



# Clemas & Co Ltd

Industrial Cleaning Equipment  
Sales - Hire - Service

## 1010 RIDE ON SWEEPER OPERATOR MANUAL



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### KEY

Any **RIGHT** or **LEFT CLOCKWISE** or **COUNTERCLOCKWISE** indications included in this handbook are always to be intended with respect to the machine's direction of movement.



This symbol draws your attention to operations that could cause **damage to the machine** if improperly executed.

### **NOTE**

This symbol draws your attention to operations that could cause **injuries** to the operator if improperly executed.



This symbol draws your attention to operations that must be read about very carefully.

Use this manual to learn the features of the machine and to understand how to take advantage of them at their utmost.

### 1.1 SECURITY WARNING



All the paragraph in the following chapter may cause damage to people and/or object if improperly executed.

**ALWAYS KEEP THE MACHINE OUT OF CHILDREN.**

**IMPORTANT:** the manufacturer **CANNOT** be held responsible for damage in the event that the machine is used for purposes other than those it was designed for use.

The machine **CANNOT** and **MUST NOT BE** dragged.

The machine **MUST NEVER** be tampered with for any reason whatsoever; in this event, the manufacturer will accept no responsibility for improper use or damage to the machine.

The machine must be used only by qualified and authorised personnel.

For this purpose, **NEVER**:

- use the machine to transport people;
- touch the moving parts of the machine;
- remove the machine's guards when it is running.
- do not leave the operating machine unattended.

If you are working in a particularly dusty environment (for instance; cement factories, sawmills, marble processing factories), it is recommended to wear:

- a mask
- protective goggles
- gloves

**NEVER LEAVE** the machine with the key in the dashboard unattended.

**ATTENTION:** The machine has got a presence device that allows the starting up if the operator is in the correct working position. The device stops the machine in the case that the operator gets up from the seat.

Do not use a jet of water in order to wash the machine.

The machine must not be used for the sucking of the toxic substances.

It is forbidden to use the machine on surfaces sloping more than 12%

The machine can only work in presence of light.

In case the machine is being used in a place where there's a danger for falling little objects, a helmet must be worn by the operator.

Do not use the machine to sweep up cables, straps, wire, or similar material.

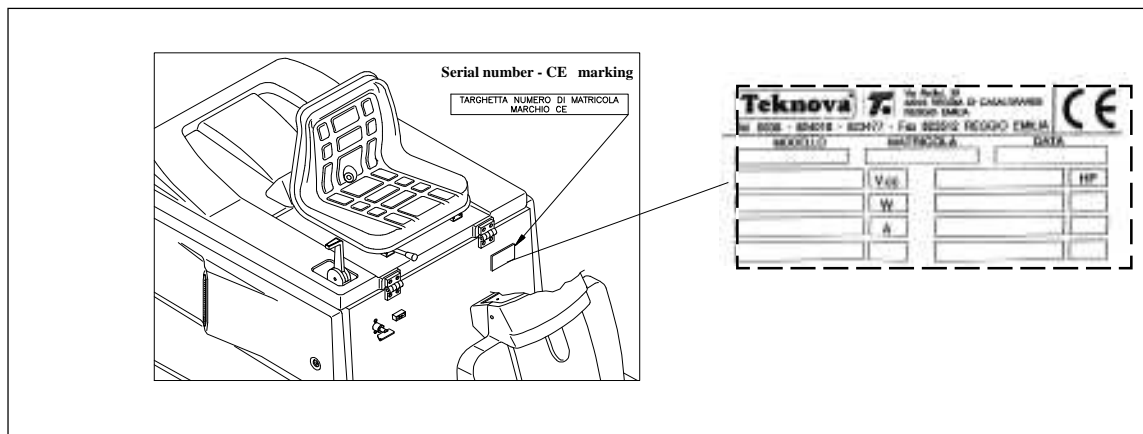
Do not use the machine near cables, wire, or similar material.

Do not start the machine with the accelerator pressed down. It could jolt forward and cause damage to people and / or things.

**USE AND STORAGE IN ENVIRONMENTS WHERE THERE IS A RISK OF EXPLOSION IS PROHIBITED.**

## 2.2 SERIAL NUMBER AND CE MARKING

Always ensure that the machine is provided with a name plate giving the **serial number** and **CE marking** in the position shown in figure. On the contrary, advise your dealer immediately.



### 2.3 DATI TECNICI

### 2.3 TECHNICAL FEATURES

Tensione principale  
Potenza massima totale installata  
Trasmissione sulle **2** ruote posteriori

Main Power  
Maximum installed power  
Transmission  
**Motodiff.**

Velocità d'avanzamento  
Velocità in retromarcia

Forward gear speed  
Reverse gear speed  
**0 - 6,2 Km/h**  
**0 - 6,2 Km/h**

Larghezza di pulizia con spazzola centrale  
Larghezza di pulizia con spazzola laterale  
Larghezza di pulizia con doppia spazzola laterale

Cleaning width with main brush  
Cleaning width with side brush  
Cleaning width with double side brush  
**700 mm**  
**900 mm**  
**1100 mm**

Capacità contenitore rifiuti  
Filtro a pannello  
Produttività  
Peso senza batterie  
Autonomia con batterie cariche  
Peso batterie (4 Moduli) "vuota"  
Caratteristica batteria (4 Moduli)

Capacity of the waste bin  
Panel filter  
Productivity  
Weight without batteries  
Batteries working life  
Batteries Weight "empty"  
Battery  
**65 Lt**  
**4 m<sup>2</sup>**  
**3800 - 5600 m<sup>2</sup>/h**  
**230 Kg**  
**4 h**  
**90.4 Kg (4 pcs)**  
**6V / 240Ah**

Motore spazzola centrale  
Motodifferenziale ruote posteriori  
Motore ventola  
Motore spazzola laterale  
Motovibratore

Main brush motor  
Motodifferential on back wheels  
Fan motor  
Side brush motor  
Motovibrator  
**24V DC / 600W**  
**24V DC / 400W**  
**24V DC / 180W**  
**24V DC / 90W**  
**24V DC / 90W**

