

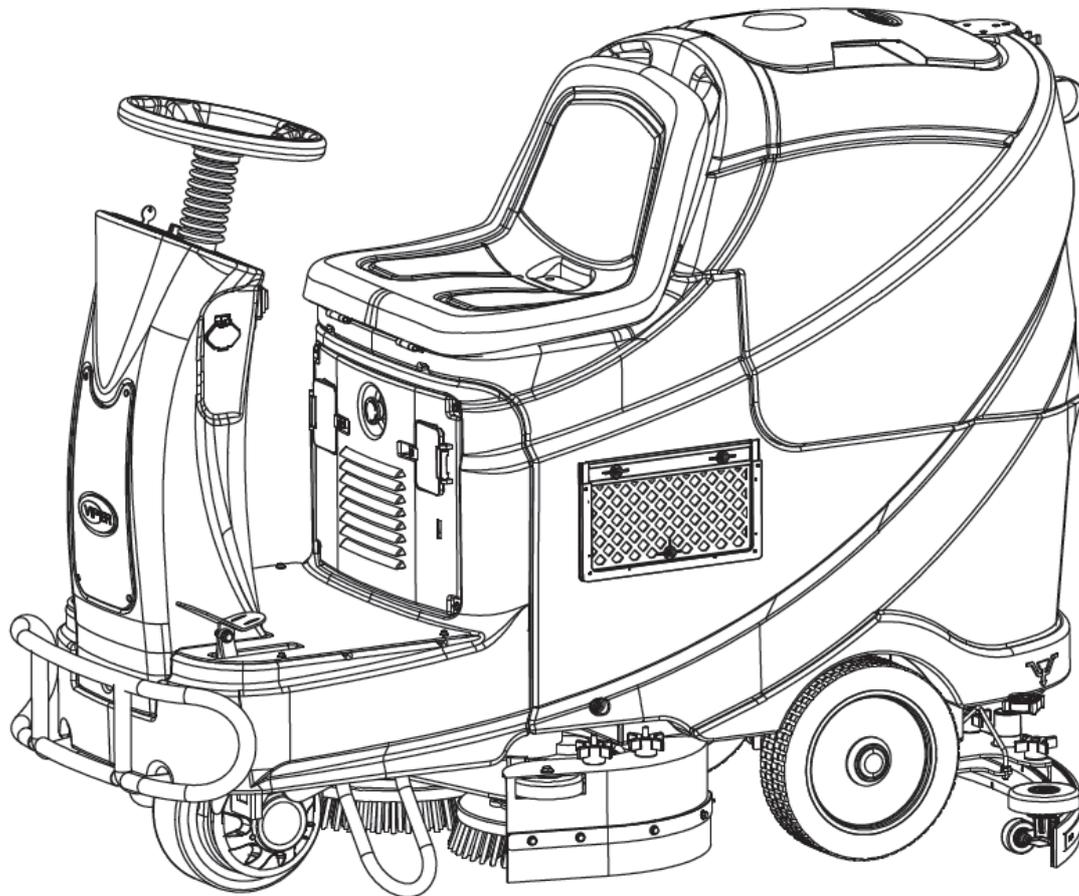


Ride-on Scrubbers

USER MANUAL

READ USER MANUAL CAREFULLY BEFORE USE

Please fill out & return