Let's grow together

Operation Manual

JX0

Original Instruction

Part No.1600-5040190000002-V1 11/2018

Foreword

The present operation manual are designed to provide sufficient instruction for the safe operation of the industrial truck. The information is provided clearly and concisely.

Our trucks are subject to ongoing development. EP reserves the right to alter the design, equipment and technical features of the system. No guarantee of particular features of the truck should therefore be assumed from the present operation manual.

Safety notices and text markups

Safety instructions and important explanations are indicated by the following graphics:


Please strictly adhere to these safety instructions to avoid personal injury or major damage to equipment.


Please pay attention to the important safety instructions.


Pay attention to Instructions.

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Legal requirements for marketing

Declaration

EP EQUIPMENT CO., LTD
Address: XIAQUAN, DIPU, ANJI, ZHEJIANG, CHINA

We declare that the

Industrial truck: according to these operation manual

Type: according to these operation manual

complies with the most recent version of Machinery Directive 2006/42/EC.

Personnel authorised to compile the technical documents:

See EC/EU Declaration of Conformity

EP EQUIPMENT CO., LTD

EC/EU Declaration of Conformity

The manufacturer declares that this industrial truck complies with the EC Machinery Directive and the provisions of other applicable EC/EU directives effective at the time of sale. This can be verified by means of the EC/EU Declaration of Conformity and the relevant certification label on the nameplate.

The industrial truck is supplied with the EC/EU Declaration of Conformity document. This declaration proves that this truck complies with the requirements of the EC Machinery Directive. Unauthorized modification or additional installation of equipment to the structure of the industrial truck may affect its safety, and will therefore invalidate the EC/EU Declaration of Conformity.

The EC/EU Declaration of Conformity must be carefully conserved and kept ready to be presented to the relevant authorities. If this industrial truck is sold, this declaration document must be handed over to the new owner.

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A Application

The truck described in the present operator manual is an industrial truck designed for lifting and transporting load units.
It must be used, operated and maintained according to the information in these operation manual. Any other uses are outside the design envelope and can lead to injury to persons or damage to equipment and property. Above all, overloading caused by excessively heavy or unbalanced loads must be avoided. The max. admissible load to be picked up is indicated on the nameplate or load diagram label shown on the truck. The truck must not be operated in spaces subject to fire or explosion hazards, or in spaces where corrosive or very dusty atmospheres prevail.

Duties of the user

For the purposes of the present operating instructions, the “operating company is defined as any natural or legal person who either uses the truck himself, or on whose behalf it is used. In special cases (e. g. leasing or renting). the operating company is considered to be the person who is to carry out the specified operational duties in accordance with existing contractual agreements between the owner and. operator of the industrial truck.

The operating company must ensure that the truck is used only for its intended purpose and that dangers to the health and safety of the operator and third parties are prevented Further more, accident prevention regulations, safety regulations and operating, servicing and repair guidelines must be followed. The operating company must ensure that all operators I have read. and understood these I operating instructions.

Mounting of attachments

The mounting or installation of any attachments which will interfere with, or supplement, the functions of the truck is permitted only after written approval by the manufacturer has been obtained. If necessary, the approval of local authorities has to be obtained. Any approval obtained from local authorities does not, however, make the approval by the manufacturer unnecessary.

Modification

If you want to use the truck for purposes that are not mentioned in the user manual, please contact dealers accredited by EP Ltd. Any modifcation of your truck, in particular fitting of equipment or conversion of the truck, is prohibited without the permission of the manufacturer.

1.1 Intended use

The following operations are in accordance with regulations and are permitted:

- Order picking of goods.
- Lifting and lowering by the operator on the operator platform
- Transporting small items on the storage table without pallet
- Travel with the platform lifted or lowered.
- Travel in indoor areas without wind forces.
- Travel on even ground. Travel on negotiating inclines up to 3 degrees is only allowed it the platform is fully lowered.
- Light Maintenance work.
- Operation in areas open to the public like in a store, if the following regulations are observed:
  - The truck must be driven by trained personal only
  - The operator must instruct the public to allow space in order to avoid potential accidents, if the situation becomes too confusing for the operator because of the presence of the public.
  - If necessary the operator must ask for a marshaller, who should direct people away from the hazardous area and warn the operator if anyone is still present in the hazardeous area.
  - The truck gives an audible warning when the travel switch is operated to increase the safety of third persons. In addition can the driver operate a horn.
  - To protect persons directly under the platform, this area is protected with a sensor with stops lowering of the platform.
  - If these safety features are not working the truck must be taken out of service until it has been repaired.

If wind forces occur during an indoors application(e. g. if warehouse gates are opened), operation should be suspended until the wind forces have subsided.

The maximum load and load distance are indicated on the capacity plate and must not be exceeded.

1.2 Improper use

The operating company or driver, and not the manufacturer, is liable if the truck is used in a manner that is not permitted. One of the main causes of accidents is the driver ignoring or being unaware of the basic safe operating practices of the truck.

The following basic safe operating practices must be observed to ensure the safety of operators and others.Never operate the truck in environments with s potentially explosive atmosphere. The flowing operations are prohibited:

•Lifting and carrying people, with the exception of the driver on the operator platform.

•Pushing or puling of loads.

•Travel on uneven ground.

•Travel in outdoor areas.

•Do not stack loads or turn when driving on a ramp.
•Do not operate the truck on loose or greasy surfaces.
•Do not drive on uneven or obstructed surfaces. Never park the truck in a place that may obstruct fire extinguishers, fire escapes or aisles.
•Do not dismount from the truck while it is moving.
•Do not dismount from the truck while the platform is not fully lowered
•Do not leave the truck unattended when the load is raised.
•Do not apply horizontal forces in excess of 200 Newton.
•Never leave the vehicle unattended on a ramp. When driving, do not place any part of your body outside the confines of the truck, lean on the edge of the truck or attempt to jump onto another truck or object.

•Do not use open flame to check lever, or for leakage of electrolyte and fluids or oil. Do not use open pans of fuel or flammable cleaning fluids for cleaning parts.

WARNING

Operation under extreme conditions

Operating the truck under extreme conditions can result in malfunctions and accidents. Special equipment and authorization are required if the truck is to be used in extreme conditions, especially in dust-laden or corrosive environments. Operation in explosive atmospheres is not permitted.

The truck must be used exclusively in industrial and commercial environments. The truck must be parked and secured only in indoor areas.

Permissible temperature range +5℃ to +25 ℃
Secure parking is only permissible at 5℃ to+25℃ .
Maximum air humidity 95% non-condensing.
Do not charge the battery below +5℃ .

B Truck Description

1.1 Application

The truck is an electric truck.The truck is designed to transport and pick goods on level ground. Small items can be placed carried on the storage table. The low overall height and platform height allow it to be driven through doorways. The low net weight means. that it can travel on lifts.

The rated capacity is indicated on the data plate.
Operation only on paved level ground with sufficient load-bearing capacity.
Do not exceed the permissible surface and spot load limits on the travel paths.
Operation only on travel paths that are visible and approved by the operating company.
Do not travel across or at an angle on inclines. Travel with the load facing uphill.
Operation in areas partially open to the public.

1.2 Functional Description

Safety mechanisms

The order picker geometry with rounded edges ensures safe handling of the truck. Pressing the Emergency stop switch disconnects all electrical functions in hazardous situations. Opening the gates will interrupt all driving and lifting / lowering operations except mechanical emergency lowering of the platform. Before you can drive or lift the dead man switch must be operated.

If the platform is lifted, the area under the platfom is checked by weight sensitve switches to prevent any movement if an object or person is detected in that area.

Both hands must be at the control handles for driving and lifting to prevent injury of hands sticking out. This safety feature can be deactivated by a switch in the control area, than driving speed is limited to crawl speed.

Drive

The entire drive unit is enclosed in the order picker chassis.
The electronic traction controller ensures the smooth driving operation of the drive motor and as a result smooth driving, powerful acceleration.

Brake system

The operator can brake gently and wear-free by pulling back the travel control button. The electromagnetic spring pressure brake acting on the drive motor serves as both parking and handbrake. Without electric power the springs will engage the brake.

Steering system

The steering controller is monitoring permanently the position of the steering wheel and the drive wheel. In case of error the truck is stopped immediately. The steering angle is shown on the display. The maximum steering angle is±90°.

Controls and Displays

The drive functions are activated via ergonomic thumb movement to ensure fatigue-free operation without stressing the wrists; sens. The display units show all important driver information such as order picker status reports (e.g. faults), battery capacity and time etc.

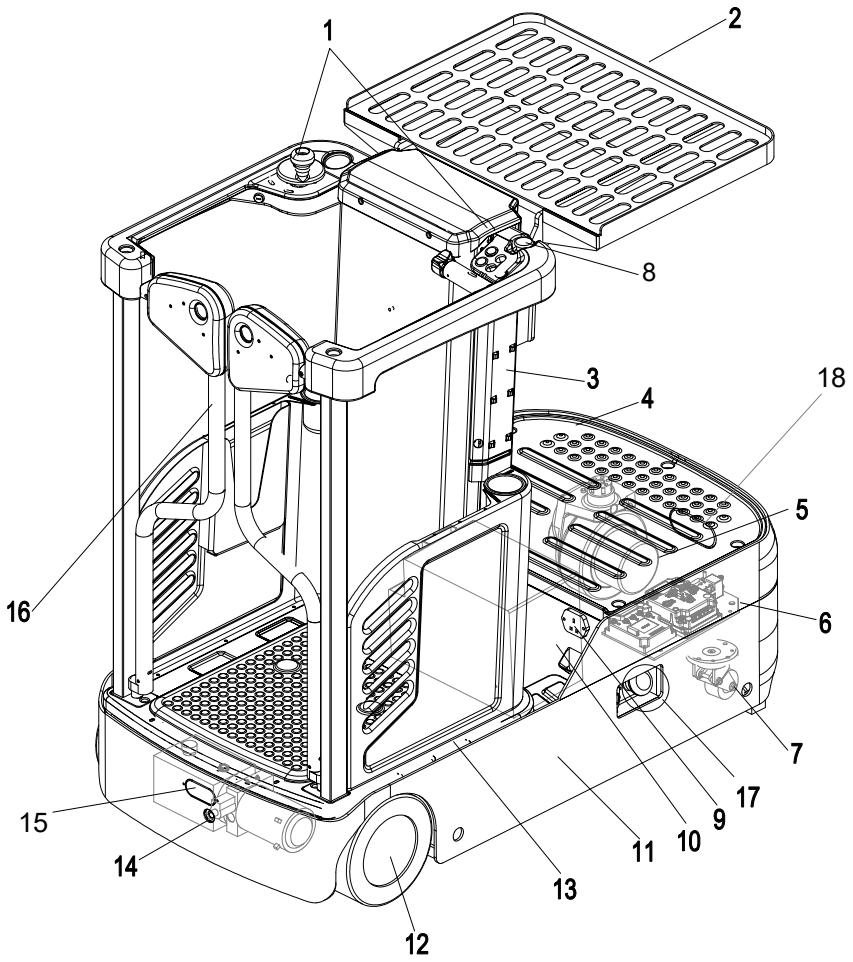
Hydraulic system

All hydraulic operations are controlled by a hydraulic pump.

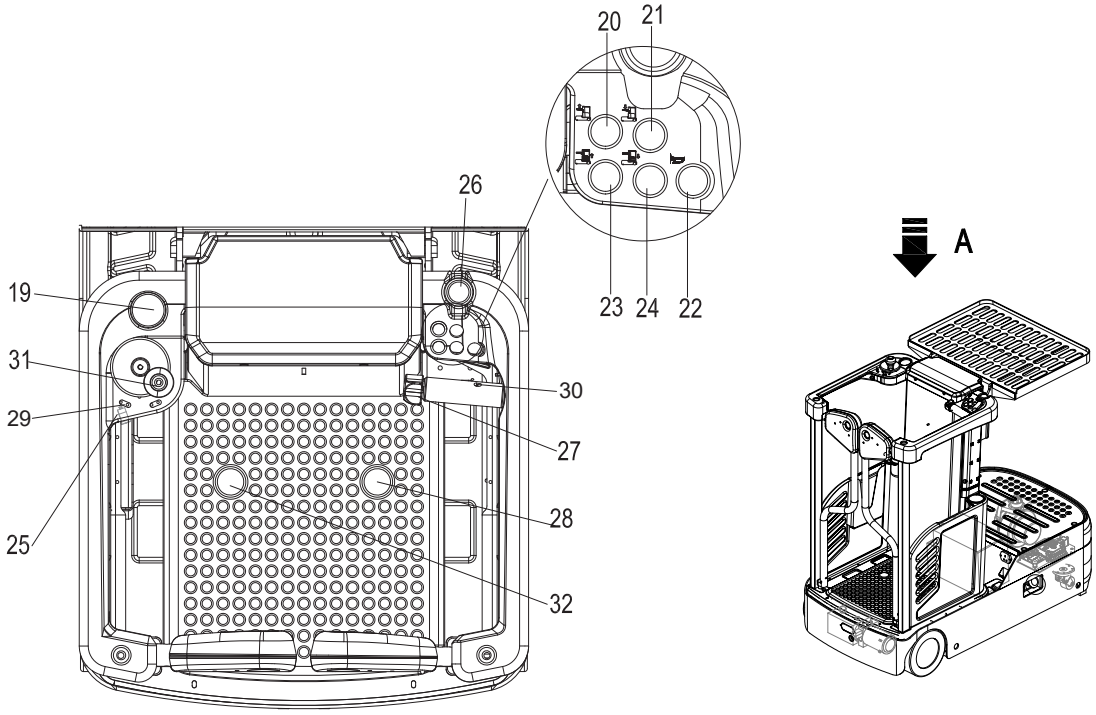
Electrical system

The electrical system is powered by a 24V battery. Electronic controllers drive the traction motor (AC), steering and lifting.

