

# 印中力

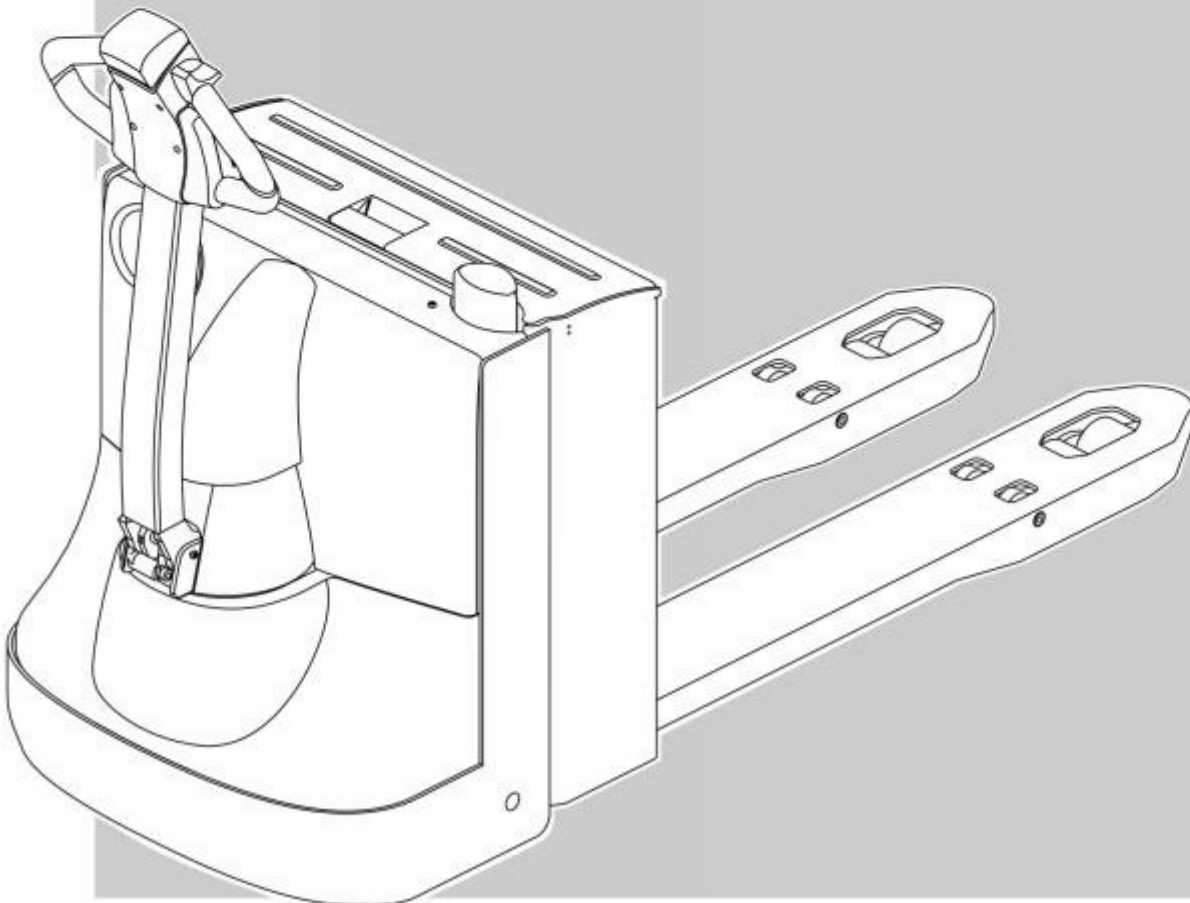
**EPT20-20WA**

**EPT25-WA**

**EPT20-18WE**

**Electric Pallet Truck**

**Operation Manual**



**CE**  
CE CERTIFICATE

Part No.508000003127

V1 08/2019



EP EQUIPMENT CO.,LTD. is one of the world's leading companies manufacture, design material handling equipment and provide related service. With over 100,000m<sup>2</sup> plant it produces over 100,000 trucks per year, and provides professional, effective and optimized material handling solutions worldwide, until now it has developed three major kinds of business:

- Material handling equipment: Focus on electric forklift and warehouse equipment
- OEM parts: Global parts supply
- Imow industry,online: One stop industrial products supply

Guided by our customer-oriented concept, EP has developed service centers in more than 30 countries around the world, from which customers are able to receive timely local service. Moreover, 95% of warranty parts can be shipped out within 24 hours after been ordered. Through our online after-sales service system, customers can process their warranty claims, order spare parts and consult the operation manuals, maintenance materials and spare parts

catalogs.

With business all over the world, EP has thousands of employees and hundreds of agents worldwide to provide our global customers with prompt local service.

Based on the concept of sharing economy , EP also offer rental service for various logistics equipment. Adhering to the idea "Making the leasing of logistic equipment more simple", EP is devoted to providing customized one-stop leasing solutions for our customers with our high quality, reasonable price and prompt rental service.

EP's mission&vision is " Let more people apply the electrical material handling equipment to relieve the intensity of labour" and "Let's grow together".

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## Foreword

Thanks for your purchasing our pallet truck.

This manual is about how to use, operation and maintenance. Please operator and whom in charge of the truck must read the manual carefully before operate the truck.

We have the right to improve the truck, maybe there are some difference between your product and the description in this manual.

If you have any questions please keep in touch with the sales department or let the dealer know.

Notes:

1. This manual is used for operation and maintenance , the detail parameters, size and specifications in context is only for reference , the real parameters will depend on sale files.
2. Manual pictures for reference only, the real car shall prevail, and shall not affect the manual use.
3. Manual pictures only sign for one of the models in this series models.

### Internet address and QR code of Parts manual

By entering the address <http://www.ep-care.com> in a web browser or by scanning the QR code, Login after registration, Select "Parts purchase" function and input part number or model name to find the truck.



**Note:** After registration, please send email to [info@ep-care.com](mailto:info@ep-care.com) to activate your account

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2019.8 1<sup>nd</sup> EDITION

## **WARNING!**

### **TO PREVENT SETIOUS RISK OF INJURY TO YOURSELF AND OTHERS OBSERVE THE FOLLOWING SAFETY INSTRUCTIONS.**

These truck may become hazardous if adequate maintenance is neglected. Therefore, adequate maintenance facilities, trained personnel and procedures should be provided.

Maintenance and inspection shall be performed in conformance with the following practices:

1. A scheduled planned maintenance,lubrication and inspection system should be followed.
2. Only qualified and authorized personnel shall be permitted to maintain, repair, adjust, and inspect truck.
3. Before leaving the truck:
  - Do not park the truck on an incline.
  - Fully lower the load forks.
  - Set the key switch to the "OFF" position and remove the key.
4. Before starting to operate truck:
  - Be in operating position
  - Place directional control in neutral
  - Before operating truck, check functions of lift systems, directional control,speed control,steering, warning devices and brakes.
5. Avoid fire hazards and have fire protection equipment present. 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.
6. Brakes,steering mechanisms, control mechanisms,guards and safety devices shall be inspected regularly and maintained in legible condition.
7. Capacity, operation and maintenance instruction plates or decals shall be maintained in legible condition.
8. All parts of lift mechanisms shall be inspected to maintain them in safe operating condition.
9. All hydraulic systems shall be regularly inspected and maintained in conformance with good practice. Cylinders, valves and other similar parts shall be checked to

assure that "drift" has not developed to the extent that it would create a hazard.

10. Truck shall be kept in a clean condition to minimize fire hazards facilitate detection of loose or detective parts.

11. Modifications and additions which affect capacity and safe truck operation shall not be performed by the customer or user without manufacturers prior written approval. Capacity, operation and maintenance plates or decals shall be changed accordingly.

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## **Correct use and application**

The “Guidelines for the Correct Use and Application of Industrial Trucks” (VDMA) are supplied with the truck. The guidelines form part of these operating instructions and must be observed. National regulations apply in full.