your warranty card



Model # _____

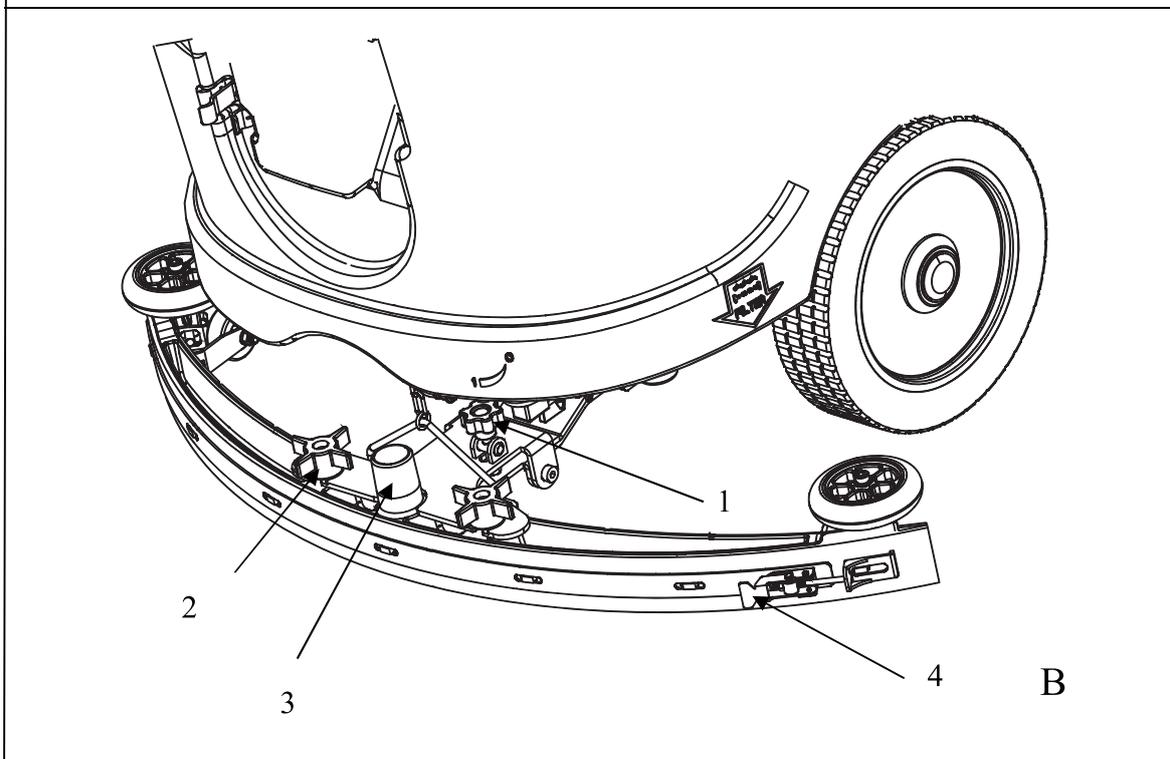
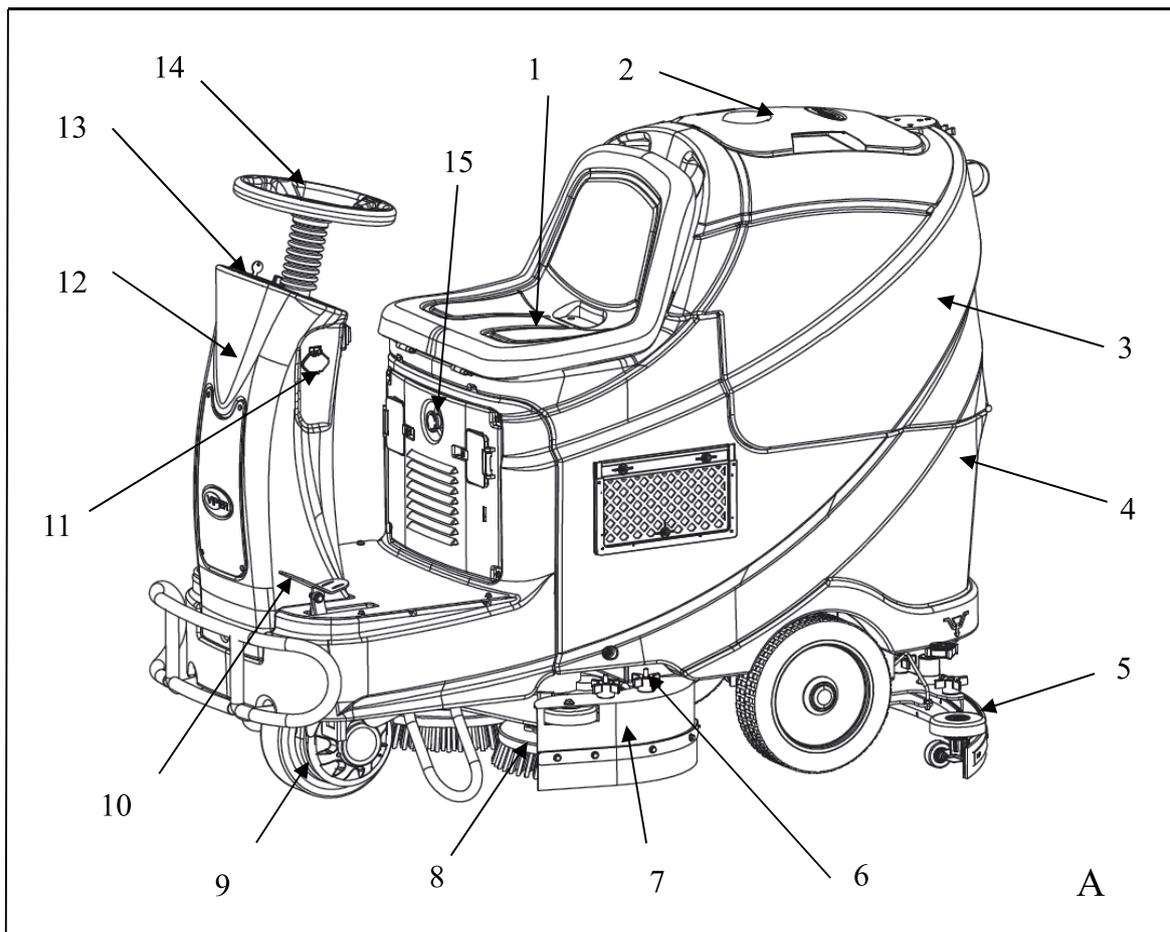
Serial No.# _____

