



# Clemas & Co Ltd

Industrial Cleaning Equipment  
Sales - Hire - Service

## CS230 145B SWEEPER OPERATOR MANUAL



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### **Congratulations for your choice!**

***FIorentini S.r.l.** thanking you for the preference to our product, would like to remind you that **FIorentini S.r.l** production covers manufacture and marketing of industrial cleaning machines and is currently a leading company in this sector.*

*Our tradition and competence guarantee technical quality of your choice; actually all our products are being built first quality materials through criteria that can give reliability, solidity and functionality satisfying every kind of customers. **FIorentini** has recently obtained the quality system certificate conforming to the requirements of **UNI EN ISO 9001:2000**.*



*We wish therefore inviting you to contact us, unhesitatingly, for every kind of request, as technical or commercial; we'll be pleased to be at your disposal for any information you may need.*

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## 1 GENERAL INFORMATION

### 1.1 SYMBOLS

	<p>This symbol is used to get the operator's attention on procedures or precautions to be followed in order to avoid damages to users or to the support.</p>
	<p>This symbol is used to get the operator's attention on general information.</p>

### 1.2 PREMISE

	<p><b>FIorentini S. r. l.</b> is the only owner of this manual. The reproduction of all or part of the manual or the transmission to third parties with mechanic or electronic devices are forbidden without a written manufacturer's authorization. This manual is supplied to the customers in one original copy when differently specified during the order.</p>
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*This manual is supplied to the customer with the machine and it must be kept with it even when the machine has to be transferred.  
Please, keep the manual in a safe place and for all the machine lifetime. Purchaser is responsible for showing the manual to qualified people. In case of loss ask for a duplicate to FIORENTINI Co..*

*FIORENTINI S.r.l. is not responsible for any kind of damages caused by people or things due to the non-observance of the instructions of this manual.*

*FIORENTINI reserves the right to add at any time and without notice all the technical and commercial changes considered useful for the customer. Therefore data and information in this manual can be updated.*

## DICHIARAZIONE CE DI CONFORMITA'

**ING. O. FIORENTINI s.r.l.**

1.5.1.1.1.1 Loc. Rombola

**50030 PIANCALDOLI (FI) ITALIA**SISTEMA QUALITA' AZIENDALE  
CERTIFICATO ISO9001**DICHIARIAMO SOTTO LA NOSTRA RESPONSABILITA' CHE LA MACCHINA**

**Marca** FIORENTINI  
**Tipo**  
**N° serie**  
**Anno di costruzione** 2006

**RISULTA IN CONFORMITA'**

con quanto previsto dalle seguenti direttive e normative armonizzate comunitarie:

**DIRETTIVA COMUNITARIA****DIRETTIVA MACCHINE**

98/37/CEE

**DIRETTIVA COMPATIBILITA' ELETTROMAGNETICA**

89/336/CEE

Piancaldoli

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**Luogo e  
data**

Ing. O. Fiorentini S.r.l.

Il titolare

Ing. O. Fiorentini

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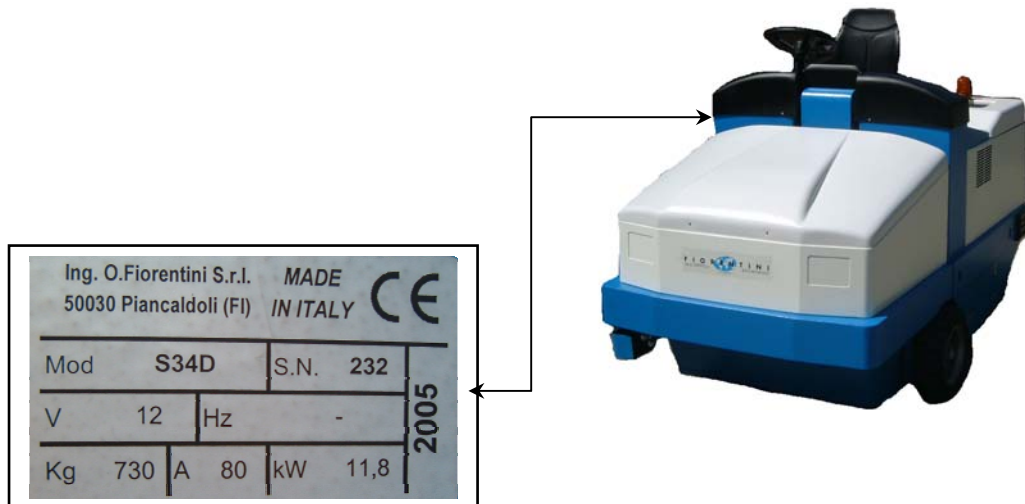
**Firma**

A handwritten signature in black ink, appearing to read 'O. Fiorentini', written over a horizontal line.

## 2 MACHINES FEATURES AND TECHNICAL DATA

### 2.1 IDENTIFYING THE MACHINE

A silver label is stuck on the protection case of the steering column and clearly shows the data referring to the "CE" marking.



**PICTURE N° 1**



**The label has never to be removed. In case of damage it is necessary to ask for a copy. The scrubber cannot be sold without the label.**

## 2.2 DESCRIPTION AND FEATURES OF THE MAIN PARTS

### 2.2.1 DESCRIPTION

The sweeper – S34 - has been designed to clean flat and hard surfaces by means of a sweeping system and suction of the dust into a suitable tank.

The traction system is based on oleodynamic engines fed by a pump which is driven by an endothermic petrol or GPL engine.

The oleodynamic pump also feeds the engine of the central brush, the engine of the side brushes, the oleodynamic actuators for the lifting and sink of the waste tank. The vacuum and the filter shaker engines are fed by a battery supplied with the machine.

The sweeper is equipped with a side rotating brush (the left side brush is optional) which has to bring dust into the central part of the machine. The main brush brings dust into the waste tank thanks to a suction system. The machine must be used on dry or damp surfaces and can be equipped with a water system which has to pull dust down.

Thanks to the dashboard the operator can control all the machine functions and a series of LEDs shows to the operator the battery status or the errors detected by the electronic card.

