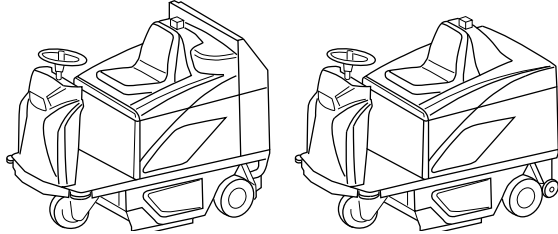




1250 - 1280



(IT) MANUALE ISTRUZIONI PER L'USO / **(EN)** OPERATOR'S MANUAL /
(FR) MANUEL D'INSTRUCTIONS / **(DE)** BEDIENUNGSANLEITUNG /
(ES) MANUAL DE INSTRUCCIONES / **(NO)** BRUKERHÅNDBOK /
(NL) GEBRUIKERSHANDLEIDING / **(PT)** MANUAL DE UTILIZAÇÃO /
(SE) INSTRUKTIONSBOK / **(RU)** РУКОВОДСТВО ОПЕРАТОРА /
(BG) РЪКОВОДСТВО ЗА ЕКСПЛОАТАЦИЯ / **(TR)** KULLANIM KILAVUZU /
(DK) BETJENINGSMANUAL / **(FI)** KÄYTTÖOPAS / **(CN)** 操作手册 /
(HU) HASZNÁLATI ÚTMUTATÓ / **(PL)** PODRĘCZNIK OPERATORA /
(SL) PRIRIČNIK Z NAVODILI ZA UPORABO / **(CZ)** NÁVOD PRO OBSLUHU
(HR) PRIRUČNIK ZA KORIŠTENJE / **(LT)** OPERATORIAUS VADOVAS /
(LV) OPERATORA ROKASGRĀMATA / **(SK)** NÁVOD NA POUŽITIE /
(RO) MANUAL DE UTILIZARE / **(EE)** KASUTUSJUHEND / **(GR)** ΕΓΧΕΙΡΙΔΙΟ ΧΡΗΣΤΗ /
(JP) 取扱説明書 / **(KR)** (영) 사용설명서

Consultare attentamente questo manuale prima di procedere a qualsiasi intervento sulla macchina
Read this manual carefully before carrying out any work on the machine

Lire attentivement ce manuel avant toute intervention sur la machine

Vorliegendes Handbuch vor jedem Eingriff an der Maschine aufmerksam durchlesen

Consulte detenidamente este manual antes de llevar a cabo cualquier trabajo en la máquina

Konsulter denne håndboken nøye før du går i gang med noen som helst type inngrep på maskinen

Raadpleeg deze handleiding aandachtig alvorens met enige werkzaamheid aan de machine te beginnen

Consulte atentamente este manual antes de efectuar cualquier intervención na máquina

Läs noggrant igenom denna handbok innan du utför något som helst ingrepp på maskinen

Внимательно ознакомьтесь с данной инструкцией до проведения любой работы с машиной

Прочетете внимателно това ръководство, преди да започнете работа с машината

Makine ile herhangi bir işlem yapmadan önce bu kilavuzu dikkatle okuyun

Læs denne brugsanvisning omhyggeligt, inden du udfører arbejdet på maskinen.

Lue tämä opas huolellisesti ennen minkään toimenpiteen suorittamista koneelle.

操作机器之前请认真阅读本手册

A géppel történő munkavégzészt megelőzően figyelmesen olvassa el ezt az útmutatót

Przed rozpoczęciem pracy z urządzeniem należy uważnie przeczytać niniejszy podręcznik

Pozorno preberite to navodilo za uporabo, preden se lotite kakršnega koli poseganja v stroj

Před jakoukoli manipulací se strojem si nejdříve pozorně přečtete tento návod.

Pažljivo pročitajte ovaj priručnik prije izvođenja bilo kakvih radnji na uređaju.

Idemiai perskaitykite šį vadovą prieš atlikdami bet kokius darbus su mašina

Pirms uzsākt jebkuru darbu ar šo iekārtu, rūpīgi izlasiet šo rokasgrāmatu.

Tento návod si pozorně přečtajte pred každým zásahom na stroji.

Cititi cu atenție acest manual înainte de a efectua orice operațiuni asupra mașinii

Enne masina kasutamise alustamist lugege see juhend põhjalikult läbi.

Διαβάστε προσεκτικά αυτό το εγχειρίδιο προτού χρησιμοποιήσετε το μηχάνημα.

本機を使用する前に本説明書をよくお読みください。

본 제품을 사용하기 전 해당 설명서의 내용을 숙지하여 주십시오.

ENGLISH

(Translated instructions)

TECHNICAL CHARACTERISTICS	4
MACHINE DIMENSIONS	7
SAFETY SYMBOLS.....	8
GENERAL INFORMATION	9
Purpose of this manual	9
Identifying the machine	9
Documentation provided with the machine	9
TECHNICAL INFORMATION.....	10
General description	10
Parts of the machine	10
Danger zones.....	11
Accessories.....	11
SAFETY INFORMATION	12
Safety precautions	12
HANDLING AND INSTALLATION	15
Lifting and transporting the palletized machine.....	15
Delivery checks	15
Unpacking	15
Batteries (Battery version).....	15
Batteries: preparation.....	16
Batteries: installation and connection.....	16
Battery: removal / replacement / disposal.....	17
Choosing a battery charger.....	17
Preparing the battery charger	17
Preparing the engine (Petrol, Diesel and Dual Power versions).....	18
Preparing the hydraulic circuit (Petrol and Diesel versions).....	18
Lifting and transporting the machine	18
PRACTICAL GUIDE FOR THE OPERATOR.....	19
Preparing the machine for work	19
Controls of the Battery and Dual Power versions	20
Operating the Battery and Dual Power versions	22
Controls of the Petrol and Diesel versions	22
Operating the Petrol and Diesel versions.....	25
Emptying the bottom unloading debris bin	26
Emptying the top unloading debris bin	27
Finishing work	27
Moving the machine when not in operation.....	27
SAFETY THERMOSTAT (Battery version).....	28
SAFETY THERMOSTAT (PETROL version).....	28
PERIODS OF INACTIVITY	29
MAINTENANCE INSTRUCTIONS	30
Maintenance - General rules.....	30
Replacing/installing the main brush	30
Adjusting the main brush.....	31
Replacing/installing the side brushes.....	31
Adjusting the side brushes	32
Replacing/installing the suction filter	32
Fuses: replacing.....	34
Battery maintenance and charging	35
Changing the engine oil	35
Top up hydraulic circuit oil on PETROL and DIESEL version	36
Periodic checks	37
TROUBLESHOOTING	38
DISPLAY ALARMS	40
TECHNICAL MENU	42

TECHNICAL CHARACTERISTICS

		BATTERY	DUAL POWER	PETROL	DIESEL
Cleaning width	mm	1100			
Cleaning capacity per hour	m ² /h	3800-5600	3800-5600	3800-5600	3800-5600
Main brush motor power	W	600		-	-
Side brush motor power	W	90		-	-
Drive motor power		450 W		98 Cm ³ /rpm	
Internal combustion engine starting	W	-			
Internal combustion engine power	W	-	4100	3600	3500
Fuel tank capacity	l	-	3,1	3,1	
Suction motor power	W	260		-	-
Panel filter shaker motor power	W	90			
Pocket filter shaker motor power	W	110			
Alternator	A	-	80	-	-
Maximum forward speed	Km/h	6.2	6.2	6.2	6.2
Maximum reverse speed	Km/h	6.2	6.2	4.6	4.6
Maximum negotiable gradient	%	12			
Debris bin capacity (bottom unloading)	l	61			
Debris bin capacity (top unloading)	l	56			

Maximum debris bin capacity (top unloading)	Kg	61			
Rear wheel diameter	mm	250			
Front wheel diameter	mm	250			
Main brush diameter	mm	280			
Side brush diameter	mm	400			
Panel filter surface area	sq.m.	4			
Pocket filter surface area	sq.m.	4			
Maximum bin tipping height (top unloading)	mm	1460			
Gross weight 1250	Kg	497	456	435	465
Gross weight 1280	Kg	551	510	489	519
Transported weight 1250	Kg	215	131	75	75
Transported weight 1280	Kg	215	131	75	75
Number of batteries	n°	4	2	1	1
Battery voltage	V	12			
Individual battery capacity	Ah (5h)	180	75	45	
Power system voltage	V	24	24	12	12
Machine dimensions (bottom unloading)	mm	X=1615 Z=905 Y=1210			
Machine dimensions (top unloading)	mm	X=1550 Z=905 Y1=1868 Y2=1210			
Battery compartment dimensions (length, width, height)	mm	500X500	(305x185) x 2	/	/
Packed size (length, width, height)	mm	1740X1100X1410			

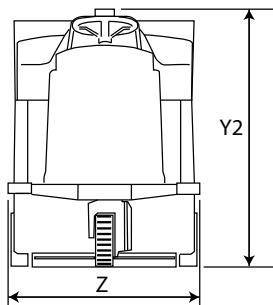
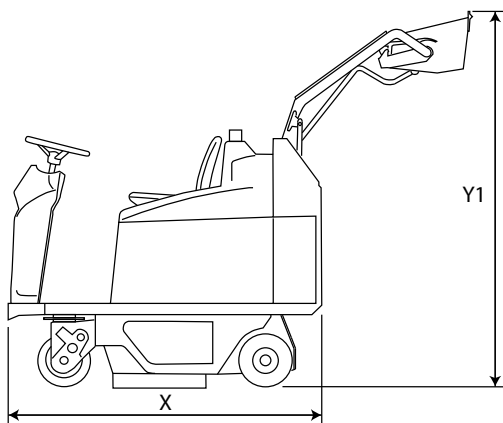
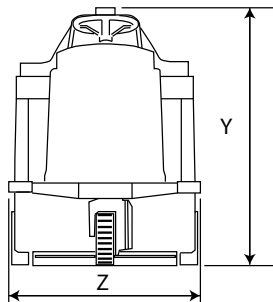
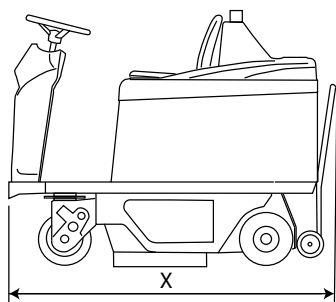
Sound pressure	LpA (dB)	70	84	82	88
Measured sound power	Lwa (dB)	82	94	94	99
Guaranteed sound power	Lwa,g (dB)	83	95	95	100
Vibration level (hand)	HAV m/sec ²	2,6	3	2,5	3,3
Measurement uncertainty, k	m/sec ²	1,3	1,5	1,3	1,7
Vibration level (body)	HBV m/sec ²	0,5	1	0,5	0,7
Measurement uncertainty, k	m/sec ²	0,3	0,3	0,3	0,3

Gross weight (GVW): maximum permitted weight of the machine at full load, ready for use, plus its net load. The gross weight of the vehicle includes, where applicable, full clean water tanks, empty dirty water tanks (half full for recycling systems), empty dust collection sacks, hopper filled to rated capacity, the largest recommended batteries, all accessories such as cables, pipes and hoses, detergents, sweepers and brushes.