VIPER INDUSTRIAL ESTATE
LIANG BIAN, LIAO BU
DONGGUAN, GUANGDONG
CHINA

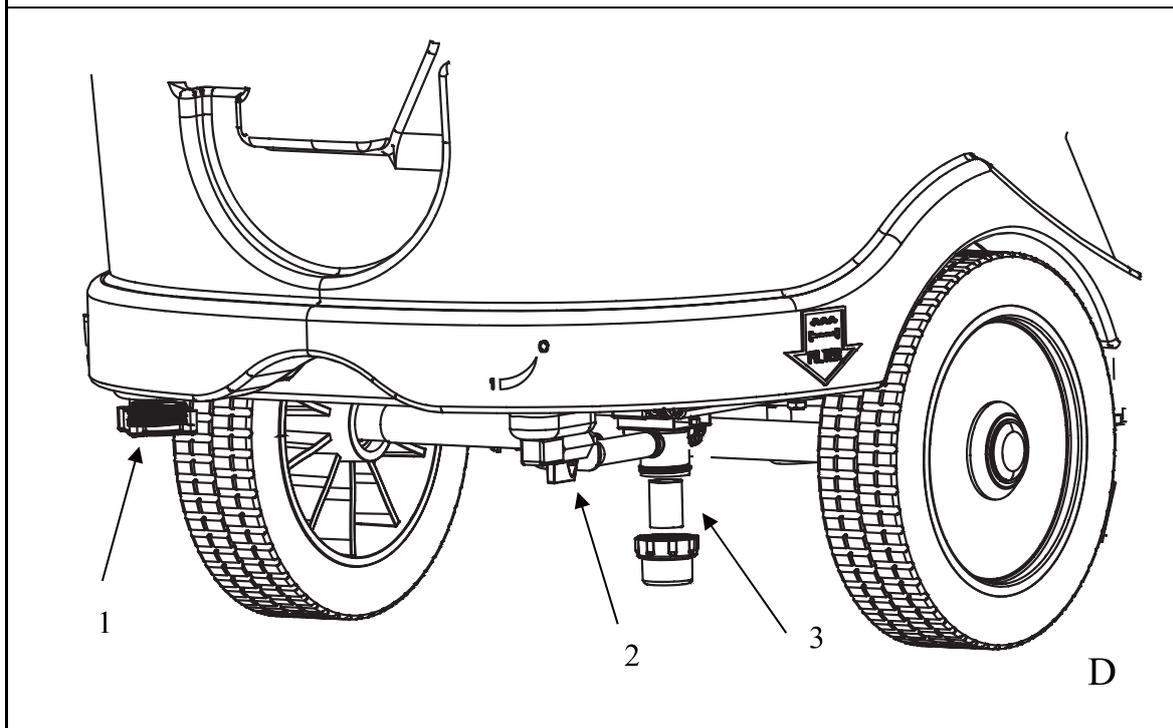
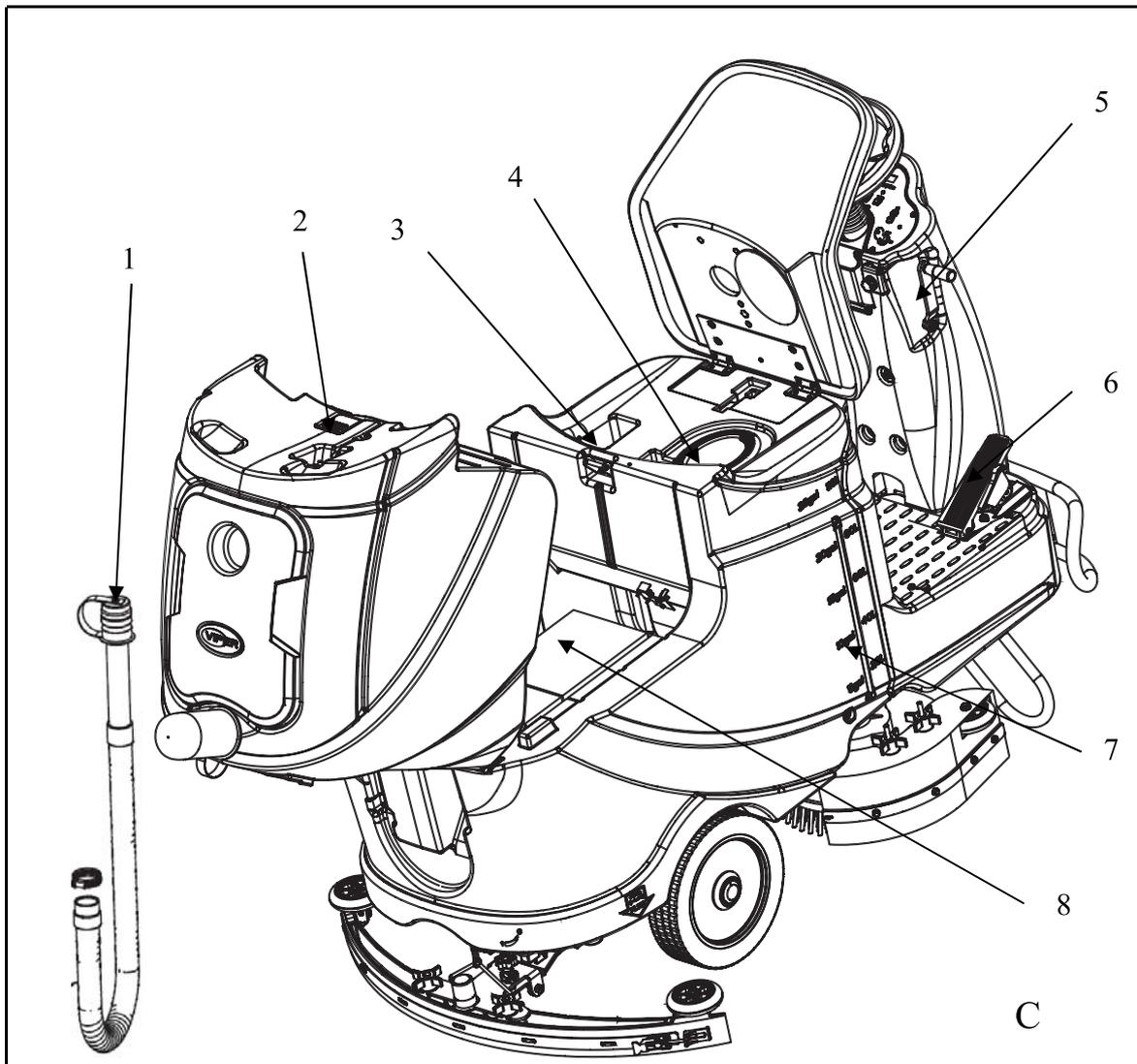
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VIPER...exceptional value
VR10029 REV.01
2014-12-30