Pendenza massima di utilizzo  
Pressione Sonora LpA  
□□□□□□ □□□□□□ □□□□□□□□ LWA  
POTENZA SONORA GARANTITA LWA,g  
Vibrazioni mano HAV  
(incertezze della misura) k  
Vibrazioni corpo HBV  
(incertezze della misura) k

Max. sloping surface allowed  
Sound Pressure LpA  
MEASURED SOUND POWER LWA  
GUARANTEED SOUND POWER LWA,g  
Hand vibration HAV  
(measurement uncertainty) k  
Body vibration HBV  
(measurement uncertainty) k  
**12%**  
**73 dB**  
**75 dB**  
**76 dB**  
**0,9 [m/sec<sup>2</sup>]**  
**0,4 [m/sec<sup>2</sup>]**  
**0,3 [m/sec<sup>2</sup>]**  
**0,1 [m/sec<sup>2</sup>]**

### 3.1 - FOREWORD

The purpose of this manual is to inform the operator of the basic rules, safety rules and criteria which must be observed when using, adjusting and maintaining the machine. The machine has been developed and manufactured to ensure an excellent performance and the utmost comfort and ease of operation in a variety of working conditions. Before delivery, the machine has been checked at our factory and by our dealer to make sure it is handed over to you in perfect working order. To maintain the machine in this condition and ensure problem-free operation, it is essential to follow the routine maintenance instructions given in this handbook.

### 3.2 - UTILIZATION FIELD

The machine, composed of a brush and suction system, is to be used **EXCLUSIVELY** to clean dry surfaces. Any other use could be cause of damage to people or things and is therefore **PROHIBITED**.

### 4.1 - UNPACKING THE MACHINE

- Unpack the machine with the utmost care; avoid carrying out any operation that could damage it. Once it has been unpacked, check whether it is damaged. If you notice that it is not in correct working order, **DO NOT** use it and inform your dealer.

- For packaging and transport purposes, some parts and accessories are supplied disconnected from the machine. To assemble them, carefully follow the instructions given in the relevant sections.

- Contents of the package
- N° 1 Machine
- N° 1 or 2 Side brush/es
- N° 2 Ignition key
- N° 1 Instruction booklet
- N° 1 Spare parts' list
- N° 1 Declaration of conformity
- N° 1 Warranty slip
- N° 4 Batteries (on request)
- N° 1 Battery charger (on request)
- N° 1 Unblocking key

In the case in which one of the above-mentioned parts is missing, please inform your dealer straight away.

#### NOTE

For security reason during the transport, the ignition key has been fixed inside the bag containing the technical documentation.



Take care to keep the packaging materials (bags, cartons, pallets, hooks, etc...) **out of the reach of children.**

### 4.2 - Precautions to be taken before attempting to put the machine at work:

To facilitate transport, the side brush/es haven't been assembled in their actual work position. Therefore, before using the machine, assemble them as shown in Par. 4.3.

### 4.3 - ASSEMBLING THE SIDE BRUSH

To assemble the side brush in its correct position, operate as follows:

- 1: Place the brush-rising lever **5** Fig.2 on the **OFF** position.
- 2: Unscrew the screw from the side brush motor's shaft.
- 3: Take the protection away from the key.
- 4: Position the brush complete with flange on the shaft
- 5: Screw the blocking screw back.

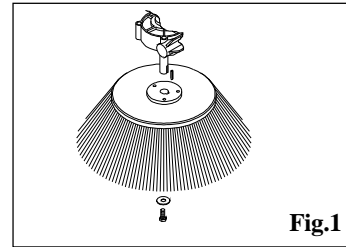


Fig.1



### 4.4: PREPARING THE BATTERY FOR OPERATION AND CHARGING.

To charge the battery, proceed as described below.

#### NOTA

#### 4.4.1 FIRST CHARGE

- Remove the caps of the battery cells.
- Fill the battery with electrolytic liquid.
- It is advisable to carry out this operation before the battery is mounted on the machine from being damaged by the electrolytic liquid of the battery. This operation should be done in a sufficiently ventilated environment. Do not smoke. Now put the battery in its housing and connect it appropriately, making sure to respect the polarity. Connect the battery charger to the socket **Fig 2** located on the rear part of the machine and charge for at least 2 hours. After charging, put the caps back on the battery cells.

#### 4.4.2: RECHARGING

With the machine turned off:

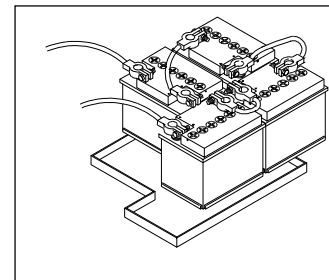
- Remove the caps of the battery cells.
- Top up the battery with distilled water.

Connect the battery charger (Fig.2)

Carry this operation out following the **NOTE** instructions of paragraph 4.4.1

#### 4.4.3 CONNECTING THE BATTERIES

Connect the 4 batteries as shown in the pictures:



## 5.1 CONTROLS

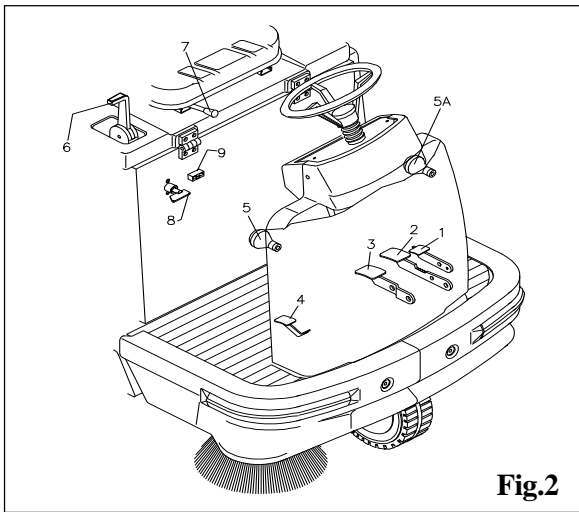


Fig.2

### **1: Brake locking pedal**

Pressing it with the service brake, 2, disables the latter and engages the parking brake. To release the parking brake, press service brake 2 and the brake locking pedal will snap into its rest position.

### **2: Service brake pedal**

Operate this pedal to stop the machine during operation.

### **3: Flap lifting pedal**

Use the pedal when you are tackling bulky but light wastes. Do not keep the pedal pressed down unless it is strictly necessary.

