ELECTRIC AERIAL ORDER PICKER

AMPD2

OPERATION INSTRUCTION



Note: Owner/Operator must read and understand this instruction manual before using the electric high lift truck.

No.002 28/11,2017

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PREFACE

Read this instruction carefully before the machine is taken into use to avoid errors. Correct operations and regular inspections are factors of vital importance for the operating economy and lifetime of the machine.
These important parts are described in the following related sections.
All the information contained in this booklet is based on the data available at the time of printing, the manufacturer reserves the right to modify its products at any time, without notice and without liability. It is therefore advisable to regularly check for any changes.
This manual is a very important tool. Keep it with the machine at all times.

Ⅰ APPLICATION

Electric Aerial Order Picker is the best equipment for goods picking and handling. It's intended for use on plane and level floors. Easy driving and operating. Lift or fall steadily. Safe and reliable. Suitable for order picking in the goods distribution warehouses.
This manual is a very important tool. Keep it with the machine at all times.

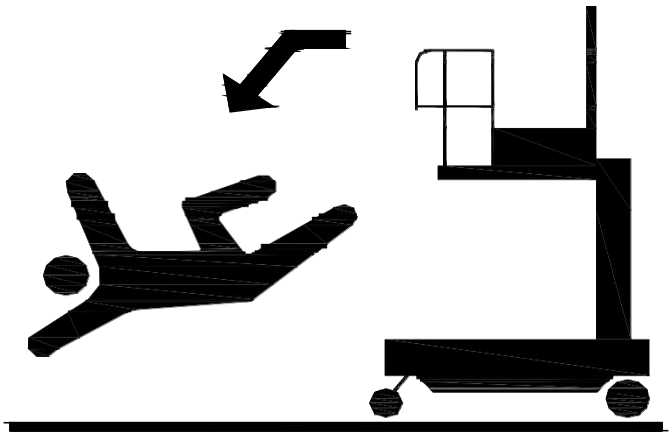
Ⅱ SAFETY PRECAUTIONS

GENERAL

This section outlines the necessary precautions for use the machine properly, it is mandatory that a daily routine be established based on the content of this manual. A maintenance program, using the information provided in this manual, must also be established by a qualified person and must be followed to ensure that the machine is safe to operate.
The owner/user/operator/lessor/lessee of the machine should not accept operating task until this manual has been read, training is accomplished, and operation of the machine has been completed under the supervision of an experienced and qualified operator.
If there are any questions with regard to safety, training, inspection, maintenance, application, and operation, please contact the manufacturer.

Trip and Fall Hazard

- Before operating the machine, make sure all railings and gates are fastened in their proper position.



- Keep both feet firmly positioned on the platform floor at all times. Never use ladders, boxes, steps, planks, or similar items on platform to provide additional reach.
- Never use the mast assembly to enter or leave the platform.

- Use extreme caution when entering or leaving platform. Ensure that the platform is fully retracted. Face the machine when entering or leaving the platform. Always maintain "three point contact" with the machine, using two hands and one foot or two feet and one hand at all times during entry and exit.
- Platform-to-structure transfers at elevated positions are discouraged. Where transfer is necessary, enter/exit through the gate only with the platform within 1 foot (0.3m) of a safe and secure structure. 100% tie-off is also required in this situation utilizing two lanyards. One lanyard must be attached to the platform with the second lanyard attached to the structure. The lanyard connected to the platform must not be disconnected until such time the transfer to the structure is safe and complete.