The operator can control all the main functions of the machine and in particular:

- start both the central and the side brushes;
- start the dust pull down device (optional);
- lift up or sink down of the waste dust;
- open or close the flap set up in the front side of the machine;
- start the vacuum engine;
- start the filter shaker.

**Important: before switching the machine off the operator must**

- **sink the waste tank down;**
- **lift the brushes up to avoid damages to the brushes bristles and decrease their effectiveness.**

### 2.2.2 MAIN PARTS OF THE MACHINE

- Zinc-plated steel or stainless steel frame;
- Lombardini diesel or GPL engine;
- RH rotating brush;
- LH rotating brush (optional);
- vacuum system to pick dust up;
- one drive wheel;
- two idle wheels;
- steering wheel assy;
- operator's seat;

- dust pull down device (optional).

FIORENTINI Co., taking the new CE safety rules into consideration, manufactures the machine following the CE directives about safety and health. The high quality material, the high technology and FIORENTINI experience guarantee the performance and the reliability of this machine . Each machine is tested during the manufacturing process and the final check is done before the machine is shipped out.



**2.3 TECHNICAL DATA**

<b>FEATURES</b>	<b>S34B</b>	<b>S34D</b>
LENGTH	1980 mm.	1980 mm.
WIDTH	1119 mm.	1119 mm.
HEIGHT	1470 mm.	1470 mm.
SWEEPING BRUSHES	1 central brush, 1 RH brush (1 LH brush is optional)	1 central brush, 1 RH brush (1 LH brush is optional)
TRACTION	hydraulic	Hydraulic
CENTRAL BRUSH DIMENSION	L. 850 mm. D. 300 mm.	L. 850 mm. D. 300 mm.
SIDE BRUSH DIMENSION	D. 550 mm.	D. 550 mm.
SWEEPING WIDTH WITH ONE SIDE BRUSH	1155 mm.	1155 mm.
SWEEPING WIDTH WITH TWO SIDE BRUSHES	1460 mm.	1460 mm.
PETROL TANK	*****	9 lt.
HYDRAULIC OIL TANK	22 lt.	22 lt.
FRONT WHEEL DIAMETER	375 mm.	375 mm.
REAR WHEEL DIAMETER	375 mm.	375 mm.
INTAKEN AIR VOLUME	?	?
WEIGHT WITHOUT OPERATOR	864 kg. with batteries	740 kg.
<b>ENGINES</b>		
ENGINE	*****	LOMBARDINI LDW 702
CYLINDERS	*****	2
DISPLACEMENT	*****	700 cc
POWER	*****	17 HP
HYDRAULIC ENGINE OF THE CENTRAL BRUSH	OMM 32	OMM 32
HYDRAULIC ENGINE OF THE SIDE BRUSH	OMP 160	OMP 160
TRACTION HYDRAULIC ENGINE	OMS 200	OMS 200
VARIABLE DELIVERY PUMP	COMER OVP 09	COMER OVP 09
FIXED DELIVERY PUMP	GALTECH	GALTECH
VACUUM ENGINES	MOVIMOTOR 36V	MOVIMOTOR 12V
<b>FUNCTIONS</b>		
DRIVE	MAN ON BOARD	MAN ON BOARD
U-TURN LANE	3450 mm.	3450 mm.
BRUSHES LIFTING UP SYSTEM	hydraulic	hydraulic
SERVICE BRAKE	mechanical	mechanical
PARKING BRAKE	mechanical	mechanical
<b>PERFORMANCES</b>		
FORWARD SPEED	6,6 km/h	7,6 km/h
REVERSE SPEED	6,6 km/h	7,6 km/h

MAX. SLOPE	?	?
MAX. SLOPE FOR AN U-TURN	?	?
CLEANING	9636 m <sup>2</sup> /h	9636 m <sup>2</sup> /h
<b>ECOLOGICAL FEATURES</b>		
NOISE AT OPERATOR'S EAR	LpΔ 72 dB(A) LpiccoC 95 dB(c)	LpΔ 81 dB(A) LpiccoC 103 dB(c)
VIBRATIONS AT OPERATOR'S SEAT	A = 1,6 m/s <sup>2</sup>	A = 1,86 m/s <sup>2</sup>