### **4: Accelerator pedal**

Operate this pedal to regulate the speed of the machine.

### **5: Right side brush control lever**

By pulling and pushing down the side brush lever, the brush moves to work position and starts spinning.

To stop the side brush at the end of your work, push the lever back to its initial position.

### **5-A: Left side brush control lever**

As above in the double side brush version.

### **6: Centre brush control lever**

By pushing the lever back (to ON), the centre brush moves to work position and starts spinning.

To stop the brush at the end of your work, push the lever back to OFF.

### **7: Seat adjustment lever**

This lever adjusts the position of the seat in the position best suiting the operator.

### **8: Battery disabling key**

**NOTE** If necessary or in hazardous situations, this key disables ALL of the machine's functions by cutting off the power supply.

Before using the key to enable the battery again, remember to turn off all the parts that are on (side brush, centre brush, fan, etc.) and to take your foot off the accelerator pedal in order to prevent the machine from the starting up abruptly and jolting forward.

### **9: Battery charger socket**

Connect a battery charger with a capacity of 24V/30A. Do not use chargers with different capacities.

## 5.2 - INSTRUMENTS DASHBOARD

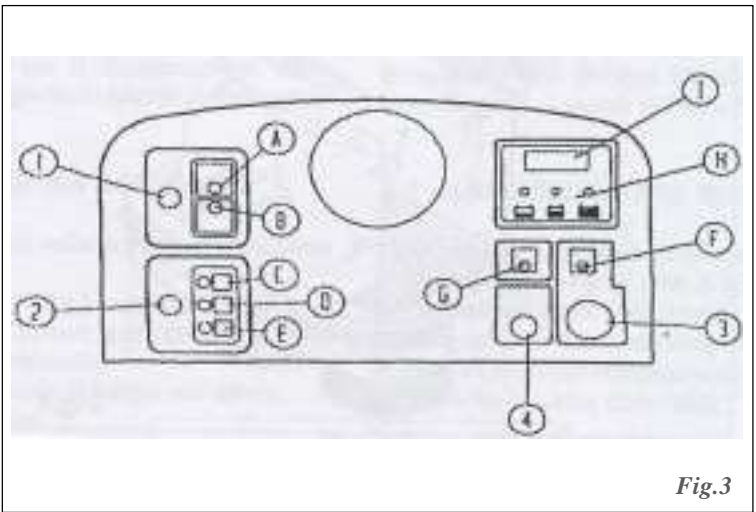


Fig.3

### **1: Advances switch**

By operating this switch, you select the direction of the machine.

**WARNING:** before operating this switch, remember to take your foot off the accelerator, otherwise the machine will not manage to change direction.

### **COMBINED INDICATOR LIGHTS:**

**Indicator light A:** the direction is forward

**Indicator light B:** the direction is reverse

### **2: Function switch**

This switch allows you to select the work functions of the machine. Push the switch forward to turn on the suction motor. Push and hold the switch back to operate the motor vibrator for cleaning the filter.

### **COMBINED INDICATOR LIGHTS**

**Indicator light C:** the suction motor is working.

**Indicator light D:** the centre brush is working.

**Indicator light E:** the filter shaker motor vibrator is working.

### **3: General key switch**

This enables or disables all of the machine's functions.

### **COMBINED INDICATOR LIGHT**

**Indicator light F:** power on.

### **4: Button to operate the horn.**

Press this button to operate the horn.

**Indicator light G:** the side brush is working.

**Indicator light H:** the batteries are being charged. See the Routine Maintenance section.

**Indicator I:** this indicates the total number of hours the machine has worked.

## 6.1 STARTING UP

### After checking whether the battery is charged:

- 1 Make sure all parts of the machine are off (centre brush, side brush, fan).
- 2 Make sure the battery disabling key **8, fig. 2** is turned to **ON**.
- 3 Turn the general key switch **3, fig. 3** to **ON** (indicator light F comes on).
- 4 By means of the appropriate advance switch **1, fig. 3** select the direction of the machine. The relevant indicator light will come on.
- 5 If necessary, release the parking brake with the pedal **2, fig. 2**.
- 6 Press the accelerator pedal **4, fig. 2** to start the machine and reach the desired speed by means of the pressure of the same.

## 6.2 OPERATION

### After starting up

- 1 Lower the centre brush by pushing the appropriate lever **6, fig. 2** to **ON**.
- 2 If necessary, lower the side brush by operating the lever **5, fig. 2**.
- 3 If necessary, start up the suction fan by turning on the switch **2, fig. 3**.
- 4 If necessary, operate the flap lifting pedal.
- 5 The cleaning efficiency of the machine depends on the condition of the filter. Follow all the instructions given in the *Routine Maintenance section*.

## 6.3 - CLEANING THE WASTE BIN

To empty the rear waste bin operate as follows:

- Release the bin lock.
- Pull out the rear bin by grasping it by the appropriate handles.
- With the help of the wheels fitted to the bin, drag it to the waste disposal area.
- Put the bin back into the machine.
- Fasten the lock again.



**-N.B.** If the bin is full it will be rather heavy to handle. Therefore it is wise to entrust this operation to two operators.



**ATTENTION:** Wastes must be disposed of in accordance to the regulations in force.



ALL ROUTINE MAINTENANCE AND SPECIAL MAINTENANCE MUST BE CARRIED OUT BY COMPETENT PERSONNEL OR BY AN AUTHORISED SERVICE CENTRE. ALWAYS USE ORIGINAL SPARE PARTS. ALL MAINTENANCE OPERATIONS MUST BE CARRIED OUT WITH THE MACHINE OFF.

CONTROLLI	CHECK				
		Alla consegna On delivery	Ogni 10 ore Every 10 hours	Ogni 50 ore Every 50 hours	Ogni 100 ore Every 100 hours
Controllare liquido batteria	Check the battery liquid	X	X		
Controllare l'usura delle cinghie	The belts for slackening				X
Registrazione il freno	Adjust the brake's cable				X
Controllare il serraggio di dadi e viti	The tightness of nuts and screws			X	
Controllare lo stato delle spazzole	The brushes for wear			X	
Controllare la tenuta delle guarnizioni	The gaskets for wear and leakages		X		
Controllare il funzionamento di tutte le funzioni	If all the functions are in working order	X			X
Ingrassare la catena dello sterzo	Grase the steering chain up				X

The life of the battery will depend on its routine maintenance and on its discharge level.

