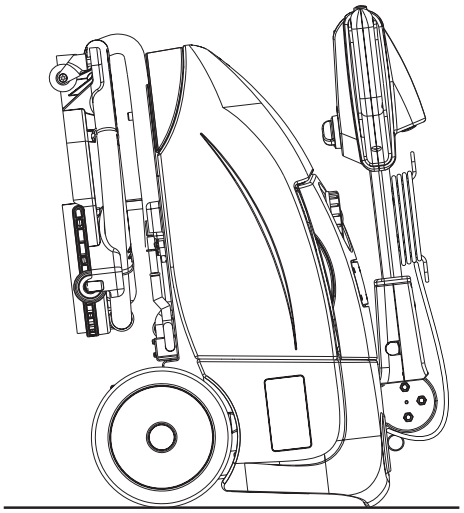


Figure 4

P100410

MAINTENANCE

The lifespan of the machine and its maximum operating safety are ensured by correct and regular maintenance. The following chart 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!
Maintenance procedures must be performed with the machine switched off and the battery/battery charger cable disconnected.
Moreover, carefully read the instructions in the Safety chapter.

All scheduled or extraordinary maintenance procedures must be performed by qualified personnel, or by an authorised Service Center. This Manual describes only the easier and most common maintenance procedures.

NOTE
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 Cleaning				
Tank and Vacuum Grid Cleaning				
Squeegee blade check and/or replacement				
Solution valve check and cleaning			(1)	
Brush deck rotation clutch check and/or replacement				(1)

(1) For the relevant procedure, refer to the Service Manual.

BATTERY CHARGING

NOTE
Charge the batteries when the yellow or red warning light turns on, or at the end of each working cycle.
Keeping the battery charged make its life last longer.

CAUTION!
When the battery is discharged, charge is as soon as possible, as that condition makes its life shorter.
Check for battery charge at least once a week.

1. Drive the machine on a level floor.
2. Check that the function selection knob (31) is turned to “0”.
3. Connect the battery charger cable (10) to the electrical mains (the electrical mains voltage and frequency must be compatible with the battery charger values shown on the machine serial number plate (1)).

NOTE
When the battery charger is connected to the electrical mains, all machine functions are automatically cut off.
The red or yellow warning light (37) is on when the battery charger is charging the batteries.

4. When the green warning light (37) stays on, the battery charging cycle is over.
5. When the battery charging is completed, disconnect the battery charger cable (10) from the electrical mains and wind it round its housing (11).
6. Now the machine is ready to be used.

NOTE
For further information about the operation of the battery charger (9), see the relevant Manual.

MACHINE SPEED ADJUSTMENT

NOTE
The machine speed varies according to the type of floor to be cleaned and the choice of using the brush or the pad.
If necessary, perform the adjustments as shown.

1. Remove the recovery and the detergent tanks.
2. Adjust the machine speed with the handwheel (A, Fig. 5):
   - Turn the handwheel counter-clockwise to increase the machine speed.
   - Turn the handwheel clockwise to decrease the machine speed.
3. If it is difficult to keep the machine moving straight-forwardly because it deviates to the left or to the right, adjust the handwheel (B) by turning it clockwise or counter-clockwise.
4. After adjusting, install the tanks as shown in Use chapter.
5. With the machine ready to operate, perform hands-on tests of the machine and, if other adjustments are necessary, repeat steps 1 to 4.

