



HWXE 30-40



PWXE 30-40



Operator's Manual

HWXE 30-40 / PWXE 30-40

OM-748

IMPORTANT! Do not remove this manual from the lift truck.

JUN 2022 | REV 1.3

Truck Information

Lift Truck Information:

Model No. _____

Serial No. _____

Customer ID No. _____

Unloaded Weight _____

Rated Capacity _____

Gross Weight _____

Special Attachments _____

Component Serial Numbers:

Hydraulic Pump _____

Hydraulic Pump Motor _____

Drive Motor _____

Drive Unit _____

Traction Controller _____

IMPORTANT!

DO NOT expose this manual to hot water or steam.

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Operator's Manual Overview

YOU can prevent accidents

First: Learn safe operating rules and your company rules.

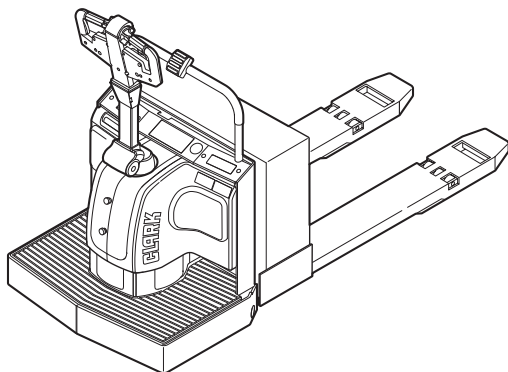
Next: Read the Operator's Manual. If you do not understand it, notify your supervisor for assistance.

Learn about the lift truck you operate.

KNOW your lift truck

Then: Practice operating your truck safely.

And: Keep your lift truck in safe operating condition with correct and timely maintenance.



WARNING

If you DO NOT follow these rules, serious injury or death to yourself or others can occur.

A Message to Lift Truck Operators

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

The safe operation of lift trucks is a primary importance to CLARK. Our experience with lift truck accidents has shown that when accidents occur and people are injured or killed, the most common causes are:

- **Improperly trained operator**
- **Inexperienced operator, unfamiliar with lift truck operation**
- **Basic lift truck safety rules NOT followed**
- **Lift truck NOT maintained to a safe operating condition**

For these reasons, CLARK wants you to know how to safely operate and properly maintain your lift truck.

This manual is designed to assist you in operating your lift truck safely. This manual shows and describe correct safety inspections and important general safety rules and hazards of lift truck operation. It shows and explains the special components and features of your specific truck and it's functions. The correct operating procedures are shown and explained. Illustrations and important safety messages are included to provide a clear understanding. A specific section detailing the proper maintenance and correct lubrication is included for the lift truck mechanic.

The operator's manual is not a training manual. It is a guide to help trained and authorized operators safely operate their lift truck by emphasizing and illustrating the correct procedures. This manual cannot cover every possible situation that could result in an accident. You must be aware of possible hazards in your specific work areas and make sure to correct or avoid them.

It is important that you know and understand the information in this manual and that you understand and follow your company's safety rules. Make sure that your lift truck is maintained in a safe, properly working condition. Do not operate a damaged or malfunctioning truck. Practice safe operation every time you use your lift truck.

Let's join together to set high standards in safety!

Remember, that before you begin operation of this lift truck, to make sure you understand all correct driving procedures. It is your responsibility to operate your lift truck safely and efficiently.

Be aware that the Federal Occupational Safety and Health Act (OSHA) and state law requires that operators be trained and certified in the safe operation of lift trucks. It is an OSHA requirement that an inspection of the lift truck be performed prior to every shift. If you have not been trained (or need recertification training) for operating or inspecting your lift truck, notify your supervisor.

CLARK lift trucks are designed and built to handle hard work, but not abuse from the operator. They are built to be dependable, but are only as safe and efficient as the operator(s) and person(s) responsible for maintaining them.

Do not make any repairs to this truck unless you have been trained and authorized to perform safe lift truck repair procedures. For any repair, maintenance, or any other service work concerning your lift truck, please contact your CLARK dealer.

Only use CLARK original spare parts to guarantee trouble free functionality and optimum economy of your truck.

Introduction

Foreword

CLARK welcomes you to the growing group of professionals who own, operate, and maintain CLARK lift trucks. We take pride in the long tradition of quality products and superior value the CLARK name represents. This manual familiarizes you with safety, operation, and maintenance information concerning your new lift truck. It has been specially 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 Safety Standard for Powered Industrial Trucks**. Each truck is also furnished with equipment to help you operate safely. For example, load back rest, parking brake and horn are all standard equipment.

Safe and 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 skills 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 maintained to a safe condition.

Routine Servicing and Maintenance

Regular maintenance and care of your lift truck is not only important for economy and utilization reasons; it is 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 optimal operating condition by following the recommended schedule of maintenance.

Operator Daily Inspection — Safety and Operating Checks

A lift truck should always be examined by the operator, before driving, to make sure it is safe to operate. The importance of this procedure is described in this manual with a brief illustrated review and later with more detailed instructions. Your CLARK dealer can supply you with copies of a helpful **Drivers Daily Checklist**.

Planned Maintenance

In addition to the *Daily Operator Inspection*, CLARK recommends that a *Planned Maintenance* (PM) and safety inspection program be performed by a trained and authorized mechanic on a regular basis. This PM will provide an opportunity to make a thorough inspection of the safety and operating condition of your lift truck. Necessary adjustments and repairs can be done during the PM, which will increase the life of components and reduce unscheduled downtime (increased productivity) and increase safety. The PM can be scheduled to meet your particular application and lift truck usage.