Do not allow the battery charge to drop below the limit signalled by indicator light (**H Fig.3**).

Charge indicator lights

**NOTA**

- GREENLIGHT:** the battery is fully charged.
- YELLOWLIGHT:** the battery is running out, recharge as soon as possible.
- RED LIGHT:** the battery has run out. **DO NOT** operate the machine.

Every **200** hours of work, check the state of the motor carbon brushes of every electrical motor and replace them if they are worn.

Always try to replace them before they reach **1000** hours of work.



**7.1 BATTERY MAINTENANCE** The battery must be kept clean and dry. Keep the terminals and poles clean.

Every 10 hours, remove the caps and check the electrolyte level. If necessary top up with distilled water.

The battery should be serviced in a properly ventilated area. During this operation, do not expose the battery to naked flames and do not smoke.

The battery has a 4 hours working life; if you notice that it is much shorter, check that:

- \* the brushes are not obstructed.
- \* the battery is completely charged before starting the work.

**7.2 - FILTER MAINTENANCE**

The filter is a component of primary importance for the correct work of the machine. Its correct maintenance will keep the functioning of the machine always to the highest levels.

The filter can be cleaned in two ways:

**1 - The electric filter shaker**

This instrument is simple to use and allows you to keep the filter in perfect working order. To operate the shaker, push down the switch **2, fig. 3** and hold it down for a few seconds. Repeat the operation **4 or 5 times**. Remember that the cleaner the filter, the better the results. This operation should be carried out after every work cycle.

**NOTE**

**DUSTY ENVIRONMENT:** If you are using the machine in a particularly dusty environment ( i.e. warehouses with trucks passing, sawmills, ecc... remember that the filter shaker should be used more frequently.

**2. Cleaning the filter manually**

In the case in which the cleaning of the filter by the filter-shaker wouldn't be effective, and every 20 working hours anyway, proceed with the manual cleaning of the filter.

Before carrying out every operation on the machine, make sure that this last be switched off and that all of its functions be deactivated, to get to this state, set the key switch **3 Fig.3** in the **OFF** position.

- 1 - Lift the bonnet where the seat is located.
- 2 - Slacken the wing nut on the filter box cover.
- 3 - Remove the cover.

Clean the filter blowing with a jet of compressed air directed towards the waste bin, so that any residual falls into the bin.

### 7.3 - REPLACING THE FILTER

Every **200** hours of work, the filter must be replaced.

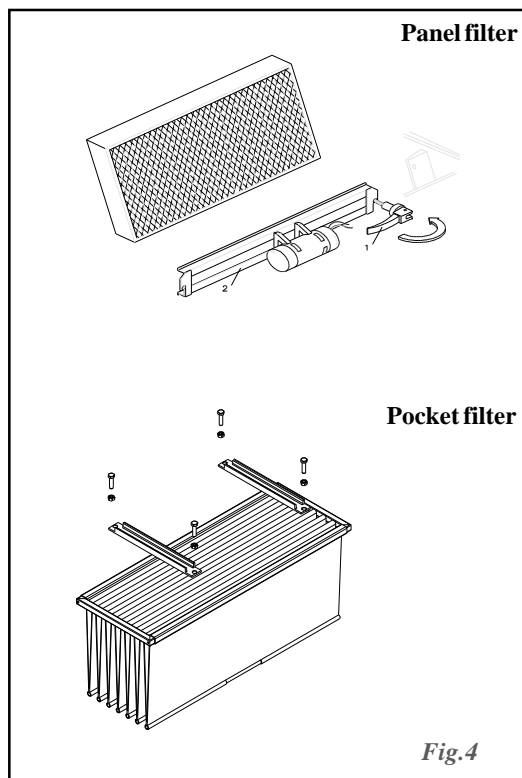
To do so:

- 1 - Lift the bonnet where the seat is located.
- 2 - Slacken the wing nut on the filter box cover.
- 3 - Remove the cover.
- 4 - Loosen the 4 locking rings (**10**) (**Panel filter**).
- 5 - Loosen the 4 knobs (**11**) (**Panel filter**).
- 6 - Remove the filter from the filter holder (**Panel filter**).

After replacing the filter, carry out the above operations in reverse order.

- 7 - Unscrew the four screws (**Pocket filter**).
- 8 - Disconnect the connector on the filter shaker (**Pocket filter**).
- 9 - Remove the filter from its housing (**Pocket filter**).
- 10 - Thoroughly clean the filter with a vacuum cleaner or replace it (**Pocket filter**).

After replacing the filter, carry out the above operations in reverse order.



**NOTE** When fastening the filter, make sure that filter and gaskets are tightproof.



**WARNING:** To get rid of the filter, follow strictly the directing laws.

### 7.4 Replacing the centre brush



Before carrying out any work on the machine, make sure that it is off and that all its functions are disabled. This is done by turning the key switch **3**, **fig. 3 OFF**. Push the centre brush control lever **6**, **fig. 2** to **OFF**.

**fig. 3 OFF**. Push the centre brush control lever **6**, **fig. 2** to **OFF**.

- 1 - Loosen the screws fixing the bottom left casing.
  - 2 - Loosen the screw fixing the brush locking arm.
  - 3 - Remove the spring from the brush shaft.
  - 4 - Remove the 4 screws closing the brush compartment.
  - 5 - Remove the flange and the centre brush.
- Insert the new brush and make sure that its rows of brushes direct the wastes towards its centre.
- Once the brush has been inserted, carry out the operations in reverse order to reassemble the machine.

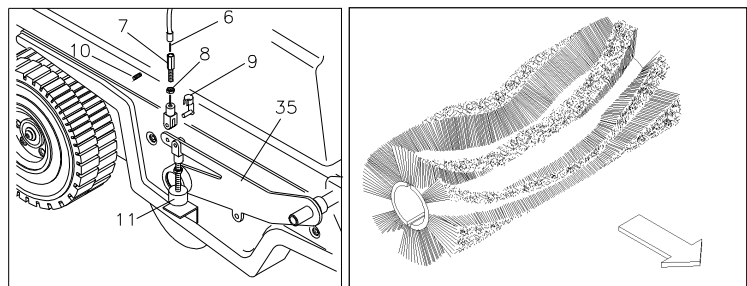
#### Adjusting the centre brush

The main brush is an essential part of the machine. Correct regulation will help you achieve better results in less time. The machine is delivered regulated; however should you require further regulations:

Unscrew the bottom right casing; push the lever (**6**, **fig. 2**) to its **ON** position.