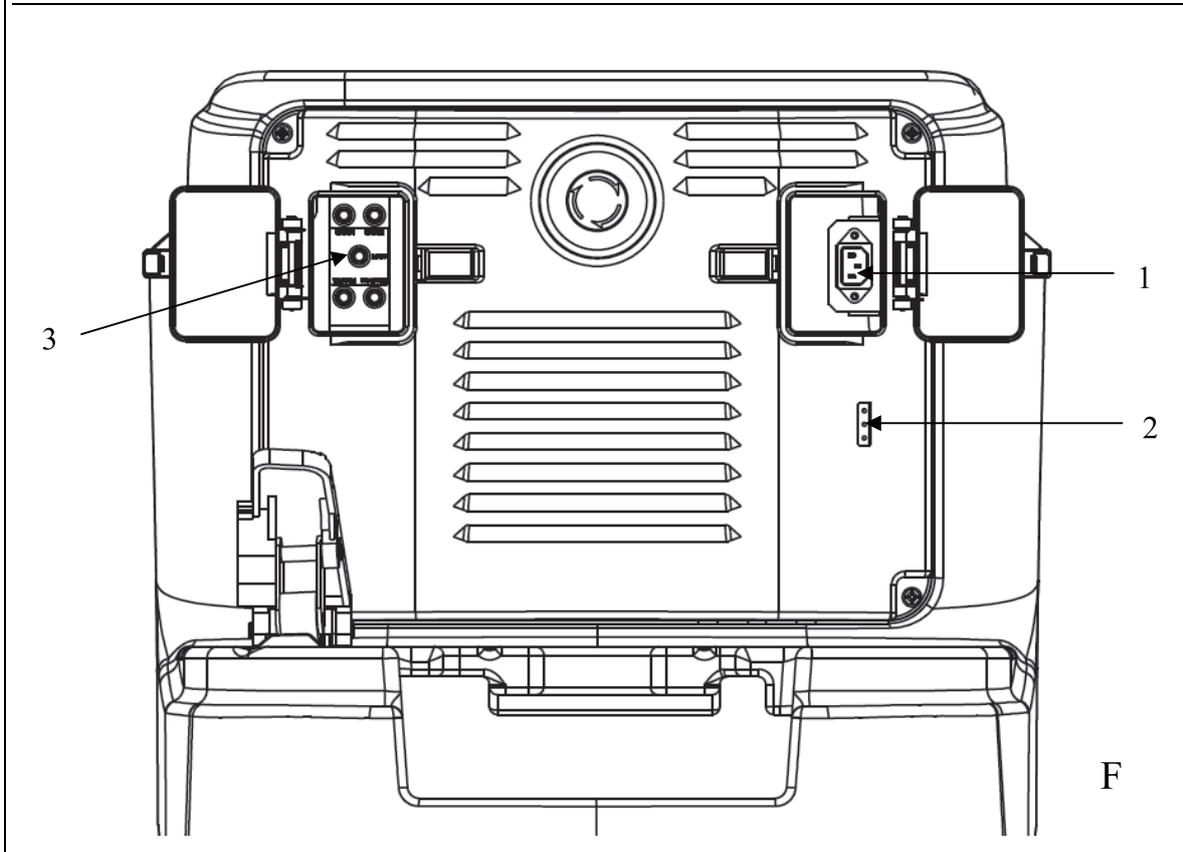
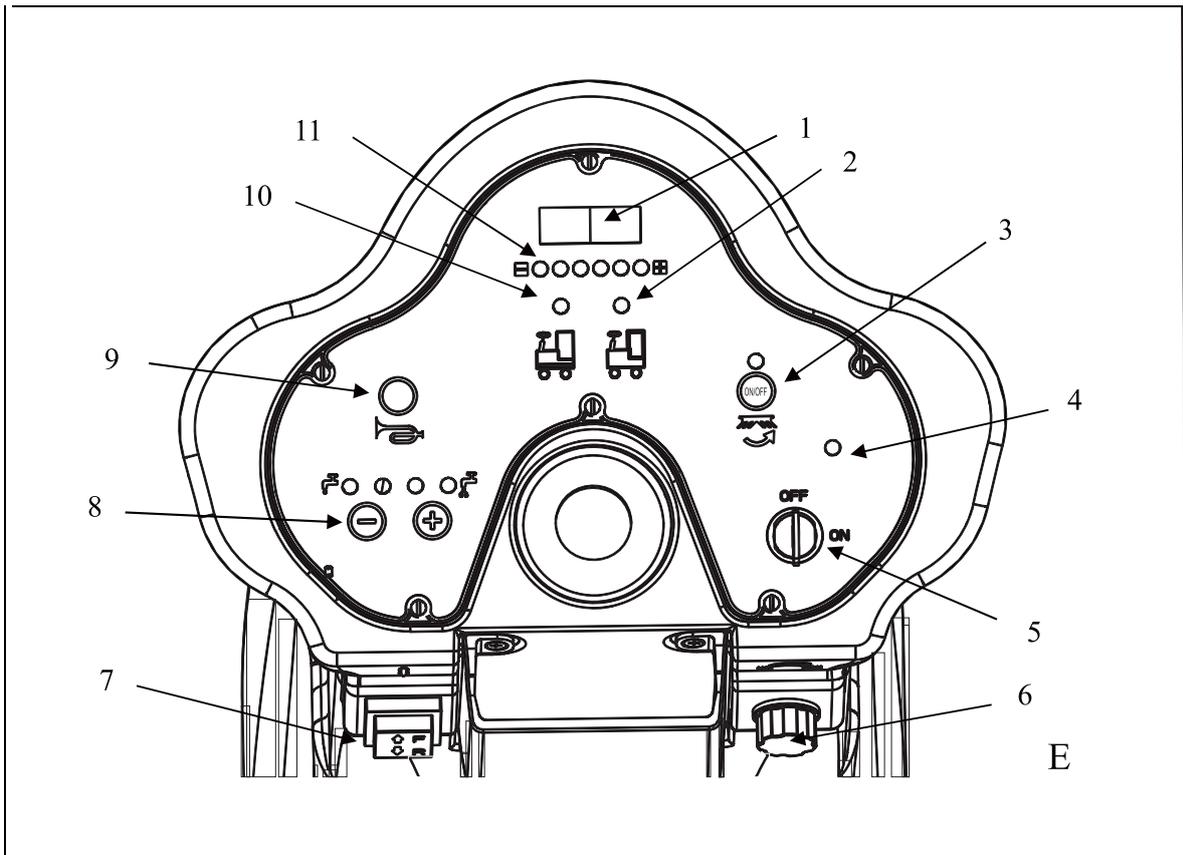
USER MANUAL



USER MANUAL



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USER MANUAL



SAFETY PRECAUTIONS

This machine is intended for commercial use. It is constructed for use in an indoor environment and is not intended for any other use. Use only with recommended accessories.