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 serviced in accordance with the present instructions. Any other type of use is beyond the scope of application and can result in damage to personnel, the truck or property. In particular, avoid overloading the truck with loads which are too heavy or placed on one side. The data plate attached to the truck or the load diagram are binding for the maximum load capacity. The industrial truck must not be used in fire or explosion endangered areas, or areas threatened by corrosion or excessive dust.

### **Proprietor responsibilities**

For the purposes of the present operator manual the “proprietor” is defined as any natural or legal person who either uses the industrial truck himself, or on whose behalf it is used. In special cases (e.g. leasing or renting) the proprietor is considered the person who, in accordance with existing contractual agreements between the owner and user of the industrial truck, is charged with operational duties.

The proprietor must ensure that the truck is used only for the purpose it is intended for and that danger to life and limb of the user and third parties are excluded.

Furthermore, accident prevention regulations, safety regulations and operating, servicing and repair guidelines must be followed. The proprietor must ensure that all truck users have read and understood this operator manual.

Failure to comply with the operator manual shall invalidate the warranty. The same applies if improper work is carried out on the truck by the customer or third parties without the permission of the manufacturer’s customer service department.

### **Attaching accessories**

The mounting or installation of additional equipment which affects or supplements the performance of the industrial truck requires the written permission of the manufacturer. In some cases, local authority approval shall be required.

Approval of the local authorities however does not constitute the manufacturer’s Approval.



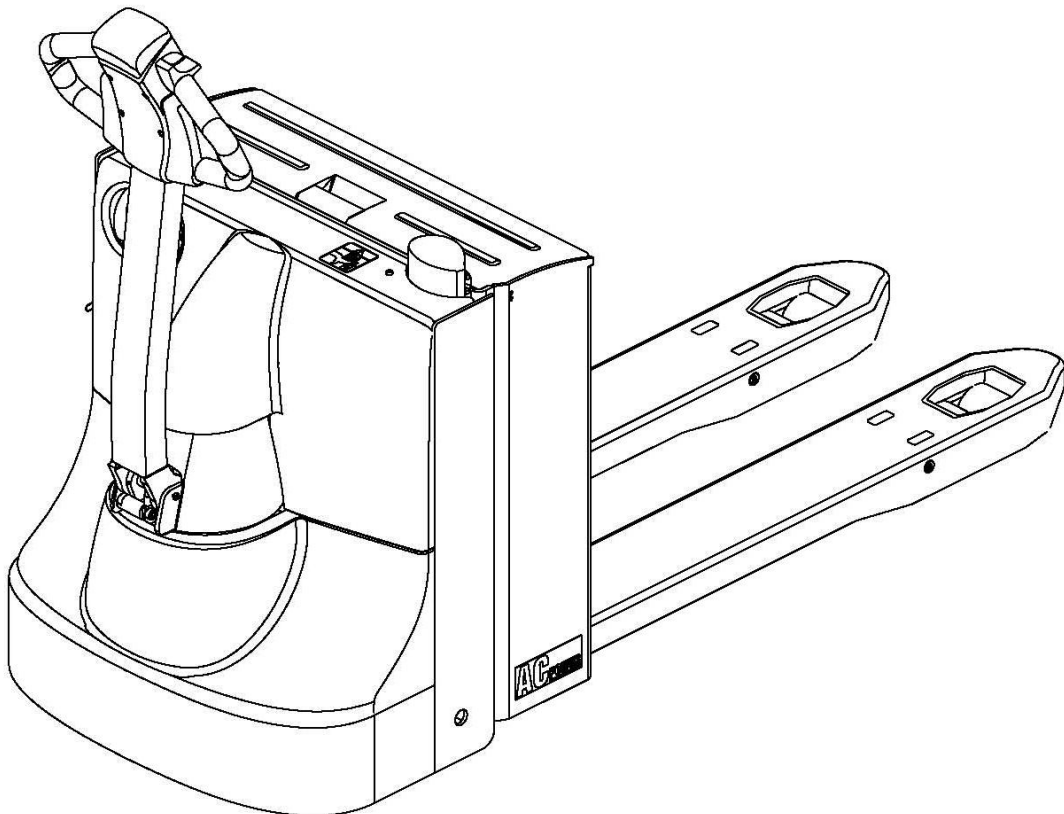
## 1. Truck Description

### 1.1 Application

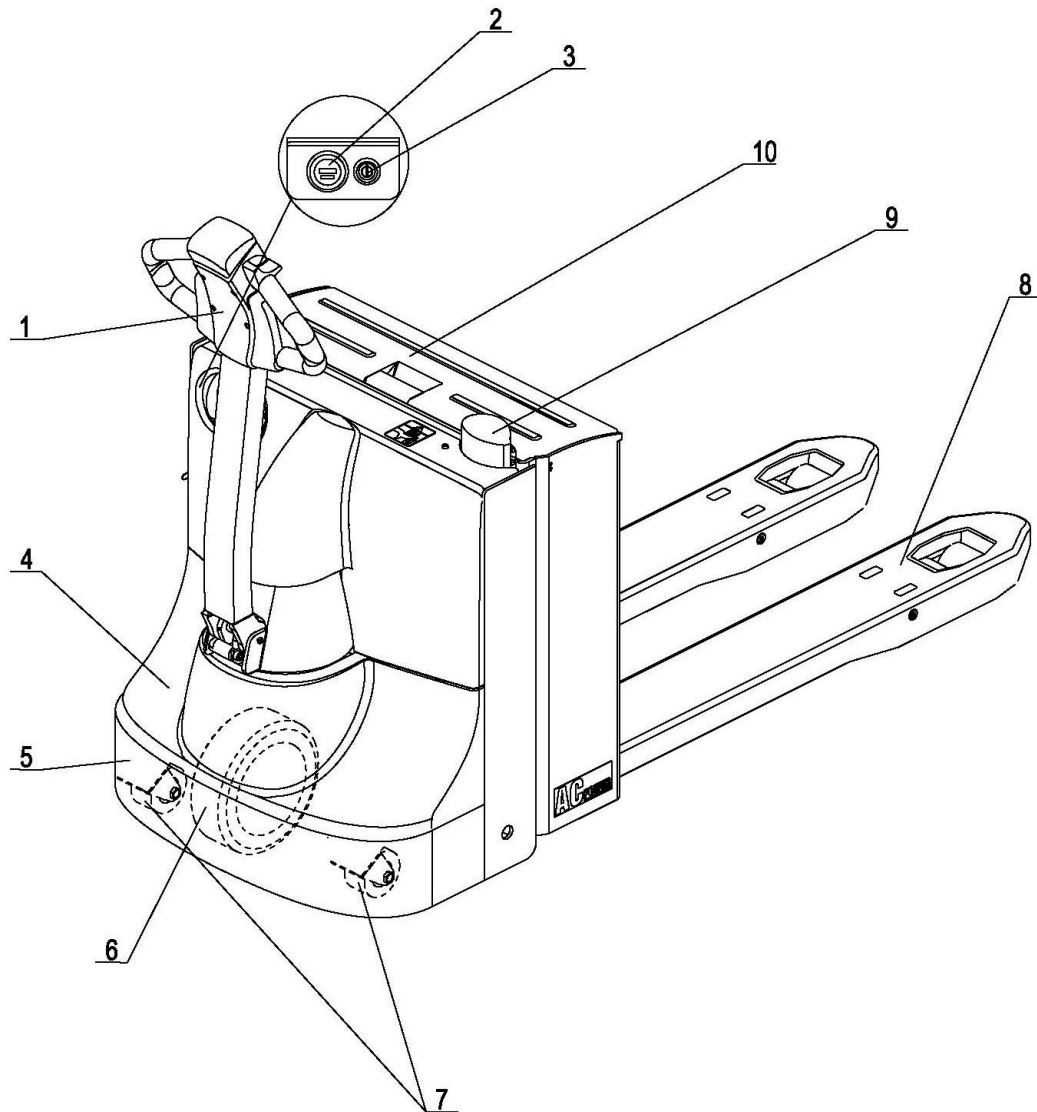
The truck is designed to transport goods on level surfaces. It can lift open bottom or diagonal board pallets as well as roll cages beyond the area of the load wheels.