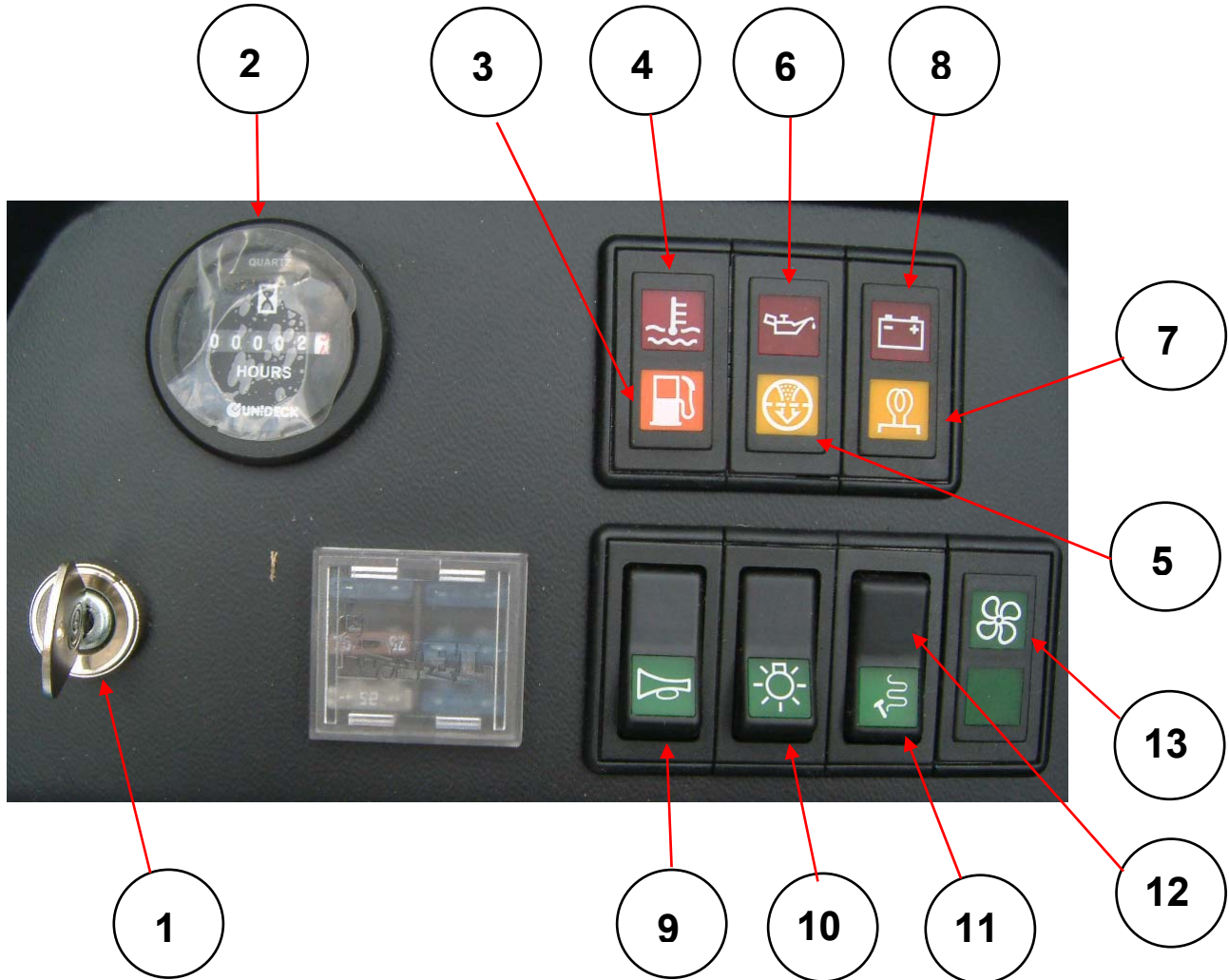
The technical data listed above may be changed by the manufacturer without notice. In any case, FIORENTINI is available for any further information or explanation.

#### MEASUREMENT UNITS CONVERSION

<b>Length</b>	1 inch = 1" = 25,4 mm	<b>Power</b>	1 kW = 1,36 CV = 1,34 BHP
<b>Temperature</b>	T (K) = t (°C) + 273 / t (°F) = 1,8 t (°C) + 32	<b>Pressure</b>	1 bar = 100 kPa = 14,5 psi

2.3.1 THE DASHBOARD

The dashboard is composed by a series of switches that activate or deactivate all the functions of the machine. The function of every switch is shown by a pictogram. Picture nr. 2 shows the dashboard. The function of every switch and pilot light is explained in the scheme below.







PICTURE N° 2


1	Key switch	8	Battery charger pilot light
2	Hour counter	9	Horn button
3	Petrol level pilot light	10	Lights switch
4	Engine temperature pilot light	11	Filter shaker switch
5	Air filter switch (clogged filter)	12	Suction engine switch
6	Oil pressure pilot light	13	Vacuum engine pilot light
7	Glow plugs pilot light		

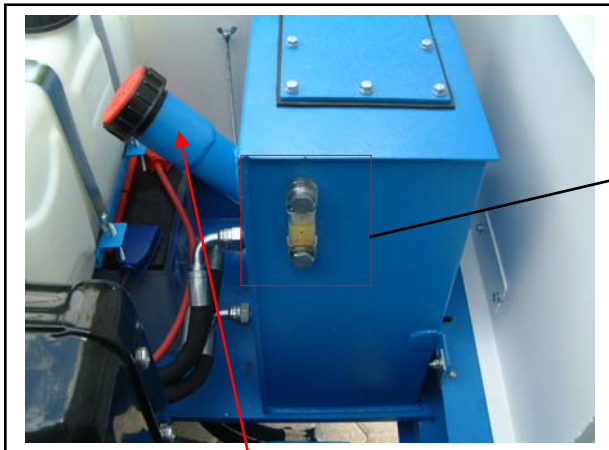
2.3.2 USE OF THE MACHINE

Starting the machine.

	Glow plugs
	Battery charger
	Oil pressure
	Engine temperature pilot light

Insert the key into the dashboard and turn it once clockwise. Wait until the glow plugs pilot light (picture nr. 2 position 7) switches off and turn again the key clockwise in order to start the engine.

	<p><b>Before using the sweeper please check the hydraulic oil level in the tank of the hydraulic system. The oil level must be kept between the two notches of the level indicator inside the engine bonnet (see picture 3). If the oil level is not sufficient, fill it up. Before this operation, switch the machine off and remove the key from the dashboard.</b></p>
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PICTURE N° 3

*Oil tank cap*



**Important:** before starting the machine make sure that the accelerator lever is the same position as shown in picture nr. 4. When the engine is running the lever has to be moved towards the dashboard in order to increase the rpm.

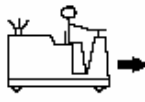
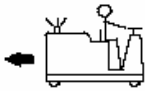


