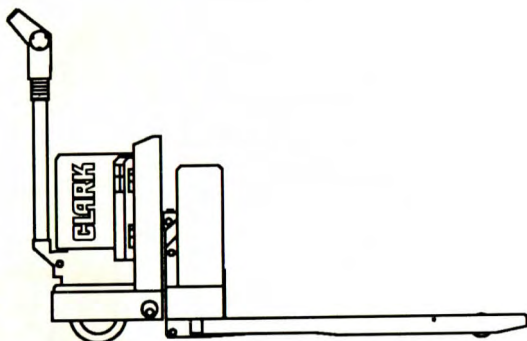

Operator's Manual

Do not remove this manual
from the truck.



PWD25/30/36

HWD25/30/36

P/HWP25/30

CLARK

Book No. 2779043
OM-568

Record the following information pertaining to your truck.

Model No. _____

Serial No. _____

Customer Truck Identification No. _____

Truck Weight, Empty _____

Truck Rated Capacity _____

Truck Gross Weight, Loaded w / Rated Load _____

Special Equipment _____

IMPORTANT

Do not expose this manual to hot water or steam.

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Introduction

Clark Material Handling Company welcomes you to the growing group of professional people who own, operate and maintain Clark lift trucks. We take pride in the long tradition of quality products and superior value that the Clark name represents. This manual will familiarize you with safety, operating, and maintenance information about your new truck. It has been especially prepared to help you use and maintain your Clark lift truck in a safe and correct manner.

Your Clark lift truck has been designed and built to be as safe and efficient as today's technology can make it. As manufactured, it meets all the applicable mandatory requirements of ANSI B56.1 - 1969 - 1988 Safety Standard for Powered Industrial Trucks. In addition, all standard trucks conform to Underwriters Laboratories requirements for the Type Designation shown on the truck capacity plate. Each truck is also furnished with certain safety devices, e.g., horn, as standard equipment.

ANSI B56.1 is the standard for lift truck operation, including rules about operation selection, training and supervision and maintenance. We suggest you read this standard and make it available for your operators and their supervisors. If you do not have one, contact the American Society of Mechanical Engineers, 345 East 47th Street, United Engineering Center, New York, NY, 10017, and ask for a copy of ASME /ANSI B56.1.

See page 6.8 of this manual for additional safety standard information.

Safe, productive operation of a lift truck requires both skill and knowledge on the part of the operator. The operator must know, understand and practice the safety rules and safe driving and load handling techniques described in this manual. To develop the skill required the operator must become familiar with the construction and features of the lift truck and how they function. The operator must understand its capabilities and limitations, and see that it is kept in a

Introduction

Routine Servicing and Maintenance

Regular maintenance and care of your lift truck is important not only for economy and utilization reasons, it is also essential for your safety. A faulty lift truck is a potential source of danger to the operator and to other personnel working near it. As with all quality equipment, keep your lift truck in good operating condition by following the recommended schedule of maintenance.

User Daily Inspection - Safety and Operating Checks

A lift truck must always be examined by the user before driving to be sure it is safe to operate. OSHA & ANSI requires it. The importance of this procedure is emphasized in this manual with a brief illustrated review and later with more detailed instructions. Copies of a "Driver's Daily Check List" are available from your Clark dealer to assist you with this examination.

Planned Maintenance Program

In addition to the daily user inspection, Clark recommends that a planned maintenance and safety inspection program (PM) be performed by a trained and authorized mechanic on a regular basis. The PM will provide an opportunity to make a thorough inspection of the safety and operating condition of your truck. Necessary adjustment and repairs can be done during the PM, which will increase the life of components and reduce unscheduled downtime. The PM can be scheduled to meet your particular application and lift truck usage.

The procedures for a periodic planned maintenance program which covers inspection, operational checks, cleaning, lubrication and minor adjustments are outlined in this manual. Your Clark dealer is prepared to help you with a Planned Maintenance Program with trained service personnel who know your lift truck and can keep it operating safely and efficiently. If you plan to do any of your own maintenance or repairs, contact your Clark dealer for copies of the proper service manuals. Also, remember to always use genuine Clark parts.

This manual is intended to be stored in the pocket in the front cover. Keep it on the truck as a ready reference for anyone who may drive or service it. If the truck you operate is not equipped with this manual, ask your supervisor to obtain one and have it attached to the truck. And remember, your Clark dealer is pleased to answer any questions about the training, operation, and maintenance of your lift truck and will provide you with additional information should you require it. He is glad to help you.

About This Manual

The purpose of this manual is to provide a digest of essential information about the safe operation of your truck, acquaint you with its features, how they function and are maintained. This manual is organized into 8 major parts for easy reference:

Part 1 Know Your Truck...describes the major operation components, systems controls and other features of your truck and how they function.

Part 2 General Safety Rules...reviews and illustrates accepted practices for safe operation of a lift truck.

Part 3 Operating Hazards...illustrates and describes the hazards that you might encounter most often when operating your lift truck.

Part 4 Operating Procedures...discusses more specific instructions on the safe, efficient operation of your lift truck.

Part 5 Daily Inspection...describes the safety and maintenance checks that assist in maintaining your lift truck in a safe operation condition.

Part 6 Planned Maintenance and Lubrication...describes a PM program for your truck.

Part 7 Towing...discusses towing your truck.

Part 8 Specifications...provides reference information and data on features, components, and maintenance items for your truck.

Safety Signs and Safety Messages

Throughout this manual, you will find safety signs and safety messages, as well as other notes and informational instructions. These messages are given to remind you of either essential procedures or to prevent you from making an error which could damage the truck and possibly cause personal injury. Please refer to the following "Safety Signs and Safety Messages" pages for further definition and explanation of the messages.

Notice - - - The descriptions and specifications included in this manual were in effect at the time of printing. Clark Equipment Company reserves the right to make improvements and changes in specifications or design, with out notice and without incurring obligation. Please check with your authorized Clark dealer for information on possible updates or revisions.

Safety Signs and Safety Messages

Improper or careless techniques cause accidents. Don't take chances with incorrect or damaged equipment. **READ** and **UNDERSTAND** the procedures for safe driving and maintenance outlined in this manual.

SAFETY SIGNS and **MESSAGES** are placed in this manual and also on the lift truck to provide instructions and to identify specific areas where potential hazards exist and special precautions should be taken. Be sure you know and understand the meaning of these instructions, signs and messages. Damage to the truck or death or serious injury to you or other persons may result if these messages are not followed.

STAY ALERT ! Follow your company safety rules, regulations and procedures. Accidents can be avoided by recognizing dangerous procedures or situations before they occur.

DRIVE AND WORK SAFELY and follow the safety signs and their messages displayed on the truck and in this manual. If you have any questions, ask your supervisor.

NOTICE

This message is used when special information is required to clarify procedures or identify components pertaining to the truck.

IMPORTANT

This message is used when additional attention is required for proper operation or maintenance of the truck.

CAUTION:

This message is used as a reminder of safety practices which can result in personal injury if proper precautions are not taken.

WARNING:

This message is used when a hazard exists which can result in injury or death if proper precautions are not taken.

Safety Signs and Safety Messages

DANGER:

This message is used when an extreme hazard exists which will result in death or serious injury if proper precautions are not taken.

Safety Signs and Safety Messages

For safe operation of this lift truck you must be trained in its use and authorized to operate it.

Follow these important rules:

1. Read and understand the operator's manual.
2. Know the basic parts of the truck.
3. Learn and practice your employer's safe operating procedure.
4. Keep the truck properly maintained.

Safe operation is the responsibility of the operator.

Ignoring these rules can cause serious or fatal injury to yourself or others.



A Message To CLARK Lift Truck Operators

Lift trucks are specialized machines with unique operating characteristics designed to perform specific jobs. Their function and operation are not like a car or ordinary truck. They require specific instructions and rules for safe operation and maintenance.

Safe operation of lift trucks is of primary importance to CLARK. Our experience with lift truck accidents has shown that when accidents happen and people are killed or injured the causes are:

1. OPERATOR NOT PROPERLY TRAINED
2. OPERATOR NOT EXPERIENCED WITH LIFT TRUCK OPERATION
3. BASIC SAFETY RULES NOT FOLLOWED
4. LIFT TRUCK WAS NOT MAINTAINED IN A SAFE OPERATING CONDITION

For these reasons, CLARK wants you to know about the safe operation and correct maintenance of your lift truck.

This manual is designed to help you learn how to operate your lift truck safely. This manual shows and tells you about operator maintenance and the important general safety rules and hazards of lift truck operation. It describes the special components and features of the truck and their function. The correct operating procedures are shown and explained. Illustrations and important safety messages are included for clear understanding. And finally, a section on maintenance and lubrication is included for the lift truck mechanic.

The operator's manual is not a training manual. It is a guide to help authorized operators safely operate their truck by illustrating the correct procedures. It cannot cover every possible situation which may result in an accident. You must watch for hazards in your work areas and correct them. It is important that you learn the information in this manual and know your company safety rules! Be sure that your equipment is maintained in a safe condition and do not operate a damaged truck. Practice safe operation every time you use your lift truck. Let's join together to set new standards in safety.

A Message To Clark Lift Truck Operators

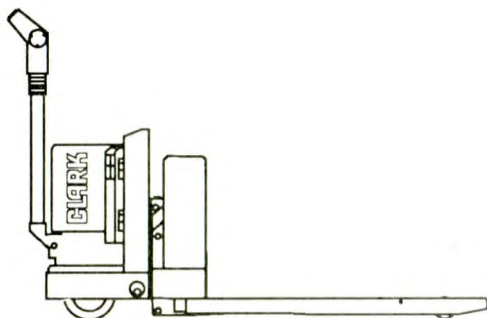
Remember, before you start operating this lift truck, be sure that you understand all operating procedures. It is your responsibility, and important to you and your family, to operate your lift truck safely and efficiently. Be aware that the Federal Occupational Safety and Health Act (OSHA), the American National Standards Institute (ANSI) Standard B56.1 and state laws require that operators be completely trained in the safe operation of lift trucks. Ask your supervisor for help if you have any questions about training or operation.

CLARK lift trucks are built to take hard work, but not abuse. They are built to be dependable, but they are only as safe and efficient as the operator and the persons responsible for maintaining them. Do not make any repairs to this truck unless you have been trained in lift truck repair procedures and authorized by your employer.

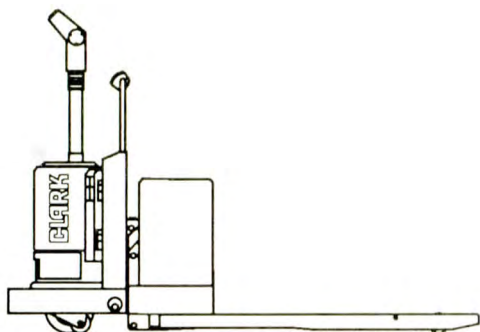
See "Planned Maintenance and Lubrication - User Maintenance Practices" in this manual for information regarding governmental and industrial standards for operation, maintenance and design of industrial trucks.

Truck Application

Each model of lift truck is designed for a specific set of work tasks and conditions. Be sure you are using the right truck for the job.



PWD & P model lift trucks are designed for use in areas where loads only need to be moved short distances. No riding is allowed on PWD & P model trucks



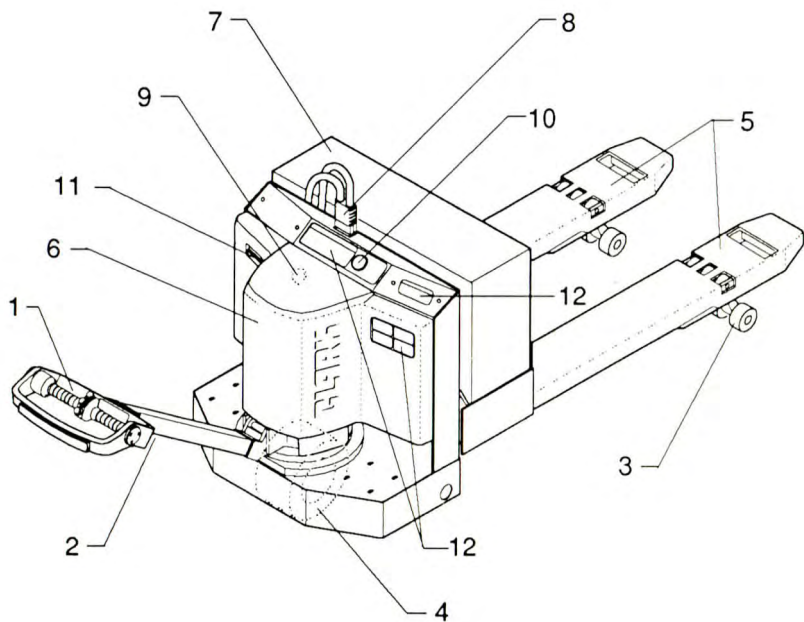
HWD & HWP model lift trucks should be used if loads must be moved longer distances. Operators can walk with the truck or ride using the hand rail.

