

NR-41

## OPERATION

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This manual is furnished with each new model.

It provides necessary operation and maintenance instructions.

**Read this manual completely and understand the machine before operating or servicing it.**

A complete illustrated Parts Manual is also furnished with each new model. Use the Parts Manual to order replacement parts. To ensure prompt delivery, please order the spare parts on time.

This machine will provide excellent service. However, the best results will be obtained at minimum costs if:

- The machine is operated with reasonable care.
- The machine is maintained regularly-per the machine maintenance instructions provided.
- The machine is maintained with manufacturer supplied or equivalent parts.

### PROTECT THE ENVIRONMENT



Please dispose of packaging materials, old machine components such as batteries, hazardous fluids, including antifreeze and oil, in an environmentally safe way according to local waste disposal regulations.

Always remember to recycle.

Specifications and parts are subject to change without notice.

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## 2. GENERAL INFORMATION



**Read this manual carefully before carrying out any work on the machine.**

### 2.1 Scope of the manual

This manual has been written by the Manufacturer and is an integral part of the machine.

It includes the useful information of how to operate, adjust and maintain the machine. The purpose of this manual is to let you know the design of the machine and ensure the best performance to achieve the comfortable and easy operation. Before the product sales, manufacturer and dealer have tested the machine to ensure the sold product with best quality. To protect the machine and ensure the machine working without any problem, you must operate it per the instruction of the manual. Read the manual carefully before using the machine and put it on the place that can be gotten easily. Any operating instruction will be in relation to the using direction of the machine. If you want to know more about our machine, please kindly contact with our agent as soon as possible. We will provide you the professional technician, all kinds of spare parts and necessary equipment. The machine cannot be used without protection. For your safety, please check if all the security protections are closed or set correctly.

To find the topic that interests you more rapidly, consult the list of contents at the beginning of the manual.

Parts of the text requiring special attention are highlighted in bold and preceded by the symbols illustrated and described here.

### **! DANGER**

**Indicates that attention must be paid to avoid serious consequences that could cause the death of the personnel or possible damages to health.**

### **! IMPORTANT**

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

**! INFORMATION****Particularly important instructions.****Modification and improvement**

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

**Security:**

- ◆ We can help to avoid the most accident.
- ◆ Without the cooperation of the person who directly operate the machine, any accident prevention program will not be valid.
- ◆ Most accidents due to neglect and don't operate per the security rule.
- ◆ One careful and cautions operator is the best guarantee of preventing accident from happening.
- ◆ During the operation, please take care of the nearby environment, especially the children.

**2.2 Products standard parts****Check if the following parts are provided together with the machine:**

- ◆ One piece of battery connect line
- ◆ Several pieces of battery jump wire
- ◆ One connector of battery charger
- ◆ A group of storage battery
- ◆ Two pieces of Start key

**2.3 Documentation provided with the machine**

- ◆ Manual
- ◆ Assembly drawing
- ◆ Certificate of conformity

**2.4 Identifying the machine**

- ◆ Model;
- ◆ Serial number;
- ◆ Total nominal power;
- ◆ Power supply;
- ◆ Weight;

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- ◆ Maximum slope;
- ◆ Manufacturer's identification.

### 3. TECHNICAL INFORMATION

#### 3.1 General description

This machine is a scrubber drier for sweeping, washing and drying flat, horizontal, smooth or moderately rough, even and obstacle free floors in civil and industrial premises.

The scrubber drier spreads a solution of water and detergent in the correct concentration on the floor and then scrubs it to remove the dirt. By carefully choosing the detergent and brushes (or abrasive discs) from the wide range of accessories available, the machine can be adapted to a wide range of combinations of floor and dirt.

With the liquid suction system incorporated in the machine, the floor can also be dried after washing. Drying is performed by means of the under pressure in the recovery tank generated by the suction motor. The floor cleaner, connected to the tank, collects the dirty water.

#### 3.2 Legend

The main parts of the machine are as follows (fig. A):

1. Steering wheel
2. Warning lamp
3. Control panel
4. Drive pedal
5. Solution tank
6. Wall rollers
7. Head assembly
8. Machine Wheel
9. Water discharge hose
10. Squeegee assembly
11. Dirty water suction hose
12. Recovery tank
13. Drain hose



A

### 3.3 Danger zones

- ◆ **Tank assembly:** when using certain detergents, danger of irritation for eyes, skin, mucous membranes and respiratory tract and of asphyxia. Danger represented by the dirt collected from the environment (germs and chemical substances). Danger of crushing between the two tanks when the collection tank is replaced on the solution tank.
- ◆ **Control panel:** danger of short circuit.
- ◆ **Bottom of washing head:** danger due to brush rotation.
- ◆ **Rear wheels:** danger of crushing between the wheel and chassis.
- ◆ **Battery compartment:** danger of short circuit between the battery poles and presence of hydrogen during charging.

