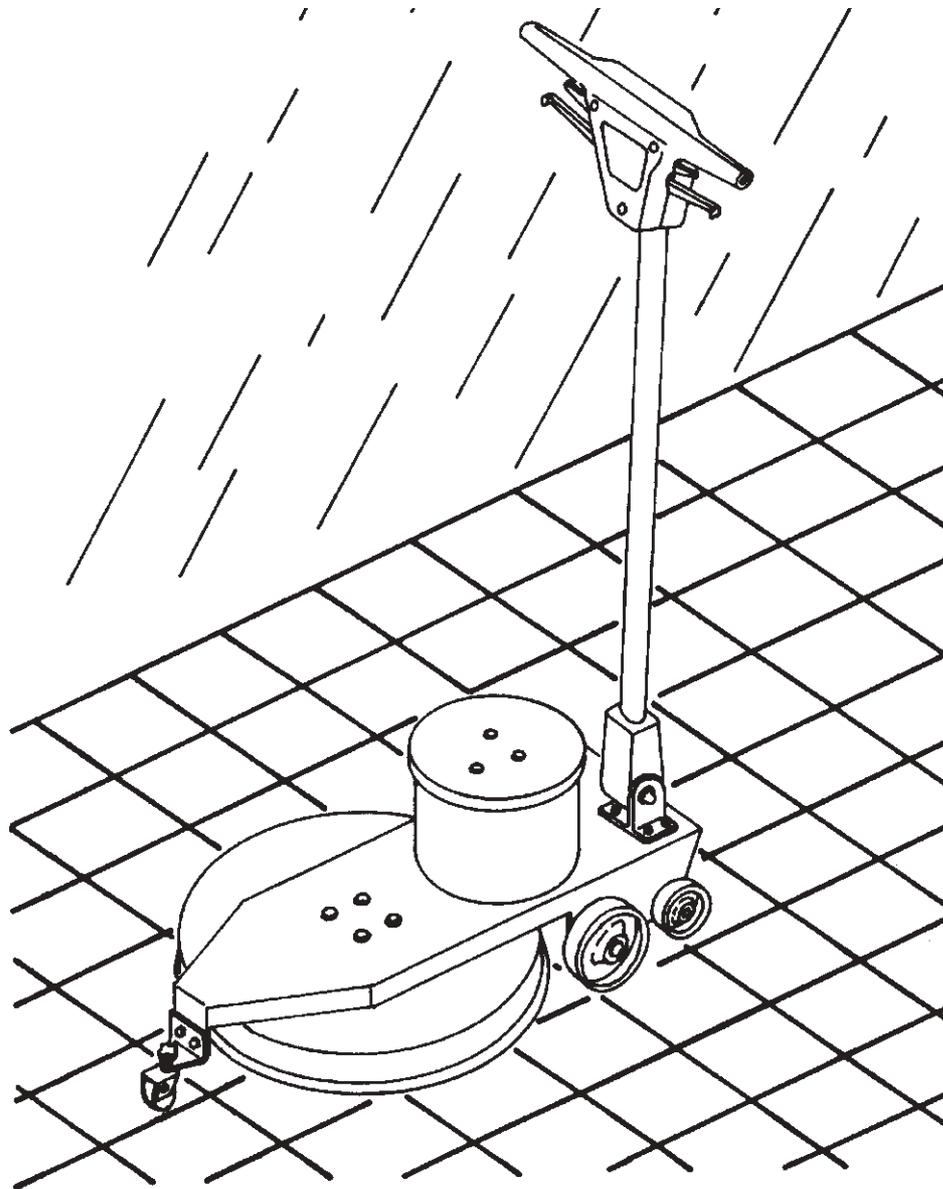


HS 2000

Operating instructions and maintenance



ING. O. FIORENTINI s.p.a.

THIS MANUAL CONTAINS VITAL INFORMATION FOR THE SAFE USE AND EFFICIENT OPERATION OF THIS MACHINE. CAREFULLY READ THIS OPERATOR'S MANUAL BEFORE STARTING THE MACHINE, AND RETAIN FOR FUTURE REFERENCE. INSTRUCT ALL OPERATORS TO READ THIS MANUAL. FAILURE TO ADHERE TO THE INSTRUCTIONS COULD RESULT IN SERIOUS BODILY ANJURI OR PROPERTY DAMAGE.