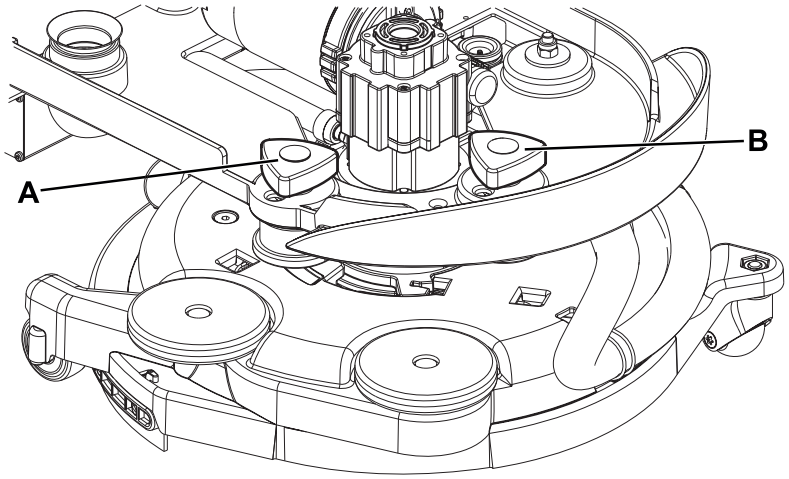


Figure 5

P100413

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. Check that the function selection knob (31) is turned to “0” and disconnect the battery connector (7).
3. Fully turn the brush/pad-holder deck (12) counter-clockwise.
4. Disconnect the vacuum hose (A, Fig. 6) from the squeegee.
5. Disengage the squeegee (B) from the deck.
6. Wash and clean the squeegee. In particular, clean the compartments (C) and the vacuum hole (D).
7. Check the front blade (E) and the rear blade (F) for integrity, cuts and tears; if necessary replace them (see the procedure in the following paragraph).
8. Assemble the components in the reverse order of disassembly.

SQUEEGEE BLADE CHECK AND REPLACEMENT

1. Clean the squeegee as shown in the previous paragraph.
2. Check the front blade (E, Fig. 6) and the rear blade (F) for integrity, cuts and tears; if necessary replace them. Check that the front corner (G) of the rear blade is not worn; otherwise, overturn the blade to replace the worn corner with an integral one. If the other corners are worn too, replace the blade as shown:
   - Remove the fastening strap (H) by disengaging it from the fasteners (I).
   - Replace (or overturn) the rear blade (F), then reinstall the fastening strap.
   - Remove the fastening strap (J) by disengaging it from the fasteners (K).
   - Replace (or overturn) the front blade (E), then reinstall the fastening strap.
3. Install the squeegee (B) by carefully inserting the hooks (L) and the vacuum hole (M) in the brush deck housings.
4. Connect the vacuum hose (A) to the squeegee.

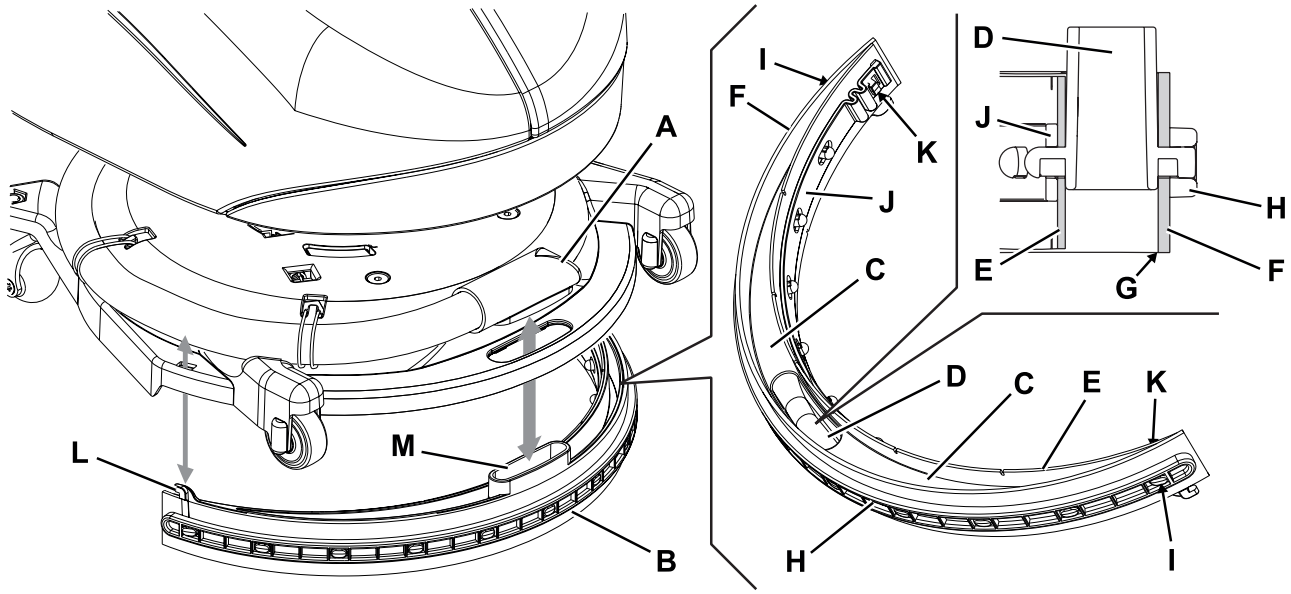


Figure 6

P100411

BRUSH CLEANING

NOTE
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 chapter.
2. Clean the brush with water and detergent.
3. Check the brush bristles for integrity and wear; if necessary, replace the brush.

