



**ING. O. FIORENTINI S.R.L.
INDUSTRIAL CLEANING MACHINES**

SCRUBBER MACHINE I 42/60 GAS



USER MANUAL

Congratulations for your choice!

FIORENTINI S.r.l. thanking you for the preference to our product, would like to remind you that FIORENTINI's 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.

INDEX

1. GENERAL INFORMATION

- 1.1. Symbols.....
- 1.2. Notes.....
- 1.3. Manual consulting.....
- 1.4. Warranty.....
- 1.5. Conformity declaration.....

2. FEATURES OF THE MACHINE AND TECHNICAL DATA

- 2.1. Identifying the machine.....
- 2.2. Description and components.....
- 2.3. Technical data.....

3. SAFETY

- 3.1. Right use of the machine.....
- 3.2. Wrong use of the machine
- 3.3. Suggested equipment.....
- 3.4. Operator qualify.....
- 3.5. Safety and warning devices
- 3.6. Other dangers.....
- 3.7. Safety signals.....

4. INSTRUCTIONS FOR STARTING AND USE

- 4.1. Trasport and handling.....
- 4.2. Storage.....
- 4.3. How to unpack the machine.....
- 4.4. How to handle the unpacked machine.....
- 4.5. Installation.....
- 4.6. Control devices.....
- 4.6.1. Dashboard.....
- 4.7. Functioning.....
- 4.7.1. Preparing and starting the machine.....
- 4.7.2. Choosing the right detergent.....
- 4.7.3. Driving position regulation.....
- 4.7.4. Rudder bar functioning.....
- 4.7.5. Detergent control.....
- 4.7.6. Squeegee adjustment.....
- 4.7.7. Water discharge.....
- 4.7.8. Brushes replacement.....
- 4.7.9. Set the gas cylinders up.....
- 4.5.10. Squeegee blades replacement.....

5. MAINTENANCE



- 5.1. Periodical maintenance.....
- 5.2. Gas engine maintenance.....
- 5.3. Suction motor maintenance.....
- 5.4. Electrick equipment control.....
- 5.5. Maintenance register.....

6. SERVICE

- 6.1. Service adresses.....
- 6.2. Claim report.....

1. GENERAL INFORMATION

1.1. SYMBOLS

	<i>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</i>
	<i>This symbol is used to get the operator's attention on general information.</i>

1.2. AVVERTENZE



FIorentini S. r. l. 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.

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.

MANUAL CONSULTING

This manual deals exhaustively with all arguments that are necessary for an easy and safe use of the machine as it is recommended by European Directives on product safety.

Therefore we suggest to all authorized operators to read carefully this manual contacting FIORENTINI S.r.l. for any explanation. The manual has to be used every time the operator forgets a procedure or when new operators have to be trained.

For publishing reasons, pictures and drawings can look different from the reality but without arising doubts.

Special symbols and **bold type** and/or *sloping* get the attention of the reader on remarkable information in particular for safety.

The revision index is written on the left at the bottom of every page. The list of those pages that have been updated has to be found at the end of the manual.

1.4. WARRANTY

Warranty conditions are stated as below when not differently specified in the order confirmation.

WARRANTY OBJECT

The machine has been designed and built for a long-lasting use without relevant problems. Anyway, if problems arise during the warranty period, FIORENTINI S.r.l. is engaged to repair or substitute for free those parts that are broken or damaged by defective materials, working defects or imperfect assembly.

Warranty is not given for parts whose early breaking or wear and tear are due to:

- Non-respect of instructions included in this manual;
- Breaking and/or changes made up without FIORENTINI's approval;
- Not-use of genuine spare parts;
- Interventions made up by unauthorised personnel;
- Missing maintenance;
- Natural calamities.

FIORENTINI S.r.l., its purchasers and its suppliers have the same warranty for the electric and expendable materials that are sold by external suppliers.

WARRANTY CONDITIONS

The warranty is granted for 24 months since the machine delivery date. This is a single warranty term and it cannot be extended.

EXCEPTIONS

Expandable materials like brushes, squeegee blades and materials whose lifetime cannot be predetermined are not under warranty.

APPLICATION MODALITY

Defective components must be sent back to FIORENTINI S.r.l. in order to establish the anomalies causes and apply therefore the warranty. Repair and replacement under warranty will be done in FIORENTINI's workshop, by third parties or in loco. In case of repair or replacement in loco, energy sources and the use of particular equipment have to be paid by the customer himself.

INTERVENTION DEMANDS

Intervention demands must be sent to FIORENTINI Service Dpt. only after a careful analysis of the problem and its causes. Following information have to be given to FIORENTINI's agent:

- Serial number you get it from the silver label stucked on the machine (§ 2.1.);
- Code and position of the component taken from the spare parts list (§ 7.2.);
- A detailed description of the problem and its causes.

The components considered under warranty are delivered ex works; those ones being substituted belong to FIORENTINI Co..

GOODS TO BE RETURNED

In case of goods to be returned for warranty replacement, it is necessary to have a written acceptance from FIORENTINI technical department before sending them.

All defective parts must be carefully packed in order to avoid further damages during transport.

Goods must be shipped ex-warehouse and followed by :

- **serial number of the equipment where they were installed on;**
- **item code of the defective part;**
- **detailed description of the defect and of the conditions where it happened.**

In case of defective electric or electronic goods, please return them separately from other materials, in order to help us in dividing dangerous wastegoods and recicle the (RAEE) as DER 2002/96/CEE LOW.