Loosen the nut **10** and the register-blocking counter nut. Verify that the wire isn't in tension and that there is gap enough for the pad to be adjusted. If not, adjust the register **7** until you don't have the gap needed. Adjust the pad by means of the counter nut until when between the pad and the padblocker there is a gap 4 / 5 mm roughly.

Re-block the blocking counter-nuts and the sheathing blocking dowel.



### 7.5 Replacing the side brush:

Push the side brush control lever **5 (5A) Fig.2** to **OFF**. Loosen the three screws that secure the side brush to the drive flange. Remove the brush and replace it with a new one. Tighten the three side brush fixing screws. The machine is now ready to be turned on.

#### - Adjusting the side brush:

The side brush directs the material towards the centre of the machine so that it can be drawn into the bin.

It should be high enough to brush lightly against the floor.

Should you decide to increase or decrease the pressure of the brush on the floor: move the brush to its work position **ON**.

- Loosen the two adjustment screws under the brush lifting knob.
- Manually adjust the brush.
- Tighten the adjustment screws.
- Move the side brush back to rest position **OFF**.

## 7.6 - Replacing the belts



Before carrying out any work on the machine, make sure that it is off and that all its functions are disabled. This is done by turning the key switch **3 fig.3 on the OFF** position.

After loosening the screws that keep the top right casing and bottom right casing in place, remove the belt from the pulley groove and replace it with a new one.

When you are replacing the driving belt **18** you must remove the other belt too, otherwise it will not be possible to carry out this operation. See the fig. 5.

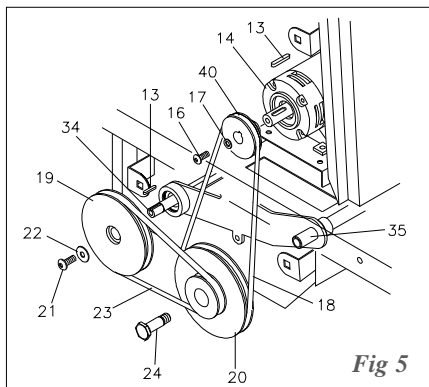


Fig 5

## 7.7 Replacing the flaps

### NOTE

As this operation cannot be carried out with the machine in working position, carry out the following operations.

After removing the rear bin, the batteries and the two left and right bottom casings, lift one side of the machine and tip it up until it is vertical. Do not do this on the floor but onto material that will prevent the machine from getting damaged.

**Fixed side and rear flaps:** loosen the screws that secure the flap retainer to the machine's chassis.

- Remove the flap retainer.
- Replace the flap with a new one.
- Put the flap retainer back in place and fasten the screws you previously removed.

**Adjustable front flap:** release the clip fastening the flap lifting cable.

- Remove the fixing screws.
- Replace the flap with a new one.
- Put the flap retainer back in place and fasten the screws you previously removed.
- Fasten the flap lifting cable to the flap.



Before carrying out any work on the machine, make sure that it is off and that all its functions are disabled. This is done by turning the key switch **3, fig.3 OFF**.

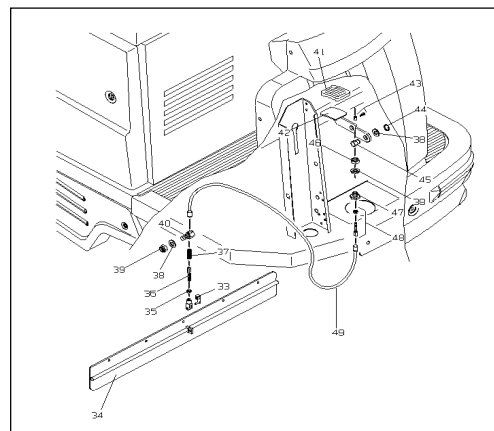
## 7.8-REPLACING AND REGULATING THE FLAP LIFTING CABLE ( See Fig. 6 )

### To replace the flap lifting cable:

- Loosen the machine nose fixing screws and remove the nose.
- Loosen the bumper fixing screws and remove the bumper.
- Loosen the cable clamp **43** fitted to the brake.
- Remove the clip **33** from the flap fork.
- Remove the cable **36**.

### Reassembling:

- After removing the fork and nut **35** from the broken cable (if they are in good repair), mount them on the new flap lifting cable.
- Secure the fork to the flap using the clip **33**.
- Put the spring **37** onto the cable **36** and slot the cable through the guide pin **40**. Insert the cable **36** into the sheath **49** and then slot it through the centring pin **47**. Insert the cable into the cable clamp and secure it in place with the other clamp **43**.



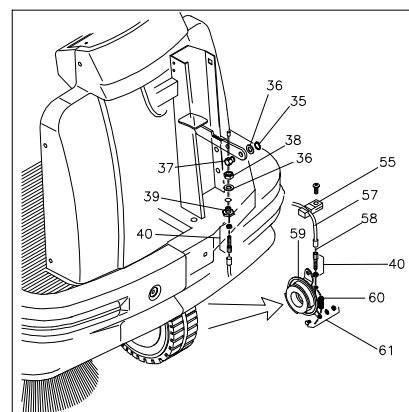
## 7.9 REPLACING AND REGULATING THE BRAKE CABLE. ( See Fig. 7 )

### To replace the brake cable:

- Loosen the machine nose fixing screws and remove the nose.
- Loosen the bumper fixing screws and remove the bumper.
- Loosen the cable clamp (**61**) fitted to the brake.-Pull the cable out of the pedal, making sure not to loose the brake return spring **60**.

### Re-assembling:

- Before fitting the cable, loosen the adjustment screws **40**.
- After slotting the cable through the cable holder pin **37** located on the brake pedal, first slot the cable through the centring pin **39**, then through the adjustment screw **40**.
- Fit the cable into the sheath **57** and the spring onto the cable.
- Secure the cable in place with the clamp **61**.
- Clamp the sheath and cable into the appropriate sheath holding clamp **55**.
- To adjust the braking efficiency, act on the adjustment screws **40** located near the brake lever.