## 4. SAFETY INFORMATION

### 4.1 Safety regulations



**Read this (user manual) carefully before start-up and use, or before performing maintenance or any other work on the machine.**

### ! IMPORTANT

**Rigorously respect all instructions in the Manual (in particular those relating to danger and important information) and on the safety plates fitted to the machine. The manufacturer declines all liability for damage to people or things resulting from failure to observe the instructions.**

The appliance must be used exclusively by persons trained in its use and / or who have demonstrated their ability and have been expressly instructed to use the appliance.

The machine must not be used by minors.

Must comply with the following safety precautions to avoid injury to the operator or damage to the machine.

- Read the label on the machine carefully, anytime, don't shelter it. Change the label as soon as it is broken.
- Don't mix the different kinds of detergents to avoid it may engender harmful gas.

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- The temperature of the place to put the machine should be during 0°C to +55°C.
- The suitable working temperature should be during 0°C to +44°C.
- The suitable working humidity should be during 30% to 95%.
- Don't using the machine in the flammable and combustibile environment.
- Don't use the machine as the vehicle.
- Don't use the detergents that will damage the machine
- Don't stop in one place to abrasive cleaning for long time to avoid breaking the floor.
- Don't suck the flammable liquid.
- Use dry powder fire extinguishers in case cause a fire, do not use water.
- Do not crash material frame or scaffolding to prevent materials falling.
- Please adjust the speed of the machine accordingly when on the sticky ground
- Avoid to using the machine in the unsteady environment.
- Please do routine maintenance work well. When the machine is faulty, contact with the authorized service center.
- When change the spare parts, please get original accessories from the Agent.
- Power off the machine before the maintenance or repair.
- When it is necessary to use the tools to dismount, please don't take off the protective device
- Don't use high pressure water or corrosive liquid to wash the machine
- After using ever 200 hours of the machine, please ask the authorized service center to check it.
- This product is classified in the electrical and electronic products environmental directive (2002/96/CE RAEE) special waste regulations, in accordance with current regulations and standards, waste must be separated from the ordinary garbage.
- Must ensure that all harmful components are disposed safely , to prevent children' s touch.
- This machine will not cause harmful shake.



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



## 5. HANDLING AND INSTALLATION

### 5.1 Lifting and transporting the packaged machine

#### ! IMPORTANT

**During all lifting operations, make sure the packaged machine is firmly anchored to avoid it tipping up or being accidentally dropped.**

**Always load/unload lorries in adequately lit areas.**

The machine packaged on a wooden pallet by the Manufacturer, must be loaded by means of proper handling machine (refer to the EEC provision 89/392/CEE and following amendments), onto the carrier and, once it has arrived at the appointed destination, unloaded by similar means.

The squeegees are packed in cardboard boxes without pallet.

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

### 5.2 Checks on delivery

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

### 5.3 Unpacking

#### ! IMPORTANT

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

Unpack the machine as follows:

- ◆ cut and remove the plastic straps using scissors or nippers;
- ◆ remove the cardboard;
- ◆ depending on the model, remove the metal brackets or cut the plastic straps fixing the machine chassis to the pallet;
- ◆ using a sloping ramp, push the machine backwards off the pallet;
- ◆ unpack the brushes and squeegees;

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- ◆ open the envelope on the battery, and check the following items are complete:
  - operation manual
  - certificate
  - packing list
- ◆ clean the outside of the machine in respect of safety regulations;
- ◆ once the machine is clear of the packaging, the batteries can be installed.

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

Otherwise it must be disposed off compliance with current legislation.

### **! DANGER**

**Failure to observe these instructions could cause possibly serious damage to people and things and invalidates the guarantee.**

#### **5.4 Batteries**

### **! INFORMATION**

**The type of battery is settled by the Manufacturer.**

This machine use 36V batteries. There're 3 options for your choose:

- The machine with the storage battery which is full of battery and can be used at once.
- The machine with the storage battery which is without battery.
- The machine without the storage battery.

##### **5.4.1 Batteries:preparation**

### **! DANGER**

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

The batteries are normally supplied filled with acid and ready for use.

If the batteries are dry, before mounting them on the machine, proceed as follows:

- ◆ remove the caps and fill all elements with specific sulphuric acid solution until the plates are entirely covered (this requires at least a couple of passes for each element);
- ◆ leave for 4-5 hours to allow the air bubbles to come to the surface and the plates to absorb the electrolyte;
- ◆ make sure the level of electrolyte is still above the plates and if necessary top up with sulphuric acid solution;
- ◆ close the caps;
- ◆ mount the batteries on the machine (following the procedure described below).
- ◆ Before starting up the machine for the first time, charge the batteries as follows.