PRESCRIBED USAGE

This machine is designed for the professional cleaning according to these operating instructions. For the safe operation of this machine, and for the safety of the operator observe the following instructions:

- 1) Do not use this machine in an explosive atmosphere such as gas vapor etc. .
- 2) Do not operate this machine unless it is completely assembled.
- 3) Do not leave this machine plugged into the power source while unattended.
- 4) The Floor Maintainer is designed to be used with detergent and water .They should never be used with flammable materials such as : gasoline, kerosene, etc. .
- 5) Do not clean this machine with a high pressure cleaner by water but use only air pressure cleaner.

GENERAL SAFETY INSTRUCTION

This machine is designed and constructed according to the present state of the art and recognised technical safety standards. It is fitted with protective devices, following safety European standard rules. Dangers can occur in spite of this, in particular in the case of maloperation or non-compliance with the specifications and information in the operating instructions. All our equipments are covered by international assurances against risks.

1) Sources of danger.

Electrical voltage / Electric current

Warning: Danger

Contact with voltage or current carryng parts carries the risk of electric shock which can result in serious injury or even death. Never touch damaged cables. Always switch off and disconnect the power supply before carrying out any work on the machine. Replace faulty cables immediately.

2) Improper usage.

Any usage of the machine for a purpose not covered under the "Prescribed usage" or contractually agreed purpose is not permissible. The use of the machine in an unserviceable condiction or not in compliance with the following prescription is prohibited:

- Protective devices must not be removed or bypassed.
- Conversions and modification to the machine are not permitted.
- Defective supply cables are only to be replaced by original FIORENTINI cables.
- Coupling elements between mains supply or detachable extension cable must be at least splashproof.
- The machine is to be fitted with a type H circuit breaker for rated current of 15A.

3) Organisational points.

It is the responsibility of the operator to ensure that:

- The machine is used only by personnel who have been instructed in its handling and authorised to use it.
- The recognised occupational safety regulations are observed.
- Any further national or internal company regulations are observed.
- All users are acquainted with the safety regulations and trained in the use of the specific machine.
- All users have read and understood the operatin instructions.
- Responsibilities for the operation, maintenance and repair of the machine are clearly assigned and observed.
- Faults and damage are immediately notified to the Service Agent of FIORENTINI.

4) Emergencies.

In the case of an emergency:

- Pull out the mains connector plug.
- Immediately apply recognised first-aid measures.

After incidents, do not resume operation with the machine until it has been inspected by FIORENTINI authorized technical.

5) Operating for the first time.

Delivery, instruction on safety rules, handling and maintenance as well as operation for the first time must be carried following the specification of this instruction book. The operator is responsible for instructing the users.

FURTHER SAFETY INSTRUCTIONS CONCERNING OPERATING AND MAINTENANCE ARE DETAILED IN THE RELEVANT SECTIONS AND MUST BE COMPLIED WITH!

IMPORTANT NOTES

Before starting to use the machine please observe the following points:

- If you should discover any damage when unpacking the machine please inform your sale agency.
- The supply voltage must be the same as that shown on the nameplate.

FOR ALL GROUNDED APPLIANCES

This appliance should be grounded while in use to protect the operator from electric shock. The appliance is equipped with an approval three-conductor european cord and three-prong grounding type plug to fit the proper grounding type receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Never connect the green (or green and yellow) wire to a live terminal.

OPERATION OF HIGH SPEED FLOOR MACHINES

Fiorentini high speed floor machines are designed to be used with a forward and backward movement. It will not swing side to side as with standard, low speed machines. The front of the machine should be lifted for turning, transporting and storage of the machine. Damage to the pad and pad driver can result if pushed, pulled or stored with the weight of machine on the pad while it is not in operation. Do not apply pressure or weight to the front of the machine while in operation. This causes an excessive load on the motor and will shorten the life of the motor. Model 1100 and 1500 are balanced to provide superior performance when used with the proper pad and high quality floor finishes. The Model 2000 comes equipped with a front caster to stabilize the machine at its 2000 rpm operating speed. This caster is adjustable to achieve proper pad pressure. Please refer to the pad installation procedures regarding adjustment of this caster. The machine was pre-adjusted at the factory using a 25mm thick pad. **Fiorentini high speed floor machines** come equipped with a 15m heavy gauge power cord. We do not recommend the use of extension cords with these floor machines. Damage to the motor can result due to a voltage drop when inadequate extension cords are used.