The procedure for a periodic planned maintenance program covers inspections, operational checks, cleaning, lubrication, and minor adjustments. These are all outlined in this manual. Your CLARK dealer is prepared to help you with a *Planned Maintenance* program by offering trained service personnel who know your lift truck and can keep it operating safely and efficiently.

How to Use this Manual

This manual contains essential information about the safe operation, features and functions, and maintenance of your lift truck.

This manual is organized into eight major sections:

Section 1: General Safety Rules - reviews and illustrates accepted practices for safe operation of a lift truck.

Section 2: Operating Hazards - warns of conditions that could cause damage to the truck or injury to the operator or other personnel.

Section 3: Know Your Truck - describes the most common operating components, systems, controls, and other features of your truck and tells how they function.

Section 4: Operating Your Truck - discusses more specific instruction on the safe and efficient operation of your lift truck.

Section 5: Daily Inspection - details how to perform the operator's daily safety inspection of the lift truck.

Section 6: Planned Maintenance - describes the proper planned maintenance (PM) program.

Section 7: Storage and Towing - includes information on proper methods to transport and store the lift truck when not in use.

Section 8: Specifications - provides reference information and data on features, components, and maintenance items.

NOTICE: The descriptions and specifications included in this manual were current at the time of printing. CLARK Material Handling Company reserves the right to make improvements and changes in specifications or design, without notice and without incurring obligation.

The examples, illustrations, and explanations in this manual should help you improve your skill and knowledge as a professional lift truck operator and take full advantage of the capabilities and safety features of your new lift truck.

Please check with your authorized CLARK dealer for information on possible updates or revisions.

The first section of the manual is devoted to a review, with illustrations and brief messages, of general safety rules and the major operating hazards you can encounter while operating a lift truck. Next, you will find descriptions of the components of your specific lift truck model and how the instruments, gauges, and controls operate. Then, you will find a discussion of safe and efficient operating procedures, followed by instructions on how to tow a disabled lift truck. The later sections of the manual are devoted to maintenance and truck specifications.

Take time to carefully read the Know Your Truck section. By acquiring a good basic understanding of your truck's features, and how they function, you are better prepared to operate it both efficiently and safely.

In *Planned Maintenance*, you will find essential information about the correct servicing and periodic maintenance of your truck, including charts with recommended maintenance intervals and component capacities. Carefully follow these instructions and procedures.

We recommend to carefully read the manual from cover to cover before operating your lift truck. Be sure to read and understand the information on the *General Safety Rules* and *Operating Hazards*. Familiarize yourself with the various procedures in this manual. Understand how all the gauges, indicator lights, and controls function. Please contact your authorized CLARK dealer about any questions you may have about your lift truck's features, operation, or manuals.

Operate your lift truck safely; careful driving is your responsibility. Drive defensively and think about the safety of people who are working nearby. Know your truck's capabilities and limitations. Follow all instructions in this manual, including all IMPORTANT, CAUTION, WARNING, and DANGER messages to avoid damage to your lift truck and to avoid any harm to yourself or others.

This manual is intended to be permanently attached to your lift truck. Keep it on the truck as a reference for anyone who may operate or service it. If the truck you operate is not equipped with a manual, inform your supervisor to obtain a replacement to be reinstalled to the truck.

Remember, your CLARK dealer is happy to answer any questions about the operation and maintenance of your lift truck and to provide you with any additional information should you request it.

Safety Symbols and Messages

Improper operation can cause accidents. Do not operate improperly setup or damaged equipment. **Read and understand** all the procedures for safe driving and maintenance described in this manual. Do not hesitate to ask for assistance. **Stay alert and follow** all safety rules, regulations, and procedures. Avoid accidents by recognizing and avoiding dangerous procedures or situations before they occur. **Drive and work safely** and follow the safety symbols and their messages on the lift truck and in this manual.

Safety symbols and messages are described in this manual and located on the lift truck to identify specific areas where potential hazards exist and provide instructions or special precautions that should be taken. Know and understand the meaning of these instructions, symbols, and messages. Damage to the truck, serious injury, or death to you or other persons may result if these messages are not followed.

NOTE

This message is used when special information or instruction is needed relating to procedures, equipment, tools, specifications or other special data.

IMPORTANT!

This message is used when special precautions or action should be taken to avoid damage to the truck or one of its components.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in injury. It may also be used to alert against unsafe practices.



WARNING

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



DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in serious injury or death.

IMPORTANT!

Your CLARK lift truck has been built to meet all applicable mandatory requirements of ANSI / ITSDf B56.1 Safety Standard for Powered Industrial Trucks. Each truck also includes certain safety devices, such as a horn and overhead guard, as standard equipment. No additions, omissions, or modifications should be made to the truck that affect compliance to the above requirements or in any way minimize the effectiveness of the safety devices.

IMPORTANT!

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

ANSI / ITSDf B56.1: Safety Standard for Low Lift and High Lift Trucks (Safety Code For Powered Industrial Trucks). Available from: Industrial Truck Standards Development Foundation, 1750 K Street NW Suite 460, Washington, DC 20006.

NFPA 505: Fire Safety Standard for Powered Industrial Trucks: Type Designations, Areas of Use, Maintenance and Operation. Available from: National Fire Protection Association, Inc., 1 Batterymarch Park, Quincy, MA 02169.


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. Available from: U.S. Government Publishing Office, 732 North Capitol Street, Washington, DC 20401 or contact your CLARK dealer.