Before carrying out any work on the machine, make sure that it is off and that all its functions are disabled. This is done by turning the key switch 3, **fig.3 OFF**.

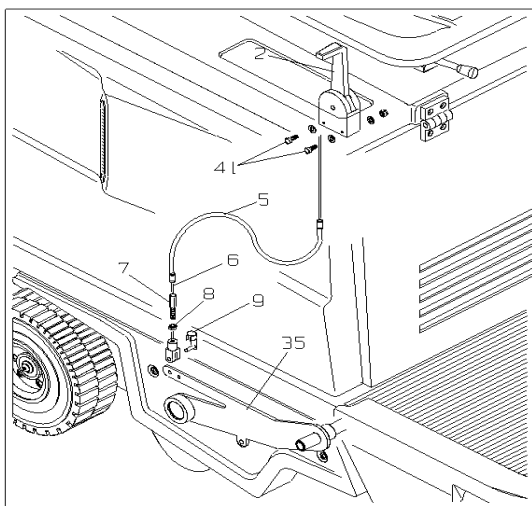
### 7.10 - REPLACING AND REGULATING THE CENTRE BRUSH LIFTING CABLE

#### To replace the centre brush lifting cable:

- Turn the handle 2 to **OFF**.
- Lift the top bonnet.
- Loosen the screws fastening the top and bottom side casings.
- Remove the top and bottom side casings.
- Remove the bolt fastening the handle to the handle support.
- Loosen the screws 41.
- Open up the handle 2.
- Remove the sheath and wire.
- Unscrew and remove the clamp.
- Remove the clip 9.
- Remove the fork from the rocker.
- Remove the cable 6 from the sheath 5.

#### Reassembling:

- Turn the handle 2 to **ON**.
- Slot the cable 6 into the sheath 5.
- Hook the fork to the rocker and lock it in place with the clip 9.
- Fit the clamp to the cable and fix it so that when the handle 2 is in **ON** position the striker cap touches the reference stop.
- Fit the clamp into the handle and tighten the screws 41.
- Secure the handle 2 to its fastening element 3.
- Reassemble the machine's casings.



### 7.11 REMOVING THE REAR WHEEL GEAR MOTOR GROUP

**1** Remove the rear bin, the batteries, the top right side casing and the two bottom casings.

**2** By means of a shim A set under the machine, lift the machine up from the ground in a way that the back wheels are not touching the floor. It is recommended to position the side flaps in a way they aren't damaged during the operation.

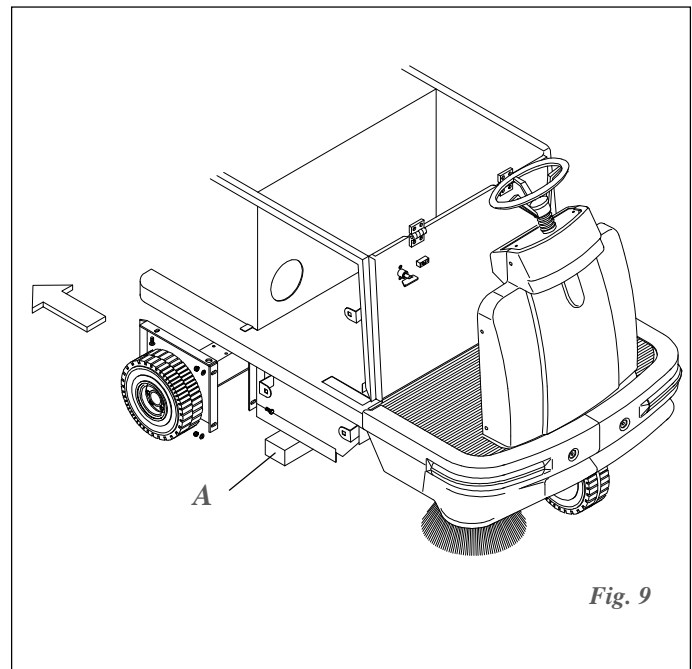
**3** Remove the upper cover.

**4** Loosen the 2 fixing screws that keep the cover of the electrical box shut and take the cover away.

**5** Disconnect the power supply cables of the gear motor from the control card.

**6** After cutting the plastic cable binds, remove the sheath containing the gear motor power supply cables from the right side of the machine.

**7** Loosen the 6 screws that fix the gear motor group to the chassis. Now you can take the group out of the machine. It is recommended to carry out this operation with the help of another person. There is a layer of silicone between the gear motor group and machine and the former may be slightly difficult to detach without help.



### **7.11.1 REPLACING THE GEAR MOTOR (DISASSEMBLING)**

Once the rear wheel gear motor group has been removed, replace the gear motor as indicated here below:

- 1 Remove the two rear wheels by loosening the two middle screws.
- 2 Remove the keys from the two gear motor shafts.
- 3 Remove the snap rings from the two gear motor shafts.
- 4 Loosen all the security dowels of the SBFL supports.
- 5 Unscrew and remove the two outer SBFL supports.
- 6 Unscrew the two SBFL bearing holder brackets.
- 7 Unscrew the gear motor support bracket.
- 8 Remove the gear motor.

Now take the two brackets with bearings from the gear motor shafts.

### **7.11.2 REPLACING THE GEAR MOTOR (REASSEMBLING)**

The gear motor is reassembled in the following way:

- 1 Fit the brackets with their SBFL supports onto the relevant shafts of the reduction unit. Make sure to mount them in the right direction.
- 2 Position the gear motor onto the axle support.
- 3 Fit the SBFL supports onto the two shafts.
- 4 Centre the motor and make sure the shafts and their SBFL bearings are properly aligned to prevent excessive stress. Tighten all the nuts, screws and security dowels of the SBFL brackets and bearings.  
Position the gear motor support bracket and secure it in place.

The gear motor assembling and disassembling operations must be carried out by qualified personnel, using original parts.



Before carrying out any work on the machine, make sure that it is off and that all its functions are disabled. This is done by turning the key switch **3 fig.3 OFF**.