The machine warranty is no more available in case of the loss of the silver label.

1.5. CONFORMITY DECLARATION

The conformity declaration is released with the machine and the user manual.

**DICHIARAZIONE-DECLARATION-DECLARATION-ERKLÄRUNG-
DECLARACION**

DICHIARAZIONE CE DI CONFORMITÀ
DECLARATION OF CONFORMITY
DECLARATION DE CONFORMITE
ÜBEREINSTIMMUNGSERKLÄRUNG
DECLARACION DE CONFORMIDAD

ING. O. FIORENTINI s.r.l.
Loc. Rombola
50030 PIANCALDOLI (FI) ITALIA

Dichiara sotto la propria esclusiva responsabilità che la macchina:
Declares under its own responsibility that the machine:
Déclare sous sa responsabilité exclusive que la machine:
erklärt unter ausschließlich eigener Verantwortung, daß die Maschine:
declara bajo su propia y exclusiva responsabilidad que la máquina:

FIORENTINI

Modello/model/modele/modell/modelo
Matricola/serial number/numero
matricule/serienummer/numero matricula
Anno/year/année/jahr/ano

2010

Fabbricata nel rispetto delle direttive e decreti:
and moreover is built according to the directives and decrees:
et est fabriquée l, en outre, conformément aux directives et ou décrets:
und daß sie unter Einhaltung folgender Verordnungen und/oder Dekrete hergestellt worden (sind):
y que además ha sido fabricada en conformidad con las directivas y/o decretos:

2006/42/CE/EC/EG-

Direttiva macchina: Machines Directive: Maschinen Richtlinie: Directive machines:

2004/108/CE/EC/EG-

Compatibilità elettromagnetica: Electro Magnetic Compatibility: Elektromagnetische Verträglichkeit: Compatibilité électromagnétique:

2002/95/CE/EC/EG-

Restrizione sostanze pericolose: Restrictions of Dangerous Substances Beschränkung der gefährlichen Mitteln: Restriction des substances dangereuses

2003/10/CE/EC/EG

Protezione da rumore: Exposure of Workers to Noise: Gefährdung der Arbeitnehmer durch Geräusch: Exposition des travailleurs aux Bruits:

È conforme alle seguenti norme:
conform to the following laws:
est conforme aux normes:
mit den folgenden Normen übereinstimmen:
está conforme a las siguientes normas:

EN 12100-1- EN 12100-2

Norme applicate: Harmonized Standard Applied: Angewandte harmonisierte Normen: Normes Harmonisées Appliquées:

Piancaldoli*Luogo e data***Ing. O. Fiorentini S.r.l.****Il titolare/chairmen/gérant****Ing. O. Fiorentini***Firma*

In caso di modifiche apportate alla macchina questa dichiarazione non è più valida

2. FEATURES OF THE MACHINE 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.

Ing. O.Fiorentini S.r.l.				MADE			
50030 Piancaldoli (FI)				IN ITALY			
Mod	I 42 TP/G			S.N.	/		 2010
V	-		rpm	3000			
Kg	750	A	-	kW		14,50	



PICTURE N°2.1



The label has never to be removed and should always be kept readable. In case of damage it is necessary to ask for a duplicate. The autoscrubber machine cannot be sold without the label.

2.2. DESCRIPTION AND COMPONENTS

The autoscrubber machine – I 42/60 GAS - has been designed to clean flat surfaces by means of washing and suction of the washing water.

This machine is equipped with a traction system based on two hydraulic motors. They operate the rear traction wheels and are fed by a variable delivery pump.

Three hydraulic motors operate the washing brushes. These hydraulic motors are fed by a fixed delivery pump connected to the variable delivery pump.

The autoscrubber is equipped with two systems: one 12V system and one 36V system. The first system controls the functioning of the explosion engine, i.e. the hydraulic solenoid valve and the gas system. The second system is operated by an endothermic engine which starts a dynamo. The dynamo develops a 36V voltage that controls:

- the lift up or the sink of the squeegee;
- the lift up or the sink of the brushes plate;
- the suction motor;
- the flashing light.

The machine is equipped with two rotating brushes which wash the surface by means of water and detergent. Whilst the machine is running forward, the back brush (squeegee) picks the water up that is directly sucked into the recovery tank.

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 machine functions and in particular:

- Start the washing brushes;
- Regulate the quantity of water;
- Start the suction motor;
- Start the lift or the sink of the squeegee;
- Choose the forward or back gear;
- Start or stop the machine.

The machine frame is made of zinc-plated or stainless steel in order to avoid oxidation which could compromise the machine reliability.

The main machine components are:

- Zinc-plated steel or stainless steel frame;
- ABS plastic solution tank;
- ABS plastic recovery tank supplied with flexible suction piping system and drainage;
- Endothermic engine (Kubota 752);
- Squeegee (suction system);
- Three rotating brushes;
- Water recovery system;
- one idle wheel;
- two traction wheels operated by two hydraulic motors;
- steering wheel;
- driving seat.