Transport weight: weight of the machine for transport, which includes the batteries but excludes the options (for example, the driver's cabin, the FOPS, the second and third side brush, the front brush attachment), clean water (for scrubbers or combined machines) and the standard weight of an operator (75 kg).










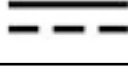


Data subject to variation without warning.

MACHINE DIMENSIONS



X-Y-Z: See "TECHNICAL CHARACTERISTICS" table

SAFETY SYMBOLS

	<p>WARNING! RISK OF CUTTING</p>
	<p>WARNING! RISK OF CRUSHING LIMBS</p>
	<p>WARNING! RISK OF ABRASION</p>
	<p>WARNING! RISK OF ENTANGLEMENT</p>
	<p>WARNING! RISK OF ACID BURNS</p>
	<p>WARNING! RISK OF BURNS</p>
	<p>MAXIMUM SLOPE</p>
	<p>OPERATOR'S MANUAL, OPERATING INSTRUCTIONS</p>
	<p>READ THE OPERATOR'S MANUAL</p>
	<p>DIRECT CURRENT SYMBOL</p>
	<p>CLASS III APPLIANCE. AN APPLIANCE IS IDENTIFIED AS CLASS III WHEN ITS EXPLOSION-PROOF PROTECTION IS BASED ON THE FACT THAT THERE ARE NO VOLTAGES HIGHER THAN THE ULTRA-LOW SAFETY EXTRA-LOW VOLTAGE (SELV). THIS MEANS IN PRACTICE THAT THE APPLIANCE IS POWERED BY A BATTERY OR A SELV TRANSFORMER.</p>
	<p>SPECIAL WASTE. DO NOT DISPOSE OF AS NORMAL WASTE.</p>

GENERAL INFORMATION

Purpose of this manual

This manual has been written by the Manufacturer and is an integral part of the [machine1](#). It defines the purpose for which the machine has been designed and constructed and contains all the information required by [operators2](#).

In addition to this manual, which contains information for operators, other publications are available providing specific information for [maintenance personnel3](#).

The terms "right" and "left", "clockwise" and "anti-clockwise" refer to the forward movement of the machine.

Constant compliance with the instructions provided in this manual guarantees the safety of the operator and the machine, ensures low running costs and high quality results and extends the working life of the machine. Failure to follow these instructions may lead to injury to the operator or damage to the machine, floor and environment.

Consult the table of contents at the beginning of the manual to find the section you need rapidly. Parts of the text requiring special attention are printed in bold and preceded by the symbols illustrated and described here.

! DANGER!

Indicates the need for attention in order to avoid a series of consequences which could cause death or serious injury to personnel.

! WARNING!

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

! IMPORTANT!

Important information.

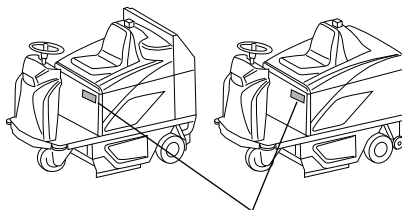
In line with the company's policy of constant product development and updating, the Manufacturer reserves the right to make modifications without prior notice.

Although your machine may differ appreciably from the illustrations in this document, the correctness and validity of the instructions contained in this manual are guaranteed.

Identifying the machine

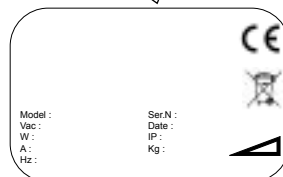
The nameplate provides the following information:

- ▶ Model
- ▶ Battery voltage
- ▶ Total rated power
- ▶ Rated current draw
- ▶ Serial number
- ▶ Year of manufacture
- ▶ IP Index of Protection
- ▶ Dry weight
- ▶ Maximum negotiable gradient
- ▶ Name of manufacturer



Documentation provided with the machine

- ▶ Operator's manual
- ▶ Certificate of warranty
- ▶ CE certificate of conformity



1 The term "machine" replaces the trade name of the machine described in this manual.

2 Persons responsible for operating the machine but not for performing maintenance operations requiring special technical skills.

3 Persons with technical experience, training and a knowledge of applicable legislation and standards, able to perform all necessary operations and to recognise and avoid possible risks in handling, installing, operating and maintaining the machine.

TECHNICAL INFORMATION

General description

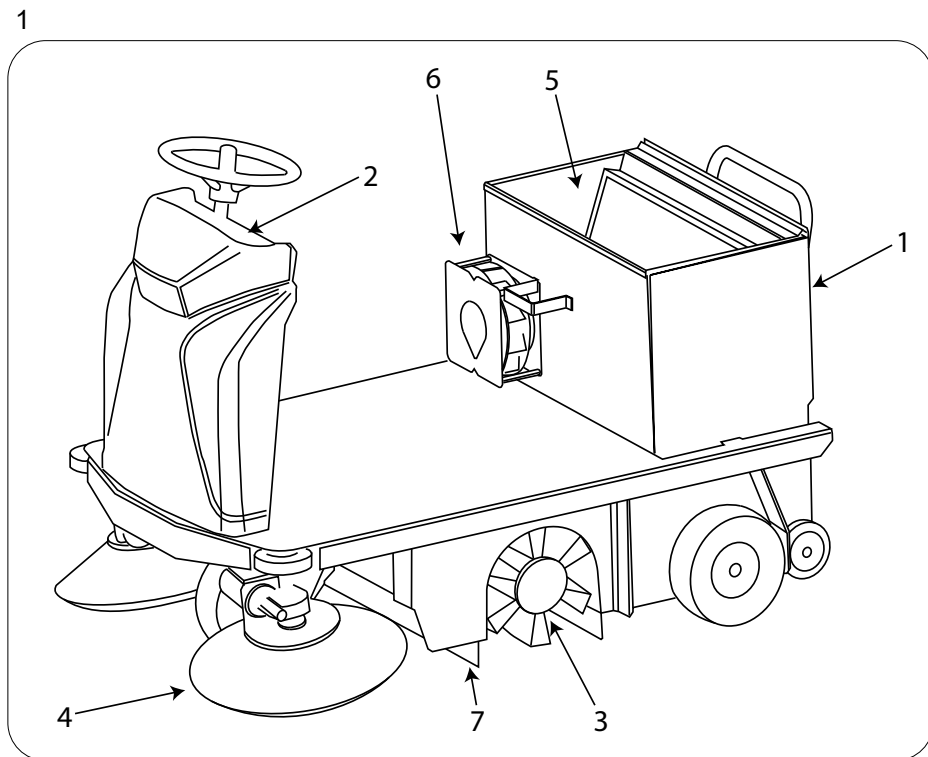
The machine described in this manual is a motorised sweeper designed to sweep floors in civil and industrial premises.

It may be used to clean the residues of industrial processes, dust and dirt in general on all relatively even, flat and hard surfaces such as concrete, asphalt, porcelain stoneware, ceramic tiles, sheet metal, marble, embossed or smooth rubber or plastic mats indoors or outdoors.

Parts of the machine

The machine comprises the main parts described below (fig. 1).

- ▶ Debris bin (1, fig. 1). This collects the debris picked up by the main brush and dust from the filter.
- ▶ Control panel (2, fig. 1).
- ▶ Main brush (3, fig. 1). This is the most important part of the machine, and transfers dust and debris to the bin. Brushes are available in different hardnesses and with different bristles to suit the type of material to be picked up.
- ▶ Side brushes (4, fig. 1). These convey dust and debris towards the main brush. They only clean edges, corners and profiles.
- ▶ Suction filter (5, fig. 1). This filters the air drawn in by the suction fan.
- ▶ Suction fan (6, fig. 1). This enables the machine to sweep without raising dust.
- ▶ Flaps (7, fig. 1). These surround the main brush and maintain the suction created by the fan.



Danger zones

- ▶ Control panel: risk of injury from short circuits.
- ▶ Main brush: risk of injury by rotating brush.
- ▶ Side brushes: risk of injury by rotating brushes.
- ▶ Front/rear wheels: risk of crushing.
- ▶ Motor/engine/battery compartment: risk of short circuit across battery poles and presence of hydrogen during charge cycle; risk of serious burns if maintenance is performed with the engine off but not fully cooled down (PETROL, DIESEL and DUAL POWER versions).
- ▶ Debris bin: risk of crushing during lifting/lowering and rotation.

Accessories

- ▶ Soft and hard brushes, abrasive pads.

SAFETY INFORMATION

Safety precautions

! DANGER

Read this Operator's Manual carefully before start-up and use and before performing any maintenance or other work on the machine.

! DANGER

Follow all the instructions in this Manual to the letter (in particular those marked "Danger!" and "Warning!") and take careful note of safety labels applied directly to the machine: see section on "[Safety Symbols](#)". The Manufacturer declines all liability for injury to persons or damage to property resulting from failure to follow instructions.

- ▶ Do not inhale exhaust gases. Use the machine indoors only when sufficient ventilation can be guaranteed and when there is another person on stand-by, ready to assist in situations of potential danger.
- ▶ The machine must be used exclusively by persons trained in its use and/or who have demonstrated their ability and have been expressly authorised to use it.
- ▶ The machine must not be used by minors.
- ▶ Always pay attention to other people, especially children, in the place where you are working.
- ▶ Children must be supervised to make sure they do not play with the machine.
- ▶ The 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 are supervised by a person responsible for their safety and have received instruction in the use of the machine.
- ▶
- ▶ The machine must not be used for purposes other than those for which it was expressly designed.
- ▶ The machine must be kept indoors at all times.
- ▶ This machine is intended for commercial use, for example in hotels, schools, hospitals, factories, shops, offices and business premises generally.
- ▶ Scrupulously respect all safety standards and conditions applicable to the type of building in which the machine is to be operated (e.g.: pharmaceutical companies, hospitals, chemicals, etc.).
- ▶ The machine is designed to operate in temperatures between +4°C and +40°C. It can be stored in temperatures between +0°C and +50°C when not in use.
- ▶ The machine is designed to operate at relative humidity levels between 0% and 95%.
- ▶
- ▶ The machine must be used only on dry surfaces.
- ▶ In areas where the operator could be struck by objects falling from overhead, do not use the machine without a FOPS (Falling Object Protective Structure)
- ▶ Do not use the machine in inadequate lighting, explosive atmospheres, on public roads, to clean dirt that is hazardous to health (dust, gas, etc.) or in unsuitable environments.
- ▶ Never use the machine to clean up flammable or explosive liquids (e.g. petrol, fuel oil, etc.), acids or solvents (e.g. paint solvents, acetone etc.) even if diluted.
- ▶ Never clean up burning or incandescent objects.
- ▶ Never use the machine on gradients or ramps steeper than specified in the "Technical specifications" table; when negotiating gentle slopes, do not operate in a direction transverse to the gradient, always manoeuvre with care, and avoid reversing.