All operators shall read, understand and exercise the following safety precautions:

1) DO NOT OPERATE MACHINE:

- Unless trained and authorized.
- Unless you have read and understand the user manual.
- In flammable or explosive areas.
- If not in proper operating condition.
- In outdoor areas.

2) BEFORE OPERATING MACHINE:

- Make sure all safety devices are in place and operate properly.

3) WHEN USING MACHINE:

- Go slow on inclines and slippery surfaces.
- Follow all safety guidelines.
- Be very careful when using the machine in reverse.
- Report and repair any damage to machine prior to operating it.

4) BEFORE LEAVING OR SERVICING MACHINE:

- Never park the machine on a slope.
- Turn machine off.

5) WHEN SERVICING MACHINE:

- Read user manual thoroughly prior to operating or servicing this machine.
- Use manufacturer supplied or approved replacement parts.
- Use approved jack or hoist to safely elevate the machine.
- Disconnect batteries prior to working on machine.
- Wear gloves when handling batteries or battery cables.
- Avoid moving parts. Do not wear loose fitting clothing while servicing machine.

6) SAFETY DEVICES

- Emergency-stop button(A15)
The machine comes to a sudden halt including all functions and no display can be seen on the control panel (A13) when you press the emergency-stop button.
- Safety button (A1).
Switch off the drive motor after a 0.5 second delay, if the operator leaves the operator seat during operation or while moving. The LED screen displays STOP.

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Batteries emit hydrogen. Explosion or fire can result from hydrogen. Keep sparks and open flames away! It is recommended to push the button (C2) to turn recovery tank open before charging.



Flammable materials can cause an explosion or fire. Do not use flammable materials in tanks.



Flammable materials or reactive metals can cause an explosion or fire. Do not pick up by hand.



WARNING It indicates a potential risk of injury or dangerous situation with risk of death for the operator.



NOTED It indicates a remark related to important reminding or useful functions.

MACHINE SET UP & INSTALLATION

UNPACKING MACHINE

Be sure and check packing carton for any damage. Report immediately any damage to carrier. Check contents of package to ensure that the following items are included:

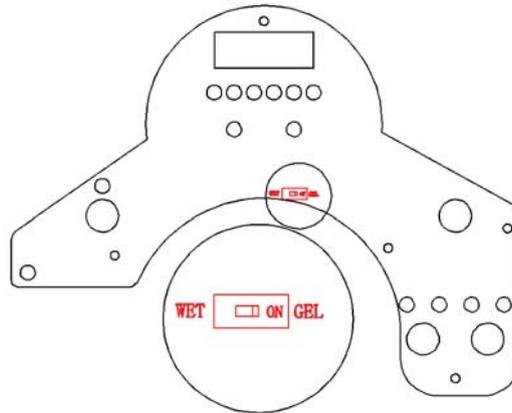
- 1, Machine
- 2, Squeegee assembly
- 3, Brush assembly(x2)
- 4, User manual
- 5, Battery charger (If equipped)
- 6, Batteries (x4) (If equipped)
- 7, Connecting wire for battery and charger (If equipped)
- 8, Warning lamp (If equipped)
- 9, Bumper bracket (If equipped)

BATTERY CONNECTIONS

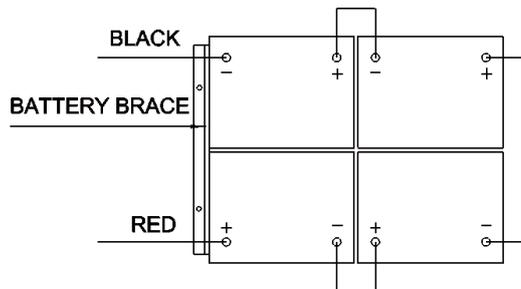
1. Turn off the key switch (E5).
2. Turn the seat (A1) open, push board (C2) and turn recovery tank (A3) open. If machine does not include batteries. Fit batteries suitable to your requirements.

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After selecting batteries, please choose WET or GEL mode with toggle switch on the back of PCB, as shown in the figure below.



3. Carefully place the four batteries into the compartment as shown in figure below. Place the battery brace at the front of the four batteries.
4. Connect battery cables to posts in numbered order as shown in the figure below.



5. Apply a coat or protective spray on the cable connections to prevent battery corrosion.
6. Cover recovery tank and seat.



Make sure the recovery tank is empty when turn it.



Do not drop batteries into compartment. Do not put metal on the batteries.



Never connect + to +, or - to - , never connect + to - with single battery, when disassembling or installing the batteries.

MACHINE SET UP

PRE-OPERATION CHECKS

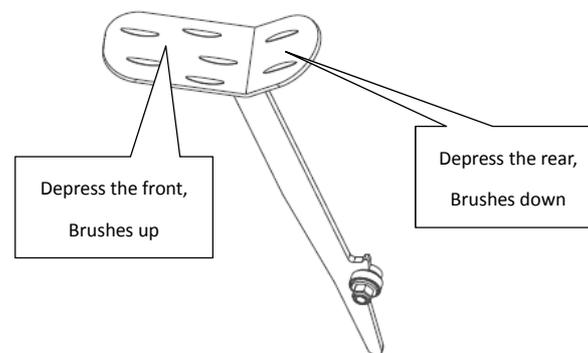
1. Sweep or dust mop the surface to be cleaned.
2. Check battery meter to make sure batteries are fully charged. (see BATTERY CHARGING)
3. Check that brush / pad is properly installed.
4. Check that squeegee is properly installed.
5. Check the speed driver (A9) is work normally.
6. Make sure the recovery tank is empty. If not, drain it.