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General Safety Rules

Daily Inspection



Date: _____

Operator's Daily Checklist
Check each item before Start of Each Shift

Check one: Gas/LPG/Diesel Truck Electric Sit-down Electric Stand-up Electric Pallet

Truck Serial Number: _____ Operator: _____ Supervisor's OK: _____

Hour meter reading: _____

Check each of the following items before the start of each shift. Let your supervisor and/or maintenance department know of any problem. **DO NOT OPERATE A FAULTY TRUCK.** Your safety is at risk. After checking, mark each item accordingly. Explain below as necessary.

Check boxes as follows: OK NG, needs attention or repair. Circle problem and explain below.

| OK | NG | Visual Checks | OK | NG | Visual Checks |
|----|----|---|----|----|---|
| | | Tires/Wheels: wear, damage, nuts tight | | | Engine: runs rough, noisy, leaks |
| | | Head/Tail/Work Lights: damage, mounting, operation | | | Steering: loose/binding, leaks, operation |
| | | Clamp(s)/mounting(s): damage, operation | | | Service Brake: linkage loose/binding, stops OK, grab |
| | | Operator Restraint: damage, mounting, operation, oily, dirty | | | Parking Brake: loose/binding, operational, adjustment |
| | | Warning Decals/Operator's Manual: missing, not readable | | | Seat Brake (if equipped): loose/binding, operational, adjustment |
| | | Data Plate: not readable, missing | | | Horn: Operation |
| | | Overhead Guard: bent, cracked, loose, missing | | | Backup Alarm (if equipped): mounting, operation |
| | | Load Back Rest: bent, cracked, loose, missing | | | Warning Lights (if equipped): mounting, operation |
| | | Forks: bent, worn, stops OK | | | LIFT/Lower: loose/binding, excessive drift, leaks |
| | | Engine Oil: level, dirty, leaks | | | Tilt: loose/binding, excessive drift, "chatters," leaks |
| | | Hydraulic Oil: level, dirty, leaks | | | Attachments: mounting, damaged, operation, leaks |
| | | Radiator: level, dirty, leaks | | | Battery Test (electric trucks only): indicator in green while holding full forward tilt |
| | | Fuel: level, leaks | | | Control Levers: loose/binding, freely return to neutral |
| | | Battery connections loose, charge, electrolyte low | | | Directional Control: loose/binding, find neutral OK |
| | | Covers/Sheet metal: damaged, missing | | | |
| | | Brakes: linkage, reservoir fluid level, leaks debris on floor | | | |

Explanation of problems marked above:

Prior to beginning your shift:

- Complete a Daily Inspection Sheet.
- Check for damage and maintenance issues, report any noted problems.
- Be sure that repairs are complete before you operate the truck.



CAUTION

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

General Safety Rules

Do's and Don'ts



Don't mix drugs or alcohol with your job.



Do watch for pedestrians.



Don't block safety or emergency equipment.

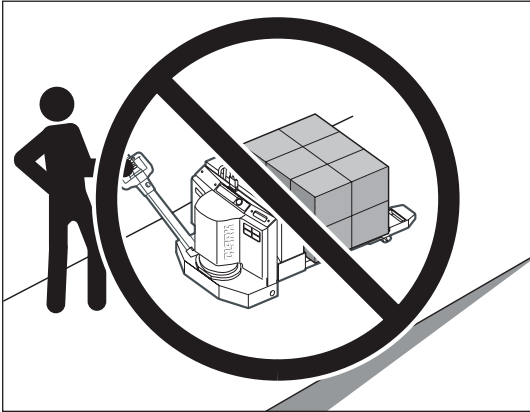
Do wear safety equipment when required.



Don't smoke in NO SMOKING areas.

General Safety Rules

No Riders



WARNING

Do not attempt to ride PWXE model trucks. The operator must always walk while operating the truck.

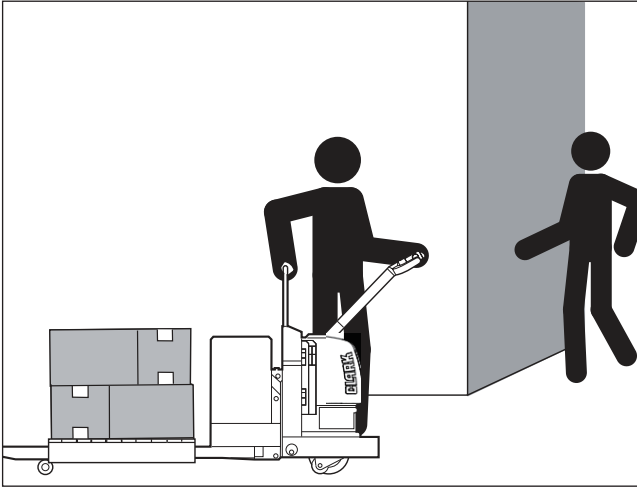


WARNING

Do not attempt to carry passengers on HWXE model trucks. The operator must be the only rider while operating the truck.

General Safety Rules

Pedestrians

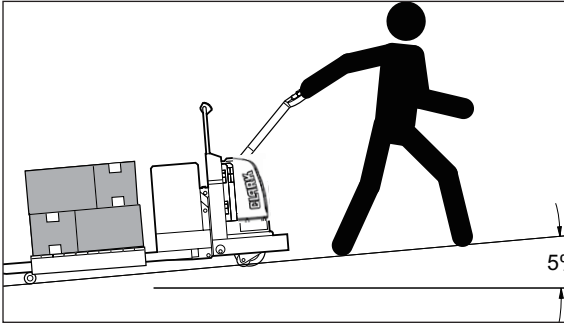


IMPORTANT!

- Watch where you are going.
- Look in the direction of travel.
- Pedestrians may use the same roadway you do.
- Sound your horn at all intersections or blind spots.
- Watch for people in your work area.
- Make people stand back, even when you are parked.

