Maintenance

Comprehensive checks of the truck can avoid malfunction and ensure the service life. The hours listed in maintenance procedures assume that the truck works for 8 hours per day and 200 hours per month. Always perform maintenance according to maintenance procedure.

Notice

 All the repair work shall be carried out by professional personnel.

Please contact the sales department of our company if you need to adjust or replace the components.

Precautions during maintenance

Notice

 The components for replacement shall be produced completely by our company. When replacing components of the truck, the components with the same safety requirement with the original design shall be used.

The lubricating oil and hydraulic oil in use shall be recommended by our company.

Places for maintenance

Notice

 Designated places for maintenance shall be appointed that can provide other services such as hoisting and safety protection facility.

The places shall have level ground and good ventilation.

The places shall be equipped with fire-extinguishing devices.

Precautions before repair and maintenance

Notice



No smoking.

Use all required safety gear.

Clean up leaks or spilled fluids quickly.

Before adding lubricating oil, clean up the dirty oil or dust on the joint with brush or cloth.

Unless otherwise instructed, turn off the key switch and pull off the power socket.

Ensure no goods are on the truck during service or maintenance.

Discharge capacitors before performing any electrical work.

Clean the electric section with compressed air. Never flush with water.

When the truck requires working at height, fall protection must be provided for the repairing and maintenance personnel.

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Troubleshooting

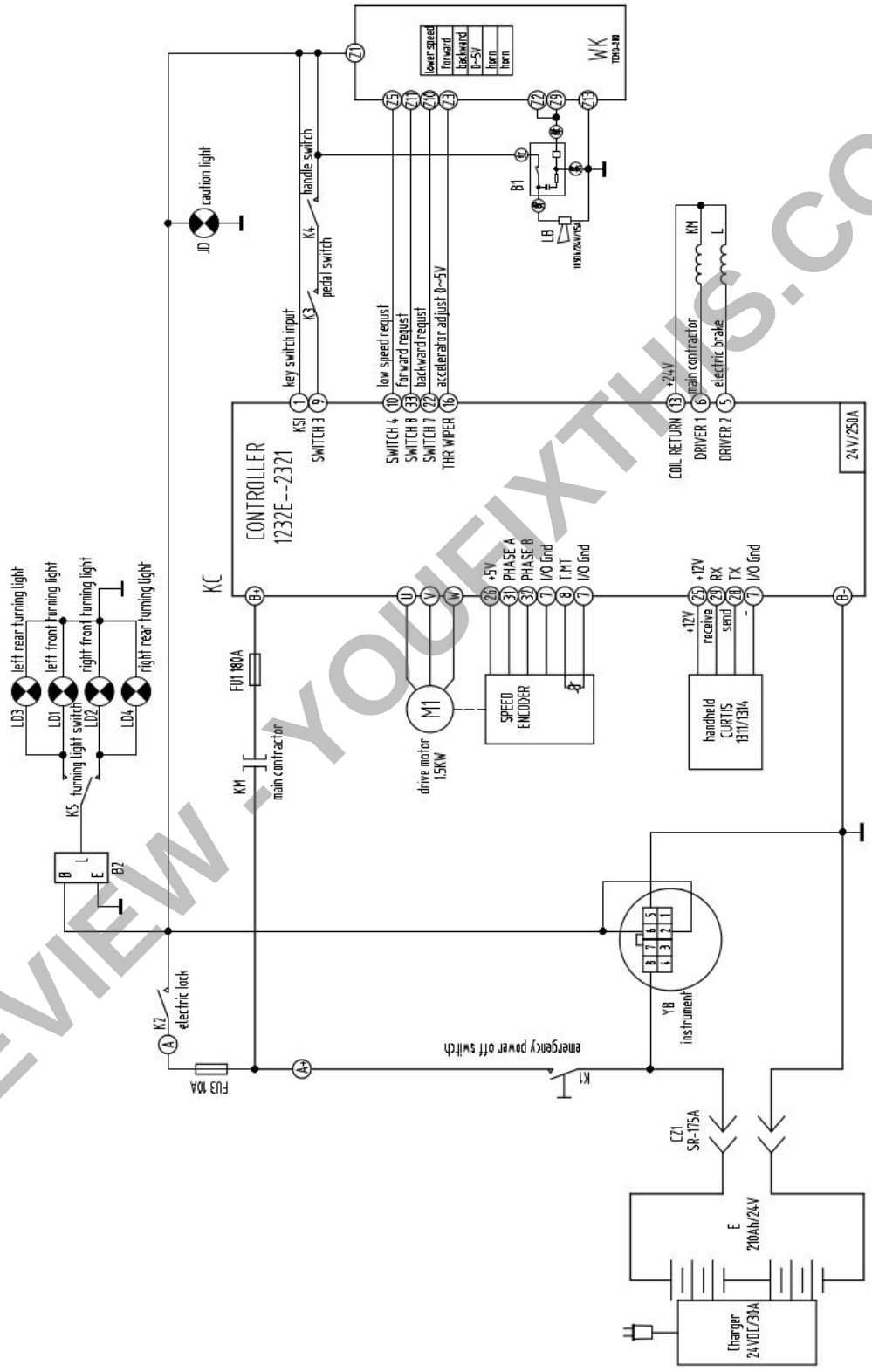
Mechanical breakdowns

Fault	Possible cause	Trouble shooting
The truck cannot start	Storage battery is used up	Inspect, charge, or replace the storage battery
	Storage battery is used up	Screw down the terminal screw
	The wire terminal is loosened	Replace the fuse
	The fuse is burned out	Replace accelerator
The direction is ineffective and heavy.	The steering device is blocked by the abnormal matter	Clean up the foreign matter
	The bearings of steering device are worn	Replace the bearings
Brake cannot work	The friction plates of the electromagnetic brake are damaged	Replace
Not release after braked	The electromagnetic brake is out of electricity	Check the circuit
	The clearance of the electromagnetic brake is too large	Adjust the brake clearance to 0.2mm (.008 in).