### **7.12 REPLACING THE SUCTION FAN MOTOR**

- The suction fan motor is replaced following the instructions given here below:

#### **DISASSEMBLING**

- 1 -Loosen the top right side casing fixing screws and remove the casing.
- 2 -Lift up the top bonnet.
- 3 -Loosen the fixing screws and remove the cover of the box containing the electrical equipment.
- 4 - Detach the cables from the control card (see lay-out) and pull them out of the box.
- 5 -Loosen the 4 motor fixing screws.  
Now you can remove the fan from the motor by unscrewing the ring nut. Keep the fan bushing and the key. Fasten these parts to the new motor and mount the new motor.

#### **ASSEMBLING**

- 1 -Fasten the motor to the bracket by means of the 4 fixing screws.
- 2 -Before tightening the screws make sure the motor is properly positioned at the centre and that the fan can spin without touching the edge of the suction hole.
- 3 -Insert the cables into the electrical equipment box and connect them to the terminals.
- 4 -Close the box, remount the top side casing and lower the top bonnet. The machine is now ready to work.

#### **IMPORTANT: WHEN CONNECTING THE MOTOR RESPECT ITS POLARITY.**

Before carrying out any work on the machine, make sure that it is off and that all its functions are disabled. This is done by turning the key switch **3 fig.3 OFF**.



### 7.13 REPLACING THE CENTRE BRUSH MOTOR



Before carrying out any work on the machine, make sure that it is off and that all its functions are disabled. This is done by turning the key switch **3 fig.3 OFF**.

To replace the centre brush motor, proceed as follows:

- 1 -Loosen the screws and remove the top right casing.
- 2 -Lift the top bonnet.
- 3 -Loosen the 2 fixing screws and remove the cover of the box containing the electrical equipment.
- 4 -Detach the cables from the control card (see lay-out) and pull them out of the box.
- 5-Remove the belt from the motor pulley.
- 6-Remove the 4 motor fixing screws.  
Now disassemble the pulley from the broken motor. Keep both the pulley and the key. Fit the pulley and the key to the new motor. Now mount the motor following the instructions given above in reverse order.

### 7.14 REPLACING THE SIDE BRUSH MOTOR

To replace the side brush motor, proceed as follows:

- 1 -Push the side brush lever to **OFF**.
- 2 -Loosen the screws and remove the bumper from the machine.
- 3 -Remove the side brush complete with flange.
- 4 -Push the side brush lever to **ON**.
- 5 -Disconnect the motor by detaching the two power supply cables.
- 6 -Loosen the 4 screws that fix the motor to the bracket. To mount the new motor, carry out the above operations in reverse order.

**IMPORTANT: WHEN CONNECTING THE MOTOR, RESPECT ITS POLARITY.**

### 7.15 -REPLACING THE FILTER SHAKER MOTOR VIBRATOR

To replace the filter shaker motor vibrator, proceed as follows:

- 1 -Lift the top bonnet.
- 2 -Loosen the wing nut and remove the filter box cover.
- 3 -Loosen the 4 filter fixing knobs.
- 5 -Remove the filter from its seat.
- 6 -Loosen the 2 power supply cable fixing screws and disconnect the motor.
- 4 -Remove the 4 motor fixing screws from the filter holder and remove the motor vibrator.

To reassemble the motor vibrator carry out these operations in reverse order.

**IMPORTANT: WHEN CONNECTING THE MOTOR, RESPECT ITS POLARITY.**

### 8.1 - SCRAPPING THE MACHINE



This product is classified as RAEE type special waste and is covered by the requisites of the new environmental protection regulations (2002/96/CE RAEE). It must be disposed of separately from ordinary waste in compliance with current legislation and standards.