1 Know Your Truck

- 1.2 Component Location (PWD & P Models)
- 1.3 Component Location (HWD & HWP Models)
- 1.4 Operator's Controls (PWD & P Models)
- 1.5 Operator's Controls (HWD & HWP Models)
- 1.6 Maintenance Component Location (PWD & P Models)
- 1.7 Maintenance Component Location (HWD & HWP Models)
- 1.8 System Description
- 1.10 Nameplate Description
- 1.11 Warning Decals

Know Your Truck

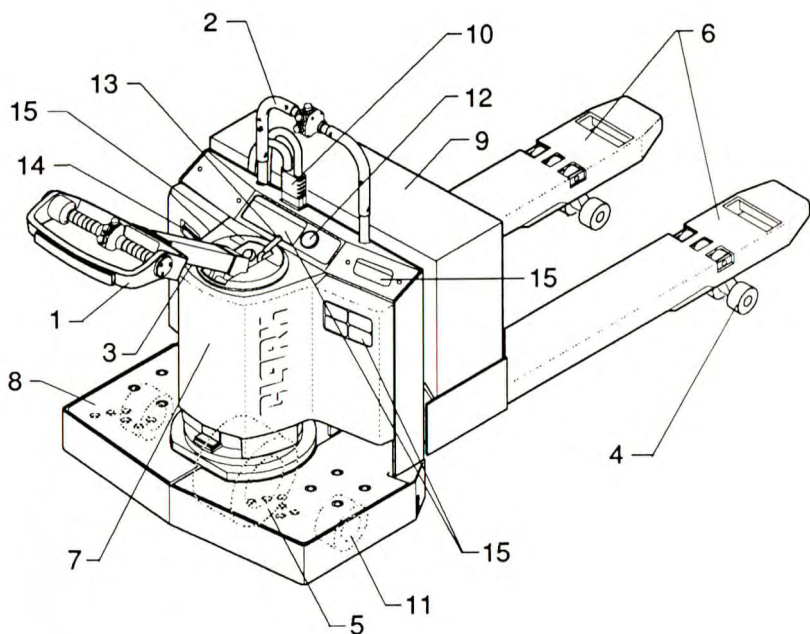
Component Location (PWD & P Models)



1. Steering and Brake Control Handle
2. Truck Data Plate
3. Load Wheels
4. Drive Wheel
5. Load Forks
6. Cover
7. Battery
8. Battery Connector
9. Hour Meter
10. Hour Meter (optional location)
11. Operator's Manual
12. Warning Decals

Know Your Truck

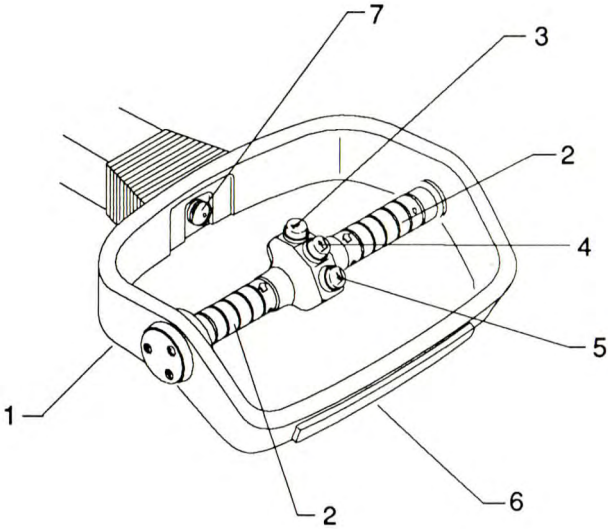
Component Location (HWD & HWP Models)



1. Steering and Brake Control Handle
2. Operator Hand Rail
3. Truck Data Plate
4. Load Wheels
5. Drive Wheel
6. Load Forks
7. Cover
8. Rider Platform
9. Battery
10. Battery Connector
11. Stability Casters
12. Hour Meter
13. Coast Control
14. Operator's Manual
15. Warning Decals

Know Your Truck

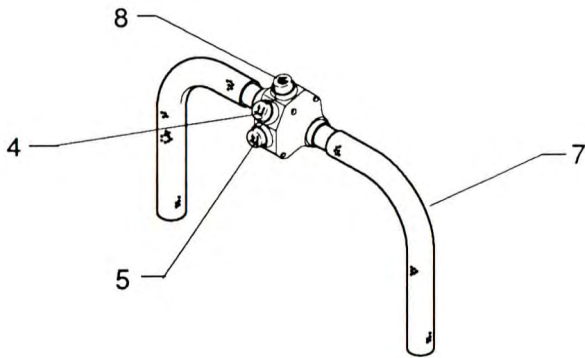
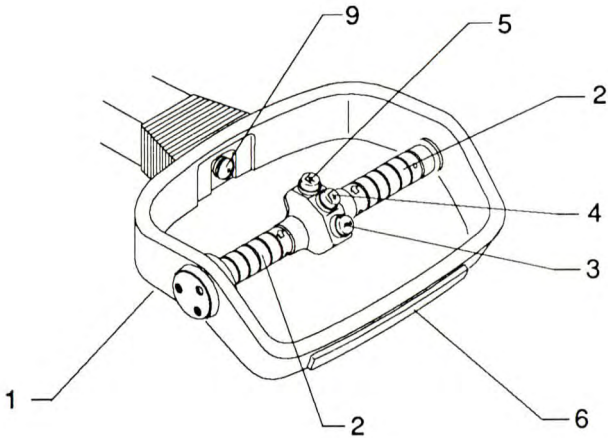
Operator's Controls (PWD & P Models)



1. Steering and Brake Control Handle
2. Forward/Reverse and Speed Control
3. Horn Control
4. Lift Control
5. Lower Control
6. Emergency Reversal Switch
7. Key Switch

Know Your Truck

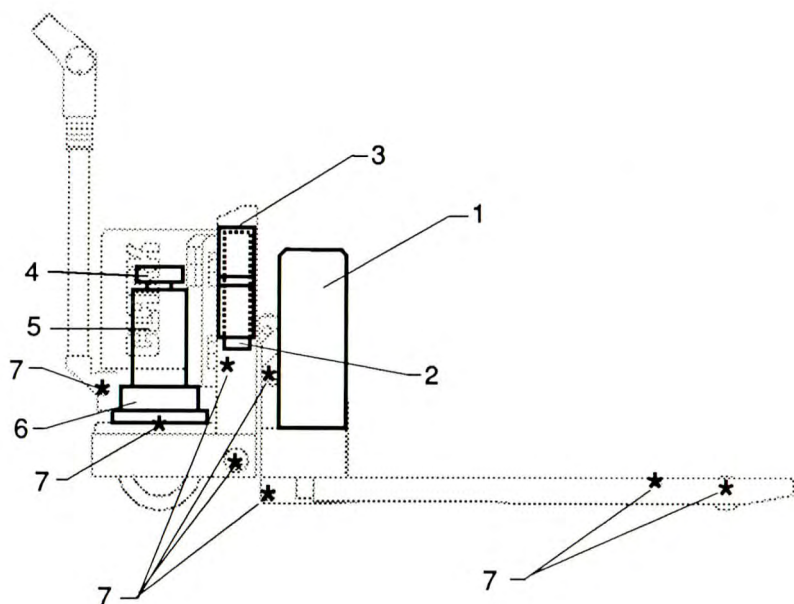
Operator's Controls (HWD & HWP Models)



1. Steering and Brake Control Handle
2. Forward/Reverse and Speed Control
3. Horn Control
4. Lift Control
5. Lower Control
6. Emergency Reversal Switch
7. Operator Hand Rail
8. High Speed Control & Emergency Reversal Disengage
9. Key Switch

Know Your Truck

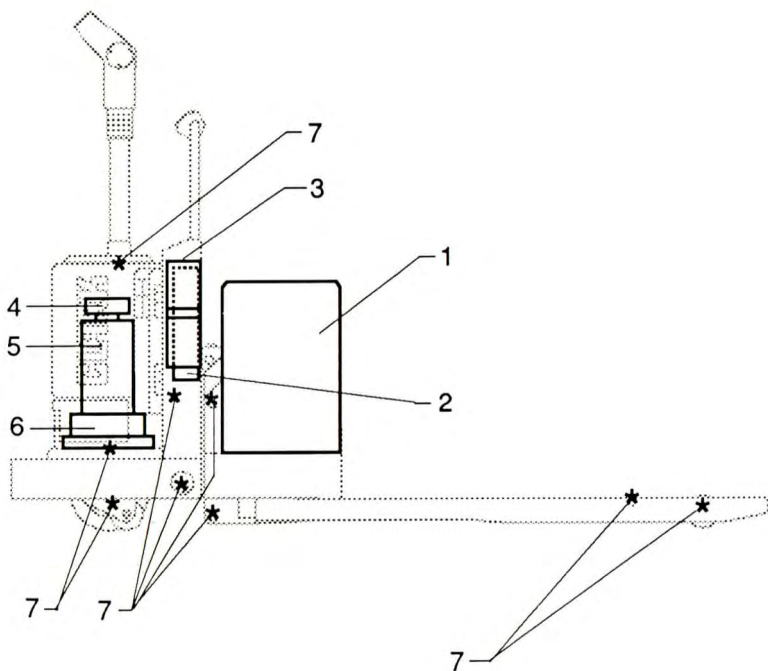
Maintenance Component Location (PWD & P Models)



1. Battery
2. Traction Control Panel
3. Hydraulic Unit
4. Brake
5. Drive Motor
6. Drive Unit
7. Lubrication Fittings

Know Your Truck

Maintenance Component Location (HWD & HWP Models)



1. Battery
2. Traction Control Panel
3. Hydraulic Unit
4. Brake
5. Drive Motor
6. Drive Unit
7. Lubrication Fittings

Know Your Truck

System Description

Control Handle

- Controls travel direction and speed, lift and lower, horn, braking and steering
- Smooth, rounded operator control handle
- Twist grip or butterfly type speed control for left or right hand operation
- Up or down brake application
- Wide, rounded, safety reversing switch on end of control handle
- 180° rotation for maneuverability
- Coast control (HWD & HWP models)

Operator Hand Rail (HWD & HWP models)

- Provides control of lift, lower, and high speed travel functions

Drive Unit

- Double reduction helical spur and spiral bevel gears
- Totally enclosed with lubricating oil bath
- Vertical mount drive motor
- Five bolt drive wheel mounting for simple removal and replacement

Brake

- Double acting
- Spring applied - cam actuated
- Drum and shoe type
- Easy service accessibility

Electrical

- 24 volt electrical system
- U.L. listed, type "E"
- Solid state Field Effect Transistor control features cool and quiet operation, cold switching for increased contactor tip life, and infinitely variable travel speed control
- Drive and hydraulic motors feature class "H" insulation and are vertically mounted for easy service accessibility

Know Your Truck

System Description

Hydraulic system

- Integral motor - pump - reservoir assembly features a control valve and pressure relief valve for controlled lowering and system overload protection
- Closed system reduces contamination
- Piston type lift cylinder is vertically mounted and provides for fork heel adjustment

Frame and Forks

- Formed steel plate with bar steel reinforcements
- Square section solid steel pull rods
- Elevating bracket with three lug mounting design
- Lift linkage easily greasable at all pivot points
- Lift linkage provides 6" of lift
- Spring loaded stability casters (standard equipment on HWD & HWP models)

Standard Equipment

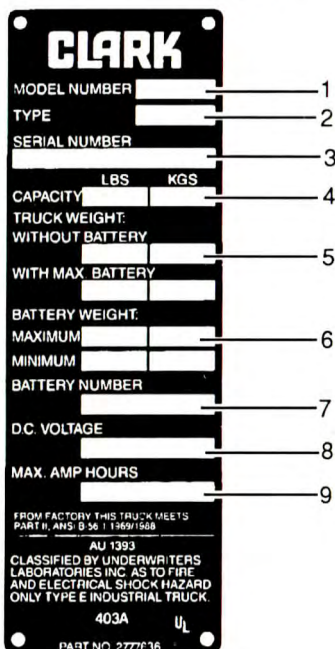
Standard features include: G.E. EV - T5 FET Control System, full 6" lift height, hour meter, horn, key switch, 24 volt electrical system, cushion rubber drive tire, poly load wheels, 7" or 13.6" wide battery compartments, SB-175 amp grey connector, high visibility Clark green and black finish. Additional HWD & HWP features include coast control, spring loaded stability casters, operator platform with non-skid metal surface, and operator hand rail with center mounted control buttons.

Optional Equipment

Optional equipment includes: Battery discharge indicator, battery discharge indicator with lift interrupt, load backrests, polyurethane drive tire, battery compartment rollers and right hand exit gate, "EE" electrical system, cold storage protection, corrosion protection, zinc plated frame and fork assemblies, and yoke style single load wheels. Fork options include 22" to 32" fork widths, 36", 42", 48", 54", 60", 72", 84", and 96" standard fork lengths, and first opening second pallet 84", 93", and 96" extended tip forks.

Know Your Truck

Nameplate Description



Know The Data On The Nameplate

1. Truck registered name.
2. Type of construction. The code number signifies the type of protection. Check with proper authority before entering areas where flammable or explosive material may be present.
3. Truck model number and serial number.
4. Capacity, load center and lifting height data.
5. Truck weight, less load.
6. Battery weight.
7. Battery identification number.
8. System voltage.
9. Battery ampere-hour rating.

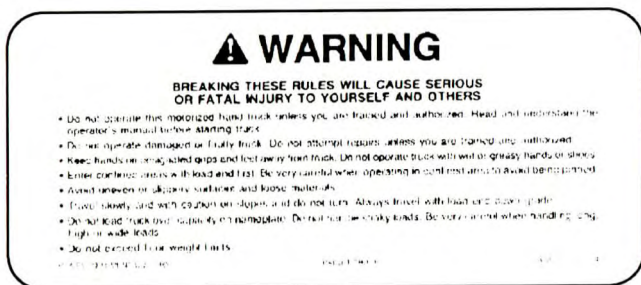
IMPORTANT:

If the truck is modified, the capacity of the truck may be affected. Contact your authorized Clark dealer for a new nameplate showing the revised capacity.