FIORENTINI Co., taking the new CE safety rules into consideration, manufactures the machine following the CE directives about safety and health. The materials high quality, the high technology and FIORENTINI's 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

DIMENSIONS	I 42	I 60
LENGHT	2150 mm	2230 mm
WITDH	1250 mm	1550 mm
HEIGHT	1500 mm	1500 mm
WASHING BRUSHES	3	3
TRACTION	hydraulic	hydraulic
WASHING BRUSHES DIMENSIONS	Ø 380 mm	Ø 460 mm
CLEANED AREA	1150 mm	1450 mm
SQUEEGEE WIDTH	1470 mm	1650 mm
SOLUTION TANK CAPACITY	340 mm	340 mm
RECOVERY TANK CAPACITY	340 mm	340 mm
BRUSHES PRESSURE	0/120 Kg	0/120 Kg
ENGINES FEATURES		
ENGINE	Kubota 752	Kubota 752
CYLINDERS	2	2
DISPLACEMENT	750 cc	750 cc
POWER	19 cv	19 cv
BRUSHES HYDRAULIC ENGINE	OR 80	OR 80
TRACTION HYDRAULIC ENGINE	OP 160	OP 160
VARIABLE DELIVERY PUMP	14 l	14 l
FIXED DELIVERY PUMP	4.2 l	4.2 l
SUCTION ENGINES	2x36V 800W	2x36V 800W
FUNCTIONS		
DRIVING SYSTEM	On drive	On drive
U-TURN LANE	2900 mm	3020 mm
BRUSHES LIFT UP SYSTEM	hydraulic	hydraulic
SQUEEGEE LIFT UP SYSTEM	hydraulic	hydraulic
SERVICE BRAKE	mechanical	mechanical
PARKING BRAKE	mechanical	mechanical
PERFORMANCE		
FORWARD SPEED	0/12 km/h	0/12 km/h
HIGHEST SLOPE	13 %	13 %
CLEANING	13800 m²/h	17400 m²/h
ENVIRONMENTAL FEATURES		
NOISES FOR THE OPERATOR	91 dB	91dB



The above mentioned characteristics are not binding for the manufacturer; they can be changed without any notice . ING.O.FIORENTINI Co. is always at disposal for any information (par.7.1.).

MEASUREMENT UNITS CONVERSION

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

3. SAFETY

3.1. RIGHT USE OF THE MACHINE



This machine is a scrubbing machine and it has been designed and built to clean in an industrial place. It can work on flat surfaces or on surfaces with a slope not higher than 13% and with a speed not higher than 1 km/h for U-turn.

3.2. WRONG USE OF THE MACHINE



- *The machine cannot be driven by non-authorized personnel;*
- *The machine cannot wash sloping surfaces whose gradient is higher than 13% or surfaces with holes;*
- *The machine cannot be used to wash sloping surfaces;*
- *The machine cannot reverse with a speed higher than 1 km/h on surfaces whose gradient is higher than 5%;*
- *The machine cannot be used in places with dangerous substances and in particular with explosive atmospheres or with a bad microclimate;*
- *The machine cannot clean surfaces with inflammable products;*
- *The machine cannot be used as a means of transport for people or other means of transport;*
- *The machine protection devices cannot be modified or tampered;*
- *Batteries must be recharged in a fanned room;*
- *The operator have always to respect safety rules;*
- *The operator cannot use equipments or devices that can create problems to the machine working;*
- *The machine components cannot be modified without FIORENTINI's authorization;*
- *The operator cannot use acids that can damage the machine;*
- *The operator has always to respect the rules written in the user manual.*



Please read carefully and do not cover the labels stucked on the machine. FIORENTINI S.r.l. is not responsible for a wrong use of the machine (see § 3.2.)

3.3. SUGGESTED EQUIPMENT

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

FIORENTINI S.r.l. Technical Dpt. 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

The scheme below summarizes the operator qualify requested for each kind of operation.

OPERATION	OPERATOR'S QUALIFY
Driving/control of the machine	Trained operator
Installation/ disinstallation	Fiorentini technician
Mechanical parts maintenance	Fiorentini technician
Electric parts maintenance	Fiorentini technician
Cleaning maintenance	Trained operator
Dismantling and demolition	Fiorentini technician

FIORENTINI S.r.l. suggest to train the operator before using the machine. The operator also 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. SAFETY AND WARNING DEVICES



- ***It is absolutely forbidden to tamper or disconnect safety and warning devices while the machine is working;***
- ***It is important to check periodically safety and warning devices (see § 5.1.).***

Side brushes protection	I 42/60 GAS is equipped with three nylon brushes which rotate while the machine is on duty. La macchina I 42/60 GAS è dotata di tre spazzole, con setole in nylon che sono in rotazione durante il normale utilizzo. The machine cannot reach dangerous areas thanks to fixed plastic protections set up on each brush. The brush protection can be only willingly removed.
Protection for hot parts	I 42/60 GAS is equipped with a steel rear case to protect hot parts of the engine and the engine itself. This case can only willingly be opened. Make sure that it is well closed.
Warning devices	I 42/60 GAS is equipped with several warning devices: <ul style="list-style-type: none"> ➤ One acoustic warning device like a claxon. It has to warn people who are near the machine while its operating; ➤ one flashing yellow light to signal the machine operating.

3.7. OTHER DANGERS

FIORENTINI S.r.l. analyzes since the machine design all dangers that can occur while the machine is operating in order to prevent or at least low the operator's accident. Thanks to a series of signals on the machine the operator can avoid many risks that can occur during the machine operating.

CRUSHING

This kind of danger can occur:

- during the front brushes replacement;
- during the check up of the coal brushes of the suction engine;
- during the squeegee regulation.

Whilst replacing the brushes and regulating the squeegee, the ignition key must be kept away from the dashboard in order to avoid the casual starting of the machine.

Whilst replacing the coal brushes of the suction engine, the operator must pay attention that any parts of his/her body is between the machine and the cylinder support.