General Safety Rules

Grades

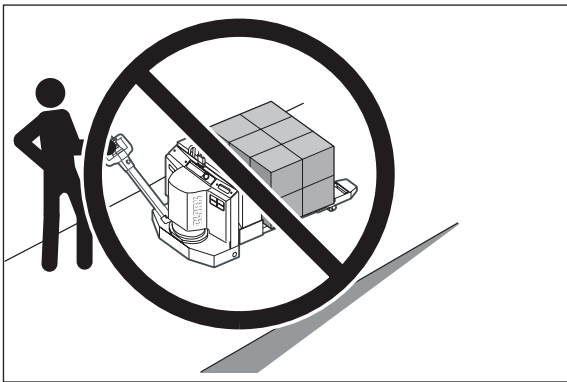


CAUTION

Always keep the forks pointed down-grade and in the raised position when operating on a grade (with or without a load).

Do NOT ride HWXE models while operating on a grade.

Your CLARK truck is designed to travel up a maximum grade of 5% with a capacity load.



WARNING

Do not turn when on a grade, either loaded or unloaded.

General Safety Rules

Travel



CAUTION

Always carry a load in the raised position.



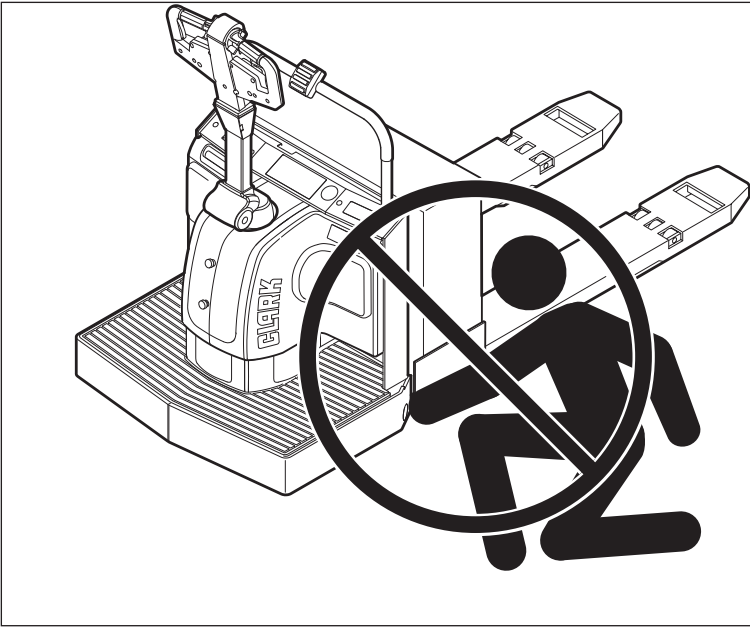
CAUTION

Always enter confined areas (semi-trailers, trucks, box-cars, elevators, etc.) load end first. This minimizes the maneuvering necessary to exit. If the load blocks your view while traveling in reverse, make sure the travel path is clear of people and obstructions.

Always take extra care in any confined areas. Think ahead when moving in and out of confined areas to allow enough room for yourself between any type of obstacle.

General Safety Rules

Pinch Points

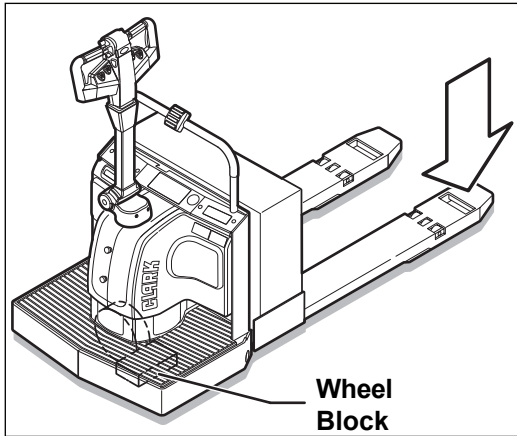


WARNING

Do not allow anyone to reach under or around the edge of the truck. Be especially careful not to place any portion of your body under the load forks. Keep your feet clear of the truck when traveling.

General Safety Rules

Parking



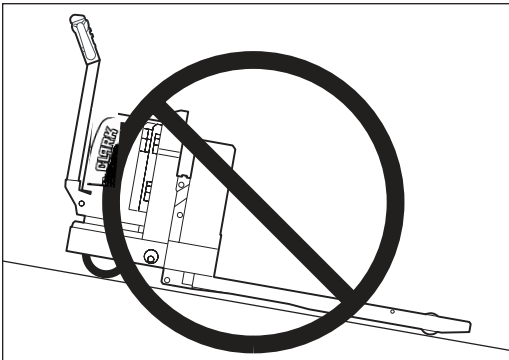
How to Safely Park Your Lift Truck:

- Lower forks to floor.
- Place control handle in full turn.
- Raise handle UP to apply brake.
- Turn key switch off and remove key.
- Unplug battery connector.
- Block drive wheel to prevent roll away.
- Turn key in to supervisor.



CAUTION

Do not obstruct traffic lanes or aisles. Park truck in designated areas only.



WARNING

Do not park on a grade.

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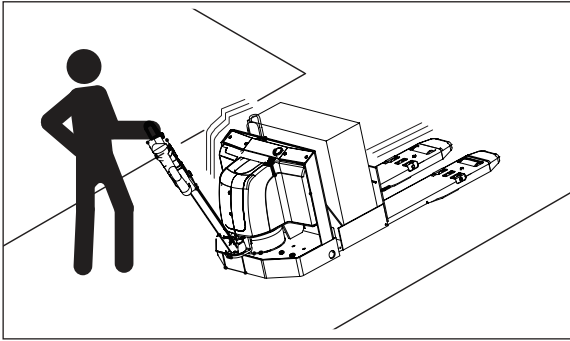


WARNING

This section describes some of the most common hazardous situations associated with the operation of a lift truck. The work area that you operate your lift truck may have hazards not described in this manual. Be alert to any situation that can result in serious injury and possible death.

