OPERATING MANUAL

Electric Pallet Truck

DO NOT REMOVE THIS MANUAL FROM THIS UNIT

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⚠ WARNING

SAFETY WARNINGS AND MARKINGS

The safety regulations and important explanations are marked by the following symbols:

⚠ DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

⚠ WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor injury and/or damage to the equipment.

NOTE: It is given before warnings and explanations.

These symbols are used to draw attention to the presence of a risk: failure to comply with safety regulations and all relative instructions may be hazardous for people and property.

A general risk is defined as the possibility of major hazard situations ensuing, such as:

- **Overturning**
- **Falling load**
- **Explosion**
- **Crushing**
- **Electrocution**

The operators, maintenance engineers and anyone working near the truck are exposed to these risks.

Risks / Transporting the truck

RISKS AS A RESULT OF INCORRECT USE

In order to operate in safe conditions, the following instructions must be followed and dangerous situations must be handled with caution.

DEFINITION OF OPERATOR



The operator is defined to be any person who is trained and responsible for moving the truck and handling the load.

The operator can be transported on the truck or drive the truck from the ground or remotely (by cable, radio, etc.)

The truck may only be driven by trained and authorised personnel.

KNOWING THE TRUCK

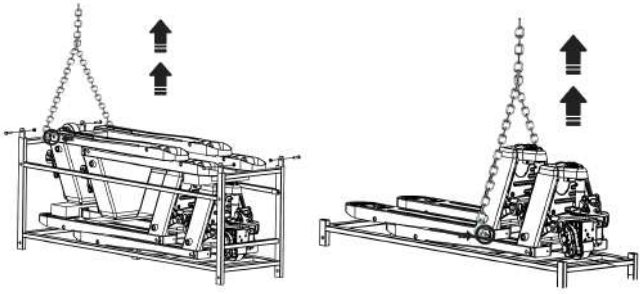
The operator must be fully acquainted with the truck he is using, carefully study the operating instructions and work only with loads that do not exceed the load capacity indicated on the nameplate.

KNOWING THE LOAD

The operator must be fully aware of the nature and the stacking condition of the load that is being transported. The operator has the right to refuse to transport loads he considers to be hazardous to the transit environment or loads that are incorrectly stacked.

NOTE: Avoid scratching the forks or covers of the pallet truck when loading, especially when inserting the forks into the shipping pallet. Do not drop the truck when loading.

- Ensure that any packaging including the shipping pallet or crate are of sufficient strength to bear the weight of the pallet truck and large enough to accomodate the pallet truck.
- Ensure that the forks of the pallet truck are fully inserted into the shipping pallet.
- Once the truck is inserted into the shipping pallet, park the truck as described in the **Parking** section of this manual.
- Ensure the capacity of the transporting equipment is of sufficient capacity to hold the combined weight of the pallet truck and any packaging.
- If the pallet truck is not to be shipped on a pallet, only lift the truck using the lifting points marked on the truck on the left and right sides of the chassis.

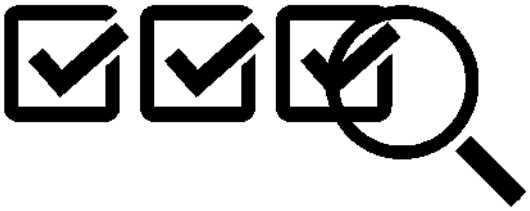


MAKING THE TRUCK READY AFTER TRANSPORTATION

Following transportation, the truck must be prepared for use in order to ensure its correct operation.

Use the storage battery to drive the truck.

If the truck has been dismantled for transport requirements, request technical assistance from distributor to reassemble it.



Now proceed to make the checks listed below:

- Inspect the truck to make certain there is no damage and there are no parts missing.
- Install the battery, making sure not to damage any electrical wires.
- Charge the battery.
- Check the battery charge level (Indicator).
- Test the lift and lower system.
- Make a general inspection of the controls and instrumentation.

NOTE: It is normal for wheels to show some deflection or distortion in shape after the truck is parked for an extended period. The wheels will restore to their original shape after the truck is driven for a time.

⚠ WARNING

Any damage or incorrect operation of the truck must be reported immediately to the distributor service centre. Never start the truck if it is damaged or defective. Trucks may only operate when they are in good condition.

NOTE: If the truck needs to be repaired, place a clearly visible sign saying “OUT OF ORDER - DO NOT USE” on the truck and remove the key from the control panel.

Description / Operating instructions

CONSTRUCTIONS STANDARDS

The truck described in this manual is constructed in accordance with the EU standards.

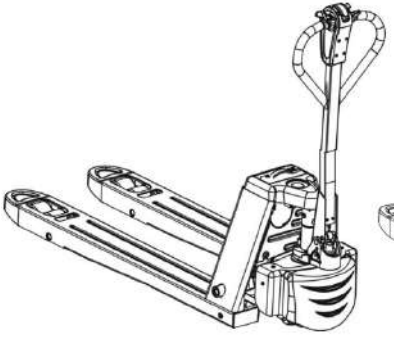
DESCRIPTION OF THE MODEL

The machines in this series are electric pallet trucks operated by a user walking alongside the pallet truck.

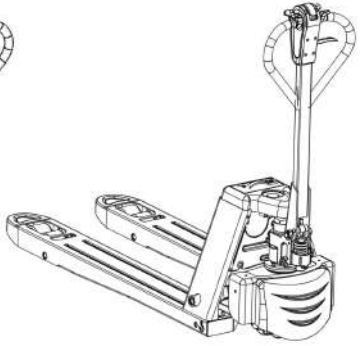
⚠ WARNING

This lift truck is designed and intended for handling materials. A lift truck is not designed to lift people. If a lift truck is used to elevate a worker it must be ensured that:

- **It is allowed by the national regulations of the country in which the truck is used.**



(FULL ELECTRIC)



(SEMI-ELECTRIC)

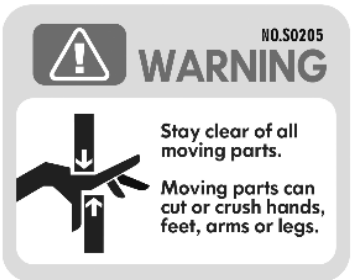
WARNING AND INFORMATION PLATES AND ADHESIVE DECALS

⚠ CAUTION

The warning and information decals must never be removed, painted over or made undecipherable. Should a decal be undecipherable it must be replaced.

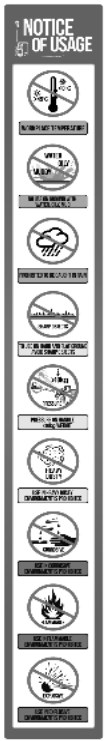
⚠ WARNING

Stay away from all moving parts. Moving parts may cut or crush hands, feet, arms or legs.

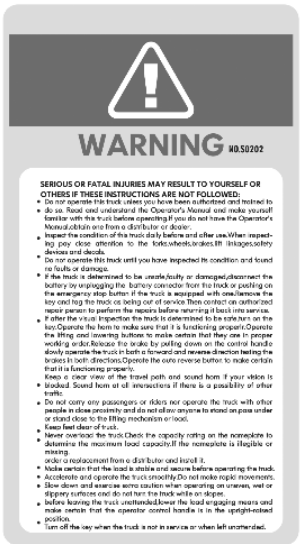


⚠ CAUTION

Do not soak the battery in water. Do not recharge battery at less than 0°C (32°F).







TECHNICAL DATA

The dimensions diagram and the specification sheet contain the truck data.

Knowledge of weight, dimensions, movement areas, are essential for enabling the operator to avoid the general risks for misuse.

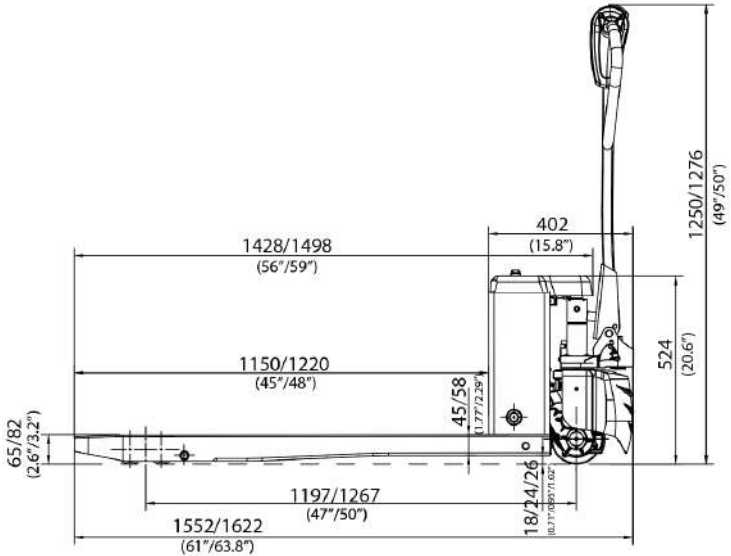
NOTE: ALL VALUES ARE NOMINAL AND SUBJECT TO TOLERANCES.
FOR MORE INFORMATION, PLEASE CONTACT YOUR SUPPLIER.

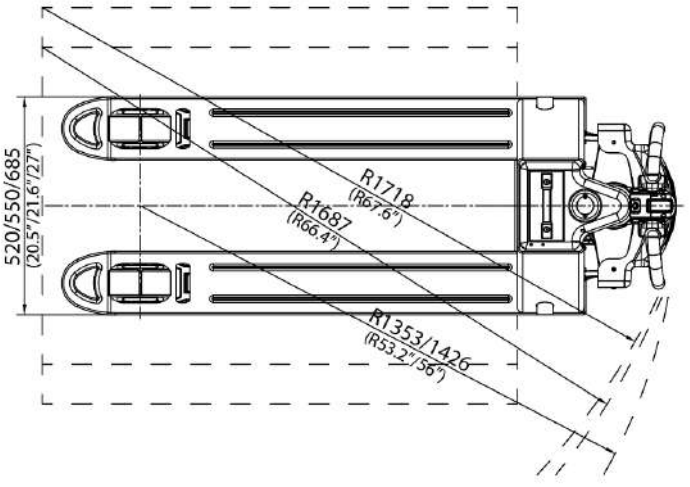
PRODUCTS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

THE TRUCKS ILLUSTRATED MAY FEATURE OPTIONAL EQUIPMENT.

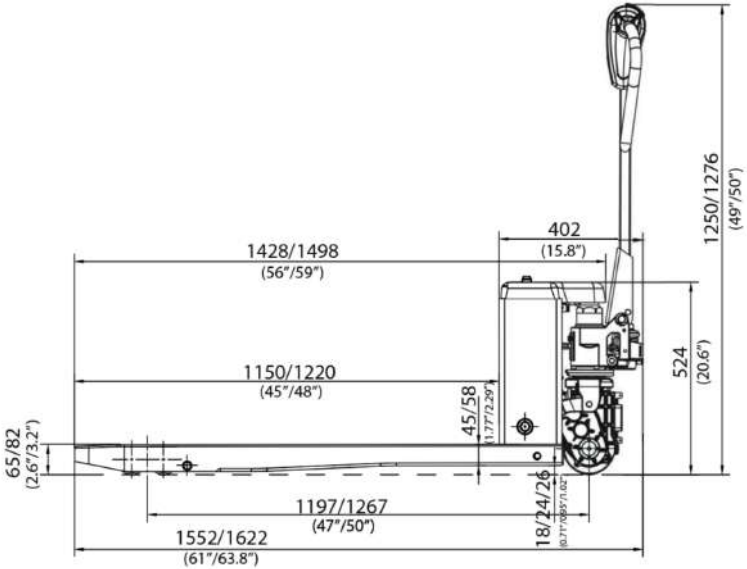
THE VALUES MAY VARY DEPENDING ON THE DIFFERENT CONFIGURATIONS.

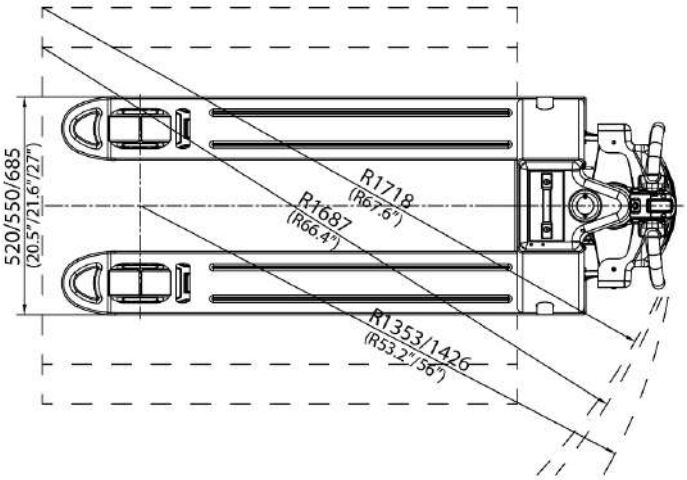
OVERALL DISPLACEMENT DIAGRAMS (FULL ELECTRIC)





OVERALL DISPLACEMENT DIAGRAMS (SEMI-ELECTRIC)





SPECIFICATION SHEET

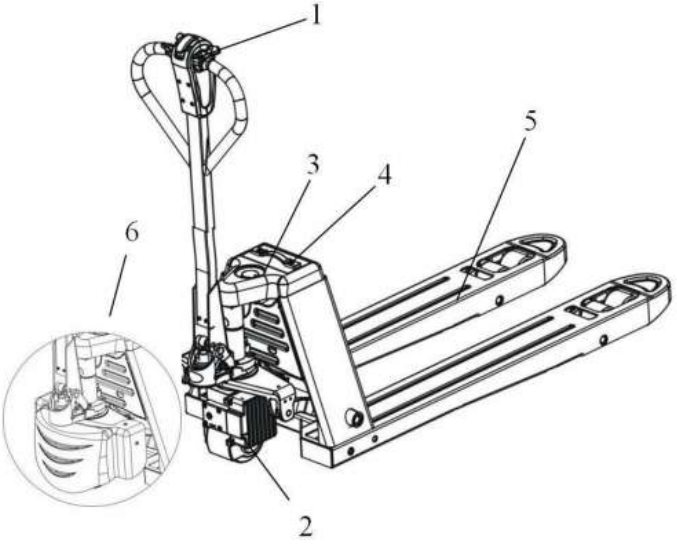
The following data is according to standard GB/ T27542-2011.
The manufacturer reserves the right to update this data.

Model				PPT20H (PPT44H)	EPT15H (EPT33H)	EPT20H (EPT44H)	EPT15H-65L (EPT33H-2.6L)
Characteristics	Capacity		kg (lb)	2000 (4400)	1500 (3300)	2000 (4400)	1500 (3300)
	Load center		mm (in)	600 (23.6)			
	Overall fork width		mm (in)	520/550/685 (20.5/21.6/27)			550/685 (21.6/27)
	Fork length		mm (in)	1150/1220 (45/48)			
	Overall length		mm (in)	1552/1622 (61/63.8)			
	Overall height of fork		mm (in)	82±2 (3.2±0.8)			65±2 (2.6)
	Max.height of fork		mm (in)	197 (7.8)			165 (6.5)
	Overall height (with tiller)		mm (in)	1276 (50)			1250 (49)
	Rear body width		mm (in)	520/550/685 (20.5/21.6/27)			550/685 (21.6/27)
	Minimum turning radius		mm (in)	1353/1426 (53.2/56)			
Performance	Max.Traveling speed	laden	km/h (mph)	4 (2.5)			
		unladen	km/h (mph)	5 (3.1)			
	Gradeability	laden	%	6			
		unladen	%	20			
Motor	Traveling		kw	DC 1.0 Brushless	DC 0.75 Brushless	DC 1.0 Brushless	DC 0.75 Brushless
	Lifting		kw	Hydraulic	DC 0.8		
Battery	Voltage		v	48			
	Capacity/type		Ah	10Ah/15Ah Lithium			
Brake type	Travel brake			Regenerate			
	Brake			Electromagnetic			
Controller	Controller			STAXXB1503			

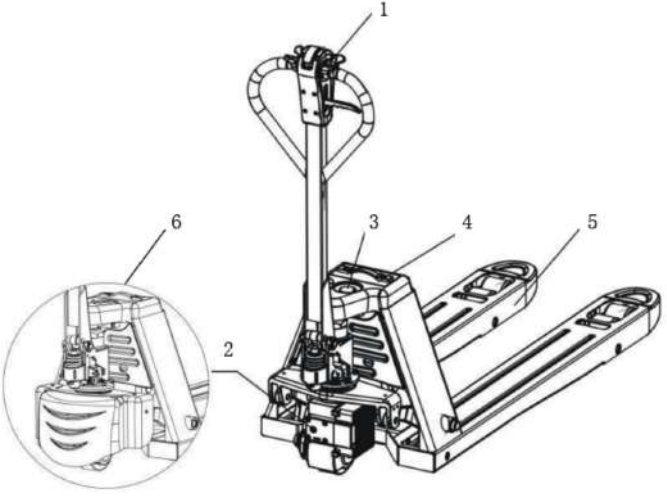
COMPONENTS AND POSITIONING

The figures below indicate the terminology used to describe the main components of this truck and their location.

1. HANDLE ASSEMBLY
2. DRIVE MOTOR ASSEMBLY
3. POWER SWITCH (EMERGENCY POWER OFF)
4. LITHIUM-ION BATTERY
5. CHASSIS
6. COVER



(FULL ELECTRIC)



(SEMI-ELECTRIC)

INSTRUCTIONS FOR USING THE CONTROLS AND INSTRUMENTS

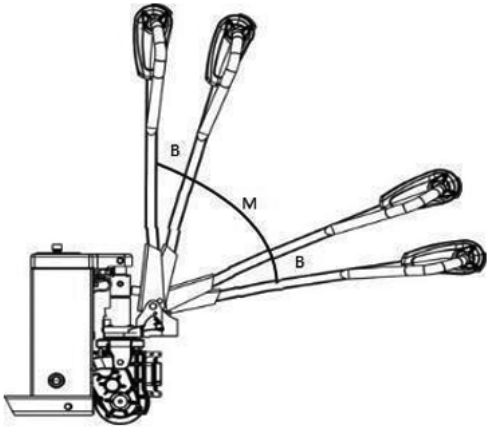
The following diagrams and instructions show the type of control or instrument, their position and the way to use them.

STEERING TILLER

The steering tiller in position “M” enables the truck to be driven. If travel, lift, or lower is commanded with the steering tiller in position "B", the truck will not respond and the display will read **SRO ERR**.

Push the throttle in the direction of desired travel to move the truck. The more the throttle is pressed, the faster the truck will move.

Operate the driving tiller to steer.



REGENERATIVE BRAKING

- Release the throttle.
- It causes a deceleration due to braking of the electric braking of the drive motor.

⚠ WARNING

When the throttle is released, it should return to neutral position immediately. If it does not, have the truck repaired immediately to reduce the risk of personal injury or property damage.

HARD BRAKING

To brake the truck more quickly, do one of these things:

- Release the steering tiller.
- Move the steering tiller to position “B”.
- Pull the steering tiller down to the lowest position.

It causes a deceleration due to braking of the electric braking of the drive motor.

⚠ WARNING

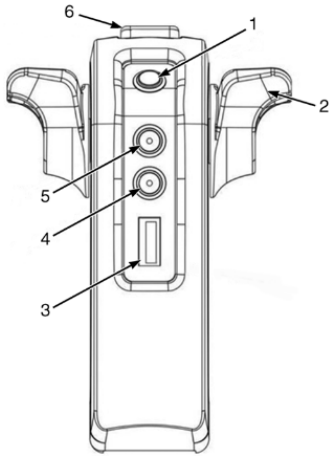
When the steering tiller is in the "B" position, the truck should stop moving until the throttle is pressed again. If the truck moves with the handle in the "B" position, have the truck repaired immediately to reduce the risk of personal injury or property damage.

PLUG BRAKING

To brake quickly with more control, use controlled braking or "plugging".

- Release the throttle.
- Move the throttle in the direction opposite the current direction of travel.
- When the truck just begins to move in the opposite direction, release the throttle.

NOTE: Use hard braking or plugging when an unexpected situation arises and it is necessary to stop quickly.



1. HORN BUTTON
2. THROTTLE
3. BATTERY DISCHARGE INDICATOR (BDI), HOUR-METER, FAULT CODE DISPLAY
4. LOWER BUTTON
5. LIFT BUTTON
6. BELLY SWITCH - REVERSING BUTTON

HORN BUTTON (POS. 1)

Press this button to operate the horn.

THROTTLE (POS. 2)

The operation of the throttles permits traveling both in the operator side direction and in the fork side direction.

Turning the throttles toward the operator, the truck moves in the operator direction.

Turning the throttles toward the forks, the truck moves in the fork direction.

The truck speed increases proportionally according to the angle of rotation of the throttles.

Reversing the throttle causes a progressive deceleration of the truck to a stop due to the traction engine electrical braking (reverse braking or 'plugging').

On releasing the butterfly controls, they return to their neutral position, causing a progressive deceleration, due to the traction engine electrical braking, with subsequent engaging of the electromechanical brake (release braking).

BATTERY DISCHARGE INDICATOR (BDI) AND ERROR CODE INDICATOR (POS. 3)

The display screen will show remaining charge left in the battery and also will list any active fault codes.

LOWER BUTTON (POS. 4)

Press this button to lower the forks.

LIFT BUTTON (POS. 5)

Press this button to lift the forks.

BELLY SWITCH - REVERSING BUTTON (POS. 6)

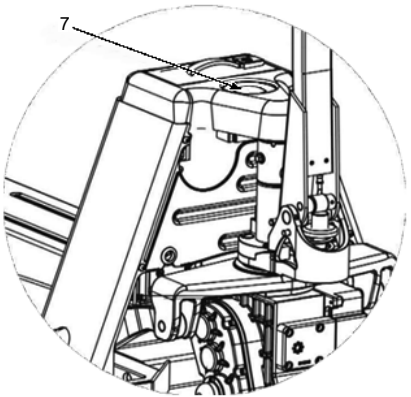
It is a device located at the tiller end to reverse the direction of travel when it is hit. It works during the truck travel on the operator direction. If bumped, the truck reverses and stops immediately. To reset the truck functions it is necessary to turn the truck off and then on again.

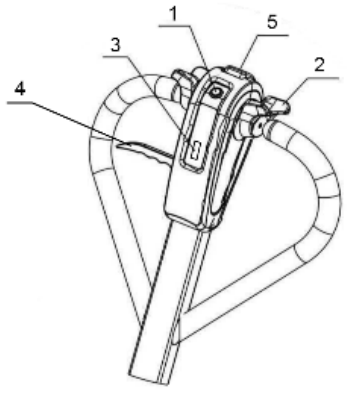
POWER SWITCH (EMERGENCY STOP BUTTON) (POS. 7)

By pressing it, the battery supply is disconnected and all the electric controls are disabled (**Button down: electrical system disconnected**).

To reset, pull the button and move the tiller to the vertical position (**Button up: electrical system connected**).

By pressing it, it also acts as an emergency brake (the electromagnetic brake engages).





1. HORN BUTTON
2. THROTTLE
3. BATTERY DISCHARGE INDICATOR (BDI), HOUR-METER, FAULT CODE DISPLAY
4. RELIEF HANDGRIP
5. BELLY SWITCH - REVERSING BUTTON

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The display screen will show remaining charge left in the battery and also will list any active fault codes.

RELIEF HANDGRIP (POS. 4)

Press down on the handgrip and press down on the handle to lift the pallet truck;
Lift up the handgrip and the forks will lower down;
The handgrip is in the middle and the pallet truck is in the driving position.

BELLY SWITCH - REVERSING BUTTON (POS. 5)

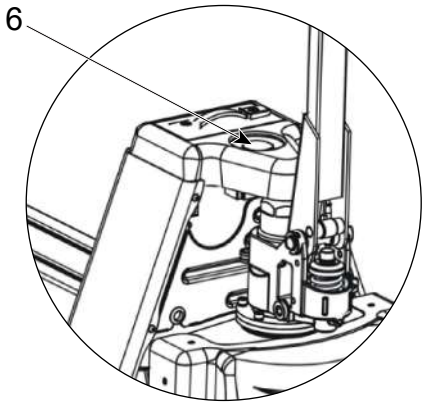
It is a device located at the tiller end to reverse the direction of travel when it is hit. It works during the truck travel on the operator direction. If bumped, the truck reverses and stops immediately. To reset the truck functions it is necessary to turn the truck off and then on again.

POWER SWITCH (EMERGENCY STOP BUTTON) (POS. 6)

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By pressing it, it also acts as an emergency brake (the electromagnetic brake engages).



SMART FUNCTIONS

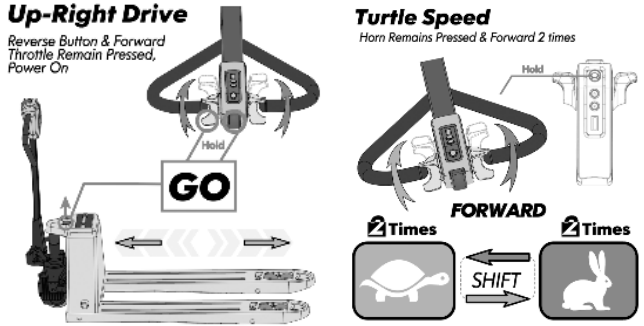
UP-RIGHT DRIVE

Up-right drive allows the truck to be driven with the tiller in the fully vertical position. Use up-right drive to maneuver the truck in tight quarters.

To activate up-right drive on trucks, turn the truck off, put the tiller into the fully vertical position, then press and hold the belly switch - reversing button and push the throttle toward the forks and hold. When the truck is powered on, it will start in up-right drive mode.

To activate up-right drive on trucks, with intelligent control handheld intelligent control. See **SMART FUNCTIONS**.

When up-right drive mode is active, the top speed is 2 km/h (1.5 mph).



TURTLE SPEED

Turtle speed allows the truck to move at a reduced speed. Normal top speed for the pallet truck is 5km/h (3.1 mph). When turtle speed is active, the top speed is 2 km/h (1.5 mph).

To activate or deactivate turtle speed, hold the horn button, then press (but do not hold) the throttle toward the forks two times.

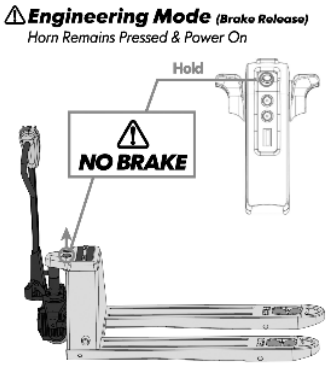
REPAIR PROCEDURES

BRAKE RELEASE MODE (SERVICE MODE)

⚠ WARNING

The brake release mode is for service use only. To reduce the risk of personal injury, do not use brake release mode in normal operation.

This pallet truck is fitted with an electromagnetic brake. When the truck has no power, the brake is closed and the truck will not move. If the truck has no power but must be moved to a service location, enter brake release mode so that the truck can be pulled manually.



1. Make sure the power is off and the power button is down.
2. Press and hold the Horn button, then lift the power button to provide power to the truck.

   The display will read NO BRAKE and the truck will beep to indicate the brake release mode is active.
3. Manually pull the truck to the service location.

HANDHELD INTELLIGENT CONTROL (OPTION)

The optional intelligent control allows operation of some features of the truck using the handheld remote control. The remote control uses radio-frequency (RF) technology, and is powered by an L828 (12V/27A) non-rechargeable alkaline battery. Each remote control is tied to the specific truck.

To use the intelligent control, it must be within 2 m (6.5 ft). Press the function buttons on the control to use the features in this table.

If the LED on the remote control is dim or off, or if the buttons do not work, replace the battery in the remote control. If the buttons still do not work, the remote control may be damaged and should be replaced.



ICON	FUNCTION	DESCRIPTION
	Lock or Unlock	To lock the truck, press the Lock button once. The truck will beep once to indicate it is locked. To unlock the truck, turn truck power ON and press the Lock button twice. The truck will beep twice and the display will show the Unlock icon to indicate the truck is ready for operation.
	Up-right Drive	Press the Up-right Drive button to activate Up-right Drive mode. The truck will beep continuously and travel at a reduced speed with the handle in the upright position. Press the Up-right Drive button again to deactivate Up-right Drive mode. The truck will beep once and will now travel at normal speeds with the handle in the travel position.
	Travel Speed	Press the Travel Speed button to cycle through speed presets. • One press - Level 1 - 0.5 km/h (0.3 mph) • Two presses - Level 2 - 1.5 km/h (0.9 mph) • Three presses - Level 3 - 2.5 km/h (1.5 mph) • Four presses - Level 4 - 3.5 km/h (2.2 mph) • Five presses - Level 5 - Full speed The display indicates the selected speed. Travel Speed is limited until this setting is changed.
	Horn	Press and hold the Horn button to make the truck beep continuously. Release the Horn button to stop the truck from beeping.

WARNING!

1. Users have to check and do maintenance on regular basis.
2. Rules of parking
   -No parking on the ramp.
   -The forks must be lowered completely.
   -Press down the emergency stop button.
3. Before using the pallet truck
   -Users have to stand on the operational position.
   -Put handle in the driving position
   -Test lifting, steering, speed, operation, alarm and brake, to ensure all functions are normal.
4. Ensure the availability of firefighting facility in the workplace. Do not use flare to check battery and hydraulic system.
5. Check braking, driving, alarm and safety system on regular basis, maintain them in good working condition.
6. Keep the nameplate and warning stickers clean andreadable.
7. Check and maintain lifting system regularly.
8. Check and maintain hydraulic system regularly. Ensure no oil leak of cylinder, hydraulic valve and other hydraulic system parts.
9. Park the electric pallet truck in clean areas, to ensure the lowest possibility of fire.
10. Unauthorized modification is forbidden. Modification with manufacturer's consent should come with updated nameplate and warning stickers.
    basis, maintain them in good working condition.
6. Keep the nameplate and warning stickers clean and readable.
7. Check and maintain lifting system regularly.

OPERATING INSTRUCTIONS

NOTE: When using the truck there are some operations that, in spite of all the safety precautions, may cause it to overturn unless performed with care.

The main causes of tipping over are:

- Turning too fast.
- Driving and turning on a slope.
- Driving with raised loads.
- Driving with a side-positioned load.
- Driving on a slope with a load facing downwards.
- Loads out of size.
- Driving with swinging loads.
- When transporting liquids, the centre of gravity inside one of the containers loaded may change; this can cause the truck to tip up as a result of the force of inertia, for example when switching on, braking or on bends.
- Ramps or steps.
- Loading operations on a lorry, for example if the lorry engine is switched on while the forks are still raised above the loading area, if the ramp is not in the right position or if a truck wheel is beyond the edge/limit.
- Driving over rough ground.

⚠ DANGER

If the truck should tip over try and keep body parts as far as possible from the point of impact with the ground.

BASIC PRINCIPLE

Because of the specific skills required, it is advisable that each individual operator follow a special training course, even if he has already obtained a license entitling him to drive lift trucks in general.

The following pages contain a list of some of the basic regulations and manoeuvres that should be employed when using the truck.

USE IS RESTRICTED TO AUTHORISED AND TRAINED PERSONNEL

This means that only operators who have followed a specific training course, aimed at providing total comprehension of the truck functions, should be allowed to operate the truck.
The instructor should therefore be an expert truck user and should work alongside beginners for a period of time, until they are judged to be sufficiently proficient.
A thorough basic training in driving techniques and load handling is absolutely essential to enable the operator to handle dangerous and unexpected situations effectively.

WORK ENVIRONMENT

The truck may only be used in suitable areas and normal environmental conditions. Do not operate the industrial truck outdoor in the event of adverse weather conditions or in hazardous areas.
Acceptable environmental conditions:

1. Ambient temperature 0-45 ° C, prohibit cold storage use;
2. Hard ground, flat, no sharp surface objects;
3. Prohibit to use in in heavy dusty enviorunent;
4. Prohibit to cross water, oil and muddy ground;
5. Prohibit to caught in the rain, 10 minutes use in light rain;
6. Prohibit to use in flammable, explosive, acid-base or other corrosive environments;

The pallet truck is a flat ground transport equipment as mentioned in this instruction. It is used for lifting and transporting goods. Users have to operate and maintain according to instruction rules. Using the product for applications not included in the instruction might cause damage to users, equipment or other property. Overload or unbalanced loading must be avoided. Loading capacity should strictly follow instructions on the nameplate or capacity diagram.

⚠ WARNING

DO NOT ALLOW THE TRUCK TO ENTER AREAS WHERE FLAMMABLE GASES, VAPOURS OR POWDERS ARE GENERATED.
THE TRUCK IS NOT EQUIPPED WITH ANTI-EXPLOSION PROTECTION.

Take the utmost care when transporting dangerous materials: flammable liquids, acids, etc. must be transported in appropriate closed containers.

Where possible, avoid routes with holes, bumps and obstacles; if this proves to be impossible, calculate whether each individual obstacle can be negotiated and always drive the truck with extreme caution. Take steps to ensure that all holes, bumps and obstacles are removed wherever possible.

⚠ WARNING

INCORRECT USE ON UNSUITABLE FLOORING MAY CAUSE DANGEROUS SITUATIONS AND REDUCE THE WORKING LIFE OF THE TRUCK.

Contact the service network for advice concerning the flooring, or the most suitable type of truck for a particular type of flooring.

IMPROPER LIFTING

This truck has been designed and constructed for the handling of materials.
The truck is not suited to lifting or carrying persons on the forks.

LIFTS

Never enter lifts without first having obtained permission from the person in charge.

NOTE: Check the load bearing capacity of the lift (it must be able to sustain the weight of the truck + operator + load if present).

- Approach the lift slowly.
- Only activate the lift after the truck is correctly centred and perfectly level, so that the lift is well balanced.
- Make sure that the forks or other parts of the truck do not protrude beyond the lift perimeter.

LOADING INSTRUCTIONS AND PRECAUTIONS

Avoid loading materials that may fall. You should bear in mind that the truck, even when it is equipped with a load backrest, offers a reasonable degree of protection for the operator against objects falling, but it cannot protect against all possible risks.

Only move stable loads with weights that can be supported by the truck (see the summary identification data plate on the truck). Pick up the load so that its weight is well distributed and balanced on the forks.

Even if a load no greater than that indicated on the load capacity data plate affixed on the truck weighs entirely on the tip of a fork, this could constitute a tipping hazard. The load must not excessively overreach the tip of the forks.

PICKING UP THE LOAD FROM THE GROUND

- Position the truck in line with the load to be lifted.
- Move slowly when moving the forks into position under the load and make sure that the load is correctly centred on the forks.
- After fitting the forks in the pallet, slightly lift the load just enough to move it.

PUTTING DOWN THE LOAD ON THE GROUND

- Put the load on the ground.
- Lower the forks.
- Move slowly to remove the forks from the pallet.

NOTE: During all the operations of picking up/putting down the load, use the machine at the lowest speed allowed by the operation. Always make sure that the space in the aisle is sufficient, during operations of picking up/putting down goods, to prevent the operator from coming into contact with other persons working in the same aisle.

⚠ WARNING

The lift unit is lowered by gravity.
If the lowering command does not actually lower the lift unit (laden or unladen), take immediate action, placing adequate guarding to ensure that no one stands below or near the raised load, transferring the load if possible using other vehicles and calling the HYSTER service centre for assistance.

LOAD STABILITY

⚠ WARNING

- **Only work with stable loads.**
- **Never load unstable elements.**
- **Do not handle a load, composed of a number of separate parts, when any one of them is precariously balanced and in danger of falling.**
- **It is not permitted to carry swinging loads.**

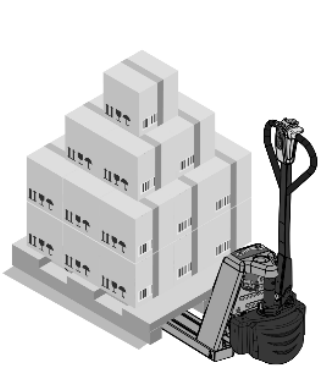
POSITIONING THE LOAD

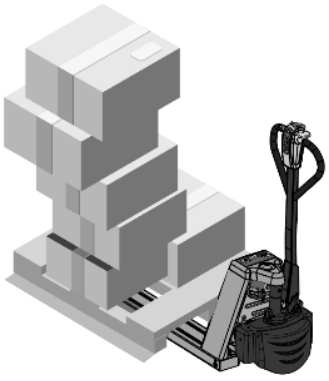
Make sure that the weight of the load is equally distributed and balanced on the forks, so that the load will not overturn when negotiating a bend.

⚠ WARNING

A load that is placed in an unbalanced position on the forks will increase the risk of overturning.

CENTRED LOAD



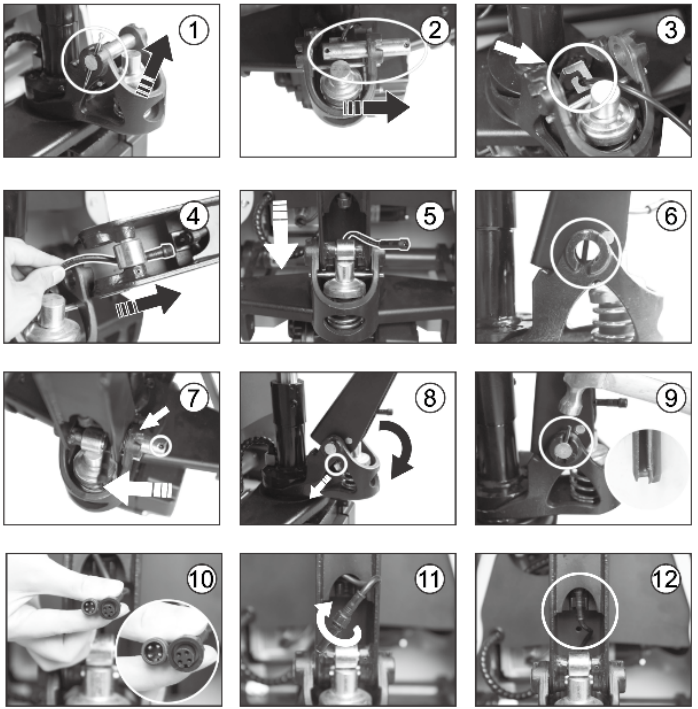


NON-CENTRED LOAD

FIRST TIME SETUP (FULL ELECTRIC)

INSTALL THE TILLER HANDLE

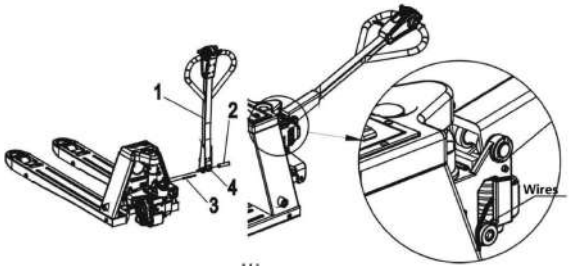
1. Handle numbers correspond to chassis numbers.
2. Disconnect the battery.
3. Remove handle shaft (item 2) from Handle socket.
4. Put the chassis connector through wire supporting plate (item 5) and lock hole.
5. Install handle assembly (item 1) to handle socket. Be careful to avoid damaging the wire harness.
6. Install handle shaft through the handle assembly ad handle socket. Install spring pin (item 3) to left side of handle shaft.
7. Press down on the handle assembly and remove spring holder(item 4).
8. Connect and lock the wire harness from handle assembly to chassis connector.
9. Fix wire harness to wire holder (item 6).
10. Reconnect the battery.

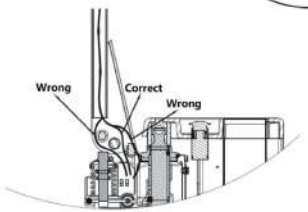


FIRST TIME SETUP (SEMI ELECTRIC)

INSTALL THE TILLER HANDLE

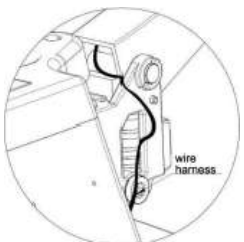
1. Handle (Picture No.1) , match the holes of handle and hydraulic system.
2. Handle pins (Picture No.2) , the spring safety pin should be well rested in the holes situated on each side of the pump housing.
3. Chain (Picture No.4) chain should be passed through the middle side hole of the handle pin and connected with the pump housing.
4. After above steps, pull the handle down to lowest position, remove the fixed spring safety pin (Picture No.3) carefully to complete handle installing.
5. Handle assembly wire Harness installing: wire harness pass through hand tube, the wire harness twine method should be same as the above pictures.





WRONG WIRE HARNESS TWINE METHOD

1. Wire harness passes outside hydraulic unit.
2. Wire harness passes outside handle.





BATTERY PROTECTION STOPPER INSTALLATION INSTRUCTION

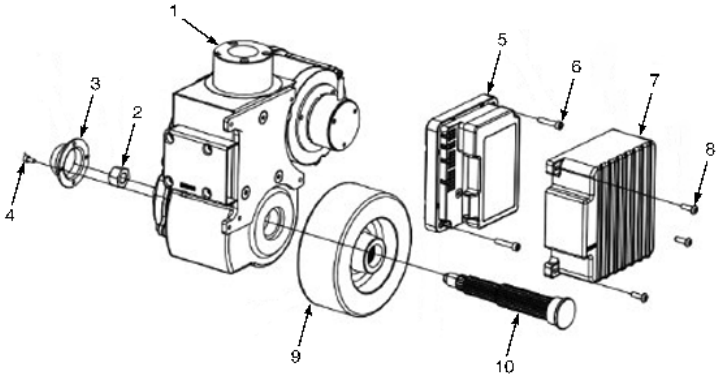
1. Take out screw (#1), block (#2) and washer (#3) in the manual bag and combine these three items as shown.
2. Align the mounting hole and tighten the screw.



1. Put in the battery, rotate the anti-jumping stopper against battery and tighten the screw.
2. Loosen the screw and rotate the anti-jumping stopper in the opposite direction, and pull out the battery vertically.

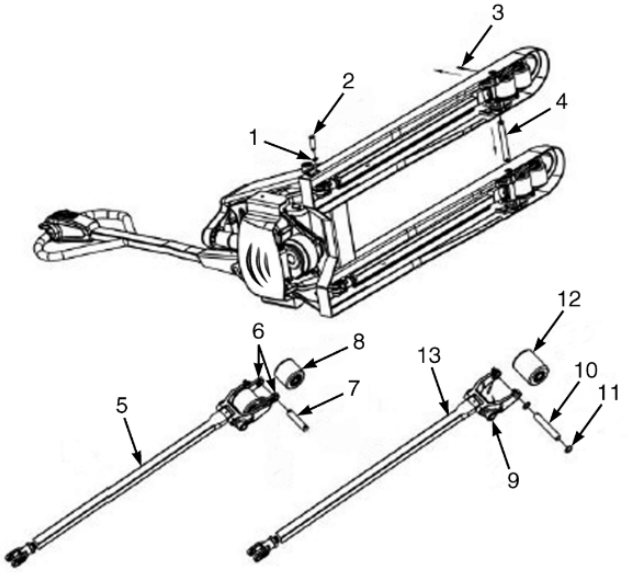


REPLACE THE DRIVE WHEEL



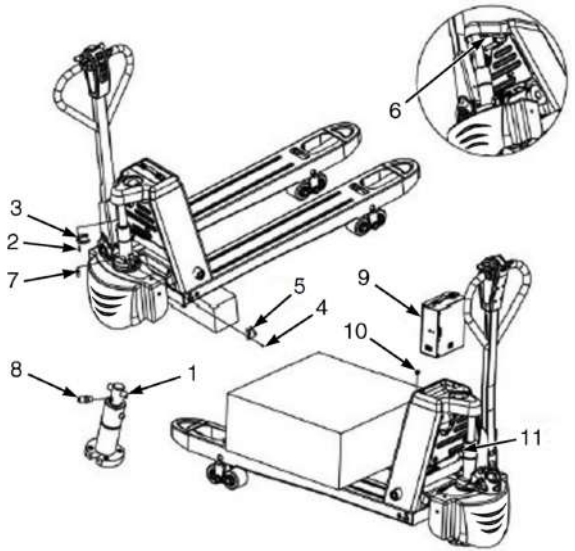
1. Disconnect the battery.
2. Support the truck on blocks so that the drive wheel (item 9) is off the ground.
3. Remove 3 bolts (item 8) from controller cover (item 7), then remove the controller cover .
4. Remove 4 bolts (item 4) from the nut cover (item 3), the remove the nut cover.
5. Remove nut (item 2).
6. Gently tap the wheel shaft (item 10) and pull it out of the drive wheel.
7. Remove the drive wheel.
8. To install the drive wheel, perform these steps in reverse order.
9. Reconnect the battery.

REPLACE THE LOAD WHEELS



1. Turn off the truck, remove the battery, and turn over the truck. Be careful to avoid damaging the tiller handle.
2. Remove snap ring (item 1) with snap ring pliers, the remove the shaft (item 2).
3. Tap out the spring pin (item 3), then tap out the wheel fork shaft (item 4).
4. Remove the load wheel assembly (item 5 for tandem wheel, item 13 for single wheel).
5. Tap out the spring pin (item 6 or 9), then remove the wheel shaft (item 7 or 10) and remove the load wheel.
6. Replace the load wheel (item 8 for tandem wheel, item 12 for single wheel). For single wheels, install nylon gasket (item 11).
7. Reinstall wheel shaft and spring pin.
8. Reinstall the load wheel assembly into the frame, then repeat steps 1 through 3 in reverse order to complete installation.

REPLACE THE HYDRAULIC CYLINDER



1. Disconnect the battery.
2. Lower the forks completely, raise up the truck, and put a 200 mm (8 in) block underneath the ends of the fork closest to the main frame.
3. Remove screw (item 4) and remove wire clamp (item 5), then remove 4 screws (item 7) with a hex wrench.
4. Remove the oil pipe (item 6), remove the piston rod shaft end (item 1) and shaft gland (item 3).
5. Press down the piston rod, allow the cylinder to separate from the frame, and remove the cylinder assembly from the truck.
6. Remove the oil pipe join (item 8) and install on the new cylinder assembly.
7. Place the new cylinder on the cylinder holder and install locking screw (item 7).

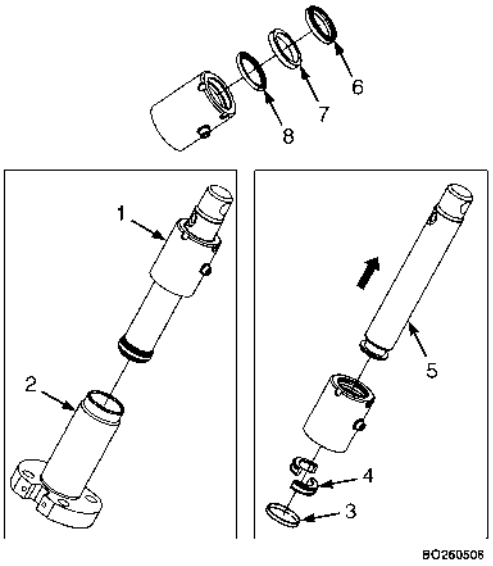
8. Reinstall the piston shaft, pull up on the piston rod, and connect the shaft gland to the frame.
9. Connect and tighten the oil pipe, then reinstall the wire clamp.
10. Take the truck off of the 200 mm (8 in) block, then remove the battery.
11. Open the screw on the tank, then fill the tank with L-HV32 hydraulic oil, close the screw on the tank, then install and connect the battery.

⚠ CAUTION

To avoid damage to the seal ring and oil leaks, always bleed the air from the cylinder after replacement.

12. Loosen screw (item 11), then use a truck to lift a pallet with a load of at least 500 kg (1102 lb). Lift and lower the pallet 2 or 3 times to bleed air from the cylinder, then tighten the screw.
13. Reconnect the battery.

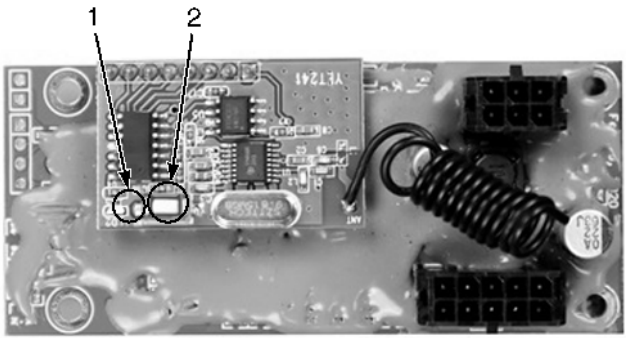
REPLACE SEAL KITS



1. Disconnect the battery.
2. Use a hook head wrench to unscrew the upper part of the cylinder (item 1), and remove the upper part from the rest of the cylinder (item 2).
3. Remove guide ring (item 3) and guide sleeve (item 4).
4. Pull out piston (item 5).
5. Remove dust ring (item 6), seal ring (item 7), and step seal (item 8). Replace all with new parts.
6. Reinstall piston into the top of the upper cylinder. Install in the direction of the arrow in the image, and be careful not to damage the seals.
7. Reinstall guide sleeve and guide ring. Reinstall upper cylinder into the rest of the cylinder.
8. Reconnect the battery.

REPLACE THE HANDHELD INTELLIGENT CONTROL

If the handheld intelligent control must be replaced for any reason, the current handheld intelligent control must be unpaired from the truck, and the new handheld intelligent control must paired.



Unpair the handheld intelligent control

1. Turn on the truck.
2. Remove the cover to allow access to the display circuit board.
3. Press and hold the white button (item 2) on the circuit board until the red LED (item 1) turns of.

   The current handheld intelligent control is now unpaired from the truck and will not operate the truck anymore.

Pair a new handheld intelligent control

1. Ensure that the original handheld intelligent control is unpaired from the truck.
2. Press the white button on the display circuit board (item 2) one time.

   The LED (item 1) will blink red once.
3. Quickly press any key on the handheld intelligent control.

   The LED (item 1) will flash red 4 times to indicate that the new handheld intelligent control is paired to the truck.

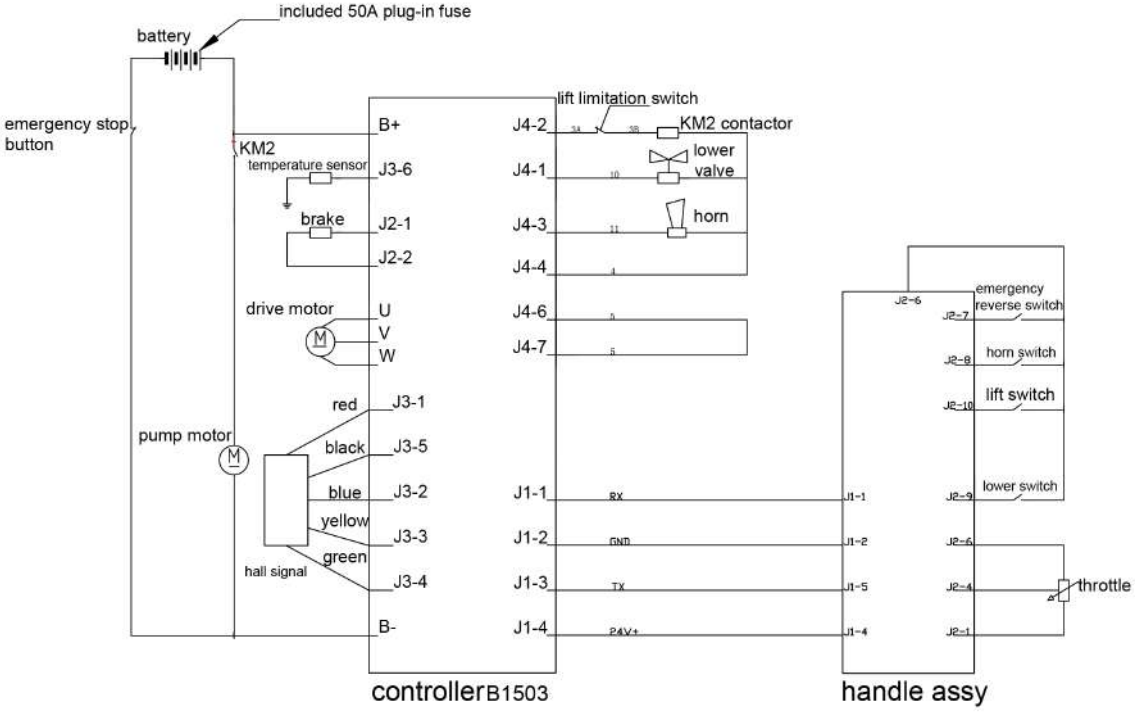


Figure 1. WIRING DIAGRAM (FULL ELECTRIC)

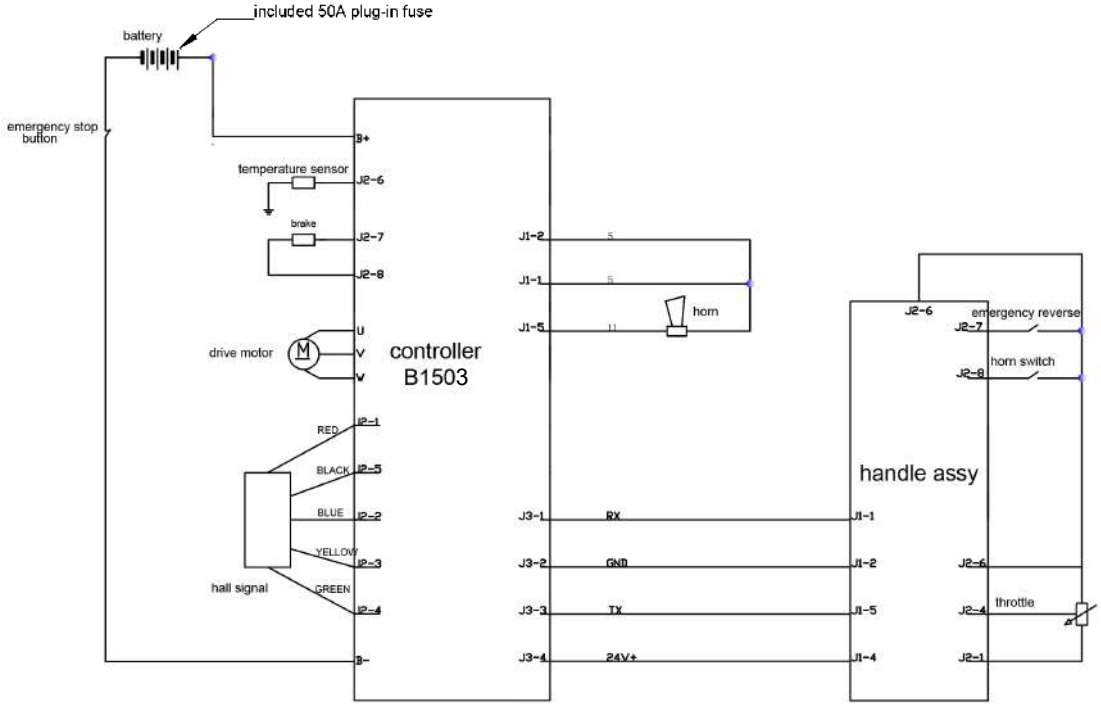


Figure 1. WIRING DIAGRAM (SEMI - ELECTRIC)

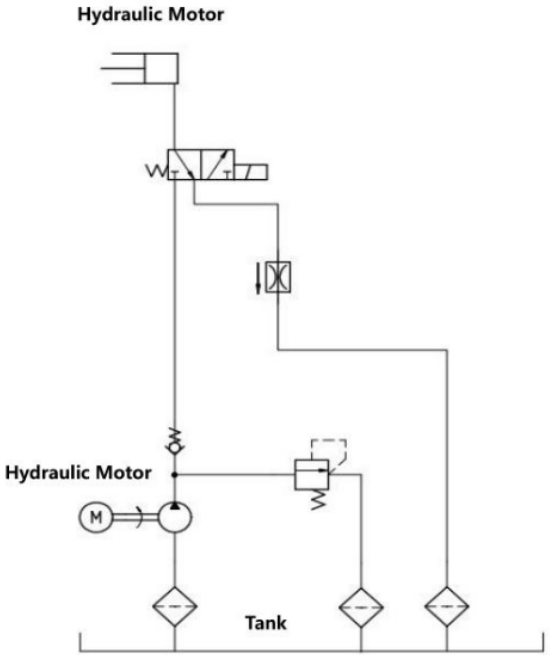


Figure 2. HYDRAULIC DIAGRAM (FULL - ELECTRIC)

Table 1. HYDRAULIC SCHEMATIC COMPONENTS

Item	Description	Item	Description
1	Tank	5	One-way valve
2	Oil filter	6	Solenoid valve
3	DC motor	7	Overflow valve
4	Gear pump	8	Built-in balancing valve

TROUBLESHOOTING

OBSERVED SYMPTOM TROUBLESHOOTING

Observed failure	Possible cause	Solution
No power	Loose terminal or bad switch connection causes interrupted current	Check battery and wire harness terminals, tighten screw connections, and keep switch contacts clear
Lift speed not uniform	Air in the hydraulic cylinder	Bleed air from cylinder as described in cylinder replacement procedure
No lift	Hydraulic oil is low	Fill with hydraulic oil L-HV32
	Low battery	Recharge battery
	Oil leaking	Inspect and repair hydraulic system, replace seal kit, or tighten oil pile connection screws
	Overload	Reduce the load weight
	Lift limit switch failure	Repair the limit switch
Abnormal noise during lifting	Hydraulic assembly is loose	Tighten the retaining screw
	Hydraulic motor or gear pump failure	Inspect hydraulic motor and gear pump

FAULT CODE TROUBLESHOOTING

When the controller detects a failure, a fault code is displayed on the display in the format **ERR+*nn***, where ***nn*** is the fault code number from this table.