WARNING: NEVER TURN ON MACHINE WHEN HANDLE IS IN UPRIGHT VERTICAL POSITION BECAUSE THE MACHINE IS SUPPLIED OF SAFETY MICRO-SWITCH. THE "ON" AND "OFF" MASTER SWITCH IS OPERATED BY MEANS OF LEVERS IMMEDIATELY UNDER HANDLE GRIPS. WHEN TRANSPORTING OR STORING MACHINE, RAISE HANDLE TO VERTICAL POSITION.

PRESTART-UP CHECKS

- 1) Check pad and pad driver; both must be secure and properly aligned.
- 2) Check handle assembly and camlock lever. Loose bolts should be tightened to avoid damage to attachment points.
- 3) Check power cable, strain relief and cord plugs for frayed or damaged insulation.
- 4) Plug power cord into outlet.
- 5) Adjust handle height to desired level and with the
- 6) The machine can be operated with either the right or left levers located below the handle bars. Squeeze the lever toward the handle bar to start the machine.

USE CAUTION

DO NOT hold the machine in one spot for more than one or two second. This is a high speed machine and can damage a hard surface floor very quickly leaving a permanent burn mark. If you must stop, release the trigger lever to stop the machine.

AVOID any protruding objects such as bolts, mouldings, conduit pipes, etc. Even the slightest contact can damage the pad and pad driver.

PAD DRIVER AND PAD SELECTION

These HIGH SPEED MACHINES come equipped with a balanced high speed pad driver with a locking pad holder. This style pad driver and the locking pad holder must always be used. An unbalanced pad driver will create vibration.

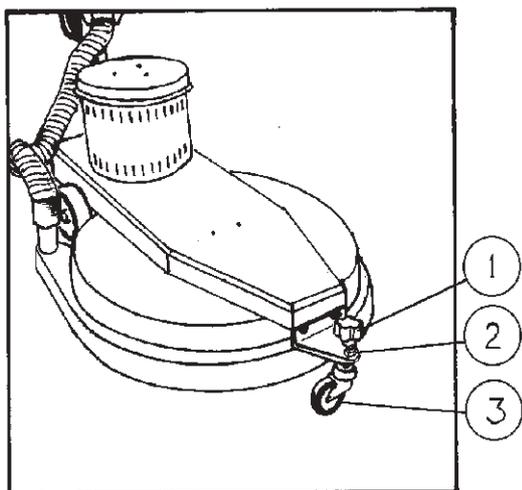
Vibrations can damage the machine and is unsafe to operate. If the locking pad holder is not used, the pad will be thrown out from under the pad driver.

Proper pad selection is important to achieve the desired performance of the machine and desired floor finish. We recommended a 25 mm. thick pad. There are many types and grades of pads available. Poor quality pads are often uneven in density causing thick and thin spots which cause vibrations and poor finish. Avoid using seconds or rejected pads. Pad installation is a simple procedure.

Lock the handle in the full upright position. Disconnect the power at the outlet (unplug cord). Tilt the machine back fully, allowing it to rest on the handle block and wheels. The pad locking mechanism is a yellow plastic piece found at the center of the driver. The center section and lock plate are removed by turning counter-clockwise as indicated by the arrows on the lock ring. Fully remove the lock nut from the hub. Lift the old pad off and turn over or discard as needed. Place new pad into pad driver making certain it is centered to avoid erratic operation. Re-install the center lock plate and ring and hand tighten. The pad driver and center ring will hold the pad securely while in operation.

FRONT CASTER (Model HS 2000)

Adjusting the front caster is a simple, minor adjustment. Loosen the lock nut located under the black adjustment knob. Turn the knob clockwise to raise the pad and reduce pad pressure. Turn the knob counter clockwise to lower the pad and increase pad pressure. Adjust the pad height up or down to achieve a slight drag on the motor when in operation. **DO NOT OVERLOAD THE MOTOR BY SETTING THE PAD TOO LOW.** Make only minor adjustments and make a test pass with the machine. Compare the sheen after each pass. When the adjustment is completed, retighten the lock nut against the bracket to hold the pad height at the selected level.