*Picture 4*

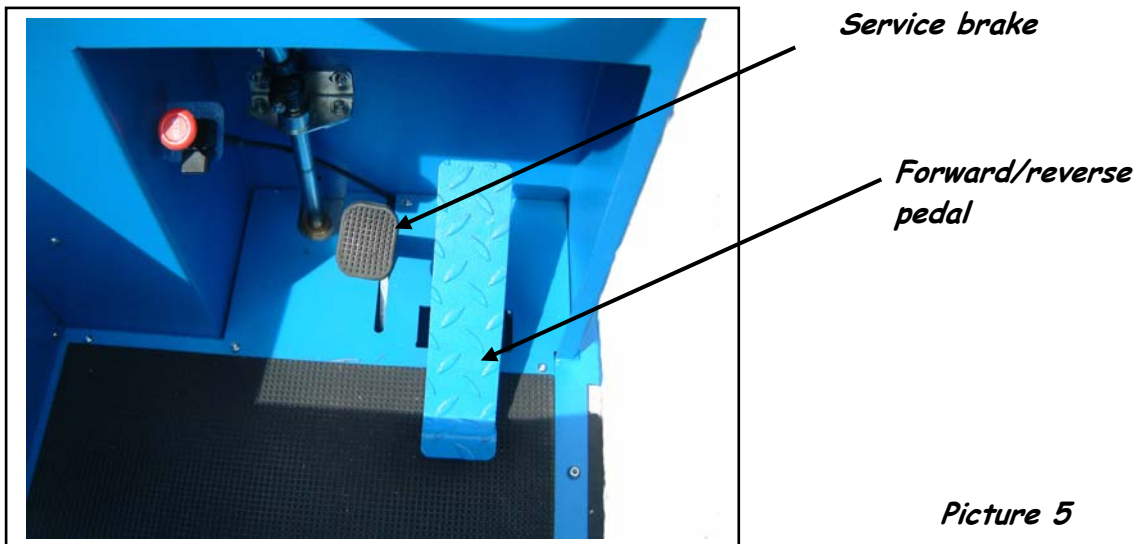


**Important:** after having started the machine both the battery charger and the motor oil pressure must switch off. Otherwise make reference to the engine user manual.

**Moving the machine.**

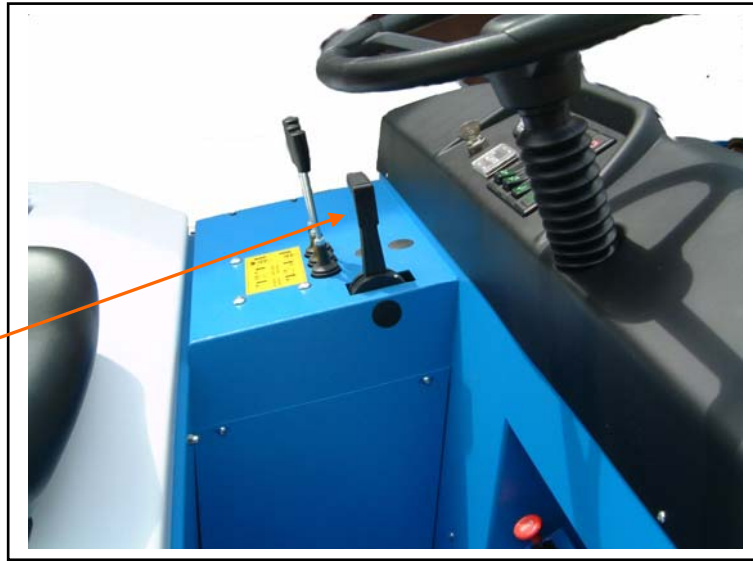
	Forward gear
	Reverse gear

By means of the forward/reverse pedal the operator can move the machine. The operator has to put the foot onto the pedal and press it with the heel to move forward or with the top of the foot to move the machine backward.



Before moving the machine make sure that the engine rpm is right. Otherwise, the operator can regulate the engine rpm by means of the lever which is on the left side next to the hydraulic controls (see picture 6).

*Rpm lever*



*Picture 6*

### **Stopping the machine.**

The sweeper is equipped with one parking brake and one service brake. The last one (see picture 5) is controlled by a pedal placed next to the forward/reverse pedal. The parking brake is controlled by a knob (see picture 7). The operator has to pull this knob when the sweeper is not working. By means of the black little lever under the knob the operator can release the brake.

*Parking brake knob*



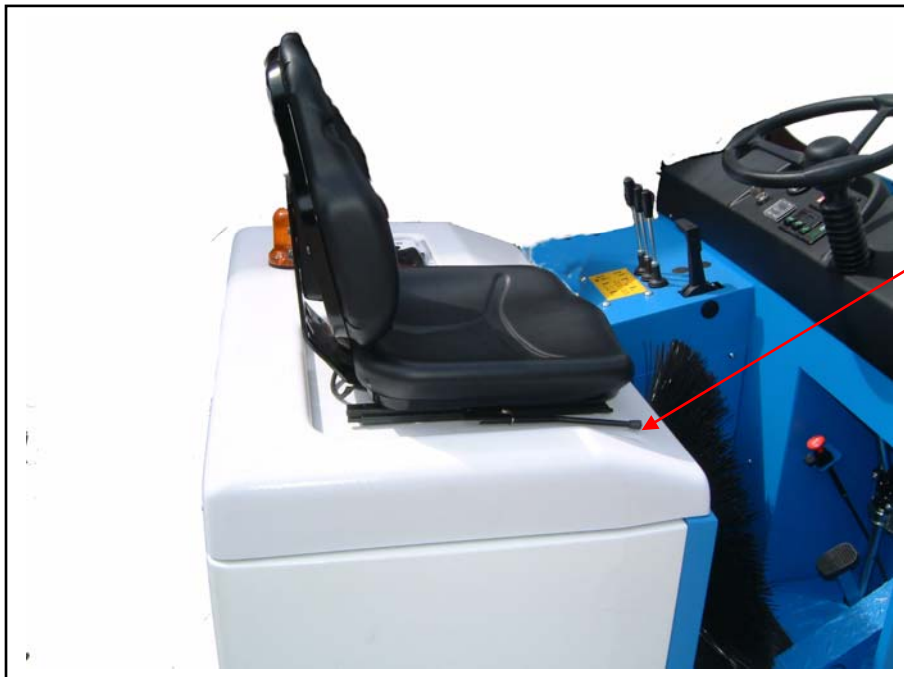
*Picture 7*



**Important: the brake must be checked and registered every three months.**

### **Driving seat regulation.**

By means of the lever under the driving seat (see picture 8) the operator can regulate the horizontal position of the seat itself.



*Picture 8*



**How to use the machine.**

The operator can start the three functions of the machine by means of the three levers next to the driving seat. Make reference to the scheme below for the explanation of the yellow sticker under the levers (see picture 9).



*Picture 9*

	<p>The operator has to pull the lever down in order to sink down and start the rotation of the central and side brushes. Pulling the lever up the hydraulic engines of the brushes stop and the brushes return in their original position.</p>
	<p>The operator has to pull the lever up in order to sink the waste tank down. Pulling the lever down the tank returns in its original position.</p>
	<p>The operator has to pull the lever up to open the flap and pick the dust up into the waste tank. Pulling the lever down the flap closes.</p>

The operator has to follow the rules below to sweep the surface:

- start and sink the sweeping group down;
- start the vacuum engine;
- open the flap;
- drive the sweeper at the same speed to clean all the surface.