#### 5.4.2 Batteries: installation and connection

### **! DANGER**

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

**Make sure you connect the terminals marked with a “+” to the positive poles of the battery. Do not check the battery charge by sparking.**

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

- 1) Ensure that each electrode terminal "+", "-" mark is connected properly when installation. Don't check the battery charging in the electrical environment.
- 2) Ensure the weight of the storage batter must be suitable for your machine, the diameters of the positive pole and negative pole are different. Put the cable regularly long the recess of the top of the battery, and connect the terminal to the electrode of the battery.
- 3) Connect the battery cable and tight the connector with proper spanner and cover the battery pole with Vaseline. Connect the battery joints to the machine.
- 4) Using the proper equipment to lift and mount the battery.

### **! IMPORTANT**

**Using the proper equipment to lift and mount the battery.**

### 5.4.3 Batteries: removal

#### ! DANGER

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

Proceed as follows:

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

### 5.5 The battery charger

#### ! IMPORTANT

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

#### 5.5.1 Choosing the battery charger

Make sure the battery charge is compatible with the batteries to be charged ;

- **tubular lead batteries** : an 36V-40A automatic charger is recommended. Consult the battery charger manufacturer and manual to confirm the choice.
- **gel batteries** : use a charger specific for this type of battery.

#### 5.5.2 Preparing the battery charger

The on-board charger applies to lead-acid battery.

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

To install the connector, proceed as follows:

- ◆ remove about 13 mm of protective sheath from the red and black wires of the battery charger;
- ◆ insert the wires into the connector contacts and squeeze them forcefully with suitable pliers;
- ◆ respect the polarity (red wire + black wire -) when inserting the wires into the connector.

## 5.6 Lifting and transporting the machine

### ! IMPORTANT

All phases must be performed in an adequately lit room and adopting the safety measures most appropriate to the situation.

The operator must always use personal protection devices.

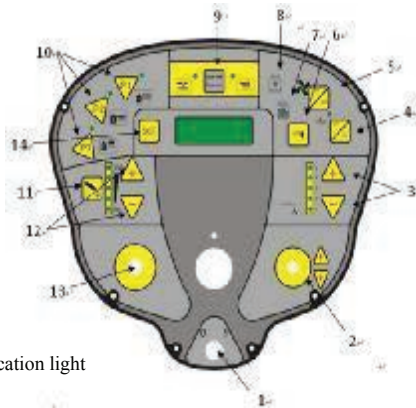
To load the machine onto a means of transport, proceed as follows:

- ◆ empty the recovery and solution tanks ;
- ◆ remove the squeegee and brushes (or abrasive disks) ;
- ◆ remove the batteries ;
- ◆ lace the machine on the pallet and fix it with plastic straps or metal brackets ;
- ◆ lift the pallet (with the machine ) using a fork lift truck and load it onto the means of transport ;
- ◆ anchor the machine to the means of transport with cables connected to the pallet and machine itself.

## 6. PRACTICAL GUIDE FOR THE OPERATOR

### 6.1. Control Panel Description

- 1=Main Switch
- 2=Forward/back switch
- 3=Water flower adjust button
- 4=Brush motor on/off button
- 5=Vacuum Motor on/off button
- 6=Horn button
- 7=Recovery tank full indication light
- 8=Solution tank empty indication light
- 9=Automatic brush load/unloaded button
- 10=Working program choose button and indication light
- 11=Detergent inject button
- 12=Detergent flow regulation button
- 13=Emergency stop button



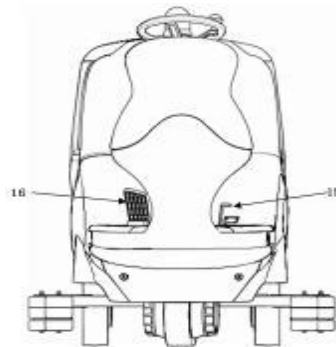
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14=The display switching key

15=Braking and parking

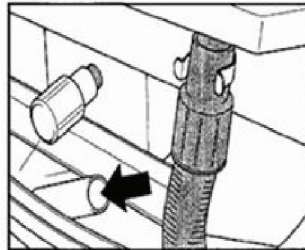
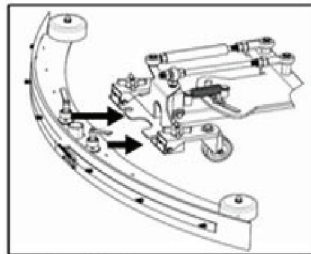
16=Acceleration pedal



### 6.2 Install the Squeegee

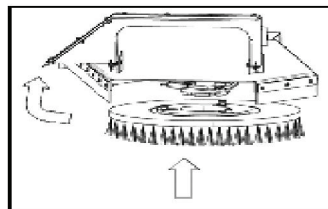
Take apart the packing of the squeegee, and install it on the slots on the support showed on the drawing. Insert the sleeve of the suction hose fully into the squeegee.