- 1) Adjustment knob
- 2) Tightening nut
- 3) Wheel

MAINTENANCE OF MACHINE

WARNING: MAINTENANCE SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY. Your **Fiorentini** standard speed floor machine is a very rugged, durable machine which requires very little maintenance or upkeep. The previously described **PRESTART-UP CHECKS**, if performed, should reveal any potential operational problems or hazards which may be present.

Lubrication: your machine has been completely lubricated at the factory before shipment to you. The gear unit is lubricated for 2 or 3 years (for normal work).

Reasonable care and skills should be used when servicing or making repairs to your machine. **DO NOT ALLOW UNSKILLED PERSONNEL TO OPERATE OR PERFORM REPAIRS TO YOUR MACHINE.**

If necessary, contact your local **Fiorentini** Distributor for assistance. Each and every component of this machine is available as a service part through your Distributor. An exploded view of the handle assembly and the machine base are provided with descriptions and part numbers to assist in proper identification of parts and ordering. The following outlines provide step-by-step procedures for performing routine repairs to your machine.

DRIVE BELT ADJUSTMENT PROCEDURES

Periodic adjustment of the **DRIVE BELT** will prolong the service life of the belt and maintain the level of performance expected of the machine. A squeal will come from the machine on startup when the belt needs tightening. When this happens, do not continue to operate the machine until the belt has been properly adjusted.

- 1) Disconnect power cable from outlet (unplug machine).
- 2) Lock handle in full upright position.
- 3) Tilt machine back and allow it to rest on the handle block and wheels.
- 4) Remove the protection carter. Loosen four bolts attaching the motor to the base (do not remove bolts).
- 5) An "L" bracket is located at the rear of the machine with a bolt which extends out through the rear portion of the base. Turn the nut on the out side of the base clockwise to tighten the belt. Turn the nut on the outside of the base clockwise to tighten the belt. Tighten until there is no play or deflection of the belt. **DO NOT OVERTIGHTEN THE BELT AS THIS CAN DAMAGE THE MOTOR AND PAD DRIVER HUB BEARING.**
- 6) Tighten four bolts which hold the motor inplace and return machine to upright position.

DRIVE BELT REPLACEMENT

If replacement of the drive belt is necessary, use the following procedures:

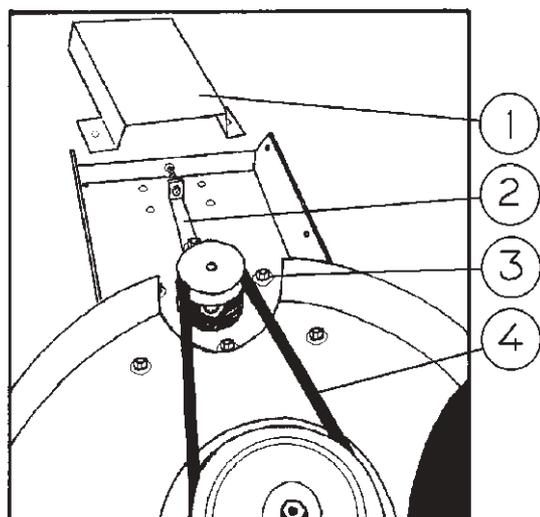
- 1) Disconnect power cable from outlet (unplug machine).
- 2) Lock handle in the full upright position.
- 3) Tilt machine back and allow it to rest on the handle block and wheels.
- 4) Remove the protection carter. Loosen four bolts attaching the motor to the base. (do not remove bolts).
- 5) Turn nut on the bolt in the "L" bracket counter-clockwise to loosen the drive belt.
- 6) Remove pad lock ring and plate.
- 7) Lift off pad and remove three (3) phillips scrws holding the lock plate hub and lift off.
- 8) Remove three (3) screws holding the pad driver in place and lift off.
- 9) Remove drive belt and inspect pulleys for damage. Remplace if necessary.
- 10) Install new belt into grooves on pulleys.
- 11) Turn bolt in "L" bracket cloclwise to tighten the new belt. Tighten until there is no play in the belt and stop. **DO NOT OVERTIGHTEN THE BELT.**
- 12) Tighten the bolts holding the motor in place. Replace the protection carter.
- 13) Reinstall pad driver with three (3) retaining screws.
- 14) Reinstall lock plate hub with three (3) phillips head screws.
- 15) Install pad, lock ring and plate.
- 16) Return machine to upright position.

