



ONYX DX26 & DX32 WALK-BEHIND BATTERY SCRUBBER

OPERATOR MANUAL



This Guide provides necessary instructions on machine operation and maintenance. Before operation or use of this machine, please carefully read and understand this Guide.

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No further notice will be given for possible change of specification and parts.

Machine Information

Please fill in when installing for future reference.

Model number:

Machine serial number:

Sales representative:

PO number:

Date PO placed:

Installation Date:

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Parts Ordering

When ordering the replacement parts, please refer to the ONYX website at www.onyxolutions.com. Use of the published Illustrated Parts Lists (IPL's) to identify the correct part number required is required to support accuracy of parts ordering.

Machine IPL's can be found at the top of the SHOP page of the ONYX website. Before matching parts or accessories, please firstly determine your machine model and serial number. You can order parts and accessories from any authorized service center or dealer by telephone at 704-827-9368, or email us at sales@onyxolutions.com.

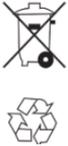
Warranty Claims

ONYX Warranty Statement (policy) and Warranty Claim form can be found on the SUPPORT page of the ONYX website, <https://www.onyxolutions.store/support>.

Technical Support

Technical support is available by submitting a HELP TICKET on the CONTACT US page of the ONYX website, <https://onyxolutions.odoo.com/contact>.

Protect the Environment

	<p>Protect the environment. Please abandon the old machine components such as packaging material, battery, etc. and toxic liquid such as anti-freezing agent and oil according to your local regulations on waste disposal and on the premise of maintaining environmental safety. Please ensure to carry out the recycling well.</p>
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SAFETY PRECAUTIONS

The ONYX DX26 and DX32 walk-behind scrubber is designed to scrub hard surfaces (concrete, asphalt, stone, synthetic, etc) in an indoor environment. Typical applications include hotels, schools, hospitals, factories, shops, offices, and rental businesses. Do not use this machine on carpeted surfaces. Use only recommended pads and commercially available floor cleaners intended for machine application. Do not use this machine on soil, grass, artificial turf, or carpeted surfaces. This machine is intended for indoor use only.

All operators must read, understand and observe the following safety precautions.

The following warning alert symbol and the “FOR SAFETY” heading are used throughout this manual as indicated in their description:



This “**WARNING**” alert symbol and the “**FOR SAFETY**” alert symbol are used throughout this manual as indicated in their description:



WARNING: To warn of hazards or unsafe practices which could result in severe personal injury or death.

FOR SAFETY: To identify actions which must be followed for safe operation of equipment.



All operators must read, understand and observe the following safety precautions.

The following safety precautions signal potentially dangerous conditions to the operator or equipment. If the following warnings are not observed, it may cause personal injury, electric shock, fire or explosion.



WARNING: Fire or Explosion Hazard:

- Do not use flammable liquid; do not operate the machine close to or in the place where there is flammable liquids, vapors or combustible dust.
- This machine is not equipped with explosion-proof motor. If this machine is used in the place where there is flammable vapors, liquids or combustible dust, electric motor may generate spark during the start and operation, which may cause flash fire or explosion.
- Do not pick up flammable materials or reactive metals.
- The battery releases hydrogen. Please keep away from sparks or open flame. The battery cabin must be kept open when charging.



WARNING: Electric Shock Hazard:

- Please first disconnect the battery cables before performing any maintenance on the machine.

- If the charger supply cord is damaged or broken, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.



WARNING: Operation of Rotary Brush: Always keep hands away from the live spinning motor. Please turn off the power before maintaining the machine.

FOR SAFETY: 1. Please do not operate the machine:

- When contacting flammable liquid or getting close to flammable vapors, otherwise it may cause explosion or flash fire.
- Unless having been trained and authorized to operate the machine.
- Unless having read and understood the operation manual.
- Under the influence of alcohol or drugs.
- While using a cell phone or other types of electronic devices.
- Unless mentally and physically capable of following machine instructions.
- If the machine is not in proper operating condition.
- If the battery emits an unusual odor. Move the machine to a ventilated area and contact Customer Service immediately.
- If the battery is leaking any substance. Avoid contact with battery substance and contact Customer Service immediately.
- If the battery becomes excessively hot. Disconnect battery charger. Move the machine to a ventilated area and contact Customer Service immediately.