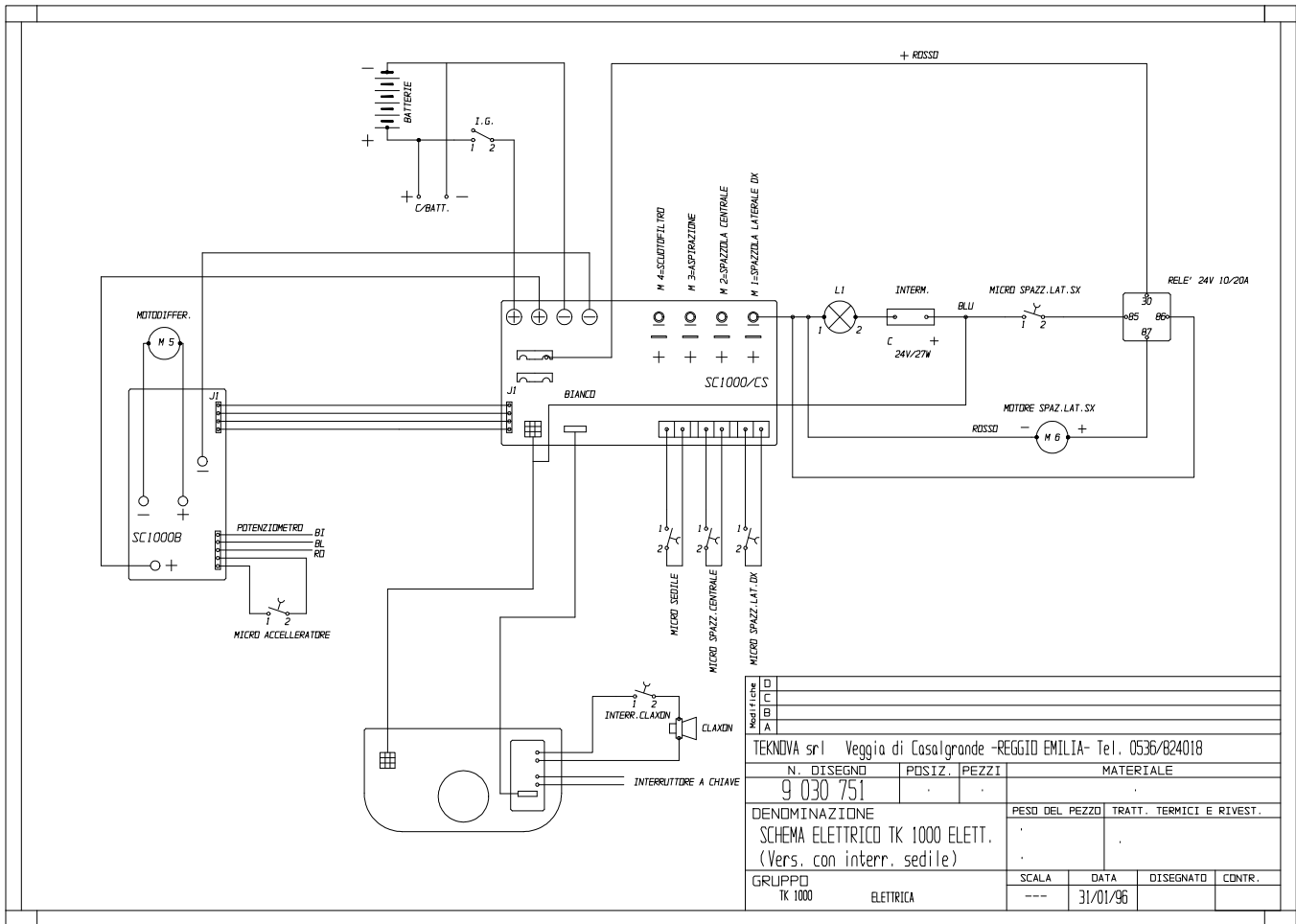


**Special waste. Do not dispose of with ordinary waste.**

**DO NOT use scrap pieces as spare parts**

**ALSO IN THIS CASE KEEP OUT OF THE REACH OF CHILDREN**

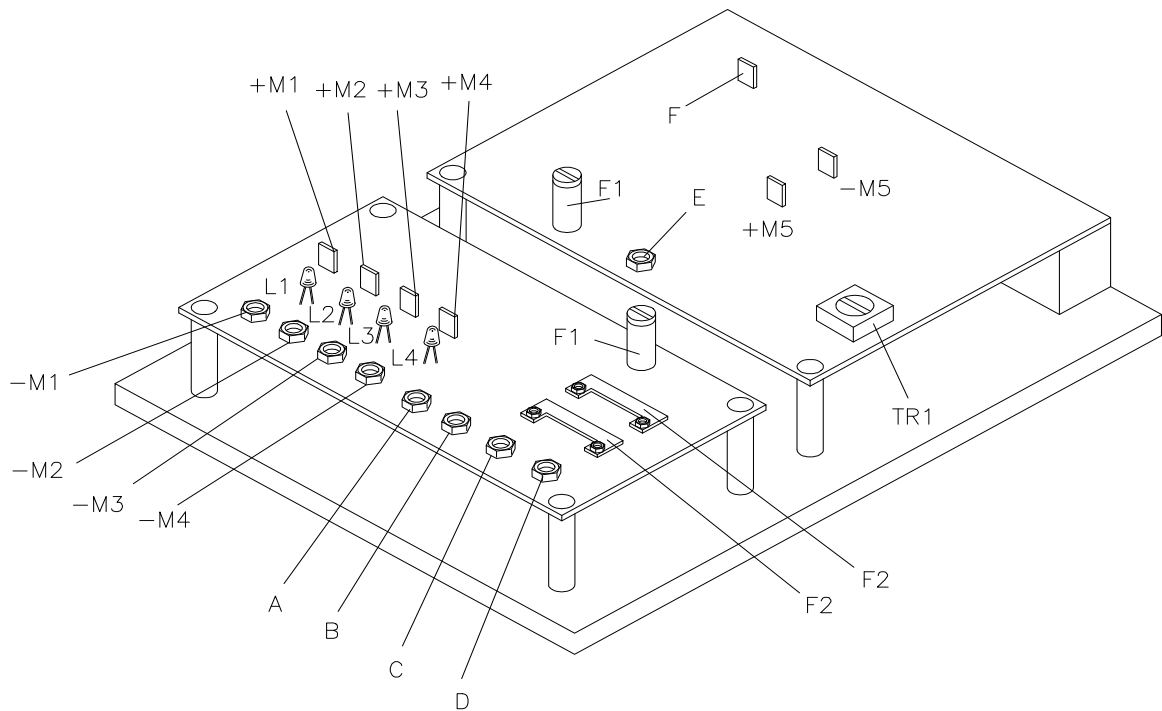
## 8.2 - WIRING DIAGRAM



### COMPONENTS:

- Batt.** Batteries
- M1** Right side brush motor
- M2** Centre brush motor
- M3** Suction fan motor
- M4** Filter shaker motor
- M5** Motor differential
- M6** Left side brush motor
- I.G.** Battery disabling key
- C.Batt** Battery charger socket
- Int.1** Side brush micro
- Int.2** Accelerator micro
- Int.3** Centre brush micro
- F1** 1.25A 250V fuse
- F2** 50A bar fuse
- Pot.1** Speed regulation potentiometer
- TR1** Brake regulation trimmer
- Comm.1** Function switch
- Comm.2** Direction switch
- P1** Horn button
- C** Horn
- CH** Key switch
- SC1** Battery charge display card
- SC2** Card with hour meter

### 8.3 LAY-OUT



- +M1 Side brush motor power supply positive pole LED:L1**
- +M2 Centre brush motor power supply positive pole LED:L2**
- +M3 Suction fan motor power supply positive pole LED:L3**
- +M4 Filter shaker motor power supply positive pole LED:L4**
- +M5 Motor differential power supply positive pole**

- M1 Side brush motor power supply negative pole**
- M2 Centre brush motor power supply negative pole**
- M3 Suction fan motor power supply negative pole**
- M4 Filter shaker motor power supply negative pole**
- M5 Motor differential power supply negative pole**

**F1:** 1.25A 250V fuse for card protection

**F2:** 50A bar fuse for motor protection

**F3:** 50A bar fuse for motor differential protection

**TR1:** brake regulation trimmer

**L1-L4:** Relais functioning's indication led lights.

**NOTE:** The 4 LED lights' function is to indicate the correct functioning of the 4 relais assembled on the circuit board.

For every relais' closing, there is the lighting up of the respective led light. The led light remains lighted just in the while in which the relais closed its contact.

- A:** - Board alimantation
- B:** - General alimantation
- C:** + Board alimantation
- D:** + General alimantation
- E:** - Board alimantation
- F:** + Board alimantation