Suitable environment temperature is 5°C to 40 °C.

If a long time in less than 5 ° C environment, cold storage or in the extreme conditions of temperature and humidity changes in the use of pallet, you must install additional special equipment, and obtain permission from the manufacturer.



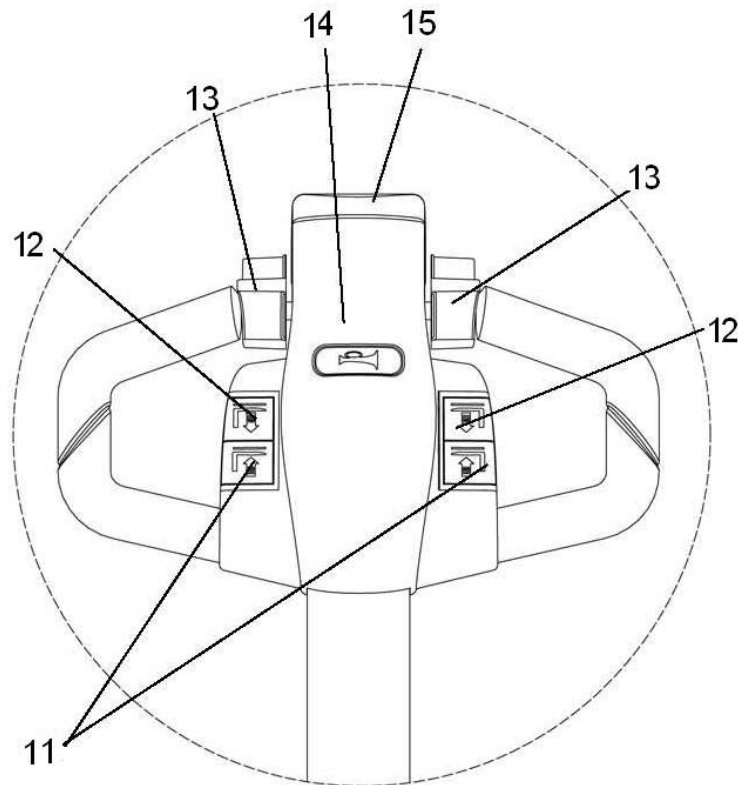
## 1.2 Assemblies



Item	Component	Item	Component
1	Control Handle	6	Driving wheel
2	Battery discharge indicator	7	Balance wheel
3	Key switch	8	Lift fork
4	Cover	9	Plug
5	Chassis	10	Battery cover

### 1.2.1 Control Handle

Item	Description	Component
11	"Lower" button	Lowers load forks.
12	"Lift" button	Raises load forks.
13	Travel switch	Controls the driving speed and direction
14	Warning signal button	Triggers a warning signal.
15	Collision safety switch	Safety function which, when activated, forces the truck to reverse for approx. 3 seconds and then cuts out until the controller is briefly restored to neutral.



### 1.2.1 Key switch

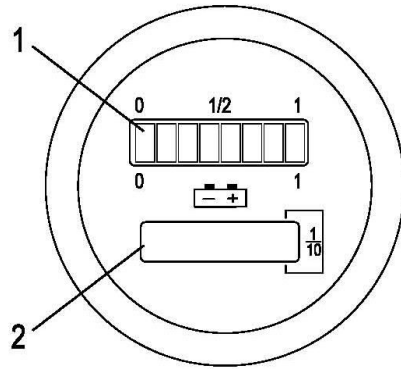
#### Key switch

Switches control current on and off.

Removing the key prevents the truck from being switched on by unauthorised personnel.

### 1.2.3 Battery discharge indicator

The LEDs (1) represent battery residual capacity,  
The LCD (2) displays the operating hours



#### Battery Discharge Indicator(1)

When the truck has been released via the key switch, the battery charge status is displayed. The colours of the LEDs (1) represent the following conditions:

LED colour		value
Green	Standard battery residual capacity	70-100%
Orange	Standard battery residual capacity	50-60%
Flashing Red	Standard battery residual capacity	0-20%

Battery Discharge for 70%, A flashing red show on storage battery charge warning.  
Battery Discharge for 80%, Two flashing reds show on battery charge used up warning, Lifting is now inhibited. The battery must be charged.

#### Operating hours display

Display range between 0.0 and 99,999.0 hours. Travel and lifting are logged. This is a backlit display.

#### Power up test

On power up the display shows:

- the operating hours
- the charge status

#### Low Voltage Protection

This vehicle has a low-voltage protection function.

When the battery voltage is less than, the vehicle will appear that the driving speed is slow ,but the fork can be lifted.And now the battery needs to be charged.

### 1.3 Identification points and data plates



Anti-pinch hand



Read the operation manual before use the truck



Sling label



NO riding label

### 1.3.1 Truck data plate



Item	Description	Item	Description
1	PRODUCT NAME	9	RATED DRIVE POWER
2	MODEL TYPE	10	MAX BATTERY WEIGHT
3	SERIAL NO.	11	MIN BATTERY WEIGHT
4	MANUFACTURE DATE	12	RATED CAPACITY
5	LIFT HEIGHT	13	LOAD CENTER
6	UNLADEN MASS	14	UNLADEN MASS WITHOUT BATTERY
7	UNLADEN MASS WITHOUT BATTERY	15	UNLADEN MASS WITH BATTERY
8	BATTERY VOLTAGE		

For queries regarding the truck or ordering spare parts please quote the truck serial number(3).

## 1.4. Standard Version Specifications

Technical specification details in accordance with VDI 2198. Technical modifications and additions reserved.

### 1.4.1 Performance data for standard trucks

Item	Description		EPT20-20WA	EPT25-WA		Unit
Q	Load capacity		2000	2500		kg
C	Load center		600	600		mm
	Travel speed	laden	5	5		km/h
		unladen	5.5	5.5		km/h
	Lifting speed	laden	0.051	0.051		m/s
		unladen	0.060	0.060		m/s
	Lowering speed	laden	0.032	0.032		m/s
		unladen	0.039	0.039		m/s
	Maximum gradeability S <sub>2</sub> 5 min.	laden	8	6		%
		unladen	16	16		%
	Service brake		Electromagnetic	Electromagnetic		
	Service weight	Incl. battery	535	565		kg
	Axle loading, laden	operator/load side	955/ 1580	1070/ 1995		kg
	Axle loading, unladen	operator/load side	430/ 105	445/ 120		kg
	Motor rating power	Drive	1.1	1.1		Kw
		Lift	0.84	0.84		Kw
	Tyre type		PU/PU	PU/PU		
	Tyre size, operator side		Φ230x75	Φ230x75		
	Tyre size, load side		2x Φ85x70/ Φ83x115	2x Φ85x70/ Φ83x115		
	Balance wheels (dimensions)		Φ85x48	Φ85x48		

	Battery	Type	Industry battery	Industry battery		
		voltage/ rated capacity	24/210	24/210		V/Ah
		weight	190	220		kg
	Sound level at operator's ear		74	74		dB(A)