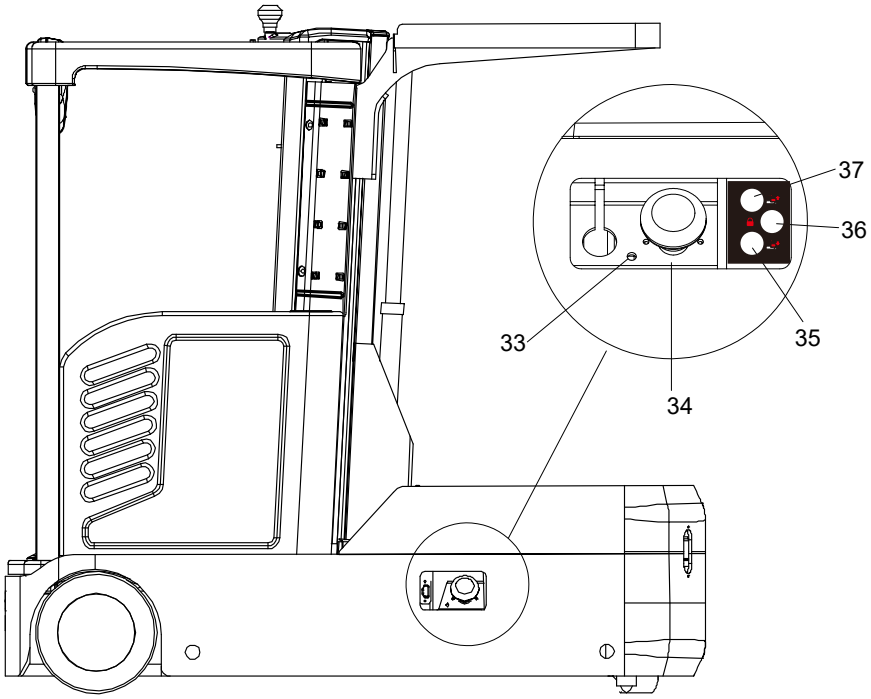
1.3 Control elements and displays



1	Control panel	11	Chassis
2	Storage table	12	Load wheels
3	Lift mast	13	Lift platform
4	Additional storage table	14	Hydraulic pump
5	Drive wheel	15	Driving lamp
6	Controller	16	Safety Gates
7	Caster	17	Emergency operation area
8	Emergency stop switch	18	Blue lamp
9	Charger socket		
10	Battery		
	Lithium Battery (option)		

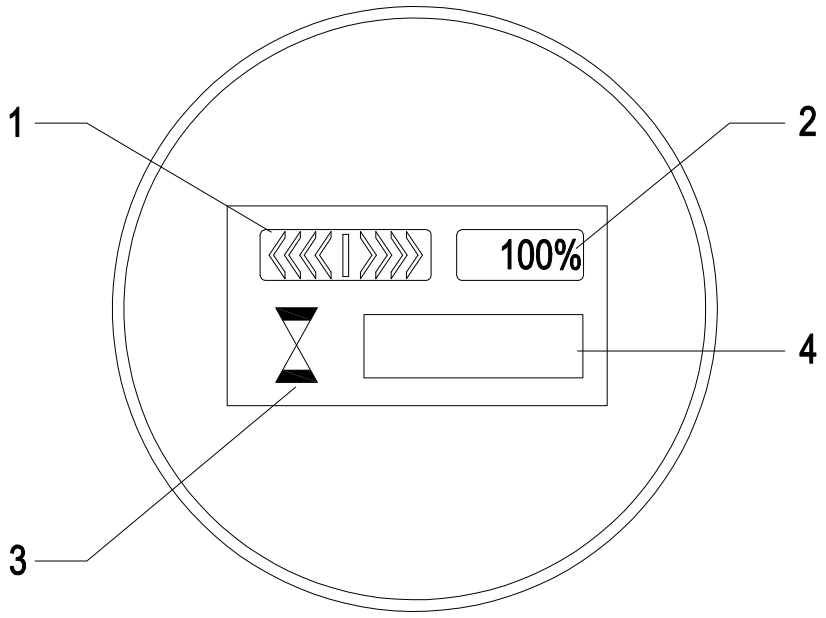


Item	Control / Display	Function
19	Display unit	Operating information and warning message display.
20	"Lifting" button	Lift the storage table.
21	"Lowering" button	Lower the storage table.
22	"Horn" button	Activates the horn.
23	"Lifting" button	Lift the lift platform.
24	"Lowering" button	Lower the lift platform.
25	Key switch	Switches control current on and off. Removing the key prevents the order picker from being switched on by unauthorized personnel.
26	Emergency stop switch	Disconnects the supply current, deactivates all electrical functions, causing the order picker to brake automatically.
27	Travel switch	Select the required driving direction.
28	Right dead man switch	Apply the right drive pedal to start up the order picker.
29	Sensor switch of steering wheel	The left hand must be placed in the position of the sensor switch to operate the order picker.
30	Sensor switch of accelerator	The right hand must be placed in the position of the sensor switch to drive the order picker to move .
31	Steering wheel	Steers the order picker in the required direction.
32	Left dead man switch(option)	If you choose this function, you need to step down the right drive pedal at the same time to start the order picker .

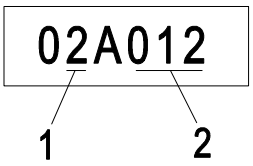


Item	Control / Display	Function
33	LED Lamp	Display charging status
34	Emergency stop switch	Disconnects the circuit, all electrical functions are deactivated.
35	"Lowering" button	Lower the lift platform.
36	Low control	Cooperate with the lift and lower button
37	"Lifting" button	Lift the lift platform.

1.3.2 Display for JX0



Item	Component	Function
1	Steering signal	The position of the drive wheel is shown here.
2	Battery discharge indicator	When the electricity is less than10%, the lamp will illuminate.Must prevent the battery from over discharging, please charge.
3	Working status signal	•Always on, dead man switch opened. • Flashing, dead man switch closed, start timing.
4	Information display area	• Normally displays the total working hours. • If fault, displays the error code.



Error Code		
1	Controller number	2 = Traction controller 6 = Steering controller
2	Error code	note
Note: Consult the service manual		

When the lift platform rises to 2000 mm the vehicle automatically operates with crawl speed.

Driving speed	**Unit: Km/h**
Lift platform height (mm)	Speed
0 - 500	6.5
500 - 1000	3
1000- 2000	2
2000 - MAX.	0.8-1

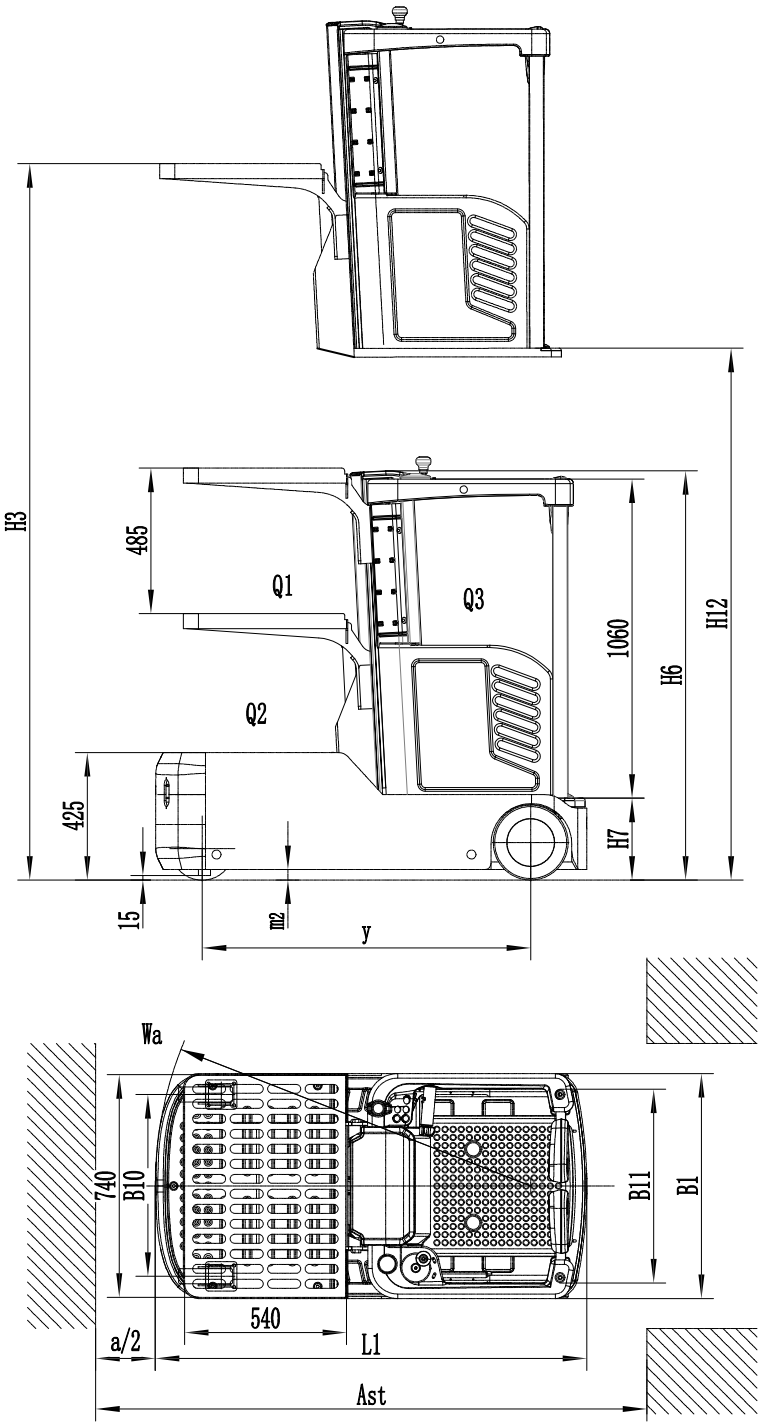
1.4 Standard Version Specifications

Technical specification details in accordance with VDI2198. Technical modifications and additions reserved.

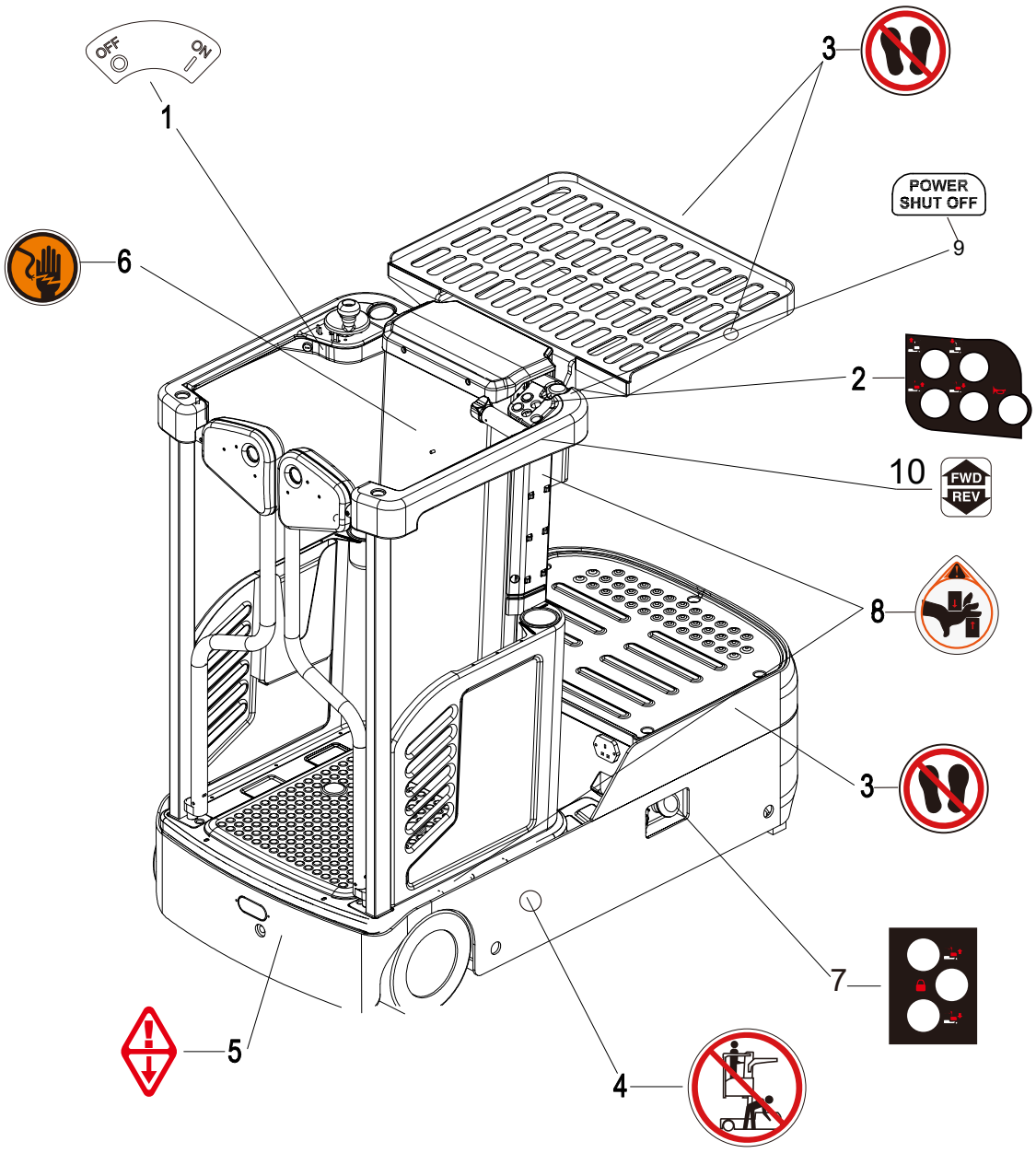
1.4.1 Performance data for standard order pickers