Electrocution Hazard

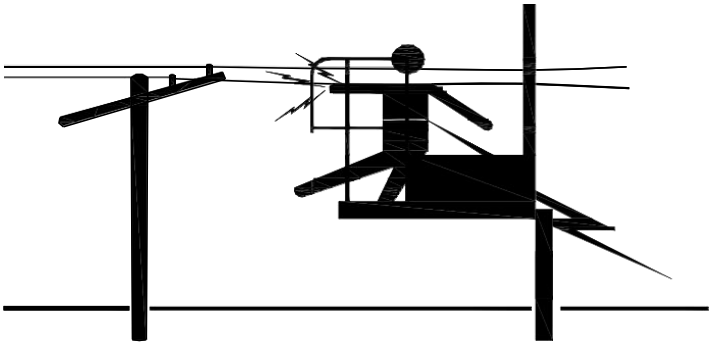


TABLE 1 MINIMUM SAFE APPROACH DISTANCE **(M.S.A.D.)**

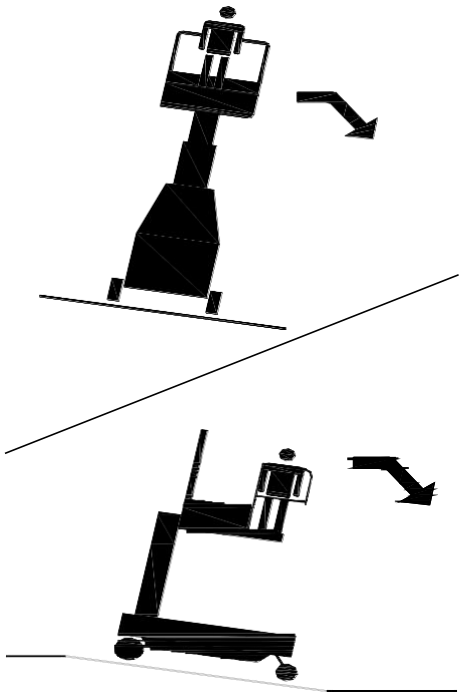
VOLTAGE RANGE (PHASE TO PHASE)	**MINIMUM SAFE APPROACH DISTANCE-Feet (m)**
0-50KV	10(3)
Over 50KV to 200KV	15(5)
Over 200KV to 350KV	20(6)
Over 350KV to 350KV	25(8)
Over 500KV to 750KV	35(11)
Over 750KV to 1000KV	45(14)
NOTE: This Minimum Safe Approach Distance shall apply except where employer, local, or governmental regulations are more stringent.	

Maintain a clearance of at least 10 ft (3m) between any part of the machine and its occupants, their tools, and their equipment from any electrical line or apparatus carrying up to 50,000 volts. One foot (0.3m) additional clearance is required for every additional 30,000 volts or less.

The minimum safe approach distance may be reduced if insulating barriers are installed to prevent contact, and if the barriers are rated for the voltage of the line being guarded. These barriers shall not be part of (or attached to) the machine. The minimum safe approach distance shall be reduced to a distance within the designed working dimensions of the insulating barrier. This determination shall be made by a qualified person in accordance with employer, local, or governmental requirements for work practices near energized equipment.

Tipping Hazard

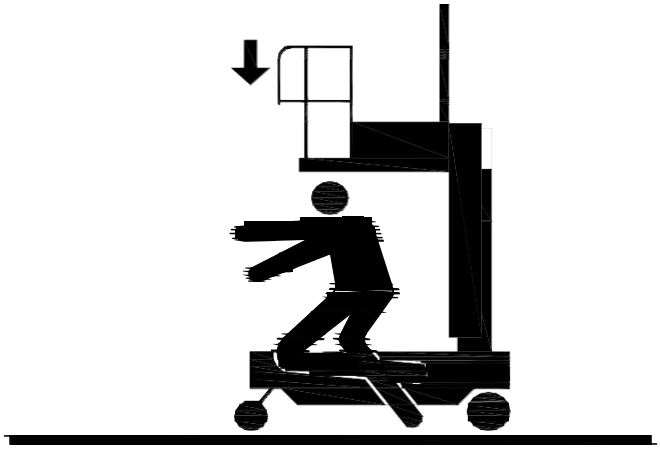
- The user should be familiar with the surface before driving. Do not exceed the allowable side slope and grade while driving.
- Do not elevate platform or drive with platform elevated while on a slope, or on an uneven or soft surface.



- Before driving on floors, bridges, trucks, and other surfaces, check allowable capacity of the surfaces.
- Never exceed the maximum platform capacity. Distribute loads evenly on platform floor.
- Keep the chassis of the machine a minimum of 2 ft. (0.6m) from holes, bumps, drop-offs, obstructions, debris, concealed holes, and other potential hazards at the ground level.
- Never attempt to use the machine as a crane. Do not tie-off machine to any adjacent structure.
- Do not increase the platform size with unauthorized deck extensions or attachments, increasing the area exposed to wind will decrease stability.
- If mast assembly or platform is caught so that one or more wheels are off the ground, the operator must be removed before attempting to free the machine. Use cranes, forklift trucks, or other appropriate equipment to stabilize machine and remove personnel.