The squeegee blades scrape the film of water and detergent from the floor and prepare the way for perfect drying. With time, the constant rubbing makes the edge of the blade in contact with the floor rounded and cracked, reducing the drying efficiency, then it need to change the rubber. The state of wear should be checked frequently. Check the if the exhaust inlet is blocked. Clean the rubbish inside. There are 2 adjusting mode, angel and pressure, to meet the different kind ground.



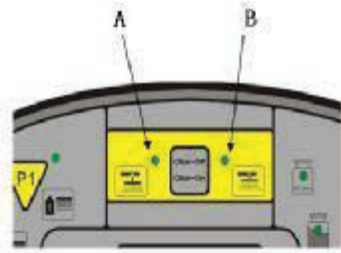
### 6.3 Install the brush

Take off the side skirt on the both sides of the machine. Push the brush below the plate. Ensure the brush against the flange aligning (As the right drawing).



Insert the key switch, turn clockwise to start the machine and wait for the display to show the Voltage.

Press the "8" button, the machine carry out unloading the brush first( light A flickers), and then can start loading the brush function (light B flickers).



At this time, the machine has prepared to

load the brush. Only need to press "8" button again, the light B will flicker all the time till finishing the loading.

#### 6.4 Detergents – Instructions

##### ! IMPORTANT

**Always dilute the detergent according to the manufacturer's instruction. Do not use sodium hypochlorite (bleach) or other oxidants, particularly in strong concentrations. Do not use solvents or hydrocarbons. The temperature of the water and detergent must not exceed the maximum indicated in the technical specification. They must be free of sand and / or other impurities.**

The machine has been designed for use with low-foam biodegradable detergents made specifically for scrubber driers.

For a complete and up-to-date list of the detergents and chemicals available, contact the Manufacturer.

Use products suitable for the floor and dirt to be removed only.

Follow the safety regulations on use of detergents given in the section "Safety regulations".

#### 6.5 Preparing the machine for work

##### ! IMPORTANT

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

- ✧ Add an appropriate proportion of clean water and detergents to solution tank.
- ✧ Insert the key switch, turn clockwise. The display will show the revision of the machine for 5

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seconds, then show the battery voltage and working hours.

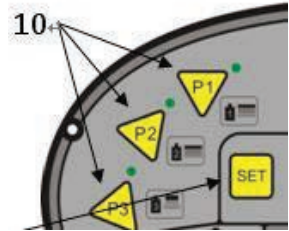
Note: If restart the machine after turn off it, it at least need to wait for 5 seconds.

Otherwise the machine will not start.

- ✧ Check the batter power through the display
- ✧ The display can show 3 kinds of information: Voltage, working hours and error information
- ✧ Voltmeter comes with a locking feature. When the battery power is not enough, voltage reduces to 29V ( the display will show the power is low and then show the battery is dead ), the machine will stop all the functions except for driving. Please charge the battery at once.

### 6.6 Using the automatic mode of the machine

- ✧ There're 3 different kinds automatic working mode to choose P1-P2-P3.
- ✧ The parameters for each automatic work mode.
- ✧ has been completed by the manufacturers. Please choose the most suitable mode for your working environment from the three.
- ✧ When the button is pressed, the relevant light will shine, and all the pre-set function will start automatically.
- ✧ Note: Only cancel the mode chosen before, then you can rechoose another mode. The function of the 3 kinds automatic working mode will be introduced in the flowing sections.



## ! INFORMATION

**If you are using the machine for the first time, we recommend trying it on a large obstacle-free surface first to acquire the necessary familiarity.**

**Always empty the collection tank before filling the solution tank again.**

### **Description for the automatic working mode p1-p2-p3**

Note: The content described in this section is suitable for all types in this manual.

P1 is suitable for lighter work, cleaning the flat ground and not dirty

P2 is suitable for moderate work, cleaning the flat and dirty ground

P3 is suitable for heavy work, cleaning the dirty and hard ground



**Using method**

After choosing one working mode, press the related button, choose forward through the direction switch on the control panel and step the throttle to start work.

Note: If you release the throttle or the throttle placed in the median, about 5 seconds later, all the function of the machine will stop automatically(automatic stop function). At this time, the indication light of your chose mode will flicker. If you want to revive those functions, only need to step the throttle and let the machine keeping on forwarding, while not need to cancel and restart the chosen mode(automatic start function).