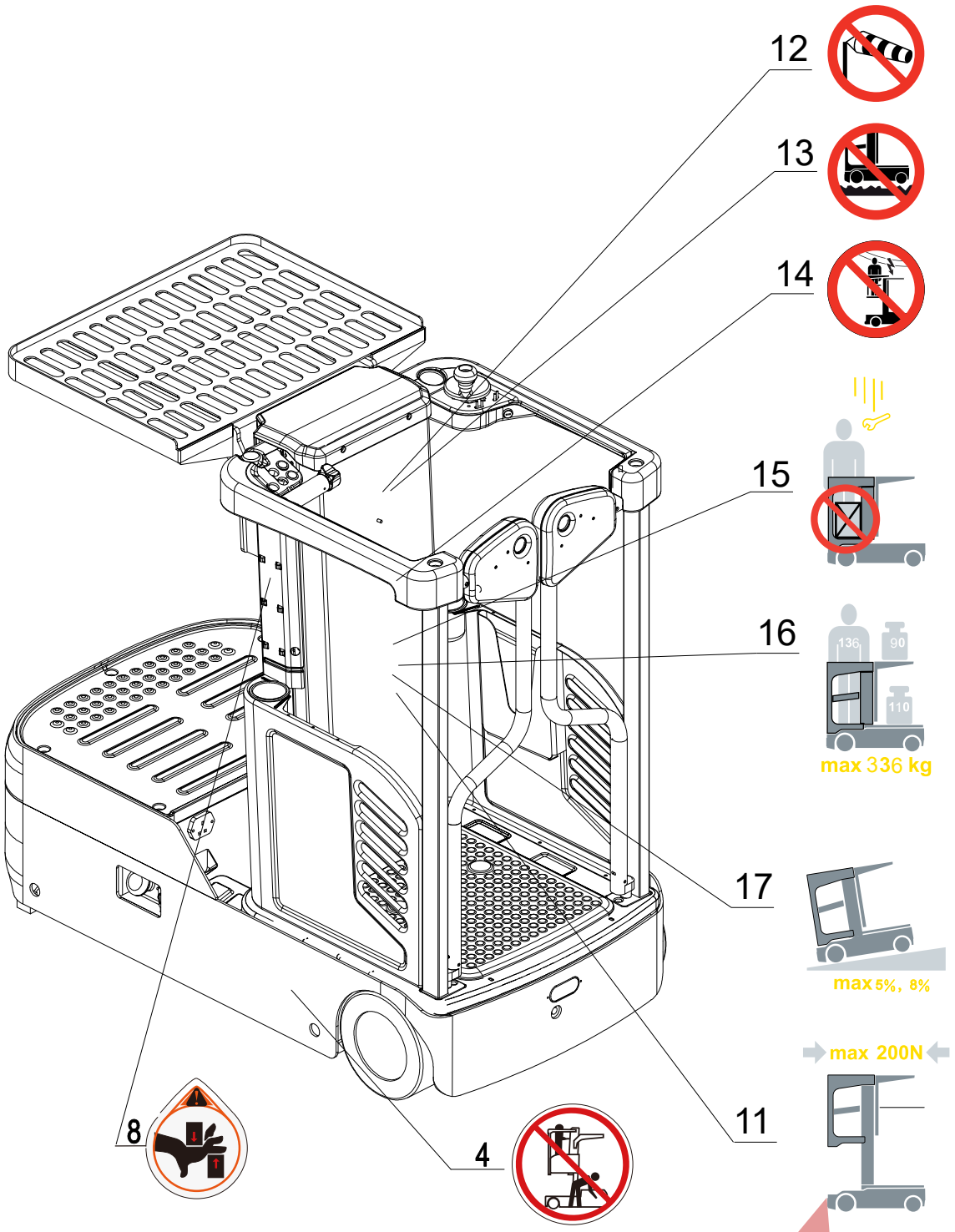
Distinguishing mark				
1.1	Manufacturer			EP
1.2	Model designation			JX0
1.3	Drive unit			E
1.4	Operator type			standing
1.5	rated capacity	Q 1	kg	90
		Q 2	kg	110
		Q 3	kg	136
1.9	Wheelbase	y	mm	1095
Weight				
2.1	Service weight （include battery）		kg	800
2.3	Axle loading, unladen driving side/loading side		kg	370/430
Types,Chassis				
3.1	Tyre type, Driving wheels/Loading wheels			polyurethane
3.2	Tyre size, driving wheels（Diameter×Width）		mm	Φ210×70
3.3	Tyre size, loading wheels（Diameter×Width）		mm	Φ250×100
3.5	Wheels, number driving，caster/loading (x=drive wheels)		mm	1x，2/2
3.6	Track width, front,driving side	b_{10}	mm	545
3.7	Track width,rear,loading side	b_{11}	mm	640
Dimensions				
4.4	Lift height)	h_3	mm	3620
4.8	Seat height/standing height)	h_7	mm	275
4.14	Stand height, elevated	h_{12}	mm	3000
4.19	Overall length	l_1	mm	1440
4.21	Overall width	b_1/ b_2	mm	750
4.32	Ground clearance, center of wheelbase	m_2	mm	35
4.35	Turning radius	Wa	mm	1260
Performance data				
5.1	Travel speed, laden/ unladen （H:0-500mm）		km/ h	6/6.5
	Travel speed, laden/ unladen （H:500-1000mm）		km/ h	3
	Travel speed, laden/ unladen （H:1000-2000mm）		km/ h	2
	Travel speed, laden/ unladen （H:2000-3000mm）		km/ h	1
5.2	Lifting speed, laden/ unladen（Q3）		m/ s	0.213/0.225
	Lifting speed, laden/ unladen（Q1）		m/ s	0.023/0.028
5.3	Lowering speed, laden/ unladen)（Q3）		m/ s	0.230/0.233
	Lowering speed, laden/ unladen)（Q1）		m/ s	0.030/0.029
5.8	Max. gradeability, laden/unladen, not lifting		%	5\8
5.10	Service brake type			Electromagnetic
Electric-engine				
6.1	Drive motor rating S2 60 min		kW	0.65
6.2	Lift motor rating at S3 15%		kW	2.2
6.4	Battery voltage/nominal capacity K5		V/ Ah	12x2/120
6.5	Battery weight		kg	30X2
Addition data				
8.1	Type of drive unit			DC
10.5	Steering type			Electronic
10.7	Sound pressure level at the driver’s ear		dB (A)	74

1.4.2 Dimensions



1.5 Data plate and Identification points




12
13
14
15
16
136
90
110
max 336 kg
17
max 5%, 8%
max 200N
11
8
4

Item	Description
1	Key Switch
2	Lifting button, Lowering button, horn button
3	Information sign "Never standing"
4	Information sign "Never stand under the platform"
5	Emergency Lowering
6	Information sign "This platform is not insulatied"
7	Emergency operation area
8	Risk of trapping
9	Power shut off
10	Forward travel Reverse
11	Lifting button, Lowering button, horn button
12	No operation permitted in wind
13	No operation permitted on uneven ground.
14	Maintain clearance to the ceiling. -No operation permit under power lines.
15	Carrying loose objects : -No loose objects may be carried on the operator platform. -Secure objects against falling.
16	Maximum load : -Maximum operator weight. -Maximum load on the storage table. -Maximum load on the addtional storage table.
17	-Maxmum incline with no lifing and laden is 5% . -Maxmum incline with no lifing and unladen is 8% .
18	Maximum manual force
19	Danger of crushing by platform

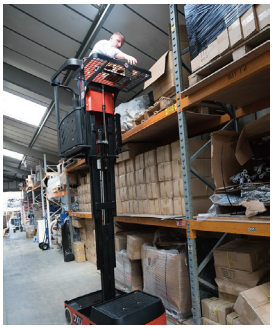
1.6 Platform safety

KEEP YOUR FEET ON THE FLOOR BOARD

Don't climb on any part of the vehicleor use any other item to standon.

USE THE GATES

Close the gates behind you whenyou are elevated. Protect yourselffrom falls.



STAYCLOSE TOYOUR WORK

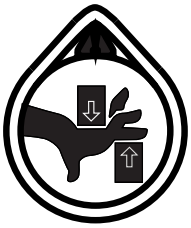
Avoid long reaches.Be careful with tools or when transferring merchandise Watch out for people below,and in the next aislel.

1.7 Be a safe operator

DRIVE CAUTIOUSLY, BE ALERT
Keep the gates closed when you are elevated.

Drive with the gates open when the platform is lowered.You may need to get of the vehicle quickly to avoid injury.Don't climb on the rails or any other part of the vehicle.

Keep your entire body inside the operator area, no matter how slow the vehicle is moving. A hand or foot caughtbetween the vehicle and a solid object will be crushed or even cut off.



Avoid sudden movement of controls. Leam to use them smoothly at a moderate, even rate. Sudden control changes can cause loads to shift or fall. Make sure loads are secure.I

Always be alert to the area around you and watch where you are driving. You could be pinned or crushed byobjects intruding or poking into the operator area.o

Always check that you can clear overhead objects.Check clearances before raising or lowering.

Be extra careful if you must use your vehicle in an area
where there is a risk of falling objects.

Make sure you have a clear view in the direction you'retraveling. Look where you're going and slow down in congested areas.

Slow down and be extra careful on wet or slippery floors.

Look where you are going before you change directionof travel. See that you have room to drive and turn.

WATCH OUT FOR OTHER PEOPLE

Slow down. Yield or stop for pedestrians. Alert others when you approach them. Watch out for other vehicles in the area. Sound the horn when you come to acrosswalk or intersection.

Be careful you don't pin or crush someone.

For example: Never drive your vehicle toward anyone standing in front of a fixed object.
Never allow passengers anywhere on your vehicle.
Make certain the area around and under you is clear of people before lowering or traveling.

Keep others away from your vehicle while you're working.Don't ever allow anyone under the load or platform.

Watch out for front end swing while turning.

Don't let anyone drive your vehicle unless they are trained and authorized.

AVOID FALLS AND TIPOVERS

Stay away from the edge of docks and drop-offs.

Watch where you're going. Always check that your path is clear of debris, overhead obstructions or holes in thefloor that could cause your vehicle to tip over.

Don't overload your vehicle or handle unstable loads.Make sure the load weight is evenly distributed.

Some floors and elevators have weight limits. Make certain your vehicle, including operator and load, isn't too heavy for where you're driving.

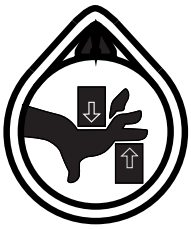
Don't drive onto an elevator unless it is authorized.Check the capacity or load limit, and make sure there are no people present. Keep vehicle gates open.Enter load first.

WATCH OUT FOR PEOPLE AROUND YOU
Pedestrians always have the right-of-way. They Ca control your vehicle. Start out slowly and don't drive too close to them. Be careful at intersections. Check around the vehicle and under the platform before lowering or driving.

THERE IS NO SAFE PLACE FOR PASSENGERS
Never allow anyone to stand or ride anywhere on your vehlicle.

FALLING OBJECTS CAN INJURE PEOPLE BELOW YOU
Be careful when handling tools or merchandise. Work close to racks or shelves when transferring loadsMake sure loads are stable.

FALLS ARE VERYSERIOUS ACCIDENTS
Keep the gates closed when you are elevated. Don't climb on any part of the platform. Never add anything to the platform to stand or climb on. Don't climb down from an elevated platform Have someone lower the platform using the override controls on the service panel or the manual lowering valve under the load deck



HANDS AND FEET CAN BE PINNED OR CRUSHED
Come to a complete stop before leaving your vehicle While the vehicle is moving, keep your hands on the controls and your heels on the pedals. Any part of your be crushed or even cut off. If you must use a hand to stabilize a load, make certain you will not be pinned or crushed

AVOID TIPOVERS

Never overload your vehicle. Distributeoads evenly Watch out for overhead obstructions like h pes or electrical conduits. Stay away from the edge c docks or drop-offs. Be sure your path is clear of debris,holes or anything that could cause a tip over.

KEEP YOUR VEHICLE UNDER CONTROL

Don't drive over on ramp or grades.You could lose steeri control.Be extra careful and drive slowly over spills or wet floors.Don't drive over things in your paths.

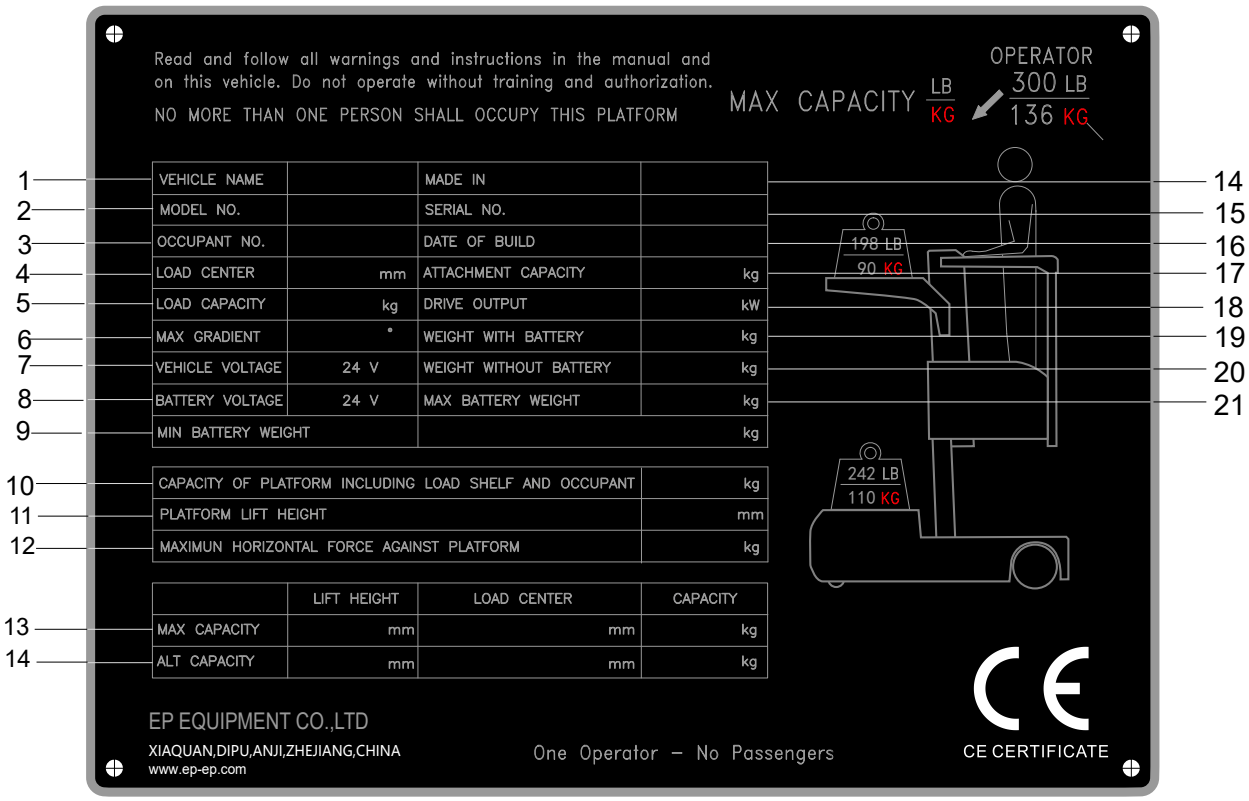
THIS PLATFORM IS NOT INSULATIED

You could be bumed or even killed if you or your vehicle comes too close to electrical devices or wires. Know what voltages you may be exposed to, and what the safe working distance is.

1.6 Truck data plate

For queries regarding the truck or ordering spare parts please quote the truck serial number.