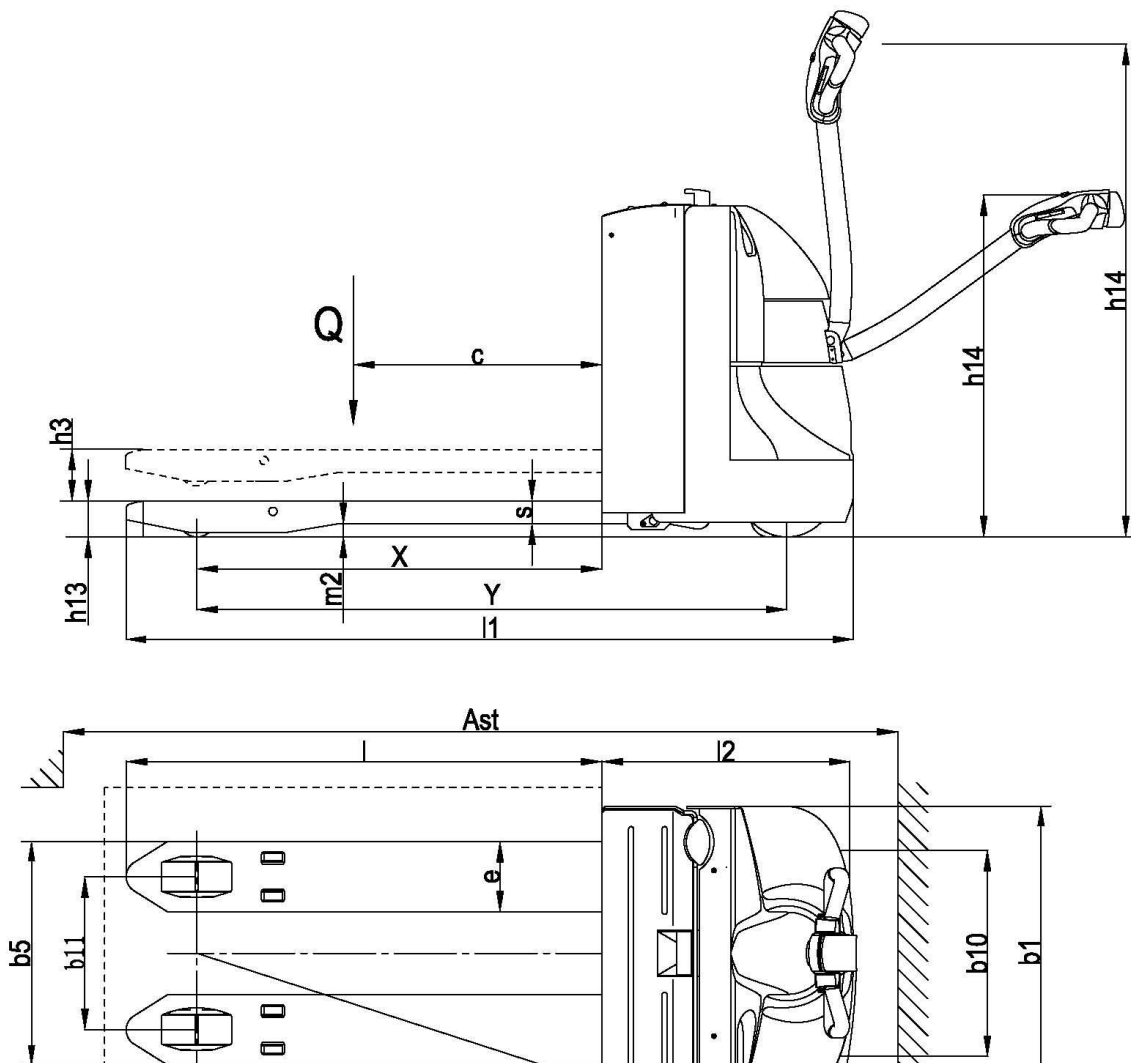
### 1.4.2 Dimensions

Item	Description	EPT20-20WA		EPT25-WA		Unit	
X	Load distance (Raised/Lowered)	916/982	937/1003	916/982	937/1003	mm	
Y	Wheelbase	1418	1488	1418	1488	mm	
h3	Lift height	120		120		mm	
b11	Tread	load side	370/ 430/515		370/ 430/515		mm
b10		operator side	498		498		mm
h13	Fork height	lowered	85		85		mm
h14	Height of control handle arm in operating position	min	715		715		mm
		max	1200		1200		mm
l1	Overall length	1748	1818	1748	1818	mm	
l2	Length to face of forks	598		598		mm	
b1	Overall width	710		710		mm	
s	Fork dimensions	Thickness	55	55	55	55	mm
e		Width	170	170	170	170	mm
l		Length	1150	1220	1150	1220	mm



b5	Fork spread, min/ max	540/600/685	540/600/685		mm
m2	Ground clearance, center of wheelbase	30	30		mm
Wa	Outer turning radius	1595	1595		mm
Ast	Aisle width, 1000 × 1200 pallet crossways	1815	1815		mm
	Aisle width, 800×1200 pallet lengthways	2015	2015		mm

EPT20-20WA  
EPT25-25WA



## 2.Transport and Commissioning

### 2.1Transport

#### Lifting the truck by crane

There are two way to pack the truck: one is use a stock, the other is use a box. The way to pick up depend on transport.

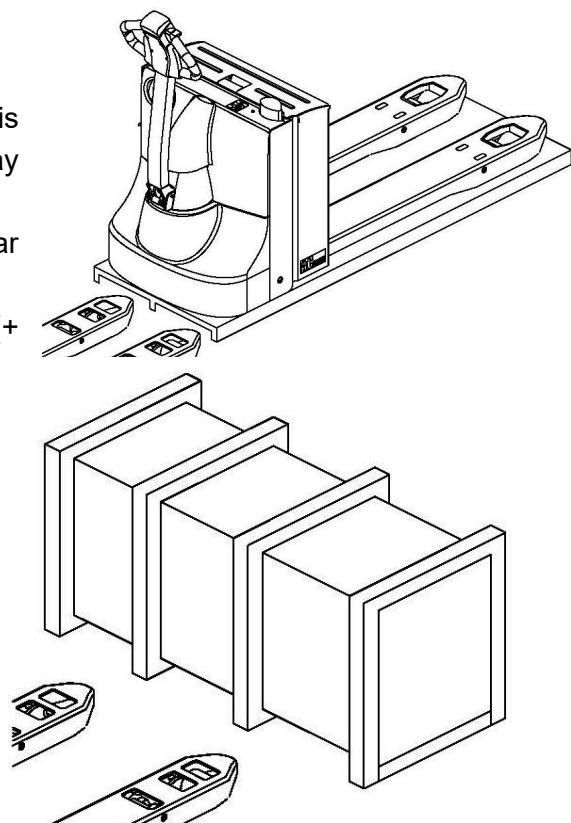
1.Only use crane handling equipment gear with sufficient capacity.

2.Loading weight > net weight of truck (+ battery weight for electric trucks).Loading weight not only net weight of truck but also the stock or the box.

3.Stock (box) should be big enough and strong enough to bear hole truck.

– Park the truck securely.(see 3.2.4 Parking the truck securely on page 17).

– Make sure forks are positioned properly for the pallet. Move forward slowly to insert forks into the pallet as far as possible and then stop the truck.



**Warning!**

- To avoid break the fork be hurt when you move the truck to stock.
- In order to keep the truck out of be scraped, please move the truck void in void and flat place.
- when you lowering the stock advert status of the place to avoid collapse.

**2.2 Using the Truck for the First Time**

Only operate the truck with battery current. Rectified AC current will damage the electronic components. Cable connections to the battery (tow leads) must be less than 6 m .

Preparing the truck for operation after delivery or transport

Procedure

- Check the equipment is complete.
- Check the hydraulic oil level.
- Install the battery if necessary (where required), (see "4.4 Battery removal and installation" on page 19) do not damage battery cable.
- Charge the battery, (see "4.3 Charging the battery" on page 18).

When the truck is parked the surface of the tyres will flatten. The flattening will disappear after a short period of operation.

**2.3 During brake-in**

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.

1. Must prevent the new battery from over discharging when early used. Please charging when remain power less than 20%.
2. Perform specified preventive maintenance services carefully and c.ompletely.
3. Avoid sudden stop, starts or turns.
4. Oil changes and lubrication are recommended to do earlier than specified.
5. Limited load is 70~80% of the rated load.