Operating Hazards

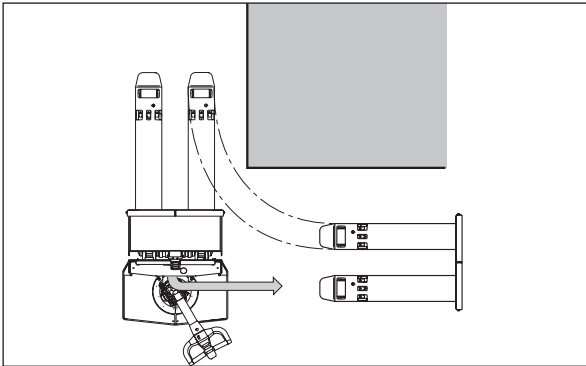
Fast Turns



WARNING

Slow down when making a turn. An empty truck can tip over more easily than a truck with a load.

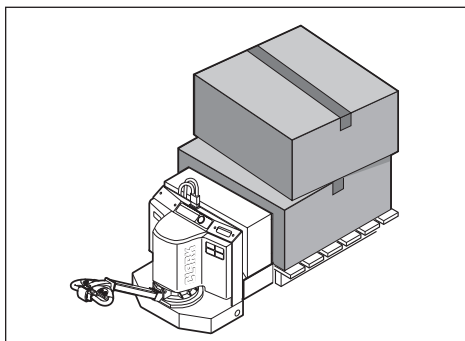
Cutting Corners



WARNING

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.

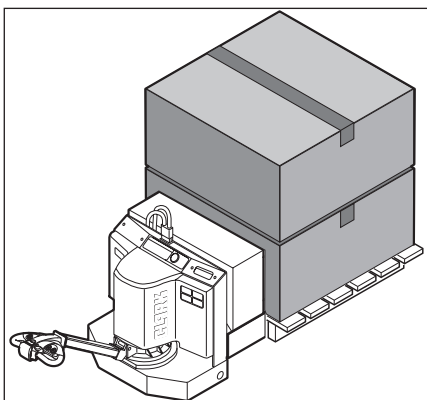
Loose Loads



WARNING

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

Long and Wide Loads

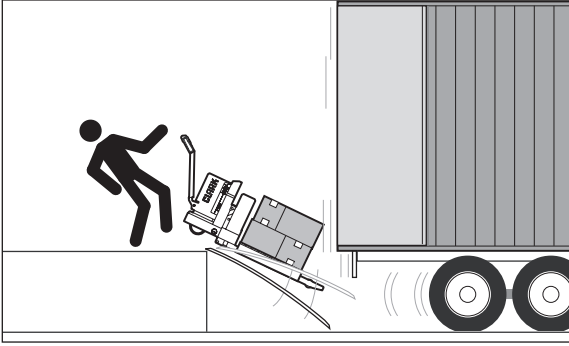


WARNING

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

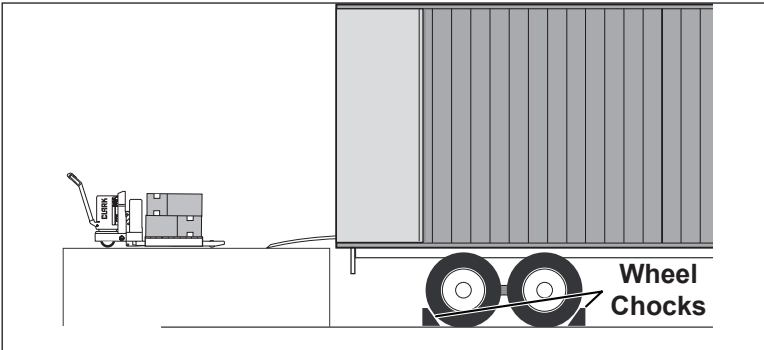
Operating Hazards

Dock or Trailer Drop-Offs



WARNING

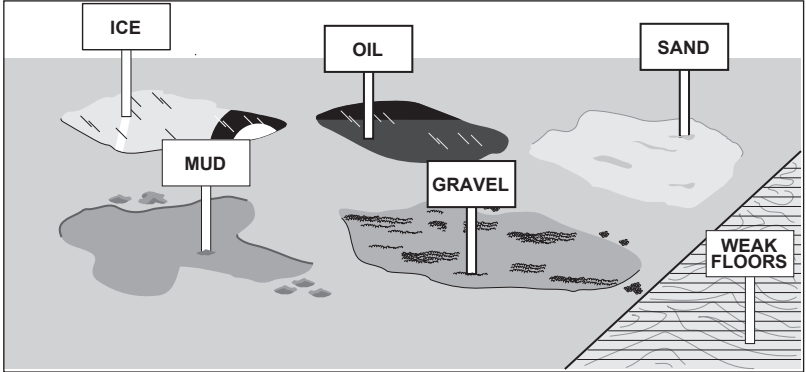
Alert the truck driver and make sure he/she has applied the trailer brakes and does not move the trailer while the lift truck is being operated! Always check that the wheel chocks have been properly installed. The impact of driving the lift truck in and out of the trailer may cause unexpected movement.



WARNING

Always install wheel chocks. Use trailer-to-dock locking systems, if available.

Debris on Floor



WARNING

Oil, ice, sand, mud, wood, gravel and other materials can cause the floor to become dangerous to operate on. Use care when crossing these hazards.