Crushing and Collision Hazard

- Personal protection equipment must be worn by all operating and ground personnel.
- Check work area clearances above, on sides, and bottom of platform while driving and lifting or lowering platform.



- During operation, keep all body parts inside platform railing.
- Always post a lookout when driving in area where vision is obstructed.
- Keep non-operating personnel at least 6 ft. (1.8m) away from machine during all driving operations.
- Limit travel speed according to conditions of ground surface, congestion, visibility, slope, location of personnel, and other factors causing hazards of collision or injury to personnel.
- Be aware of stopping distances in restricted or close quarters or when driving in reverse.
- Do not drive at high speeds in restricted or close quarters or when driving in reverse.
- Exercise extreme caution at all times to prevent obstacles from striking or interfering with operating controls and persons in the platform.
- Ensure that operators of other overhead and floor level machines are aware of the aerial order picker's presence. Disconnect power to overhead cranes.
- Warn personnel not to work, stand, or walk under a raised platform. Position barricades on floor if necessary.

WARNING

FAILURE TO COMPLY WITH THE SAFETY PRECAUTIONS LISTED IN THIS MANUAL COULD RESULT IN MACHINE DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

PRE-OPERATION

Pre-Service Check

1. If the machine has been damaged during transport, it must not be put into service, and you should immediately contact your dealer.
2. The machine has been lubricated before delivery, and the hydraulic unit has been filled with hydraulic oil. Check the oil level, fill up if necessary
3. If a battery has been supplied with the machine, the battery is charged. Check and recharge if necessary.
4. Check the connector, tighten up if necessary.

Personnel Training

The aerial order picker is a personnel-handling device; so it is necessary that it be operated and maintained only by trained personnel.

Persons under the influence of drugs or alcohol or who are subject to seizures, dizziness or loss of physical control must not operate this machine.

Operator Training

Operator training must cover:

Use and limitations of the controller and emergency switch in the platform and at the ground, the key switch and the method of manual lower platform.

1. Control labels, instructions, and warnings on the machine.
2. Rules of the employer and government regulations.
3. Use of approved fall protection device.
4. Enough knowledge of the mechanical operation of the machine to recognize a malfunction.
5. The safest means to operate the machine where overhead obstructions, other moving equipment, and obstacles, depressions, holes, drop-offs are present.

6. Means to avoid the hazards of unprotected electrical conductors.
7. Specific job requirements or machine application.

Training Supervision

Training must be done under the supervision of a qualified person in an open area free of obstructions until the trainee has developed the ability to safely control and operate the machine.

Operator Responsibility

The operator must be instructed that he/she has the responsibility and authority to shut down the machine in case of a malfunction or other unsafe condition of either the machine or the job site.

NOTE: The Manufacturer or Distributor will provide qualified people for training assistance with the first unit(s) delivered and from that time forward as requested by the user or his/her personnel.

Workplace Inspection

- The operator is to take safety measures to avoid all hazards in the work area prior to machine operation.
- Do not operate or raise the platform while on trucks, trailers, railway cars, floating vessels, scaffolds or other equipment unless approved in writing by the manufacturer.
- Elevate the platform only on the firm and level surface.
- Don't use the machine outdoor when it's lightning or storm.
- This machine can be operated in temperatures of –20℃ to 40℃ onsult the manufacturer for operation outside this range.

Machine Inspection

- Check performance and function of the machine before operating it.
- Do not operate this machine until it has been serviced and maintained according to requirements specified in this manual.
- Ensure all safety devices are operating properly. Modification of these devices is a safety violation.

WARNING

MODIFICATION OR ALTERATION OF AN AERIAL ORDER PICKER SHALL BE MADE ONLY WITH PRIOR WRITTEN PERMISSION FROM THE MANUFACTURER

- Do not operate any machine on which the safety or instruction placards or decals are missing or illegible.
- Avoid any build up of debris on platform floor. Keep mud, oil, grease, and other slippery substances from footwear and platform floor.