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Electrical schematic



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Setting up a new truck

In order to follow the industry related regulations and ensure the security of the truck during transportation, a new lift truck may arrive onsite with no electrolyte in the battery.
The electrolyte of storage battery is prepared before the truck leaves the factory, and must be poured into the storage battery by the professional personnel before the first use.

1. Place the truck to the site with good ventilation.
2. Open the lid of storage battery box.
3. Open all the top plastic lids of storage battery.
4. Use a plastic funnel and pour electrolyte into storage battery slowly and carefully.
5. Add electrolyte until it can be seen through the fill ports in the plastic lids of storage battery.
6. After all the storage battery is filled, conduct initial charge.

Initial charge

There are some special tasks that must be completed when charging a new battery for the first time.

1. Clean up the surface of the battery before the initial charge, and then check for damage to ensure reliable connection.
2. Open fill cap.
3. When the charging equipment is able to operate normally, pour the sulfuric acid electrolyte with a density of 1.260±0.005 (25℃) at a temperature below 30℃ (86°F) into the batteries. The electrolyte level should be 15-25mm (.5-1 in) higher than the protective board. In order to reduce the temperature rise caused by chemical reaction of the electrolyte and to let the electrolyte fully penetrate into the pores of the polar plates and the baffles, let the batteries sit still for 3-4 hours but not exceeding 8 hours. The initial charging can only be conducted when the electrolyte temperature reduces to below 35℃ (95°F). When necessary, the batteries can be put into cold water for temperature reduction. After this cooling period, if the electrolyte level reduces, electrolyte should be added.
4. The sulfuric acid electrolyte is prepared with battery sulfuric acid complying with the state standard GB4554-84 and distilled water. Never use industrial sulfuric acid and running water. The standard temperature of 25℃ (77°F) and density of the electrolytic solution can be calculated as follows:

$$D25 = Dt + 0.0007 (t-25)$$

Where: D25: the density of the electrolytic solution at 25℃ (77°F)
Dt: the actual density of the electrolytic solution at t ℃.
t: temperature of the electrolytic solution when testing the density.

5. Dry up the electrolyte spilled on the surface of battery.
6. Connect the positive and negative poles of batteries with those of the charger and then turn on the charger power. Charge with the current of 30A (the current of the first stage). After the charge voltage achieves 28.8V (12×2.4V=28.8V), switch to the 15A current of the second stage. When charging, the temperature of electrolyte shall never exceed 45℃ (113°F). When the temperature rises up nearly to 45℃ (113°F), reduce the current by half or stop charging temporarily. After the electrolyte temperature reduce below 35℃ (95°F), continue charging. The charge time needs to be extended in this case.

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LED code	Display code	Explanation	Potential Cause
2,4	Throttle wiper low	Accelerator voltage too low	Accelerator is damaged
			Wrong accelerator type selected
3,1	Multiplexer fault	Multiplexer malfunction	Multiplexer malfunction
3,2	Main contactor	Missing or welded main contactor	Main contactor coil open
			Main contactor stuck closed
			Welded main contactor
			Main contactor driver shorted
	Precharge	Precharge fault	Controller defective
			Low battery voltage
3,3	Brake fault	Electromagnetic brake fault	Brake coil shorted or open
			Brake driver fault
4,1	Service total disable	Total KSI timer has expired	Expired total KSI timer
	Service driver disable	Total driving timer has expired	Total driving timer has expired
	Service total expired	KSI service timer has expired	KSI service timer has expired
	Service driver expired	Driver service timer has expired	Driver service timer has expired
4,2	Battery over voltage	Battery voltage is too high	Battery voltage too high
	Battery under voltage	Battery voltage is too low	Battery voltage too low
			Corroded battery terminal
			Storage battery damaged
4,3	Temperature cutback	Controller heat sink is too hot or too cold	Low power from controller
			Excessive load on vehicle for a long time
			Overheated controller
4,4	Anti tiedown	Mode switch is closed at startup	Stuck mode switch
			Switch is in M2 position
5,1	Hardware failure	Hardware failure	Controller defective
5,2	Software failure	Software failure	Controller defective
5,3	Parameters corrupt	Parameters corrupt	Controller defective

Truck storage and transportation

Loading and unloading

Before loading the truck, check the nameplate for the total weight of truck to choose appropriate hoisting handling equipment. When hoisting the truck, keep it level and lower it slowly and carefully. The personnel around shall watch for safety. Assign one person to guide the truck and watch for correct placement. If another lift truck is used for loading and unloading, please watch the bottom of the truck. Take care to insert the fork arms to the bottom, to avoid damaging the drive wheel, casters, and load wheels.

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