

Service Manual

6HBW20 4,000LB Powered Pallet Walkie

Starting with Serial Number 17001

Manual Design

The Toyota Powered Pallet Walkie Service Manual is designed with the following objectives in mind:

- Provide technical coverage for expected levels of user expertise
- Anticipate your needs and reduce your decisions regarding maintenance
- Reduce page flipping through a "one-stop shopping" approach

The two-line running page header at the top of each page tells you the following:

- Name of the manual
(Toyota Powered Pallet Walkie Service Manual)
- Current chapter title
(e.g., this page How to Use ***This*** Manual)
- Current topic
(e.g., this page *Manual Design*)

We suggest you get in the habit of turning to the START page first when you use this manual.

Manual Design

The START page asks a few simple questions to guide you to the proper chapter.

- **How to Use This Manual** explains the manual format and design and contains the Table of Contents and START page.
- **Safety** explains warning and caution notes, general safety rules and safety rules for batteries, static, jacking, and welding.
- **Systems Overview** includes truck specifications and theory of operation information.
- **Planned Maintenance** outlines the recommended schedule of preventive services to keep your truck working most efficiently.
- **Troubleshooting** is a set of "decision-tree" charts designed to take you from a symptom to a specific sequence of tests in order to isolate a failing component.
 - **TS1: START TROUBLESHOOTING** on page 5-28 will guide you to the individual troubleshooting symptom chart you need.
 - Once you're familiar with the symptoms listed, you may instead simply find the symptom chart from the List of Troubleshooting Charts on page 5-25.
 - When you complete a troubleshooting procedure, be sure to follow the steps in the **END1: End of Troubleshooting Procedure** on page 5-31.
- **Component Procedures** give step-by-step procedures for testing, removal, installation, and adjustment of individual truck components. Components are listed in an order which considers:
 - Frequency of attention
 - Physical attachment (e.g., brake must be removed before drive motor)
 - Functional relation (e.g., drive motor and drive unit components are grouped together)

To find a component procedure, you may use one of three methods:

- Look up the component name. See List of Component Procedures on page 6-2
- Find the component. See Component Locator Photos on page 6-5.
- Look up the component name in the Index on page I-1.
- **Appendix** contains reference information such as torque values, lubricants and schematics.
- **Index** lists subjects alphabetically.

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Safety

Definitions

Definitions

Throughout this manual, you will see two kinds of safety reminders:

▲WARNING

Warning means a potentially hazardous situation exists that, if not avoided, could result in death or serious injury.

▲CAUTION

Caution means a potentially hazardous situation exists that, if not avoided, could result in minor or moderate injury or in damage to the truck or nearby objects.

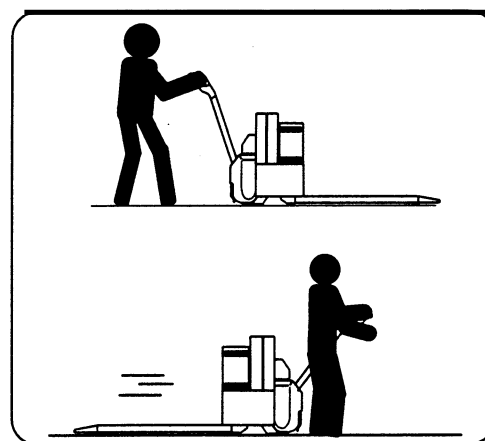
General Safety

Do not operate or work on this truck unless you are trained, qualified and authorized to do so and have read the Owner/Operator Manual.

Know the truck's controls and what they do.

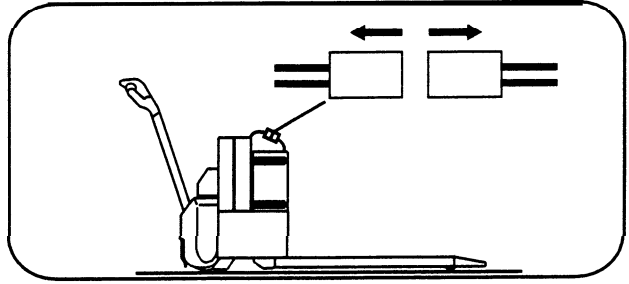
Do NOT operate this truck if it needs repair or if it is in any way unsafe.

