

PPI - 90

Portable Power Pallet Inverter Instruction Manual



Introduction

PPI-90 series Pallet Inverter is a new storage battery designed power lifter / rotator based, which is made of three parts (fuselage with battery, footplate, rotator framework) . Its main function is to lift or load the logo from floor and make it to move and rotate. It is adopted the originally imported electrical control equipment which consists of unit components such as microprocessor. It is specially adapted for printing and relevant outdoor or indoor operation owing to their functional perfection and high reliability.

Technical parameter

1. Model: PPI-90
2. Loading capacity: 2,000 lbs.
3. Sizes of forks: 26-3/4" x 31-1/2"
4. Lowered Hiegiht: 3-1/2"
5. Distance between the forks: 31-1/2" – 47-1/4"
6. Moving speed unload &load: 2.5~3.7m/h /1.86~2.5m/h
7. Driving motor: 24V/1200W
8. Hydraulic motor: 24V/2000W
9. Speed controller:
Micro-processors-Mosfet-Controller& electric throttle
10. Turning radius: R78"
11. Battery: 24V/280Ah
12. Charger: AC220V/50Hz~DC24V/40Ah
13. Overall Size: 78-3/4"x33-1/2"x51-3/16"
14. Net Weight: 1,650 lbs.



Structure and operation

1) Structured feature

As the entirety weld, fuselage has a compact structure and high strength. The electrification controller and the hydraulic part are both put on the back panel in the truck and with the reasonable rotator frame design, it is convenient to maintain. It has high function, no pollution, and low price, and high efficiency, durable and reliable feature. The new-type battery box can correctly inspect the capacity and the status of battery. With the drive wheel, it comes to move ahead or backward.

The implement of main function:

Paper lift / rotator:

Battery -- Electric Controller – Hydraulic Motor-- Gear Pump – Controller Valve – Cylinder – Fork clamp – Paper clamp –Lift Cylinder – Paper Rotate

Paper fall/ rotator:

Battery --Electrification Controller –Solenoid Valve changed the direction – Cylinder loads the oil -- Paper Rotate

Drive Move:

Battery --Electrification Controller – Drive motor changes the speed – Reduce the speed of gear box - Drive wheel rotated – Stacker moves

2) Operation

The control switches of turning, clamping, up and down, forward and backward, push the horn are all designed on the handle. You can operate the truck easily. If you push down the handle and revolve the knob forward or backward, the truck will move ahead or backward along with your movement. When you free your hand from hold of the handle or push the handle down to the lowest level then the truck will automatically turn to brake state.



As you begin to operate the truck, open the power with switch key to turn on the current. A dial of battery volume will show the electrical volume of batteries. According to the requirements of loading or unloading, push the relevant switch to control the truck. The speed regulation must be made slowly to avoid accidents.

It is strictly forbidden to turn the drive wheel in the air with in the current for a long time. Otherwise, it may possibly damage the drive motor in overheat.

3) Security system

PPI-90 Paper Inverter's are equipped with automatic brake system. The brake work only when you loose the switch to control forward and backward movement, or loose the handle. Then the electric current will be cut off before the truck stops. Press the red switch on the top of handle when the truck is moving, the truck will move rest-direction immediately.

PPI-90 electric locomotive are equipped with powerful tilt resist system. There is one safe wheel on both sides of the drive wheel. When the truck inclines to 1.5° (5mm), the safe wheel will reach the ground. Then 900N reacting force is acted on the truck (having regulated in factory). The gradient rises as the reacting force increases until the gradient reaches $5^{\circ} 30'$ (25mm), the safe bush locks the truck (the reacting force reaches 2000N) and the safe wheel provides the rigid support for the truck.

4) Hydraulic part

Adopted the American Fenner Hydraulic System, the work pressure is 16Mpa. The hydraulic system is formed in entirety and it is compact in structure and reliable in quality and durable. The cylinder adopts the piston rod type, with treatment chromate on the surface of piston rod. The cylinder is wear-resisting and stainless. The hydraulic system connects the cylinder with high-pressure hose to make a sealed cycle.



1. The hydraulic cycle: oil pump => combined valve => manual change valve => cylinder => oil-tank.

2. The pressure regulation: The truck has been regulated by specialist. Please do not adjust the truck unless it is necessary. If necessary, regulate the truck with full load by the specialists or experts.

3. The hydraulic oil: If there is no enough oil in the oil-tank (the truck cannot elevate and it will make a noise), fill the oil-tank with hydraulic oil to the 4/5 capacity. It is better to used HL-46 hydraulic specific oil, or you can use HV-32 oil instead.

5) Electrification system

Input voltage: DC-24V (2x12V)260Ah

Drive motor: DC-24V 2500RPM 4.5NM

Hydraulic motor: DC-24V 2400RPM

Moving motor and hydraulic motor adopt DC-24V motors. It is easy to operate, reliable and safe without pollution. Electrification serves as the power to lifting or moving.

Electrification system consists of charger => battery => Dc motor.

Battery serves power supply at work. When you want to charge the battery, pull the plug out of the plug base in truck, and connect the plug with the charger and connect the charger to 220V/50HZ-AC mains. When the charge finishes, disconnect the AC mains before disconnect the battery and the charger.