- ▶ When transiting steeper ramps or slopes, take the utmost care to prevent tipping and/or uncontrolled acceleration.
- ▶ Never park the machine on a slope.
- ▶ Never leave the machine unattended while switched on. Before leaving it, disconnect the machine from the mains power supply and make sure it cannot move accidentally.
- ▶ Never use the machine to transport people or goods or to tow things.
- ▶ Do not tow the machine.
- ▶ Never rest objects of any weight on the machine for any reason.
- ▶ Never obstruct the ventilation and heat dispersion openings.
- ▶ Never remove, modify or circumvent safety devices.
- ▶ Numerous unpleasant experiences have shown that a wide range of personal objects may cause serious accidents. Before beginning work, remove jewellery, watches, ties, etc..
- ▶ The operator must always use personal protection devices: protective apron or overalls, non-slip waterproof shoes, rubber gloves, protective goggles and ear protectors and mask to protect the respiratory tract.
- ▶ Keep hands away from moving parts.
- ▶ Never wash the machine with water jets.
- ▶ The area in which the bin lift, release and tip lever linkages are located is a “danger zone” and must not be approached when these mechanisms are in motion.
- ▶ The motor/engine/battery compartment is a “danger zone”. The machine must be switched off and the emergency stop button depressed before accessing the compartment.
- ▶
- ▶ Battery charger (OPTIONAL): make certain that the power socket used for the battery charger is connected to a suitable earth system and protected by thermal magnetic and residual current breakers.
- ▶ Battery charger (OPTIONAL): check the power cable regularly for damage. If the power cable is damaged, do not use the charger.
- ▶ Battery charger (OPTIONAL): use only the product supplied by the manufacturer, or alternatively, a product bearing the CE mark, certificated by a third party body in accordance with the latest edition of the pertinent standard (EN 60335-2-29), equipped with double insulation or reinforced insulation between input and output and with SELV output circuit, maximum output voltage 24 V. Check that the battery charger is compatible with the batteries being charged.
- ▶ Battery charger (OPTIONAL): make certain that the electrical specifications of the battery charger (voltage, frequency, power) indicated on the nameplate correspond to those of the mains electricity supply.
- ▶ The batteries should always be kept clean and dry to avoid surface leakage current.
- ▶ Protect the batteries from impurities such as metal dust.
- ▶ Never rest tools on the batteries as they could cause short circuits leading to explosions.
- ▶ It is essential to observe the instructions provided by the battery manufacturer.
- ▶ When using battery acid, follow the safety instructions given in this Manual to the letter: see section on “[Batteries: preparation](#)”.
- ▶ In the event of breakdown and/or faulty operation, turn the machine off immediately, disconnecting it from the batteries, and do not tamper with it. Contact a service centre authorised by the Manufacturer.
- ▶ All maintenance operations must be performed in an adequately illuminated area and only after disconnecting the machine from the batteries.
- ▶ When the seat cowling is raised, the gas spring (if fitted) must be locked in place, turning the green ring nut to the position marked with the closed padlock, so as to prevent the cowling from closing accidentally.
- ▶ All work on the electrical system and all maintenance and repair operations other than those explicitly described in this manual must be performed by specialist and experienced personnel only.

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

HANDLING AND INSTALLATION

Lifting and transporting the palletized machine

! WARNING

During all lifting operations, make certain the palletized machine is firmly secured to prevent it tipping over or being accidentally dropped.

Always load/unload lorries in adequately illuminated areas.

The machine is palletized by the Manufacturer, and must be loaded onto the transport vehicle using suitable lifting equipment (see EC Directive 2006/42/EEC and subsequent amendments and/or additions); on reaching the destination, it must be unloaded using similar equipment.

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

Delivery checks

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

Unpacking

! WARNING

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

When unpacking the machine, proceed as follows:

- ▶ Cut and remove the plastic straps using scissors or nippers;
- ▶ Remove the cardboard packaging;
- ▶ Remove the bags from the battery compartment and check their contents:
operating and maintenance manual, declaration of conformity, certificate of warranty;
battery bridges with terminals;
1 x connector for battery charger;

Depending on the model, remove the metal brackets or cut the plastic straps with which the machine is secured to the pallet.

Using a ramp, push the machine off the pallet in the reversing direction.

Unpack the brushes from their packaging.

Clean the outside of the machine, taking care to respect safety regulations.

Once the machine is clear of all the packaging materials, proceed to install the batteries — see sections on "[Battery: preparation](#)" and "[Battery: installation and collegamento](#)" — and fit the side brushes: see section on "[Replacing/installing the side brushes](#)".

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

Otherwise it must be disposed of in compliance with current regulations.

Batteries (Battery version)

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

- ▶ Leak-proof tubular batteries: these require regular checks on electrolyte level. When necessary, top up with distilled water until the plates are covered. Do not over-fill (5 mm max. above the plates).
- ▶ Gel batteries: this type of battery requires no maintenance.

Battery technical characteristics must correspond to those listed in the [Technical characteristics](#) section. The use of higher capacity batteries could seriously jeopardise manoeuvrability and lead to the drive motor overheating. Batteries with a lower capacity and weight will require charging more frequently.



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

Batteries: preparation

! DANGER

During battery installation and any type of battery maintenance, the operator must be provided with the necessary personal protection devices (gloves, goggles overalls, etc.) to limit the risk of injury. Keep clear of naked flames, avoid short circuiting the battery poles, avoid sparks and do not smoke.

Batteries are normally supplied filled with acid and ready for use.

If the batteries in use are dry charged, they must be activated before being installed in the machine. Proceed as follows:

Remove the caps and fill all elements with sulphuric acid solution specific for batteries until the plates are entirely covered (this requires at least a couple of passes for each element).

Leave the batteries stand for 4-5 hours to allow air bubbles to come to the surface and the plates to absorb the electrolyte.

Make sure the level of electrolyte is still above the plates and if necessary top up with sulphuric acid solution.

Close the caps.

Install the batteries in the machine (following the procedure described below).

Charge the batteries before starting up the machine for the first time. Follow the instructions in the "[Battery maintenance and charging](#)" section.

The battery is a sealed unit and guaranteed safe under normal circumstances; in the unlikely event of fluid leaking from the battery, do not touch the fluid and be sure to take the following precautions:

- ▶ Contact with the skin can cause irritation; wash with soap and water.
- ▶ Inhalation of vapours can cause irritation to the airways; stay out in the open air and consult a doctor.
- ▶ Contact with the eyes can cause irritation; flood the eyes with water immediately and thoroughly for at least 15 minutes, and consult a doctor.

Batteries: installation and connection

! DANGER

Check that all switches on the control panel are in the "0" (off) position.

Make sure you connect the terminals marked with a "+" to the positive poles of the battery.

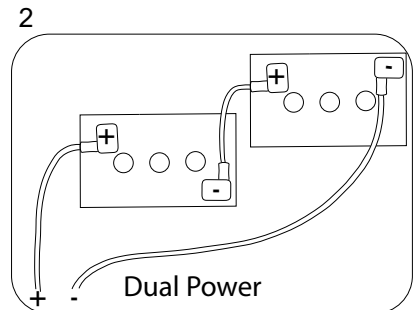
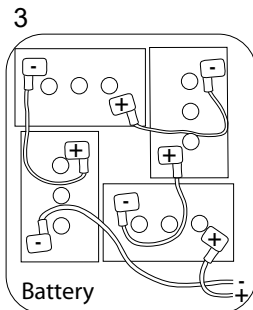
Do not check the battery charge by sparking.

Meticulously follow the instructions given below as short circuiting the batteries could cause them to explode.

Lift the cowling toward the steering wheel of the machine, and locate the batteries in the compartment, positioning them as indicated in the drawing (Fig.2-Fig.3).

Referring to the cable layout shown in the above diagram, connect the battery cables and bridge terminals to the battery poles. Arrange the cables as shown in the diagram, tighten the terminals on the poles and coat with Vaseline.

Lower the cowling into the working position



When using the machine, follow the instructions below.

! WARNING

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

! INFORMATION

Following installation, go to the relevant menu of the machine software and enter the type of battery selected, also the language in which messages are to be displayed: see section on "Technical Menu".

Battery: removal / replacement / disposal

! DANGER

When removing the batteries, the operator must be equipped with suitable personal protection devices (gloves, goggles, overalls, safety shoes, etc.) to reduce the risk of injury. Make sure the switches on the control panel are in the "0" position (off) and the machine is turned off. Keep away from naked flames, do not short circuit the battery poles, do not cause sparks and do not smoke. Proceed as follows:

- ▶ Disconnect the battery cables and bridge terminals from the battery poles.
- ▶ If necessary, remove the devices fixing the battery to the base of the machine.
- ▶ Lift the batteries from the compartment using suitable lifting equipment.

! DANGER

The battery used in this machine could pose a risk of fire or chemical burns if treated carelessly or improperly.

! INFORMATION

Should it become necessary to replace the battery, contact a professional specialist technician or take the machine to any service centre approved by the manufacturer.

! WARNING

When disposing of the battery, ensure compliance with local by-laws or regulations.

Choosing a battery charger

! WARNING

The use of an unsuitable battery charger can lead to danger situations! If in doubt, contact your local dealer.

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

Tubular lead batteries: an automatic charger is recommended. Consult the battery charger manufacturer and manual to confirm the choice.

Gel batteries: use a charger specific for this type of battery.

Preparing the battery charger

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

Proceed as follows to fit the connector.

remove around 13 mm of the protective sheath from the red and black conductors of the battery charger cable;

attach the ends to the contacts of the connector and squeeze forcibly with suitable crimping pliers; make certain the polarity is correct (red + black -) when attaching the wires to the connector.