TANK, COVER AND VACUUM GRID CLEANING

1. Drive the machine to the appointed disposal area.
2. Check that the function selection knob (31) is turned to “0” and disconnect the battery connector (7).
3. Remove the cover (A, Fig. 7), clean and wash the cover and the vacuum grid (B) with clean water.
4. Drain the water from the tanks (C and D) and clean them.
5. If necessary, disassemble the grid (B) and remove the float (E), than clean with care and reinstall.
6. Check the recovery tank cover gasket (F) for integrity.

NOTE
The gasket (F) creates vacuum in the tank that is necessary for vacuuming the recovery water.

If necessary replace the gasket (F) by removing it from its housing (G) on the cover. When assembling the new gasket, install the joint (H) in the area shown in the figure.

7. Check that the seating surface (I) of the gasket (F) is clean and adequate for the gasket itself.
8. Check the vacuum duct (J) and the gasket (K), carefully clean if necessary.
9. Reinstall the recovery tank cover (A).

VACUUM SYSTEM GASKET CLEANING

NOTE
The gaskets (L) and (M) create vacuum in the system that is necessary for vacuuming the recovery water.

1. Drive the machine on a level floor.
2. Check that the function selection knob (31) is turned to “0” and disconnect the battery connector (7).
3. Open the cover (A, Fig. 7) and check the vacuum system motor gasket (L) for integrity.
   If necessary replace the gasket by removing it from its housing.
4. Remove the recovery tank (C).
5. Check the recovery water duct gasket (M) for integrity. If necessary, replace the gasket.
6. Clean with care and reinstall.

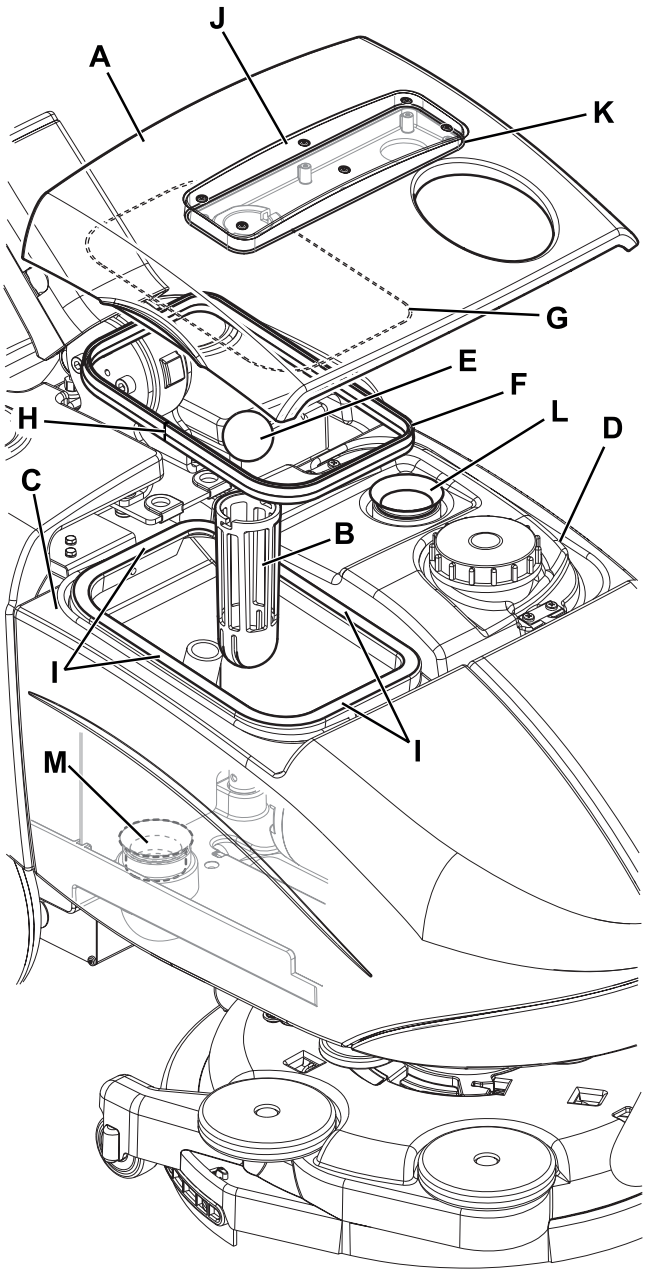


Figure 7

P100412

FUSE CHECK/REPLACEMENT/RESET

1. Drive the machine on a level floor.
2. Check that the function selection knob (31) is turned to “0” and disconnect the battery connector (7).
3. Open the cover (4) and check one of the following fuses for deactivation or integrity (Fig. 8):
   - (A): F1 (35 A) circuit breaker, brush motor.
   - (B): F2 (30 A) blade fuse, vacuum system motor.
   - (C): F3 (5 A) blade fuse, accessories.

   Reset or replace any fuse, after having checked and repaired any problem that caused deactivation.
4. Close the cover (4).

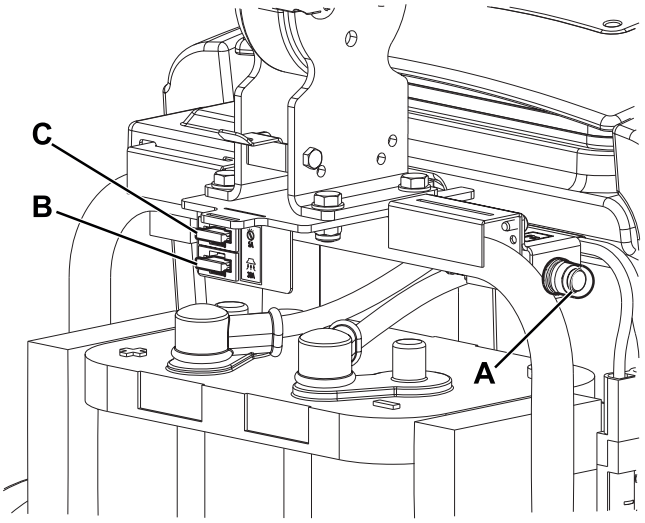


Figure 8

P100414

TROUBLESHOOTING

Trouble	Possible Cause	Remedy
The motors do not turn on; no LED turns on.	The battery connector is disconnected.	Connect.
	The battery is completely discharged.	Contact Nilfisk Service Center to restore the battery or to replace it.
	The fuse F3 is open.	Replace.
The brush motor does not run.	The F1 fuse has triggered.	Reset the fuse.
The vacuum system motor does not turn on.	The fuse F2 is open.	Replace.
The dirty water vacuuming is insufficient.	The recovery tank is full.	Empty.
	The vacuum grid is clogged or the float is stuck closed.	Clean the grid and check the float.
	The vacuum hose is disconnected from the squeegee or faulty.	Connect or replace. (*)
	The squeegee is dirty or the squeegee blades are worn or damaged.	Clean the squeegee or replace the blades.
	The recovery tank cover is not properly closed, or the gaskets are damaged.	Check and/or clean the seating surface or replace the gaskets.
	The vacuum system motor filter is dirty.	Clean.
The solution flow is insufficient.	The detergent duct is dirty/clogged.	Clean.
	The solenoid valve is faulty.	Replace. (*)
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.	Replace the blades.
When connecting the battery charger to the electrical mains the 3 LEDs on the handlebar turn on and the battery does not charge.	The battery is damaged or it is excessively discharged.	Contact Nilfisk Service Center to restore the battery or to replace it.
When connecting the battery charger to the electrical mains the yellow LED on the handlebar flashes and the battery does not charge.	The battery is not properly connected to the machine system.	Check the battery connections.
When connecting the battery charger to the electrical mains the red LED on the handlebar flashes and the battery does not charge.	There is a fault in the battery charger.	Replace. (*)
When the battery charging procedure is completed, the red LED on the handlebar flashes.	The battery has not been fully charged during the maximum time interval allowed.	Try to repeat the battery charging procedure. If the problem persists, replace the battery.

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

NOTE
The machine is inoperative without the battery charger.
In case of battery charger malfunction, contact an authorised Service Center.

For further information refer to the Service Manual, available at any Nilfisk Service Center.

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:

– Battery
– Brushes
– Plastic hoses and components
– Electrical and electronic components (*)

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