Special labels stuck on the cases of the brushes or on the recovery tank prevent dangers to the operator (see § 3.7.).

BURNING DANGER

This kind of danger can occur:

- during the check up of the oil engine.

Whilst changing or checking the oil engine make sure that the machine has been switched off a few minutes ago before opening the rear case, in order to avoid to touch hot parts of the machine.



Special labels stuck on the case of the steering column prevent dangers to the operator (see § 3.7.).

TURNOVER

This kind of danger can occur:

- during the normal operating of the machine when you exceed sloping limits as specified in the manual and you use the machine to clean disconnected surfaces or with holes and high depressions (photo 3.2)




Do not use the machine to wash sloping surfaces higher than 10% 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 to the operator the right use of the scrubber.

3.8. SAFETY SIGNALS

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


	What is it?	This signal forbids to remove the protection of pieces in movement.
	What to do	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.




	What is it?	Crushing danger: it can be due to parts in movement of the machine.
	What to do	During the installation or the maintenance make sure that the ignition key is not in the dashboard before removing the mobile protections.





The purchaser must replace danger signals on the machine if they are deteriorated. It is absolutely forbidden to remove or temper danger signals.

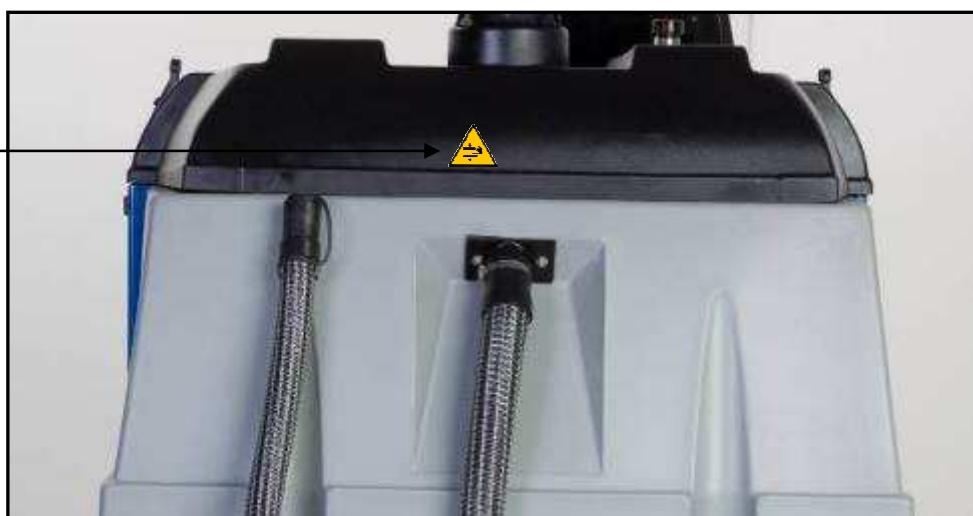
	What is it?	This signal forbids to remove the protections of hot parts of the machine while the machine is working.
	What to do	Make sure that the machine has been switched off a few minutes ago and that the ignition key is not in the dashboard.




	What is it?	Squashing danger: it can occur while closing the rear case or it can be due to the cooling fan.
	What to do	Make sure that the ignition key is not in the dashboard during the maintenance or the check up of the machine.

	<p><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></p>
---	--

	What is it?	Squashing danger: it can occur while changing the coal brushes of the suction engine or while checking the recovery tank up.
	What to do	Make sure that the ignition key is not in the dashboard and that the cylinder support is completely turned over.



	The purchaser must replace danger signals on the machine if they are deteriorated. It is absolutely forbidden to remove or temper danger signals.
---	--

	What is it?	The signal forbids to drive the machine on slopes whose gradient is higher than 13%.
	What to do	Make sure that the slope is not higher than 10%. On the contrary, do not drive the machine on slopes whose gradient is higher than 10% in order to avoid that the machine turns over.

4. INSTRUCTIONS FOR STARTING AND USE THE MACHINE

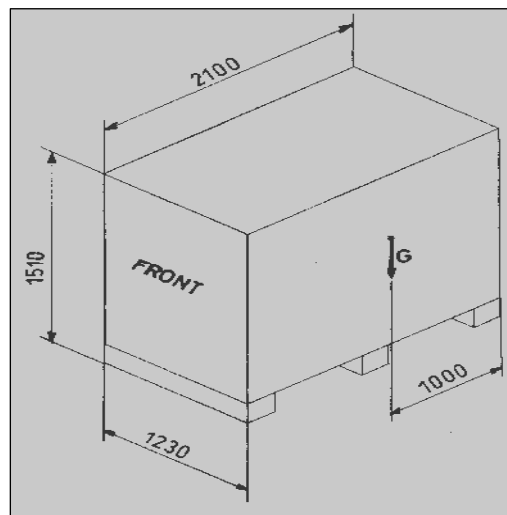
4.1. TRANSPORT AND HANDLING

The machine is delivered to the purchaser in a proper package (see picture 4.1 below where are indicated all the I42 machine dimensions). A black arrow on the package indicates 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 4.1



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.

PACKAGE	HANDLING EQUIPMENT	PICTURE
Paperboard or plywood box on a pallet	Fork elevator	Nr. 4.2.
None	Fork elevator or crane truck with a two-band-sling and equalizer	Nr. 4.3.