Preparing the engine (Petrol, Diesel and Dual Power versions)

- ▶ Fill the fuel tank.
- ▶ Check the engine oil level.

Preparing the hydraulic circuit (Petrol and Diesel versions)

- ▶ Check the hydraulic oil level.

Lifting and transporting the machine

! WARNING

All phases of lifting and moving must be performed in an adequately illuminated environment with the adoption of the safety measures most appropriate to the situation.

The operator must always use personal protection devices.

When loading the machine onto a transport vehicle, proceed as follows:

- ▶ Empty the debris bin.
- ▶ Remove the batteries.
- ▶ Position the machine on a pallet and fix it in place with plastic straps or metal brackets.
- ▶ Lift the pallet (with the machine) using a fork lift truck and load it onto the means of transport.
- ▶ Anchor the machine to the means of transport with cables connected to the pallet and to the machine itself.

PRACTICAL GUIDE FOR THE OPERATOR

! DANGER

Do not inhale exhaust gases. Use the machine indoors only when sufficient ventilation can be guaranteed and when there is another person on stand-by, ready to assist in situations of potential danger.

! DANGER

In areas where the operator could be struck by objects falling from overhead, do not use the machine without a FOPS (Falling Object Protective Structure)

! DANGER

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

! WARNING

The machine must be used only on dry surfaces.

! WARNING

Do not leave the machine unattended or parked with the key in the switch and the parking brake off.

! WARNING

Do not use the machine to clean up wire, string, plastic straps, water or other liquids.

! WARNING

To avoid damaging the surface of the floor being cleaned, do not leave the brushes rotating with the machine stationary.

! INFORMATION

Each 30 minutes of work, press the filter shaker button for 30 seconds to clean the suction filter. During this operation, the suction fan shuts off automatically (Battery and Dual Power versions).

! INFORMATION

For best results, empty the debris bin often and use the filter shaker frequently to keep the filter clean.

! INFORMATION

The machine is fitted with a driver detection device, so that the operator can start the machine only when seated correctly in the driving position; if the operator gets up from the seat, the device will immobilize the machine.

! INFORMATION

When picking up large but light objects (e.g. paper, leaves, etc.) raise the flaps.

! INFORMATION

If the machine is being used by an operator for the first time, it should be tried out initially in a spacious and obstacle-free area to acquire the necessary familiarity with the functions and controls.

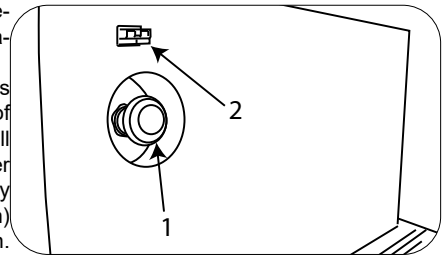
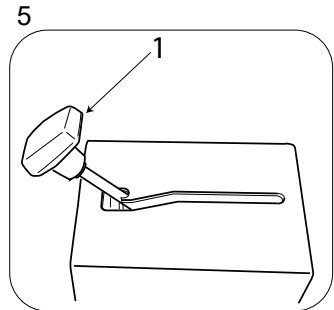
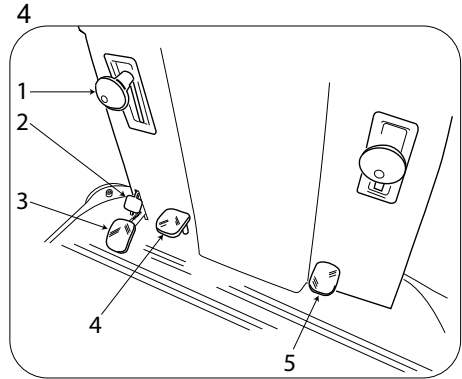
Preparing the machine for work

Carry out the following checks before starting work:

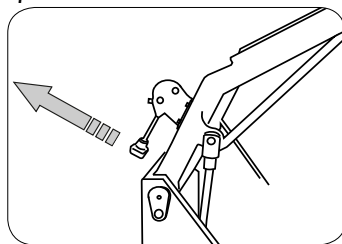
- ▶ Check the battery charge level (and recharge if necessary). On Petrol and Dual Power versions, check whether the fuel tank needs topping up.
- ▶ Make sure the debris bin is empty. If necessary, empty it.
- ▶ Step up onto the machine and adjust the seat as preferred and required, by operating the lever underneath.

Controls of the Battery and Dual Power versions

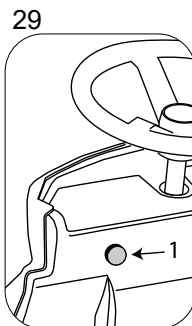
- ▶ **Brake lock pedal (2, fig. 4):** Press this pedal along with the service brake pedal to engage the parking brake. To disengage the brake lock and release the parking brake, simply press the service brake pedal.
- ▶ **Service brake pedal (3, fig. 4):** Press this pedal to stop the machine during operation.
- ▶ **Flap lift pedal (4, fig. 4):** Press this pedal to lift the flaps in order to pick up large but light objects. Release the pedal when not needed.
- ▶ **Accelerator pedal (5, fig. 4):** Press this pedal to control the speed of the machine. If the accelerator pedal is released for more than three seconds while the machine is switched on, the "AUTO POWER-OFF" function switches off all machine functions. To start again, simply press the accelerator pedal. To enable/disable "AUTO POWER-OFF" mode and change the duration of the delay, go to the **"Technical menu"**.
- ▶ **Left and right side brush control lever (1, fig. 4):** Push this lever down to lower the side brushes to working position and start rotation. Raise the lever to lift the brushes and stop rotation.
- ▶ **Main brush control lever (1, fig. 5):** Push this lever forwards to lower the main brush to working position and start rotation. Raise the lever again to lift the brushes and stop rotation on completion of work. The suction fan starts automatically when the main brush starts rotating.
- ▶ **Emergency stop button (1, fig. 6):** Press this mushroom head button in the event of imminent danger or need to deactivate all machine functions and disconnect power to the machine. Switch off all the previously active functions (side brushes, main brush) before resetting the emergency stop button.
- ▶ **Battery charger socket (2, fig. 6):** input connection for charging the batteries.



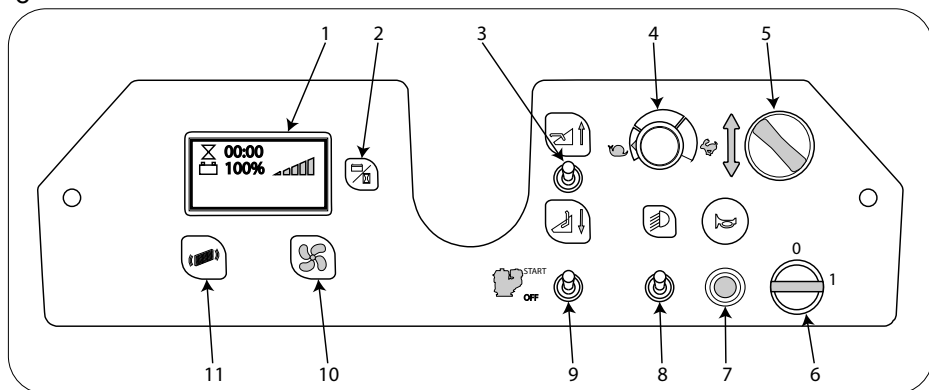
- ▶ **Bin tipping lever (top unloading) (fig. 7):** Pull this lever to rotate the bin and empty its contents. 7
- ▶ **Display (1, fig. 8):** This displays the current battery charge level expressed as a percentage, logos for active functions, an hour counter showing the total hours of use of the machine and any active alarms, see the [“Display alarms”](#) section.
- ▶ **Menu button (2, fig. 8):** on the Battery version, this button is active only in the [“Technical menu”](#); on the Dual Power version, it displays the total hours operation of the engine.



- ▶ **Bin up/down switch (3, fig. 8):** Lifts or lowers the debris bin.
- ▶ **Speed control (4, fig. 8):** Regulates the forward and reverse speed of the machine.
- ▶ **Direction selector (5, fig. 8):** Turn this selector to engage forward or reverse travel.
- ▶ **Main switch (6, fig. 8):** Switches power to all machine functions on/off.
- ▶ **Horn button (7, fig. 8):** Press to sound the horn.
- ▶ **Light switch (8, fig. 8):** Turns the lights (OPTIONAL) on and off.
- ▶ **Engine start switch (9, fig. 8):** Starts and shuts down the engine.
- ▶ **Suction switch (10, fig. 8):** Switches suction on and off.
- ▶ **Filter shaker button (11, fig. 8):** Press and hold this button for 30 seconds to shake and clean the suction filter. As soon as the shaker motor starts, the suction and drive motors are switched off. The “automatic filter shaker” function can be activated via the [“Technical menu”](#); when this option is selected, the machine will perform the cleaning sequence automatically on at the end of a programmed interval, selected likewise via the technical menu.
- ▶ **Bin up/down movement enable button (1, fig. 29):** Press this button to enable bin movement by the bin up/down switch.



8

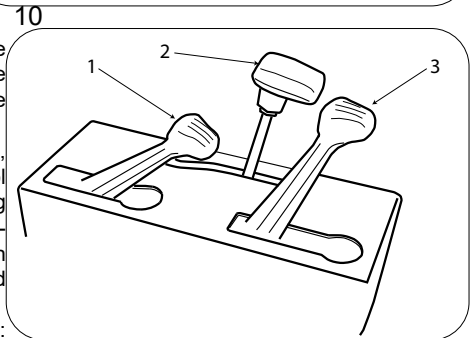
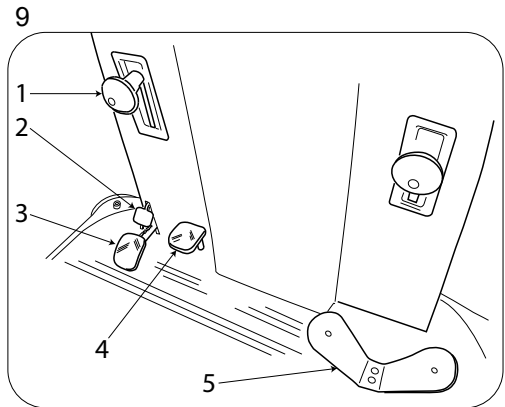


Operating the Battery and Dual Power versions

- ▶ Sit correctly in the seat.
- ▶ Turn the main switch to position “1”.
- ▶ Check that the display shows the battery status as being fully charged; if not, proceed to run the recharge cycle: see section on [“Battery maintenance and charging”](#).
- ▶ Select the direction of travel with the direction selector.
- ▶ Release the parking brake.
- ▶ Lower the side brushes.
- ▶ Lower the main brush.
- ▶ Press the accelerator pedal to move off and start work.
- ▶ Press the flap lift pedal only when you need to pick up large but light objects.
- ▶ Cleaning quality depends largely on the cleanliness of the suction filter. Operate the filter shaker at intervals suitable to the environment in which you are using the machine.