Know Your Truck

Warning Decals

Here are examples of decals which give important information about operation and safety. OSHA and ANSI require you to replace them if they are missing or unreadable. Get familiar with them and follow the instructions. If you don't understand them, ask your supervisor for help.



Operator Safety Warning Decal

The operator's warning decal describes basic instructions for safe operation of a lift truck. Read and understand these instructions and the other safety messages in this manual and on the lift truck.

Know Your Truck

Warning Decals



No Riding Decal

This safety decal is placed on the top cover to warn of the danger of injury by attempting to ride PWD & P model trucks. Always walk with PWD & P model trucks.

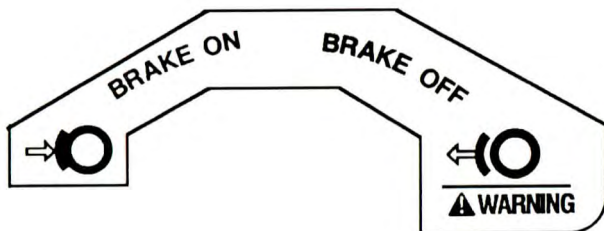


No Riders Decal

This safety decal is placed on the top cover to warn of the danger of injury by attempting to ride as a passenger on HWD & HWP model trucks. The operator must be the only rider on HWD & HWP model trucks.

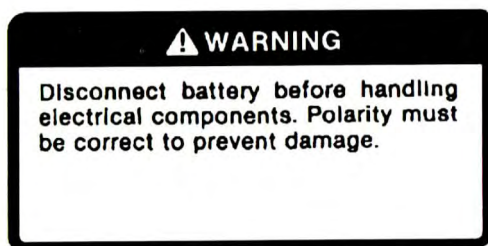
Know Your Truck

Warning Decals



Coast Control Decal

This decal is located on the control handle base cover to give warning when the brake is deactivated on HWD & HWP model trucks.



Battery Warning Decal

This decal is located on the right cover to give warning to disconnect the battery before servicing and to maintain correct battery polarity.



2 General Safety Rules

- 2.2 Do's and Don'ts
- 2.3 No Riders
- 2.4 Pedestrians
- 2.5 Grades
- 2.6 Travel
- 2.7 Pinch points
- 2.8 Parking

General Safety Rules

Do's and Don'ts



Don't mix drugs and / or alcohol with operating a lift truck.



Do watch for pedestrians.



Don't block doors, safety, or emergency equipment.



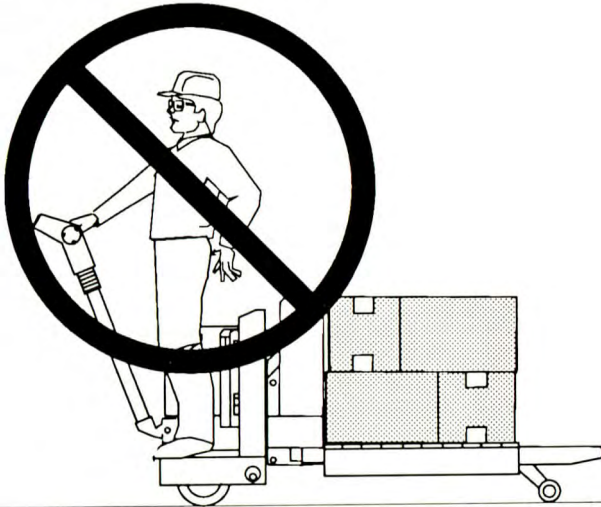
Do wear all the required safety equipment.



Don't smoke in "No Smoking" areas.

General Safety Rules

No Riders



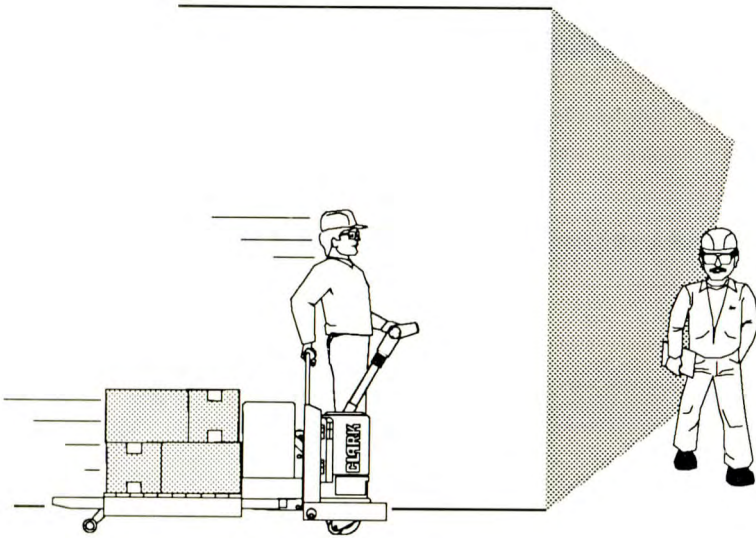
Always walk with PWD & P model trucks. Never attempt to ride.



The operator must be the only rider on HWD & HWP model trucks.

General Safety Rules

Pedestrians

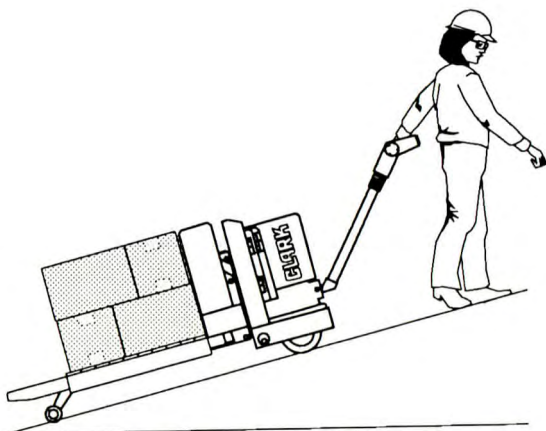


Watch where you are going. Pedestrians may use the same roadway you do. Sound your horn at all intersections.

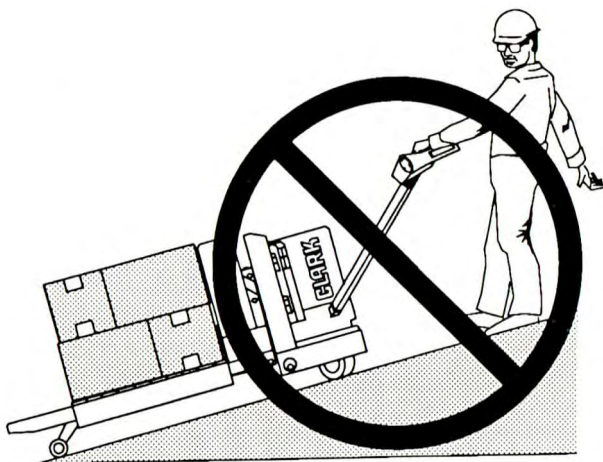
Watch for people in your work area. They may not watch for you.

General Safety Rules

Grades



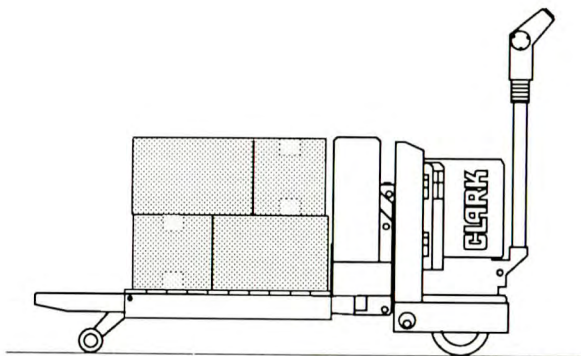
Always keep forks downgrade and in the raised position when working on a grade. Do not ride HWD or HWP models on a grade. Trucks are designed to travel up a 5 % maximum grade with load.



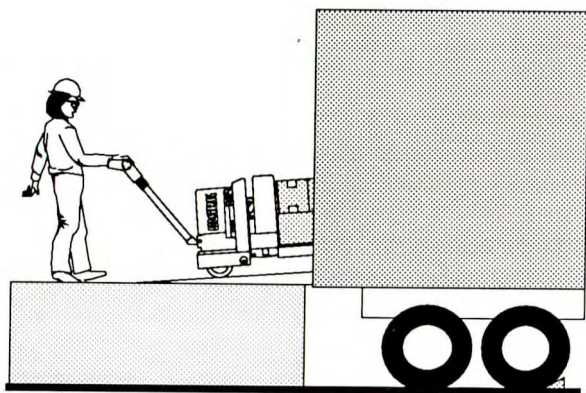
Never attempt to turn on a grade.

General Safety Rules

Travel



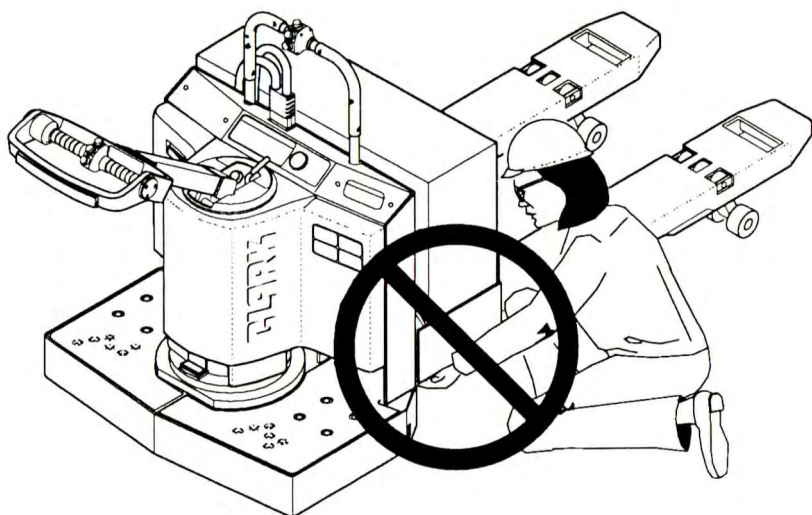
Always carry loads in the raised position.



Enter confined areas such as semi-trailers, trucks, boxcars or elevators with load end of your truck first. This will minimize the maneuvering necessary to exit. If load blocks your view while traveling in reverse, make sure path is clear of personnel and obstructions.

General Safety Rules

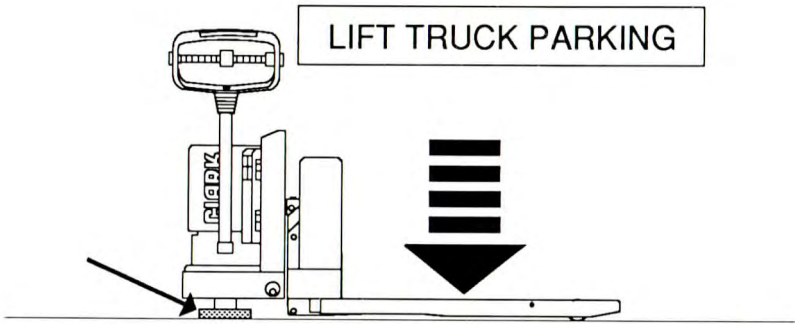
Pinch Points



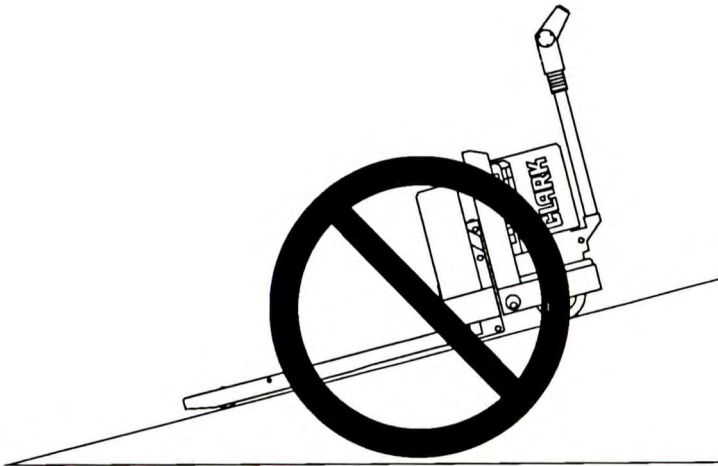
Never allow anyone to reach under or around the edge of the truck. Be especially careful not to put any portion of your body under the load forks. Keep your feet clear of the truck when traveling.

General Safety Rules

Parking



Park trucks in designated parking areas only. Do not obstruct traffic lanes or aisles. Lower forks to floor. Place control handle in full turn and raise handle to "up" position to apply brake. Turn key switch off and remove key. Unplug battery connector. Block drive wheel to prevent accidental roll. Turn key in to proper authority.



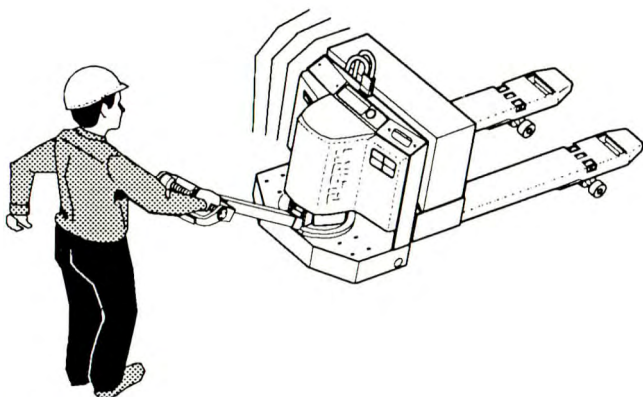
Never park on a grade.

3 Operating Hazards

The operation of lift trucks involves many hazardous situations. This section describes some of the more common ones. Your place of work may have hazards not described. Be alert to those situations that can result in injury and possibly death.