### **3.Operation**

#### **3.1 Safety Regulations for the Operation of pallet Trucks**

**Driver authorisation:** The pallet truck may only be used by suitably trained personnel, who have demonstrated to the proprietor or his representative that they can drive and handle loads and have been authorised to operate the truck by the proprietor or his representative.

**Driver's rights, obligations and responsibilities:** The driver must be informed of his duties and responsibilities and be instructed in the operation of the truck and shall be familiar with the operator manual . The driver shall be afforded all due rights . Safety shoes must be worn with pedestrian operated trucks.

**Unauthorised Use of Truck:** The driver is responsible for the truck during the time it is in use. He shall prevent unauthorised persons from driving or operating the truck. It is forbidden to carry passengers or lift personnel.

**Damage and Faults:** The supervisor must be immediately informed of any damage or faults to the pallet truck. Trucks not safe for operation (e.g. wheel or brake problems) must not be used until they have been rectified.

**Repairs:** The driver must not carry out any repairs or alterations to the pallet truck without the necessary training and authorisation to do so. The driver must never

disable or adjust safety mechanisms or switches.

**Hazardous area:** A hazardous area is defined as the area in which a person is at risk due to truck movement, lifting operations, the load handler (e.g. forks or attachments) or the load itself. This also includes areas which can be reached by falling loads or lowering operating equipment.

Unauthorised persons must be kept away from the hazardous area.

Where there is danger to personnel, a warning must be sounded with sufficient notice.

If unauthorised personnel are still within the hazardous area the truck shall be brought to a halt immediately.

**Safety Devices and Warning Signs:** Safety devices, warning signs and warning instructions shall be strictly observed.

### 3.2 Operate and run the truck

#### 3.2.1 Preparing

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

#### Checks and operations to be performed before starting daily work

- Visually inspect the entire truck (in particular wheels and load handler) for obvious damage.
- Visually inspect the battery attachment and cable connections.

#### 3.2.2 Travel

Do not drive the truck unless the panels are closed and properly locked.

#### Driving in low speed

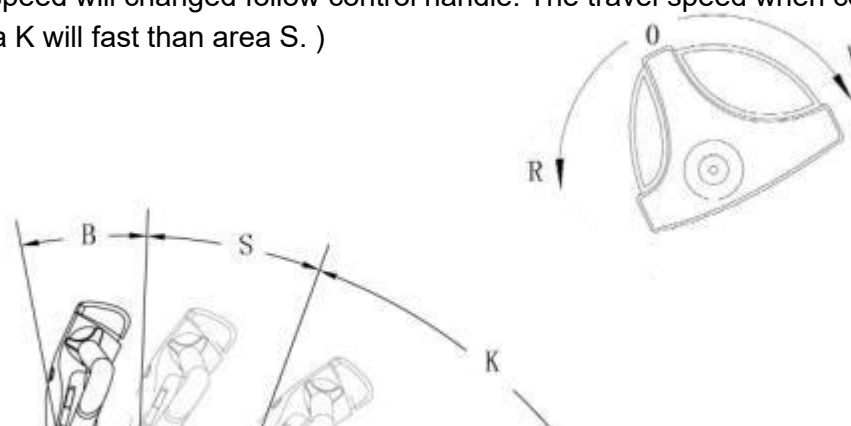
Set the control handle to the travel range (s), and press the travel switch in the desired direction (fwd. or rev.).

The more the control handle rotates, the speed is faster.

#### Driving in high speed

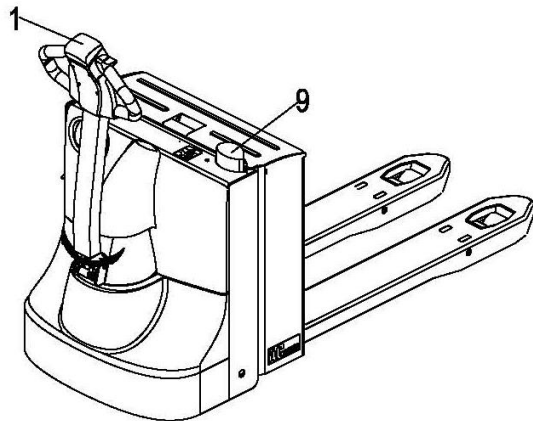
Set the control handle to the travel range (k), and press the travel switch in the desired direction (fwd. or rev.).

The more the control handle rotates, the speed is faster. (Keep travel switch in a position, the speed will change following control handle. The travel speed when control handle in area K will be faster than area S.)



## Steering

– Apply the control handle to the left or right.



## Braking

Emergency stop:

Pull out the plug(9), all electrical functions are cut out and the truck automatically brakes.

## Automatic braking

When the control handle is released it automatically sets itself to the upper brake zone (B) and automatic braking ensues.

## Regenerative braking

If the travel switch is set to "0", the truck

### Warning!

If the control handle moves slowly or not at all to the upper brake zone, the truck must be taken out of service until the cause of this fault is be rectified.

Replace the gas pressure spring if necessary.

### Warning!

If the travel switch moves slowly or not at all to 0, the truck must be taken out of service until the cause of this fault is be rectified.

Replace the control handle if necessary.

automatically brakes regeneratively. When the speed below 1Km/h, the brake then applies and motor brake stop.

### **Inversion braking**

You can set the travel switch (13) to the opposite direction when travelling. The truck brakes regeneratively until it starts to move in the opposite direction.

#### **Warning!**

In hazardous situations set the control handle to the brake position or set the travel switch (13) to the opposite direction.

### 3.3.3 Lifting, transporting and depositing loads

#### Unsecured and incorrectly positioned loads can cause accidents

- Instruct other people to move out of the hazardous area of the truck. Stop working with the truck if people do not leave the hazardous.
- Only carry loads that have been correctly secured and positioned. Use suitable precautions to prevent parts of the load from tipping or falling down.
- Damaged loads must not be transported.
- Never stand underneath a raised load handler.
- Do not stand on the load handler.
- Do not lift other people on the load handler.
- Insert the forks as far as possible underneath the load.

#### Lift

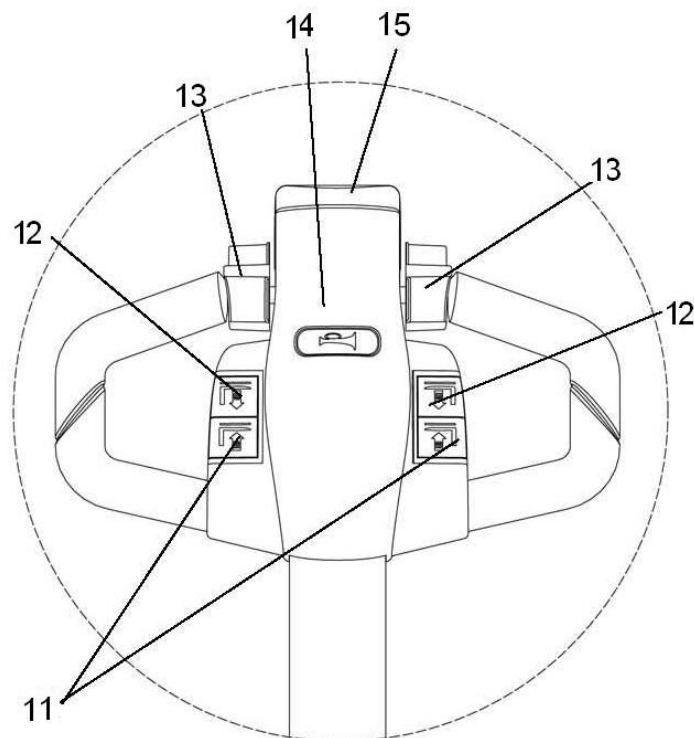
Press “Lift” button(12) until the height you need.

#### Lower

Press “Lower” button ( 11 ) until the lowest position.

#### Warning!

Before lifting a load unit the driver must make sure that it has been correctly stowed and does not exceed the truck’s capacity.  
Do not lift long loads at an angle.