FOR SAFETY: 2. Before starting the machine:

- Please ensure that all safety equipment is in place and operated correctly.
- Follow the safety guidelines and protocols concerning wet floors.
- Make sure all safety devices are in place and operate properly.

FOR SAFETY: 3. When using the machine:

- Please walk slowly when encountering a slope and slippery surface.
- Follow site safety guidelines concerning wet floors.
- Please wear anti-skid shoes when operating the machine.
- NEVER allow children to play on or around the machine.
- Report machine damage or faulty operation immediately.
- Observe the mixing ratio and processing instructions for the solution tank.

FOR SAFETY: 4. Before leaving or maintaining the machine:

- Stop and place the machine on a stable and flat surface.
- Shut down the machine.

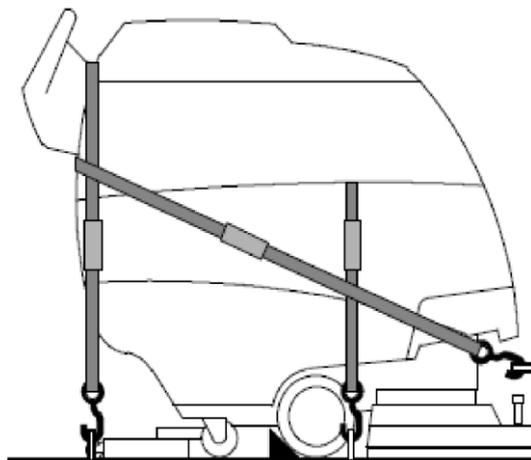
- Remove the key.

FOR SAFETY: 5. When repairing and servicing the machine:

- Avoid moving the parts. Please do not wear loose jacket, jewelry, shirt or over sleeves.
- Before conducting service on the machine, please first disconnect the battery wiring.
- When treating battery or battery wiring, please wear protective gloves and eye protection.
- Avoid contacting battery acid.
- Do not hose down or spray this machine with high pressure water.
- Use the replacement parts provided or recognized by the manufacturer.
- All maintenance must be carried out by qualified maintenance personnel.
- Relevant personal protective equipment (PPE) should always be worn when servicing the machine.
- Do not revise the original design of the machine.

FOR SAFETY: 6. When transporting the machine:

- Shut down the machine. Remove the key.
- Drain tanks before loading.
- Do not lift the machine with the batteries installed.
- Get assistance or use a mechanical lift when lifting machine.
- Put scrub head in the lowered position.
- Use a recommended ramp when loading/unloading into/off truck or trailer.
- Block machine tires.
- Use tie-down straps to secure the machine to truck or trailer, as recommended below:



Machine Components



- | | |
|----------------|---------------------------------|
| Component Key: | |
| A | Operator Handle |
| B | Accelerator Trigger |
| C | Fresh Solution Tank Fill Port |
| D | Solution Flow Valve |
| E | Stabilizer wheel |
| F | Recovery Tank |
| G | Fresh Solution Tank |
| H | Bumper Wheel |
| I | Skirt (Brushes/pads underneath) |
| J | Main Drive Wheel |
| K | Vacuum Hose to Recovery Tank |
| L | Recovery Tank Drainage Hose |
| M | Squeegee Assembly |

Machine Unpacking

1. Please carefully check whether there is damage on the packing box of the machine.
If there is, please immediately contact the shipping carrier.
2. Unpack on a level and flat surface.