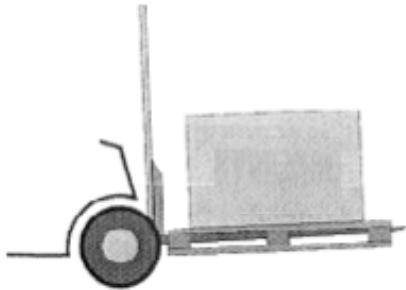


The bands used to lift the machine up must have the same loading capacity as the machine load. Handling operations must be done without causing a loss of stability of the machine. Otherwise, the machine can be damaged or the operator can be in danger.



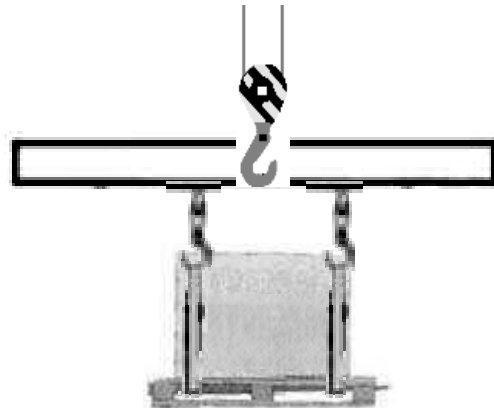
FIORENTINI suggest to use authorized personnel (see § 2.3.) to handle the machine.

LOADING SYSTEM



PICTURE N. 4.2

SI



PICTURE N. 4.3

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. HOW TO UNPACK THE MACHINE

- Cut the straps paying attention to the back spring;
- Remove the staples that join the paperboard and the pallet;
- If the package is mad of plywood, please remove the staples from each side;
- Cut the straps that fix the machine;
- Lay the machine on the floor.

4.4 HOW TO HANDLE THE UNPACKED MACHINE

- Check the machine and install the batteries if not already installed;
- For a brief transport of the machine, please disconnect the batteries cables and remove brushes and squeegee; for a longer transport, please use the original package of the machine.

4.5. INSTALLATION

The autoscrubber ICM38GAS can be started only when you are completely sure that all the components and devices of the machine are efficient. This is why, well trained FIORENTINI technicians do a strict control while producing 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	<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.

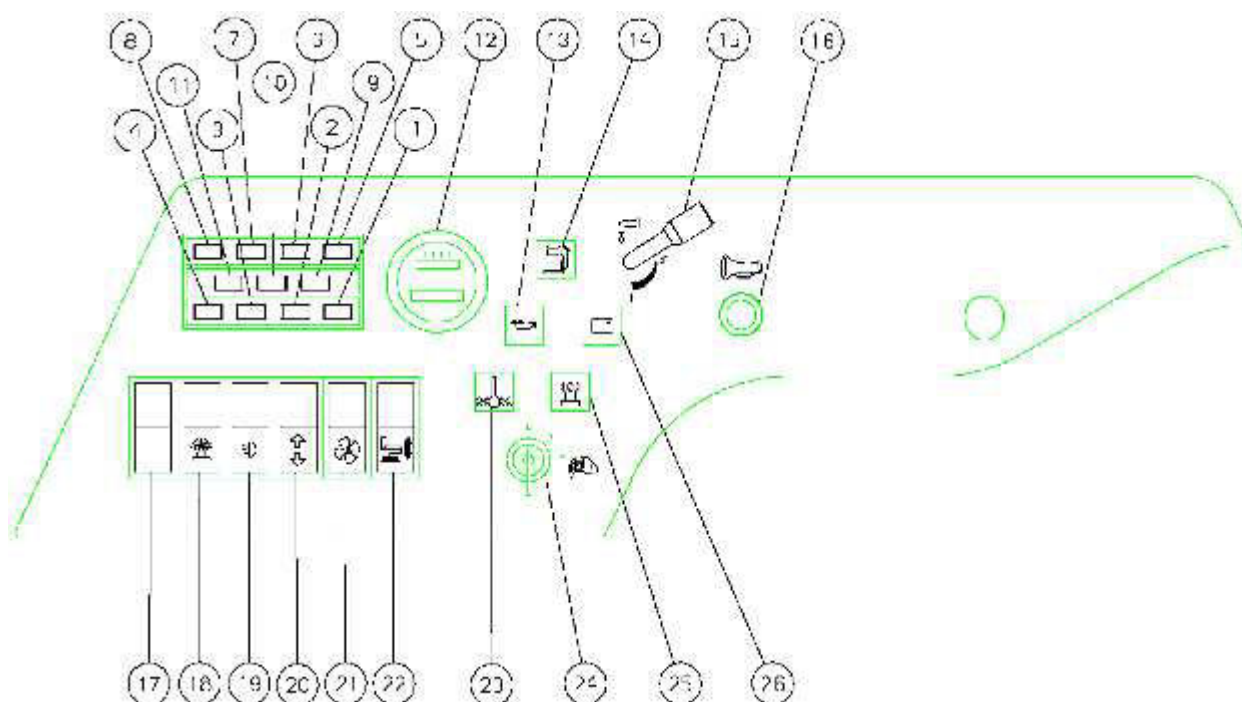


*The test above must be periodically done in order to keep the machine always efficient.
The machine must be started by authorized personnel.*

4.6. CONTROL DEVICES

4.6.1. DASHBOARD

The dashboard is made of a series of switches that activates or disactivates all the machine functions. The function of each switch is shown by a picture. Picture 4.6. shows the dashboard of the machine and the switches function is explained in the scheme of the following page.