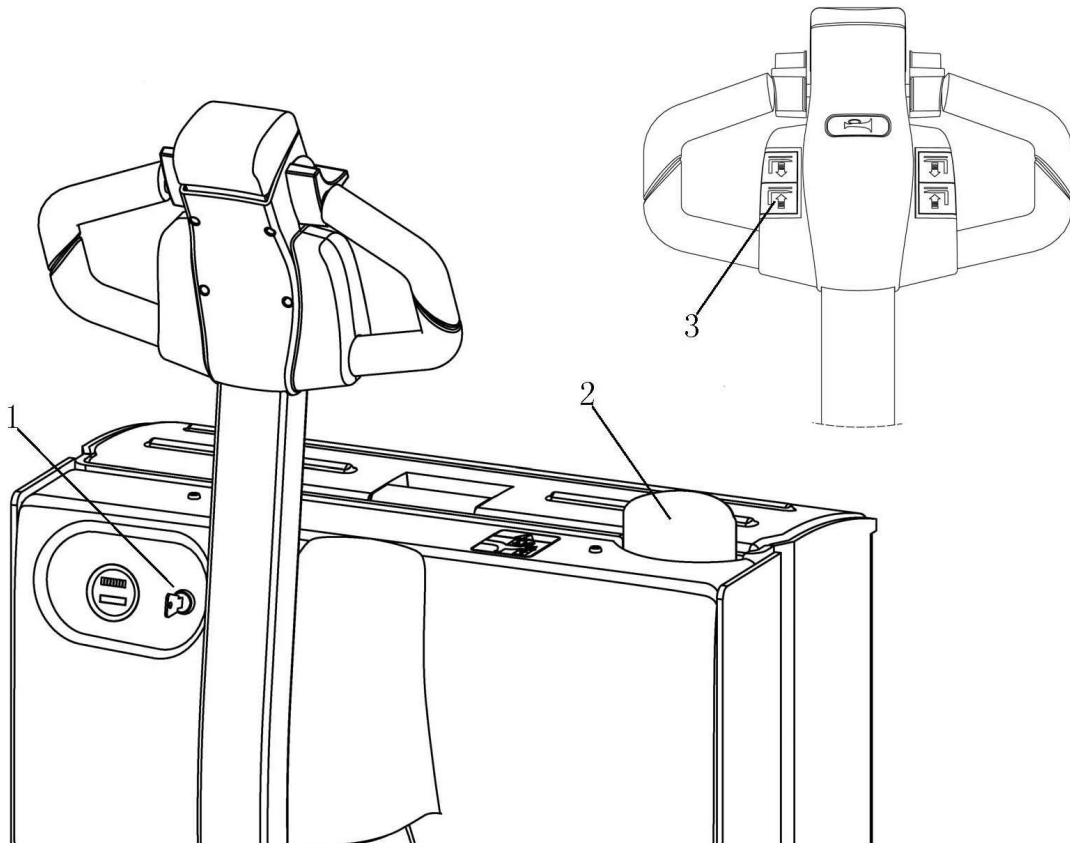
### 3.3.4 Parking the truck securely

- Press “Lower” button (3), fully lower the load handler.
- Turn off the key (1) switch and remove the key.
- Draw plug(2).

The truck is parked.

#### **Warning!**

Parking the truck securely.  
Forbid parking on an incline.  
Always fully lower the forks.



## 4. Battery Maintenance & Charging

### 4.1 Safety regulations for handling acid batteries

Park the truck securely before carrying out any work on the batteries.

**Maintenance personnel :** Batteries may only be charged, serviced or replaced by trained personnel. The present operator manual and the manufacturer's instructions concerning batteries and charging stations must be observed when carrying out the work.

#### Fire protection :

- Smoking and naked flames must be avoided when working with batteries.
- Wherever a truck is parked for charging there shall be no inflammable material or operating fluids capable of creating sparks within 2 meters around the truck.
- The area must be well ventilated.
- Fire protection equipment must be provided.



#### Protection against electric shock:

- Battery has high voltage and energy.
- Do not bring short circuit.
- Do not approach tools to the two poles of the battery, which can cause the sparkle.

### 4.2 Battery type & dimension

Battery type & dimension as follow :

Tuck type	Battery type	voltage/ rated capacity	Battery height (mm)	Battery length (mm)	Battery width (mm)
EPT20-20WA	Industry battery	24/210	540	650	200
EPT25-25WA	Industry battery	24/210	540	650	200

When replacing or installing batteries, ensure that the battery is correctly secured in the battery compartment of the truck.

### 4.3 Charging the battery

#### Safety regulations for Charging the battery

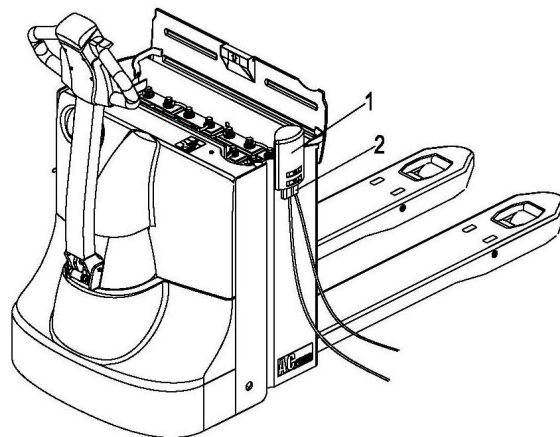
- To charge the battery, the truck must be parked in a closed and properly ventilated room. When charging, the tops of the battery cells must be exposed to provide sufficient ventilation.
- Do not place any metal objects on the battery.

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

**Warning!**  
Before closing the battery cover make sure that the battery lead cannot be damaged.

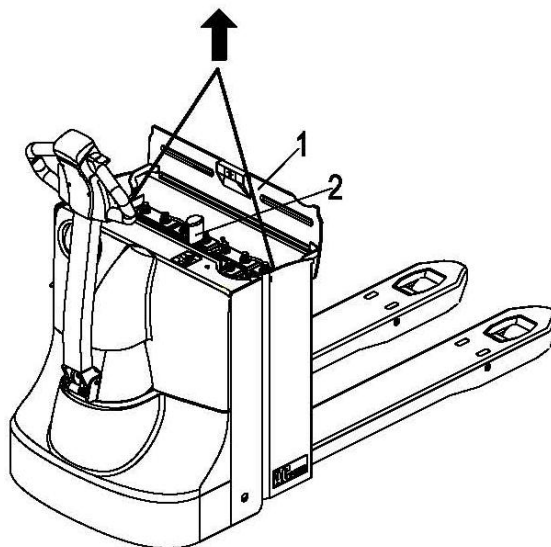
**Charging step**

- Check whether the condition is according with "Safety regulations for Charging the battery".
- Park the truck securely(See 3.2.4 Parking the truck securely Page17 ).
- Remove the battery plug (1).
- Connect the battery plug (1) with the charging lead of the stationary charger (2) and turn on the charger.



**4.4 Battery removal and installation**

- Park the truck securely(See 3.2.4 Parking the truck securely Page 17 ).
- Expose the battery
- Place the battery plug(2) or the battery cable in such a way that they will not get caught on the truck when the battery is removed.
- The hooks must be attached to the eyes of the battery in such a way.
- Start the crane, lifting the battery.



**Warning!**  
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.  
When transporting batteries using a crane, ensure that the crane is of adequate Capacity. The lifting gear must exert a vertical pull so that the battery container is not compressed. Forbid falling lift tool on battery surface.

- Installation is in the reverse order of operations.

#### **4.5 Battery maintenance**

##### **Do not overuse battery:**

- If you use up the energy of battery till the pallet immovability, you will shorten its working hours.
- Shower for battery appears need for charge, please charge it quickly.

##### **Inspection for electrolyte:**

- Do not using pallet which is absent electrolyte.
- Inspection for electrolyte level every week.
- When electrolyte level is low, you must add distilled water to the level appointed.