**! INFORMATION**

**There's one safety sensors under the seat so only when the operator is seated, then the machine can be started. Conversely, when the operator leave the seat, the machine will stop forward or back.**

Note: If you choose the machine back during working, then the machine will lift the squeegee automatically and only the squeegee lifted then the machine will be back. There's buzzer remind when the machine is back(Other functions keep on activated).

When the throttle is released, the machine will stop automatically. If it is necessary, can step the parking pedal.

The machine is with an emergency stop button. When press the button, the machine will stop forward or back automatically, and the other functions will also stop automatically.

If you want to re-activate the machine, must press the emergency stop button again. If you want to recover working, must re-choose the working mode.

Finish the cleaning work, must empty the dirty water in the recovery tank.

There's a floating wave switch inside the recovery tank. When it is full, the floating wave switch will be touched, and the machine will stop the suction motor automatically. At the same time, the related light will be bright on the dash board.

**Water supply stop**

When the water level is low in the solution tank, an intermittent tone will sound (3 times), the display will show "WATER LOW". About 1 minute later, the tone will sound again, the display will show "NO WATER", brush motor and water supply will stop at the same time.

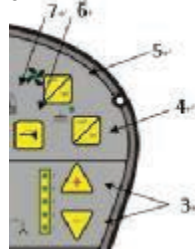
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Turn off the machine, the sound will stop. Please water the solution tank.

### 6.7 Using the manual mode of the machine

If use the manual mode, then don't need to choose any kind automatic working mode(P1, P2, P3). Can use the manual mode to operate per the button showed by the drawing.



Button 5: Vacuum Motor

Button 4: Brush Motor

Button 3: Water level adjust

### 6.8 Automatic working mode programming

When display the battery voltage during the boot process, press and hold the programming button for 5 seconds to enter the programming interface.

To be programmed in the following sequence:

- 1、 **LANGUAGE:** Can be changed by - and +. Press the programming button, it will store your set automatically and enter into next programming interface.
- 2、 **P1 BRUSH ENABLE:** Can be changed by - and +. Press the programming button, it will store your set automatically and enter into next programming interface.
- 3、 **P1 BRUSH WORKING PRESSURE:** From 010 to 100, can be changed by - and +. Press the programming button, it will store your set automatically and enter into next programming interface.
- 4、 **P1 SUCTION ENABLE:** Can be changed by - and +. Press the programming button, it will store your set automatically and enter into next programming interface.
- 5、 **P1 WATER DELIVERY:** Can be set as below
  - OFF:** Not supply water
  - LEV.1:** water flow is 18%
  - LEV.2:** water flow is 36%
  - LEV.3:** water flow is 45%
  - LEV.4:** water flow is 60%
  - LEV.5:** water flow is 70%

LEV.6: water flow is 100%

**AUTO:** Adjust automatically by the speed of the machine running

When the running speed lower than 16%, the water flow is 18%.

When the running speed between 16% and 32%, the water flow is 36%.

When the running speed between 32% and 50%, the water flow is 45%.

When the running speed between 50% and 65%, the water flow is 60%.

When the running speed between 65% and 80%, the water flow is 75%.

When the running speed more than 80%, the water flow is 100%.

The number Can be changed by - and +. Press the programming button, it will store your set automatically and enter into next programming interface.

- 6、 **P1** Work speed: From 010 to 100, can be changed by - and +. Press the programming button, it will store your set automatically and enter into next programming interface.
- 7、 **POWER OFF** enable: If it is set on, when the machine stop running, brush and suction will stop automatically. If it is set off, when the machine stop running, brush and suction will not stop automatically. The default setting is on. It can be changed by - and +. Press the programming button, it will store your set automatically and enter into next programming interface.

The set of P2 and P3 is same as above.

### **! IMPORTANT**

**Each time you fill the solution tank, always empty the collection tank.**

### **! DANGER**

**Use suitable personal protection devices.**

When the collection tank is full, the level indicator comes on and after a few seconds the suction motor is turned off, you must stop working and empty the tank.

#### **6.9 Emptying the solution tank and recovery tank**

##### **Empty recovery tank**

- 1) Drive the scrubber to the place for water let out.

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- 2) Stop all the functions of the machine
- 3) Empty the recovery tank through the hose, then rinse the tank with clean water.

### **Empty solution tank**

- 1) Proceed as described in points 1 to 2.
- 2) Open the drain hose of the solution tank to empty it.

## **7. PERIODS OF INACTIVITY**

If the machine is not used for some time, remove the squeegee and brushes (or abrasive disks), wash them and put them away in a dry place (preferably in a bag or wrapped in plastic film) away from dust.

Make sure the tanks are completely empty and perfectly clean.