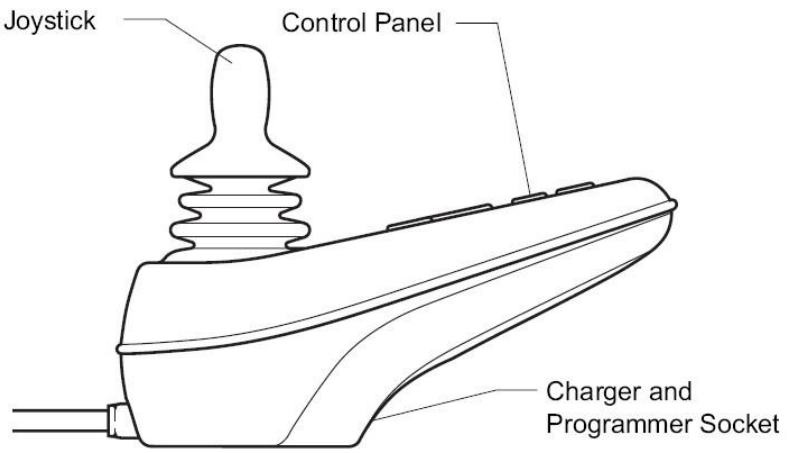
Ⅲ TECHNICAL SPECIFICATIONS

This series of materials chosen vehicle for cargo lifting and aerial materials PICKING

Model Number		AMPD230	AMPD235
Rated Capacity	Kg	300	
Max.Machine	mm	4415	5165
Platform Floor Height	mm	3000	3500
Platform Length	mm	990	
Platform Width	mm	700	
Wheel Base	mm	1230	
Driving Wheel Size	mm	Φ230×80	
Caster Size	mm	Φ150x50	
Ground Clearance	mm	40	
Min.Turning Radius	mm	0	
Gradeability	%	25	
Maximum Slope	°	1.5	
No Load UP\Down Time	sec	15/20	18/24
Full Lord Up\Down Time	sec	22/22	26/26
Lifting Motor	V/Kw	24V/2.2	
Driving Motor	V/Kw	2x24/0.4	
Battery	V/Ah	2x12V/120	
Charger	V/A	24/15	
Overall length	mm	1536	
Overall Width	mm	786	
Overall Height	mm	1935	2185
Overall Net Weight	Kg	520	580

Ⅳ OPERATING GUIDE

1.**Control Panel Operation**



Joystick

The primary function of the joystick is to control the speed and direction of the machine. The further you push the joystick from the center position the faster the machine will move. When you release the joystick the brakes are automatically applied.

If the machine is fitted with actuators, the joystick can also be used to select and move actuators.

Maximum Speed / Profile Indicator

This is a gauge which shows the maximum speed setting for the machine or, if the control system is programmed for drive profile operation, the selected drive profile. For more information on drive profiles.

This gauge also indicates if the speed of the machine is being limited or if the control system is locked.

Maximum Speed Indicator

This is a gauge that shows the maximum speed setting of the machine. There are five speed settings – step 1 is the lowest speed and step 5 is the highest speed. For details of how to change the maximum speed setting.

Profile Indicator

This is an indicator that shows the selected drive profile. There may be up to 5 drive profiles available, this depends on the programming of the control system. For details of how to select drive profiles.

Horn Button

The horn will sound while this button is depressed.

Speed / Profile Decrease Button

This button decreases the maximum speed setting or, if the control system is programmed for drive profile operation, selects a lower drive profile.

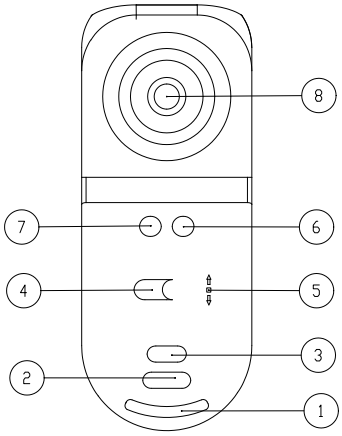
It is possible to program the control system so this button has no effect while the machine is being driven.