Fault code	Description	Possible cause	Solution
SRO	Operation sequence wrong	Lift, lower, or travel commanded before handle is in the operation position	Turn truck power off and then on, and be sure to pull the handle into operating position before commanding lift, lower, or travel
11	Parameters incorrectly set	Parameters setting is incorrect	Adjust the parameters or replace the controller
12	Overcurrent	Motor short or controller fault or Hall signal interference	Replace motor or controller
14	M+ current zero bit detection error	Controller failure	Replace controller
15	— current zero bit detection error	Controller failure	Replace controller
16	Emergency reverse button has signal when turning on power	Emergency reverse button stuck or LCD monitor fault	Check or replace the belly switch

Fault code	Description	Possible cause	Solution
18	Motor Hall fault	Motor Hall fault, connector fault or controller fault	Check the motor wiring, replace motor, or replace controller
19	Temperature sensor fault	Temperature sensor failure or open in sensor wiring	Check the motor wiring or replace the motor
21	Potentiometer fault	Potentiometer failure or fault in potentiometer wiring	Check the potentiometer wiring or replace the potentiometer
22	Overheat current limit	Controller overheated and within the current limit working state (derate)	Wait 15-25 minutes for the controller to cool before operating
23	Overheat protection	Controller overheated and shut down	Wait 15-25 minutes for the controller to cool before operating
25	Motor overheat limit	Motor temperature too high, output limited (derate)	Wait 15-25 minutes for the controller to cool before operating
26	Motor stalling	Motor stall protection active	Replace the motor
27	Brake fault	Brake failure, or open on brake wiring	Check and repair the brake wiring or replace the brake

Fault code	Description	Possible cause	Solution
29	Motor open	Open on motor cable or motor fault	Check and repair the motor cabling or replace the brake
31	Battery voltage low current limit	Low battery voltage and within the current limit working state (derate)	Charge or replace the battery
32	Low battery voltage protection	Low battery voltage and shut down	Charge or replace the battery
33	Over high battery voltage	Battery voltage too high	Wait 15-35 minutes for voltage to level before operating
35	Contactor error	Controller fault	Replace controller
38	Communication error	Display wiring fault or display fault	Check and repair display wiring, replace tiller handle harness, replace the display, or replace the controller
39	Version error	Controller version is incorrect	Replace controller

LITHIUM-ION BATTERY USE GUIDE

⚠ WARNING

Please read carefully and follow these terms and conditions for installing and using the battery. Improper installation or use may cause excessive heat and other hazardous conditions. Failure to follow these instructions may pose risks to life and property.

- **Please read the battery warning labels.**
- **Do not subject the battery to fire or heat.**
- **Do not use metal to connect the battery anode and cathode directly to short-circuit the battery.**
- **Do not disassemble the battery or change the battery structure.**
- **Do not immerse the battery in water. Keep it in a cool and dry environment when not in use.**
- **Do not put turn the battery upside down.**
- **Do not transport or store batteries with metal objects such as hairpins, coins, or tools.**
- **Do not strike, drop, throw, crush, or step on the battery.**
- **Direct welding on batteries is prohibited.**
- **Do not pierce the battery with nails or other sharp objects.**

⚠ WARNING

If the battery leaks and electrolyte comes into contact with skin or clothing, rinse immediately with clean water.

If the battery leaks and electrolyte comes into contact with skin or clothing, rinse immediately with clean water.

If the battery emits a peculiar smell or heat, becomes discolored or deformed, or shows any other abnormality during use, storage, or charging, immediately remove the battery from the device or charger to a safe place and stop using.

Keep batteries out of reach of children. Cover waste batteries with insulating paper to reduce risk of fire or explosion.

⚠ WARNING

The battery has been inspected prior to shipment. If you find deformation, heating, or peculiar smells upon receiving the battery, please contact the manufacturer.

The battery should be stored at room temperature and charged to about 30-50% of capacity. When storing for a long time, it is recommended to charge the battery every 3 months to prevent over-discharge.

Do not use unqualified equipment when charging and discharging, and follow the instructions.

Do not mix batteries of different manufacturers or different types and models. Do not mix old and new batteries.

LITHIUM-ION BATTERY SPECIFICATIONS

Model	48V/10Ah; 48V/15Ah
Capacity	10Ah/15Ah
Voltage	48V
Battery life	800 -1000 cycles

<table>
<tr><th colspan="3">Work environment</th><th><0°C
(<32°F)</th><th>0°C
(32°F)</th><th>45°C
(113°F)</th><th>55°C
(131°F)</th><th>75°C
(167°F)</th><th>High</th></tr>
<tr><td rowspan="6">Work environment temperature</td><td rowspan="3">Room temperature</td><td>Use condition</td><td rowspan="3">Prohibited</td><td colspan="2">Use allowed</td><td rowspan="3">Prohibited</td><td colspan="2" rowspan="3"></td></tr>
<tr><td>Discharge capacity</td><td colspan="2">Normal discharge</td></tr>
<tr><td>Battery life impact</td><td colspan="2">No impact</td></tr>
<tr><td rowspan="3">Cold storage</td><td>Use condition</td><td colspan="6" rowspan="3">Cold storage use is prohibited</td></tr>
<tr><td>Discharge capacity</td></tr>
<tr><td>Battery life impact</td></tr>
<tr><td rowspan="3">Battery temperature</td><td rowspan="3">N/A</td><td>Use condition</td><td rowspan="3">Prohibited</td><td colspan="3">Use allowed</td><td colspan="2" rowspan="3">Prohibited</td></tr>
<tr><td>Discharge capacity</td><td colspan="3">Normal discharge</td></tr>
<tr><td>Battery life impact</td><td colspan="2">No impact</td><td>Capacity loss</td></tr>
</table>

Work environment			**<0°C (<32°F)**	**0°C (32°F)**	**45°C (113°F)**	**55°C (131°F)**	**75°C (167°F)**	**High**
Charging environment temperature	N/A	Use condition	Prohibited	Charging allowed		Charging prohibited		
		Battery life impact						
Battery parameter setting	Approximately 20°C (Approximately 68°F)	Voltage	39.2V	43.5V		44.5V		54.6V
		Power display	Black screen	0%		4%		100%
		Vehicle condition	No output	Vehicle stops		Traction speed derate, charge symbol blinking		Normal

RECHARGING INSTRUCTIONS

BATTERY CHARGE STATUS

The battery provided by the manufacturer is already correctly charged and filled with electrolyte to the right level. The level of charge of the battery is shown by the battery charge indicator located on the truck display.

RECHARGING ENVIRONMENT

⚠ WARNING

The battery should be recharged in a special well ventilated room separated from the working environment because the batteries generate flammable gases that may cause explosions if they come into contact with flames or sparks.
In the case of forced ventilation, flues also used for the extraction of combustion products may not be used.

⚠ CAUTION

To avoid damage to the battery, never charge the battery in an environment with a temperature of 0°C (32°F) or less.

The charging area should be a dry location.

BATTERY CHARGER

The battery charger should be chosen according to the technical characteristics of the battery:

- Number of elements in the battery
- Nominal capacity.
- Type: lithium-ion
- Available power supply: voltage, frequency
- Time available to perform charging

NOTE: Call a technician from the manufacturer if you have any doubts regarding compatibility with the battery.

RECHARGING METHODS

NOTE: Follow the instructions on the instruction manual of the battery and recharging methods.

1. The battery is prohibited to charge in less than 0 degrees Celsius otherwise it will cause serious battery recession, or even a security incident.
2.The battery is prohibited to charge at low temperatures, but can use in not less than -20 degrees Celsius environment. But the capacity will be inadequate, this is a normal phenomenon.

Usage environment	Capacity
55℃	≥95%
25℃	≥100%
-10℃	≥50%

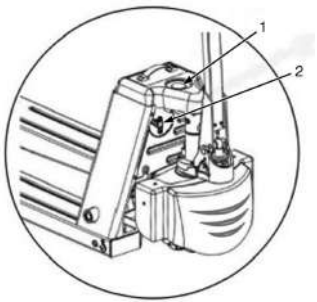
Note: Although the battery can be discharged at very low temperatures, but the process of taking battery out is easy to produce condensate water droplets, which will break the battery internal electronic devices and cause unpredictable dangers. If taken from the cold environment, battery needs to wait at least 4 hours to be charged.
3.The battery protection class is IP20, when install ed in the machine , it is IP50 . Please do not wash the battery directly with water.

It is strictly prohibited to use non-original chargers to charge the truck battery.
It is strictly forbidden to use the pallet truck charger to charge other batteries.

RECHARGING PROCEDURE

WARNING

Follow the instructions on the instruction manual of the battery and battery charger for the recharging procedure.
It is good practice to allow a battery to cool down after taking it out of service and before starting to recharge.



- Take the truck to a recharge area.
- Turn off the truck, then press down the emergency power off (item 1).
- Disconnect the battery connector (item 2).
- Connect the charger to the battery connector and begin the charging cycle according to the battery and charger manufacturers' instructions.

CHARGING TIME

With a 48V/10Ah battery and a 2A external charger, it takes about 5 hours to achieve full charge.

With a 48V/15Ah battery and a 5A external charger, it takes about 3 hours to achieve full charge.

When the truck or a battery is in storage for an extended period, charge the battery to 30-50% state of charge every three months.