Completely recharge the batteries before storing them. During long periods of inactivity, you should charge the batteries regularly (at least once every two months) to keep them constantly at maximum charge.

### **! IMPORTANT**

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

## **8. BATTERY MAINTENANCE AND CHARGING**

### **Checking and charger for the storage battery**

Periodically check the battery fluid water level of the battery. The batter seat is under the driving seat. Open the cover of the battery, if the water level is not enough, please add distilled water. The vitriol only can be used in the first time for the dry battery to add battery water.

### **! DANGER**

**The battery water is corrosive, if accidentally come into contact with the skin or eyes, immediately wash with plenty of water, and examined by a doctor.**

After finishing adding the battery water, cover the battery cap and clean the surface.

Charging procedures in accordance with the following guidelines:

- Charger should be in the Ventilated environment.
- Stop the machine with the key switch.

- Open the seat, disconnect the battery and machine connection, open the battery cover.
- Connect the battery and charger.
- Connect the charger to the external AC power supply( The parameter of the AC power should be same as the charger).

Finish charging, disconnect the battery and charger, and re-connect the battery to the machine. Cover the battery cap, clean the surface to clear the remaining acid liquor.

**Note:** In a word, please operate it per the battery manual.

### 9. ROUTINE MAINTENANCE SCHEDULE

Warning: Must turn off the power and pull up the key during maintenance and repairing .

The maintenance or repairing must be done by the professional person or the authorized service center.

Note: The battery life depends on the daily maintenance (battery water’s concentration and level).

If the machine is used for a long time (such as 4 weeks to 6 weeks), then must charger it, to avoid the battery voltage reduce to the limited 29V.

If the battery is not used for a long time, the voltage will reduce even damaged.

Checking	ON DELIVER	WHEN NECESSARY	Every 30 hours	Every 100 hours	Every 500 hours
Battery water level & voltage	•		•		
Check the motor carbon brush					•
Brake adjusting				•	
Screw nut reinforcement				•	
Brush wear				•	
Clean the filter			•		
Clean the rubbish tank		•			
Chain refueling				•	

## 10. SECURITY FUNCTION AND BREAKDOWN SOLUTION

The machine is configured some security functions.

The display can show the error code of the machine to help you find the faults and solutions.

No.	Error code	Faults description	Solutions
1	0003	Find one controller error	Disconnect the battery, wait for 30 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
2	0100	Find one controller error	Disconnect the battery, wait for 31 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
3	0201	Find one controller error	Disconnect the battery, wait for 32 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
4	0706	The switch wire input find an error.	Membrane switch panel and the water tank level signal wiring. Check the pollution joint Check the brush location
5	0811	Find one throttle error	Check the throttle line shorted or open, repair or replacement. If the error is still exist, disconnect the battery, wait for 30 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.

6	0812	Find one throttle error	Check the throttle line shorted or open, repair or replacement. If the error is still exist, disconnect the battery, wait for 31 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
7	0813	Find one throttle error	Check the throttle line shorted or open, repair or replacement. If the error is still exist, disconnect the battery, wait for 32 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
8	0814	Find one throttle error	Check the throttle line shorted or open, repair or replacement. If the error is still exist, disconnect the battery, wait for 33 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
9	0815	Find one throttle error	Check the throttle line shorted or open, repair or replacement. If the error is still exist, disconnect the battery, wait for 34 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.

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10	0816	Find one throttle error	Check the throttle line shorted or open, repair or replacement. If the error is still exist, disconnect the battery, wait for 35 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
11	0817	Find one throttle error	Check the throttle line shorted or open, repair or replacement. If the error is still exist, disconnect the battery, wait for 36 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
12	0818	Both the Trio+ and LCD modules find 2 active throttle signal	Check foreign objects on the LCD / pollution 3-way connector
13	0A01	Find the electricity disappear	Check the battery connect. Recovery power.
14	0B02	Find one possible controller error	Disconnect the battery, wait for 30 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
15	0B0B	Find one possible controller error	Disconnect the battery, wait for 31 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
16	1311	Find over current on the brush actuator, assist 1, peak flow is more than 21A	Check if the brush is locked or damaged, and check the circuit, and then power it circularly.