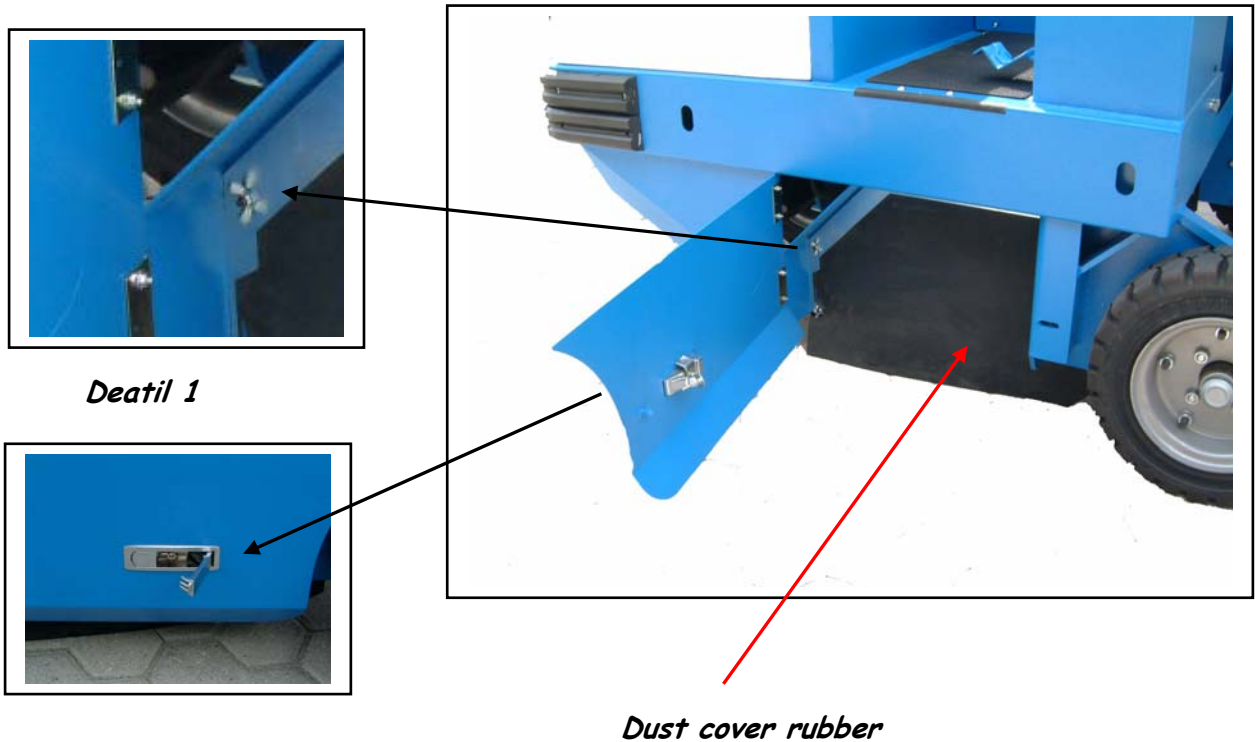
The operator has to follow the rules below to empty the waste tank:

- close the flap;
- start the filter shaker to clean the vacuum filter;
- lift the waste tank up;
- open the flap, let the dust fall down from the waste tank and start the filter shaker again to clean the vacuum filter ;
- keep away from the waste tank and make sure that nobody is near the sweeper. Sink the waste tank down.

### Main brush replacement

The operator has to follow the rules below to replace the main brush:

- by means of the lever (see picture n. 10) open the little door on the right side of the sweeper;
- unscrew the bolts (see detail 1 in picture 10) that hold the rubber catch sheet;
- remove the sheet;
- remove the dust cover rubber;
- unloose the knob and open the door that holds the brush (picture 11);
- remove the brush (picture 12);
- set a new brush up and check its holders;
- follow now the opposite operations.



*Figura 10*

*Knob*

*Brush support*



*Picture 11*



*Brush holder detail*



*Picture 12*

### Side brush replacement

- Unscrew the bolts (picture 13) and remove the brush;
- replace the brush and tighten the bolts again.



*Picture 13*

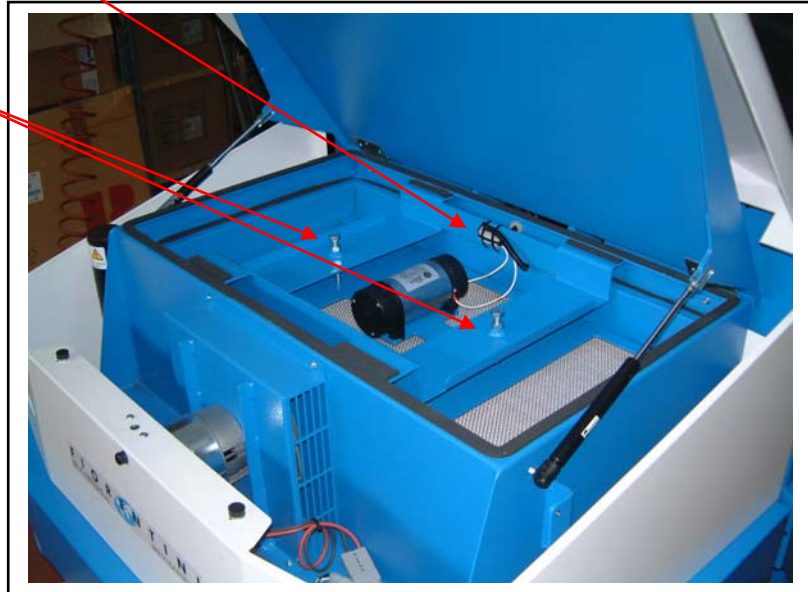
### How to replace the vacuum filter of the sweeping group and filter shaker engine

- Important: remove the key from the dashboard of the sweeper;
- open the bonnet of the machine by means of the button (picture 14);
- lift the waste tank cover up;
- unloose both screws that hold the filter (picture 15);
- remove the filter shaker support;
- disconnect the connectors of the shaker filter engine;
- lift up and replace the damaged or clogged filter;
- follow now the opposite operations.