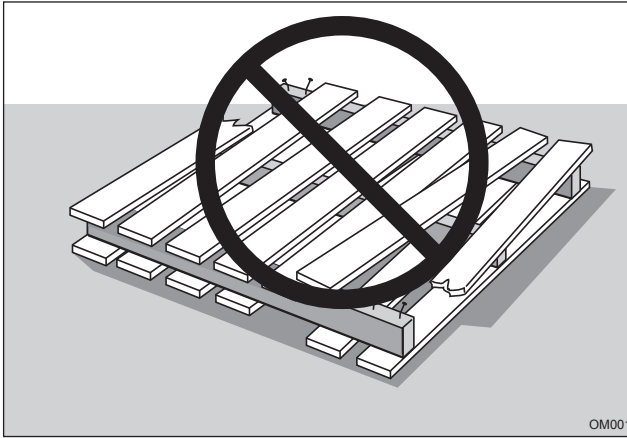


WARNING

Know the weight of your truck and the load, especially when using elevators. Know the capacity of the elevator you intend to use, DO NOT overload.

Operating Hazards

Damaged Pallets and Skids



WARNING

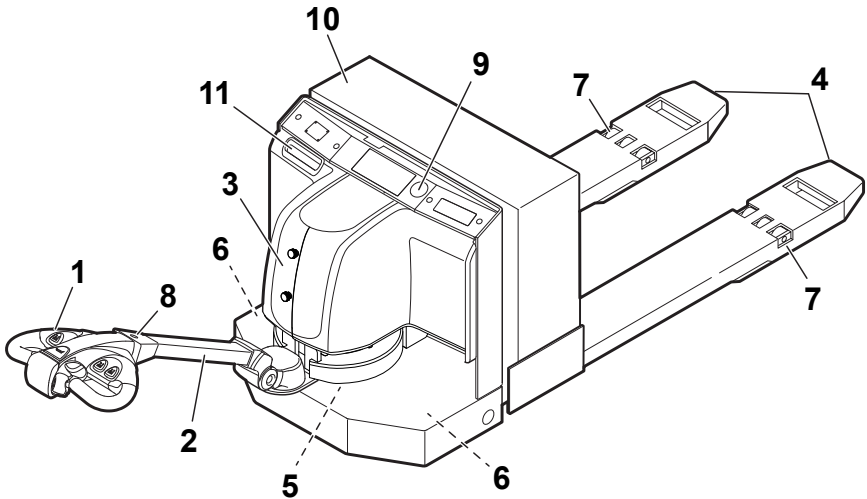
Do not move or store material on damaged or poorly maintained pallets and skids. Items can fall through or off them causing severe injury or death.

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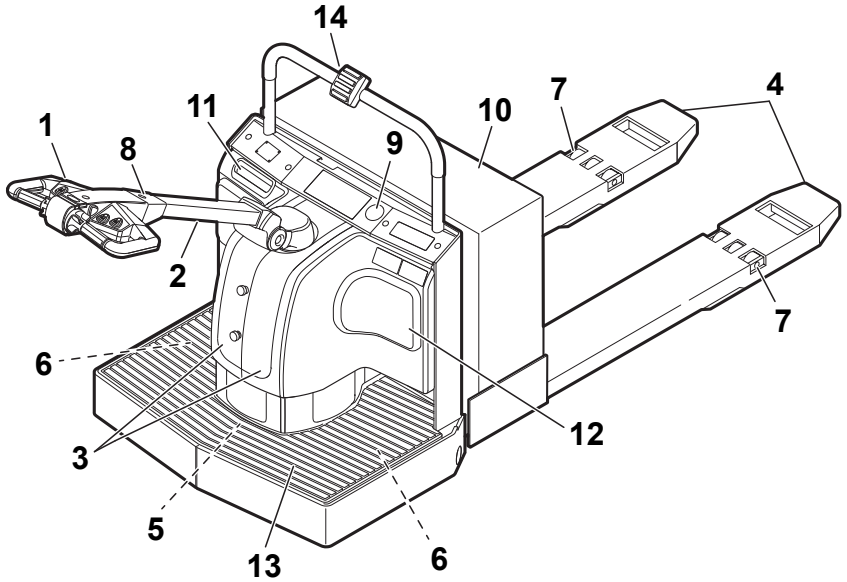
Know Your Truck

Component Location – PWXE



| Location | Component |
|----------|-------------------|
| 1 | Control Handle |
| 2 | Tiller Arm |
| 3 | Access Covers |
| 4 | Load Forks |
| 5 | Drive Wheel |
| 6 | Stabilizer Wheels |
| 7 | Load Wheels |
| 8 | Key Switch |
| 9 | Hour Meter |
| 10 | Battery |
| 11 | Operator's Manual |