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7. Make sure solution tank water indicator (E10) is not on. If on, fill water in solution tank (A4).
8. Check that the water valve (D2) is not indicated "0".

INSTALLING PAD DRIVER OR BRUSH

1. Ensure that the machine is turned off (E5).
2. Raise the brush head (A7) off the floor by trampling the front of foot pedal (A10) on the left of machine.
3. Put brushes (A8) below both driver motor hub.
4. Lower the brush head (A7) assembly by trampling the rear of foot pedal (A10). And sitting on the machine to start brush switch (E3). Lightly depress driver pedal (C6), then brushes automatic installed. If installation cannot be performed successfully in one shot, turn off brush switch (E3) and reset the suit position to install brushes.



5. Adjusting the nut (A6) to properly place for work.



Never work without the brusher/pad perfectly installed.



When cleaning or replacing the brushes, you should raise the brush head and rotate the reverse direction to "working" direction quickly. The two brushes are reverse in direction.

INSTALLING AND ADJUSTING THE SQUEEGEE

1. Ensure that the machine is turned off (E5).
2. Turn the squeegee lift lever (C5) to put down the squeegee bracket (A5) on floor.
3. Loosen the two knobs (B2) on the squeegee and slide the squeegee into the slots in the back of the squeegee bracket.
4. Tighten the knobs(B2) securely.
5. Secure the vacuum hose (B3) on the pick-up tube of the squeegee.
6. Adjusting the nut (B1) to properly place for suction.

FILLING THE SOLUTION TANK

1. It can be filled in water use a hose under the seat (C4).
2. Do not overfill the solution tank. Leave at least two inch from the opening of tank.
3. Water temperature should not exceed 40° C.

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Use only low-foam and non-flammable detergents suitable for ride-on scrubber applications.



Each time when you need to fill the solution tank, always empty and clean the recovery tank by removing the drain hose plug(C1). After each use, unscrew the drain cap (D1) to drain solution tank.

CHECKING THE SPEED DRIVER

1. Sit on seat (A1) of the machine.
2. Turn on the key switch (E5).
3. Lightly depress the driver pedal (C6) to move and release it checking the machine forward or stop.
4. For more security, you need to press the Emergency-stop button (A15) to make machine sudden halt to check the button is work, when you use the machine for the first time. Release it by turning.
5. If the drive motor error indicator (E4) is on, you must pay more attention. see ERROR INFORMATION



The gradient in the direction of travel should not exceed (10) %.



The brake of drive motor is active when the machine is running normally, that is the brake bracket is close to motor main body. When machine is on package \un-package or machine error and some special situations, brake bracket will pull out, and use washer to choke, so the machine can move by hand pushing.

MACHINE OPERATION



Do not operate machine unless you have professional training. You have read and understand this manual before operate machine.

1. You should sit on the seat of the machine when you operate it.
2. Lower squeegee assembly to the floor.



Make sure to raise the squeegee before the machine is moving backward, or machine stops and LED screen displays ERR-01.

3. Lower the brush head to the floor.



You'd better to turn off the brush motor button before raising the brush to prevent water throw out. You'd better to raise the brush head before the machine is reverse. Don't make brushes work in a same place for a long time to damage the floor.

4. Turn on the key switch.(E5)

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5. Turn on the brush motor switch.(E3)
6. Depress the driver pedal slowly (C6) and turn steering wheel (A14) to forward. The speed can be controlled by a dial (E6), turning left decreases speed, and turning right increases speed. And to reverse, you can press the switch (E7).
7. Adjust amount of solution flow by pressing the solution/water adjustment button. (D5)
8. As long as you turn on the key switch (E5), you can charge the cell-phone through the USB charging interface (A11).
9. You may press the horn (E9) for alert in case of encountering unexpected crowds or heavy crowds.



When battery indicator is red and flashing, do not continue to operate the machine; otherwise, this will cause harm to the batteries or machine. Recharge batteries.



Regularly view the clear tube (C7). If tank runs empty, turn off the brush switch, solution switch and raise the brush head. Keep the squeegee down and continue to vacuum until all dirty water is picked up.



Regularly view the filter (D3) and clean it by unscrewing the transparent cover.



If the squeegee assembly leaves streaks on the floor, raise the squeegee off the floor and wipe the blades down with a damp cloth.



Do not use your fingers to wipe or remove debris from the blades, as injury may occur.



The two brush motors \vacuum motor \drive motor\control circuit are equipped with an overload protector (F3), which protects them from being overloaded. If overload protector trips, it can't be reset immediately. You must first determine what caused the breaker to trip, and allow the motor to cool down before you can reset the breaker.

BATTERY CHARGING



Please use approved chargers to charge the batteries, while the machine is not equipped with on-board battery charger.



For good machine performance, always keep batteries charged at all times. Do not let them be in an over-discharged condition.



When charging the machine, make sure the transparent cover is open.
Charge the batteries when the red indicator (E11) on.

1. Charge the machine in a well-ventilated area.

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2. Turn machine off (E5).
3. Plug approved charger into grounded wall outlet. Open transparent cover (A9), and then connect the charging cable to the machine socket (F1).
4. The charger will automatically begin to charge the batteries.
5. Check that the battery charging is complete. Charging indicator (F2) is green.
6. Upon completion of charging, first unplug the charger from the wall outlet, and then disconnect the charger from the machine.
7. Storage the charging cable in the below chair (C3).



Check battery connections for wear and loose terminals. Replace if necessary.



When charging the machine, please do not use machine.

Battery mode setting up method of the charger.

Do not set charger unless you have professional training.