Standard freight contents, in addition to main unit:

- Four 6V batteries - standard configuration
- One 24V battery charger - standard configuration
- One set of battery cable - standard configuration
- One squeegee assembly - standard configuration
- Two scrubbing brushes - standard configuration
- Two pad holders - standard configuration

MACHINE INSTALLATION INSTRUCTIONS

Battery Installation

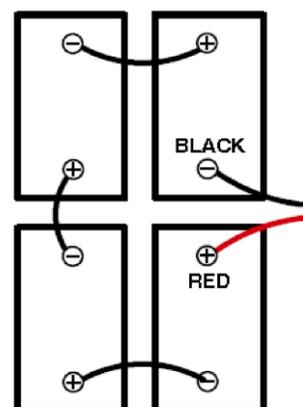


WARNING: Fire or explosion hazard: The battery releases hydrogen.
Please be away from spark or open flame. The battery cover must be kept open when charging.

FOR SAFETY: Please wear protective gloves and eye protectors when treating the battery and battery wiring when repairing and servicing the machine. Avoid contacting the battery acid.

Battery Specification:

Four 6V 200Ah AGM Maintenance Free Batteries connected in series to produce total battery power pack of 24 volt, 200 Ah AGM Maintenance Free Batteries.



1. Stop and place the machine on the level ground and take out the key. Lift up the recovery tank to expose the battery cabin.
2. Carefully install the four 6V batteries in the battery cabin and connect the battery cable according to the following figure:

Note: Gently place each battery into the battery cabin to avoid damage to the battery and the machine.



Hint: Paint a thin layer of metal-free lubricating oil or protective spray on the connected wiring to avoid battery corrosion.

3. Before connecting the battery, please first ensure whether the electrodes and electric terminals are clean. Use electrode cleaning fluid and wire brush as required.
4. After the battery is installed, please check the scale of the battery power meter. Charge the battery as required.

Installation and Connection of Squeegee Component

1. Stop and place the machine on the level ground, and take out the key.
2. Lower the lifting rod of the squeegee to the lower position.
3. Install the squeegee to the squeegee installation bracket as shown in the figure. Ensure to fully place the fastening knob into the jack and then tighten the knob.



4. Connect the vacuum suction pipe to the squeegee component.
5. Examine the squeegee adhesive tape and reasonably adjust.



Installation of Brush/Pad

For suggested brush and pad selection, please refer to the section of [Information on Brush and Pad below] in this Guide or consult your local authorized dealer.

1. Stop and place the machine on the level ground, and take out the key.
2. Lift skirt (should be loose)
3. Rotate counterclockwise to loosen and remove brushes or pad driver.
4. To replace pads, remove blue retaining clip by pinching finger points together. (see image)
5. Place correctly sized pad on driver and secure with blue retaining clip. Pinch finger points together and press firmly until you hear a click.
6. With pad/brush side down, lift up onto driver and rotate clockwise until pad is secure.



MACHINE OPERATION

Machine Operation Set-up & Water Flow Adjustment

Conventional Scrubbing/Cleaning:

Fill the cleaning liquid tank with desired cleaning solution. Make sure the recovery tank is empty before you start the operation.

Power machine on by turning the key switch (1) to the ON position. Check that the battery is well charged on LED indicator (2), ideally start with a full battery charge. Toggle the Brush Motor switch (3) to the down position. Lower the squeegee assembly and turn the vacuum motor on by pulling lever (4). Manually control the water valve (5) to adjust the volume of the cleaning liquid (water and detergent) flowing to the ground.



The brush cleans the floor with the solution, mixing detergent and water. While the machine advances, pick-up the wastewater on the floor with the squeegee into the waste water tank.

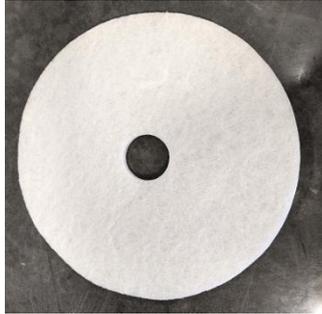
Information on Brush and Scouring Pad

To ensure the optimum efficiency, please use the correct type of brush for cleaning. The brush and pad suggested for use are as follows:

- **Soft nylon brush (white)** - It is suggested to clean the coated floor without damaging the floor. Clean without scratches.
- **Crash pad (red)** - It is used for scrubbing slight dirt without damaging the floor.