PICTURE N. 4.6


1	Blinker fuse	14	Gas oil level indicator
2	Light fuse	15	Solution regulation lever
3	Oil cooler fan fuse	16	Horn
4	Electro valve fuse	17	Accessory (sweeping group)
5	Controls alimentation fuse	18	Blinking switch
6	Direction signals and stop fuse	19	Light switch
7	Empty	20	Squeegee up and down
8	Empty	21	Vacuum motor switch
9	Empty	22	Brush up/down and on/off
10	Empty	23	Diesel motor temperature indicator
11	Empty	24	Key switch
12	Hour counter manometer	25	Igniter plug switch
13	Oil pressure indicator	26	Battery charger indicator

4.7. FUNCTIONING

The operator, thanks to his/her experience, has to choose the right type of brush and detergent for the surfaces that has to be washed and to decide if the floor needs a second washing.

Follow these instructions for a correct washing:

1. press the brushes motor switch (nr. 1);
2. press the solution solenoid valve switch (nr. 4);
3. press the suction switch (nr. 2).

By means of the accelerator pedal the washing brushes and the suction motor are activated. On the contrary, both the washing brushes and the suction motor are disactivated after a few seconds if the operator leaves this pedal. Before the surface is completely dry, the operator must switch the solution solenoid valve off because this is not activated/disactivated by the accelerator pedal.

The operator has to do a second washing if the surface is particularly dirty:

1. wash the surface with the squeegee up and the brushes down;
2. activate the brushes;
3. press the solution solenoid valve switch;
4. leave the solution on the surface to dissolve the dirt;
5. do a second washing with brushes and squeegee down, the suction activated and the solution solenoid valve open.



Before any operation, make sure that all protections are well fixed.

4.7.1 PREPARING AND STARTING THE MACHINE

the operator must fill water lifting the recovery tank up and turning the cap (see detail nr. 1 in picture nr. 4.7.). Now the operator can seat on the machine, start it and wash the surface.

1



PICTURE N. 4.7

4.7.2 CHOOSING THE RIGHT DETERGENT

Choosing the right detergent is very important for a perfect cleaning. A too strong detergent could damage the surface. A good quality detergent has to produce little foam. Alternatively, the operator can add an antifoaming additive or 50 cc of wine vinaigre in the recovery tank in order to avoid the suction motor damage.



Make sure that the detergent is suitable for the dirty surface. FIORENTINI S.r.l. is not responsible for damages provoked by too aggressive detergents.

4.7.3 DRIVING POSITION REGULATION

By means of the lever (see detail nr. 1 in picture nr. 4.8.) for the steering column regulation, the operator can pull backward or push onward the steering wheel in order to have a driving position which fits his/her body.



PICTURE N. 4.8

1

4.7.4 RUDDER BAR FUNCTIONING

The rudder bar of this scrubber machine is composed by:

- Accelerator pedal (see detail nr. 3 in picture nr. 4.9.): the machine moves forward by means of the right pedal and backwards by means of the left pedal.
- Service brake (see details nr. 1 and 2 in picture nr. 4.9.): it has to slow and stop the machine. If the operator wants to set the service brake on, he/she has to press the service brake pedal. If he/she wants to release the service brake, he/she has to press both the brake pedal and the release pedal and the release knob (see detail nr. 2 in picture nr. 4.9.).
- Accelerator lever (see detail nr. 4 in the picture nr. 4.9.).



PICTURE N. 4.9

4

2

1

3

4.7.5 DETERGENT CONTROL

During the washing the operator can control the detergent quantity by means of a cock, which is at the bottom of the machine on the left inside the protection rubber (see detail nr. 1 in picture 4.10.).