- 3.2 Fast Turns
- 3.2 Corner "Cutting"
- 3.3 Loose Loads
- 3.3 Long and Wide Loads
- 3.4 Dock or Trailer Drop-offs
- 3.4 Trailer Creep
- 3.5 Debris on Floor
- 3.5 Floor and Elevator Capacity
- 3.6 Damaged Pallets and Skids
- 3.7 Loading Dock

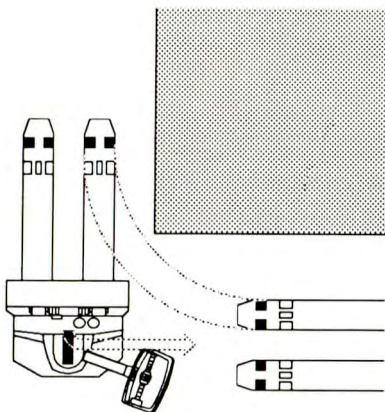
Operating Hazards



WARNING:

Fast Turns

Slow down on turns. An empty truck can tip over easier than a loaded truck.

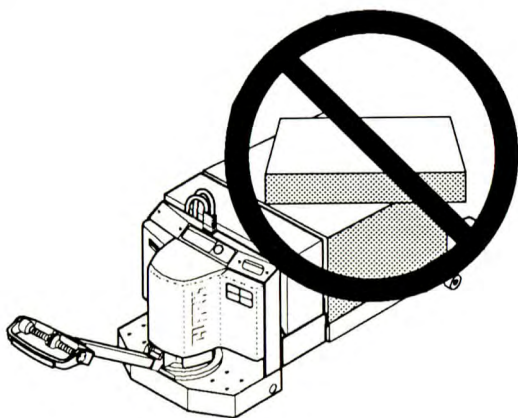


WARNING:

Corner "Cutting"

Always use caution when making a turn into an aisle. The load wheels do not follow the turn path of the drive wheel and will tend to "cut" the corner.

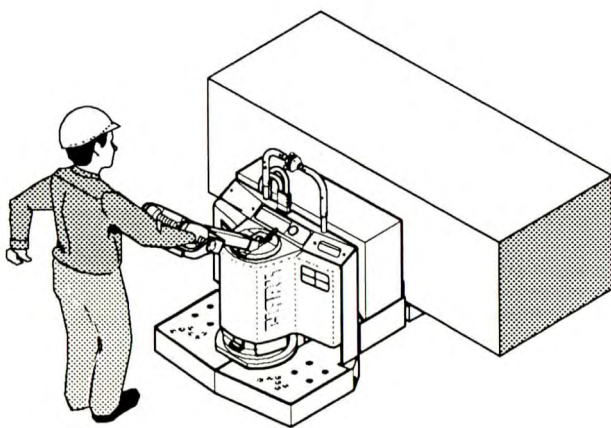
Operating Hazards



WARNING:

Loose Loads

Falling loads can seriously injure yourself or others. Never carry uneven material. Stack loose material evenly.

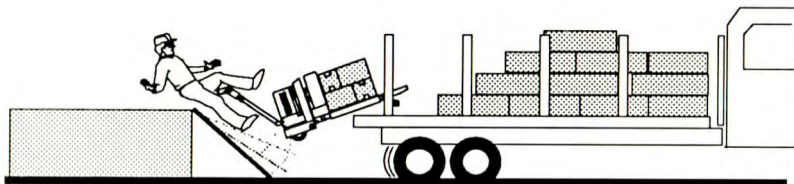


WARNING:

Long or Wide Loads

Long or wide loads are less stable and may strike objects or persons in their path. Watch load clearance, move slowly and turn carefully.

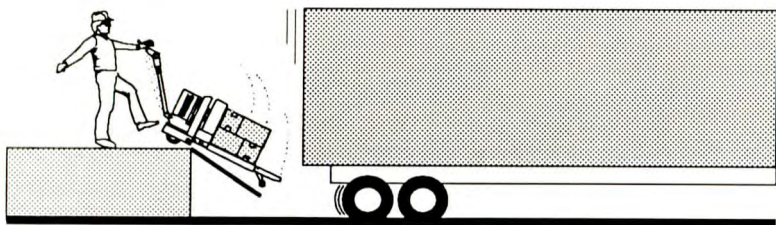
Operating Hazards



! WARNING:

Dock or Trailer Drop-Offs

Talk to the truck driver yourself and make sure he does not move the trailer until you are done! Make sure the driver applies the trailer brakes.

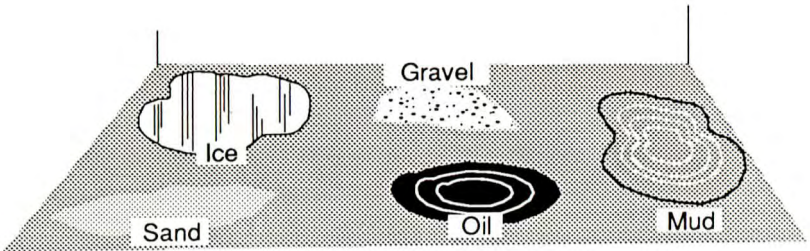


! WARNING:

Trailer Creep

The impact of moving in and out of a trailer may cause the trailer to move. Use wheel chocks. Use trailer-to-dock locking systems, if available.

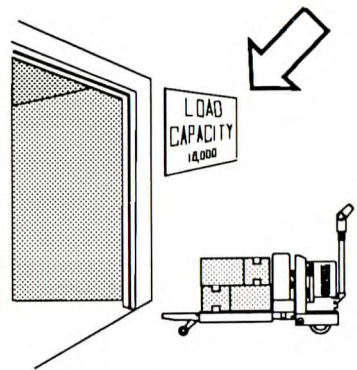
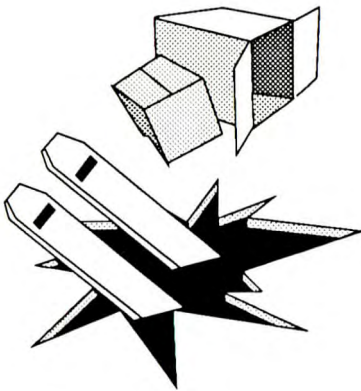
Operating Hazards



WARNING:

Debris on Floor

Oil, water, sand, mud, wood, gravel and other materials will make the floor slippery, uneven and dangerous. Be careful when crossing these areas.

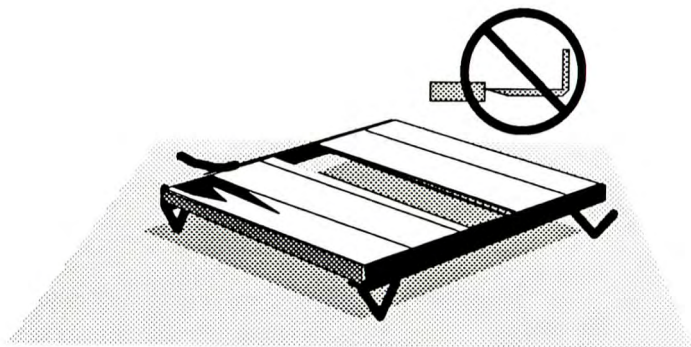
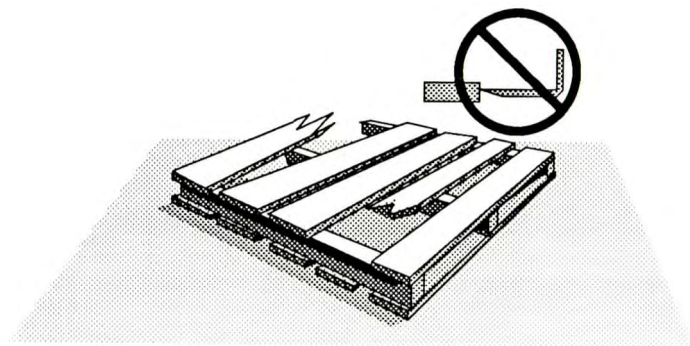


WARNING:

Floor and Elevator Capacity

Check floor and elevator capacities. They must be able to support the weight of the truck and a full capacity load. If you are in doubt, check with your supervisor first.

Operating Hazards

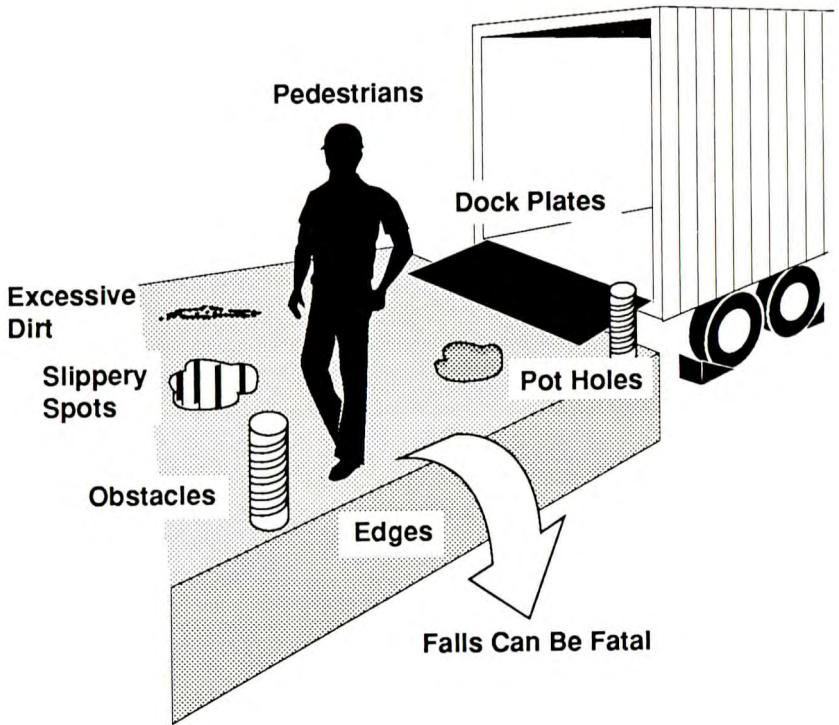


WARNING:

Damaged Pallets and Skids

Do not move or store materials on damaged or poorly maintained pallets and skids. Items can fall through or off them causing severe injury or death.

Operating Hazards



WARNING:

Loading Dock

Shown are a few of the things that the operator should be aware of when operating in the dock area.

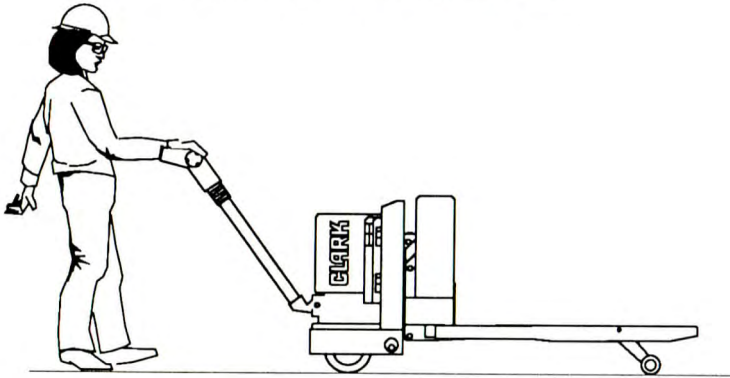


4 Operating Procedures

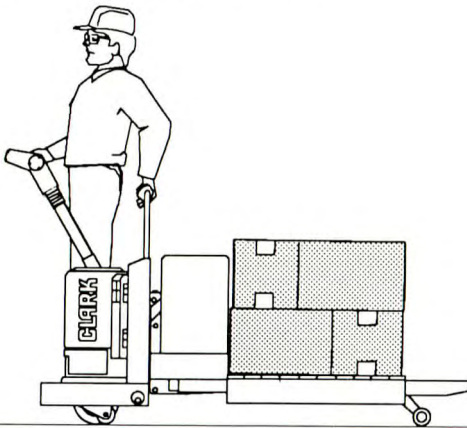
- 4.2 Beginning Truck Operation
- 4.3 Travel Control
- 4.4 Lift & Lower Control (PWD & P Models)
- 4.5 Lift & Lower Control (HWD & HWP Models)
- 4.6 Braking
- 4.7 Horn Control
- 4.8 Coast Control (HWD & HWP Models)
- 4.9 Load Handling
- 4.11 Parking

Operating Procedures

Beginning Truck Operation



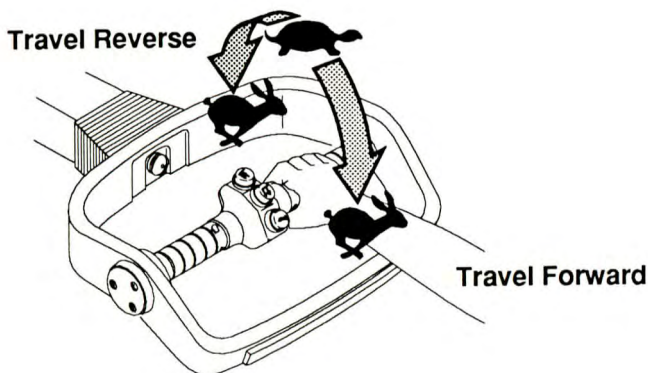
Remove chocks from drive wheel. Plug in battery connector. Lower control handle to comfortable operating position and swing handle in line with intended path of forward or reverse travel. Insert key and turn clockwise to "on" position. Check to make sure your path of travel is clear of people or obstructions.