##### **Battery maintenance:**

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

##### **Warning!**

1. Do not use dry cloth or fibre cloth to clean the battery, avoiding static to bring the explosion.
2. Unfixing battery plug.
3. Cleaning with wet cloth.
4. Wearing glasses for protecting eyes rubber overshoes and rubber glove.

#### **4.6 Battery Disposal**

Batteries may only be disposed of in accordance with national environmental protection regulations or disposal laws. The manufacturer's disposal instructions must be followed.

Batteries contain an acid solution which is poisonous and corrosive . Therefore , always wear protective clothing and eye protection when carrying out work on batteries . Above all avoid any contact with battery acid.

Nevertheless, should clothing, skin or eyes come in contact with acid the affected parts should be rinsed with plenty of clean water-where the skin or eyes are affected call a doctor immediately. Immediately neutralise any spilled battery acid.

Only batteries with a sealed battery container may be used.

The weight and dimensions of the battery have considerable affect on the operational safety of the truck. Battery equipment may only be replaced with the agreement of the manufacturer.

## **5.pallet Truck Maintenance**

### **5.1Operational safety and environmental protection**

- The servicing and inspection operations contained in this chapter must be performed in accordance with the intervals indicated in the servicing checklists.
- Any modification to the pallet truck assemblies, in particular the safety mechanisms, is prohibited. The operational speeds of the truck must not be changed under any circumstances.
- Only original spare parts have been certified by our quality assurance department. To ensure safe and reliable operation of the pallet truck, use only the manufacturer's spare parts. Used parts, oils and fuels must be disposed of in accordance with the relevant environmental protection regulations. For oil changes, contact the manufacturer' s specialist department.
- Upon completion of inspection and servicing, carry out the activities listed in the "Recommissioning (on page 28)" section.

### **5.2Maintenance Safety Regulations**

#### **Maintenance personnel**

Industrial trucks must only be serviced and maintained by the manufacturer's trained personnel.

The manufacturer's service department has field technicians specially trained for these tasks. We therefore recommend a maintenance contract with the manufacturer's local service center.

#### **Lifting and jacking up**

When an industrial truck is to be lifted, the lifting gear must only be secured to the points specially provided for this purpose.

When jacking up the truck, take appropriate measures to prevent the truck 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**

Do not use flammable liquids to clean the industrial truck.

Prior to cleaning, all safety measures required to prevent sparking (e.g. through short circuits) must be taken. For battery-operated trucks, the battery connector must be removed.

Only weak suction or compressed air and non-conductive antistatic brushes may be used for cleaning electric or electronic assemblies.

If the truck is to be cleaned with a water jet or a high-pressure cleaner, all electrical

and electronic components must be carefully covered beforehand as moisture can cause malfunctions.

Do not clean with pressurised water.

After cleaning the truck, carry out the activities detailed in the “Recommissioning (on page 28)” section.

### **Electrical System**

Only suitably trained personnel may operate on the truck’s electrical system.

Before working on the electrical system, take all precautionary measures to avoid – electric shocks.

For battery-operated trucks, also de-energise the truck by removing the battery connector.

### **Welding**

To avoid damaging electric or electronic components, remove these from the truck before performing welding operations.

### **Settings**

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

### **Tyres**

The quality of tyres affects the stability and performance of the truck. When replacing factory fitted tyres only used original manufacturer’s spare parts, as otherwise the data plate specifications will not be kept.

When changing wheels and tyres, ensure that the truck does not slew (e.g. when replacing wheels always left and right simultaneously).

### **Lift chains**

Lift chains wear rapidly if not lubricated.

The intervals stated in the service checklist apply to normal duty use. More demanding conditions (dust, temperature) require more regular lubrication.

The prescribed chain spray must be used in accordance with the instructions.

Applying grease externally will not provide sufficient lubrication.

### **5.3 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 intervals are to be performed by the customer.

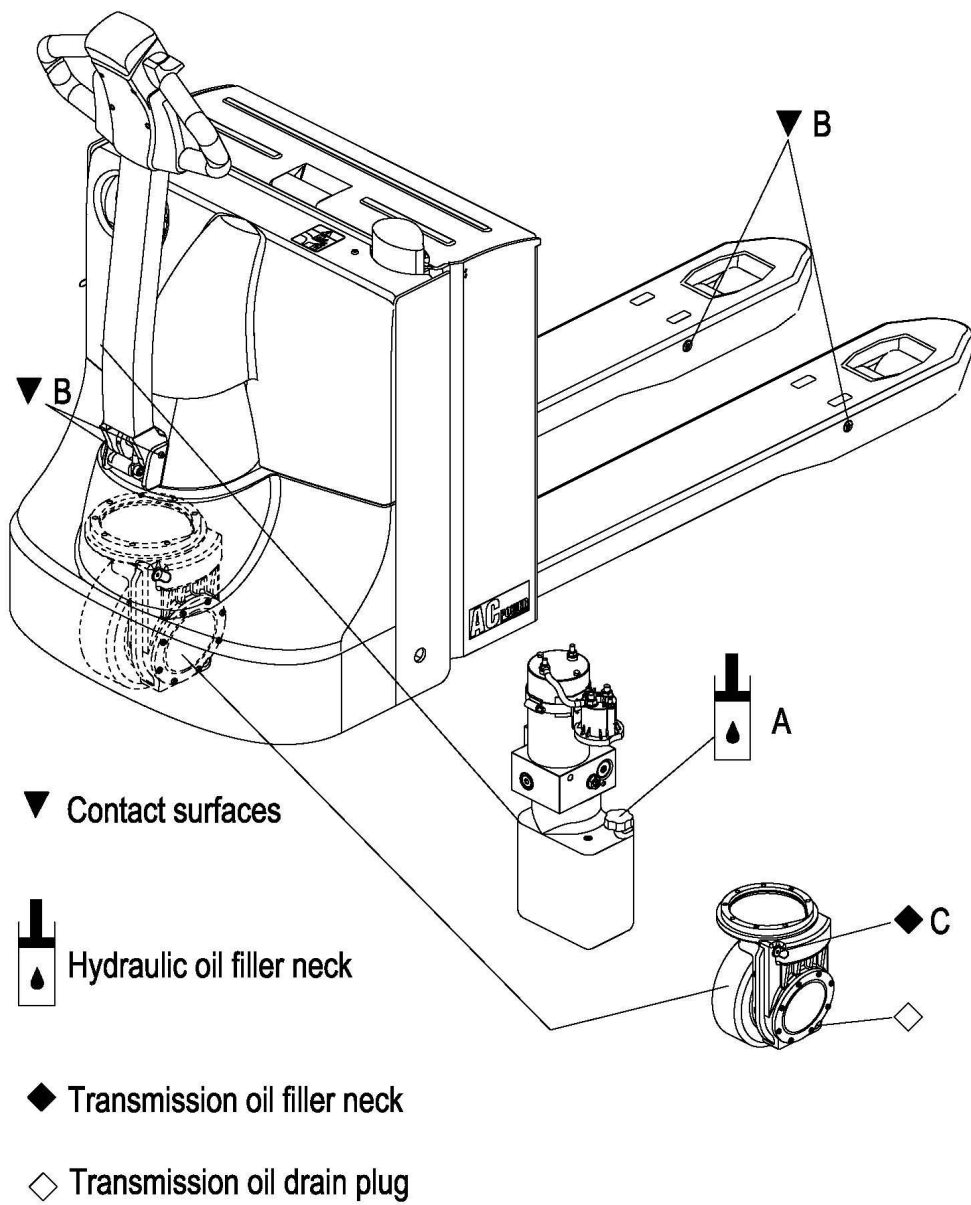
In the run-in period - after approx. 100 service hours - or after repair work, the owner must check the wheel nuts/bolts and re-tighten if necessary.