Operate this truck only from the operator's position.

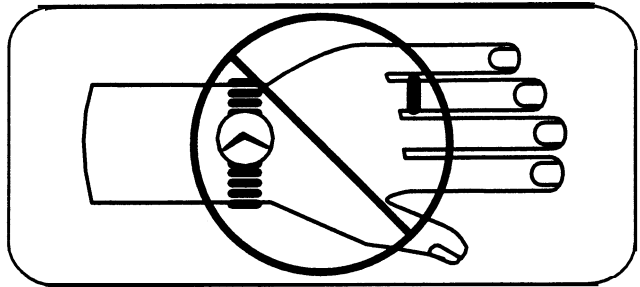


General Safety

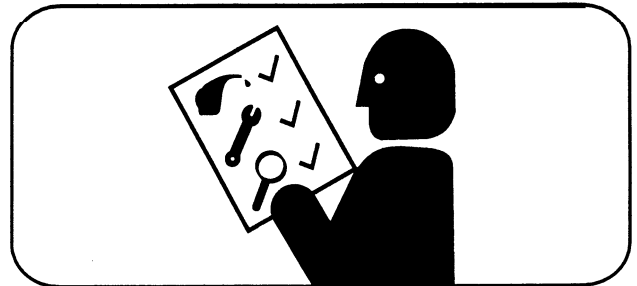
Before working on this truck, always turn the key switch to OFF and disconnect the truck's battery connector (unless this manual tells you otherwise).



Do NOT wear watches, rings, or jewelry when working on this truck.

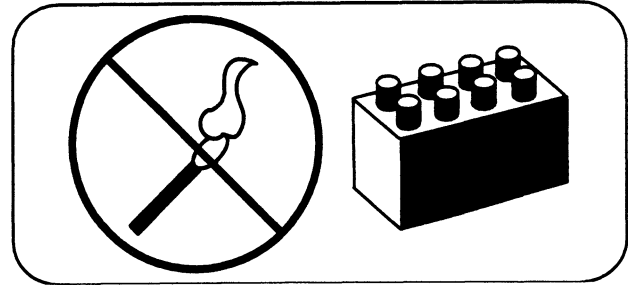


Follow the scheduled lubrication, maintenance and inspection steps.



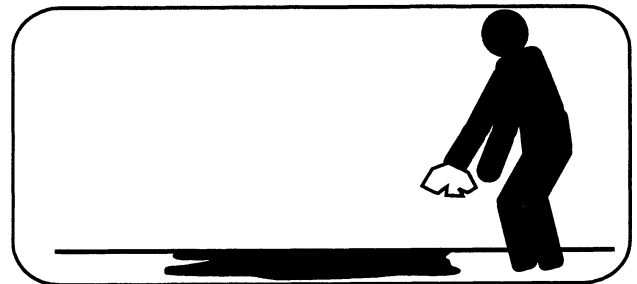
Follow exactly the safety and repair instructions in this manual. Don't take "shortcuts."

Do NOT use an open flame near the truck.

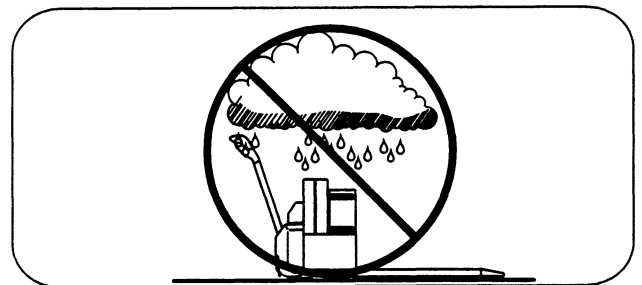


Do NOT use gasoline or other flammable liquids for cleaning parts.

Clean up any hydraulic fluid, oil or grease that has leaked or spilled on the floor.



Always park this truck indoors.



General Safety

Do NOT park this truck in a cold storage area overnight.

Do NOT wash this truck with a hose. .