Item	Description	Item	Description
1	VEHICLE NAME	12	MAX HORIZONTAL FORCE AGAINST PLATFORM
2	MODEL NO.	13	MAX CAPACITY
3	OCCUPANT NO.	14	ALT CAPACITY
4	LOAD CENTER	15	MADE IN
5	LOAD CAPACITY	16	SERIAL NO.
6	MAX GRADIENT	17	DATE OF BUILD
7	VEHICLE VOLTAGE	18	ATTACHMENT CAPACITY
8	BATTERY VOLTAGE	19	DRIVE OUTPUT
9	MIN BATTERY WEIGHT	20	WEIGHT WITH BATTERY
10	CAPACITY OF PLATFORM INCLUDING LOAD SHELF AND OCCUPANT	21	WEIGHT WITHOUT BATTERY
11	PLATFORM LIFT HEIGHT	22	MAX BATTERY WEIGHT



C Safety

1.1 Before Operation

Before using the truck, inspect the work area. It should be neat, well lit, adequately ventilated, and free from hazardous material. Aisles and roadways should be unobstructed and well marked. Operators must know the classification for the truck and use the truck only in permissible areas. Ensure that there are no loose objects on the truck or in the operator compartment, especially on the floor plate where they could interfere with pedal operation (if equipped) or foot room. Fire extinguishers and other emergency equipment should be visible and easy to reach. Wear safety equipment when required. Don't smoke in "No Smoking" areas, or while charging batteries or refueling combustion engine trucks. Never operate the truck with greasy hands. This will make the controls slippery and result in loss of truck control. Any questions or concerns about safety should be brought to the attention of a supervisor. If an accident should occur, it must be reported immediately.

WARNING

Unauthorized modification to the truck can result in injury or death.
Can not remove, disable or modify any safeguards or other safety devices. These include any alarms, lights, mirrors, overhead guards, and load backrest extensions. If present, an overhead guard is intended to provide protection to the operator from falling objects, but cannot protect from every possible impact.

1.2 Safety regulations for operating mode Drive

Routes and working areas

Only such lanes and routes that are specially allocated for truck traffic may be used. Unauthorized third parties must stay away from the working area. Loads may only be stored at places specially provided for this purpose.

Driving the vehicle

The driver must choose a driving speed suitable for the local conditions. The truck must be driven at slow speed on negotiating bends or narrow passages, when passing through swing doors and at blind spots. The driver must always observe an adequate braking distance between his truck and the vehicle in front and he must be in control of his truck at all times. Sudden stopping (except in emergencies), rapid U-turns and overtaking at dangerous or blind spots is not permitted.

Travel visibility

The operator must look in the travel direction and must always have a clear view of the route ahead If carrying loads that affect visibility, the truck must travel against
the load direction. If this is not possible, a second person must walk alongside the
order pickers as a marshaller to observe the travel path while maintaining eye contact with
the operator. Travel only at crawl speed and with particular caution. Stop the truck
immediately if eye contact is lost

Negotiating slopes and inclines

The slopes or inclines must be clean and non-slip. It should be possible to travel along them according to the technical specifications of the truck. The truck must always be driven with the load facing uphill. It is forbidden to tum, drive at an oblique angle, or park the truck on inclines or slopes.

Negotiating lifts, loading ramps and docks

Lifts may only be used if they have sufficient capacity, are suitable for driving on and authorized for truck traffic by the operating company. The driver must satisfy himself of the above before entering these areas. When entering lifts, the order pickers must have the load in front and must take up a position which does not allow it to come into contact with the walls of the lift shaft, Persons riding in the lift along with the order pickers must only enter the lift after the order pickers has safely stopped, and must leave the lift before the order pickers. The driver must ensure that the loading ramp /dock cannot move or come loose during loading or unloading.

Vibration

Mobile elevating work platform: 1.70 m/s.

In accordance with standard procedures, the vibration acceleration acting on the body in the operating position is the linearly integrated, weighted acceleration in the vertical direction. It is calculated when travelling over thresholds at constant speed. The manufacturer offers a spedal service to measure these human vibrations.

Human vibration measurement

Vibrations that affect the operator over the course of the day are known as human vibrations. Excessive human vibrations will cause the operator long tem healthproblems.The European"2002/44/EC/Vibration operator directive has thereforeI been established to protect operators.To help operators to assess the applicationsituation, the manufacturer offers a service of measuring tkese human vibrations.

1.3 Battery Safety

WARNING

Batteries contain dissolved sulfuric acid, which is poisonous and caustic. Batteries also can produce explosive gases.

Remain aware of the following information.

- Wear protective equipment (protective apron and gloves) and protective glasses when working with battery acid. If clothing, skin or eyes come into contact with battery acid, immediately flush the affected areas with water. If acid contacts the eyes, seek medical attention at once. Clean spilled battery acid immediately with large amounts of water.
- Remove any metal rings, bracelets, bands, or other jewelry before working with or near batteries or electrical components.
- Never expose batteries to open flame or sparks.
- Areas in which batteries are stored or charged must be well ventilated to prevent concentration of explosive gases.
- If a battery is charged while installed in the truck, the battery cover must remain completely open during the entire charging period unless the battery is maintenance free and does not gas out.
- Shorting of battery terminals can cause burns, electrical shock, or explosion. Do not allow metal parts to contact the top surface of the battery. Make sure all terminal caps are in place and in good condition.
- Batteries may only be charged, serviced, or changed by properly trained personnel. Always follow all instructions provided by the manufacturers of the battery, charger, and order pickers.

1.4 EMC-Electromagnetic compatibility

Electromagnetic compatibility (EMC) is a key quality feature of the truck.
EMC involves

- limiting the emission of electromagnetic interference to a level that ensures the troublefree operation of other equipment in the environment.
- Ensuring sufficient resistance to external electromagnetic interference so as to guarantee proper operation at the planned usage location under the electromagnetic interference conditions to be expected there An EMC test thus firstly measures the electromagnetic interference emitted by the truck and secondly checks it for sufficient resistance to electromagnetic interference with reference to the planned usage location . A number of electrical measures are taken to ensure the electromagnetic compatibility of the truck.
- Our order picker has been successfully tested according to EN12895 as well as the standardised instruction contained there in.

CAUTION

The EMC regulations for the truck must be observed.
When replacing truck components ts for repair the protective EMC components must be installed and connected again.

D Transport and Commissioning

1.1 Transport

WARNING

Accidental movement during transport

Improper fastening of the JX0 during transport can result in serious accidents.
Loading must only be performed by special personnel trained for this purpose.The specialist personnel must be instructed in securing loads on roads on road vehicles and handling load securing devices.In each case, correct measurements must be taken and appropriate safety measures applied.
The truck must be correctly lashed down when transported on a lorry or trailer.
The lorry or trailer must be equipped with tie-down rings.
Secure the truck with chocks to prevent accidental movements.
Use only lashing straps with sufficient rated strength.
Use non-slip matrials to secure the transport aids(pallet,wedges,....)e.g.non-slipmats.

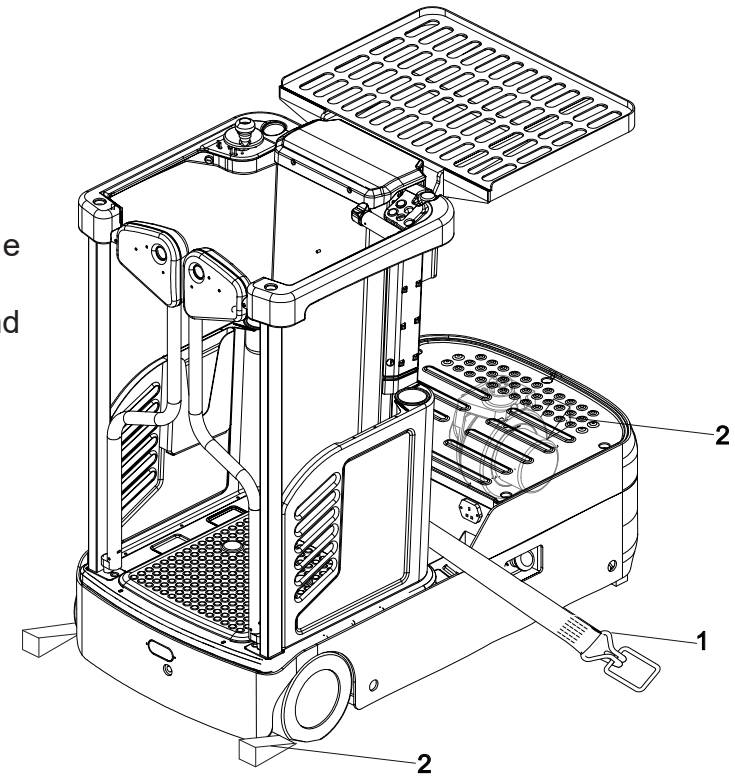
Requirements

- The truck loaded on from vehicle.
- Work platform is parked securely.
- Tools and Material Required
  Lashing straps.

Procedure

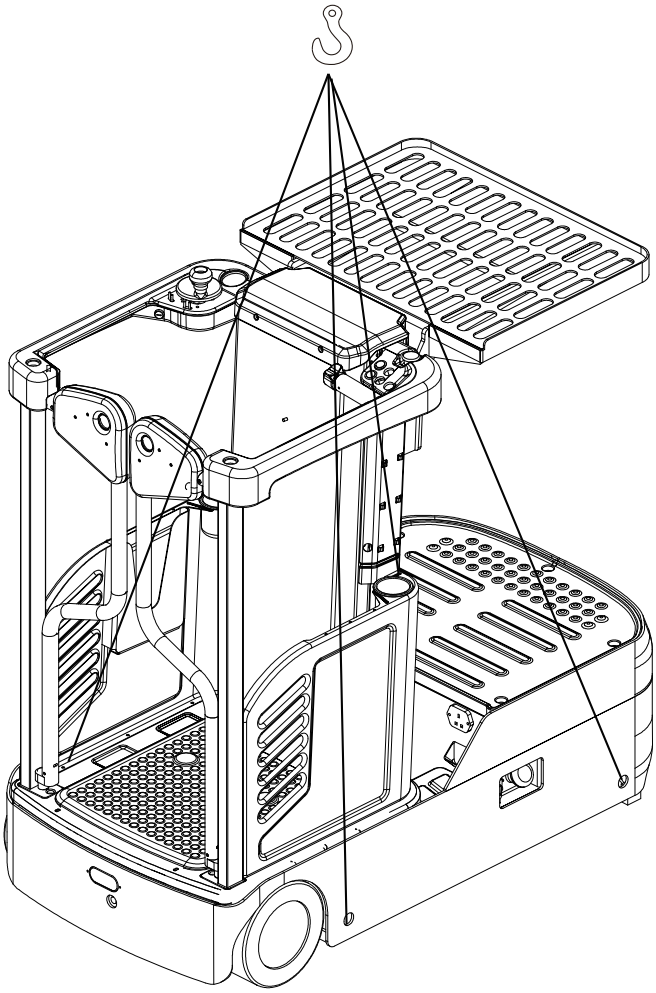
- Lay the lashing strap (1) over the chassis.
- attach to the transport vehicle, and tension it sufficiently.
- Secure the wheelswith chocks(2) to prevent slipping.

The truck can now be transported.



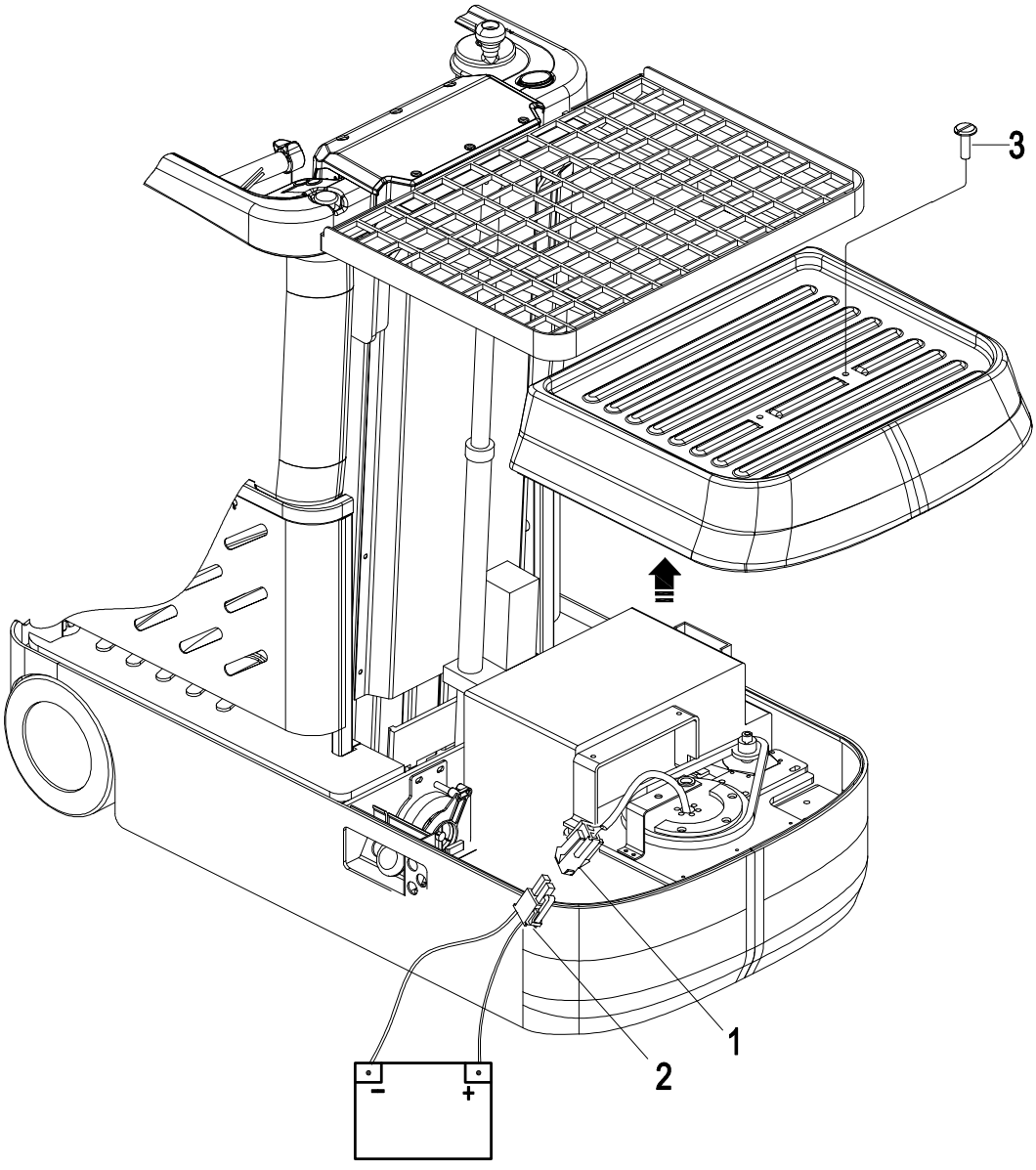
1.2 Hoisting the Truck

This section explains the attachment of lifting equipment to the truck for the purpose of hoisting. Many methods of rigging to a crane or hoist are possible. Explanation of such methods as well as operation of lifting equipment is outside the scope of this manual. Both the attachment of lifting equipment to the truck and the hoisting operation itself must be performed by personnel experienced in hoisting.