6) Safe operation

1. Check the truck' condition before you operate it. The truck must be operated in well state.
2. Do not operate this truck unless you are trained and authorized. The driver must observe the safe operation regulations.
3. Do not operate the truck with riding on it. Never place any part of your body under the forks or near the moving part when the forks have been lifted.



4. Keep the well sight and enough range to other people or mechanism. When handing long high and wide load, avoiding to affect your sight, you must forego the truck, move carefully.
5. Reduce the speed when other people or truck is nearing. If you want to forerun the other truck or bring to somebody's attention, you can use the electric bell.
6. Pay attention to control your truck, use urgent brake and repeated start and speedy turn as few as possible in order to lessen the damage of vehicle and accidental injuries of persons.
7. Before you start the truck, ensure your freight stable. Place the forks to the lowest, 150~400mm is the best distance to the ground.
8. Do not overload the truck, otherwise, it will add to the truck's wastage and easy to cause accident.
9. Moving on slopes, you must observe the instruction stated below: Do not hand the unstable or loosely stacked loads. Keep the forks lowest and travel slowly and with caution. The same as unload travels. You must not always turn your truck on the slopes.
10. If there are some faults in your truck, you must repair it in time by the specialist or expert. Don't operate the damaged or faulty truck. Our company provides the specialized maintenance.

7) Battery's and Charger's usage and conservation

1. Battery must be placed stable on rack avoiding to short circuit. Ensure that the polarities of the battery are connected correctly and with good contact. Apply some geoline to pretend the interface from corrosion.
2. Charging should be operated in ventilation and non-flammable surrounding. Keep battery and charger away from spark, high temperature and moistness. You must provide enough operating space for charging, otherwise, it would be result in overheat.
3. The charging voltage must be limited within 13.8 ~ 14.2.



Always inadequate charge will result in transformation sulphuric acid into sulphate and this will easily to shorten the life span of battery.

4. You should charge the battery before you conserve it for a long time. The same you should do if you want to use a battery that had been conserved for a long time.
5. Battery must be conserved in ventilation and drying surrounding. Keep it out of sun and keep the temperature lower than 40 degrees.
6. Battery charger is equipped steering computer monitor and over-current protector, all the charging status need not manual controlling. When the capacity of battery is fully charged, the charger will cut off output automatically.
7. Before charging the battery, be sure that the DC output charging cables of the charger are connected correctly and reliably to the battery, take care to connect the correct cables respectively to the terminals (+) and (-) of the battery.

List of enclosures

1. a Chinese-English instruction manual of charger
2. a electrification principle drawing
3. a electric wire for charger output
5. a instruction manual for walking stacker
5. a customer register
6. a certificate of inspection
7. a guarantee certificate

Note: * After the truck has been sold, our company provides the free maintenance in three years and the lifelong maintenance.



Paper Inverter

Technical parameter

| | |
|----------------------|-------------|
| Truck TYPE | PPI-90 |
| Load capacity(lbs) | 2000 |
| Fork width(in) | 5.9 |
| Width for two forks | 22 |
| Forks length (in) | 34-5/8" |
| Max forks Open(mm) | 1200 |
| Min .Forks Close(in) | 31-1/2 |
| Moving speed | 2.5/3.7m/H |
| Lowest Height(in) | 3-1/2" |
| Pump motor (kw) | DC24V/2KW |
| Drive motor(kw) | DC24V/1.2KW |
| Truck weight | 1,650 lbs. |
| battery | 12x2V/280A |
| Battery charger | 24/40A |

Note: *. The load capacity is based on the situation when the center of the gravity is located at the center of length of forks. When the center of gravity of goods is out of the center of forks, the load capacity will be lessened compared to the center.



Troubleshooting

| Fault | Reason | Remedy |
|--------------------------------------|--|--|
| The platform can not rise | Not enough voltage | Check the motor potential at work. The voltage may fluctuate in 10% |
| | Motor do not work | Check the motor and electric circuit |
| | Motor turn reverse | Change two phases in three freely |
| | Motor lack phase (motor can not turn and make noise) | Check the fuse and wire connection |
| | Restrict-speed valve has been open | Check the restrict-speed valve with voltmeter (the switch "down" must be loosed). If voltage do not exist, check the electric circuit. Otherwise, clean the restrict-speed valve or change it. |
| | Not enough pressure | Regulate the overflow valve under the full load |
| | Not enough hydraulic oil | Fill the oil-tank with hydraulic oil |
| | Filter tip has been blocked up | Clean the filter tip |
| | There is air in oil pipe | Check the oil pipe and joint. Twist the joint firmly or change it if necessary |
| Overload | Reduce the load | |
| Platform self-descend | One-direction valve leak oil | Clean the one-direction valve or change it if necessary |
| | Restrict-speed valve has not been sealed | Check whether voltage exist on the restrict-speed valve. If exist, clean the restrict-speed valve or change it. |
| | Cylinder leak oil | Change the seal unit in the cylinder or change the cylinder |
| Platform can not descend | Restrict-speed valve lose efficacy | Check whether voltage exist on the restrict-speed valve. If exist, clean the restrict-speed valve or change it. |
| | Restrict-speed valve dislocation | Regulate the restrict-speed valve, if regulation has not use , change the valve |