- **Polishing pad (white)** - It is used for maintaining a highly smooth or polished floor.
- **Gravity folding pad (black)** - It is used for powerfully removing the heavy coating or base or super-powerful scrubbing.



WARNING: Fire or explosion hazard. Do not operate the machine close to or in the place where there is flammable liquids, vapors or combustible dust.

FOR SAFETY: Please do not operate this machine before reading and understanding the operation manual.

Pre-operational Examination

- Clean the dust on the ground.
- Turn the power on via the Key Switch to read battery power. Make sure battery power is good.
- Check the abrasion conditions of the pad/brush.
- Check the abrasion conditions of the squeegee blade and reasonably adjust the angle.
- Confirm that the waste water tank is empty and has been equipped with a clean floating filter screen.
- Check the abrasion conditions of the skirt section of the brush head.



- Check the abrasion conditions of the skirt section of the brush head

Machine Operation & Duration



WARNING: Fire or explosion hazard. Please do not pick up flammable materials or reactive metals.

1. Switch the key of the main power supply to the position of (I).
2. Pull down the squeegee lifting rod to lower the squeegee to the ground.
3. Turn on the brush head lifting switch to lower the brush head to the ground.
4. Push down the accelerator trigger, the machine starts to work.
5. Recommend each cleaning path overlaps by 2”.
6. Let the machine advance constantly to avoid ground damage.
7. If there is drag mark on the ground after the squeegee absorbs water, check the squeegee blade for debris, and clean accordingly.
8. Do not operate the machine on the slope with a slope over 5% (3°).
9. If there is too much foam entering the wastewater tank, check the foamer/detergent concentration and adjust accordingly.

Note: Do not let the foam enter the filter screen so as to avoid damage to vacuum motor. The foam will make the switch of the filter screen invalid.

10. Replace or rotate the pad as required.
11. Observe the power consumption of the battery power meter
12. For traditional scrubbing operations, the consumption is typically 10 liters of fluid for each 10 minutes of operation, roughly one liter per minute.
13. When the solution in the clean water tank is used up, empty the waste water tank by accessing the waste water drain hose of the back of the machine, then re-pour the cleaning solution.



14. To stop machine operation, stop and place the machine on the level ground, release the accelerator paddle, position Key Switch to off and remove the key.

After cleaning, carry out daily maintenance procedure.

Drainage of Water Tank

For safety: please stop and place the machine on the level ground and shut down the machine and take out the key before leaving or maintaining the machine.

After each use, the wastewater tank shall be drained and cleaned. The clean water tank shall be periodically cleaned to remove any corroded parts. Move the machine to a drainage location (drain), switch off the key of the power supply, and drain the water according to the following drainage instructions:

Drainage of Wastewater Tank

1. Unscrew the drain hose cover of the waste water tank drain hose counterclockwise and drop the hose into waste water drain.
2. Open the cover of the waste water tank and flush the waste water tank with a hose using fresh water.
3. Rinse the waste water filter screen and remove any debris from inside the waste water tank.



Battery Charging

Note: To prolong the life of the battery and ensure the optimum efficiency of the machine, the battery must be charged after the use time of the machine exceeds 30min. Please do not allow the battery to remain uncharged for long.

The following charging instructions are suitable for the charger. Please ensure to use the charger provided with the machine to avoid battery damage. The specification of the battery charger:

- Charger type: - charger for aluminum acid battery
- Output voltage - 24V
- Output current - 15A

- Suitable for deep cycle battery charging



WARNING: Fire or explosion hazard. The battery releases hydrogen. Please be away from spark or open fire. The battery cabin must be kept open when charging.

FOR SAFETY: Please wear protective gloves and eye protectors when treating the battery and battery wiring when repairing the machine. Avoid contacting the battery acid. When charging, please open the side of the wastewater tank to facilitate ventilation.