Speed / Profile Increase Button

This button increases the maximum speed setting or, if the control system is programmed for drive profile operation, selects a higher drive profile.

It is possible to program the control system so this button has no effect while the machine is being driven.

Actuator Buttons and LEDs



Control Panel

1.Light

2.Power button

3.Horn button

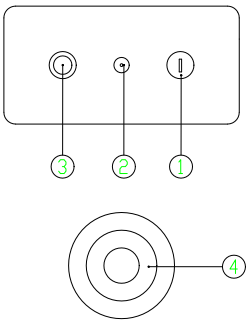
4.Lift/Drive function select button

5. Lift light

6.Drive speed button

7.Drive speed button

8.Proportional control handle and function enable switch for lift and drive functions



Ground Control Panel

1.Key switch 2.Up and Down button 3.Power indicator 4.Red Emergency Stop button

MATTERS NEEDING ATTENTION

The goods should be put on the platform evenly. And forbid to overload.
Forbid to stand under the platform when it is working or driving.
It must be operated on the smooth and solidity road.
Please use Protector during overhaul or check batteries and cables connector.
Please cut off the power and the emergency switch if it is not work for a long time.
After the platform elevated, if the machine has malfunction, you could use the emergency descent valve let it down by pull the manual descent lever out.

For saving the electricity, please cut off the power after operating.

Attention： the protection of the basic functions of the machine tipping is as follows:

1.When platform lowest position, the machine tipping angle> 1.5 ° or <-1.5 °, machine can track , platform can not be elevated;

2. When platform elevated ,the machine tipping angle> 1.5 °or <-1.5 °, machine can not track , platform can not be elevated. You should use the emergency fall button .

2.**Emmergency Stop Button Operation**



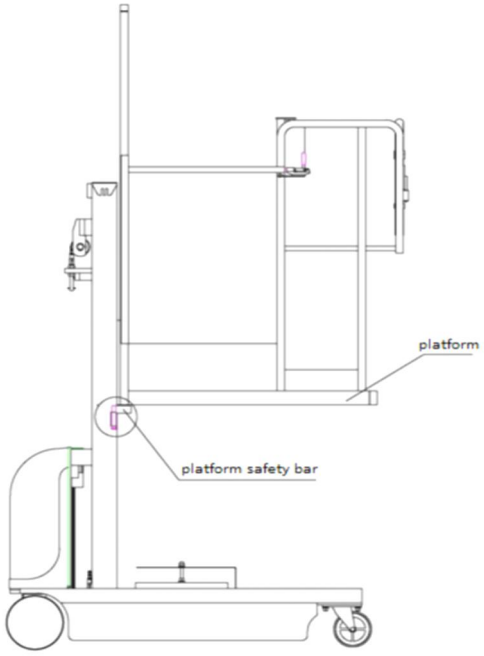
Behind the joystick there is a big mushroom-shaped button， which is provided for emergency stop. This should be used only when other means to stop the platform moving fails. Reset the button by turning the knob in the direction shown by the arrow. Do not pull the knob.

3.Emergency Lower Operation



Pull the knob shown above, to lower platform when the platform can’t lower naturally.

4.Platform safety bar



The platform safety bar have to be used when you want to repair and maintain the machine.Please lift the platform a little higher than safety bar position,swing out
The bar to 180 degree and put down the platform on the safety bar,then you can start to repair and maintain.

Ⅴ MAINTENANCE GUIDE

DAILY CHECK

1. Check that the battery is fully charged (see also the section of the battery).
2. Lift the platform to its top position to check that there is enough hydraulic oil in the system. Refill it if necessary with YA-N32 or similar oil.

WEEKLY CHECK

The user of the picker should spend a few minutes every week on cleaning. Special attention should be paid to the wheels and axles, see if there is thread, rags and the like blocked on.

HALF-YEAR CHECK

1. Lubricate the lifting chain. Check the chain for wear.
2. Check and tighten possible loose screws and nuts and the cable joints of the battery.
3. Check brush wear in the pump motor, and take away possible irregular so that a good contact is maintained.