DIPSWITCH: SW1 (ONLY FOR)

DP1	DP2	CHARGING CURVE
ON	OFF	IUIa-ACD for Lead-acid (Wet) batteries
OFF	OFF	IUIa-GEL for Gel batteries of Exide-Sonnenschein
OFF	ON	IUU0-GEL for HAZE Gel and AGM batteries of other manufacturers
ON	ON	IUIUa-AGM for Discover AGM batteries

MACHINE STORAGE

If the machine is not going to be used for more than 30 days, please proceed with the following actions:

1. Perform the "After each use" maintenance procedures. (See Maintenance section).
2. Raise brush and squeegee.
3. Store machine in a clean, dry and no slope place. If storage in an area that may reach freezing temperatures, be sure to drain all fluids from the machine prior to storage. Any damage caused by freezing will void the warranty.

MAINTENANCE



Maintenance procedures must be performed with the machine turned off and battery charger cable disconnected.



All maintenance procedures must be performed by qualified personnel, or by authorized Service Center. This Manual describes only the most common maintenance. For additional maintenance procedures, contact your local Service Center.

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SCHEDULED MAINTENANCE TABLE

Procedure	After each use	Weekly	Every six months	Annually
Battery charging				
Clean Squeegee				
Clean Brush/Pad				
Clean Tank and vacuum grid with float, cover gasket check				
Squeegee blade check and replacement				
Recovery filter cleaning				
Clean solution pipe filter				
Screw and nut tightening check			(1)	
lubricate rotary parts			(1)	
Brush/Pad-holder motor carbon brush check or replacement				(2)
Vacuum system motor carbon brush check or replacement				(2)
Drive motor check or replacement				(2)

(1) And after the first 8 working hours.

(2) This maintenance procedure must be performed by an authorized Service Center.

SQUEEGEE CLEAN AND BLADE REPLACEMENT



For optimal performance, the squeegee blades must be clean, dry and undamaged. If damaged, replace it.

1. Unscrew the knob (B2) to remove squeegee.
2. Unscrew the left and right knob to relax the front clamp, replace the front blade.
3. Disengage the retainers (B4) and remove the rear clamp, replace the rear blade.
4. Install the blades in the reverse order to removal.
5. Install the squeegee to screw the knob (B2).

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LED SCREEN DISPLAY INFORMATIONS

- STOP** Machine doesn't move and brush doesn't work, vacuum motor can work
- 00012.3** Machine add up driver time is 12.3hours
- L0-18** Batteries voltage is lower 18V
- U-25.5** Batteries voltage is 25.5V
- ERR-01** Squeegee pulls down before machine reverse

DRIVE MOTOR ERROR INDICATOR INFORMATION

LED FLASH CODES EXAMPLE, 𐄂 𐄂𐄂 means LED flash 2 times, after several seconds LED flash 4 times.

LED is always light in normal work.

	LED FLASH CODES	DESCRIPTION
1.1	𐄂 𐄂	Overheating >92° ,motor overload
1.2	𐄂 𐄂𐄂	Accelerator malfunction
1.3	𐄂 𐄂𐄂𐄂	Speed limiter potentiometer malfunction
1.4	𐄂 𐄂𐄂𐄂𐄂	Under-voltage malfunction
1.5	𐄂 𐄂𐄂𐄂𐄂𐄂	Overvoltage malfunction
2.1	𐄂𐄂 𐄂	Principal contactor actuator opening failure
2.2	𐄂𐄂 𐄂𐄂	Principal contactor bond
2.3	𐄂𐄂 𐄂𐄂𐄂	Principal contactor malfunction, faulty electrical brake coil
2.4	𐄂𐄂 𐄂𐄂𐄂𐄂	Principal contactor actuator closing failure
3.1	𐄂𐄂𐄂 𐄂	Accelerator potentiometer malfunction
3.2	𐄂𐄂𐄂 𐄂𐄂	Brake activation malfunction
3.4	𐄂𐄂𐄂 𐄂𐄂𐄂𐄂	Brake deactivation malfunction
3.5	𐄂𐄂𐄂 𐄂𐄂𐄂𐄂𐄂	HPD malfunction(incorrect regulation of accelerator potentiometer)
4.1	𐄂𐄂𐄂𐄂 𐄂	Motor short circuit
4.2	𐄂𐄂𐄂𐄂 𐄂𐄂	Incorrect motor voltage/short circuit in motor
4.3	𐄂𐄂𐄂𐄂 𐄂𐄂𐄂	EEPROM malfunction
4.4	𐄂𐄂𐄂𐄂 𐄂𐄂𐄂𐄂	Short circuit in motor/EEPROM error

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Parameter

Model	AS710R
Machine length/width/height	1580*760*1230
Solution tank capacity	120L
Recovery tank capacity	120L
Rear wheels diameter	300MM
Brush motor power	2x300W
Vacuum motor power	500W
Drive motor power	500W
Max. driver speed	6km/h
Sound level	69dB(A)
Batteries length/width/height(standard)	4x245AH(20hours)
Batteries spec	241*168*300
Working capacity, up to	1800mm H ₂ O
Cleaning productivity	4413sq.m/h
Squeegee width	940MM
Brush diameter	2x355MM
Brush rpm	204rpm/min
Charger(standard)	24V 25A
Machine weight	225KG
Machine weight(gross)	435KG
Carton spec	1730*810*1410
USB charger spec	5V, 0.8A
Gradient	10%