Do NOT add to or modify this truck until you contact your local Toyota Industrial Equipment dealer to receive written manufacturer approval.

Battery Safety

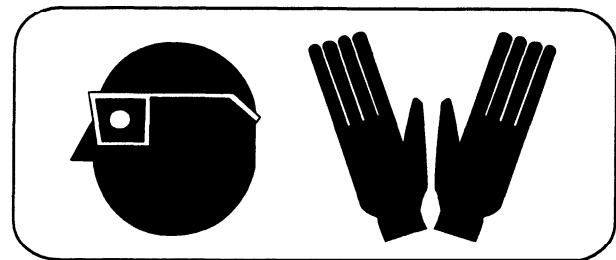
⚠WARNING

As a battery is being charged, an explosive gas mixture forms within and around each cell. If the area is not properly ventilated, this explosive gas can remain in or around the battery for several hours after charging: Be sure there are no open flames or sparks in the charging area. An open flame or spark can ignite this gas, resulting in serious damage or injury.

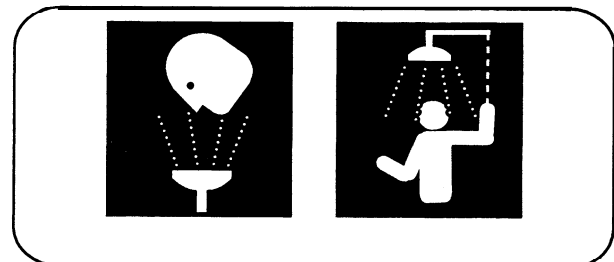
⚠WARNING

Battery electrolyte is a solution of sulfuric acid and water. Battery acid causes burns. Should any electrolyte come in contact with your clothing or skin, flush the area immediately with cold water. Should the solution get on your face or in your eyes, flush the area with cold water and get medical help immediately.

Wear personal protective equipment to protect eyes, face and skin when checking, handling or filling batteries. This equipment includes goggles or face shield, rubber gloves (with or without arm shields) and a rubber apron.

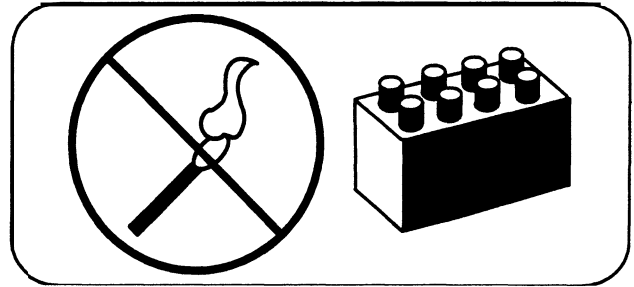


Make sure a shower and eyewash station are nearby in case there is an accident.

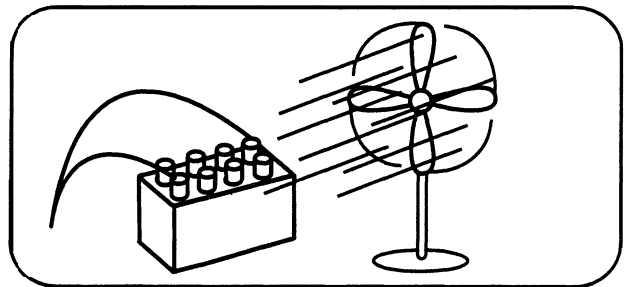


Battery Safety

A battery gives off explosive gases. NEVER smoke, use an open flame, or use anything that gives off sparks near a battery.

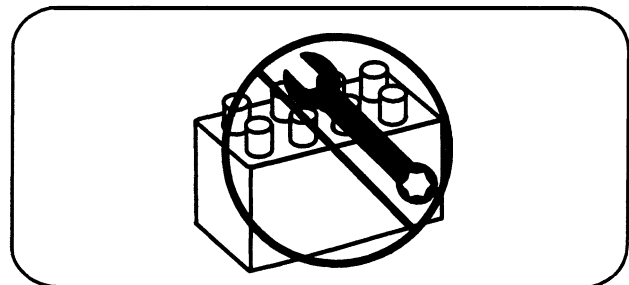


Keep the charging area well-ventilated to avoid hydrogen gas concentration.