OIL CHANGE IN THE HYDRAULIC SYSTEM

We recommend to change the hydraulic oil after one month's operation (or 200 hours), and even if the operation time has not reached, change the oil once a year. Use hydraulic oil YA-N32 or the like. Oil should be filtered clean and maintained adequate.
When you have lifted and lowered the platform 2 or 3 times, there is no more air in the

system, and the machine will again work normally. If the lift height has not been obtained it is necessary to refill.

Forbid to dump the dirty hydraulic oil anywhere at random after the hydraulic oil is changed. The dirty hydraulic oil must be subject to special prescription and comply with the current legal provisions in the area and country where the machine is used.

BATTERY CHARGER

Electric aerial order picker provide maintenance free battery. Keep dry clean and charge it as required can extend the service life of battery.

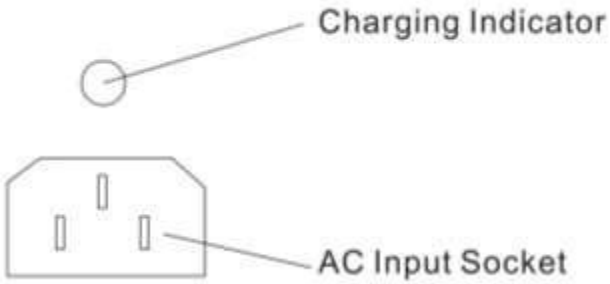


FIGURE 5 CHARGER PANEL

When AC input, the fan will running, charging indicator will flash showing red. When charging is over, the charging indicator becomes green. Please cut off the power first and then pull the AC input plug out.

NOTICE

When battery indicator display 30%, please charge in time, and choose the fit voltage. Recharging lasts at least 12 hours. The machine's platform drive and elevate functions are disabled when the battery charge. If the machine will stop using for a long time, please charge in the fixed time.

WARNING

For saving the battery, when operate is finished, please turn off the Key switch, pull out the key.

Ⅵ STORAGE AND TRANSPORTING

STORAGE

Electric Aerial Order Picker must be stowed in an upstanding position, in order to prevent the oil and the electrolyte overflow, during transporting and storing. When stores it, it must be kept clean and keep far away from the damp and bad condition. The temperature of environment should

not be more than 40℃. If the battery isn't worked for a long time, it should be recharged timely.

TRANSPORTING, LIFTING AND TIE DOWN PROCEDURES

All TT Series Model Pickers may be transported to a work site using the following methods:

- Driving the machine there by itself if travel surface area permits.
- Loaded, in an upstanding position only onto a heavy-duty vehicle with the payload capacity capable of supporting the full weight of the machine (Check the gross weigh of machine in TABLE 2).
- Moved with a forklift truck by insert its forks into sockets of the chassis.
- Truck transport

CAUTION

DO NOT TRANSPORT THE MACHINE SIDE DOWN DUE TO LEAKAGE OF ACID LIQUID FROM THE BATTERIES OR HYDRAULIC OIL FROM THE HYDRAULIC RESERVOIR.

IMPORTANT

DO NOT ATTEMPT TO DRIVE OR PUSH THE MACHINE ONTO OR OFF A TILTER.

THE ZDYT MACHINES POWER MODULE COULD SUSTAIN SERIOUS DAMAGE WHEN THE UNIT IS TOWING AT SPEEDS GREATER THAN 2 MPH.

IMPORTANT

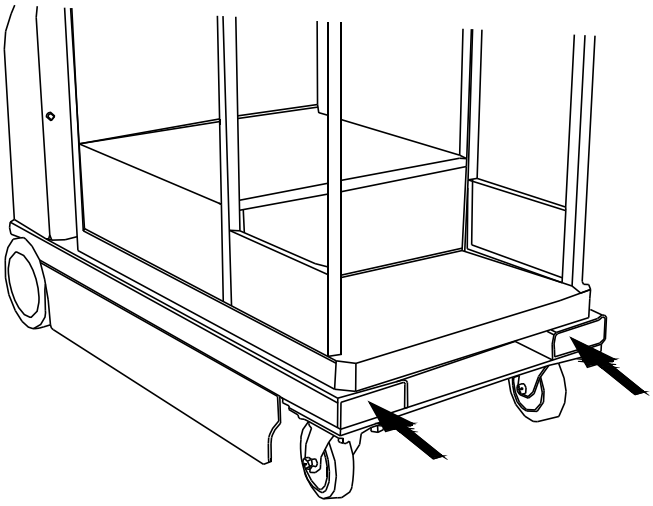
APPLY EXCESSIVE FORCE ON THE MACHINE (EXCEED WHEEL LOAD), CAN LEAD TO COMPONENTS DAMAGE OF THE WHEELS.