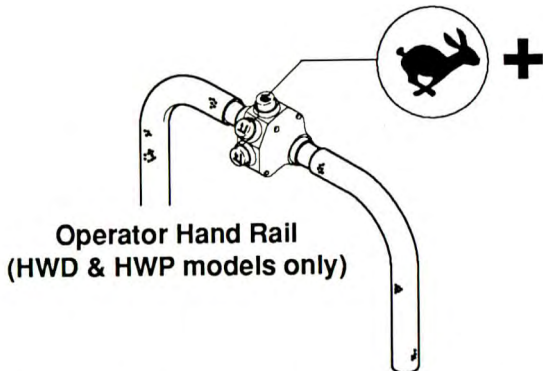
Make sure HWD & HWP models are completely stopped before you get on or off. Keep one hand on control handle and other hand on operator hand rail. Keep your feet back from edge of operator's platform while operating truck. Do not ride HWD & HWP model trucks while traveling on ramps, picking up or depositing loads, or maneuvering in close quarters.

Operating Procedures

Travel Control



Twist the directional control toward you to travel forward.
Twist the directional control away from you to travel in reverse.
Truck speed will increase as you continue to twist the directional control.

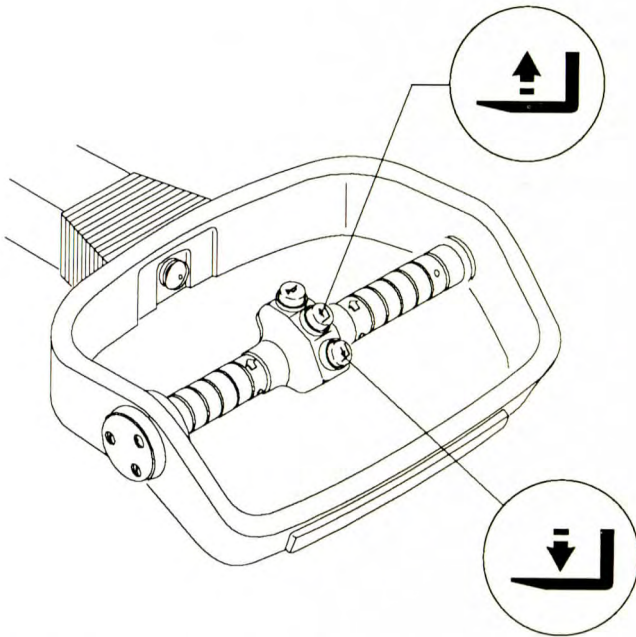


When riding HWD & HWP model trucks for long distances, the high speed control on the operator hand rail is used to provide additional speed. Twist the direction control fully to the maximum speed position and press the high speed control momentarily (2 seconds) to engage high speed. When the high speed control is in use, the emergency reversal is disengaged. This feature prevents accidental reversal of truck travel at high speed.

Operating Procedures

Lift and Lower Control

(PWD & P Models)



Press the "lift" control to raise the load forks.

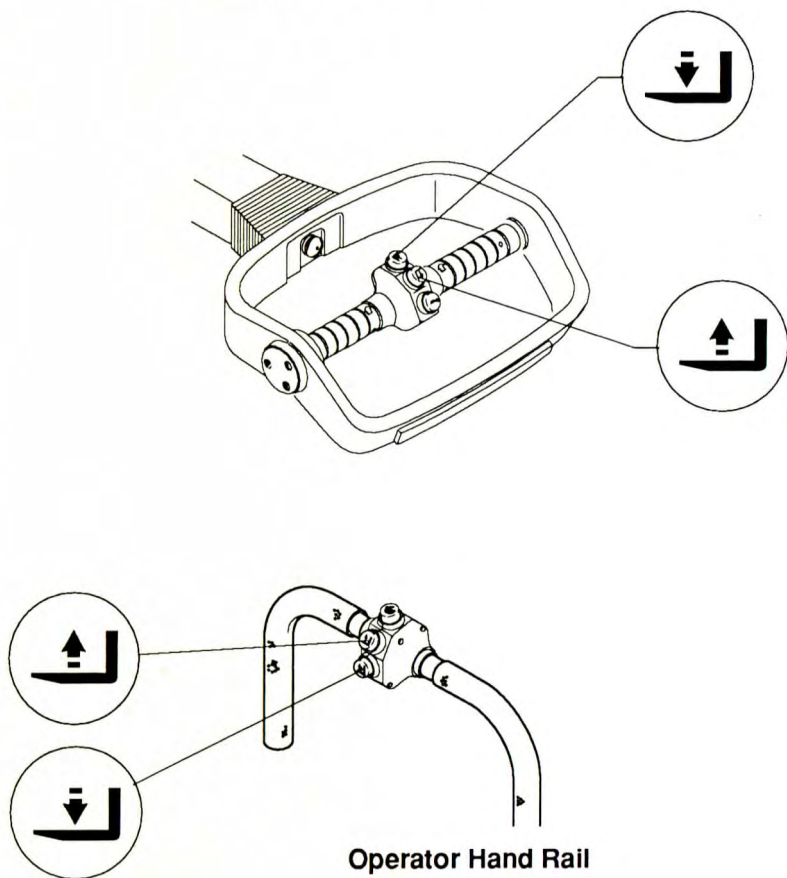
Press the "lower" control to lower the load forks.

Important: Always travel with the load forks fully elevated to provide maximum floor clearance.

Operating Procedures

Lift and Lower Control

(HWD & HWP Models)



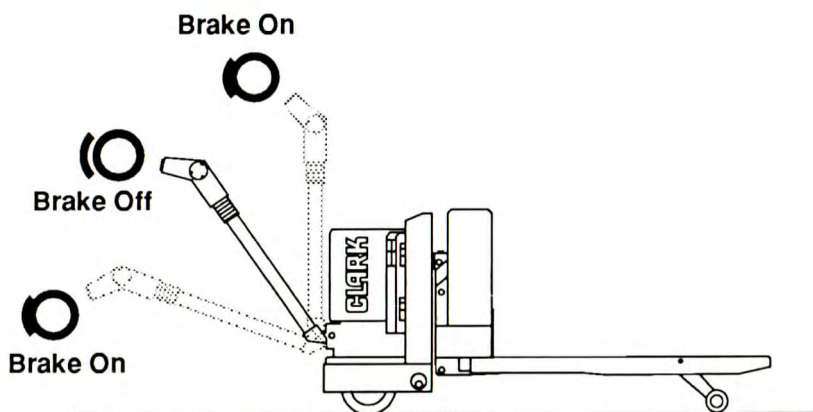
Press the "lift" control to raise the load forks.

Press the "lower" control to lower the load forks.

Important: Always travel with the load forks fully elevated to provide maximum floor clearance.

Operating Procedures

Braking



Lowering the control handle to the operating position disengages the brake. Pushing the control handle to the "up" position or pulling the control handle to the "down" position applies the brake and shuts off the drive motor.

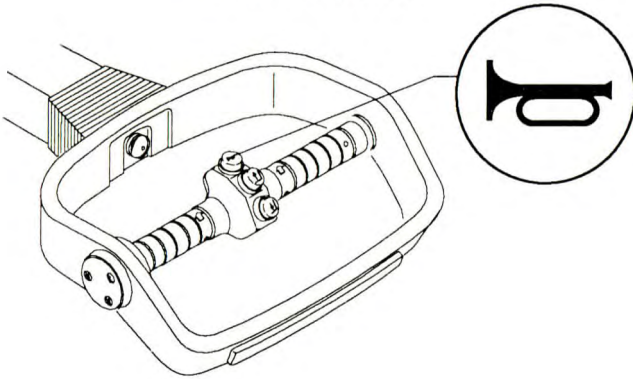
To stop the truck during operation, release the travel control and apply the brake to bring the truck to a smooth stop.

When operating a HWD or HWP "rider" truck, always bring the truck to a complete stop before getting on or off.

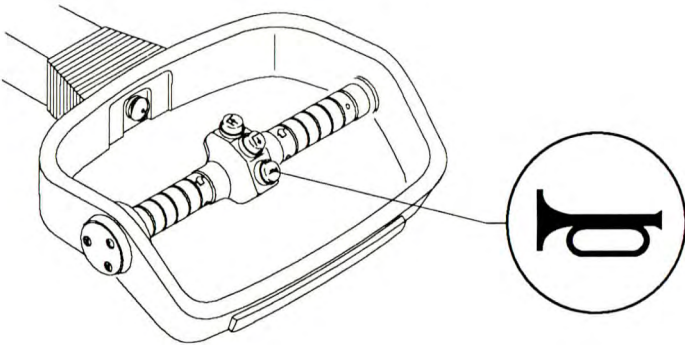
Operating Procedures

Horn Control

PWD & P Models



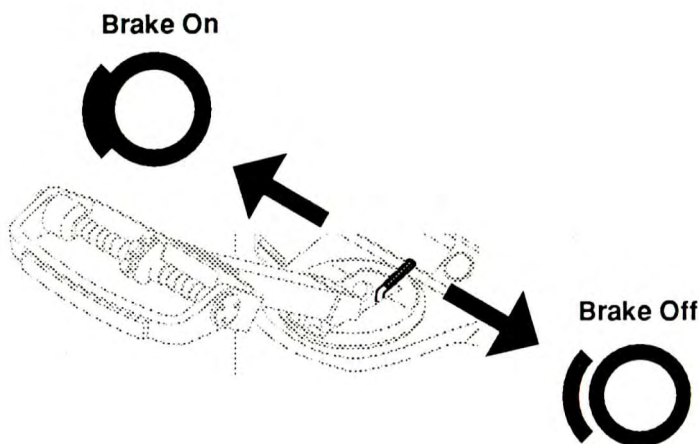
HWD & HWP Models



Press the horn control to sound the horn.

Operating Procedures

Coast Control (HWD & HWP Models)



The coast control deactivates the brake and enables the truck to be "jogged" with the travel control.

Move the coast control lever to the right to deactivate the brake.

Move the coast control lever to the left to reactivate the brake.

Hold the control handle in a vertical position while you move the coast control lever.

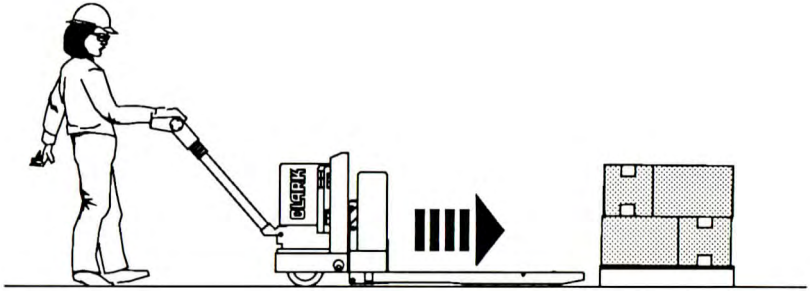


WARNING

Be sure you move the coast control to the left and reactivate the brake before resuming normal truck travel.

Operating Procedures

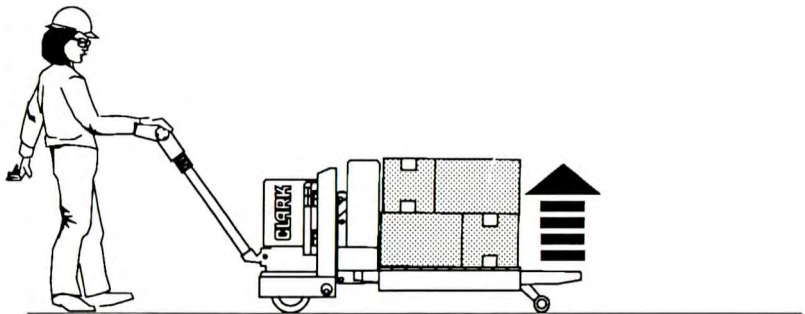
Load Handling



Lower forks completely before entering load.

Center forks with load as you approach.

Enter load as far as possible.



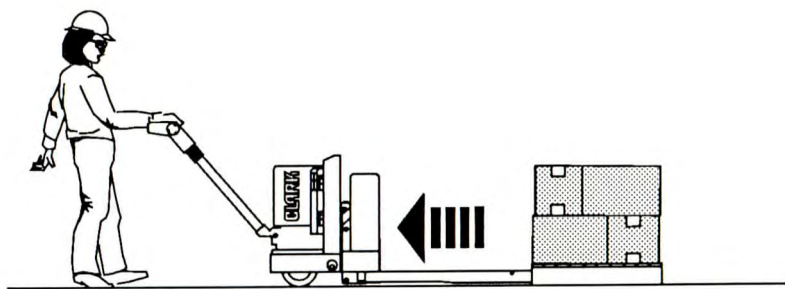
Make sure the lifting area is clear before lifting load.

Raise forks completely before moving truck.

Avoid operating hazards and observe general safety rules while moving load.

Operating Procedures

Load Handling



Always approach load deposit areas squarely and cautiously.

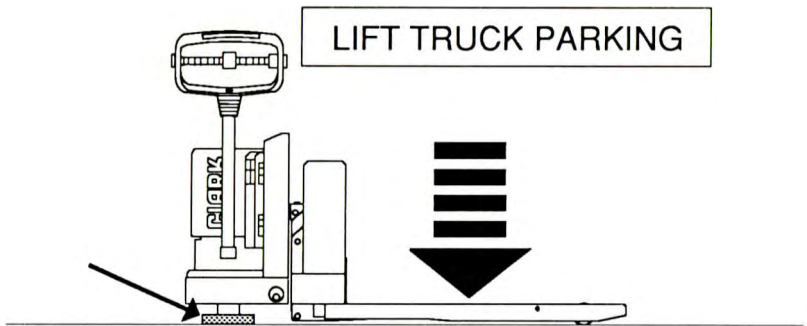
Be especially careful when placing loads near water pipes, electrical wiring or outlets, steam pipes, heaters, and other dangerous or fragile equipment.

