



IT **ATTENZIONE:** leggere le istruzioni prima dell'utilizzo.

EN **CAUTION:** Read the instructions before using the machine.

AT **ATTENTION:** lire attentivement les instructions avant l'usage.

DE **ACHTUNG:** Die Anweisungen bitte vor Gebrauch sorgfältig lesen.

ES **ADVERTENCIA:** leer atentamente las advertencias antes el uso de aparato.

PL **UWAGA:** przed użyciem przeczytać instrukcję.

RU **ВНИМАНИЕ:** перед использованием прочитайте инструкцию по эксплуатации.

NL **LET OP:** vóór gebruik de gebruiksaanwijzing aandachtig lezen.



**TRIER LES DÉCHETS
SEPARATE THE WASTE
DIFFERENZIA I RIFIUTI**



MANUALE USO E MANUTENZIONE **IT** pag. 20
motoscopa

INSTRUCTIONS AND OPERATING MANUAL **EN** pag. 49
Sweeper

MANUEL D'INSTRUCTION **FR** page 78
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РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ И ТЕХНИЧЕСКОМУ ОБСЛУЖИВАНИЮ **RU** стр. 191
Подметальных машин

GEBRUIKERS- EN ONDERHOUDSHANDLEIDING **NL** pag. 220
Veegmachine



Meijer VR950

Technical data plate

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CHAPTER 1 - PURPOSES / INTENTIONS

The company is pleased to be able to consider you one of the owners of a motorsweeper. Following the instructions below, we are sure you will fully appreciate the working possibilities of this motorsweeper.

This instruction manual is provided to instruct and define as clearly as possible the purposes and intentions for which the machine was built and for use in the context of maximum safety.

You will also find listed all those minor operations necessary to keep the motorsweeper efficient and safe.

Always contact specialised personnel for extraordinary maintenance operations (par. CHAPTER 16).

You will find information on the residual hazards or risks, that is, all those risks that cannot be eliminated, with the appropriate instructions for each case. There will be information on the permitted and not permitted uses, indications on the commissioning of the motorsweeper, technical indications and permitted performances, indications on the use of the motorsweeper and its maintenance, indications for decommissioning and for dismantling or demolition.

CHAPTER 2 - LEGEND

The following symbols are used in this manual and on the machine, which can be found individually or combined.

	Indicates a warning or note about key functions or useful functions. <u>Pay close attention to the text blocks indicated by this symbol.</u>
	Indicates a note about key functions or useful functions.
	Indicates the need to consult the use and maintenance manual before carrying out any operation
	Indicates that the information where the symbol is displayed relates to maintenance.
	Indicates that the equipment is suitable for direct current only.
	Indicates the danger of inhalation of exhaust fumes deriving from the use of combustion engines in inadequately ventilated areas.
	Wear eye protection.
	Wear ear protectors.
	Wear protective gloves.
	Wear protective clothing.

	Wear a respiratory protective mask.
	Wear safety footwear.
	Fasten the seat belt

Refer to the specific manuals of the machine parts (e.g. engine, batteries, etc.) for further symbols not shown in this document.

CHAPTER 3 - GENERAL RULES



BEFORE USING THE MACHINE READ THIS INSTRUCTION MANUAL CAREFULLY.

THE COMPANY DECLINES ANY LIABILITY FOR DAMAGE TO PROPERTY AND/OR PERSONS RESULTING FROM FAILURE TO COMPLY WITH THE RULES LISTED IN THIS MANUAL OR FROM IRREGULAR AND/OR IMPROPER USE OF THE MACHINE.

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 APPLIANCE.

IN ORDER TO PREVENT UNAUTHORISED USE OF THE MACHINE, THE DRIVING FORCE MUST BE SWITCHED OFF OR MADE SAFE, FOR EXAMPLE BY REMOVING THE IGNITION KEY. THE MACHINE LEFT UNATTENDED MUST BE MADE SAFE AGAINST INVOLUNTARY MOVEMENTS.

THIS MACHINE IS INTENDED FOR COMMERCIAL USE, FOR EXAMPLE IN HOTELS, SCHOOLS, HOSPITALS, FACTORIES, SHOPS, OFFICES AND RENTAL BUSINESSES AND IN LARGE SPACES IN GENERAL. IN ADDITION, THE MACHINE:

- CAN BE USED INDOORS WITHOUT RESTRICTIONS (BATTERY POWERED MODELS ONLY);
- MUST NOT BE USED OR KEPT OUTSIDE IN HUMID CONDITIONS OR EXPOSED DIRECTLY TO RAIN; MUST BE STORED UNDER COVER.

ALL THE TOOLS THAT WILL BE NECESSARY FOR PERSONAL PROTECTION (GLOVES, MASKS, GLASSES, WHITE LENSES, KEYS AND TOOLS) ARE SUPPLIED BY THE USER. FOR YOUR CONVENIENCE, PLEASE REFER TO THE TABLE OF CONTENTS.

FOR FURTHER REFERENCE, ALWAYS KEEP THIS MANUAL WITH YOU (IN CASE OF LOSS, IMMEDIATELY REQUEST A COPY FROM YOUR DEALER).

THE COMPANY RESERVES THE RIGHT TO MAKE CHANGES OR IMPROVEMENTS TO THE MACHINES OF ITS OWN PRODUCTION WITHOUT THE OBLIGATION ON ITS PART TO IMPLEMENT THE SAME ON THE MACHINES PREVIOUSLY SOLD.

CHAPTER 4 - PREPARATION (UNPACKING)

The motorsweeper is delivered packed on top of its pallet and comes with the side brush/brushes disassembled. After removing the outer packaging, the machine must be removed from the pallet:

- Lifting devices: After having lifted the motor hood, proceed to fit the lifting eyebolts (**Item 2 PIC 2**). Subsequently, use for slings equipped with hooks. These slings must be chosen according to the weight indicated on the CE plate. Then lift the machine from the pallet with the lifting means suitable for the weight of the machine displayed on the CE plate. Lay the machine on the ground very slowly avoiding it being struck.
- Inclined surface or descent platforms (operation to be performed without persons in front of the machine and on a wide flat surface): Use an inclined surface, or three platforms, with a capacity suitable for the weight of the machine indicated on the CE plate and which is at least 1.5m long to avoid damaging the

dust seals. Install it adhering to the narrow side of the pallet. Remove the wheel locks, get into the end of the outer packaging operation, disassemble (**Item 4 PIC 2**), pressing the break lever (**Item 3 PIC 2**) in order to trigger it (**Item 4 PIC 2**).
as illustrated in paragraph 5.5.



IMPORTANT: All waste materials resulting from the unpacking operation must be disposed of by the user, following the specific disposal regulations currently in force.



CHECK THAT THE PROTECTIONS ARE PERFECTLY INTACT AND CORRECTLY ASSEMBLED; IN CASE OF DEFECTS OR MISSING ELEMENTS DO NOT PROCEED WITH START-UP AND IMMEDIATELY CONTACT THE DEALER OR THE PARENT COMPANY.

CHAPTER 5 - MACHINE DESCRIPTION

5.1. OPERATION AND MAIN PARTS

The machine has been designed for the cleaning and removal of dust and dirt generally present on hard, not excessively uneven flat surfaces such as: cement, asphalt, stoneware, ceramic, wood, sheet metal, marble, rubber or plastic rugs in general, ashlar or smooth, synthetic or short pile fibre carpets. The motorsweeper is controlled by an operator on board the machine and is of the manual **back side** discharge type. Removal of the coarsest dirt takes place through the action of the rotating brushes (**Item 1 and 2 PIC 3**) while finer dirt is removed through a suction system (**Item 4 PIC 3**), which also prevents the formation of dust due to the action of the brushes. In particular, the machine is equipped with a side brush (**Item 1 PIC 3**; operator left side brush on request) that convey the dirt to the centre of the machine, and a cylindrical rotating central brush (**Item 2 PIC 3**), assembled transversely to the machine, which removes dirt by discharging it into the waste container located on the **back side** of the machine (**Item 3 PIC 3**). The finest debris, instead, is trapped in the filter system (**Item 5 PIC 3**) and dropped into the waste container thanks to the filter shaker (**Item 6 PIC 3**). The machine operates through a battery motor or the machine operates through a gasoline endothermic engine (depending on the versions). All the brushes present are adjustable and can be disconnected by the operator through dedicated controls.

5.2. SAFETY PROTECTIONS AND DEVICES

As shown in PIC 4, it is possible to see the safety protections and devices that must be intact and carefully fitted. The machine must not be used with damaged or missing protections or without safety devices that are not intact and functioning correctly. A description of the protections and safety devices is therefore provided below.

ITEM No.	DESCRIPTION
1	Engine hood
2	Filter / fan casing
3	Man present safety micro
4	DX and SX side panel
5	Protection carter central dx and sx brush
6	Bumper
7	Switch carter

5.3. SIDE BRUSH

The side brush is installed on the operator side, Item 1 PIC 5, acts as a conveyor of dust and debris, and is designed primarily for the cleaning of edges, corners and profiles. It is possible to disengage each brush through a dedicated command. It is available in different hardness and nature of the bristles, depending on the type of material to be collected or the flooring. On request, the additional side brush installed on the opposite side is installed.



IMPORTANT: Do not touch the side brush with your hands during rotation and do not collect filamentary materials (wires, ropes, etc.)

5.4. CENTRAL BRUSH

The central brush Item 2 PIC 5 is the main part of the machine and allows the loading of dust and debris into the waste container. It is available in different hardness and nature of the bristles, depending on the type of material to be collected or the flooring. It is adjustable in height when worn.



IMPORTANT: Do not collect cords, wires, packing straps, sticks, etc. longer than 25 cm because they could wrap around the central and side brush and then damage it.

5.5. DUST SEALS

The seals Item 3 PIC 5 surround the central brush and are very important for correct functioning of the machine as they allow dust to be suctioned in; it is important to check its condition often.

5.6. SUCTION SYSTEM

The suction system (Item 4 PIC 3) allows collection of the finest debris and prevents the formation of dust that can form by the action of the brushes.

5.7. FILTERING SYSTEM

The filtering system is obtained by means of a pocket filter Item 1 PIC 6 and traps the finest particles that are suctioned in by the suction system and prevents dust from spreading into the outside environment. A shaking system (Item 2 PIC 7) is used to release debris inside the waste container recleaning the filters.

5.8. WASTE CONTAINER

The waste container (Item 1, PIC 3) is used to contain all the material collected by the central brush and the dust of the filters. It is operated by a hydraulic actuator (Item 1 e 2, PIC 9) which allows it to be emptied.

5.9. PROPELLER, STARTER BATTERY AND TRACTION BATTERIES

5.9.1. BATTERY VERSION

The battery (Part. 1, PIC 6) power the propulsion and all the other functions of the sweeper. It is possible to recharge the sweeper using the dedicated plug connection (Part. 2, PIC 6). To have access to the batteries it is necessary to lift the bonnet (Part. 1, PIC 4).

5.9.2. FUEL ENGINE VERSION (WITH ENDOTHERMIC ENGINE)

The propeller (Part. 1, PIC 7) of the machine is responsible for the operation of the hydraulic system, which manages the mobility and the main functions of the machine. Its starting is managed by the starter battery (Part. 2, PIC 7). It is possible to access the propeller parts and the battery by lifting the bonnet (Part. 1, PIC 4).

5.10. TECHNICAL DATA

TECHNICAL CHARACTERISTICS		battery-powered version	version with an endothermic engine
Power supply	//	BATTERY	PETROL ENGINE
Rated power / rated voltage	W/Volt	2100/24 DC	3600
Width central brush /Cleaning track	mm	700 x Ø280	700 x Ø280
Max advancement speed	km/h	6	7,5
Max. reverse speed	Km/h	3	2
Working speed	Km/h	5	5
Maximum cleaning capacity (with no. 2 side brushes)	sqm/h	6200	8280
Maximum slope	%	12	16
Drive	//	Rear	Front
Transmission	//	Electric	Hydraulic
Minimum distance for reversing between two walls	mm	2200	2200
Filtering surface (no. 1 pocket filter)	sqm	6	6
Container capacity	L	62	62
Maximum permissible waste weight	kg	35	35
Maximum length with side brush	mm	1550	1550
Maximum width (with no. 1 side brush)	mm	1032	1032
Maximum width (with no. 2 side brushes)	mm	1148	1148
Standard version height	mm	1147	1147
Height with operator roof		1948	1948
Net weight , standard vers 1	kg	374	290
Gross Vehicle Weight , standard vers. (GVW) 2	kg	555	458
Transportation weight)3	kg	429	345
Measured sound power level LwA	dB	90	97
Guaranteed sound power level LwA	dB	91	99
Uncertainty	dB	1,5	1,5
Sound pressure level LpA	dB	76	84
Instantaneous sound pressure (maximum value)	dB(A)	< 130	< 130
Internal body vibration a	dB(C)	0,65	0,71
	m/s ²	0,32	0,18
Uncertainty	m/s ²	1,92	3,74
Hand-arm vibration a _{hw}	m/s ²	0,81	1,15
Uncertainty	m/s ²		

¹ Includes weights: batteries, liquids, brushes. Excludes weights: standard operator (75kg), waste collected (max), and optional

² Includes weights: battery, liquids, brushes, collected waste (max), standard operator (75kg) and second side brush), (10kg, optional), operator roof (20kg, optional), protection of the control panel(1kg, optional), protection of side brush (1,2kg x2, optional), Work lights (1,5kg, optional), flash (1,5kg, optional), waste sheet metal container (+5kg compared to a plastic container, optional), vacuum cleaner kit (12kg, optional), waste collected (max: 7kg) (Sect.3.114, ISO 60335-1 + ISO 60335-2-72).

³ Includes weights: batteries, liquids, brushes and collected waste (max). Excludes weights: standard operator (75kg), waste collected (max), and optional (Sect. 7.12, ISO 60335-1 + ISO 60335-2-72)

CHAPTER 6 - WORK STATION AND CONTROLS

6.1. WORKPLACE POSITION

The workplace that must be occupied by the operator during use of the machine is only that shown in PIC 8. All the manual and pedal controls for use of the machine are located at the operator's seat.



IMPORTANT: *For safety reasons, the machine switches off automatically if the operator gets up from the driving position.*

6.2. OPERATOR COMFORT

To ensure correct posture and the desired degree of comfort during use of the machine.

6.3. CONTROL DEVICES: BATTERY-POWERED VERSION

6.3.1. POSITION OF THE CONTROLS AND DESCRIPTION

As mentioned in para. § 6.1, the control devices are located at the operator seat. PIC 9 displays the description and position of the operator controls and a detailed description below.

Item	DESCRIPTION
1	Starter key
2	Throttle Accelerator
3	Gear selector (forward, backward)
4	Brake
5	Parking Brake
6	Flap raise
7	Central brush control
8	Side brush control
9	Adjusting the central brush action
10	Suction knob
11	Side brush, central brush, suction switch
12	Filter shaker switch
13	Hour meter
14	Horn switch
15	Work lights switch
16	Battery level indicator

6.3.2. STARTER KEY

Through the action on the key switch (Item 1 PIC 9) it is possible to start the engine and stop it. It is also possible to remove the key.

6.3.3. ACCELERATOR PEDAL

The accelerator pedal (Item 2 PIC 9) is operated by pressing it. It manages the operation of the motorsweeper. The direction of travel (forward or reverse) will be decided from the position set via the travel selector (Item 3 PIC 9).

6.3.4. GEAR SELECTOR (FORWARD, BACKWARD)

The gear selector (Item 3 PIC 9) is used to control the direction of travel of the motorsweeper (forward, backward and neutral).

6.3.5. BRAKE PEDAL

Pressing the brake pedal, (Item 4 PIC 9) it is possible to act on the braking system of the motorsweeper, stopping its operation.

6.3.6. PARKING BRAKE

This control is used to keep the motorsweeper braked when not in service and consists of an additional pedal that controls the brake lock (Item 5 PIC 9).

6.3.7. FLAP RAISE

The flap raise pedal (Item 6 PIC 9) allows the front seal to be lifted, making it possible to collect bulky and light objects (e.g. leaves, cans, cigarette packs, etc.).

6.3.8. CENTRAL BRUSH CONTROL

Through the control lever (Item 7 PIC 9) it is possible to raise or lower the central brush in order to ensure or not its cleaning action.

6.3.9. SIDE BRUSH CONTROL

By using the knob (Item 8 PIC 9) it is possible to configure the side brush in the working position (in contact with the surface to be cleaned) or at rest (in the raised position). Intermediate positions are not possible.

6.3.10. CENTRAL BRUSH ACTION REGULATOR

The central brush action regulator (Item 9 PIC 9) is represented by a slider along a slot that can be locked in place by rotating a screw. It is used to adjust the height of the central brush from the floor when it is fully lowered (working position), adjusting the action on the surface to be cleaned.

6.3.11. SUCTION KNOB

By pulling or pressing the suction knob (Item 10 PIC 9) it is possible to adjust the suction system.

6.3.12. SIDE BRUSH, CENTRAL BRUSH, SUCTION SWITCH

By rotating the switch button (Item 11 PIC 9) it is possible to operate and stop the side brush, central brush and suction system.

6.3.13. FILTER SHAKER SWITCH

Pressing the filter shaker button (Item 12 PIC 9) it is possible to operate the mechanism responsible for the falling of fine debris and dust trapped in the pocket filters. The switch is characterised by only one stable position.

6.3.14. HOUR METER

(Item 13 PIC 9) An instrument that displays the number of hours of work performed by the machine.

6.3.15. HORN SWITCH

Pressing the button (Item 14 PIC 9) activates the horn.

6.3.16. WORK LIGHTS SWITCH

The switch manages the switching on and off of the work light(s) (Item 15 PIC 9) (only in equipped models).

6.3.17. BATTERY LEVEL INDICATOR

It indicates the charge level of the batteries and is represented by three coloured lights of red, yellow and green (Item 16 PIC 9) which symbolise, respectively: full charge, medium charge, low charge or no charge. Turning the starter key (Item 1 PIC 9), the LEDs light up in the following order: red, yellow, green.

6.4. CONTROL DEVICES: VERSION WITH ENDOTHERMIC ENGINE

6.4.1. POSITION OF THE CONTROLS AND DESCRIPTION

As mentioned in para. § 6.1, the control devices are located at the operator seat. PIC 10 displays the description and position of the operator controls and a detailed description below.

Item	DESCRIPTION
1	Starter key
2	Engine regulator
3	Gear selector (forward, backward)
4	Brake
5	Parking Brake
6	Flap raise
7	Central brush control
8	Side brush control
9	Adjusting the central brush action
10	Suction knob
-	-
12	Filter shaker switch
13	Hour meter
14	Horn switch
15	Work lights switch
-	-
17	Starter
18	Handle for manual start-up

6.4.2. STARTER KEY

Through the action on the key switch (Item 1 PIC 10) it is possible to start the engine and stop it . It is also possible to remove the key.

6.4.3. ENGINE REGULATOR

The engine regulator control (Item 2 PIC 10) consists of a lever through which it is possible to adjust the intensity of the engine revolutions.

6.4.4. GEAR SELECTOR (FORWARD, BACKWARD)

The gear selector (Item 3 PIC 10) is used to control the direction of travel of the motorsweeper (forward, backward and neutral).

6.4.5. BRAKE PEDAL

Pressing the brake pedal, (Item 4 PIC 10) it is possible to act on the braking system of the motorsweeper, stopping its operation.

6.4.6. PARKING BRAKE

This control is used to keep the motorsweeper braked when not in service and consists of an additional pedal that controls the brake lock (Item 5 PIC 10).

6.4.7. FLAP RAISE

The flap raise pedal (Item 6 PIC 10) allows the front seal to be lifted, making it possible to collect bulky and light objects (e.g. leaves, cans, cigarette packs, etc.).

6.4.8. CENTRAL BRUSH CONTROL

Through the control lever (Item 7 PIC 10) it is possible to raise or lower the central brush in order to ensure or not its cleaning action.

6.4.9. SIDE BRUSH CONTROL

By using the knob (Item 8 PIC 10) it is possible to configure the side brush in the working position (in contact with the surface to be cleaned) or at rest (in the raised position).

6.4.10. CENTRAL BRUSH ACTION REGULATOR

The central brush action regulator (Item 9 PIC 10) is represented by a slider along a slot that can be locked in place by rotating a screw. It is used to adjust the height of the central brush from the floor when it is fully lowered (working position), adjusting the action on the surface to be cleaned.

6.4.11. SUCTION KNOB

By pulling or pressing the suction knob (Item 10 PIC 10) it is possible to adjust the suction system.

6.4.12. FILTER SHAKER SWITCH

Pressing the filter shaker button (Item 12 PIC 10) it is possible to operate the mechanism responsible for the falling of fine debris and dust trapped in the pocket filters. The switch is characterised by only one stable position.

6.4.13. HOURLY METER

(Item 13 PIC 10) An instrument that displays the number of hours of work performed by the machine.

6.4.14. HORN SWITCH

Pressing the button (Item 14 PIC 10) activates the horn.

6.4.15. WORK LIGHTS SWITCH

The switch manages the switching on and off of the work light(s) (Item 15 PIC 10) (only in equipped models).

6.4.16. STARTER

The lever (Item 17 PIC 10) controls the opening of the butterfly valve of the air suction of the engine.

6.4.17. MANUAL STARTING HANDLE

The handle (Item 18 PIC 10) controls the starting of the engine that is the alternative to the ordinary key starting (Item 1 PIC 10).

6.5. USE OF SAFETY PROTECTIONS AND DEVICES

6.5.1. ENGINE HOOD

The engine hood (Item 1PIC 4) can be easily opened to allow inspection and maintenance operations, pressing the seat rear (A, PIC 11).

The carter filter (Item 3PIC 4) can be easily opened to allow inspection and maintenance operations, simply lifting it from its position (B, PIC 11).

CHAPTER 7 - PERMITTED AND NON-PERMITTED CONDITIONS OF USE

7.1. PERMITTED CONDITIONS OF USE

The motorsweeper was created to clean processing residues, dust, dirt in general, all flat, hard, not excessively uneven surfaces such as: cement, asphalt, stoneware, ceramic, wood, sheet metal, marble, rubber or plastic rugs in general, ashlar or smooth, synthetic or short pile fibre carpets.

The permitted conditions of use are as follows.

Minimum operating temperature: -20°C (-4°F)
Maximum operating temperature: +38°C (+100.4°F)
Maximum front and side slope: para. § 5.10

BATTERY-POWERED VERSION :



REFER TO THE DOCUMENTATION PROVIDED BY THE BATTERY AND CHARGER MANUFACTURER FOR ADDITIONAL PERMITTED CONDITIONS OF USE.

VERSION WITH ENDOTHERMIC ENGINE:

REFER TO THE DOCUMENTATION PROVIDED BY THE BATTERY AND ENGINE MANUFACTURER FOR ADDITIONAL PERMITTED CONDITIONS OF USE.



IMPORTANT: *Do not use and do not leave at rest with temperatures above +40°C (+104°F).*



IMPORTANT: *proceed with emptying, cleaning and maintenance of the machine only on flat and regular flooring that allows perfect stability to the machine for the entire duration of all the afore-mentioned operations.*

7.2. NON-PERMITTED CONDITIONS OF USE



THIS MACHINE IS FOR DRY USE ONLY.



FOR MODELS WITH INTERNAL COMBUSTION ENGINE: DO NOT INHALE EXHAUST GAS FUMES. ONLY USE INDOORS WHEN ADEQUATE VENTILATION IS PROVIDED, AND WHEN A SECOND PERSON HAS BEEN INSTRUCTED TO LOOK AFTER YOU.



DO NOT USE FOR CLEANING PURPOSES ON SURFACES HAVING A GRADIENT EXCEEDING THAT MARKED ON THE MACHINE, SEE § 5.10



DO NOT USE THE MOTORISED BRUSH WHERE THERE IS A DANGER OF OBJECTS FALLING



IT CANNOT BE USED IN ENVIRONMENTS WHERE EXPLOSIVE OR FLAMMABLE MATERIALS ARE PRESENT.



THE MOTORSWEEPER CANNOT BE USED ON SLOPES GREATER THAN WHAT IS REPORTED.



IT CANNOT BE USED ON DIRT, GRAVEL OR VERY UNEVEN SURFACES.



IT CANNOT COLLECT OILS, POISONS AND CHEMICAL MATERIALS IN GENERAL, (IN THE CASE OF HAVING TO USE THE MACHINE IN CHEMICAL PLANTS REQUEST SPECIFIC AUTHORISATION THAT WILL BE PRODUCED BY THE RETAILER OR PARENT COMPANY).



IT CANNOT BE USED ON URBAN OR NON-URBAN ROADS AND MUST NOT TRAVEL ON ANY PUBLIC ROAD.



IT CANNOT BE USED IN POOR LIGHTING ENVIRONMENTS, EXCEPT FOR MODELS EQUIPPED WITH WORK LIGHTS.



IT CANNOT BE TOWED IN ANY WAY INCLUDING ON PRIVATE PREMISES AND ON PUBLIC ROADS OR IN PUBLIC PLACES.



IT CANNOT BE USED TO SWEEP SNOW OR TO WASH OR DEGREASE SURFACES IN GENERAL THAT ARE WET OR VERY WET.



IT CANNOT OPERATE IN THE PRESENCE OF SPINNING OR THE CONSTRUCTION OF FILIFORM MATERIALS BECAUSE THE NATURE OF THE MATERIAL TO BE COLLECTED IS INCOMPATIBLE WITH THE ROTATION OF THE BRUSHES.



IT CANNOT BE USED IN ANY WAY AS A SUPPORT FOR OBJECTS OR AS A RAISED FLOOR FOR PROPERTY AND PERSONS.



NEVER LET ANYONE APPROACH WITHIN RANGE OF THE MACHINE.



DO NOT MAKE CHANGES OF ANY KIND UNLESS AUTHORISED BY THE MANUFACTURER.



BATTERY-POWERED VERSION: IN ADDITION, REFER TO THE DOCUMENTATION PROVIDED BY THE BATTERY AND CHARGER MANUFACTURER FOR ANY ADDITIONAL CONDITIONS OF USE THAT ARE NOT PERMITTED. VERSION WITH ENDOTHERMIC ENGINE: IN ADDITION, REFER TO THE DOCUMENTATION PROVIDED BY THE BATTERY AND ENGINE MANUFACTURER FOR ANY ADDITIONAL CONDITIONS OF USE THAT ARE NOT PERMITTED.

CHAPTER 8 - COMMISSIONING



BEFORE PROCEEDING, IT IS NECESSARY TO HAVE READ ALL THE PREVIOUS CHAPTERS.

8.1. CHECKS BEFORE FIRST START-UP

The motorsweeper is supplied ready for the first start-up by the user. Adjustments, inspections and functional tests have already been performed by the Manufacturer.

VERSION WITH ENDOTHERMIC ENGINE : Carefully check the hydraulic oil level in the dedicated tank and, if necessary, top it up to the level shown (PIC 12) with ISO 46 L-HV oil (maximum quantity: 5 L).



Read the engine instruction booklet carefully, but in any case:

- 1 - Check the engine oil level. If it is low top up.
- 2 - Check the water level in the radiator.
- 3 - Check the fuel level. If it is low top up.

All these operations must be carried out with the engine off and cold.

8.2. TRAINING OF OPERATORS

8.2.1. BATTERY-POWERED VERSION

There is no need for specific training of the operator with regard to the first start-up of the motorsweeper, except for the information contained in this manual.

8.2.2. VERSION WITH ENDOTHERMIC ENGINE

There is no need for specific training of the operator with regard to the first start-up of the motorsweeper, except for the information contained in this manual and the engine instruction booklet.

8.3. FIRST START-UP

The first start-up of the motorsweeper is carried out in the same manner as described in paragraph § 9.3.

CHAPTER 9 - USING THE MACHINE



BEFORE PROCEEDING, IT IS NECESSARY TO HAVE READ ALL THE PREVIOUS CHAPTERS.

9.1. CORRECT USE AND TIPS



NEVER TOUCH THE SIDE BRUSH WITH YOUR HANDS DURING ROTATION



CHECK THAT THERE ARE NO PERSONS LESS THAN 2 METERS FROM THE MOTORSWEEPER DURING THE WASTE CONTAINER EMPTYING OPERATIONS. ALSO CHECK THAT THERE IS ADEQUATE SPACE TO AVOID SHOCKS THAT COULD DAMAGE THE MOTORSWEEPER AND COMPROMISE ITS OPERATION (PARAGRAPH § 11.3.2).



Be very careful when passing over rails or gate guides etc. These are the source of the greatest damage to the dust seals. When it is necessary to pass over them, do so very slowly



Disconnect the filter system when moving the machine over wet or very wet surfaces to avoid dampening and therefore deteriorating the filter. Avoid passing over puddles.



If the surface to be cleaned is very dirty due to the quantity or quality of the material or dust to be collected, it is advisable to carry out a first "rough" sweep without paying too much attention to the result obtained. After this, with the waste container empty and the filters well shaken, repeat the steps; this will obtain the desired effect.



The side brush must only be used for cleaning edges, profiles, corners, etc., it must be raised (disconnected) immediately afterwards in order to avoid raising unnecessary dust, and because the result obtained with the side brush inserted is always lower than that of the central brush only.



For a good result, empty the container often and keep the filters clean by vibrating them by means of the filter shaker.



IMPORTANT: Before starting the work, check if on the surface there are any cords, plastic or metal wires or long rags, sticks, power wires etc.; these are dangerous and could damage the dust seals and brushes. They must therefore be removed before starting work with the machine.



IMPORTANT: For safety reasons, the machine switches off automatically if the operator gets up from the driving position. It can only be started when seated in the driver's seat.

9.2. TRAINING OF OPERATORS

9.2.1. BATTERY-POWERED VERSION

There is no need for specific training of the operator with regard to the use of the motorsweeper, except for the information contained in this manual.

9.2.2. VERSION WITH ENDOTHERMIC ENGINE

There is no need for specific training of the operator with regard to the use of the motorsweeper, except for the information contained in this manual and the engine instruction booklet.

9.3. OPERATIONAL START-UP

9.3.1. BATTERY-POWERED VERSION

To start the machine:

1. Turn the starter key (Item 1 PIC 9) into the "ON" position, to the first click (PIC 13).

9.3.2. VERSION WITH ENDOTHERMIC ENGINE

To start the machine:

1. Turn the starter key (Item 1 PIC 10) into the "1" position, to the first click (PIC 14). The electric motorsweeper services are also activated;
 2. Turn it again to the "2" position, to the second click, The engine begins to start. Push the starter lever (Item 17 PIC 10), to activate the preheating of the engine spark plugs, to open the throttle (PIC 15) before turning the key (before turning the key).
 3. When the engine is started, release the key that will return to the "1" position.
 4. After starting, gradually bring the throttle lever (Item 2 PIC 10) to the $\frac{1}{3}$ of the stroke, allowing the engine (PIC 16) to warm up for a few minutes.
 5. Adjust the throttle lever to at least $\frac{1}{2} \div \frac{3}{4}$ of the stroke for optimal performance.
- Alternatively to the starting key, it's possible to start the engine manually through the handle. In this case:
- (Part. 18 PIC 10). In this case:
1. Pull the handle with moderate strength and then release it (PIC 17). Repeat this operation until the engine starts.
In case of cold start, push the starter lever (Part. 17 PIC 10) to open the air butterfly valve (PIC 15) before turning the key. After that the engine has started, pull the lever to close the air butterfly valve.
 2. After starting, gradually bring the throttle lever (Item 2 PIC 10) to the $\frac{1}{3}$ of the stroke, allowing the engine (PIC 16) to warm up for a few minutes.
 3. Adjust the throttle lever to at least $\frac{1}{2} \div \frac{3}{4}$ of the stroke for optimal performance.

9.4. TRAVEL

9.4.1. BATTERY-POWERED VERSION

To activate travel:

1. Disengage the parking brake (Item 5 PIC 9) see § 9.6.
2. Position the gear selector (Item 3 PIC 9) in the desired direction: forward for forward gear, reverse for reverse motion (PIC 18).
3. Gradually press the accelerator pedal with your foot (Item 2 PIC 9). Manage the direction of travel through the steering wheel.
4. Release your foot to stop the traction of the engine and gradually press the brake pedal (Item 4 PIC 9) to finish operation of the motorsweeper.
5. Return the gear selector to the central (idle) position as shown in PIC 18.

If necessary, activate the work lights by using the switch (Item 15 PIC 9)(PIC 19) (only in models where the work lights are included).

NOTE 1: The reverse speed is reduced by half with respect to the forward speed.

NOTE 2: An intermittent beep signals reversing of the motorsweeper (only in models where the work lights are included)

9.4.2. VERSION WITH ENDOTHERMIC ENGINE

To activate travel:

1. Disengage the parking brake (Item 5 PIC 10) see § 9.6.
2. Gradually press the direction selector pedal with your foot (Item 3 PIC 10).
Pressing forwards will activate forward motion while pressing backwards will activate the reverse movement (PIC 20). To reach the maximum travel speed, adjust the engine speed regulator lever (Item 2 PIC 10) to the end of the stroke (PIC 16) and press the pedal. Manage the direction of travel through the steering wheel.
3. Release your foot to stop the traction of the engine and gradually press the brake pedal (Item 4 PIC 10) to finish operation of the motorsweeper.

If necessary, activate the work lights by using the switch (Item 15 PIC 10)(PIC 21) upwards (only in models where the work lights are included).

NOTE 1: The reverse speed is reduced by half with respect to the forward speed.

NOTE 2: An intermittent beep signals reversing of the motorsweeper (only in models where the work lights are included)

9.5. OPERATIONAL SHUTDOWN

9.5.1. BATTERY-POWERED VERSION

To turn off the machine and make it inactive, turn the starter key (Item 1 PIC 9) anti-clockwise until it reaches the "off" position (PIC 16).

In the event of prolonged stops, the parking brake must be engaged (Item 5 PIC 9) as described in paragraph § 9.6.

NOTE: the braking system is also working with the machine switched off.



It is advisable to remove the key when the engine is switched off during maintenance, inspection and adjustment operations to prevent inadvertent or accidental ignition by persons unrelated to the operations

9.5.2. VERSION WITH ENDOTHERMIC ENGINE

To stop the engine, bring the engine speed regulator lever (Item 2 PIC 10) (PIC 16) to a minimum (drawing of a turtle) and turn the starter key (Item 1 PIC 10) anti-clockwise until it reaches the "0" position (PIC 14).

In the event of prolonged stops, the parking brake must be engaged (Item 5 PIC 10) as described in paragraph § 9.6.

NOTE: the braking system is also working with the machine switched off.



It is advisable to remove the key when the engine is switched off during maintenance, inspection and adjustment operations to prevent inadvertent or accidental ignition by persons unrelated to the operations

9.6. PARKING

9.6.1. BATTERY-POWERED VERSION

In case of prolonged stops, in order to ensure the stability of the machine, it is necessary to activate the parking brake (Item 5 PIC 9) proceeding as follows (PIC 22):

1. Press the brake pedal (Item 4 PIC 9) (A PIC 22)
2. Press the parking brake lever (Item 5 PIC 22)(B PIC 22).
3. Release the brake pedal, check that it is locked.

In the event of prolonged stops, the parking brake must be engaged (Item 5 PIC 9), push the lever, releasing the brake pedal (Item 4 5 PIC 9, C PIC 22), as described in paragraph § 9.6. The lever will return to the home position on its own.

NOTE: the braking system is also working with the machine switched off.

9.6.2. VERSION WITH ENDOTHERMIC ENGINE

In case of prolonged stops, in order to ensure the stability of the machine, it is necessary to activate the parking brake (Item 5 PIC 10) proceeding as follows (PIC 23):

1. Press the brake pedal (Item 4 PIC 10) (A PIC 23)
2. Pull the parking brake lever (Item 5 PIC 10) (B PIC 23).

To disengage the parking brake, push the brake lever, and release the brake pedal (Item 4 PIC 10) (C PIC 23). The lever will return to the home position on its own.

NOTE: the braking system is also working with the machine switched off.

9.7. EMERGENCY STOP

9.7.1. BATTERY-POWERED VERSION

In case of emergency, it is necessary to:

1. turn the starter key (Item 1 PIC 9) anti-clockwise until it reaches the "OFF" position (PIC 13).
2. Engage the parking brake as described in paragraph 9.6.1.

9.7.2. VERSION WITH ENDOTHERMIC ENGINE

In case of emergency, it is necessary to:

1. turn the starter key (Item 1 PIC 10) anti-clockwise until it reaches the "0" position (PIC 14).
2. Engage the parking brake as described in paragraph 9.6.2.

9.8. CENTRAL BRUSH

9.8.1. BATTERY-POWERED VERSION

To start the cleaning operations of the motorsweeper it is always necessary to insert the central brush (Item 2 PIC 5) by activating its rotation through its switch (Item 11 PIC 9 and PIC 24) and use the Central brush control (Item 7 PIC 9). A) To insert and lower the central brush and to place it in the working condition:

it is necessary to act on the lever by sliding it along the slot (A, PIC 25);

- B) To disengage and raise the central brush from the working position,
it is necessary to act on the lever by sliding it along the slot, in the opposite direction (B, PIC 25).
Deactivate its rotation using the switch (Item 11 PIC 9 and PIC 24).

9.8.2. VERSION WITH ENDOTHERMIC ENGINE

To start the cleaning operations of the motorsweeper it is always necessary to insert the central brush (Item 2 PIC 5) by activating its switch (Item 7 PIC 10).

A) To insert and lower the central brush and to place it in the working condition, it is necessary to:

1. it is necessary to act on the lever by sliding it along the slot (A, PIC 25);

- B) To disengage and raise the central brush from the working position:
it is necessary to act on the lever by sliding it along the slot, in the opposite direction (B, PIC 25).

9.9. SIDE BRUSH

9.9.1. BATTERY-POWERED VERSION

To activate the side brush, with electrical services activated:

1. Activate the rotation of the side brush by means of the switch (Item 11 PIC 9 and PIC 24 "ON")
2. Insert the side brush (left and/or right) using the command lever shown in (Item 8 PIC 9 and A PIC 26) by pressing it rear as shown in (PIC 22). The brush lowers to the surface.

To disengage the brush:

1. Stop the rotation of the side brush by turning on the switch (Item 11 PIC 9 and PIC 24 "OFF")
2. Disconnect the side brush using the command lever (Item 8 PIC 9) as shown in (PIC 22). The brush rises.

9.9.2. VERSION WITH ENDOTHERMIC ENGINE

To activate the side brush, with the engine running:

1. Activate the command knob of the side brush by means of the switch (Item 8 PIC 10 and PIC 24 "ON")
2. Insert the side brush (left and/or right) using the command lever shown in (A PIC 26). The brush lowers

to the surface.

To disengage the brush:

1. Disconnect the side brush using the command lever (Item 8 PIC 10) as shown in (B PIC 26). The brush rises.

9.10. SUCTION

9.10.1. BATTERY-POWERED VERSION

With electrical services activated: To activate or deactivate the suction, turn the relative switch (Item 11 PIC 9, PIC 24). Also push the knob (Item 10 PIC 9) to open the butterfly valve (A, PIC 27) and pull it to close it (B, PIC 27).

9.10.2. VERSION WITH ENDOTHERMIC ENGINE

To activate or deactivate the suction, push the knob (Item 10 PIC 10) to open the butterfly valve (A, PIC 27) and pull it to close it (B, PIC 27).

9.11. FILTER SHAKER

To activate the filter shaker, with the engine started or only the electrical services activated, turn the relative switch (Item 12 PIC 9) (Item 12 PIC 10) by pressing it in an unstable position for the desired time and releasing it to deactivate it (PIC 28): BATTERY-POWERED VERSION; (PIC 29): VERSION WITH ENDOTHERMIC ENGINE).

9.12. HORN SWITCH

To activate the horn switch, with the engine started or only the electrical services activated, turn the relative switch (Item 12 PIC 9) (Item 12 PIC 10) by pressing it in an unstable position for the desired time and releasing it to deactivate it (PIC 30): BATTERY-POWERED VERSION; (PIC 31): VERSION WITH ENDOTHERMIC ENGINE).

9.13. FLAP RAISE

To raise the front dust seal to collect larger waste, press the relevant pedal (Item 6 PIC 9) (Item 6 PIC 10) and hold it for the desired time and releasing it to lower it to the ground (PIC 32)

9.14. EMPTYING THE WASTE CONTAINER

To empty the waste container:

1. Deactivate the central brush (§ 9.8);
2. Unlock the fixing hook by lowering the relative lever (A, PIC 33);
3. Remove the container from the sweeper (B, PIC 33);
4. Remove waste from container.

To complete the assembly, perform the operations described in reverse.



MAKE SURE THAT THE MOTORISED BRUSH REMAINS STATIONARY FOR THE ENTIRE DURATION OF THE WASTE CONTAINER EMPTYING OPERATION.

9.15. RECHARGING THE BATTERY (BATTERY-POWERED VERSION)

When the battery level is low, the battery must be recharged, proceeding as follows:

1. Open the motor hood as shown in (A, PIC 11),
2. Disconnect the plug (Item 2 PIC 6) as shown in (PIC 34);
3. Connect the plug to the charger.

The connection to the charger is represented by:

ANDERSON type plug, 175A.

The characteristics of the batteries, if not supplied directly with the motorsweeper, are as follows:

6Volt DC, 205 Ah/5h (acid): nr. 4 pieces.

For which a charger with the following characteristics is recommended:

24Volt DC, 20A



ALWAYS CONSULT THE BATTERY AND CHARGER MANUAL FOR ANY FURTHER PROCEDURES TO BE FOLLOWED FOR CHARGING, WITH PARTICULAR REFERENCE TO THE PREVENTION AND PROTECTION MEASURES TO BE OBSERVED.

CHAPTER 10 - ADJUSTMENTS



BEFORE PROCEEDING, IT IS NECESSARY TO HAVE READ ALL THE PREVIOUS CHAPTERS.

10.1. TRAINING OF OPERATORS

There is no need for specific training of the operator with regard to the various phases of adjustment of the motorsweeper, except for the information contained in this manual.

10.2. ADJUSTING THE CENTRAL BRUSH ACTION



*VERSION WITH ENDOTHERMIC ENGINE : OPERATION TO BE PERFORMED WITH THE ENGINE OFF AND COLD.
BATTERY-POWERED VERSION : OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED.*

When the central brush (Item 2 PIC 3) is worn and, consequently, begins to decrease its efficiency, adjust its height, through the controller (Item 9 PIC 9, Item 9 PIC 10):

1. first unscrew the screw (Item 1 PIC 35)
2. slide the controller along the slot until the desired height is reached
3. screwing the screw to fix the adjustment.

To verify that the central brush is properly adjusted, its "track" must be measured as follows:

- a. After making the adjustments, activate the central brush and, without moving forward or backward, let it work at the same point for at least 10/15 seconds.
- a. Lift the central brush and move the motorsweeper until the track that the central brush in rotation left is visible on the floor, as shown in PIC 36. Proceed with new adjustment if the track is different from the one shown.

10.3. SIDE BRUSH ACTION ADJUSTMENT



*VERSION WITH ENDOTHERMIC ENGINE : OPERATION TO BE PERFORMED WITH THE ENGINE OFF AND COLD.
BATTERY-POWERED VERSION : OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED.*

When the side brush is being used or to adjust its action on the surface, adjust its height :

1. first unscrew the locking screw (Item 1 PIC 37).
2. slide the controller along the slot (Item 2 PIC 37) until the desired height is reached
3. screw the locking screw back to fix the adjustment.

10.4. ADJUSTING THE HEIGHT OF THE SIDE DUST SEALS



*VERSION WITH ENDOTHERMIC ENGINE : OPERATION TO BE PERFORMED WITH THE ENGINE OFF AND COLD.
BATTERY-POWERED VERSION : OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED.
OPERATION TO BE PERFORMED WITH GLOVES, SAFETY GOGGLES AND RESPIRATORY PROTECTION DEVICES.*

If it is necessary to adjust the side dust seals (Item 3 PIC 5), for example after replacing them or for readjustment, proceed as follows:

1. disassemble the right and/or left protective cover of the central brush (Item 5 PIC 4)(PIC 38) by unscrewing the appropriate fixing screws (Item 2 PIC 38);
2. loosen the nuts of the seal fastening strip (left and/or right) (Item 3 PIC 38);
3. move the seal downwards until it is 2mm from the ground;
4. Once the desired adjustment has been reached, tighten the screws of the seal fastening strip.

CHAPTER 11 - SAFETY RULES

11.1. GENERAL RESIDUAL RISKS



DEFINITION: The residual risks that cannot be eliminated are all those that, for various reasons, cannot be removed, but for each of which we report the indications to operate in the context of maximum safety.

- Risk of injury to the hands, body and eyes if the machine is used without all the safety protections

correctly fitted and intact. Risk of injury to the hands from touching the side brush or the central

- brush for any reason during operation. The brushes can only be touched with the engine off and with the aid of protective gloves to avoid being pricked or cut if in the bristles there were pointed splinters of debris in general. Risk of
- inhalation of harmful substances, abrasions to the hands due to emptying of the waste container without using protective gloves and mask to protect the respiratory tract.
- Risk of not being in control of the machine should it be used on slopes greater than those indicated in paragraphs 5.10 and 7.1, or of it not being properly stopped when left parked.
- Risk of explosion or fire from refuelling with the engine on or with the engine off but not completely cold.
- Risk of serious burns from performing any maintenance with the engine on or engine off but not completely cold.
- Risk of inhalation of exhaust gas when used in an inadequately ventilated environment.

Risk of noise generated by the machine;

11.2. GENERAL RISKS FOR ACID BATTERIES

- Risk of vibrations to both the hand-arm system and to the entire body.
- Before charging, check that the room is well ventilated or charge in rooms that may be used for this purpose.
- Do not smoke, do not approach with naked flames, do not use grinding wheels and welders; in any case, do not cause sparks near the batteries.
- Do not draw power from the battery with pliers, sockets and temporary contacts.
- Make sure that all connections (lugs, sockets, plugs, etc.) are always tight and in a good condition.
- Do not place metal tools on the battery.
- Keep the battery clean and dry using antistatic cloths if possible.
- Top up with distilled water whenever the electrolyte level drops to 5 - 10 mm from the splashguard.
- Avoid overcharging and keep the battery temperature below 45°C.
- Keep any centralised topping up systems in perfect working order, ensuring periodic maintenance is performed on them.
- Risk of electric shock and short circuit; for safety purposes, before carrying out any maintenance or repair on the battery (or on the machine), disconnect the +/- terminals from the battery poles.
- Risk of explosion during charging; this could occur when charging with an unsuitable battery charger (based on battery amps).
- During the battery charging operation, or in any case when the battery charger plug is inserted, it is forbidden to turn on the machine or to move it (even manually).

In the event of accidental spills of liquid from the batteries due to any reason, mop up leaks with

11.3. PROTECTIVE MEASURES

consulting the battery manual.

11.3.1. PERSONAL PROTECTION EQUIPMENT (PPE)

In addition to the above, to proceed safely during the operations of use, maintenance, adjustment, inspection and cleaning of the motorised brush, personal protection equipment (PPE) suitable for the type of risk that could occur will be necessary. In particular, during the operations of use of the motorised brush, it will be necessary to:



Wear suitable PPE for hearing protection chosen based on both the level of noise generated (§5.10) and on the relative exposure time and considering any other external risks deriving from the use of the same such as:

- vehicular traffic and the presence of persons around the motorised brush during all its phases of use;
- failure to perceive acoustic alarm signals by the operator;
- presence of any ototoxic substances present in the surrounding environment.
- Wear suitable PPE to protect against the risk of hand-arm vibrations;

- Limit the time of continuous use of the motorised brush to protect the whole body system from the risk of vibrations.

In particular, for the maintenance operations referred to in this manual, the following will be necessary:



Safety gloves against mechanical risk;



Safety glasses;



Respiratory protective devices.

In case of accidental acid spills from the battery or if hazardous material has been accidentally collected, the following will be necessary:



Safety gloves against mechanical and chemical risks (e.g. neoprene gloves);



Safety glasses;



FFP3 or higher face mask;



Protective clothing against chemical risk.

For the cleaning operations of the motorsweeper it will also be necessary to use only suitable work clothes and ensure they are cleaned at the end of the work.



BATTERY-POWERED VERSION : Refer to the documentation provided by the Battery and Charger Manufacturer for further prevention and protection measures.

VERSION WITH ENDOTHERMIC ENGINE: Refer to the documentation provided by the Battery and Engine Manufacturer for further prevention and protection measures.

11.3.2. PROTECTIVE MEASURES FOR THE WASTE CONTAINER EMPTYING OPERATION

During the waste container emptying operations it will be necessary to respect the appropriate safety distances depending on the dimensions .



CHECK THAT THERE ARE NO PERSONS LESS THAN 2 METERS FROM THE MOTORSWEEPER DURING THE WASTE CONTAINER EMPTYING OPERATIONS. ALSO CHECK THAT THERE IS ADEQUATE SPACE TO AVOID SHOCKS THAT COULD DAMAGE THE MOTORSWEEPER AND COMPROMISE ITS OPERATION.



MAKE SURE THAT THE MOTORISED BRUSH REMAINS STATIONARY FOR THE ENTIRE DURATION OF THE WASTE CONTAINER EMPTYING OPERATION. ALWAYS ACTIVATE THE PARKING BRAKE FOR THIS PURPOSE (Item 5 PIC 9, Item 5 PIC 10; § 9.6.).



IN CASE OF THE WASTE IN THE CONTAINER WILL BE EXCESSIVELY HEAVY, REMOVE IT WITH SUITABLE MEANS AND GRADUALLY, WEARING SAFETY GLASSES AND SAFETY MASK. ALTERNATIVELY, ASK FOR HELP FROM ANOTHER PERSON.

CHAPTER 12 - STABILITY OF THE MACHINE

12.1. STABILITY DURING USE

The stability of the machine during travel and cleaning operations is mainly guaranteed by compliance with the maximum slope values (para. 5.10 and 7.1) as well as by verification of the capacity of the work surface which must be such as to withstand the value of the weight of the motorsweeper indicated on the CE plate. The operation of emptying of the waste container, and all the maintenance, adjustment, cleaning and inspection phases must take place on floors without slopes and such as to bear the value of the weight of the motorsweeper indicated on the CE plate. To ensure the necessary stability during machine parking, it will be necessary to insert the parking brake as shown in para. 9.6. If it is not possible to leave the machine stationary on flat surfaces, it is advisable to use dedicated wheel stop wedges.

12.2. STABILITY DURING TRANSPORTATION

The motorsweeper must be transported and handled considering the weight of the motorsweeper indicated on the CE plate, and the values reported in §5.10. Lifting of the motorsweeper must take place as shown in para. CHAPTER 4 while for transportation it will be necessary to secure the machine. For this purpose, it is possible to use the relative fastening slots (PIC 39). Once positioned, it is necessary to insert the parking brake as shown in para. 9.6 using, where appropriate and in addition, dedicated wheel stop wedges.

CHAPTER 13 - TRANSPORTATION, HANDLING AND DECOMMISSIONING

13.1. DECOMMISSIONING



*VERSION WITH ENDOTHERMIC ENGINE : OPERATION TO BE PERFORMED WITH THE ENGINE OFF AND COLD.
BATTERY-POWERED VERSION : OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED.*

The motorsweeper must be decommissioned in accordance with the following points:

- Disconnect the batteries by unplugging the charging plug as shown in PIC 34.
- Remove the battery from its housing and store it in a dry and well-ventilated place. For a good life of the unused battery, it is necessary to charge and possibly top up with distilled water every 30/40 days (acid batteries). For a good life of the unused battery, it is necessary to charge and possibly top up with
- distilled water every 30/40 days (acid batteries).
- Clean the dust filters and the waste container.
- Close the fuel tank valve (battery-powered version).

BATTERY-POWERED VERSION :



Refer to the documentation provided by the Battery Manufacturer for further information on decommissioning the machine.

VERSION WITH ENDOTHERMIC ENGINE :

Refer to the documentation provided by the Engine Manufacturer for further information on decommissioning the machine.

13.2. PACKAGING, LIFTING AND TRANSPORTATION

In the event that the machine needs to be packed, it will be necessary to proceed with disassembly of the side brush/brushes as described in paragraph 15.5 Then lift the motorsweeper by placing it on the appropriate pallet using the necessary lifting devices, adapted to the weight of the motorsweeper shown on the plate, or ascent platforms. For lifting use the eyebolts (para. CHAPTER 4 Item 2 PIC 2). Observe what is indicated in the CHAPTER 4 regarding lifting of the machine, and in the paragraph 12.2 regarding its transportation.

CHAPTER 14 - EMERGENCY SITUATIONS

14.1. EMERGENCY SITUATIONS

In any emergency situation, the following may occur:

- inadvertently passing with the machine in motion over current cables on the floor, which then became twisted to the central or side brush,
- unusual noise is heard coming from inside the machine or engine,
- incandescent materials or flammable liquids, chemical materials in general, poisons, etc.

the following are necessary:

- If the engine is switched on, proceed to the emergency stop as described in paragraph 9.7.
- Proceed to insert the parking brake as described in paragraph 9.6
- Move away from the machine

Immediately call for help if other persons are involved.



BATTERY-POWERED VERSION : Please refer to the documentation provided by the Battery and battery charger Manufacturer for further information on the procedures to be taken in the event of an emergency.

VERSION WITH ENDOTHERMIC ENGINE : Please refer to the documentation provided by the Engine Manufacturer for further information on the procedures to be taken in the event of an emergency.

14.2. STARTING AFTER AN EMERGENCY SITUATION

Before proceeding to use the machine after an emergency situation has been resolved, an inspection of all the parts of the machine must be carried out (CHAPTER 5), with particular reference to the protections and safety devices. It is only possible to resume normal use of the motorsweeper after these checks have been successful (all parts working and intact). There are no rearming procedures.



BATTERY-POWERED VERSION : Please refer to the documentation provided by the Battery Manufacturer for further information on the procedures to be taken in the event of an emergency.

VERSION WITH ENDOTHERMIC ENGINE : Please refer to the documentation provided by the Engine Manufacturer for further information on the procedures to be taken in the event of an emergency.

CHAPTER 15 - MAINTENANCE

15.1. GENERAL SAFETY RULES



BEFORE PROCEEDING, IT IS NECESSARY TO HAVE READ ALL THE PREVIOUS CHAPTERS.



VERSION WITH ENDOTHERMIC ENGINE : ALL MAINTENANCE AND CLEANING OPERATIONS MUST BE CARRIED OUT WITH THE KEY DISCONNECTED AND THE MOTOR OFF AND COLD.

BATTERY-POWERED VERSION : ALL MAINTENANCE AND CLEANING OPERATIONS MUST BE CARRIED OUT WITH THE KEY DISCONNECTED AND WITH THE ELECTRICAL SERVICES DISABLED.



NEVER TOUCH THE BRUSHES WITH YOUR HANDS DURING ROTATION



CHECK THAT THERE ARE NO PERSONS UNRELATED TO THE CLEANING AND MAINTENANCE OPERATIONS LESS THAN 2 METERS FROM THE MOTORSWEEPER DURING THEIR ENTIRE DURATION.



VERSION WITH ENDOTHERMIC ENGINE : TAKE THE NECESSARY MEASURES TO AVOID ACCIDENTAL AND INVOLUNTARY STARTING DURING ALL PHASES WHERE IT IS EXPECTED TO OPERATE WITH THE MOTOR OFF OR/AND THE ELECTRICAL SERVICES DISCONNECTED.

BATTERY-POWERED VERSION : TAKE THE NECESSARY MEASURES TO AVOID ACCIDENTAL AND INVOLUNTARY STARTING DURING ALL PHASES WHERE IT IS EXPECTED TO OPERATE WITH THE MOTOR OFF OR/AND THE ELECTRICAL SERVICES DISCONNECTED.

15.2. TRAINING OF OPERATORS

15.2.1. BATTERY-POWERED VERSION :

There is no need for specific training of the operator with regard to the maintenance and cleaning of the motorsweeper, except for the information contained in this book.

15.2.2. VERSION WITH ENDOTHERMIC ENGINE :

There is no need for specific training of the operator with regard to the maintenance and cleaning of the motorsweeper, except for the information contained in this book and engine book.

15.3. DUST SEALS



OPERATION TO BE PERFORMED WITH THE ENGINE OFF AND COLD.

OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED WITH GLOVES, SAFETY GOGGLES AND RESPIRATORY PROTECTION DEVICES.

Every 70/100 hours of work, check the condition of the dust seals (Item 1PIC 5) and replace if necessary.

To replace the dust seals:

1. disassemble the right and/or left protective cover of the central brush (Item 5PIC 4)(PIC 38) by unscrewing the appropriate fixing screws (Item 2 PIC 38);
2. Loosen the nuts of the seal listel fixing listel (Item 3PIC 30);
3. Remove the worn seal and replace it with a new one;
4. Adjust the height from the ground as described in § 10.4;
5. Retighten the nuts of the seal fixing listel (Item 3PIC 30)
6. Refit the the right and/or left protective cover of the central brush (Item 1PIC 30) then tightening the screws.

15.4. CENTRAL BRUSH



OPERATION TO BE PERFORMED WITH THE ENGINE OFF AND COLD.

OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED WITH GLOVES, SAFETY GOGGLES AND RESPIRATORY PROTECTION DEVICES.

Every 50/80 hours of work or when required, check the good condition of the central brush (Item 2 PIC 3), in particular if it is assumed that it has inadvertently collected cords, wires, etc.

To proceed with the inspection of the central brush: simply remove the waste container (Item 3 PIC 3)

If it is necessary to replace the central brush:

1. disassemble the right and/or left protective cover of the central brush (Item 5PIC 4)(PIC 40) by unscrewing the appropriate fixing screws (Item 2 PIC 40);
2. Remove the left arm of the sling bar (Item 4 PIC 40) by loosening the appropriate nut (Item 3 PIC 40).
3. Disassemble the brush door (Item 6 PIC 40) by loosening the appropriate nut (Item 5 PIC 40).
4. Disassemble the brush (Item 8 PIC 40) remove the hub (Item 7 PIC 40)

To complete the assembly, perform the operations described in reverse.

Adjust the height of the new brush as described in paragraph § 10.2.

15.5. SIDE BRUSH



OPERATION TO BE PERFORMED WITH THE ENGINE OFF AND COLD. OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED WITH GLOVES, SAFETY GOGGLES AND RESPIRATORY PROTECTION DEVICES.

Every 50/80 hours of work or when required, check the good condition of the side brush (Item 1 PIC 3) (para. § 5.3), in particular if it is assumed that it has inadvertently collected cords, wires, etc.

In the event that its replacement is necessary:

1. Raise the side brush (para. § 9.9)
2. Unscrew the ring nut (Item 1 PIC 41) to detach the side brush (Item 2 PIC 41) from the plastic flange
3. Replace the worn brush with the new one, inserting it on the flange and tightening the ring nut to lock it, adjusting the height as described in para. § 10.3

15.6. SPECIFIC MAINTENANCE FOR INTERNAL COMBUSTION ENGINES



Refer to the engine manual for further information on engine maintenance and related safety measures to be taken during operation.