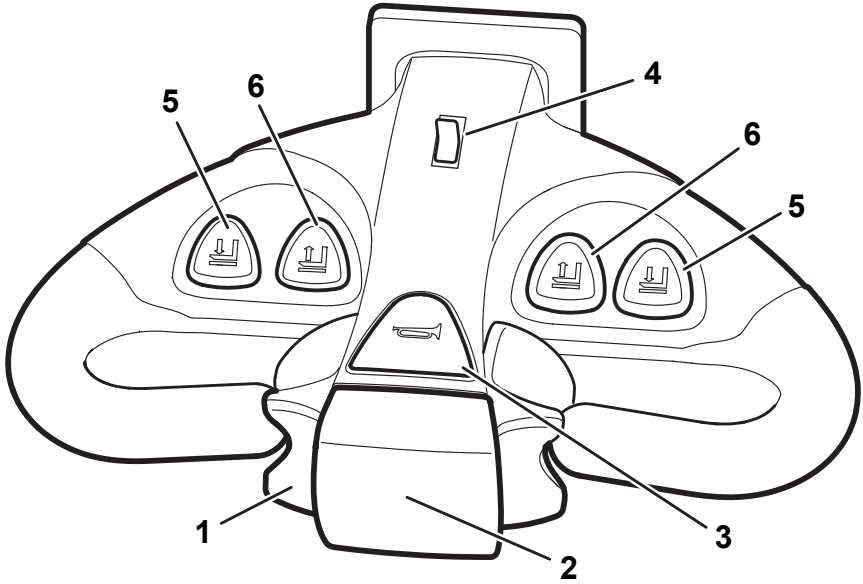
Component Location – HWXE



| Location | Component |
|----------|-------------------|
| 1 | Control Handle |
| 2 | Tiller Arm |
| 3 | Access Covers |
| 4 | Load Forks |
| 5 | Drive Wheel |
| 6 | Stabilizer Wheels |
| 7 | Load Wheels |
| 8 | Key Switch |
| 9 | Hour Meter |
| 10 | Battery |
| 11 | Operator's Manual |
| 12 | Knee Pads |
| 13 | Operator Mat |
| 14 | Hand Rail Control |

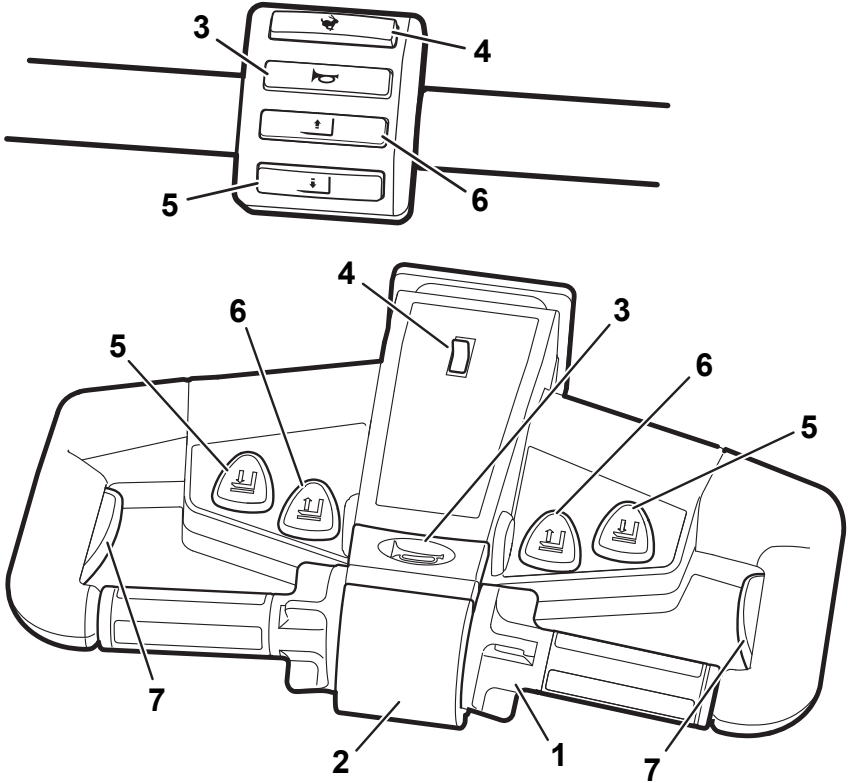
Know Your Truck

Operator Controls – PWXE



| Location | Control Handle |
|----------|-----------------------------|
| 1 | Butterfly Direction Control |
| 2 | Emergency Reverse Switch |
| 3 | Horn Button |
| 4 | Speed Control Button |
| 5 | Lower Control Button |
| 6 | Lift Control Button |

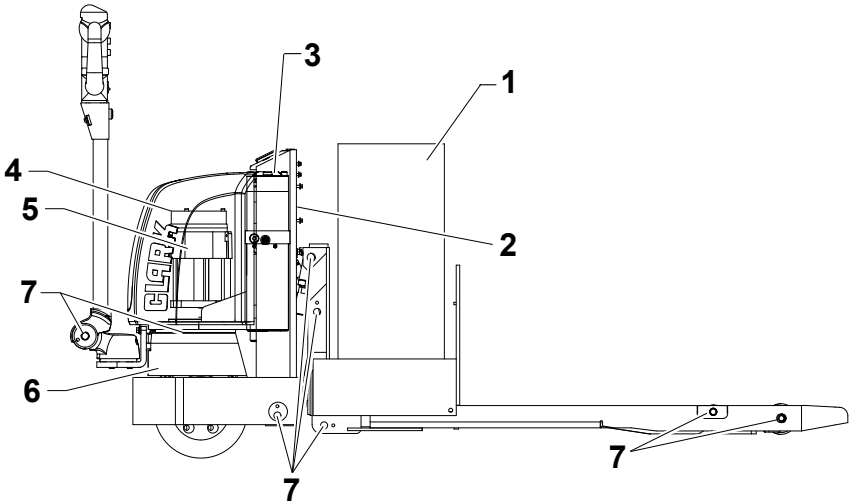
Operator Controls – HWXE



| Location | Control Handle | Hand Rail Control |
|----------|--------------------------|----------------------|
| 1 | Twist Direction Control | -- |
| 2 | Emergency Reverse Switch | -- |
| 3 | Horn Button | Horn Button |
| 4 | Speed Control Button | Speed Control Button |
| 5 | Lower Control Button | Lower Control Button |
| 6 | Lift Control Button | Lift Control Button |
| 7 | Coast Control (Optional) | -- |