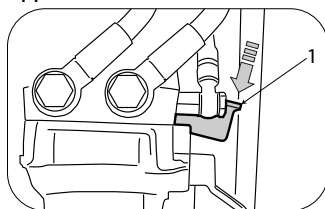
Controls of the Petrol and Diesel versions

- ▶ Brake lock pedal (2, fig. 9): Press this pedal along with the service brake pedal to engage the parking brake. To disengage the brake lock and release the parking brake, simply press the service brake pedal.
- ▶ Service brake pedal (3, fig. 9): Press this pedal to stop the machine during operation.
- ▶ Flap lift pedal (9, fig. 4): Press this pedal to lift the flaps in order to pick up large but light objects. Release the pedal when not needed.
- ▶ Direction selector pedal (5, fig. 9): this pedal is depressed to select the drive direction and the relative speed: applying pressure to the right hand side, the machine will move forward; applying pressure to the left, the machine will move in reverse.
- ▶ Left and right side brush control lever (1, fig. 9): lowering the side brush control lever, the brush is moved into operating position. On petrol/diesel engine models, with the engine running, the brush turns continuously in both operating and idle positions.
- ▶ Main brush control lever (2, fig. 10): shifting the lever forward, the brush is moved into operating position. On petrol/diesel engine models, with the engine running, the brush turns continuously in both operating and idle positions.
- ▶ Suction control level (1, fig. 10): Adjust this lever to increase or reduce suction.
- ▶ **Engine drive lever (3, fig. 10):** Enables/disables all functions powered by the engine.

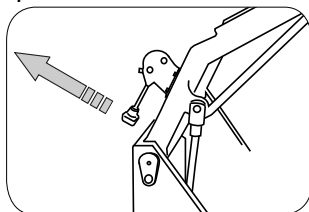


- ▶ **Emergency bypass (1, fig. 11):** Use this lever to move the machine with the engine off. Press in the direction shown to disengage the hydraulic pump.
- ▶ **Bin tipping lever (top unloading) (fig. 7):** Pull this lever to rotate the bin and empty its contents.
- ▶ **Emergency stop button (1, fig. 12):** Press this mushroom head button in the event of imminent danger or need to deactivate all machine functions and disconnect power to the machine.
- ▶ **Starter (1, fig.13):** lever controlling engine air flow in cold start conditions (PETROL VERSION).
- ▶ **Filter shaker button (2, fig. 13):** the filter can be kept in optimum condition at all times, at a fingertip touch: first shut off the dust suction airflow by means of the “open air intake lever”, then press and hold the button for 30 seconds.
- ▶ **Bin up/down switch (3, fig. 13):** Lifts or lowers the debris bin.
- ▶ **Horn button (4, fig. 13):** Press to sound the horn.
- ▶ **Main switch (5, fig. 13):** Switches power to all machine functions on/off.
- ▶ **Voltage indicator (6, fig. 13):** Shows correct electric circuit voltage.
- ▶ **Hour counter (7, fig. 13):** Shows machine operating hours.
- ▶ **Engine speed control lever (8, fig. 13):** used to adjust the speed of the engine.
- ▶ **Light switch (9, fig. 13):** turns the lights (OPTIONAL) on and off.

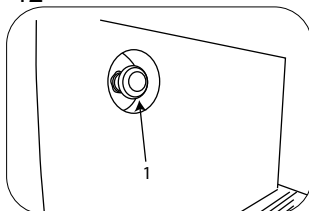
11



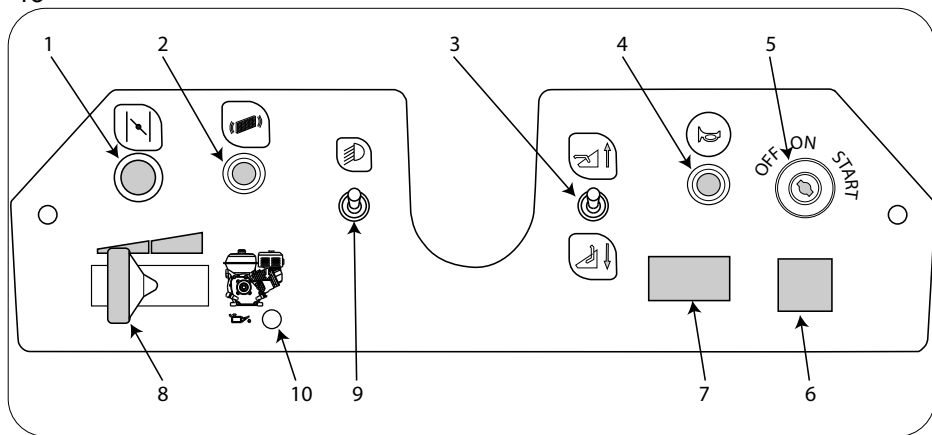
7



12

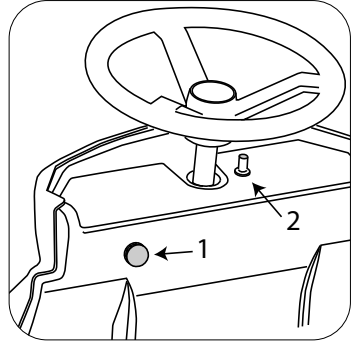


13

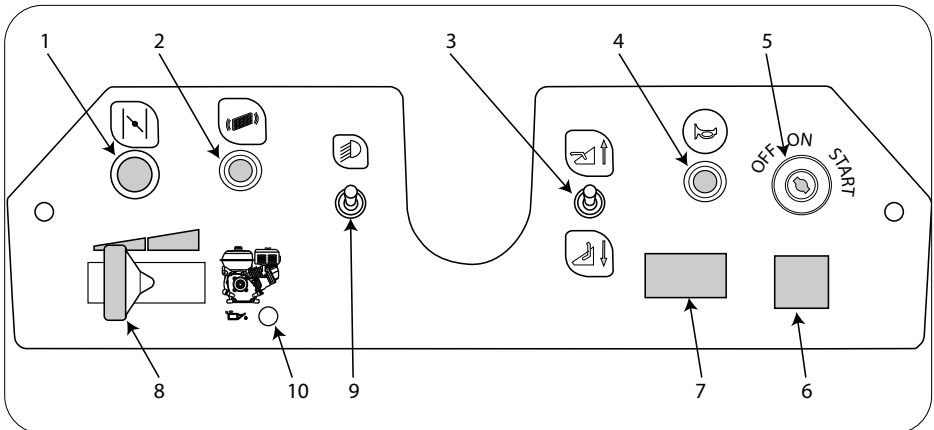


- ▶ **“Oil alert” warning light (10, fig. 13):** indicates problem with engine oil pressure.
- ▶ **Bin up/down movement enabling button (1, fig. 29):** Press this button to enable bin movement by the bin up/down switch.

29



13



Operating the Petrol and Diesel versions

- ▶ Sit correctly in the seat.
- ▶ Release the parking brake.
- ▶ Move the engine speed control lever to START position.
- ▶ Pull the STARTER lever (PETROL VERSION).
- ▶ Move the engine drive lever to position 1-START and hold it there while turning the ignition key to START position.

! WARNING

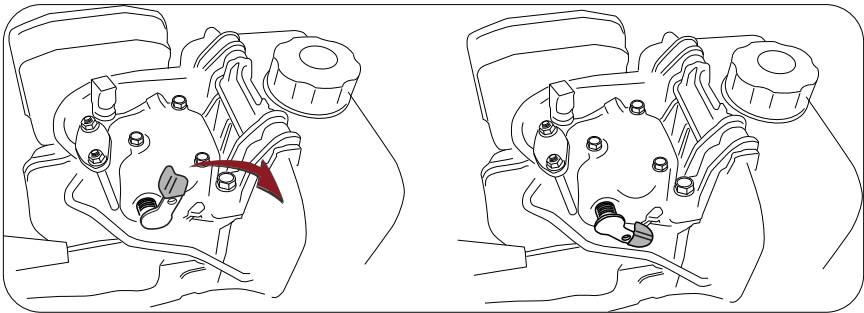
Do not engage the starter motor for more than five seconds at a time. If the engine fails to start, release the ignition key and wait approximately ten seconds before trying again.

- ▶ Allow the ignition key to return to ON position as soon as the engine starts and release the engine drive lever.
- ▶ Press on the direction selector pedal to move off. Press the right side to move forwards. Press the left side to move backwards.
- ▶ Lower the side brushes.
- ▶ Lower the main brush.
- ▶ Adjust the suction control lever to obtain the required strength of suction.
- ▶ Press the flap lift pedal only when you need to pick up large but light objects.
- ▶ Cleaning quality depends largely on the cleanliness of the suction filter. Operate the filter shaker at intervals suitable to the environment in which you are using the machine.

! WARNING

If the DIESEL engine fails to start due to a starter motor malfunction, proceed as follows: lower the lever highlighted in the figure (Fig. 30) on the motor head and try to start the engine again.

30



Emptying the bottom unloading debris bin

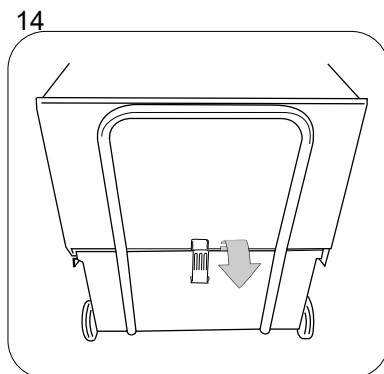
! WARNING

When emptying the bin, always wear a mask to protect the respiratory tract from the dust which is always present during this operation.

! WARNING

Before emptying the debris bin, operate the filter shaker for 30 seconds to clean the filter

- ▶ Release the bin lock (fig. 14).
- ▶ Pull out the rear bin by means of its handle.
- ▶ Take the bin (which is fitted with wheels) to the rubbish collection point and empty it.



Emptying the top unloading debris bin

! WARNING

When emptying the bin, always wear a mask to protect the respiratory tract from the dust which is always present during this operation.