After placing load in position, lower the forks completely.

Withdraw the forks squarely from the load.

Operating Procedures

Parking



Park truck in designated parking area.

Lower forks to floor.

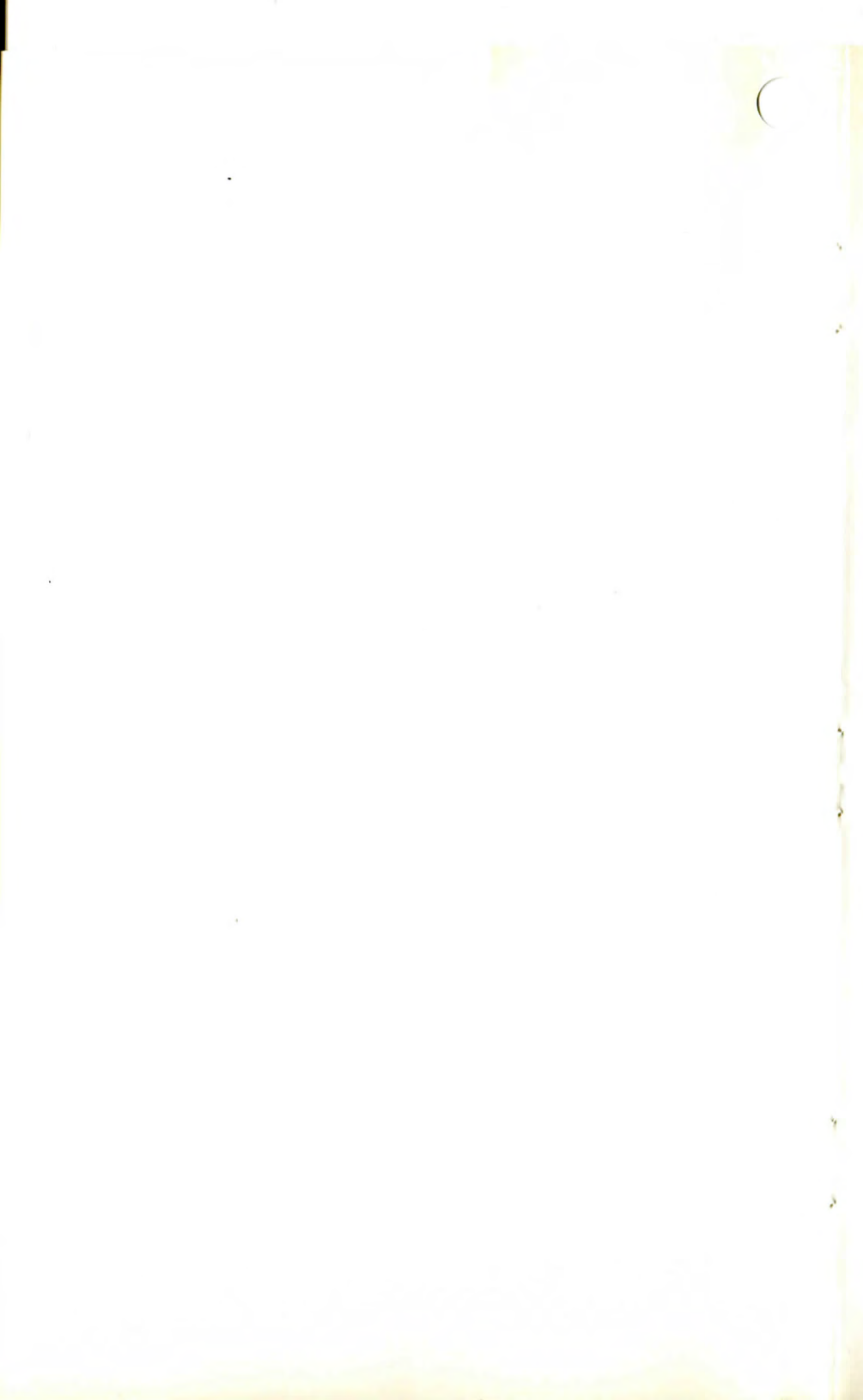
Place control handle in full turn and raise handle to "up" position to apply brake.

Turn key switch to "off" position and remove key.

Unplug battery connector.

Block drive wheel to prevent accidental roll.

Turn key in to proper authority.



5 Daily Inspection

OSHA requires inspection before starting each shift to keep lift trucks in safe operating condition. The following information points out important areas to check during these inspections.

- 5.2 Daily Inspection Sheet
- 5.3 Operator Repairs
- 5.4 Emergency Reversal Switch
- 5.4 Travel Control
- 5.5 Horn
- 5.6 Lift and Lower Controls (PWD & P Models)
- 5.7 Lift Controls (HWD & HWP Models)
- 5.8 Lower Controls (HWD & HWP Models)
- 5.9 Brake
- 5.9 Coast Control (HWD & HWP Models)
- 5.10 Wheels and Tires
- 5.11 Hydraulic System
- 5.12 Maintenance Problem

Daily Inspection

Daily Inspection Sheet



As an aid in carrying out this inspection, Clark has prepared a form called " Driver's Daily Check List." Copies of this form may be obtained from your Clark dealer. We recommend that you use this form to make a daily record of your inspection and truck condition.

Daily Inspection

Operator Repairs

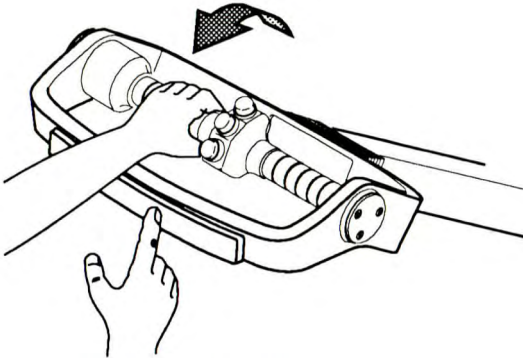


Do not make repairs yourself. Lift truck mechanics are trained professionals. They know how to make repairs safely.

Daily Inspection

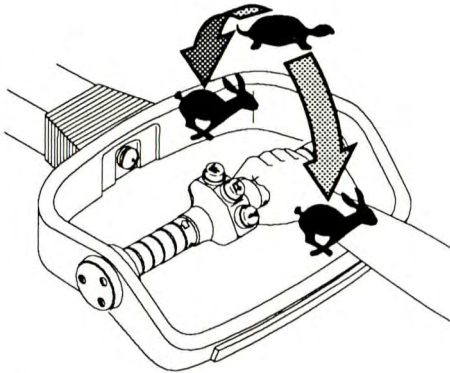
WARNING

Perform these checks in a safe area away from people, walls, or equipment. Do not operator truck if you find a maintenance problem. Remove truck from service and report problem as shown on page 5.12.



Emergency Reversal Switch

Check emergency reversal switch. Operate forward travel control and touch emergency reversal switch. Truck must move away from you until emergency reversal switch is released or brake is applied.



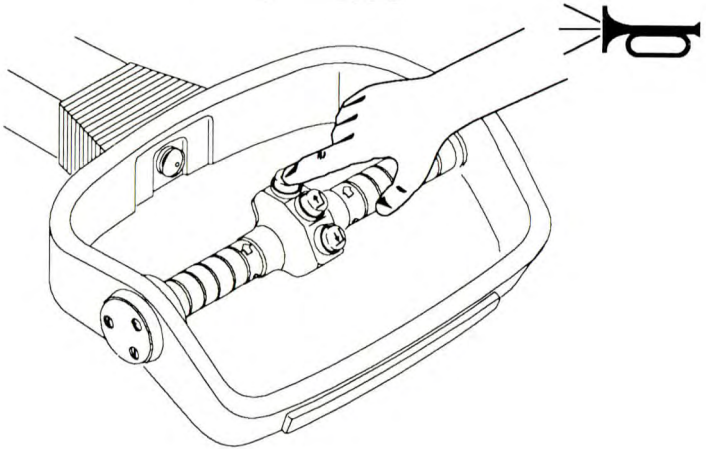
Travel Control

Check travel control. Operate truck in both forward and reverse directions. Travel control must return to neutral position when released.

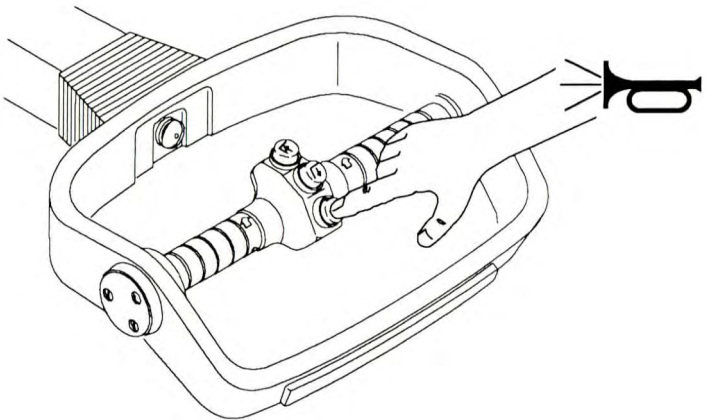
Daily Inspection

Horn

PWD & P Models



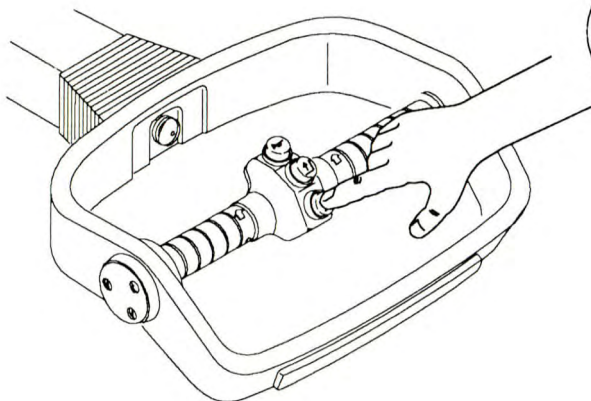
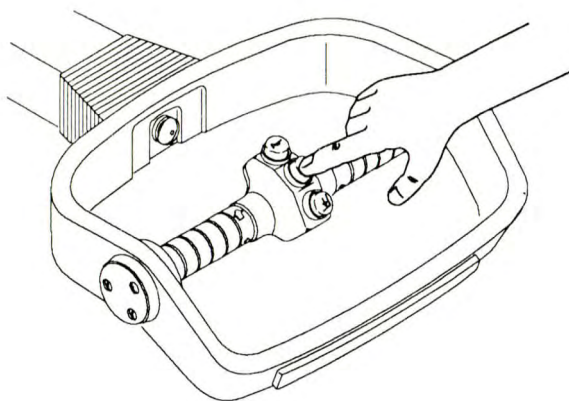
HWD & HWP Models



Check operation of horn.

Daily Inspection

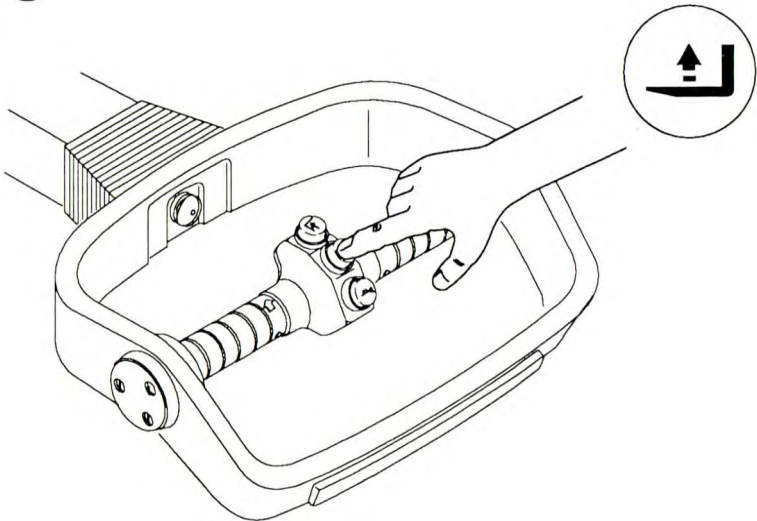
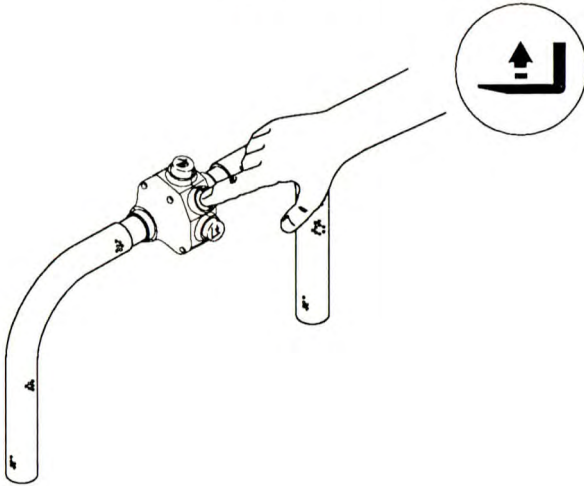
Lift and Lower Controls (PWD & P Models)



Check lift and lower controls. Control buttons must return to "off" position when released. Lift pump motor should stop when maximum lift height is reached.