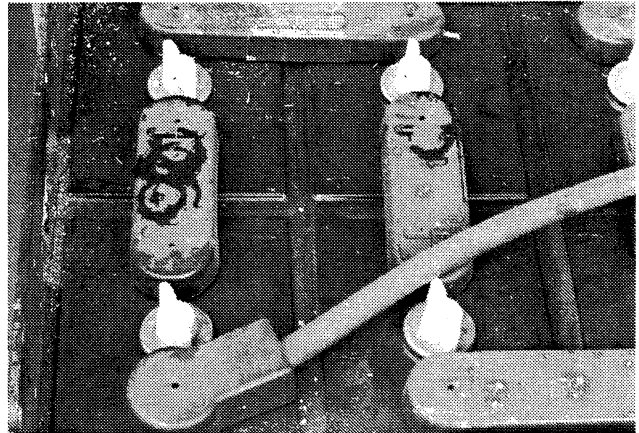
Turn the key switch OFF before disconnecting the battery from the truck at the battery connector. Do not break live circuits at the battery terminals. A spark often occurs at the point where a live circuit is broken.

Do not lay tools or metal objects on top of the battery. A short circuit or explosion could result.



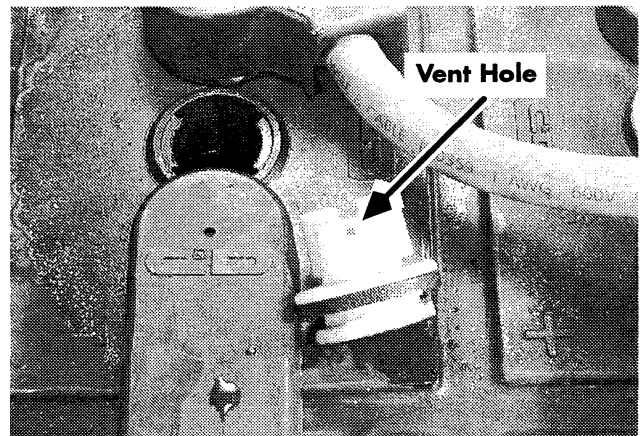
Keep batteries clean. Corrosion causes shorts to the frame and possibly sparks.

Keep plugs, terminals, cables and receptacles in good condition to avoid shorts and sparks.



Keep filler plugs firmly in place at all times except when the electrolyte level is checked, when water is added to the cells or when the specific gravity is checked.

Make sure the vent holes in the filler plugs are open to allow the gas to escape from the cells.

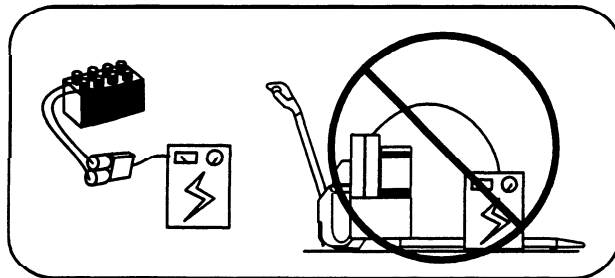


Do not allow cleaning solution, dirt or any foreign matter to enter the cells.

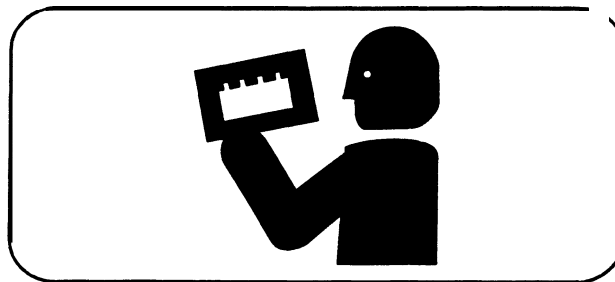
Make sure you install the correct size battery. A smaller or lighter weight battery could seriously affect truck stability. See the truck's specification plate for more information.

Battery Safety

Never plug a battery charger into the truck's battery connector. Plug the battery charger only into the battery connector from the battery.



Follow the charging procedures in the Battery Instruction Manual and in the Battery Charger Instruction Manual.



Jacking Safety

Sometimes you may need to jack the truck off the floor to perform maintenance procedures. When doing so, observe the proper safety precautions:

1. Lower the forks completely. Remove any load.
2. Place all controls in neutral.
3. Block the wheels to prevent movement of the vehicle.
4. Disconnect the battery connector.
5. Place the jack under the designated jacking points.

▲WARNING

Use extreme care whenever the truck is jacked up. Keep hands and feet clear from vehicle while jacking the truck. After the truck is jacked, place solid blocks beneath it to support it. DO NOT rely on the jack alone to support the truck.

Fork Section

1. Using the lift button, raise the forks to maximum height.
2. Block the fork section as shown in Figure 2-1. The tractor section will remain on the floor.
3. Lower the forks onto blocks.
4. Turn the key switch OFF and disconnect the battery connector.

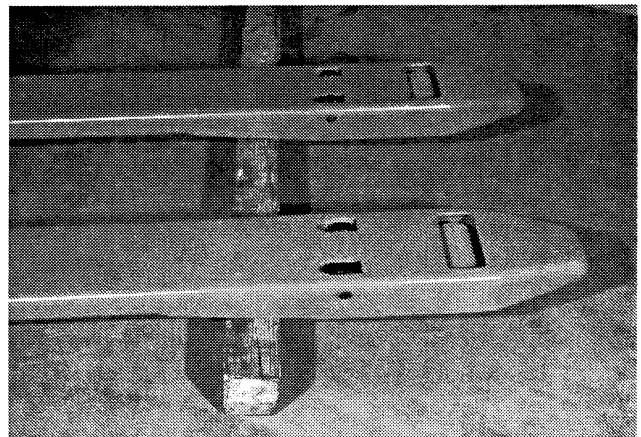


Figure 2-1: Blocking the Fork Section

Jacking Safety

Tractor Section

1. Place the jack in the designated jacking position.
2. Jack one side of the truck so that the drive tire is off the floor no more than 1 in. (25.4 mm).
3. Block that side of the truck in place.
4. Jack the other side of the truck level with the first side.
5. Block that side of the truck in place.

NOTE: After working on a vehicle, test all controls and functions to assure proper operation.

Tie-down for Transport

To transport your Toyota Powered Pallet Walkie in an over-the-road vehicle or rail car, follow these steps:

1. Lower the forks and locate the truck in the center of the transport vehicle.
2. Using a suitable lifting device, remove the battery. See "Battery" on page 6-8.
3. Position the adjustable chain over and through the battery compartment.
4. Position an additional adjustable chain over and through the battery compartment.
5. Position the chain ends of one chain toward the front of the vehicle bed and the chain ends of the other chain to the back of the vehicle bed and draw taut. See Figure 2-2.

NOTE: This will secure the truck to the vehicle bed and prevent tip-over and forward or backward movement.

6. Secure the battery according to the battery manufacturer's instructions. If equipped, remove the battery cover or storage tray from the top of the battery and store separately.

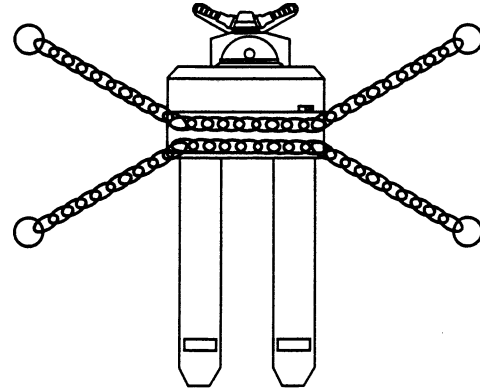


Figure 2-2: Tie-Down for Transport

Towing

Towing

To safely tow a Toyota Powered Pallet Walkie:

1. Lower the forks and remove any load.
2. Turn the key switch OFF and disconnect the battery connector.
3. Using a suitable towing vehicle, lift the tractor end of the truck until the drive tire is no more than 1 in. (25.4 mm) off the floor.
4. Tow the truck slowly in the tractor-first direction.



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