PICTURE N. 4.10

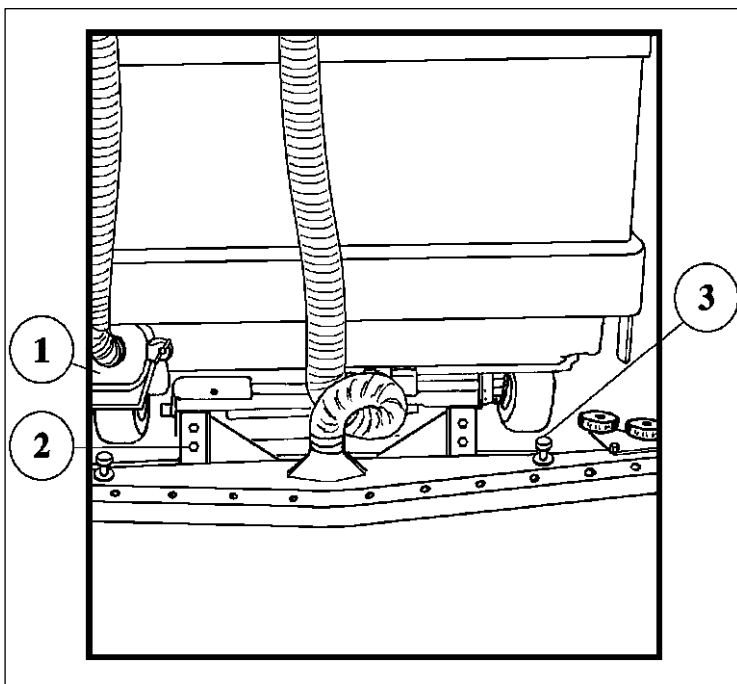


1

4.7.6 SQUEEGEE ADJUSTMENT

The squeegee must be perfectly adjusted to get a perfect floor drying. ICM 42 is equipped with a V-shaped squeegee, as shown in . This type of squeegee performs very well in collecting water from the floor to the suction hose, but is particularly sensitive to the parallelism to the floor. Therefore, adjust first its angular position through the screws so that its rubber blades get the same slanting on the floor along its entire width. If blades are more pressed at their ends than in their centers, unscrew the upper screws and screw the lower ones, then tighten the lock nuts. If, on the contrary, blades are more pressed at their centers than in their ends, perform the opposite operation. After having reached the right angular position, adjust the pressure. Turn the ring nut and tighten it to increase pressure to the floor, or loosen to decrease it. The right pressure is got when the edge of the rear blade touches the floor with a slanting of approx. $60^{\circ}45^{\circ}$ referring to the floor. If the pressure is too high, the rear blade will touch the floor with its side surface, and not with its edge. If the pressure is too low, the edge doesn't work well and lets some water on the floor, particularly on an uneven floor. Of course the optimal adjustment is confirmed by very good results of the drying operation, and the operator's experience will contribute to enhance such good results. Note that often drying is negatively affected by a wrong suction operation. If the suction hose doesn't work well, drying will continue to be bad, even with all adjustments attempts. In this case:

- a) accurately clean the suction hoses, their inlets and filters and the squeegee itself
- b) check the vacuum motors operation
- c) confirm that all inspection openings of the tank are closed.



Make sure that the two wheels of the squeegee are well regulated in order to keep both its blades parallel to the floor.

4.7.7 WATER DISCHARGE

This scrubber machine is equipped with two pipes for water discharge (picture 4.15.):

- A pipe for the recovery tank discharge (see detail nr. 1 in picture nr. 4.15.);
- A suction pipe (see detail nr. 1 in picture nr. 4.15.);

If you need to discharge water from the tanks, you have to place the machine on a dump well, release the pipe of the tank and open the rubber cap at the end of the pipe itself.



PICTURE N. 4.15

4.7.8 BRUSHES REPLACEMENT

The operator has to follow the instructions below to replace the brushes:

- Take the ignition key away from the dashboard in order to avoid a casual starting of the machine;
- Right side brush replacement: remove the case by means of the lever (see detail nr. 1 in picture nr. 4.16) and translate it outside. Translate counterclockwise the right brush and remove it;
- Left side brush replacement: follow the same instructions as for right side brush replacement (see detail 2 in picture 4.18). Translate clockwise the left brush and remove it;
- To set a new brush up (see detail 3 in picture 4.17): put the coupler pins under the brush support slots, pull the brush up and translate it (clockwise for the right brush and counterclockwise for the left one);
- Set again the brushes cases up and fix them by means of the lever.



PICTURE N. 4.17



Make sure that both cases of the lateral brushes are well fixed before starting the machine.

4.7.9 SET THE GAS CYLINDER UP

Please follow the instructions below to set the gas cylinder up:

- Place the gas cylinder on its support (see detail 1 in picture 4.18) and fix it by means of belts (see picture 4.18);
- Insert the pipe into the cylinder and tighten it with a clamp. Insert the other end of the pipe into the machine through the hole (see detail nr. 2 in picture 4.18);
- Insert the rubber pipe joined to the copper pipe into the machine.



Before starting the machine again make sure that the gas cylinder has been perfectly set up and that there are no leaks.



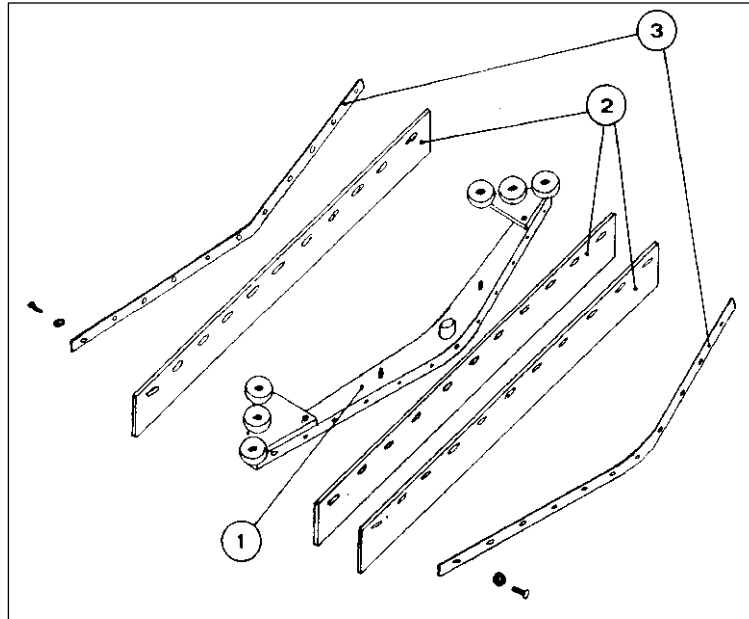
PICTURE N. 4.18

1

2

4.7.10 SQUEEGEE BLADES REPLACEMENT

The squeegee blades should be replaced when the contact edge becomes worn; the perfection of the edge is essential for a perfect drying. To replace the blades, the squeegee should be removed from the machine. To do that, lift the squeegee support in UP position, then remove the suction pipe from the squeegee, partially unscrew the screws. At this point, remove the squeegee from the machine and place it on a desk. Now, remove the screws both on the front part and on the rear part of the squeegee, the steel straps, and the three worn rubber blades as well. Perform the inverse procedure and assemble the new blades, then adjust the squeegee.




PICTURE N. 4.19

5. MAINTENANCE

5.1. PERIODICAL MAINTENANCE

A periodical maintenance is very important.