Daily Inspection

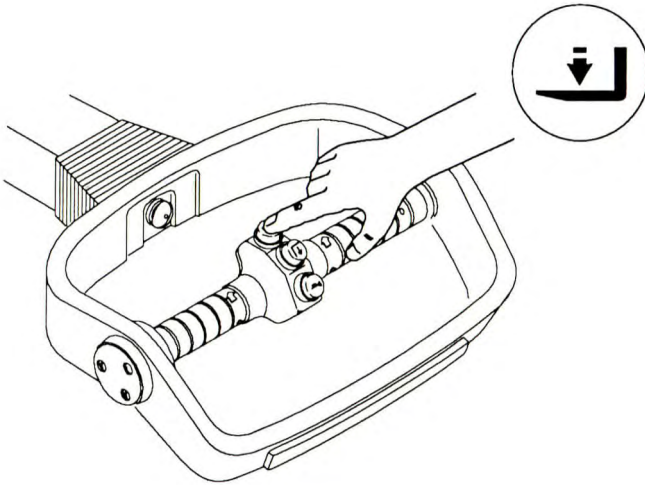
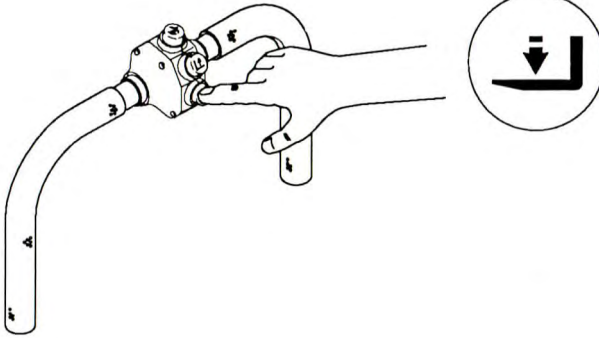
Lift Controls (HWD & HWP Models)



Check lift control. Control buttons must return to "off" position when released. Lift pump motor should stop when maximum lift height is reached.

Daily Inspection

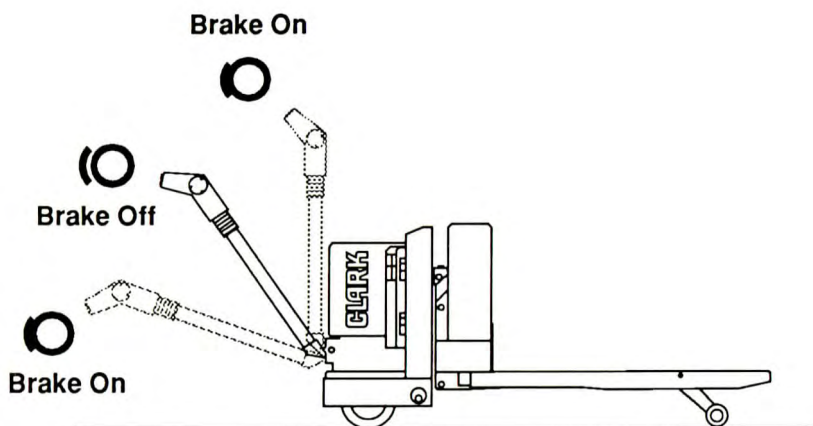
Lower Controls (HWD & HWP Models)



Check lower control. Control buttons must return to "off" position when released.

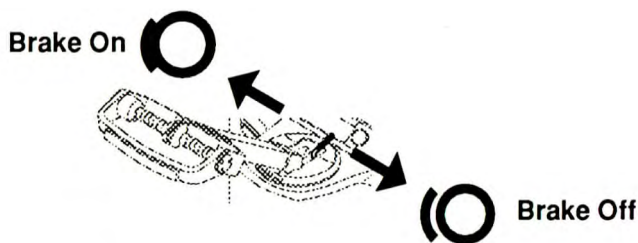
Daily Inspection

Brake



Check brake. Brake should be applied with control handle in fully raised and fully lowered positions. Drive motor should stop when brake is applied.

Coast Control



Check coast control on HWD & HWP models. Make sure brake can be applied with coast control in "brake on" position.

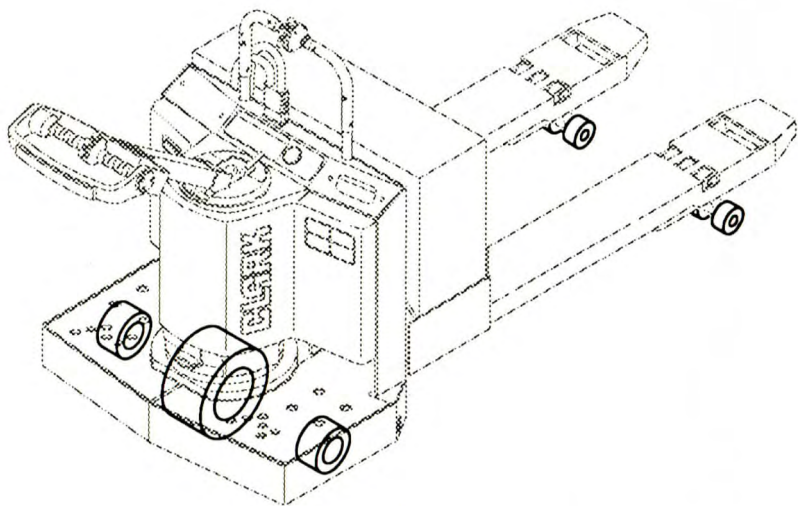


WARNING

Never operate truck if brake does not work perfectly.

Daily Inspection

Wheels and Tires

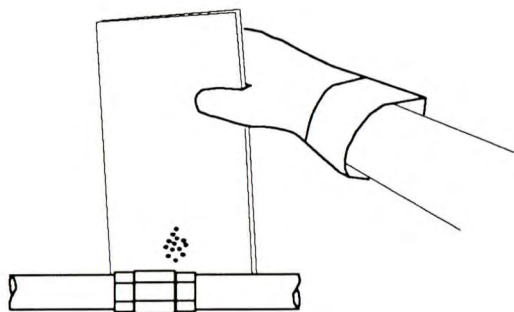


Check condition of wheels and tires. Remove any embedded objects. Report excessive wear, breaks, "chunking out", or bond failure.

Check lug nuts for proper torque. Watch for loose wheel bearings.

Daily Inspection

Hydraulic System



Check hydraulic system and components for damage. Use white cardboard to check for hydraulic leaks. Wear heavy gloves.

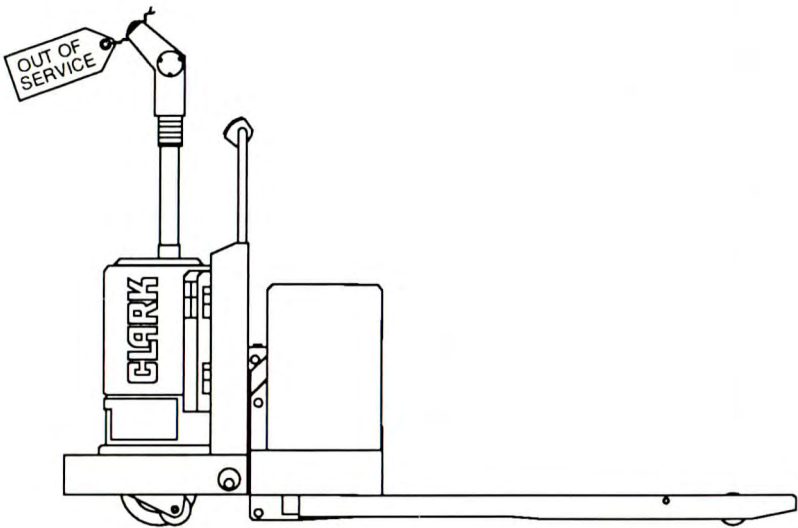


WARNING:

Do not check for hydraulic pressure leaks with your hands or body. Hydraulic oil may be injected into your skin causing serious injury.

Daily Inspection

Maintenance Problem



Do not operate a truck that has a maintenance problem. Park the truck properly and remove the key. Put an "Out of Service" tag on the truck. Report the truck problem to the proper authority.

6 Planned Maintenance and Lubrication

Regular maintenance and care of your lift truck is important not only for full and efficient truck life, it is also essential for your safety. To assist you in keeping your lift truck in service and in good operating condition, this section outlines maintenance procedures to be performed at regular intervals. These procedures are considered essential to the life and safe performance of your truck. It is your responsibility to be alert for any indication that your truck may need service and have it attended to promptly. You are important in making sure your lift truck regularly receives the service it needs.

- 6.2 Typical Operating Conditions
- 6.3 Daily Inspection Points
- 6.4 Recommended Planned Maintenance and Lubrication Schedule
- 6.5 User Safe Maintenance Practices
- 6.8 Safety Standards
- 6.9 Battery
- 6.10 Battery Handling
- 6.13 Battery Removal and Installation
- 6.14 Battery Maintenance, Records, and Life
- 6.15 Battery Maintenance
- 6.17 Battery Cleaning

Planned Maintenance and Lubrication

Typical Operating Conditions

NORMAL OPERATION

Basically, eight hour material handling in clean buildings with smooth level floors and clean, open air.

SEVERE OPERATION

Prolonged operating hours or constant usage, with ramps and/or bumpy floors.

EXTREME OPERATION

1. Sandy or dusty locations.
2. High temperature locations.
3. Sudden temperature changes such as refrigeration facilities.

Planned Maintenance and Lubrication

Daily Inspection Points

The following should be done every 8-10 hours:

Check truck for obvious damage and leaks.

Check / clean battery terminals.

Check battery electrolyte level and specific gravity.

Check capacity plate, warning plates & decals.

Check condition of tires and wheels and remove embedded objects

Check drive wheel lug nuts.

Check hour meter and optional battery discharge indicator.

Check brake operation.

Check horn operation.

Check emergency reversal switch operation.

Check directional and speed control operation.

Check lift and lower operation.

Planned Maintenance and Lubrication

Recommended Planned Maintenance and Lubrication Schedule

Recommended Planned Maintenance Intervals
A = 8 - 10 hours or daily
B = 50 - 250 hours or every month
C = 450 - 500 hours or every 3 months
D = 900 - 1000 hours or every 6 months
E = 2000 hours or every year

PLANNED MAINTENANCE and LUBRICATION					
To be performed by Trained and Authorized Personnel (See Service Manual for other important information)					
	A	B	C	D	E
Check truck visually and inspect components		●			
Test drive truck - Check functional performance		●			
Air clean truck		●			
Check torque on critical fasteners		●			
Lubricate truck		●			
Clean / check battery terminals, electrolyte level		●			
Check battery cables & truck receptacle		●			
Perform battery load test		●			
Check drive motor brushes		●			
Check lift pump motor brushes		●			
Test truck ground		●			
Clean drive motor air vents		●			
Check drive unit fluid level		●			
Drain and replace drive unit fluid					●
Check hydraulic unit fluid level		●			
Drain and replace hydraulic unit fluid					●
Check brake shoe linings		●			

Planned Maintenance and Lubrication



USER SAFE MAINTENANCE PRACTICES

The following instructions have been prepared from current industry and government safety standards applicable to industrial truck operations and maintenance. They are listed here for the reference and safety of all workers during inspection / maintenance operations. When in doubt of any inspection / maintenance procedures, please contact your local CLARK dealer.

1. Powered industrial trucks can become hazardous if maintenance is neglected. Therefore, suitable maintenance facilities, trained personnel and procedures shall be provided.

2. Maintenance and inspection of all powered industrial trucks shall be done in conformance with the manufacturer's recommendations.

3. A scheduled planned maintenance, lubrication and inspection system shall be followed.

4. Only trained and authorized personnel shall be permitted to maintain, repair, adjust and inspect industrial trucks and in accordance with the manufacturer's specifications.

5. Properly ventilate work area, vent exhaust fumes, keep shop clean and floor dry.

6. Avoid fire hazards and have fire protection equipment present in the work area. Do not use an open flame to check electrolyte level. Do not use open pans of fuel or flammable cleaning fluids for cleaning parts.

7. Before Starting To Work On Truck:

- a) Raise drive wheel free of floor or disconnect power source and use blocks or other positive truck positioning devices.
- b) Put blocks under the load-engaging means, innermast(s), or chassis before working on them.
- c) Disconnect battery before working on the electrical system.

8. Operation of the truck to check performance must be conducted in an authorized, safe, clear area.

Planned Maintenance and Lubrication



USER SAFE MAINTENANCE PRACTICES

9. Before Starting to Drive the Truck:

- a) Be in operating position.
- b) Turn on power.
- c) Check functioning of lift and tilt systems.
- d) Check directional and speed controls.
- e) Check steering.
- f) Check brakes.
- g) Check warning devices.
- h) Check any load handling attachments.

10. Before Leaving the Truck:

- a) Stop truck.
- b) Fully lower forks or attachment device.
- c) Allow directional control to return to neutral.
- d) Turn off the control / ignition switch.
- e) Chock wheels if truck must be left on an incline.

11. Brakes, steering mechanisms, control mechanisms, warning devices, lights, lift overload devices, guards and safety devices, lift, reach and rotation mechanisms, and frame members must be carefully and regularly inspected and maintained in a safe operating condition.

12. Special trucks or devices designed and approved for hazardous area operation must receive special attention to ensure that maintenance preserves the original, approved safe operating features.

13. All hydraulic systems must be regularly inspected and maintained in conformance with good practices. Lift cylinders, valves and other similar parts must be checked to assure that "drift" or leakage has not developed to the extent that it would create a hazard.

14. When working on hydraulic system, be sure the battery is disconnected and upright is in its fully lowered position, and hydraulic pressure relieved in hoses and tubing.



WARNING:

Always put blocks under the carriage and upright rails when necessary to work with upright in an elevated position.