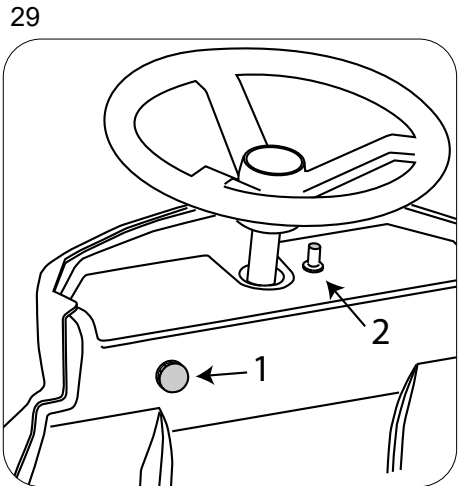
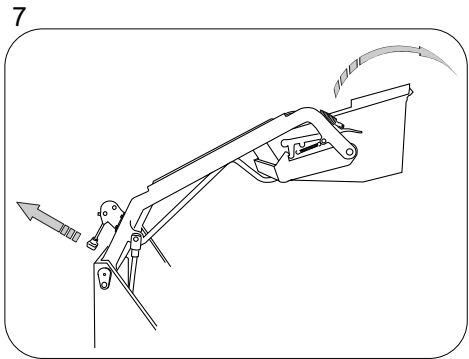
! WARNING

Before emptying the debris bin, operate the filter shaker for 30 seconds to clean the filter

! INFORMATION

When you open the bin, all functions are disabled on Battery and Dual Power versions, and the engine is also switched off on the Dual Power version.

- ▶ Press and hold the bin movement enabling button (1, fig. 29) then operate the bin up/down switch (2, fig. 29) to raise the bin to the required height.
- ▶ Pull the lever (fig. 7) to rotate the bin and empty its contents.
- ▶ Turn the bin back to its horizontal position.
- ▶ Press and hold the bin movement enabling button (1, fig. 29) then operate the bin up/down switch (2, fig. 29) to lower the bin again.



Finishing work

! INFORMATION

Shake the filter at the end of every work session.

When you finish work, switch the machine off at the main switch, lift the side brushes and main brush and engage the parking brake.

Moving the machine when not in operation

To move the machine, proceed as follows:

- ▶ Raise the side brushes.
- ▶ Raise the main brush.
- ▶ Select the direction of travel.
- ▶ Press the accelerator pedal.

SAFETY THERMOSTAT (Battery version)

The safety thermostat is located in the position shown.

If a fire starts inside the debris bin, the thermostat will stop the suction fan. Proceed as follows:

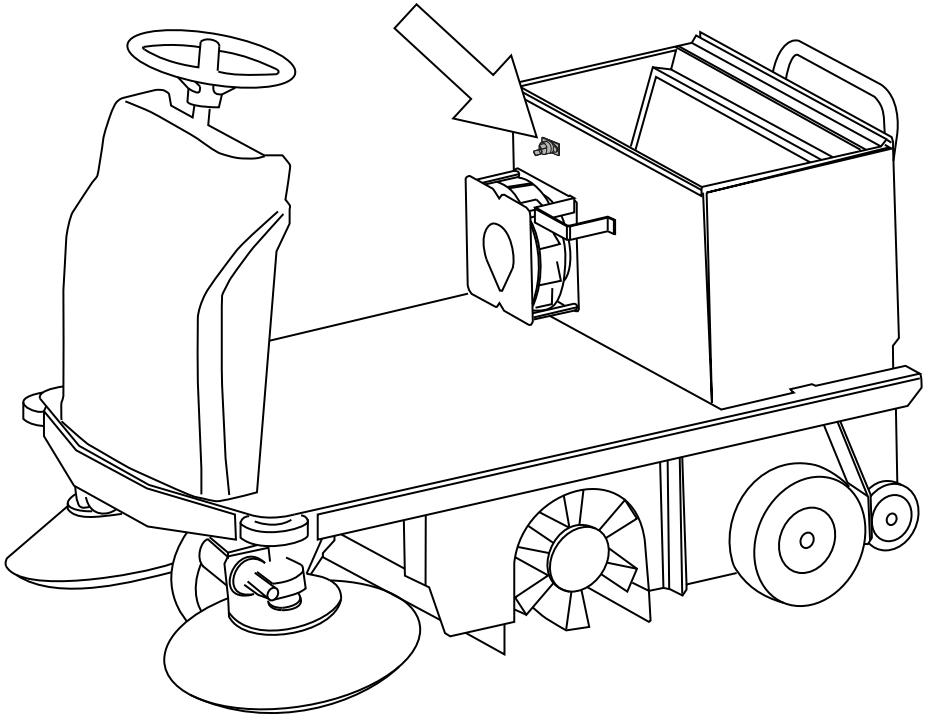
- ▶ take the machine to a safe area.
- ▶ open the debris bin and remove the heat source.

SAFETY THERMOSTAT (PETROL version)

The safety thermostat is located in the position shown.

If a fire starts inside the debris bin, the thermostat will stop the machine. Proceed as follows:

- ▶ open the debris bin and remove the heat source.



PERIODS OF INACTIVITY

Proceed as follows to prepare the machine for extended periods of inactivity.

- ▶ Empty the debris bin.
- ▶ Clean the suction filter.
- ▶ Disconnect the machine from the power supply.
- ▶ Completely recharge the batteries and deposit them in the battery store. During long periods of inactivity, you should charge the batteries regularly (at least once every two months) to keep them constantly at maximum charge.

! WARNING!

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

MAINTENANCE INSTRUCTIONS

! DANGER

Never commence any maintenance operations without first having disconnected the batteries and removed the ignition key.

Maintenance operations on the electrical circuit and in any event all other operations not explicitly described in this operating manual must be performed by specialist technical personnel only, in compliance with current safety regulations and as indicated in the maintenance manual.

Maintenance - General rules

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

When cleaning the machine, always observe the following precautions:

- ▶ avoid the use of high pressure washers: water could penetrate the electrical compartment or the motors, leading to damage or the risk of short circuit;
- ▶ do not use steam, as the heat could cause plastic parts to lose their shape;
- ▶ do not use hydrocarbons or solvents, as these could damage cowlings and rubber parts.

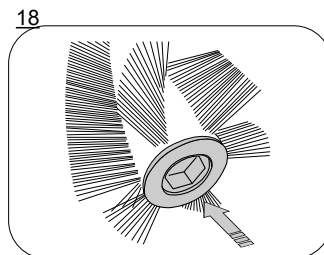
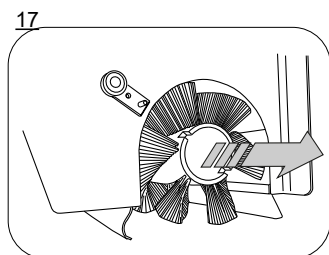
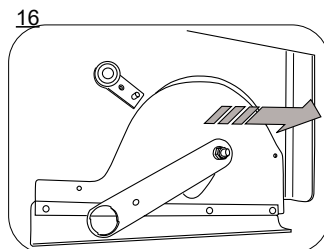
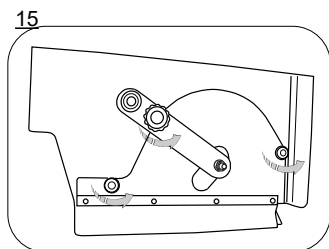
Replacing/installing the main brush

! DANGER

This operation must be performed with the machine switched off and the key removed.

Proceed as follows to replace the main brush.

- ▶ Unscrew the knob and open the door on the left hand side of the machine.
- ▶ Unscrew the three knobs securing the brush compartment cover (fig. 15).
- ▶ Remove the brush compartment cover (fig. 16).
- ▶ Take out the brush (fig.17).
- ▶ Remove the adapter from the core of the old brush and fit it to the new brush, taking care to keep the bristles aligned in the same direction (fig.18).
- ▶ Refit the adapter and position the new brush in the machine, taking care to ensure that the adapter engages the drive hub correctly. Fit the cover over the brush compartment and secure it with the three knobs, repeating the removal steps in reverse order.

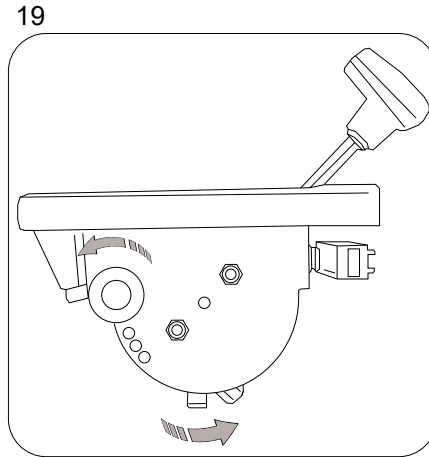


Adjusting the main brush

The main brush makes a major contribution to the efficiency of the whole machine. Correct adjustment ensures better quality cleaning in shorter times.

The machine is delivered correctly adjusted. The main brush therefore only needs further adjustment when it becomes worn. Proceed as follows to adjust the main brush.

- ▶ Unscrew the knob (fig. 19).
- ▶ Turn the adjuster anti-clockwise until the knob is aligned with the required fixing hole (fig. 19).
- ▶ Retighten the knob (fig. 19).



Replacing/installing the side brushes

! DANGER

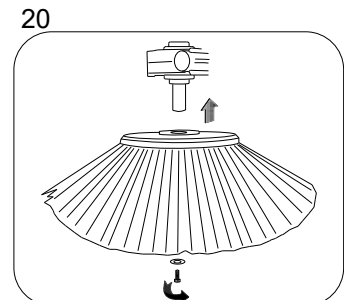
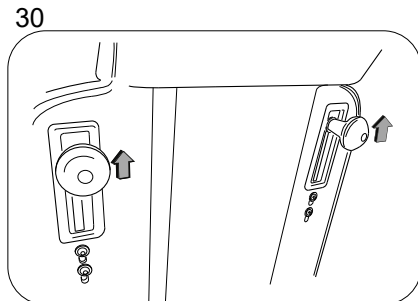
This operation must be performed with the machine switched off and the key removed.

For ease of transport, the side brushes are not installed on the machine when it is delivered.

Proceed as follows to install the side brushes.

- ▶ Raise the side brushes (fig. 30).
- ▶ Undo the screw of the side brush motor shaft (fig. 20).
- ▶ Remove the key protector.
- ▶ Position the brush complete with flange on the motor shaft (fig. 20).
- ▶ Refit and tighten the screw (fig. 20).

Repeat the above procedure to replace worn side brushes.