17	1312	Find over current on the squeegee actuator, assist 2, peak flow is more than 21A	Check if the squeegee is locked or damaged, and check the circuit, and then power it circularly.
18	1313	Find over current on the liquid pump , assist 3	It may relay to a wrong pump or some related wire. Check if it is blocked or there's barrier inside the pipe.
19	1314	Find over current on the valve, assist 4	It may relay to a wrong pump or some related wire. Check if it is blocked or there's barrier inside the pipe.
20	1318	Find over current on the warning index	Check the error indication or some other related wire.
21	131C	Find over current on the alarm circuit outlet	Such auxiliary output signal, operating a more than 2 amps alarm. Checking device if has a problem, or interconnected wires.
22	1321	Find over current on the brush actuator, assist 1	Over 1 second, find the brush actuator over 12A. Check if the brush is locked or damaged. And check the related wire.
23	1322	Find over current on the squeegee actuator, assist 2	Over 1 second, find the squeegee actuator over 12A. Check if the squeegee is locked or damaged. And check the related wire.
24	1331	Find over current on the inside traction relay	Check the short circuit part on the traction line. If the problem still exist, please change the controller.
25	1332	Find over current on the inside auxiliary relay	Check all the short circuit auxiliary wiring. If the problem still exist, please change the controller.

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26	1411	Brush drive, assist 1, find have reduced to +ve	Check if there's pollutant on the drive connector. Check the short circuit wiring harness.
27	1412	Brush drive, assist 1, find have reduced to +0V	Check if there's pollutant on the drive connector. Check the short circuit wiring harness.
28	1413	Squeegee drive, assist 2, find have reduced to +ve	Check if there's pollutant on the drive connector. Check the short circuit wiring harness.
29	1414	Squeegee drive, assist 2, find have reduced to +0V	Check if there's pollutant on the drive connector. Check the short circuit wiring harness.
30	1500	Find An electromagnetic brake error.	Check the circuit connected to the electromagnetic brake. Repair or change it.
31	1507	Find over current on the electromagnetic brake.	Check the circuit connected to the electromagnetic brake. Repair or change it.
32	1600	Find the battery voltage is too high	Check if the battery is overcharged or damaged. Check all battery wiring and connections are correct. If connected to the charger, please disconnect it.
33	1704	Find one controller error	Disconnect the battery, wait for 30 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
34	1705	Find one controller error. The traction relay check fails.	Disconnect the battery, wait for 30 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.

35	1706	Find one controller error. The brush and vacuum relay check fail.	Disconnect the battery, wait for 31 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
36	1800	Find one controller error.	Disconnect the battery, wait for 32 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
37	1802	Find one controller error.	Disconnect the battery, wait for 33 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
38	1B20	Find one controller error.	Disconnect the battery, wait for 34 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
39	1B21	Find one controller error.	Check if the squeegee is locked or damaged. And check the related wire, then power it circularly.
40	1D02	The controller has been successfully reprogrammed	Power cycle recovery operations.
41	1E03	A suppressor is activated	Repair led to all cases of the suppression signal. This may be associated with recovery tank filled switch or solution tank emptied switch.
42	1E04	A suppressor is activated	Repair led to all cases of the suppression signal. This may be associated with recovery tank filled switch or solution tank emptied switch.

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43	1E06	Find an active suppression, or there is an error.	Repair led to all cases of the suppression signal. This may be associated with recovery tank filled switch or solution tank emptied switch.
44	2102	Find one controller error.	Disconnect the battery, wait for 34 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
45	2103	Find one controller error.	Disconnect the battery, wait for 35 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
46	2C00	Find the battery voltage is too low. The threshold for this test is 16 V.	Check the battery status and verify that the wiring is correct. Charge the battery.
47	2C01	Find the battery voltage is too low. The threshold for this test is 14 V.	Check the battery status and verify that the wiring is correct. Charge the battery.
48	2C02	Find the battery voltage is too low. Battery lock function is activated	Check the battery status and verify that the wiring is correct. Charge the battery.
49	2F01	Find the throttle is transferred at starting	power cycling confirm the throttle is in the middle.
50	3100	Find one controller error.	Disconnect the battery, wait for 35 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.

51	3101	Find one controller error.	Disconnect the battery, wait for 36 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
52	3102	Find one controller error.	Disconnect the battery, wait for 37 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
53	3104	Find one controller error.	Disconnect the battery, wait for 38 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
54	3200	Find one controller error.	Disconnect the battery, wait for 39 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
55	3201	Find one controller error.	Disconnect the battery, wait for 40 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
56	3210	Find one controller error.	Disconnect the battery, wait for 41 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
57	3211	Find one controller error.	Disconnect the battery, wait for 42 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.

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58	3213	Find one controller error.	Disconnect the battery, wait for 43 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
59	3214	Find one controller error.	Disconnect the battery, wait for 44 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
60	3601	Find one controller error.	Disconnect the battery, wait for 45 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
61	3602	Find one controller error.	Disconnect the battery, wait for 46 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
62	3603	Find one controller error.	Disconnect the battery, wait for 47 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
63	3608	Find one controller error.	Disconnect the battery, wait for 48 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
64	3609	Find one controller error.	Disconnect the battery, wait for 49 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.