1.3 Operating the order picker without its own drive system

This operating mode is not permitted when negotiating inclines and gradients.
If the order picker has to be moved after a failure has rendered
it immobile, proceed as follows:
Set the emergency stop switch “OFF”.
Set the key switch “OFF” and remove the key.
Prevent the truck from rolling away.
Take off the two screws(3) **and** remove the cover.
Connect wiring harness (1) to wiring harness(2).
Connect wiring harness (2) to positive and negative pole of battery.
The brake is now released and the order picker can be pushed.
Disconnect the harness(1) and harness(2).
The brake is now applied again.



1.4 Using the Truck for the First Time

Only operate the order picker with battery current.
Preparing the order picker for operation after delivery or transport.
Procedure

- Check whether is complete.
- Check the hydraulic oil level.
- Install the battery if necessary, (see Battery removal and installation" on) do not damage battery cable.
- Charge the battery, (see Charging the battery").
  When the order picker is parked the surface of the tyres will flatten. The flattening will disappear after a short period of operation.
- Check for Fluid Leakage.
- Check Battery Connector.
- Check Decal Condition.
- Check Operating Controls.
- Visually inspect the entire truck (in particular wheels and storage table) for obvious damage.
- Visually inspect the battery attachment and cable connections.
- Check the storage table for visible damage such as cracks.
- Check wheels for wear and damage.
- Test the warning device.
- Make sure the load chains are evenly tensioned.
- Check whether the normal function of all safety devices.

1.5 Break-in period precautions

Fasten wheel screws again at 50 hours of operation.
We recommended operating the machine under light load conditions for the first stage of operation to get the most from it. Especially the requirements given below should be observed while the machine is in a stage of 100 hours of operation.

- Must prevent the new battery from over discharging when early used. Please charge when remain power is less than 20%.
- Perform specified preventive maintenance services carefully and completely.
- Avoid sudden stop, starts or turns.
- Oil changes and lubrication are recommended to do earlier than specified.
- Carry only 70-80% of the rated load.

E Operation

1.1 Safety Regulations for the Operation of order pickers

Driving permission

The order pickers must only be operated by persons who have been trained in the operation of trucks, who have demonstrated to the owner or his representative their capability of moving and handling loads, and who have expressly been charged by the user or his representative with the operation of the truck.

Rights, duties and conduct of the driver

The driver must be: informed of his rights and duties; trained in the operation of the order pickers; and familiar with the contents of these operation manual. All necessary rights must be granted to him. If the order pickers can be used in the pedestrian-controlled mode, the driver must wear safety boots when operating the truck.

Unauthorized Use of truck

The driver is responsible for the order picker during the time it is in use. He shall prevent unauthorized persons from driving or operating the order picker. It is forbidden to carry passengers or lift personnel.

Repairs

Without specific training and expressed authorization, the driver is not allowed to perform any repairs or modifications on the order pickers . Under no circumstances must the driver change the setting of switches or safety installations or render them ineffective.

Safety devices and warning labels

The safety devices, warning signs and warning instructions in the present operating instructions must be strictly observed.

Hazardous area: A hazardous area is defined as the area in which a person is at risk due to order picker movement, lifting operations, the storage table (attachments) or the load itself. This also includes areas which can be reached by falling loads or lowering operating equipment. The driver must give a warning signal whenever a situation presenting danger to persons might develop.

- Unauthorized persons must be kept away from the hazardous area.
- Where there is danger to personnel, a warning must be sounded with sufficient notice.
- If unauthorized personnel are still within the hazardous area the order picker shall be brought to a halt immediately.

1.2 Run the order picker

Checks and operations to be performed before starting daily work.

- Visually inspect the entire order picker (in particular wheels and storage table) for obvious damage.
- Visually inspect the battery attachment and cable connections.
- Check the storage table for visible damage such as cracks.
- Check wheels for wear and damage.
- Test the warning device.
- Make sure the load chains are evenly tensioned.
- Check whether the normal function of all safety devices.

To prepare the order picker for operation

- Close the safety gates.
- Insert the key in the key switch and turn it to the “ON” position .
- Pull up the emergency brake switch .
- Test horn.
- Check the operation of the brake.

WARNING

Before the order picker can be commissioned, operated or a load unit lifted, the driver must ensure that there is nobody within the hazardous area.

1.3 Industrial order picker Operation

1.3.1 Safety regulations for order picker operation

Travel routes and work areas

Only use lanes and routes specifically designated for order picker traffic. Unauthorized third parties must stay away from work areas. Loads must only be stored in places specially designated for this purpose.

Driving conduct

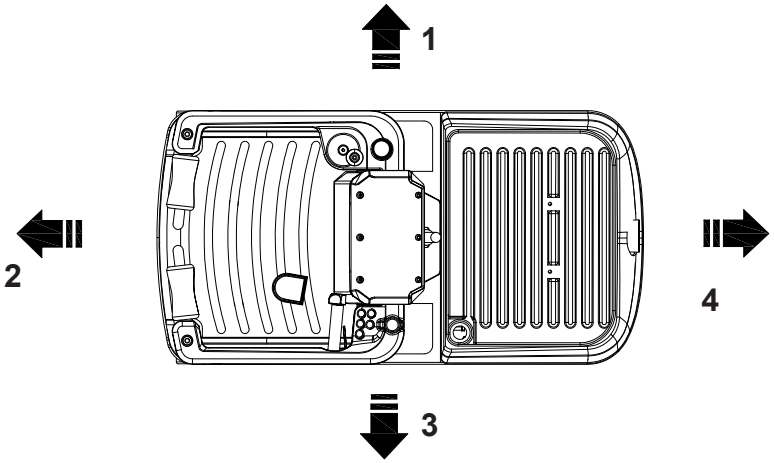
The driver must adapt the travel speed to local conditions. The order picker must be driven at slow speed when negotiating bends or narrow passageways, when passing through swing doors and at blind spots. The driver must always observe an adequate braking distance between the order picker and the vehicle in front and must be in control of the order picker at all times. Abrupt stopping (except in emergencies), rapid U turns and overtaking at dangerous or blind spots are not permitted. It is forbidden to lean out of or reach beyond the working and operating area.

Nature of loads to be carried

The operator must make sure that the load is in a satisfactory condition. Only carry loads that are positioned safely and carefully. Use suitable precautions, e.g. a load guard, to prevent parts of the load from tipping or falling down.

1.3.2 Travel, Steering, Braking

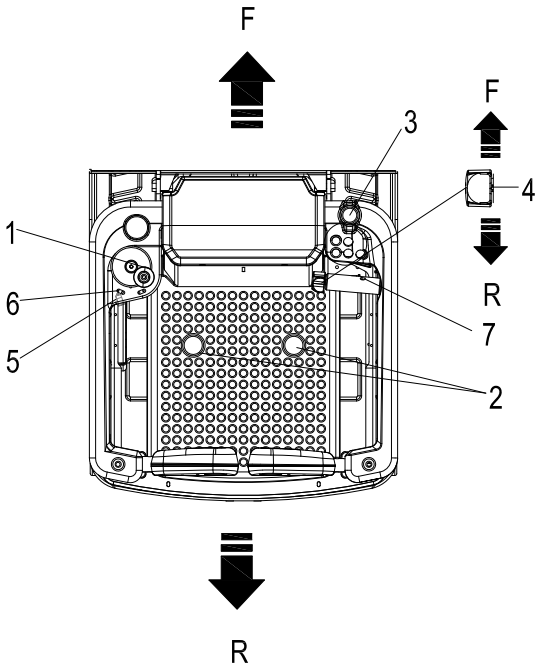
The following definitions apply to travel direction specifications.



Item	Travel direction
1	Left
2	Reversing/drive direction
3	Right
4	Forward

NOTE

Can not drive the order picker unless the panels are closed and properly locked.
When you start up the order picker the deadman switch must be applied.



1. Driving

- Close the safety gates.
- Insert the key in the key switch(5) and turn it to the “ON” position .
- Pull up the emergency stop switch(3) .
- Apply the drive deadman switch(2).
- Left hand in sensor switch(6) position.
- Right hand in sensor switch(7) position.
- Use the travel switch (4) to select the required driving direction.
- Forward = F.
  Reverse = R .
  The travel speed is governed by the speed mode .

WARNING

The trucks must be driven in sequence, otherwise the trucks can not run normally.The blue lamp will always be on when the truck driving. Driving lamp will flash yellow when driving.

WARNING

When the truck is switched on, the controller will do a self-test. Make sure the lamps on the display unit stop flashing before operation.

2. Steering

Use steering wheel (1) to steer the order picker in the required direction.

3. Braking

The brake performance of the order picker depends largely on the ground conditions. The driver must take this into account when operating the order picker.The driver must be looking ahead when travelling. If there is no hazard, brake moderately to avoid moving the load The order picker can brake in three different ways:

- with the reversing brake
- with the coasting brake
- with the emergency brake

➢ Reverse braking

While the order picker is travelling press the travel switch (4) into the opposite travel direction and the order picker decelerates. Turn to stop before the truck starts to travel in the oppsite direction.

➢ With the coasting brake

Let the travel switch return to zero positon, the truck is braked.
Releasing the dead man swtich has same effect.

WARNING

This method of braking should be only used as a parking brake, not as service brake.

➢ With the emergency brake

Press the emergency stop switch(3).
The order picker brakes until it comes to a halt.

WARNING

The emergency stop switch (3) must only be used in dangerous situations.

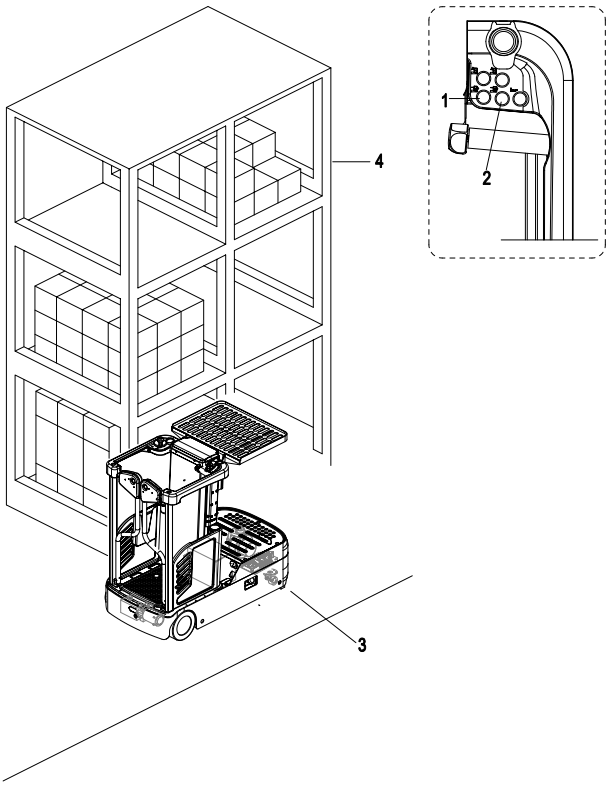
➢ Parking brake

The mechanical brake applies automatically when the truck comes to a halt.

1.4 Switch on the truck,Picking up, transporting

➢ Picking up a load

- Open the doors.
- Go onto the operator platform
- Close the doors
- Turn the emergency stop switch to unlock it
- Insert the key in the key switch and tum it fuly to the right.The truck is ready to operate.
- Drive the order picker carefully up to the storage location(4).
- Press the "Lifting" button(1),lift the storage table load handler(3) reach the desired height.
- Pick the load to the storage table(3) on the goods shelves.



CAUTION

Before a load can be placed, the driver must ensure that the picking location is suitable for storing the load (size and capacity).

WARNING

When the lift platform lifted, please try to avoid sudden steering and emergency stop operation.

➢ Transporting loads

- Always transport loads with storage table.
- Gradually accelerate the order picker.
- Travel at a constant speed.
- Always be prepared to brake. Only stop suddenly in dangerous situations.
- Reduce speed accordingly on narrow bends.

CAUTION

Avoid placing the load down suddenly to avoid damaging the load and the storage table.

1.5Parking the order picker securely

When you leave the order picker it must be securely parked even if you only intend to leave it for a short time.

- Lower the load completely and position it horizontally.
- Set the emergency brake switch“OFF”.
- Turn off the key switch and remove the key.

WARNING

Do not park the order picker on a slope. The lift platform must always be lowered to the ground.

1.6 Lifting - Lowering

Ensure there are no other people standing underneath the raised load and driver's cab. Instruct other people to move out of the hazardous area.

➢ Storage table

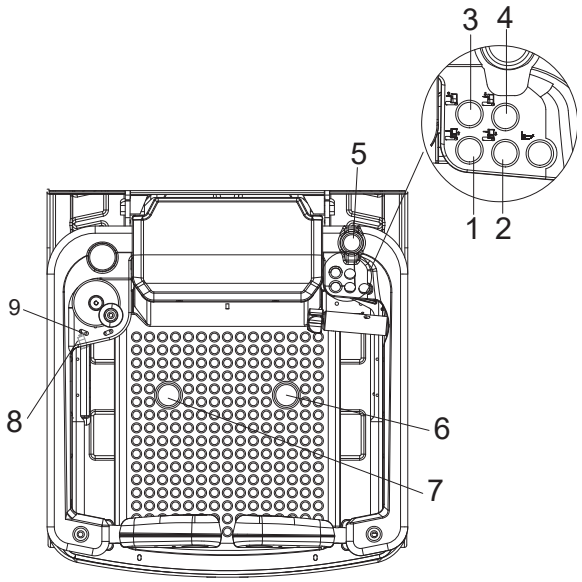
Close the safety gates.
Insert the key in the key switch (8) and turn it to the “ON” position .
Pull up the emergency stop switch (5).
Apply the drive deadman switch (6) and (7).
Left hand in sensor switch(9) position

Lifting

Press the "Lifting" button (1) until you reach the desired lift height.

Lowering

Press the "Lowering" button (2) until you reach the desired height.



WARNING

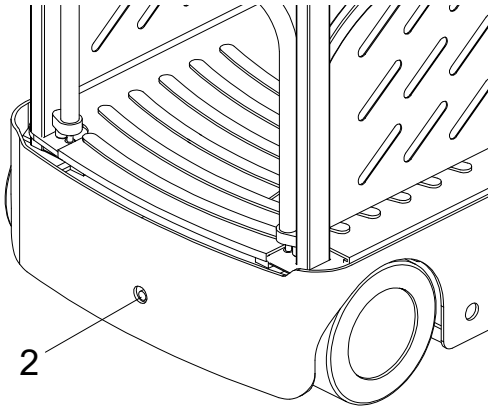
The left hand must be placed in the position of sensor switch of steering wheel that the truck lifting and lowering normally

CAUTION

While lowering the lift platform, the truck sounds an intermittent alarm beeper.