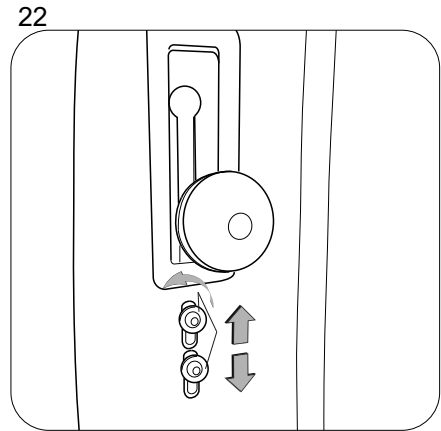
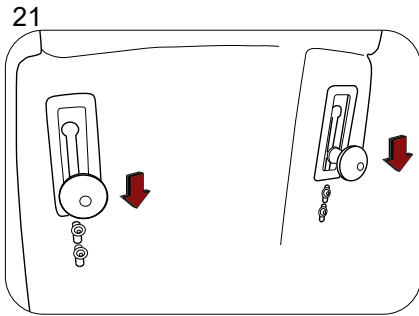
Adjusting the side brushes

! WARNING

Never operate the machine without the side brushes installed.

The side brushes direct dirt and debris towards the centre of the machine. The most efficient height for this purpose is when the side brushes gently touch the floor. Proceed as follows to increase or reduce the pressure of the side brushes on the floor, if necessary.

- ▶ Lower the side brushes into the work position (fig. 21).
- ▶ Loosen the two adjuster screws under the brush positioning knob (fig. 22).
- ▶ Position the brush as required, by hand.
- ▶ Tighten the adjuster screws (fig. 22).
- ▶ Return the side brushes to the raised idle position.



Replacing/installing the suction filter

! DANGER

This operation must be performed with the machine switched off and the key removed.

The suction filter makes a major contribution to the efficiency of the whole machine.

Its correct maintenance keeps the machine at maximum efficiency at all times. If the sweeper begins to raise dust as it sweeps, check the condition of the suction filter.

The suction filter can be cleaned in two ways.

Semiautomatic filter cleaning:

- ▶ This method provides a quick and easy way to keep the filter in faultless operating condition: press and hold the filter shaker button for a number of seconds, repeating the operation four or five times. On Petrol and Diesel versions, shut off suction with the suction control lever before pressing the filter shaker button.

Manual cleaning of the panel filter:

! DANGER

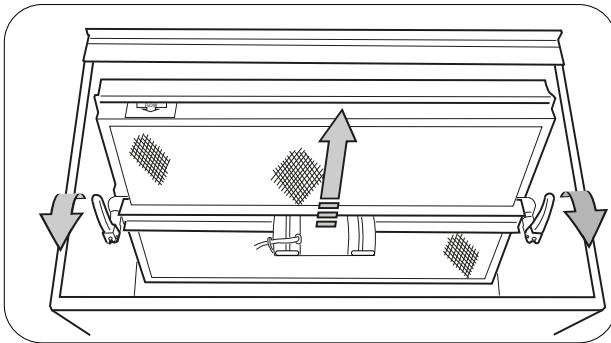
This operation must be performed with the machine switched off and the key removed.
If the action of the filter shaker proves insufficient, proceed as follows to clean the filter manually.

- ▶ Remove the cover of the filter housing.
- ▶ Take out the bracket with the filter shaker motor, lifting the two handles and making certain to detach the power connector from the shaker (fig. 23).
- ▶ Take out the filter (fig. 23).
- ▶ Blow the filter clean with compressed air (maximum pressure 6 bar)

! INFORMATION

The filter is marked to show the correct direction for fitting.

23



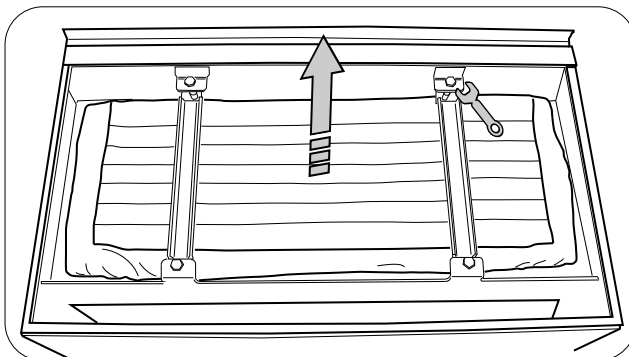
Manual cleaning of the pocket filter:

! DANGER

This operation must be performed with the machine switched off and the key removed.
If the action of the filter shaker proves insufficient, proceed as follows to clean the filter manually.

- ▶ Remove the cover of the filter housing.
- ▶ Undo the four screws securing the two filter holder brackets (fig. 24).
- ▶ Remove the two brackets (fig. 24).
- ▶ Take out the filter, making certain to detach the power connector from the shaker (fig. 24).
- ▶ Blow the filter clean with compressed air (maximum pressure 6 bar)

24



Fuses: replacing

! DANGER

This operation must be performed with the machine switched off and the key removed.

! WARNING

Never use a fuse with a higher amperage than specified.

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

DIESEL version:

(Fig. 25-Ref. 1) front light fuse (optional)

(Fig. 25-Ref. 2) blinker, buzzer, hour counter, horn and filter shaker relay coil fuse.

(Fig. 25-Ref. 3) starter motor relay fuse.

(Fig. 25-Ref. 4) filter shaker motor fuse.

(Fig. 25-Ref. 5) starter fuse.

PETROL version:

(Fig. 25-Ref. 1) filter shaker motor fuse.

(Fig. 25-Ref. 2) starter motor relay fuse.

(Fig. 25-Ref. 3) blinker, buzzer, hour counter, horn, filter shaker relay coil and front light fuse (optional)

(Fig. 25-Ref. 4) generator fuse.

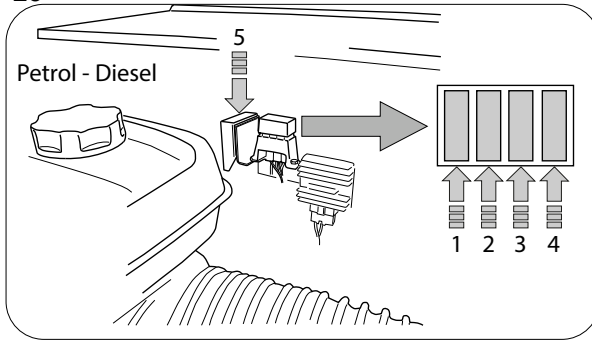
(Fig. 25-Ref. 5) starter fuse.

(Fig. 26), main fuse.

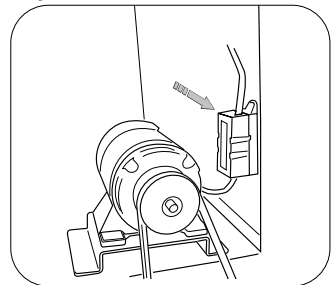
(Fig. 27) resettable main and side brush motor fuse, Battery and Dual Power versions.

(Fig.28-Ref.1) side brush motor fuse, (Fig.28-Ref.2) centre brush motor fuse, (Fig.28-Ref.3) suction motor fuse, (Fig.28-Ref.4) filter shaker fuse, Battery and Dual Power version.

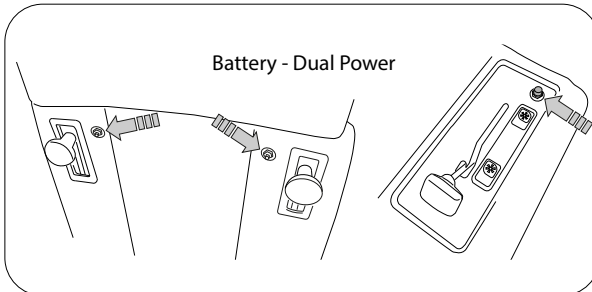
25



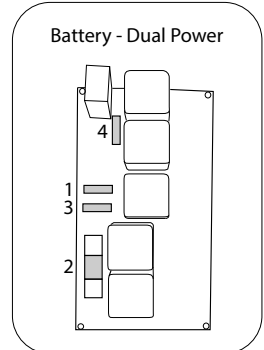
26



27



28



Battery maintenance and charging

! DANGER

Do not check the batteries by sparking.

The batteries give off flammable fumes. Put out all fires and hot embers before checking or topping up the battery level.

Perform the operations described below in a ventilated area.

To avoid permanent damage to the batteries, do not run them down completely.

Charging procedure:

connect the connector of the battery charger to that of the battery wiring harness (fig. 35).

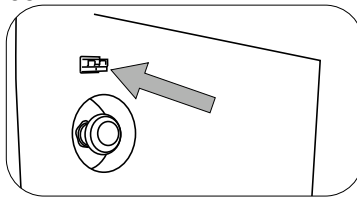
! WARNING

Carry out the recharge procedure as specified in the battery charger manual: models with batteries that need recharging periodically are Battery powered and Dual Power versions. At the end of the recharge procedure, isolate the power supply and detach the connector from the machine.

! WARNING

If the machine is to stand idle for any length of time, disconnect the batteries from the machine circuits by depressing the emergency stop button.

35



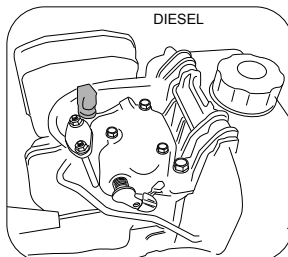
Changing the engine oil

! WARNING

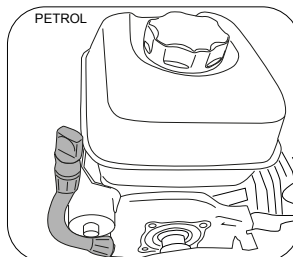
Engine oil change interval: renew the engine oil when the “CHANGE ENGINE OIL” warning appears on the machine display (DUAL POWER version only); in the case of PETROL and DIESEL versions, refer to the operation and maintenance manual provided by the engine manufacturer and to the hour counter located on the dashboard of the machine; the oil change must be carried out with the machine switched off and the engine cold.