The chain should be securely tightened with a force of approximately 100 lb. applied two feet from the pivot handle.

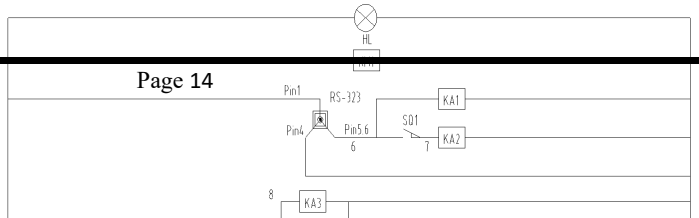
Fork-Lift Truck Transport

All TT Model Pickers are equipped with wide fork pockets. This allows the machine to be either transported around a work area or lifted onto a higher level using a standard fork-lift truck.

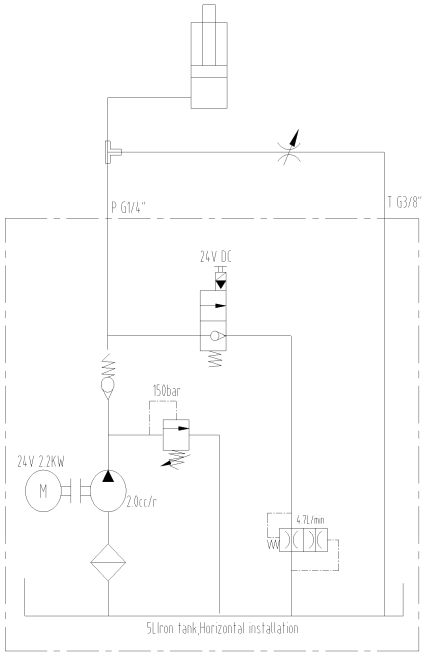
NOTE: Fork-lift trucks must be capable of handling the gross weight of the machine.



Ⅶ ELECTRICAL DIAGRAM



Ⅷ HYDRAULIC DIAGRAM



常州市祥瑞液压设备有限公司
CHANGZHOU XIANGRUI HYDRAULIC EQUIPMENT CO.,LTD.

Ⅸ TROUBLE SHOOTING

Battery indicator lights (1)on the control panel are a battery gauge. It is used to display electric quantity or malfunction. The battery Gauge has ten bars. They are not flash when the machine is good. If the picker has malfunction, they will flash. The detailed trouble is as follows:

1 Bar	The battery needs charging or there is a bad connection to the battery. Check the connections to the battery. If the connections are good, try charging the battery.
2 Bar	The left hand motor* has a bad connection. Check the connections to the left hand motor.
3 Bar	The left hand motor* has a short circuit to a battery connection. Contact your service agent.
4 Bar	The right hand motor* has a bad connection. Check the connections to the right hand module.
5 Bar	The right hand motor* has a short circuit to a battery connection. Contact your service agent.
6 Bar	The machine is being prevented from driving by an external signal. The exact cause will depend on the type of picker you have, one possibility is the battery charger is connected.
7 Bar	A joystick fault is indicated. Make sure that the joystick is in the center position before switching on the control system.
8 Bar	A control system fault is indicated. Make sure that all connections are secure.
9 Bar	The parking brakes have a bad connection. Check the parking brake and motor connections. Make sure the control system connections are secure.
10 Bar	An excessive voltage has been applied to the control system. This is usually caused by a poor battery connection. Check the battery connections.

WARNING

Do not wear metal frame glasses, metallic necklaces or chains while working on any electrical equipment. Also do not wear any ring, watch or bracelet while operating electrical equipment.

X LABELS

The following labels are visible on the machine:

