FORKLIFT

SERVICE MANUAL

16, 20, 25EP-X

HYUNDAI

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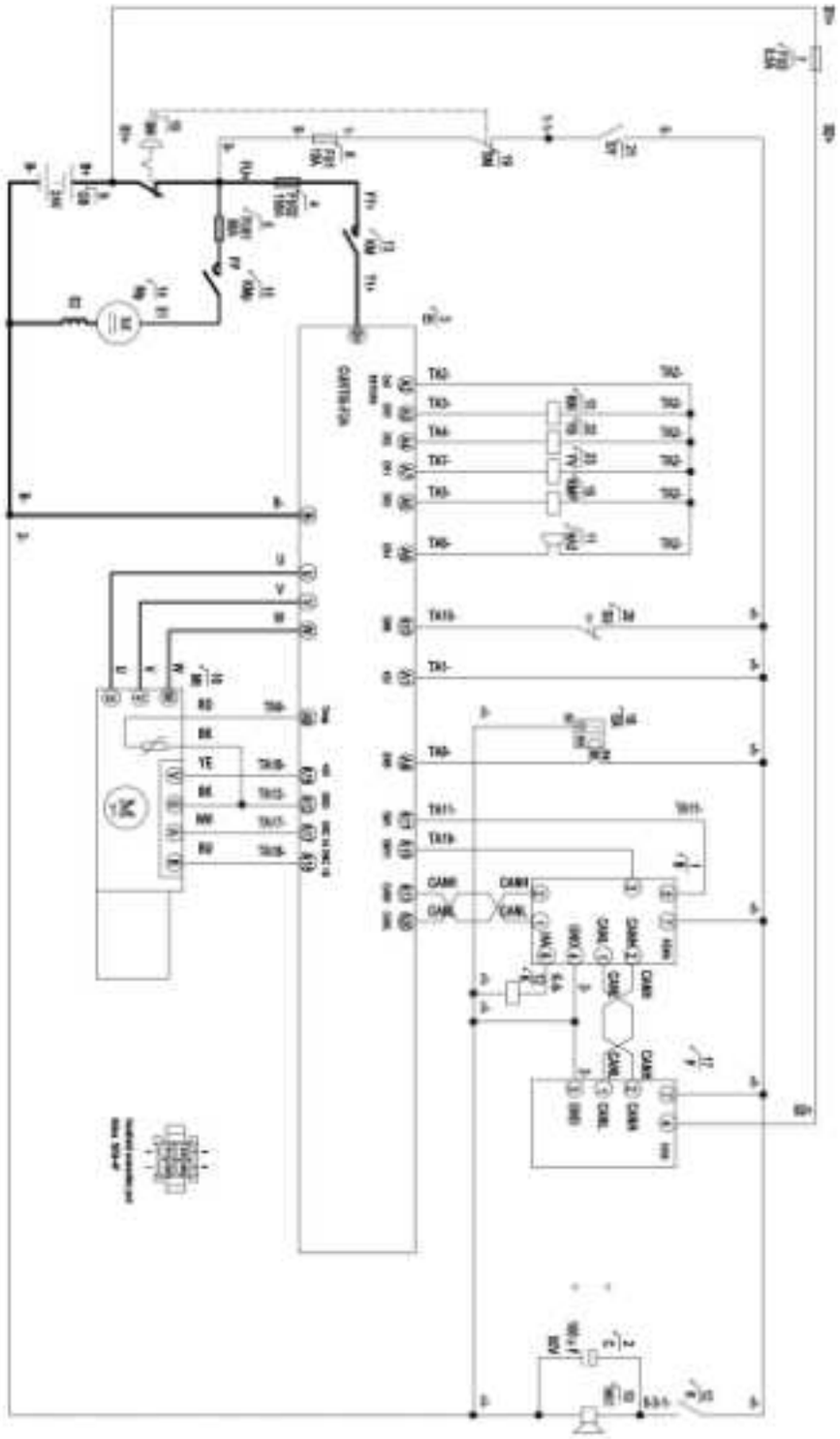
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b. **WIRING/ CIRCUIT DIAGRAM**

b-1 16/ 20/ 25EP-X (CURTIS System)



FU01:	150A
FU02:	80A
FU1:	10A
FU2:	0.5A

Fig. 12: Electrical diagram

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8. BATTERY CHARGING AND REPLACEMENT