Check that all functions of the machine are disabled and that the temperature of the engine is not

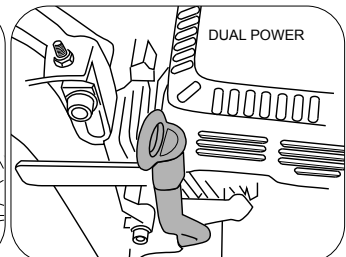
31



32



33



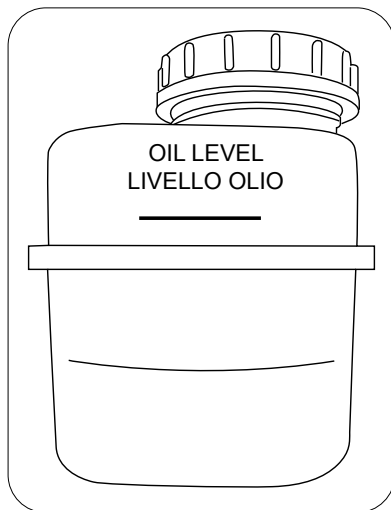
such as to present a risk of personal injury, then lift the top cowling and proceed as follows:

- ▶ Having identified the oil drain hose connected to the engine, run it through the hole in the metal cover of the engine compartment (Petrol version); in the case of Diesel and Dual Power versions, the side panel must be removed.
- ▶ Remove the oil level dipstick to facilitate drainage of the old oil.
- ▶ Position a suitable container under the drain hose to collect the old oil, and unscrew the plug to release the flow.
- ▶ Once the old oil has drained out, close off the drain hose and replace it in the engine compartment, making certain that it does not interfere with any moving parts of the machine.
- ▶ Pour oil into the engine through the dipstick tube (PETROL and DUAL POWER version, Fig. 32, 33), using the quantity specified in the engine manual; in the case of the DIESEL engine, pour the oil into the opening closed by the cap (Fig. 34) on the cylinder head, using the quantity specified in the engine manual.
- ▶ Once the right quantity of new oil has been added, replace the oil level dipstick and check that the level is correct.
- ▶ Close the top cowling.

Top up hydraulic circuit oil on PETROL and DIESEL version

Check the oil level every 10 hours; if the level is below the minimum level indicator on the tank (Fig. 34), top up with "SAE 15 W40 Q8 T 700 I" oil.

34



Periodic checks

CHECK	ON DELIVERY	EVERY 10 HOURS	EVERY 50 HOURS	EVERY 100 HOURS
CHECK THE BATTERY ELECTROLYTE	X	X		
CHECK THE HYDRAULIC OIL	X	X		
CHECK THE CONDITION OF THE BELTS				X
ADJUST THE BRAKE				X
CHECK THE TIGHTNESS OF NUTS BOLTS			X	
CHECK THE CONDITION OF THE BRUSHES			X	
CHECK THE TIGHTNESS OF THE SEALS		X		
CHECK THE FUNCTIONING OF DEVICES	X			X
GREASE THE STEERING CHAIN				X

TROUBLESHOOTING

B= Battery
 DP= Dual Power
 P= Petrol
 D= Diesel

PROBLEM	CAUSE	REMEDY
The machine raises dust.	Filter clogged. (B,DP,P,D)	Shake the filter with the filter shaker and, if necessary, remove and clean it thoroughly.
	Filter damaged. (B,DP,P,D)	Replace the filter.
	Filter incorrectly fitted. (B,DP,P,D)	Fit the filter correctly in its housing.
	Safety thermostat activated (B,DP)	Remove the heat source from the debris bin.
The machine leaves dirt on the ground.	The main brush is not adjusted correctly or is worn. (B,DP,P,D)	Adjust or replace the main brush as necessary.
	The main brush has collected string or wire. (B,DP,P,D)	Remove the string and wire picked up.
	The flaps are damaged. (B,DP,P,D)	Replace the flaps.
	Debris bin full. (B,DP,P,D)	Empty the debris bin.
The main brush does not rotate.	Belt broken. (B,DP,P,D)	Replace.
	Fuse burned out. (B,DP)	Replace.
	Microswitch faulty. (B,DP)	Replace.
	Cable disconnected. (B,DP)	Check.
	Gearmotor faulty. (B,DP)	Replace.
The side brushes do not rotate.	Belt broken. (P,D)	Replace.
	Cutout tripped. (B,DP)	Reset.
	Microswitch faulty. (B,DP)	Replace.
	Cable disconnected. (B,DP)	Check.
The suction motor does not work.	Fuse burned out. (B,DP)	Replace.
	Switch faulty. (B,DP)	Replace.
	Cable disconnected. (B,DP)	Check.
	Motor faulty. (B,DP)	Replace.
	Safety thermostat activated (B,DP)	Remove the heat source from the debris bin.
The filter shaker motor does not work.	Fuse burned out. (B,DP,P,D)	Replace.
	Switch faulty. (B,DP,P,D)	Replace.
	Cable disconnected. (B,DP,P,D)	Check.
	Motor faulty. (B,DP,P,D)	Replace.

The machine won't start.	Battery terminals disconnected. (B,DP,P,D)	Check.
	Batteries discharged. (B,DP,P,D)	Recharge.
	Emergency stop button pressed. (B,DP,P,D)	Reset.
	No fuel. (DP,P,D)	Top up.
	No engine oil. (DP,P,D)	Top up.
	Driver detection device faulty. (B,DP,P,D)	Replace.
	Operator not correctly seated.	Sit correctly in the seat.
	Clutch not engaged. (P,D)	Engage.
	Main fuse burned out. (B,DP)	Replace.
	Power control board fuse burned out. (B,DP)	Replace.
	Safety thermostat activated (P)	Remove the heat source from the debris bin.
The machine goes off	Safety thermostat activated (P)	Remove the heat source from the debris bin.
The batteries do not hold their charge.	Electrolyte low. (B,DP,P,D)	Top up.
	Battery terminal loose. (B,DP,P,D)	Tighten.

DISPLAY ALARMS

BRUSH MOTOR CUTOUT TRIPPED	The brush motor has overheated.
BRAKE	The parking brake is engaged or the drive motor has overheated.
STAND-BY	The driver detection microswitch is not detecting an operator.
RELEASE ACCELERATOR	Incorrect starting sequence. Release the accelerator pedal when starting.
EEPROM 1 FAULT	Replace the display board.
DRIVE CONTROL BOARD CUTOUT TRIPPED	The drive control board has overheated.
ACCELERATOR FAULT	There is a problem with the accelerator cable.
MAX. SPEED POTENTIOMETER FAULT	There is a fault in the maximum speed potentiometer cabling.
UNDERVOLTAGE FAULT	Check the batteries.
OVERVOLTAGE FAULT	Check the batteries.
MAIN RELAY FAULT	Replace the drive control board.
HPD	Check the accelerator pedal. Switch the machine off and back on with the accelerator released.
MOSFET FAULT	Replace the drive control board.
EEPROM 2 FAULT	Replace the drive control board.

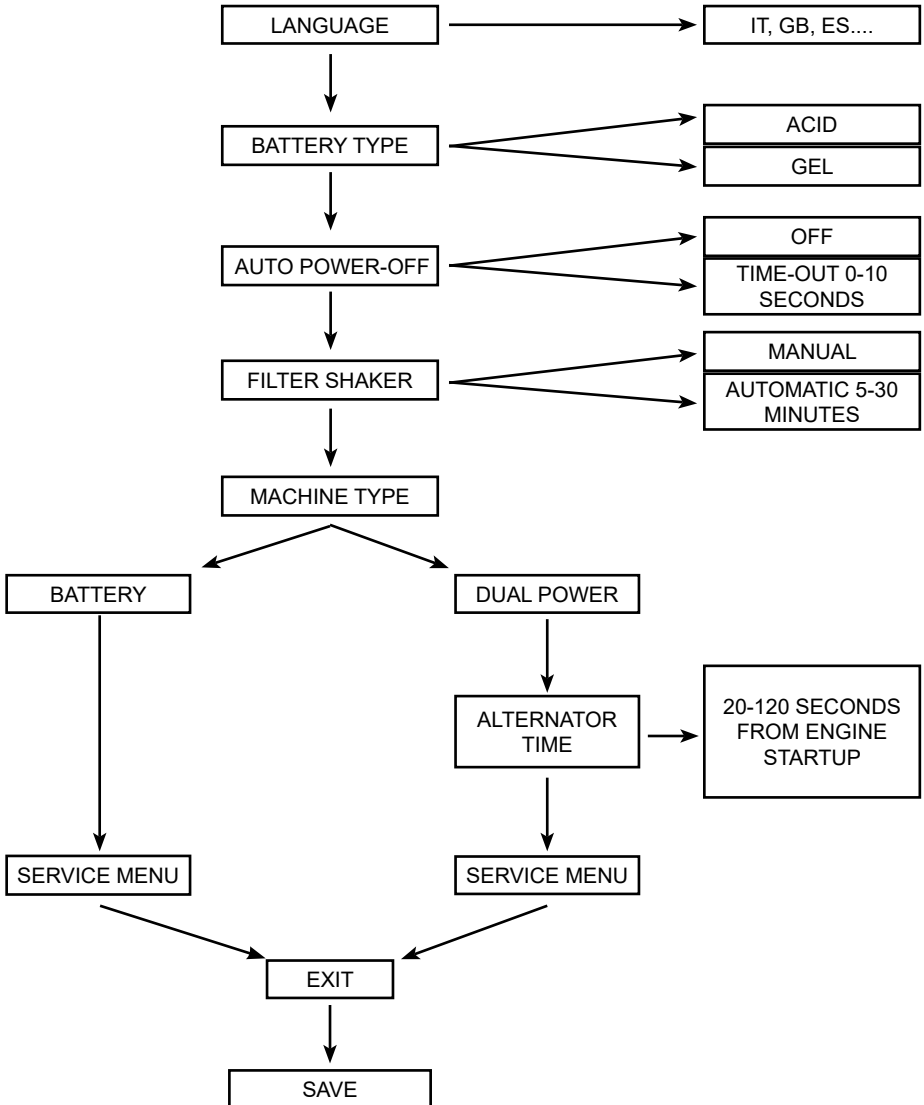
SERVICE	Call a service centre to arrange servicing.
BATTERY DISCHARGED	Battery discharged.
START ENGINE	Dual Power version only: start the engine to continue work.
BATTERY CHARGED	Dual Power version only: batteries charged.
ALTERNATOR CUTOUT TRIPPED	Dual Power version only: the alternator has overheated.
CHANGE ENGINE OIL	Dual Power version only: change the engine oil.
COWLING OPEN	
SWITCH OFF MOTOR/ ENGINE	

TECHNICAL MENU

To access the technical menu, turn the main switch on then press and hold the menu and suction buttons for three seconds.

Press the "SUCTION" button to scroll up through items or increment the selected parameter value. Press the "FILTER SHAKER" button to scroll down through items or decrement the selected parameter value.

Press the "MENU" button to select the parameter to change. The selected parameter appears in negative.





IPC

IP Cleaning S.p.A.
Viale Treviso 63
30026 Summaga di Portogruaro
Venezia (Italy)
T: +39 0421 205511
F: +39 0421 204227
E: www.ipcworldwide.com
W: info@ipcworldwide.com