Planned Maintenance and Lubrication



USER SAFE MAINTENANCE PRACTICES

15. The truck manufacturer's capacity, operation and maintenance instruction plates, tags or decals must be maintained in legible condition.
16. Batteries, motors, controllers, limit switches, protective device, electrical conductors and connections must be inspected and maintained in conformance with good practices. Special attention must be paid to the condition of electrical insulation.
17. To avoid injury to personnel or damage to the equipment, consult the manufacturer's procedures in replacing contacts on any battery.
18. Industrial trucks must be kept in a clean condition to minimize fire hazards and help in the detection of loose or defective parts.
19. Modifications and additions that affect capacity and safe truck operation must not be done without the manufacturer's prior written approval. Capacity, operation and maintenance instruction plates, tags or decals must be changed accordingly.
20. Care must be taken to assure that all replacement parts, including tires, are interchangeable with the original parts and of a quality at least equal to that provided in the original equipment. Parts, including tires, are to be installed per the manufacturer's procedures. Always use genuine CLARK or CLARK - approved parts.
21. When removing tires, follow industry safety practices. Most important, deflate pneumatic tires completely prior to removal. Following assembly of tires on multi-piece rims, use a safety cage or restraining device while inflating.
22. Use special care when removing heavy components from the truck, such as counterweight, upright, etc. Be sure that lifting and handling equipment is of the correct capacity and in good condition.

Planned Maintenance and Lubrication

Safety Standards

NOTICE - - - You should also be familiar with additional operating and maintenance safety instructions contained in the following publications:

ANSI / ASME B56.1 - 1988: Safety Standard for Low Lift and High Lift Trucks (Safety Code For Powered Industrial Trucks). Published by: American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, N.Y. 10017.

NFPA 505 - 1982: Fire Safety Standard for Powered Industrial Trucks: Type Designations, Areas of Use, Maintenance and Operation. Available from: National Fire Protection Assoc., Inc., Batterymarch Park, Quincy, MA 02269.

General Industry Standards, OSHA 2206: OSHA Safety and Health Standards (29 CFR 1910), Subpart N - Materials Handling and Storage, Section 1910.178 Powered Industrial Trucks. For sale by: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 or contact your CLARK dealer.

IMPORTANT

Your new CLARK lift truck has been built to meet all applicable mandatory requirement of ANSI B56.1 -- 1969 - 1988 Safety Standard for Powered Industrial Trucks. Each truck also includes certain safety devices (such as the horn) as standard equipment. No additions, omissions or modifications should be made that will affect compliance to the above requirements or in any way minimize the effectiveness of the safety devices.

Planned Maintenance and Lubrication

Battery



WARNING: SULFURIC ACID

THE BATTERY CONTAINS CORROSIVE ACID WHICH CAN CAUSE INJURY. IF ACID CONTACTS YOUR EYES OR SKIN, FLUSH IMMEDIATELY WITH WATER AND GET MEDICAL ASSISTANCE.

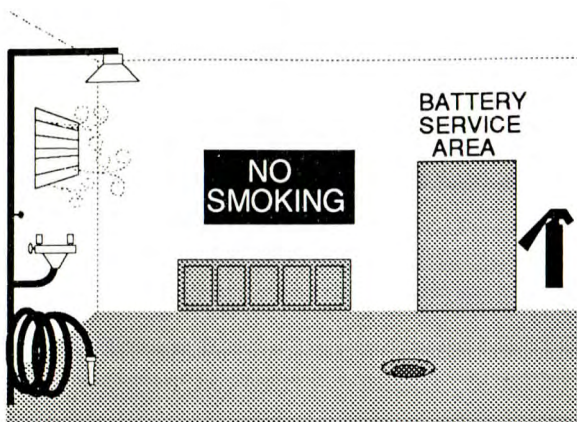


WARNING:

Electric truck batteries are heavy and awkward to handle. They are filled with a very hazardous chemical solution. On charge, they give off hydrogen and oxygen which, in certain concentrations, are explosive. Electric truck batteries are also costly, so before you remove, service, or install a truck battery, consult the BATTERY MANUFACTURER, SUPPLIER or your SERVICE MANUAL for more recommendations and instructions on handling and charging batteries. Carefully read and follow recommendations and instructions.

Planned Maintenance and Lubrication

Battery Handling



Change or service batteries only in an area designated for this purpose. Be sure this area has provisions to flush and neutralize acid spillage, to ventilate fumes from gassing batteries, and also has provisions for fire protection.



⚠ DANGER:

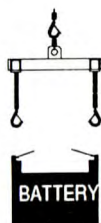
Explosive gas is always present around batteries, especially when they are being charged. No smoking must be allowed in the charging area. Do not check the battery electrolyte level with an open flame. Do not allow open flame, sparks, or electric arcs in the battery charging area.

Planned Maintenance and Lubrication

Battery Handling



Be sure the area is equipped with material handling equipment designed for the purpose of removing and replacing batteries, such as a conveyor or overhead hoist equipped with safety hooks.



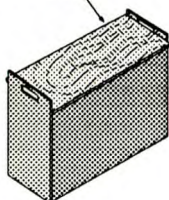
When using an overhead hoist, be sure an insulated spreader bar or similar lifting device is used so the lifting force is vertical.

To prevent side forces from damaging the battery, the distance between the lifting hooks must be the same as the distance between the battery lifting eyes. Make sure the lifting hooks are the correct size to fit the lifting eyes of the battery.

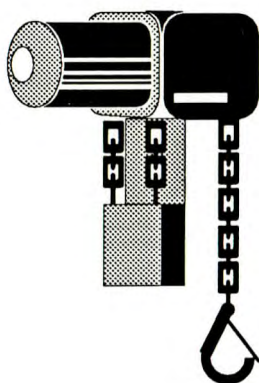
Planned Maintenance and Lubrication

Battery Handling

Non-Conductive Cover



If the battery does not have a cover of its own, cover it with a non-conductive material such as plywood prior to attaching a battery lifting device.



When using a power hoist, be sure it is equipped with a chain container to accumulate the excess chain. If this is not possible, be sure the battery is covered.

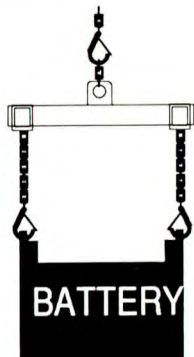
Planned Maintenance and Lubrication

Battery Removal and Installation



WARNING: SULFURIC ACID

THE BATTERY CONTAINS CORROSIVE ACID WHICH CAN CAUSE INJURY. IF ACID CONTACTS YOUR EYES OR SKIN, FLUSH IMMEDIATELY WITH WATER AND GET MEDICAL ASSISTANCE.



Position the truck in the designated battery service area, turn off key switch and disconnect the battery. Be sure the truck can not move. Cover the battery with a non-conductive material, if required, and lift the battery from the truck using a proper lifting tool and overhead hoist. Reverse this procedure to install the battery.



WARNING:

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Planned Maintenance and Lubrication

Battery Maintenance, Records, and Life

BATTERY MAINTENANCE:

Refer to the battery vendor for their recommended procedures.

KEEPING BATTERY RECORDS:

Some type of record should be kept to get the best service out of your battery and truck. Select a pilot cell, take readings of specific gravity and temperature before and after charging, and record with the date. It is best to change the pilot cell occasionally to distribute any electrolyte loss over the battery in taking the readings. Every two to three months, take complete battery readings. Check specific gravity, temperature and voltage. Record these readings.

HOW TO GET MAXIMUM LIFE FROM THE BATTERY:

If battery discharges rapidly during normal operation or does not charge to the correct specifications, contact a qualified battery service technician to check the battery for you.

DO NOT ADD ACID TO A BATTERY. Only a qualified battery representative should determine if this is necessary.

Lift only with a properly constructed lifting device which will not put side pressure on the battery.

Check battery electrolyte level before each charge and add distilled water, if necessary. Do not overfill. Overfilling causes loss of electrolyte. The electrolyte level should be slightly below the lower lip of the filling vent hole.

Keep battery clean and dry. Wash down as required.

Do not over-charge battery.

Keep battery records as indicated above.

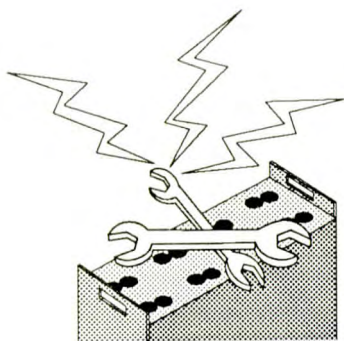
Planned Maintenance and Lubrication

Battery Maintenance



⚠ DANGER:

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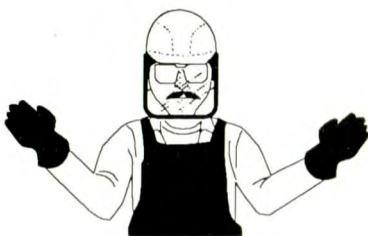


⚠ DANGER:

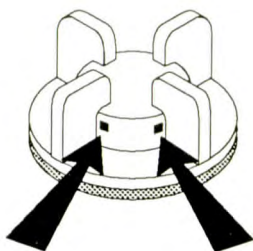
Keep all tools and other metal objects away from the battery terminals. They will cause short circuits and can cause the battery to explode.

Planned Maintenance and Lubrication

Battery Maintenance



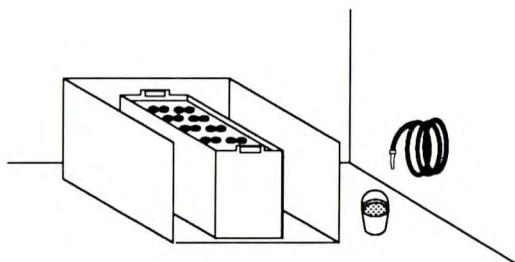
Persons maintaining storage batteries must wear protective clothing such as face shields, long shirt sleeves and gauntlet gloves.



When charging batteries, the vent caps must be kept in place to avoid electrolyte spray. Care must be taken to assure that vent caps are functioning. The vent cap holes must be open to allow the battery to breathe. The battery cover must be removed to dissipate heat and explosive gas.

Planned Maintenance and Lubrication

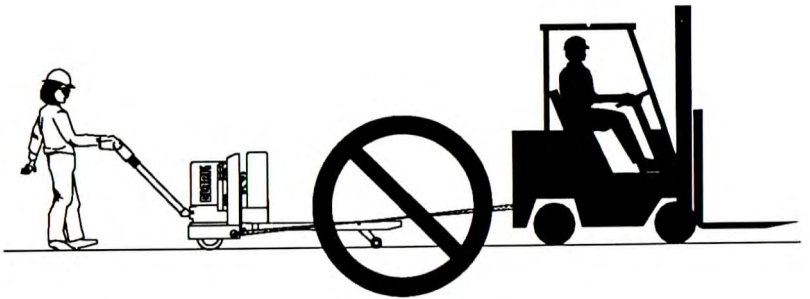
Battery Cleaning



The easiest and most satisfactory method of cleaning a battery is to wash it occasionally with a low pressure cold water spray. The battery top can also be washed with a baking soda solution and rinsed with clear water. Make the solution by adding a box of baking soda to a pail of water and stir until dissolved. It is wise to have this solution around the battery service area at all times. Be sure all battery vent caps are tightly in place during the cleaning operation.



7 Towing



Do not tow or push your truck with another vehicle.



8 Specifications

Load Capacity:

Model	Capacity	
PWD25	5000 lbs	[2268 kgs]
PWD30	6000 lbs	[2721 kgs]
PWD36	8000 lbs	[3628 kgs]
HWD25	5000 lbs	[2268 kgs]
HWD30	6000 lbs	[2721 kgs]
HWD36	8000 lbs	[3628 kgs]
P25	5000 lbs	[2268 kgs]
P30	6000 lbs	[2721 kgs]
HWP25	5000 lbs	[2268 kgs]
HWP30	6000 lbs	[2721 kgs]

Service Weight:

Model	Battery Compartment	Service Weight	
PWD25/30	7"	1400 lbs	[635 kgs]
PWD25/30	13.6"	1825 lbs	[828 kgs]
PWD36	7"	1550 lbs	[703 kgs]
PWD36	13.6"	1975 lbs	[896 kgs]
HWD25/30	7"	1505 lbs	[683 kgs]
HWD25/30	13.6"	1930 lbs	[875 kgs]
HWD36	7"	1665 lbs	[755 kgs]
HWD36	13.6"	2090 lbs	[948 kgs]
P25/30	7"	1550 lbs	[703 kgs]
P25/30	13.6"	1975 lbs	[896 kgs]
HWP25/30	7"	1665 lbs	[755 kgs]
HWP25/30	13.6"	2090 lbs	[948 kgs]

Battery:

Minimum Weight	Battery Compartment
456 lbs	7"
821 lbs	13.6"

Specifications

Battery (continued):

Capacity (6 hour rate maximum)	Battery Compartment
7.7 KW•h	7"
21.5 KW•h	13.6"

Specific Gravity (minimum)	1.250
Specific Gravity (fully charged)	1.275

Type

24 Volt Lead Acid	12 cells (7" Battery Compartment)
24 Volt Lead Acid	12 cells (13.6" Battery Compartment)

Fluid Recommendations:

Hydraulic Unit	Clark Specification MS - 68 (Normal Temperature)
	Clark Specification MS - 226 (Cold Storage)
Drive Unit	Dexron II ATF

Fluid Capacities:

Hydraulic Unit	1.5 quarts (nominal)
Drive Unit	2 - 2.5 quarts (nominal)

General Purpose Grease:

Clark Specification MS - 107C, use Grade NLGI #2 per MS - 107C


SERIAL NUMBERS:

TRUCK _____

CONTROL PANEL _____

DRIVE MOTOR _____

HYDRAULIC UNIT _____



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YOUR AUTHORIZED CLARK DEALER.

**CLARK[®] Material Handling
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