1.6.1 Emergency Lowering

The lift platform can be lowered using the emergency lowering function even if the electronics has failed or the power is off.



1.6.2 Procedures

The truck is parked securely.(See Parking the order picker securely)

Press the emergency lowering valve(2), anticlockwise
rotation of valve. The lift platform is lowered slowly. If necessary to stop, Clockwise rotation of valve, Pull out lowering valve.(for JX0)

WARNING

Can not climb out while the lift platform is elevated. The lift mast cannot be climbed safely. An elevated lift platform has a high center of gravity and can be tipped easily. Standing on or leaning out from the outside of a cage rail may cause the lift vehicle to tip over. Tipping the lift vehicle over can cause severe injury or death and equipment damage.

1.7 Operator daily checklist

At the beginning of each shift, inspect your truck by using the EP Operator's Daily Checklist. If necessary, refer to the Maintenance section of this manual for details on how to carry out this inspection. Check for damage and maintenance problems. Any necessary repairs must be completed before the truck is operated. In addition to daily inspection, scheduled maintenance is vital to safe operation of the truck. Adhere to the inspection, lubrication and maintenance schedule given in the Maintenance section of this manual.

Check for Fluid Leakage

Check the entire truck as well as the surface beneath it for signs of fluid leakage.

Check drive wheels and load wheels for damage

Inspect the drive wheels and load wheels to see if there is any damage, and the function is normal.

Check Battery Connector

Disconnect and reconnect the battery to confirm smooth operation. Inspect the battery connector and its cables for damage.

Check Decal Condition

Inspect all decals and the data/capacity plate for condition and legibility. Decal locations are given in the Overview section of this manual. Any damaged or unreadable decals must be replaced.

Check Operating Controls

Operate the truck in forward or reverse.

Brake Interlock - Travel Control

Operate the truck in forward or reverse. Release the travel control without moving the control handle out of its operating range. The truck should slow to a stop using electric braking.

Perform Operational Check

Before returning the truck to service, perform an operational check of the following items:
Electro-magnetic brake (audible sound during engage/release)
Multi-function display/battery discharge indicator
Horn
Forward and reverse travel
Electric braking
lift and lower function (operate through complete range of motion)
Working lights (if equipped)

Operator's Daily Checklist

Date _____ Operator _____

Truck No. _____ No. _____

Department _____

Runtime
Meter Reading _____

Daily Check Items	O.K.(√)	Remark
Check the entire truck from outside for damage and leaks.		
Check drive wheels and load wheels for damage		
Check Battery Connector		
Check storage table for damage		
Check Decal Condition		
Check Operating Controls		
Check the Horn		
Check Multi-function display/battery discharge indicator		
Check Forward and reverse travel		
Check Electric braking		
Check lifting and lowering function		

F Battery Maintenance & Charging

1.1 Safety regulations for handling acid batteries

The truck must be parked and rendered safe before any operations on batteries are under taken.

Fire protection measures: Smoking and naked flames are not permitted when handling batteries. No inflammable substances or spark-generating materials must be present or stored within a distance of 2 meters of the truck parked for battery re-charging. The location must be well ventilated and fire fighting equipment must be kept ready.

DANGER

- *Battery has high voltage and energy.*
- *Do not short circuit.*
- *Do not place any metal objects on the battery.*
- *Do not put tools on the battery.*

1.2 Battery type & dimension

All the batteries are maintenance free.

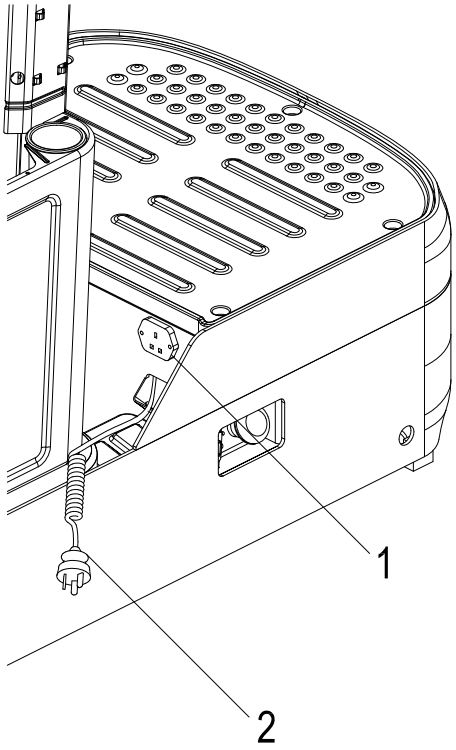
Battery type & dimension as follow:

Tuck type	Battery type	voltage/ rated capacity	Dimension	Charger	Charging time
JX0	Industry battery	2 × 12 / 120	260×180×300	15A	8

1.3 Charging the battery

Safety regulations for Charging the battery

- Before charging, check all cables and plug connections for visible signs of damage.
- Before start and finish charging make sure power is turn OFF.
- It is essential to follow the safety regulations of the battery and charging station manufacures.



Charging Procedure (Interal)

The battery is charged with an internal charger.

Ensure the temperature of the area where charging will occur is between -20℃ and 60℃ .
Park the truck in the designated charging area.
Pull the charger cord (2) from the plate(1) of socket and examine it for damage. If undamaged, plug the charger into a standard 100V ~ 240V, 3-phase, 50/60Hz walloutlet. As long as the built-in charger is connected to the outlet, the truck will not move.

WARNING

Can not climb out while the lift platform is elevated. The lift mast cannot be climbed safely. An elevated lift platform has a high center of gravity and can be tipped easily. Standing on or leaning out from the outside of a cage rail may cause the lift vehicle to tip over. Tipping the lift vehicle over can cause severe injury or death and equipment damage.

➢ Table for charger

DISPLAY	DESCRIPTION	TROUBLESHOOTING
Solid Red	Battery is charging	Running normally.
Solid Green	Battery has fully charged	Running normally.
Solid Yellow	Battery failure	The battery voltage is less than 13V or greater than 32.5V.
Flashing Yellow	Charger failure	a. Output current or output voltage is too large.
Flashing Red	Charger failure	a. Charger without output current
NO Lighting	Charger failure	a. Charger failure.

NOTE

A fully charged battery will provide approximately 3 hours of continuous use. Capacity will be reduced when used in low-temperature environments.

Storage

If batteries are taken out of service for a lengthy period they should be stored in the fully charged condition in a dry, frost-free room.
If the battery is not used for an extended period, it must receive a supplementary charge every two months to prevent permanent damage to the battery.

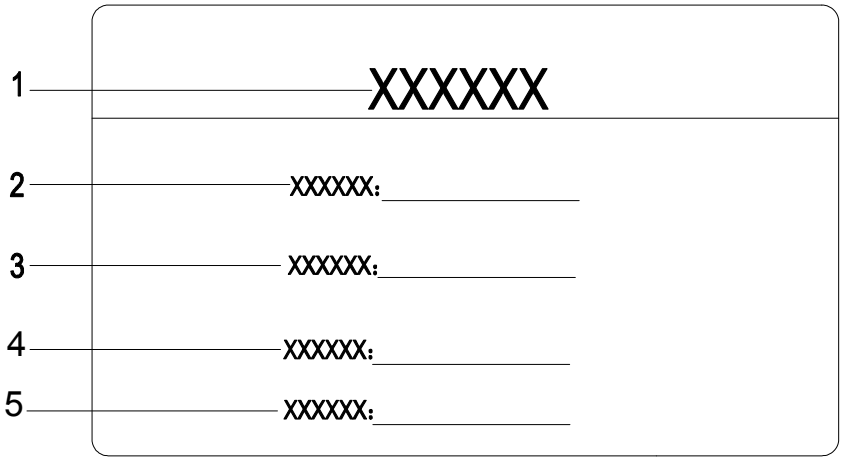
1.4 Battery removal and installation

Park the truck securely(See Parking the truck securely) and turn off the power before removal and installation of the battery.

WARNING

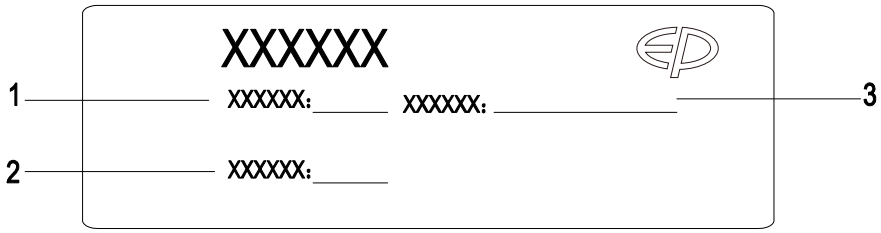
1.The truck must be parked on level ground. To prevent short circuits, batteries with exposed terminals or connectors must be covered with a rubber mat. Place the battery connector or the battery cable in such a way that they will not get caught on the tractor when the battery is withdrawn.
2.When transporting batteries with the aid of a crane, ensure that the crane is of adequate capacity (the battery weight is indicated on the battery identification plate at the battery trough). The lifting gear must exert a vertical pull so that the battery container is not compressed. Attach the hooks to the battery hand(or battery strap) in such a way that the lifting gear, when slack, cannot collapse on the battery cells.
3.When removing the battery make sure it does not get caught on the battery panel,causing the tractor to tip over.
4.After installing the battery, check all cables and plug connections for visible signs of damage. Ensure that the battery is firmly secured in the tractor to prevent any damage caused by sudden movements of the tractor. Whenever you replace the battery make sure it cannot slide. The battery cover must be securely closed and locked.

➢ Battery Nameplate



No.	Name	No.	Name
1	Maintenance-Free Sealed Battery	4	Charging capacity(for JX0)
2	Deep Cycle Capacity	5	Charge settings
3	Reserve capacity		

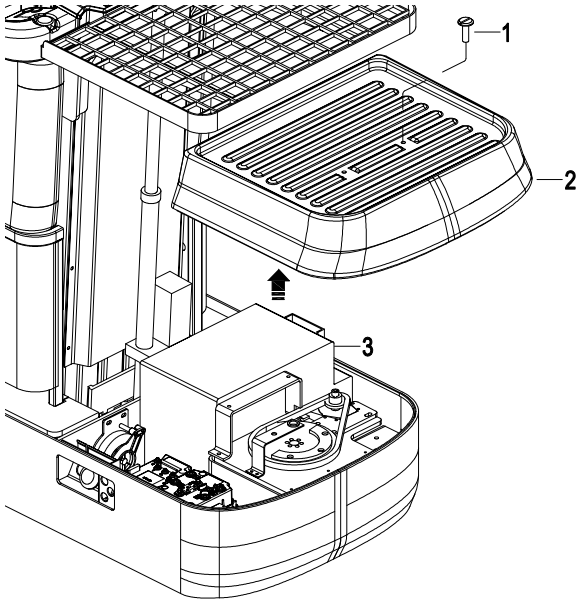
➢ Nameplate of internal charger



No.	Name	No.	Name
1	Model	3	Output
2	Input		

➢ **Procedure(for JX0):**

- Take off the two screws(1) and the front cover itself (2), expose the battery(3).
- Attach the hooks to the battery hand(or battery strap).
- Carefully lift the battery out of the truck.



1.5 Battery maintenance

Do not deep charge battery:

- If you discharge the energy of battery completely till the pallet trucks do not move any more, you will shorten the life time of the battery.
- As soon as the signal for charging appears that is no more lifting or reduced travelling speed, please charge it immediately.

Battery maintenance:

The battery cell covers must be kept dry and clean. The terminals and cable shoes must be clean, secure this with a light coating of dielectric grease. Batteries with non insulated terminals must be covered with a non slip insulation mat.

1.6 Battery Disposal

Batteries must only be disposed of as stipulated in the national environmental protection regulations or waste disposal provisions. The battery manufacture's specifications for the disposal must be followed.

➢ **Cleaning the battery**

- Do not use dry cloth or fire cloth to clean the battery to prevent static charging and prevent explosion.
- Unfix battery plug.
- Clean with wet cloth.
- Wear glasses to protect eyes, wear rubber overshoes and rubber gloves.

1.7 Lithium Battery Use and Maintenance Manual

⚠ CAUTION
• DO NOT short-circuit the positive and negative terminals of the battery. • DO NOT collide, handle gently, and avoid the battery being subjected to excessive vibration, external impact, high drop, etc. • DO NOT place the battery or battery pack in a corrosive chemical environment. • DO NOT charge the battery without a charging device or with a charging device that we do not recognize. • DO NOT expose the battery or leave it in an environment above 45 °C for a long time. • DO NOT disassemble, squeeze, puncture or heat the battery. • Lithium batteries are forbidden for those who lack the knowledge of safe use of lithium batteries. • DO NOT immerse the battery in water or other conductive liquids. • DO NOT use the battery in series or in parallel with other models or types of batteries. •Serial and parallel operation of a complete power supply system containing a lithium-ion battery protection circuit board or battery management system is prohibited.
• It is strictly forbidden to hot swap battery • It is easy to cause fire and electric shock
• Be aware of corrosion • It may cause battery damage and shorten battery life
• No burning • It may cause battery explosion

1.7.1 Battery type & dimension

Battery model	**JX0**	**Battery weight**	**36KG**
Rated voltage	24V	Cell material	NMC
Rated capacity	120AH	Battery size	465mm*259mm*335mm
Charger voltage	24V	Charger current	30A