Read the engine manual carefully, and:

- 1) Check the engine oil level every 20 hours of machine operation;
- 2) The first change of engine oil must take place after 50 hours of operation, add the quantity indicated in the engine manual; the recommended oil for temperate climates is 10W-30 multi-grade for petrol and diesel engines. When operating in areas with a non-temperate climate, identify the appropriate type of oil from the engine instruction manual. Use the dedicated drain to change the oil positioned under the engine sump.
- 3) Change the oil after every 90/100 hours of operation.
- 4) Clean the air filter every 25 operating hours, or earlier if necessary, and replace as necessary (see engine instruction manual).



TO CHECK OR REPLACE THE ENGINE OIL IT IS NECESSARY TO WEAR SAFETY GLOVES TO PROTECT AGAINST CHEMICAL AGENTS, POSSIBLY MADE OF NITRILE RUBBER. DO NOT DISPOSE OF USED OIL AS HOUSEHOLD WASTE AS IT IS HIGHLY POLLUTING. DISPOSE OF USED OIL IN ACCORDANCE WITH THE PROVISIONS OF THE LAW.

15.7. SPECIFIC MAINTENANCE FOR ACID BATTERIES



FOLLOW THE RULES AND PRECAUTIONS PROVIDED IN §11.2. ALWAYS WEAR SAFETY GLASSES, AND RESPIRATORY PROTECTIVE EQUIPMENT AND ANTI-ACID GLOVES AND CLOTHING.

1. For a good life of the batteries, whether they are flat or tubular, never discharge them completely. **FULLY DISCHARGED BATTERIES (EVEN NEW ONES) ARE NO LONGER RECHARGEABLE.**
2. Check often the level of solution of the battery and if necessary add only distilled water.
3. Always carry out the charging cycle without interruption.
4. **DISPOSE OF USED BATTERIES FOLLOWING THE REGULATIONS IN FORCE.**



Consult the documentation provided by the Battery Manufacturer for further information on their maintenance and related safety measures to be adopted during the operation.

15.8. CLEANING THE MACHINE

Clean the external parts of the machine using damp cloths or soft brushes.



OPERATION TO BE PERFORMED WITH THE ENGINE OFF AND COLD. OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED WITH GLOVES, SAFETY GOGGLES AND RESPIRATORY PROTECTION DEVICES.



CLEANING OF ALL EXTERNAL PARTS OF THE MACHINE BY DIRECT WATER JET IS NOT PERMITTED.



DO NOT USE DETERGENTS OR CHEMICALS IN GENERAL THAT ARE TOO AGGRESSIVE, ABRASIVE POWDERS OR SIMILAR TO CLEAN THE CONTROL PANEL AND WHERE THERE ARE LABELS OR PRINTED PARTS IN GENERAL TO AVOID DAMAGING THEM, MAKING THEM INCOMPREHENSIBLE AND ILLEGIBLE.

15.9. CLEANING OF FILTERS AND FILTERS REPLACEMENT



OPERATION TO BE PERFORMED WITH THE ENGINE OFF AND COLD. OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED WITH GLOVES, SAFETY GOGGLES AND RESPIRATORY PROTECTION DEVICES.

Every 200/300 hours of work, or when required, check the dust filter (Item 5 PIC 3 para. § 5.7). For deep cleaning, it must be removed from its seat, as follows:

1. Remove the waste container as described in § 9.14;
2. Remove the filter case (Item 1 PIC 42) by first removing the flash plug (only in equipped models)
3. Unplug the filter shaker (Item 2 PIC 42)
4. Remove the filter shaker support (Item 3 PIC 42) loosening the fixing handwheels (Nr. 4 PIC 42);
5. Remove the filter (Item 5 PIC 42) to clean it

To clean it, first shake it (not violently), then, to clean it thoroughly, with an air gun or similar blow from the outside inside, as illustrated in (PIC 42).

When reassembling, make sure that the black seal (Item 6 PIC 42) is always well supported and centred.

At the end of the cleaning proceed to reassemble the filter by performing the operations described in reverse (Item 2 PIC 42).

Make sure that the filter is always in a good condition and replace it if necessary

15.10. CLEANING THE WASTE CONTAINER



OPERATION TO BE PERFORMED WITH THE ELECTRICAL SERVICES DISABLED WITH GLOVES, SAFETY GOGGLES AND RESPIRATORY PROTECTION DEVICES. MAKE SURE THAT ACCESS TO PERSONS NOT INVOLVED IN THE OPERATIONS IS DENIED.

Every 50/60 hours of work, or when required, clean the waste container.

To proceed with the cleaning operations, it will first be necessary to open the waste container at the most convenient height, as described in § 9.14, and then turn off the motorsweeper so that cleaning can begin.

Subsequently, it is advisable to inspect the parts around the central brush where the formation of scale or waste deposits is possible and, if necessary, proceed with removal. Simply lift the waste container (§ 9.14) and install the safety rod (§ 6.4.1) to access the parts and to clean them.



IMPORTANT: *It is highly recommended to clean the filter container without the use of water or to allow the motorsweeper to dry completely before resuming cleaning operations.*

CHAPTER 16 - EXTRAORDINARY MAINTENANCE



EXTRAORDINARY MAINTENANCE ARE ALL OPERATIONS THAT HAVE NOT BEEN MENTIONED IN THIS BOOKLET; THEY MUST THEREFORE BE CARRIED OUT BY SPECIALIST ASSISTANCE PERSONNEL, APPOINTED FOR THIS PURPOSE (SEE BOOKLET COVER).

CHAPTER 17 - SPARE PARTS

For the replacement of machine parts, refer to the list of spare parts provided by the Manufacturer.

CHAPTER 18 - DISMANTLING AND DEMOLITION

If the machine will no longer be used, remove the batteries and dispose of them in accordance with the eco-compatibility regulations as set forth in European standard 2013/56/EU or deposit them in an authorized

collection centre.

To dispose of the machine, comply with the current laws where it is used:

- disconnect the machine from the mains and clean it after emptying any liquids;
- separate the machine into groups of homogeneous materials (plastics in accordance with the recycling symbol, metals, rubber, packing).

For parts containing different materials, contact the competent authorities; Each homogeneous group must be disposed of in accordance with recycling laws.

In addition, it is recommended to eliminate those parts of the machine that may be dangerous, especially for children

CHAPTER 19 - DEFECTS / CAUSES / SOLUTIONS

There are two fundamental defects:

- the machine creates dust during use,
- the machine leaves dirt on the ground.

There can be many causes, but with careful use and good routine maintenance they will not occur. The most common and frequent problems that can occur are listed in the following table.

DEFECTS	CAUSES	SOLUTIONS
The machine creates dust.	Suction is not active or it is closed	Activate the suction Clean it, "shake" it
	Filter clogged.	with the appropriate tools and if necessary remove it and clean it thoroughly.
	Damaged filter	Replace it. Fit it with the appropriate
	Filter inserted incorrectly.	seal and make sure that it is well inserted and tightly in place with the appropriate fasteners.
	Continuous use of the side brush.	Use the side brush only for the cleaning of edges, profiles and corners.
	Damaged side seals.	Adjust or replace them.
The machine leaves dirt on the ground.	The central brush is not adjusted properly or it has worn out.	Adjust the central brush, checking the "track".
	You have picked up wires, cords, etc.	Remove them.
	Damaged side seals.	Replace them.
	Collection drawer full.	Empty it.
(BATTERY VERSION) The battery-powered machine does not perform at its best, is slow and does not clean well.	Low or not fully charged battery	Check the electrolyte level and proceed with a new complete charge cycle (see documentation provided by the Battery Manufacturer).
	The charger is not the recommended one or is insufficient.	Use a suitable charger (§ 9.15)
-	-	-
(VERSION WITH ENDOTHERMIC ENGINE) The engine doesn't work appropriately	The engine's air filter is dirty	Clean or replace it (see the maintenance manual of the engine)
	The fuel cartridge filter is dirty.	Replace it (see the maintenance manual of the engine)

(VERSION WITH ENDOTHERMIC ENGINE) The engine does not start or tends to stall	The seat safety switches/protectations are not correctly closed or don't work.	Close correctly or replace it.
	Low battery	Change/charge the battery
	The alternator does not charge the battery	Change/repair the alternator (see the maintenance manual of the engine)
	Check the motor oil level, which must always be at the maximum level	Top up oil (see the maintenance manual of the engine)
	Make sure there is fuel	Fill up with fuel

CHAPTER 20 - WARRANTY

This machine is guaranteed against manufacturing or assembly defects for 12 months from the date of sale. The warranty includes only and exclusively the replacement or repair of parts that are found to be defective. Any other requests will not be accepted.

Damage due to normal wear and tear, use other than that reported in this manual, damage caused by incorrect adjustments, technical interventions not performed correctly and acts of vandalism are not included.

CHAPTER 21 - EC DECLARATION OF CONFORMITY

The EC Declaration accompanies the motorsweeper together with this manual. Please refer to the relevant document for consultation.