### 5.3.1 Maintenance 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 .			●	
	Check battery plug			●	
	Fix the motor and cable			●	
Power supply	Visually inspect battery		●		
	Check battery cable connections are secure, grease terminals if necessary.			●	
	Check acid density, acid level and battery voltage.			●	
Travel	Check the transmission for noise and leakage.			●	
	Check travel mechanism, adjust and lubricate if necessary. Check control handle recuperating function.		●		
	Check wheels for wear and damage.			●	
	Check wheel bearings and attachments.			●	
Truck frame	Check truck frame for damage.			●	
Hydraulic operation	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.				●



### 5.3.2 Lubrication Schedule



## Fuels, coolants and lubricants

**Handling consumables:** Consumables must always be handled correctly. Follow the manufacturer's instructions.

Improper handling is hazardous to health, life and the environment. Consumables must only be stored in appropriate containers. They may be flammable and must therefore not come into contact with hot components or naked flames.

Only use clean containers when filling up with consumables. Do not mix consumables of different grades. The only exception to this is when mixing is expressly stipulated in the Operating Instructions.

Avoid spillage. Spilled liquids must be removed immediately with suitable bonding agents and the bonding agent/consumable mixture must be disposed of in accordance with regulations.

Code	Description	Used for
A	HM46#	Hydraulic system
B	Grease, Polyube GA352P	Lubrication
C	GL-5 85W-90	Gear case

### 5.3.3 Maintenance Instructions

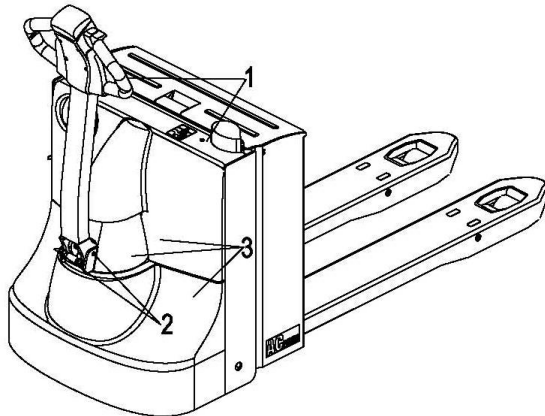
#### Prepare the truck for maintenance and repairs

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

- Park the truck securely (See 3.2.4 Parking the truck securely Page 17 ).
- Disconnect the battery to prevent the truck from accidentally starting.
- When working under a raised lift truck, secure it to prevent it from tipping or sliding away.

#### Removing the front panel

- Remove the two screws (1).
- Turn the control handle to the right limit position.
- Remove the screws(2) in left.
- Turn the control handle to the left limit position.
- Unscrew the other side.
- Carefully lift off the front panel (3).



## Replacing the drive wheel

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

## Checking the hydraulic oil level

It is going to add hydraulic oil when you heard explosion sound from pipe during lifting.

### Warning!

Forbid adding hydraulic oil within impurity.

- Prepare the truck for maintenance and repairs ( See 5.3.3 Maintenance Instructions Page26).
  - Opening the front panel(See 5.3.3 Maintenance Instructions Page26).
  - Add hydraulic oil of the correct grade ( See 5.3.2 Lubrication Schedule P25 ).
- Add hydraulic oil till you cant hear explosion sound during lifting.  
Installation is the reverse order.

## Check transmission oil level

- Prepare the truck for maintenance and repairs (See 5.3.3 Maintenance Instructions Page26 ).
  - Remove the front panel (See 5.3.3 Maintenance Instructions Page26).
  - Turn the control handle to the right limited position.
  - Check the transmission oil level, it should be at the control plug level (See 5.3.2 Lubrication Schedule Page25).
  - Add transmission oil every 800-1000 operating hours, or at least annually (See 5.3.2 Lubrication Schedule Page25).
- Installation is the reverse order.

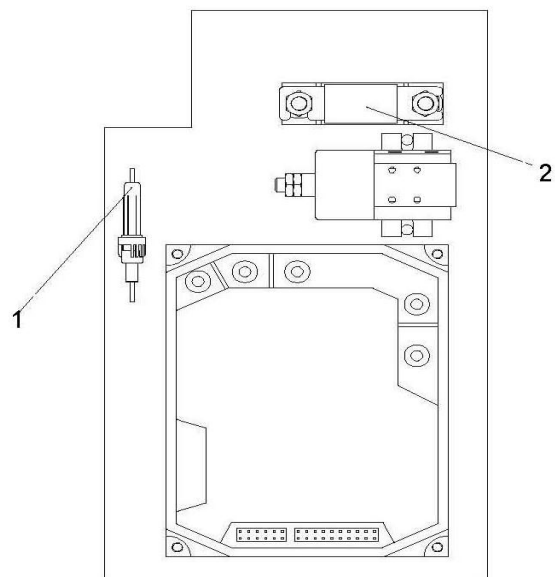
### Warning!

Forbid adding transmission oil within impurity.

## Checking electrical fuses

- Prepare the truck for maintenance and repairs (See 5.3.3 Maintenance Instructions Page26 ).
- Dismantle the front panel (See 5.3.3 Maintenance Instructions Page26).
- Check rating of all fuses in accordance with table, replace if necessary.

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



## Recommissioning

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

- Test horn.
- Test Emergency brake switch.
- Test brake.
- Lubricate the truck in accordance with the maintenance schedule.

## 5.4Decommissioning the industrial truck

If the industrial truck is to be decommissioned for more than two months , e.g. For operational reasons,it must be parked in a frost-free and dry location and all necessary measures must be taken before, during and after decommissioning as described.

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

### 5.4.1Prior to decommissioning

- Thoroughly clean the truck.
  - Check the brakes.
  - Check the hydraulic oil level and replenish as necessary (See 5.3.3 Maintenance Instructions Page26 ).
  - Apply a thin layer of oil or grease to any non-painted mechanical components.
  - Lubricate the truck in accordance with the maintenance schedule (See 5.3.2 Lubrication Schedule P25 ).
  - Charge the battery (See 4.3Charging the battery P17).
  - Disconnect the battery, clean it and apply grease to the terminals.
- In addition, follow the battery manufacturer’s instructions.
- Spay all exposed electrical contacts with a suitable contact spray.

#### **Warning!**

Charge every months:

- Charge the battery.

Battery powered trucks:

The battery must be charged at regular intervals to avoid depletion of the battery through self-discharge.

The sulfatisation would destroy the battery.

#### **5.4.2 Restoring the truck to operation after decommissioning**

- Thoroughly clean the truck.
- Lubricate the truck in accordance with the maintenance schedule (See 5.3.2 Lubrication Schedule P25 ).
- Clean the battery, grease the terminals and connect the battery.
- Charge the battery (See 4.3Charging the battery P17).
- Check transmission oil for condensed water and replace if necessary.
- Check hydraulic oil for condensed water and replace if necessary.
- Start up the truck (see 3.2.2Operate and run the truck P14).

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 them repeatedly.

Perform several brake tests immediately after re-commissioning the truck.

#### **5.5Safety 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 pallet 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.

#### **5.6Final de-commissioning, 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 and electronic and electrical systems must be observed.

## 6. 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.

Fault	Possible cause	Action
Truck does not start.	<ul style="list-style-type: none"> <li>– Battery connector not connected</li> <li>– Key switch in “0” position</li> <li>– Battery charge too low</li> <li>– Faulty fuse</li> <li>– Truck in charge mode</li> </ul>	<ul style="list-style-type: none"> <li>– Check the battery connector and connect if necessary.</li> <li>– Set key switch to “I”</li> <li>– Check battery charge, charge battery if Necessary</li> <li>– Test fuses</li> <li>– Interrupt charging</li> </ul>
Load can not be lifted	<ul style="list-style-type: none"> <li>– Charge capacity below 20% / 40%</li> <li>– Hydraulic oil level too low</li> <li>– Excessive load</li> </ul>	<ul style="list-style-type: none"> <li>– Charging the battery</li> <li>– Check the hydraulic oil level</li> <li>– Note maximum capacity (see data plate)</li> </ul>

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.