1. Move the machine to the place with good ventilation for charging.
2. Stop and place the machine on the level ground and turn the key to the close position.
3. When charging, tilt back and leave open the waste water tank to facilitate ventilation.
4. Plug the AC (alternating current) power cord of the charger to the power socket with sound grounding.
5. Plug the red DC (direct current) power cord of the charger to the battery charging socket located on the steering column of the machine.



6. The charger will automatically start charging and will automatically switch off when charging is complete and the batteries are fully charged.

Hint: The machine will not work when being connected to the charger.

Note: during the charging of the charger, please do not pull the DC cord of the charger out of the socket of the machine to avoid generation of arc strike. If the charging must be suspended during the charging, please pull out the AC power cord first.

Machine Maintenance

Only by following daily, weekly and monthly maintenance procedure can the machine be kept in the optimum working state.



WARNING: Electric shock hazard. Please first disconnect the battery wiring before maintaining the machine.

Daily Maintenance (after each use)

1. Drain and clean the wastewater tank
2. Rinse and flush the floating filter screen in the wastewater tank
3. Drain the clean water tank and flush the water tank with hot water, no higher than 50°C as required
4. Inspect the pad/brush after cleaning, ensure pad/brush is still in good condition. If there is any abrasion, overturn or replace the brush/pad.
5. Wipe the squeegee blade.
6. Check the abrasion conditions of the scraper edge of the squeegee blade. If there is any wear and tear, exchange two sides of the blade.
7. Use multi-purpose detergent and wet cloth to wipe the machine.
8. Check the abrasion conditions of the skirt side of the brush head and replace it if there is any wear and tear or damage.
9. Charge the battery. To prolong the life of the battery and ensure the optimum efficiency of the machine, the battery must be charged after the use time of the machine exceeds 30min.



Monthly Maintenance (every 80 hours)

1. Dismantle the filter of the clean water tank from the bottom of the machine and clean the filter screen. Ensure the clean water tank is emptied before dismantling the filter.
2. Clean the top of the battery to prevent electrode corrosion (refer to [Battery Maintenance]).
3. Check whether the battery wiring is loose.
4. Check and clean the cover seal of the wastewater tank and replace it if there is any damage.
5. Spray the silica gel dry lubricant on all pivots and wheels and cover a layer of water-proof lubricating oil to ensure smooth operation of wheels and pivots.
6. Check whether the nuts and bolts on the machine are loose.
7. Check whether the machine leaks.

Machine Transport

When transporting the machine with truck or trailer, please ensure to following the following procedure:

FOR SAFETY: When loading/unloading machine onto or off of a truck or trailer, use a ramp, truck or trailer that will support the weight of the machine and operator. Use tie-down straps to secure machine to truck or trailer.

1. Park the scrubber and select OFF on Yellow control switch.
2. Switch power key to OFF position.
3. Drain machine tanks.
4. Switch power key or ON.
5. Load the machine using a ramp that can support the machine weight.
6. Lower the scrub head and squeegee.
7. Place a block behind each wheel to prevent the machine from rolling.
8. Secure with tie-down straps.

Machine Storage

Note: Do not let the machine be subject to rain, excessive amounts of humidity and moisture, and store indoor.

1. Please charge the battery before storage.
2. Yellow mode switch to OFF position, this will place pad/brush head and squeegee in up position.
3. Switch power key to OFF position.
4. Disconnect the batteries before any long-term storage.
5. Drain and flush thoroughly the bottom of the water tank.
6. Store the machine in a dry place.
7. Open the cover of the waste water tank.
8. **Note:** Do not let the machine be subject to rain, excessive amounts of humidity and moisture, and store indoor.
9. If the machine is stored in a cold environment, drain all liquid in the machine.