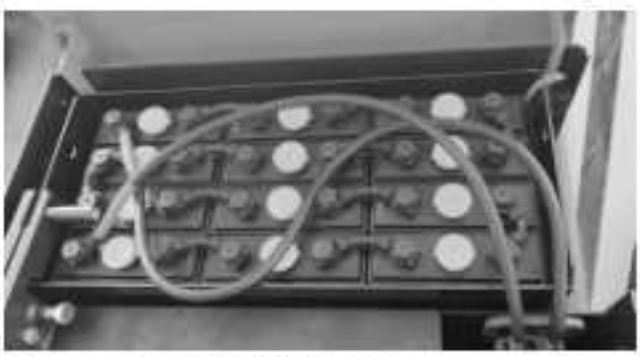
- Only qualified personnel are allowed to service or charge the batteries. The instructions of this handbook and from the battery- manufacturer must be observed.
- Recycling of batteries undergoes national regulations. Please follow these regulations.
- By handling batteries, open fire is prohibited, gases could cause explosion!
- In the area of battery charging neither burning materials nor burning liquids are allowed. Smoking is prohibited and the area must be ventilated.
- Park the truck securely before starting charging or installing/changing the batteries
- Before finishing the maintenance work, make sure, that all cables are connected correctly and that there are no disturbing towards other components of the truck.

Battery types

Depending on the version, the truck is equipped with different battery types. The following tables show which combinations are intended as standard, indicating the capacity. The battery weights can be taken from the battery data plate.

Manufacturer`s type designation	Battery type	Capacity	Weight	Max. dimensions
16EP-X	24 V battery	2PzB-160Ah	155kg	624x146x590mm
	24 V battery Li-Ion	100Ah	55kg	624x146x590mm
	24 V battery Li-Ion	150Ah	60kg	624x146x590mm
20EP-X	24 V battery	2PzS-210Ah	195kg	624x212x627mm
	24 V battery Li-Ion	100Ah	62kg	624x212x627mm
	24 V battery Li-Ion	150Ah	67kg	624x212x627mm
	24 V battery Li-Ion	200Ah	80kg	624x212x627mm
25EP-X	24 V battery	3PzS-350Ah	285kg	624x284x627mm
	24 V battery Li-Ion	150Ah	83kg	624x284x627mm
	24 V battery Li-Ion	200Ah	90kg	624x284x627mm

LEAD-ACID BATTERIES AND LITHIUM BATTERIES ARE ALLOWED FOR APPLICATION.
THE WEIGHT OF THE BATTERIES HAS AN INFLUENCE TO THE TRUCKS OPERATING BEHAVIOR.
PLEASE CONSIDER THE MAXIMUM OPERATING TEMPERATURE OF THE BATTERIES.



Lead-acid battery



Lithium Battery

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c. TROUBLESHOOTING

Pump Motor

Trouble	Possible cause
The hydraulic pump motor does not work	Poor connection or blown fuse. Check the battery connection. Check the key fuse. Check whether the fuse of the hydraulic pump motor may be blown.
	Key switch, upper limit switch and line contactor are not closed. Turn off the key switch. Use a multi-meter to check the power flow through the key switch, line contactor coil and line contactor. The key switch must be turned off.
	Insufficient voltage. Charge or replace the battery. Check whether the cable terminal fits closely with the battery terminal and the control panel connector. Check whether the wires inside the cable are broken.
	The lifting and drive system is not operating correctly.
	During the battery charging operation, the battery is not fully charged.
	The hydraulic system uses too much battery power because the lift or hydraulic control is not correct for the duty cycle.
	The hydraulic pump motor is overheating. If the motor temperature reaches 155 ° C (311 ° F)

Hydraulic Pump

Trouble	Possible cause
Noise in the pump.	The oil level is low.
	Oil is very thick (viscosity is too high)
	The pump inlet pipeline is restricted.
	Worn parts in the pump.
	The oil is dirty.
	Air leaks into the inlet line.
The oil temperature is too high.	The oil level is low.
	The oil passage is restricted.
	The oil is too thin.
	Air leakage exists in the system.