Routine lubrication of wheels with a light spry lubricant and general good cleaning will also help keep your high quality **Fiorentini floor machine** operating at peak performance.

Your local **Fiorentini floor machine** Distributor can provide any parts or accessory items needed for your machine.

An exploded view of the handle assembly and base units are provided for your information along with a parts listing with descriptions to identify any part needed to keep your machine in operation for years to come.

If you need assistance with service or maintenance of your machine, contact your local Distributor or our Technical Service Departement.

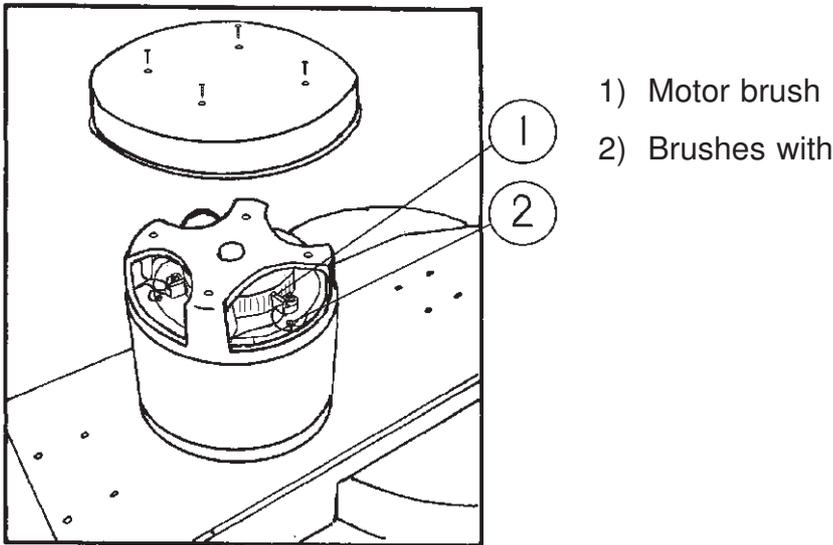


- 1) Protection carter
- 2) "L" bracket
- 3) Bolts attaching the motor
- 4) Belt

MOTOR BRUSH REPLACEMENT

- 1) Disconnect power cable from outlet (unplug machine).
- 2) Release camlock lever and lay handle flat or tilt back to allow access to motor.
- 3) Unplug motor powered lead from lead at base of handle fork.

- 4) Remove four (4) Truss Head Phillips screws from drip cover and lift off.
- 5) The 1.5 HP Motor on your machine has four (4) brushes with leads connected to the brush plate. The leads are fastened to the plate with a brass screw located to the left of the brush holder. Loosen but do not remove these screws.
- 6) Remove brushes from brush holders and replace with new brushes.
- 7) Reconnect brush leads and tighten brass retaining screws.
- 8) Reinstall drip cover and connect power lead.
- 9) Return handle to full upright position and lock.
- 10) Reconnect power cable to outlet (plug in machine) and test the machine.



TECNICAL CHARACTERISTICS	
POWER	1100 W
PROTECTION CLASS	1
LENGTH OF CORDS	15 m
BRUSH SIZE	480 mm
BRUSH REVS.	2000 rpm
ENERGY SOURCE	direct current
VOLT	220 v
WEIGHT	35 Kg
DECIBEL	70 dB
OPTIONAL (VACUUM ATTACHMENT)	
POWER	800 W
AIR FLOW	51 L/s
DEPRESSION	195 mbar
WEIGHT	10 Kg
DECIBEL	77 dB

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 recycle the (RAEE) as DER 2002/96/CEE LOW.



Mat. n.

Serial no. _____

Nr. de serie

Distributed by:

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