*Bonnet button*



*Picture 14*

*Connectors of the filter shaker**Fastening screws**Picture 15*

Thanks to the vibrations of the filter shaker engine, the dust falls down from the filters into the waste tank. If it is necessary, remove and replace the filter shaker engine.



**Do not tighten the bolts of the shaker filter engine too much. Otherwise it may be damaged.**

**How to clean the waste tank**

The operator has to follow the instructions below to clean the waste tank:

- lift the waste tank up and open the flap;
- fasten the waste tank by means of the red safety lever (picture 16);
- clean the waste tank;
- place the red safety lever in its original position;
- sink the waste tank down.



*Picture 16*

### 3 SAFETY

#### 3.1 RIGHT USE OF THE MACHINE





This sweeper is equipped with an internal combustion engine and has been designed to clean open spaces. S34 can pick up dust from horizontal surfaces or with a slope not higher than 10% at a speed not higher than 3km/h. During a U-turn, the slope has not to be higher than 5%.



### 3.2 WRONG USE OF THE MACHINE

The manufacturer is not responsible for damages due to a wrong use of the machine as stated in the scheme below.

	<ul style="list-style-type: none"> <li>➤ <i>The machine cannot be driven by non-authorized personnel;</i></li> <li>➤ <i>The machine cannot sweep sloping surfaces whose gradient is higher than 10% or surfaces with holes;</i></li> <li>➤ <i>During a U-turn on a 5% sloping surface the machine has to be driven at a speed not higher than 3 km/h;</i></li> <li>➤ <i>The machine cannot be used in places with dangerous substances and in particular with explosive atmospheres or with a bad microclimate;</i></li> <li>➤ <i>The machine cannot clean surfaces with inflammable products;</i></li> <li>➤ <i>The machine cannot be used as a means of transport for people or other means of transport;</i></li> <li>➤ <i>The machine protection devices cannot be modified or tampered;</i></li> <li>➤ <i>Batteries must be recharged in a fanned room;</i></li> <li>➤ <i>The operator have always to respect safety rules;</i></li> <li>➤ <i>The operator cannot use equipments or devices that can create problems to the machine working;</i></li> <li>➤ <i>The machine components cannot be modified without FIORENTINI's authorization;</i></li> <li>➤ <i>The operator cannot use acids that can damage the machine;</i></li> <li>➤ <i>The operator has always to respect the rules written in the user manual.</i></li> </ul>
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	<p><i>Please read carefully and do not cover the labels sticked on the machine. FIORENTINI S.r.l. is not responsible for a wrong use of the machine (see § 3.2.)</i></p>
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	<p><b>Important. In case of fire use a dust extinguisher. Do not use water.</b></p>
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### 3.3 SUGGESTED EQUIPMENTS

In order to use the machine in a proper way, we suggest to use FIORENTINI equipments and original spare parts.

FIORENTINI S.r.l. Technical Dept. is always at your disposal to design components or parts for a particular use of machine as requested by the customer.

### 3.4 OPERATOR'S QUALIFY

OPERATION	OPERATOR'S QUALIFY
Driving/control of the machine	Trained operator
Installation/ disinstallation	Fiorentini technician
Mechanical parts maintenance	Mechanic/trained technician
Electrical parts maintenance	Electrician/ trained technician
Hydraulic system maintenance	Mechanic/ trained technician
Cleaning of the machine	Unskilled worker
Dismantling and demolition	Unskilled worker



**FIORENTINI S.r.l. suggest to train the operator before using the machine. The operator must be trained about safety rules and carefully read this manual.**



**FIORENTINI S.r.l. is not responsible for any possible damage to people and/or things caused by the non-observance of the instructions dealt within this manual.**

### 3.5 PROTECTION AND WARNING DEVICES

<b>Side brush case</b>	<p>The machine is equipped with a nylon central brush that rotates while the machine is on duty. The machine cannot reach dangerous areas thanks to a stainless steel case set up on the brush.</p> <p>The operator can remove the brush case only with special tools.</p>
<b>Warning device</b>	<p>S34 sweeper is equipped with three warning devices that have to prevent dangers if somebody is near the machine durino the cleaning.</p> <ul style="list-style-type: none"><li>➤ an acoustic warning device durino the normal use of the machine;</li><li>➤ a warning acoustic and intermittent device while the operator is reversing;</li><li>➤ a yellow flashing light to signall that the machine is functioning.</li></ul>



**It is absolutely forbidden to camper, remove or disactivate these devices durino the normal use of the machine.  
Please check their effectiveness regularly (read the chapter about maintenance).**

### 3.6 OTHER DANGERS

Starting from the design of the machine, FIORENTINI studies every kind of danger that can occur whilst using the sweeper in order to prevent or at least reduce the number of accidents for the operator. The operator can avoid many risks that can occur during the machine operating thanks to a series of signals on the machine.

#### SQUASHING

This kind of danger can occur:

- whilst regulating the central brush;

Whilst regulating the central brush, the ignition key must be kept away from the dashboard in order to avoid the casual starting of the machine.

#### TURNOVER

This kind of danger can occur:

- during the normal use of the machine when sloping limits are not respected - as specified in the manual – or whilst cleaning disconnected surfaces or surfaces with holes and high depressions (photo 3.2)



**Do not use the machine to wash sloping surfaces higher than 12% or surfaces with holes or depressions which might compromise the stability of the machine.**




**FIORENTINI is not responsible for accidents occurred to people or things provoked by a wrong use of the machine, i.e. using the machine on surfaces which can compromise its stability. The purchaser must stick proper labels on the machine to show the operator the right use of the sweeper.**

### 3.7 SAFETY SIGNALS


On the brushes protection cases of the machine the operator can find stickers that show different dangers that can occur whilst operating with the sweeper.