1.7.2 Instructions

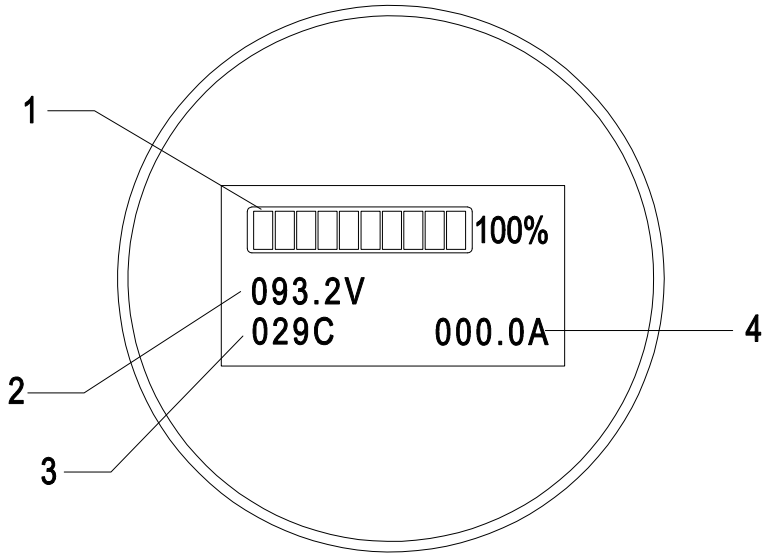
1. Before the first use, charge battery completely with original charger.
2. The lithium battery should be used at an ambient temperature of -20°C ~ 45°C, do not use or store the battery near a fire source/heat source where the temperature is outside the temperature range;
3.when the battery is low, please charge it in time to avoid over-discharge; the replaced battery should also be charged in time to avoid damage caused by over-discharge of the battery after self-discharge.
4. Do not place metal objects (such as wrenches, knives) on the lithium battery, or other objects that may cause short-circuiting of the battery to avoid short circuit between the positive and negative terminals;
5. Do not bump or strike the lithium battery during use, if the battery leaks or smells, please stop using it immediately and keep away from the fire source.
6. If the battery life is significantly shortened, please contact the after-sales for check;
7. If the lithium battery fails and cannot be used, please remove the battery from the handling equipment, the trained personnel can use our BMS special reading instrument to read the information for preliminary judgment; for problems that cannot be solved, please contact the after-sales service department for solutions;
8. Before installing and removing the battery, be sure to read the user manual; the weight of the battery body is evenly distributed, please pay attention to the installation

and removal when there is an external weight; please use two hooks to hang on the lifting rings during the lifting process, and gently lift it to keep it stable and not inclined;
9. The operator must read the instructions carefully before use and receive relevant safety training to be able to handle emergencies;

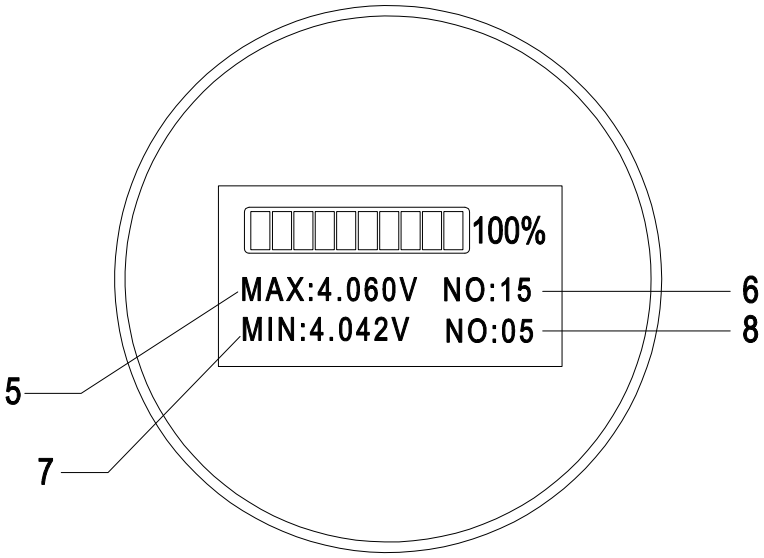
CAUTION

Ambient temperature for use: -20°C ~ 45°C

1.7.3 Display Instrument

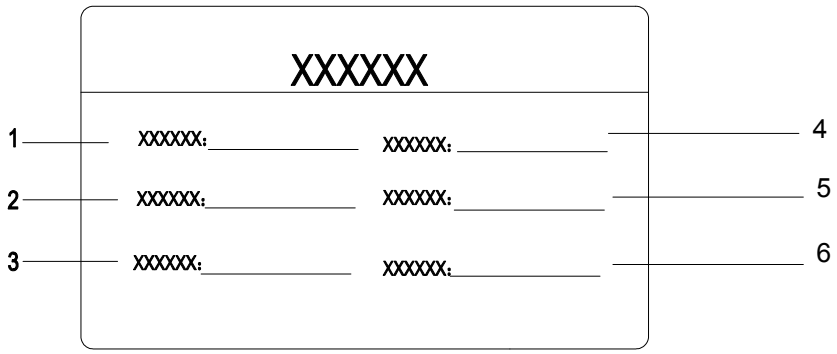


No.	Name	Description
1	Energy display	When all 10 cells are on, it indicates that the battery is full; When the first cell and the second flash alternately, it indicates that the battery is low and must be charged. The battery remaining capacity is displayed; “100%” indicates that the battery is fully charged.
2	Total voltage	The sum of the total voltages of the lithium battery series
3	Temperature	Battery temperature
4	Charging current	Current value when charging the lithium battery



No.	Name	Description
5	Maximum cell voltage	Maximum value of cell voltage
6	No. of cell	Identification No. of the cell with maximum voltage.
7	Minimum cell voltage	Minimum value of cell voltage
8	Cell No. of minimum cell voltage	Identification No. of the cell with minimum voltage.

1.7.4 Battery Nameplate



No.	Name	No.	Name
1	Battery model	4	Cell type
2	Version No.	5	Battery weight
3	S/N	6	Date of production

1.7.5 Charging

1. This battery can only be charged with the vehicle-specific charger, other chargers may cause battery damage.
2. The normal charging temperature range of the battery is: 0°C ~ 45°C, please do not charge in the environment beyond the normal temperature range;
3. If the charging is still not completed within the specified time, stop charging the battery;
4. During the charging operation, it is necessary to have professional personnel to operate and care, in order to ensure that the charging plug and socket work normally without heat, to ensure that the charging device works normally, to ensure that the battery pack and its protection circuit work normally, and the whole power supply system has no sign of short circuit, over current, over temperature or overcharge.
5. When charging, connect the battery plug connector to the charger plug connector, and there will be contactor sound; after starting charging, the circular display meter will display the total voltage, the maximum and minimum cell voltages, power, temperature, charging current and other information; pay particular attention to the charging current and the maximum and minimum cell voltages, as well as the voltage difference between them; if there is abnormality, stop charging in time and contact the after-sales service department for solutions.

WARNING

Lithium batteries are strictly prohibited from overcharging and over discharging.

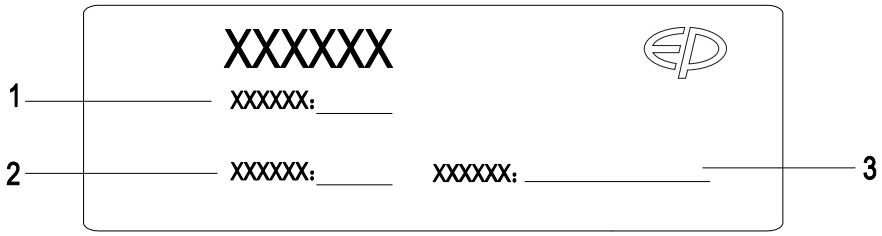
CAUTION

1. The normal charging temperature range of the battery is: 0°C~45°C.
2. The voltage difference between the maximum and minimum cell voltages during charging is less than 0.1V.
3. The lithium battery voltage matches the charger voltage.
4. The charger should be periodically checked for charging over voltage protection device.

➢ **Charging procedure:**

- Move the order pickers to the vicinity of the charger.
- Check the charger before starting charging.
- Check if the battery voltage to be charged matches the charger. (Please refer to the nameplate for rated output of the charger)
- Connect the output plug of the charger to the plug of the lithium battery box on the order picker.

➢ **Nameplate of internal charger**



No.	Name	No.	Name
1	Model	3	Input
2	Output		

1.7.6 Storage

1. Try to ensure that the battery or battery pack's power is ≥60% before long-term storage as the battery has the function of self-discharge, be sure to charge the battery once every 3 months to ensure the battery power is ≥60%;
2. The battery should be stored in a temperature environment of -20°C~45°C;
3. Store in a dry, ventilated and cool environment, avoid direct sunlight, high temperature, high humidity, corrosive gas, severe vibration, etc.
4. DO NOT stack, stacking of this series of products is not allowed.
5. DO NOT store under the condition that the load or the hidden load is connected, that is, it is prohibited to have any form of discharge behavior when storing;
6. If the battery is found to be bulged, cracked, or has a low voltage value after long-term storage, the battery may be damaged; please contact the relevant technical department of the company for technical support.
7. After not using the battery for a long time, do not charge or discharge the battery if the smell of leakage is found near the battery.

Transportation

1. During the loading, unloading and transportation process, severe vibration and large external impact should be avoided, and throwing, rolling, inverting, squeezing and excessive stacking are prohibited;
2. Prevent rain during transportation;
3. Ensure that the battery or battery pack has been disconnected from the load or charging device before transportation, without any form of charging and discharging.

WARNING

Don't bump, handle gently.

1.7.7 Common Problems and Solutions

During the use and maintenance of the lithium-ion battery, the battery or battery system may have one or more of the following abnormal conditions, please organize the professional engineers and technicians to perform the necessary processing according to the instructions in this manual; if you have any questions about the status or solutions, please contact the relevant technical department or after-sales service department of the company to obtain professional technical support.

1. If the battery is found to have abnormal mechanical characteristics such as swelling, cracked casing, melted casing deformation, and distortion of the casing before and during installation, stop using the battery immediately and store it separately;
2. If abnormalities such as looseness, cracks, cracks in the insulation layer, burn marks, etc. of the battery's pole pressing bolts, conductive strips, main circuit wires and connectors are found before and during the installation, stop using the battery immediately, check the reason for analysis and give it a fix;
3. If the polarity of the positive and negative terminals of the battery is found not match the polarity identification before installation, please stop using the battery immediately and contact the after-sales service department to replace the battery or obtain other solutions;
4. If the temperature of the battery exceeds 65°C before and during installation, stop using the battery immediately and leave it separately, if the temperature continues to rise, it needs to be buried with sand;
5. If the battery is found to emit smoke before and during installation, immediately stop using the battery and bury it with sand, and notify the after-sales service department of the company for record and obtain technical support;

1.7.8 Maintenance

➢ Daily Maintenance

1. It is necessary to arrange professionals for care during the charging operation, especially when the battery is almost fully charged; make sure that the plug and the socket are in good contact during the charging process to ensure that the charging device works normally and ensure that the connection points of the battery pack are in good contact. If an abnormality occurs, the battery needs to be repaired before charging;
2. Check the battery voltage, temperature, voltage difference, etc. displayed on the circular display meter before charging and discharging to ensure that all values are within the normal range;
3. If there is a large amount of dust, metal shavings or other debris on the upper cover and poles of the battery pack, use compressed air or dry cloth to clean it in time, avoid cleaning with water or water-soaked objects;
4. When charging and discharging, try to avoid water or other conductive liquids splashing on the top cover and poles of the battery, for example, being exposed to heavy rain during use;
5. Estimate the charging time and discharging time of the battery according to the actual status of use of the battery or battery pack, observe whether there is any abnormality in the battery or battery pack at the end of charging and the end of discharging, such as the voltage difference of the battery.

➢ Regular Maintenance

1. Check the nodes such as the conductive strips and voltage collection terminals for looseness, shedding, rusting or deformation, etc., to ensure that the series-parallel harness used in the battery pack is firm and reliable (once a month);
2. Check the battery casing for cracks, deformation, loose poles, bulging and other abnormal conditions (once a month);
3. Check the reliability of the charging device to ensure that the charging device performs the charging action in accordance with the voltage regulation and current regulation signals sent by the BMS and to ensure that the battery will not be overcharged (once a month);
4. Check discharge protection equipment, such as fast-acting fuses, DC contactors, relays, etc., to ensure that the battery pack can be quickly disconnected from the main circuit in the event of a dangerous situation such as short circuit or over current (once a month);
5. Check the insulation resistance between the battery pack and the vehicle body to ensure that the resistance value meets the Chinese national standard (≥500Ω/V) and to ensure that there is no electric leakage with the battery (once a month);

1.7.9 Disposal of Used Battery Packs

To prevent environmental pollution, the battery should be sent to a local recycling center or a dedicated lithium battery.

G Truck Maintenance

1.1 Operational safety and environmental protection

- The servicing and inspection operations contained in this chapter must be performed in accordance with the intervals indicated in the service checklists.
- Only use original spare parts that have been certified by our quality assurance.
  Used parts, oils and fuels must be disposed of in accordance with the applicable environmental protection regulations. For oil changes, the oil service of the manufacturer is available to you.
- Upon completion of inspection and servicing, carry out the activities listed in the “Recommissioning ”section.

1.2 Maintenance Safety Regulations

Servicing and maintenance personnel:

Only qualified personnel authorized by the owner are permitted to perform maintenance or repair work. All items listed in the Scheduled Maintenance Charts must be performed by qualified technicians only. They must have knowledge and experience sufficient to assess the condition of a truck and the effectiveness of the protective equipment according to established principles for testing trucks. Any evaluation of safety must be unaffected by operational and economic conditions and must be conducted solely from a safety standpoint.

Daily inspection procedures and simple maintenance checks, e.g. checking the hydraulic oil level or checking the fluid level in the battery, may be performed by operators. This does not require training as described above.

Lifting and jacking up:

When a order picker is to be lifted, the lifting gear must only be secured to the points specially provided for this purpose.

When jacking up the order picker, take appropriate measures to prevent it from slipping or tipping over (e.g. wedges, wooden blocks). You may only work underneath a raised load handler if it is supported by a sufficiently strong chain.

Cleaning operations:

No inflammable liquids must be used when cleaning the truck. Prior to commencing cleaning operations, all safety measures that are required to prevent sparking (e.g. by short circuits) have to be taken. For battery operated trucks, the battery plug must be removed. Only weak pressure, weak compressed air and non-conducting, antistatic brushes must be used for the cleaning of electric or electronic assemblies.

Work on the electric system:

Work on the electric system of the truck must only be performed by personnel specially trained for such operations. Before commencing any work on the electric system, all measures required to prevent electric shocks have to be taken. For battery-operated trucks, the truck must also be powered down by removing the battery plug.

Settings

When repairing or replacing hydraulic, electric or electronic components or assemblies, always note the truck specific settings.

Hydraulic hoses

The hoses must be replaced every six years. When replacing hydraulic components, also replace the hoses in the hydraulic system.

1.3 Servicing and inspection

Thorough and expert servicing is one of the most important requirements for the safe operation of the industrial truck. Failure to perform regular servicing can lead to truck failure and poses a potential hazard to personnel and equipment.

The service intervals stated are based on single shift operation under normal operating conditions. They must be reduced accordingly if the truck is to be used in conditions of extreme dust, temperature fluctuations or multiple shifts.

The following maintenance checklist states the tasks and intervals after which they should be carried out. Maintenance intervals are defined as:

W = Every 50 service hours, at least weekly

A = Every 250 operating hours

B = Every 500 operating hours, or at least annually

C = Every 2000 operating hours, or at least annually

W service can be performed by the customer.