Troubleshooting Guide

Problem	Reason	Solution
The machine cannot be operated	The battery has no power	Charge the battery
	The battery fails	Replace the battery
	The battery wiring is loose	Fasten the battery wiring
	The main fuse blows out	Replace the fuse
The brush motor does not work	The brush head rises up from the ground	Lower down the brush head
	The batteries are not charged	Charge the battery
	The breaker of the brush motor circuit triggers blackout	Reset the button of the breaker of the brush circuit
	The brush (upper/lower) switch fails	Please contact with the service center
	The carbon brush of the motor wears	Please contact with the service center
The vacuum motor does not work	The squeegee rises up from the ground	Lower down the squeegee
	The fuse of the vacuum motor blows out	Replace the fuse
	The vacuum motor or wiring fails	Please contact the service center
	The carbon brush of the motor is worn	Please contact the service center
Little or no water flows out	The filter or solution pipe of the clean water tank is blocked	Clean the filter of the clean water tank
	The speed of the flow control valve is set too low (or shut)	Adjust the water control valve
The waste water recovery rate is low	The waste water tank is full	Drain the waste water tank
	The water-absorbing adhesive tape (squeegee blade) is worn	Replace the water-absorbing adhesive tape

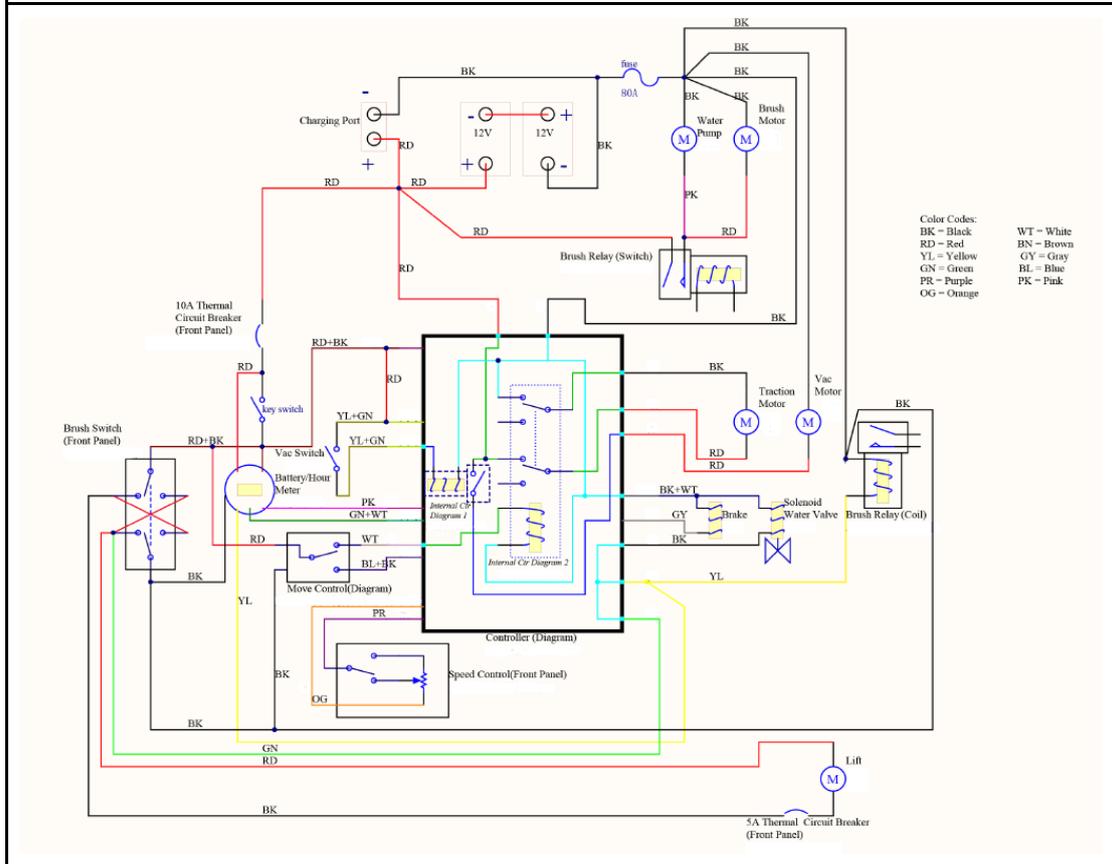
	The water suction pipe is blocked	Remove the blocked scraps
	The sealing strip of the waste water tank is damaged	Replace the sealing stripe
	The vacuum motor fails	Please contact with the service center
The running time shortens	The battery has flaws	Replace the battery
	The battery charging fails	Repair or replace the charger