<b>DANGERS</b>		Dangers' signals are triangular with black pictures on a yellow background
<b>PROHIBITIONS</b>		Prohibitions' signals are round with black pictures and a red stripe

	<b>What is it?</b>	This signal forbids to remove the protection of pieces in movement.
	<b>What to do</b>	During the installation or the maintenance make sure that the ignition key is not in the dashboard before removing the mobile protections. While the machine is operating make sure that all covers are well fixed.





Picture 17

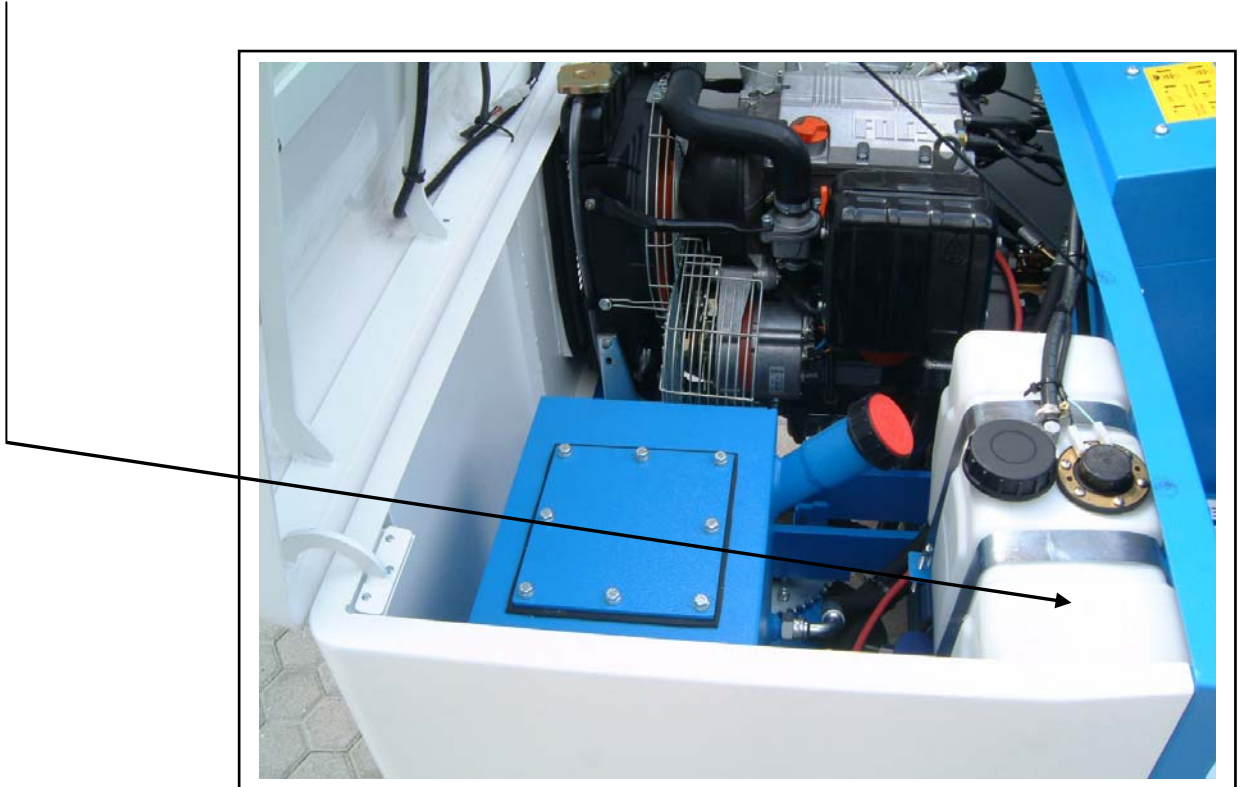
	<b>What is it?</b> Squashing ranger: this can of ranger can occur when the engine cover is open.
	<b>What to do</b> Whilst installing or maintaining the engine, the operator has to stop the engine cover with its rod.



Picture 18

	<p><b><i>The purchaser must replace danger signals on the machine if they are deteriorated. It is absolutely forbidden to remove or temper danger signals.</i></b></p>
---	--

	<b>What is it?</b>	This signal shows fire ranger due to inflammable liquids.
	<b>What to do</b>	Whilst filling the tank with petrol, the operator has to use a suitable funnel to avoid to dirt the machine. Moreover, this operation has to be done in a proper place where no primer danger can occur.



*Picture 19*

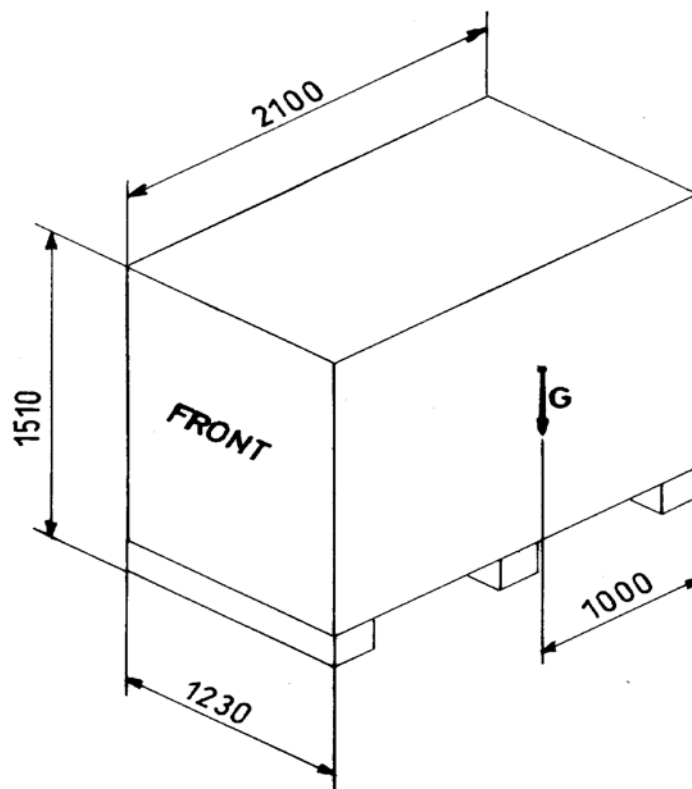
## 4 HOW TO START AND USE THE MACHINE

### 4.1 TRANSPORT AND HANDLING

The machine is delivered to the purchaser in a proper package (see picture 4.1 below). A black arrow on the package shows the barycentre. This arrow must be in the middle of the elevator or transpallet forks. The package must be carefully handled. Do not place one package on another one. If agreed with the purchaser, the machine can be delivered without package, placed on a pallet and fixed by means of straps.



The purchaser must make sure that the machine has not been damaged during the transport and that all papers are on the machine. Otherwise, the purchaser must immediately contact FIORENTINI in order to sort out the problem. The purchaser is responsible for the transport of the machine if not differently agreed with FIORENTINI.



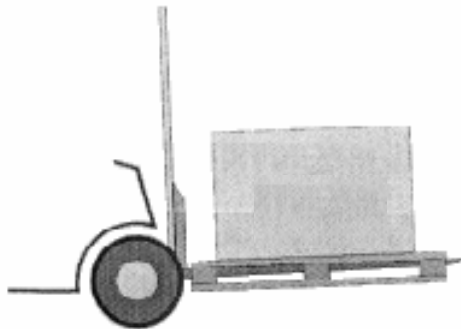
Picture 20



The machine must be handled with proper devices as stated in the scheme below. Please, make sure that the black arrow on the package is always in the middle of the elevator forks or the sling bands. Anchorage and/or sling points are set on the machine up in order to keep the stability of the sweeper during the handling.

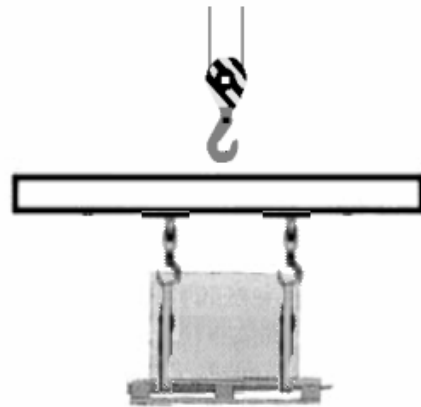
PACKAGE	HANDLING EQUIPMENT	PICTURE
Paperboard or plywood box on a pallet	Fork elevator	No. 17
None	Fork elevator or crane truck with a two-band-sling and equalizer	No. 18

LOADING SYSTEM





Picture 21

SI



Picture 22

	<p><b>Make reference to § 2.3. for the dimensions and the weight of the machine. Trained personnel only can handle the machine.</b></p>
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	<p><b><i>The bands used to lift the machine up must have the same loading capacity as the machine load. Handling operations must be done without causing a loss of stability of the machine. Otherwise, the machine can be damaged or the operator can be in danger.</i></b></p>
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## 4.2 STORAGE

The machine must be stored in a closed and dry place if not immediately installed in order to keep every part safe.

Relative humidity must be lower than 80% and the storage temperature must be between  $3^{\circ}\text{C} \leq t \leq + 45^{\circ}\text{C}$ .

### 4.3 STARTING THE MACHINE

S34 sweeper can be started only after a complete check up of all its components and safety devices. This is why, well trained FIORENTINI technicians do a strict control while manufacturing the machine and an accurate final test. Anyway, FIORENTINI suggests to do another test before starting the machine. Please see the scheme below.

Test	Result	
	√	X
Hydraulic oil level	<input type="checkbox"/>	<input type="checkbox"/>
Engine oil level	<input type="checkbox"/>	<input type="checkbox"/>
Engine cooling water level	<input type="checkbox"/>	<input type="checkbox"/>
Wheels brake functioning	<input type="checkbox"/>	<input type="checkbox"/>
Pilot lights functioning	<input type="checkbox"/>	<input type="checkbox"/>

If the result of the test is positive, the machine can be started. On the contrary, please contact immediately FIORENTINI service.





**The test above must be periodically carried out in order to keep the machine always efficient.**


## 5 MAINTENANCE

### 5.1 PERIODICAL MAINTENANCE

A periodical maintenance is important in order to keep the machine efficient. Please fill in the format below all the interventions done on the machine.

	<p><b>If the original product is not conform, do not use it and wait for the repair or replacement of the defected part.</b></p>
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	<p><b>Maintenance must be carried out by trained personnel only especially for the electrical or electromechanical systems. Technicians must use suitable tools for every kind of intervention. Make reference to FIORENTINI SERVICE only for original spare parts (§ 7.1. / 7.2.).</b></p>
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<b>OPERATION</b>	<b>INTERVENTION</b>	<b>HOW OFTENA</b>
Cleaning	Clean the waste tank and the oil filter of the suction motor	Daily
	 <ul style="list-style-type: none"> <li>• <i>Do not use corrosive substances.</i></li> <li>• <i>Do not use bolts of water.</i></li> </ul>	
Controlli	➤ Check the oil level of the hydraulic system	Every week
	Check and regulate the braking system	Every 3 months
	Check if the battery cables are well fixed	Every 6 months
	<ul style="list-style-type: none"> <li>➤ Check the safety devices</li> <li>➤ Check the electric system</li> </ul>	Every year
	➤ Complete overhaul	Every 5 years

## 5.2 ENGINE MAINTENANCE

In order to maintain the internal combustion engine, the operator has to check:

- the engine oil level every 50 hours and replace it every 150 hours;
- the coolant every 50 hours;
- replace the air filter every 100 hours;
- replace the petrol filter every 250 hours;
- replace the engine oil filter every 300 hours;
- replace the hydraulic oil filter every 750 hours;
- check the tension of the alternator belt every 250 hours;
- clean and set the injector every 1000 hours;
- adjust the equalizers slack every 1000 hours.



**For any kind of intervention on the engine please follow the instructions of the engine logbook delivered with the machine.**

### 5.3 CHECKING THE ELECTRIC SYSTEM

It is very important to check the electric system up every two years. Disconnected cables or burnt cables must be immediately replaced.



**Interventions on the electric system must be carried out by a trained technician. Every kind of intervention not explained in the operator manual must be carried out by FIORENTINI's technicians.**