In the run-in period - after approx. 100 service hours - or after repair work, the owner must check the wheel nuts/bolts and re-tighten if necessary.

1.3.1Maintenance Checklist

		Maintenance interval●			
		W	A	B	C
Brake	Check magnetic brake air gap.			●	
Electrics	Test instruments, displays and control switches.	●			
	Test warning and safety device.		●		
	Make sure wire connections are secure and check for damage.			●	
	Test micro switch setting.	●			
	Check contactors and relays.			●	
	Fix the motor and cable			●	
Power supply	Visually inspect battery			●	
	Visually inspect battery plug.			●	
	Check battery cable connections are secure, grease terminals if necessary.			●	
Travel	Check the transmission for noise and leakage.			●	
	Check travel mechanism, adjust and lubricate if necessary.		●		
	Check wheels for wear and damage.			●	
	Check wheel suspension and attachments			●	
	Check drive support plate.				
order picker frame	Check chassis for damage.			●	
	Check labels.				
	Check mast attachment.				
	Check screw connections.				
	Check gates and panels are secure and free of damage.				
Hydraulic operations	Test hydraulic system.		●		
	Check that hose and pipe lines and their connections are secure, check for leaks and damage.		●		
	Check cylinders and piston rods for damage and leaks, and make sure they are secure.			●	
	Check hydraulic oil level.			●	
	Replace hydraulic oil.				●
	Check and clean hydraulic oil filter. Replace it if necessary.				●
Lifting	Check lifting chains and chain guides for wear, adjust and	●			
	Check Storage table and Pallet for wear and damage.			●	
	Perform sight check of rollers, sliding elements, and stops			●	
Steering system	Test electric steering.	●			
	Check steering toothing for wear and lubricate.			●	
Lubrication	Grease the vehicle in accordance with the lubrication schedule.			●	

1.3.2 Lubrication Points

Lubricant

Improper operations may constitute hazards to the operator's health and life, as well as to the surrounding environment.

When storing or adding lubricant, use clean containers. It is strictly forbidden to mix different types and specifications of lubricants with each other (except for those can be mixed under clear statement).

CAUTION

The use and disposal of lubricants must be carried out in strict accordance with the manufacturer's regulations.

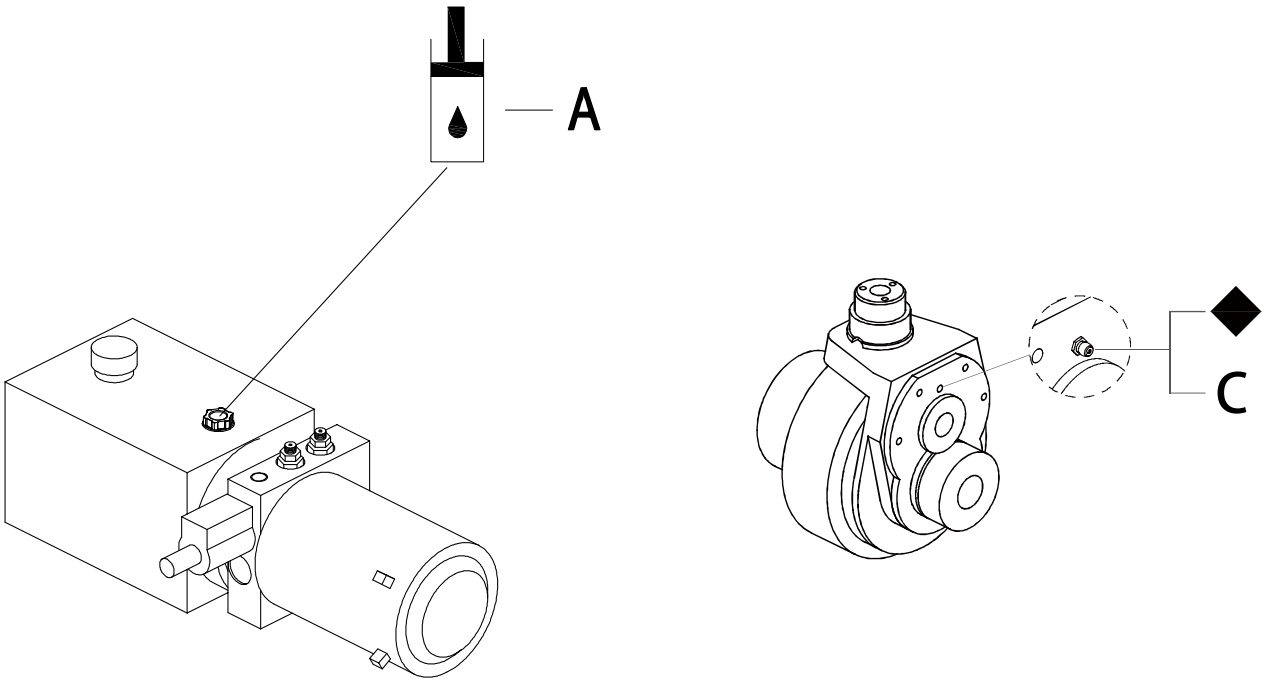


Table 1 Lubricants				
Code	**Type**	**Specification**	**Amount**	**Position**
A	Anti-wear hydraulic oil	L-HM46	See the table below	Hydraulic System
	Low temperature anti-wear hydraulic oil (cold storage)	L-HV32		
C	Heavy Duty Gear Oil	80W-90 (GL-5)	1.38 L	Gearbox

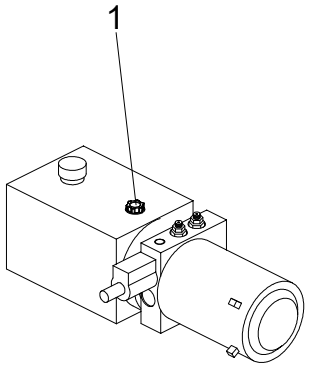
	Lifting Height (mm)	**Quantity (L)**
	Max height 3000	4

➢ **Check the hydraulic oil level**

CAUTION

Do not add hydraulic oil that contains impurities.

Lift the platform to the top.
Press the emergency stop switch.
Unscrew the oil cap.
Use a clean cloth to dry the dipstick.
This oil cap has a dipstick.
Reinstall the oil cap, then remove it again and check whether the traces of oil on the dipstick are between the maximum and minimum marks.



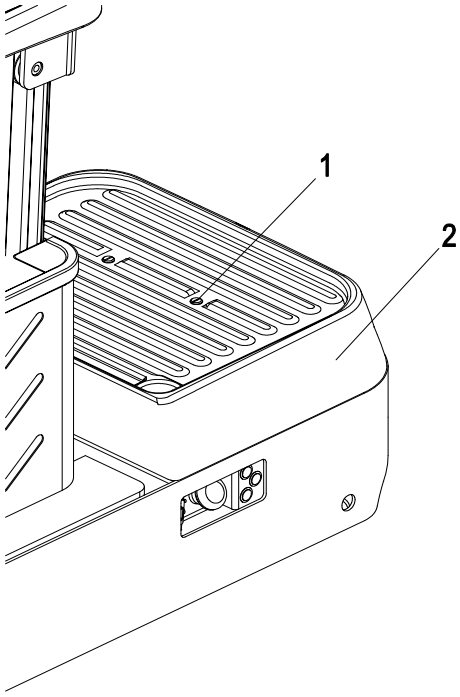
NOTE

You can lift again after you have finished adding the oil. You must continue checking the hydraulic oil level if there is still a banging noise.

NOTE

Only use hydraulic oil that meets the specifications.Refer to "Lubricants Points".

1.3.3 Maintenance Instructions



➢ **Prepare the truck for maintenance and repairs**

All necessary safety measures must be taken to avoid accidents when carrying out maintenance and repairs. The following preparations must be made:

All necessary safety measures must be taken to avoid accidents when carrying out maintenance and repairs. The following preparations must be made:

- Park the order picker securely (Parking the order picker securely).
- Remove the key to prevent the order picker from accidentally starting.
- When working under a raised lift order picker, secure it to prevent it from tipping or sliding away.

➢ **Open the cover**

- Remove the two screws (1).
- Carefully open the cover (2) up.

➢ **Replacing the drive wheel**

The drive wheel must only be replaced by authorized service personnel.

WARNING

It is forbidden to add hydraulic oil with impurity.

➢ **How to add oil**

- It is going to add hydraulic oil when you heard explosion sound from pipe during lifting.
- Prepare the order picker for maintenance and repairs (Maintenance Instructions).
- Opening the cover.
- Add hydraulic oil of the correct grade (Lubrication Schedule) .

There are markings on the hydraulic reservoir. The oil level should lie between the “max” and “min” markings when the storage table are lowered. If necessary, add hydraulic oil of the correct grade up to the “max” mark.

Add hydraulic oil till you cant hear explosion sound during lifting.
Re-installation in the reverse order.

➢ How to add oil (See Lubrication Points)

- Prepare the order pickers for maintenance and repairs (Maintenance Instructions).
- Add transmission oil(or grease for JX0) of the correct grade to oil cup(Lubrication Schedule).
- Add transmission oil every 1000 operating hours, or at least annually.

Re-installation in the reverse order.

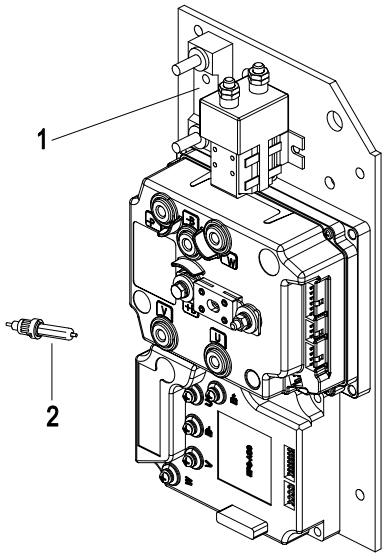
WARNING

It is forbidden to add transmission oil with impurity.

➢ Changing electrical fuses

- Prepare the truck for maintenance and repairs (Maintenance Instructions).
- Open the cover.
- Check rating of all fuses in accordance with table, replace if necessary.

Fuse 10A installed on main harness.



Item	To protect:	Rating
1	Traction / Lift / Steer motor Fuse	200A
2	Controller Fuse	10A

➢ Recommissioning

The truck may only be recommissioned after cleaning or repair work, once the following operations have been performed.

- Test horn.
- Test Emergency stop switch.
- Test brake.
- Lubricate the truck in accordance with the maintenance point.
- Do follow the daily checklist.

1.4 Decommissioning the order picker

If the order picker is to be decommissioned for a long period, it must be parked in a frost-free and dry location.
On decommissioning the truck must be jacked up so that all the wheels are clear of the ground. This is the only way of ensuring that the wheels and wheel bearings are not damaged.

If the order picker is to be out of service for more than 6 months, further measures must be taken in consultation with the manufacturer's service department.

1.4.1 Prior to decommissioning

- Clean the order picker thoroughly.
- Check the brakes
- Check the hydraulic oil level and top up if required.
- Apply a thin layer of lubricating oil or grease to all nonpainted mechanical components.
- Lubricate the order picker in accordance with the lubrication schedule.
- Remove the battery and recharge it at least once per month.
- Clean the battery and apply specialised grease to the terminals.
- Spay all exposed electrical contacts with a suitable contact spray.

WARNING

Charge the battery every months to avoid depletion of the battery through self-discharger.

1.4.2 Restoring the truck to operation after decommissioning

- Thoroughly clean the truck.
- Clean the battery. Grease the pole screws using pole grease and reconnect the battery.
- Recharge the battery.
- Check if the hydraulic oil contains condensed water and change if required.
- Follow the daily checklist.

If there are switching problems in the electrical system, apply contact spray to the exposed contacts and remove any oxide layers on the contacts of the operating controls by applying contact spray repeatedly.
Perform several brake tests immediately after recommissioning the truck.

1.5 Safety checks to be performed at regular intervals and following any unusual incidents

Carry out a safety check in accordance with national regulations. EP has a special safety department with trained personnel to carry out such checks.
The truck must be inspected at least annually (refer to national regulations) or after any unusual event by a qualified inspector. The inspector shall assess the condition of the truck from purely a safety viewpoint, without regard to operational or economic circumstances. The inspector shall be sufficiently instructed and experienced to be able to assess the condition of the truck and the effectiveness of the safety mechanisms based on the technical regulations and principles governing the inspection of trucks.
A thorough test of the truck must be undertaken with regard to its technical condition from a safety aspect. The truck must also be examined for damage caused by possible improper use.
A test report shall be provided. The test results must be kept for at least the next 2 inspections.
The owner is responsible for ensuring that faults are immediately rectified.

A test plate is attached to the truck as proof that it has passed the safety inspection.This plate indicates the due date for the next inspection.

1.6 Final decommissioning, disposal

Final, proper decommissioning or disposal of the truck must be performed in accordance with the regulations of the country of application. In particular, regulations governing the disposal of batteries, fuels, Hydraulic oil, plastic and electronic and electrical systems must be observed.

NOTE

Any repairs or maintenance to the truck must be performed only by trained and authorized technicians.

1.7 Tire replacement

The quality of tyres affects the stability and performance of the truck. When replacing tyres fitted at the factory, only use the manufacturer's original spare parts. Otherwise the data sheet specifications of the truck cannot be guaranteed. When changing wheels and tyres, ensure that the truck does not slew (e.g. when replacing wheels always left and right simultaneously).

WARNING

Only original tires have been certified by our quality assurance service. To ensure safe and reliable operation of the truck, only tires of the manufacturer must be used.

H Troubleshooting

This chapter is designed to help the user identify and rectify basic faults or the results of incorrect operation. When locating a fault, proceed in the order shown in the table.
If the fault cannot be rectified after carrying out the remedial procedure, notify the manufacturer ' s service department ,as any further troubleshooting can only be performed by specially trained and qualified service personnel.The manufacturer has a customer service department specially trained for these tasks.

Fault	Probable Cause	Action
Order picker does not start.	• Battery connector not connec ted. • Key switch in "OFF" position • Safety gates open • EMERGENCY DISCONNECT switch pressed • Foot switch not pressed • Battery charge too low • Faulty fuse • order picker in charge mod	• Check the battery connector and connect if necessary. • Set key switch to "ON" • Close the safety gates • Unlatch EMERGENCY DISCONNECT switch • Press foot switch • Check battery charge, charge battery if Necessary • Test fuses • Interrupt charging
Load cannot be lifted	• Hydraulic oil level too low • Excessive load • Fuse blown	• Check the hydraulic oil level • Note maximum capacity (see data plate) • Check fuses

To provide targeted and rapid response to faults, the following details are useful and important to provide for the customer service department:

- Order picker serial number
- Display unit error number (if present)
- Error description
- Current location of order picker.