Technical Parameters

Technical parameter	Unit	DX26 & DX32
Operating voltage	V/AH	24/200
Scrubbing motor	W	550
Suction motor	W	550
Brush lifting motor	W	100
Cleaning width	mm	DX32: 800 (30" w/ 34" skirt width) DX26: 660 (26" w/ 34" skirt width)
Squeegee width	mm	1080 (43")
Cleaning efficiency	m ² /h	RX32: 4,200 (46,000sq-ft/hr) DX26: 3,600 (39,000sq-ft/hr)
Clean water tank capacity	Gallons	25 Gallons

Waste water tank capacity	Gallons	28 Gallons
Machine weight	lbs	DX32: 570 (Shipping weight 590lbs) DX26: 550 (Shipping weight 570lbs)
Machine dimension	cm	1650*900*1300 (66"*36"*52")

Wiring Diagram/Schematic



Link to Wiring Schematic PDF file on ONYX Website Support Page:
<https://www.onyx solutions.store/support>

Controller Error Code Table

Code	Failure Description	Cause and Solution
1	Lower feedback speed	The controller is faulty, please contact the manufacturer
2	Kernel running error	The controller is faulty, please contact the manufacturer
3	The controller and the motor are overloaded for a long time	Check whether the controller matches the motor, and whether the controller is too small
5	The position after the electronic gear ratio exceed the max. motor speed	The controller is faulty, please contact the manufacturer
6	In speed model, the speed command exceeds max. speed of motor	The controller is faulty, please contact the manufacturer
7	In torque model, the torque command exceeds max. torque of motor	The controller is faulty, please contact the manufacturer
11	Motor 2 minutes max. current protection	The motor is blocked; check whether the brake is opened and wheter there is any foreign matter stuck in the drive mechanism
12	Controller overcurrent	Controller selection error, or controller failure, contact the manufacturer.
13	Bus capacitor charging failure	The controller is faulty, please contact the manufacturer
14	Main contactor connection failure	Check whether the main contractor is connected properly
15	Electromagnetic brake connection failure	Check whether the electromagnetic brake is connected properly
16	The battery voltage is severely low	Check the battery power, or the controller battery voltage level is set incorrectly
17	Battery voltage is too high	Check the battery voltage, or the controller battery voltage level setting is wrong.
18	Power board is severely overheated	The controller is protected and temporarily suspended.
19	The motor is severely overheated	The controller is protected and temporarily suspended.
20/R20	Accelerator problem	Check whether the accelerator cable is loose and whetehr the accelerator is burned out.
21	Main contactor contact welding	Check whether the main contractor is damaged or not, replace the main contractor.
22	5V output failure	Motor encoder is hort-circuited, or other external 5V devices are short-circuited, or the controller is faulty, contact the manufacturer.
23	MACID test failure	The setting of the controller CAN network ID number is repeated, reset it.
24	Main contactor drive failure	Check whether the main contractor is damaged and replace the main contractor
25	Power model failure	The controller is faulty, contact the manufacturer.
31	Battery voltage is low	The battery is low, charge it as soon as possible.
32	Power board is slightly over-temperature	Reduce load
33	Power board low temperature	The ambient temperature is too low.
34	Motor slightly over temperature	Reduce load
35	12V overput failure	The power supply of the handheld terminal is short-circuited; or the controller is faulty, contact the manufacturer.
36	Drive3 connection failure	Check Drive3 connection.
37	Drive4 connection failure	Check Drive4 connection.
38	EEPROM read and write parameter error	The controller is faulty, please contact the manufacturer
39	Parameter overrun error	Parameter setting failure, contact the manufacturer.
40	Opertion timing error	Reset, and follow the correct sequence.
41	Remaining battery power 20%, alarming	Charge the battery
42	Remaining battery power 15%, alarming	Charge the battery