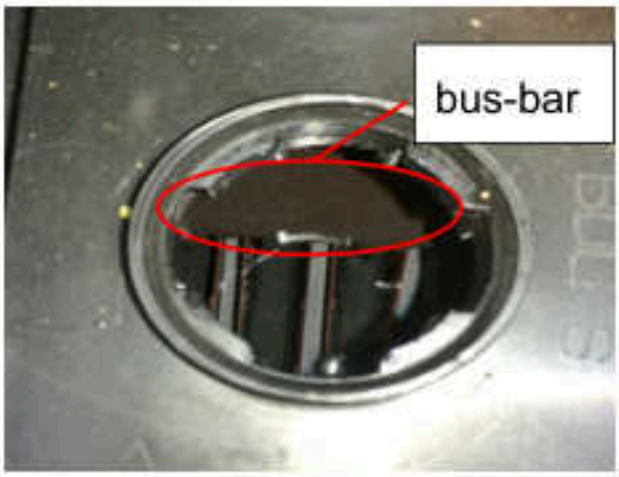
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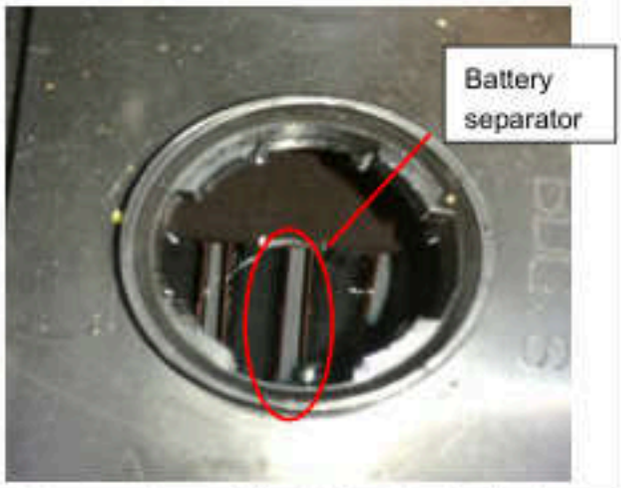
1. Unplug battery switch



2. Unscrew the battery water cap



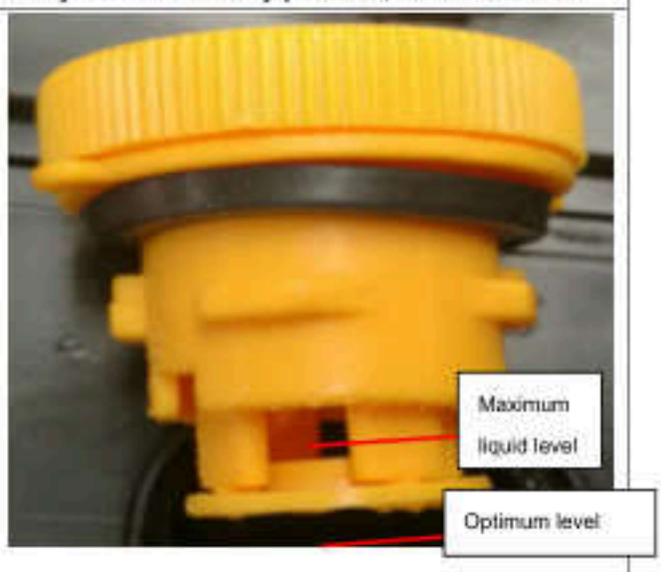
3. Electrolyte lever is lower than bus-bar, then add distill water



4. In some battery filling holes, the bus bar is not visible. When the liquid level drops to 10mm away from the battery partition, water is added



5. Use a plastic funnel to add water.



6. Add-water lever

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4) Remove and replace the 5 screws fixing the PU ring with a 17mm wrench

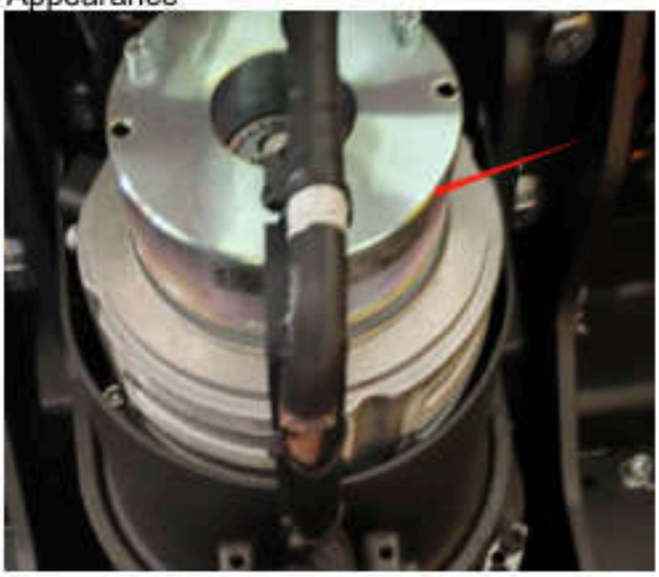




5) The reverse process of installation and disassembly

b. Brakes

Appearance



Brake removal and installation

Remove the brake by removing the three screws that are fixed to the drive wheel with a 5mm hex wrench.





The reverse process of installation and disassembly

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