65	360A	Find one controller error.	Disconnect the battery, wait for 50 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
66	360B	Find one controller error.	Disconnect the battery, wait for 51 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
67	360C	Find one controller error.	Disconnect the battery, wait for 52 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
68	360D	Find one controller error.	Disconnect the battery, wait for 53 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
69	360E	Find one controller error.	Disconnect the battery, wait for 54 seconds, and then re-connect the power and turn on the switch. If the error is still exist, please change the controller.
70	3A00	Parameter is set to an illegal value	The default factory program controller parameter document and power cycling
71	7000	The machine free wheel switch is activated	Check the free wheel switch and related wiring.
72	7001	Free wheel switch is activated and driving	Check the free wheel switch and related wiring.

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73	7500	Communication of Trio+ and LCD module timed	<p>Check the wire connect to the Trio+ and LCD module.</p> <p>If the problem still exist, please change the Trio+ and LCD module.</p>
74	7600	Find the brush motor turnoff	<p>Check the connect and wiring of the brush motor.</p> <p>Check the motor carbon.</p>
75	7601	Find the brush current excessive	<p>Check if the brush motor rotate freely.</p> <p>Check the Welt and Bent Axis Of the brush motor.</p> <p>Check if the operation deck need promotion and demotion.</p>
76	7602	Find the brush current excessive	<p>Check if the brush is abroad.</p> <p>Check if the brush motor rotate freely.</p> <p>Check the Welt and Bent Axis Of the brush motor.</p> <p>Check if the operation deck need promotion and demotion.</p>
77	7603	Find the brush current excessive	<p>Check if the brush is abroad.</p> <p>Check if the brush motor rotate freely.</p> <p>Check the Welt and Bent Axis Of the brush motor.</p> <p>Check if the operation deck need promotion and demotion</p>
78	7604	Inhibit two active may inhibit the brush	<p>This is an warning to indicate one inhibition is activated. Check the location and wiring inhibit switch.</p>



79	7605	Find the brush current excessive When starting	Check if the brush motor rotate freely. Check the Welt and Bent Axis Of the brush motor. Check if the operation deck need promotion and demotion.
80	7700	Find the vacuum motor turnoff	Check properly inserted into the connector is vacuum motor. Check the continuity of the vacuum motor and line. Check the motor carbon brush.
81	7701	Find vacuum current excessive	Check if the vacuum motor is blocked. Check if the vacuum motor rotate freely. Check the Welt and Bent Axis Of the vacuum motor.
82	7702	Find vacuum current excessive	Check if the vacuum motor is blocked. Check if the vacuum motor rotate freely.
83	7703	Find vacuum current excessive	Check if the vacuum motor is blocked. Check if the vacuum motor rotate freely.
84	7800	Find the traction motor current excessive when starting	Check the traction motor's connect.
85	7801	Find the traction current excessive	Check the traction motor and short circuited line.
86	7802	Traction motor output fold back	Confirm the vehicle not overload, or high slope. Check if the traction motor is blocked. Check if the traction motor rotate freely. Check the Welt and Bent Axis Of the traction motor.

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87	7803	The relevant internal signals with the traction motor become unreliable. May be due to noise.	Check the connection of the traction motor. If the problem still exist, please change the controller.
88	7880	Traction speed control switch input doesn't have the expected level.	Check the wiring traction speed selector switch.
89	7900	Emergency stop input activated	Check the connection emergency stop switch.
90	7901	Summon up button is activated	Check the summon up button switch connection.

## 11. EQUIPEMENT PARAMETER

<b>Technical Data</b>	<b>NR-41</b>
<b>Length</b>	<b>1850mm</b>
<b>Width</b>	<b>950mm</b>
<b>Height</b>	<b>1360mm</b>
<b>Recovery tank capacity</b>	<b>180L</b>
<b>Solution tank capacity</b>	<b>155L</b>
<b>Drivesystem</b>	<b>Before driving</b>
<b>Productivity rate</b>	<b>6500 m<sup>2</sup>/h</b>
<b>Cleaning Path width</b>	<b>950mm</b>
<b>Squeegee Width</b>	<b>1280mm</b>
<b>BrushMotor</b>	<b>0.75HP 36VDC</b>
<b>Vacuum Motor</b>	<b>0.64KW 36VDC</b>
<b>Traction Motor</b>	<b>0.56KW 36VDC</b>
<b>Recommended battery</b>	<b>305AH-420AH</b>
<b>Run Time Per Charge</b>	<b>6h-8h</b>
<b>Grade level, Max</b>	<b>16%</b>
<b>Voltage DC</b>	<b>36V</b>
<b>Weight (without battery)</b>	<b>345</b>