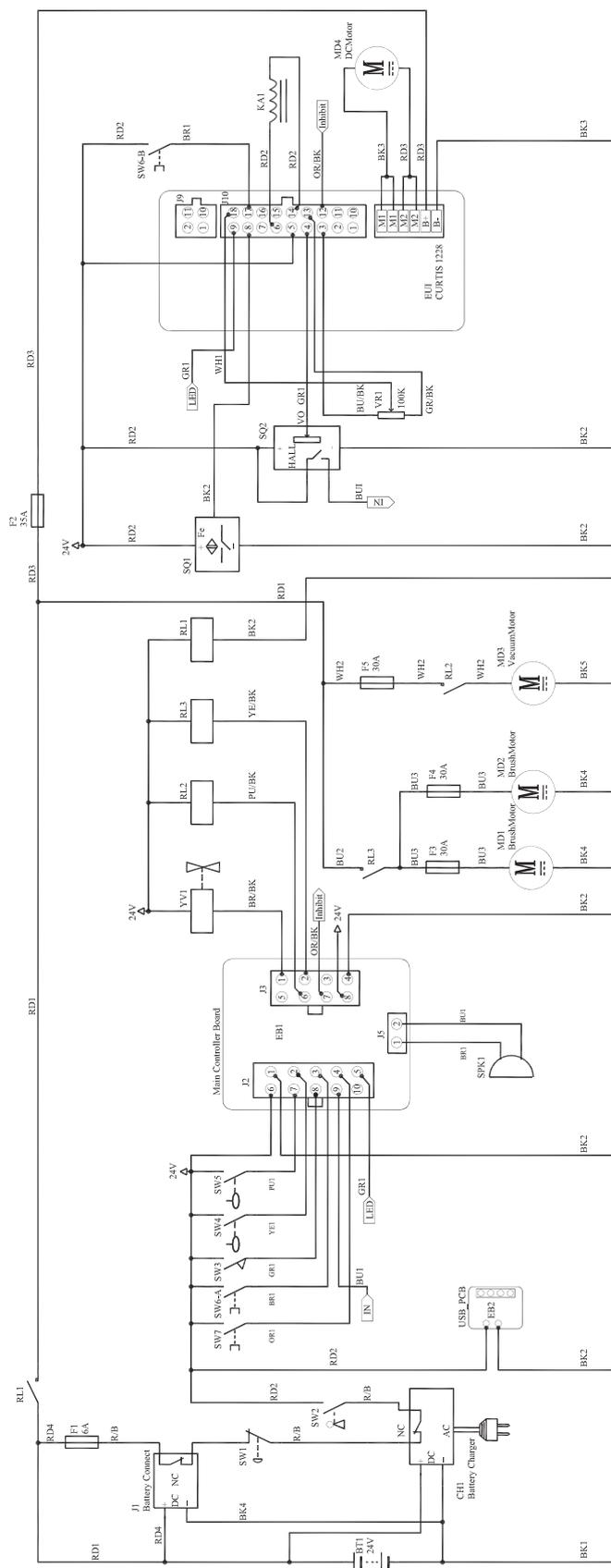
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TROUBLESHOOTING

Trouble	Possible Cause	Remedy
The machine does not work, LED screen (E1) does not turns on	The battery connector is disconnected	Connect.
	The batteries are completely discharged	Charge the batteries
The machine does not work, indicator light (E11) is red	The batteries are discharged	Charge the batteries
The machine does not forward or back	The PCB or key board is broken	Change the PCB or key board
	Emergency-stop button(A15) does not release	Turn and release
	Seat limit switch is not activated.	Sit on the seat of machine
	Squeegee has not lifted in reverse, LED screen (E1) display ERR-01	Before reversing, lift the squeegee
Brush motor does not work, indicator light does not turns on	The PCB or key board is broken	Change the PCB or key board
	The deck motor is overloaded	Use less aggressive brushes suitable for the floor to be cleaned, reset the breaker
	There are foreign materials preventing the brush from rotating	Clean the brush hub
Drive motor does not work	Error indicator (E4) is lit	Refer to ERROR INFORMATION
	Drive motor is overloaded	Check the drive motor, reset the breaker
Vacuum system motor does not work	The recovery tank is full, light(E2) is red	Empty the recovery tank
	The vacuum motor is overloaded	Check the vacuum motor, reset the breaker
	The PCB or key board is broken	Change the PCB or key board
The dirty water vacuuming is insufficient	The recovery tank is full, light(E2) is red	Empty the recovery tank
	The hose is disconnected from the squeegee	Re-connect
	Vacuum assembly is clogged	Clean or check
	The squeegee is dirty, or the squeegee blades are worn or damaged	Clean and check the squeegee
	The tank cover(A2) is not properly closed, or the gasket is damaged	Close the cover properly or replace the gasket
The solution flow is insufficient	The solution filter (D3) is dirty,	Clean the filter
	The solution is empty, light(E10) is red	Full in water
	Water switch (D2) indicate “0”	Open the water switch
	The solution is dirty	Clean the solution
The squeegee leaves marks on the floor	There is debris under the squeegee blades	Remove the debris
	The squeegee blades are worn, chipped or torn	Replace the blades
Machine cannot brake	Do not start the drive motor brake	Brake bracket is choked

USER MANUAL

WIRING DIAGRAM



SYMBOL	REMARK	SYMBOL	REMARK
BT1	Batteries	F1	Main circuit breaker
CH1	Charger	F2	Drive motor circuit breaker
SW1	Emergency-stop switch	F3	Brush motor circuit breaker
SW2	Key switch	F4	Brush motor circuit breaker
SW3	Vacuum motor switch	F5	Vacuum motor circuit breaker
SW4	Dirty water level switch	MD1	Brush motor
SW5	Clean water level switch	MD2	Brush motor
SW6-A	Direction switch DPHF	MD3	Vacuum motor
SW6-B	Direction switch DPHF	MD4	Drive motor
SW7	Seat switch	KA1	Brake
SPK1	Buzzer	SQ1	approach switch
YV1	Water electro valve	SQ2	foot pedal
RL1	Main contactor	VR1	Speed potentiometer
RL2	Vacuum motor contactor	ELU1	Drive motor controller
RL3	Brush motor contactor	J1	Battery connector
EB1	Main control PCB		
EB2	USB Charging PCB		

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