Please fill in the format you find below all the interventions done on the machine.

OPERATION	INTERVENTION	HOW OFTEN
Cleaning – Controls - Replacement	Clean the recovery tank and the oil filter of the suction motor	Daily
	 <ul style="list-style-type: none"> • Do not use corrosive substances. • Do not use bolts of water. 	
	<ul style="list-style-type: none"> ➤ Check the suction pipes and the squeegee ➤ Check the oil motor ➤ Check the coolant 	Every week
	<ul style="list-style-type: none"> ➤ Check the rubber suction blades of the squeegee ➤ Check the air filter 	Every 15 days
	<ul style="list-style-type: none"> ➤ Check the filter of the clean water tank 	Every month
	<ul style="list-style-type: none"> ➤ Check and regulate the breaking system ➤ Replace the motor oil filter ➤ Check the belts tension 	Every three months
	<ul style="list-style-type: none"> ➤ Check the connection of the battery cables ➤ Check the water battery level ➤ Replace the air filter ➤ Replace the hydraulic oil filter 	Every six months
	<ul style="list-style-type: none"> ➤ Check the coal brushes of each motor ➤ Check the pipes of the hydraulic system ➤ Check the electric system ➤ Check the safety devices 	Every year



- *Every kind of control, cleaning and replacement must be done when the machine is off.*
- *Trained personnel only can service the machine and especially electric and electromechanical parts by means of suitable tools and equipments.*
- *Make reference to FIORENTINI S.r.l. only for service and spare parts (§ 7.1. and § 7.2.).*

5.2 GAS ENGINE MAINTENANCE



For any kind of intervention on the engine please follow the instructions of the engine logbook (Kubota 752) delivered with the machine.

For the maintenance, check what follows:

- Oil lever every 50 working hours, replace it every 150 hours
- Level cooling fluid every 50 hours
- Replace air filter it every 100 hours
- Replace diesel filter every 250 hours
- Replace motor oil filter every 300 hours
- Replace hydraulic oil filter every 750 hours
- Check aternting belt tension every 250 hours
- Injection calibration and cleaning every 1000 hours
- Adjusting rocker lever clearance every 1000 hours

5.3 SUCTION MOTOR MAINTENANCE

The vacuum motors must be checked and cleaned. The brushes should be checked all six months and replaced, if necessary. After removing the key from the dashboard, remove the motor cover located on the rear part of the machine. To release the motors (fig.), unhook the hooks (fig.) and detach the plug (fig.). In this way, it is possible to extract the motors and release the sponge filter under the motors that can be extracted, cleaned and replaced. Check the suction fan from the hole located in the front part of the vacuum motor. By a visual check, the fan should appear undamaged and well-cleaned. To check the brushes, first of all remove the plastic cap, then unscrew the screws (fig.) and remove the two plastic supports of the brushes. Once checked and replaced (if necessary), the brushes can be easily remounted, by reassembling all elements until the initial situation has been reached.



5.4 ELECTRIC EQUIPMENT CONTROL

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.*

5.5. MAINTENANCE REGISTER

[illegible]

6. SERVICE

6.1. SERVICE ADDRESSES

Do not hesitate to contact FIORENTINI S.r.l. service for any kind of information or request.

ING. O. FIORENTINI s.r.l.

“THE BEST IN FLOOR MACHINES”

FILIALI:

20132 MILANO – Fax. 02/2592779

Via Palmanova 211/a – Tel. 02/27207783 - 2564810

00155 ROMA – Fax. 06/22754075

Via Carlo Carrà 13 – Tel. 06/22754040-2275060

STABILIMENTO:

50030 PIANCALDOLI (FI) – Fax. 055/817144

Loc. Rombola – Tel. 055/8173610

Most of the technical problems can be sorted out with short intervention. This is why FIORENTINI S.r.l. suggest to read carefully this manual before using the machine. On the contrary, if the customer needs a FIORENTINI'S technician, please inform us about the problem in order to sort it out with the right material.

6.2 CLAIM REPORT

Please, fill in the format below if the machine shows particular problems.

Operator:	
Company:	
Operator's name:	
Role:	
Date:	Signature:
Machine description:	
Machine: CUCCIOLO	Type:
Purchase date:	S.N.:
Warranty: <input type="checkbox"/> YES <input type="checkbox"/> NO	Work hours:
Where does the machine normally work?	
Fault:	
Code of the defected component:	Description:
Fault:	Fault short description:
<input type="checkbox"/> Mechanical component	
<input type="checkbox"/> Wrong functioning	
<input type="checkbox"/> Electric system	
<input type="checkbox"/> Engine	
<input type="checkbox"/> Missing component	
<input type="checkbox"/> Extremely noisy	
<input type="checkbox"/> Water leak	
<input type="checkbox"/> Other	
Customer's suggestion:	

Mat. n.
Serial no. _____
Nr. de serie

Data di spedizione
Date of shipment _____
Date de spedition

Distributed by:

ING. O. FIORENTINI s.r.l.
“THE BEST IN FLOOR MACHINES”

FILIALI:

20132 MILANO – Fax. 02/2592779
Via Palmanova 211/a – Tel. 02/27207783 - 2564810
00155 ROMA – Fax. 06/22754075
Via Carlo Carrà 13 – Tel. 06/22754040-2275060

STABILIMENTO:

50030 PIANCALDOLI (FI) – Fax. 055/817144
Loc. Rombola – Tel. 055/8173610