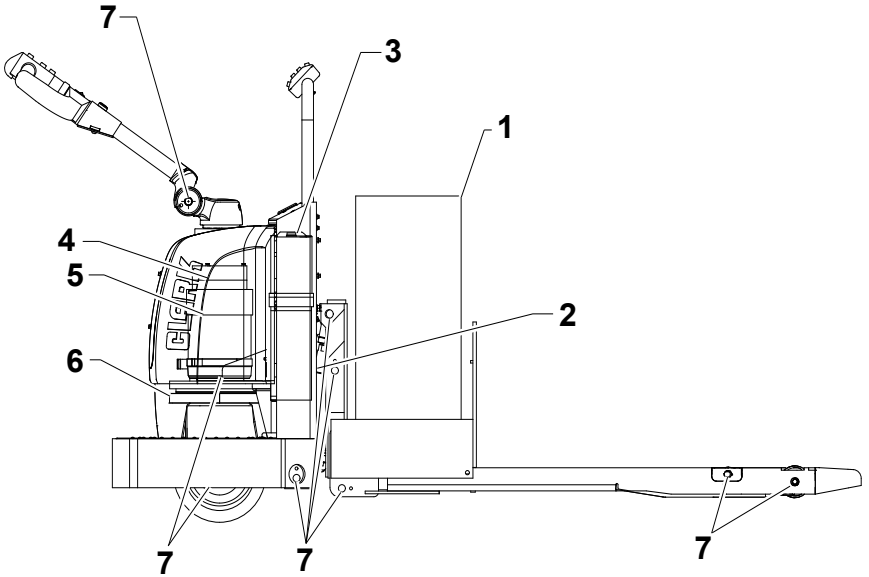
Know Your Truck

Maintenance Component Location – PWXE



| Location | Component |
|----------|----------------------|
| 1 | Battery |
| 2 | Traction Controller |
| 3 | Hydraulic Unit |
| 4 | Brake |
| 5 | Drive Motor |
| 6 | Drive Unit |
| 7 | Lubrication Fittings |

Maintenance Component Location – HWXE



| Location | Component |
|----------|----------------------|
| 1 | Battery |
| 2 | Traction Controller |
| 3 | Hydraulic Unit |
| 4 | Brake |
| 5 | Drive Motor |
| 6 | Drive Unit |
| 7 | Lubrication Fittings |

Know Your Truck

System Description

Control Handle

- Controls travel direction, speed, lift and lower, horn, braking and steering.
- Twist grip or butterfly-type speed control for left or right hand operation.
- Up or down brake application.
- Speed control (rabbit or turtle mode)
- Safety reversing switch on end of control handle.
- 180° rotation for maneuverability.
- Coast control (Optional - HWXE).

Hand Rail Control (HWXE)

- Provides control of lift, lower, horn 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.
- Electromagnetic (EM) type brake.
- Easy service accessibility.

Electrical

- 24-volt electrical system, UL-listed, type "E"
- Inverter type control features cool and quiet operation, cold switching for increased contactor tip life, and infinitely variable travel speed control.
- Drive motor features both class "F" insulation (induction motor) and hydraulic motor features class "H" insulation. They are both mounted vertically for easy service accessibility.

Hydraulic system

- Integrated 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 allows for fork 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 pivot points are easily greasable.
- Lift linkage provides 6" of lift.
- Spring-loaded stability casters.

Standard Equipment

- Standard features include: either ZAPI ACE-2 500A (HWXE) or ACE-2 400 A (PWXE) Control System, ZAPI MDI-CAN display battery indicator, 6" lift height, horn, key switch, 24-volt electrical system, cushion rubber drive tire, polycarbonate load wheels, 7" or 13.6" wide battery compartment, SB-175A power connector, high-visibility CLARK green with black finish.
- Additional HWXE features include: operator platform with rubber molded pad, operator comfort knee pads, and operator hand rail with center mounted control buttons.

Optional Equipment

- Optional equipment includes: coast control (HWXE only), load backrests, polyurethane drive tire, battery compartment rollers, and right hand exit gate, "EE" electrical system, cold storage protection, corrosion protection and dual load wheels.
- Fork options include: 22" fork width and 48", 60", 72", and 96" standard fork lengths. Also available are first-opening second pallet 84", 93", and 96" extended tip forks.

Know Your Truck

Data Plate

CLARK

1 []

MODEL []

TYPE [] 2

SERIAL NUMBER [] 3

ATTACHMENTS [] 4

CAPACITY: 5

MFH [] inch [] mm

[] LBS AT [] inch LC

[] KG AT [] mm LC

TRUCK WEIGHT: 6

WITHOUT BATTERY

[] LBS $\pm 5\%$ [] KG $\pm 5\%$

WITH MAXIMUM BATTERY

[] LBS $\pm 5\%$ [] KG $\pm 5\%$ 7

BATTERY WEIGHT:

MAXIMUM [] [] 8

MINIMUM [] []

BATTERY TYPE [] 8

VOLTS [] 9

MAX AMP HOURS [] 9

10 []

CLARK MATERIAL HANDLING CO., LEXINGTON, KY
FROM THE FACTORY THIS TRUCK MEETS
ANSI/ITSDF B56.1 & CANADIAN
STANDARD ICES-002

Know The Information On The Data Plate

1. Truck Model
2. Type of UL Protection
3. Truck Serial Number
4. Attachments
5. Truck Capacity
6. Truck Weight
7. Battery Weight
8. Battery Type
9. Battery Voltage
10. Battery Rating

IMPORTANT!

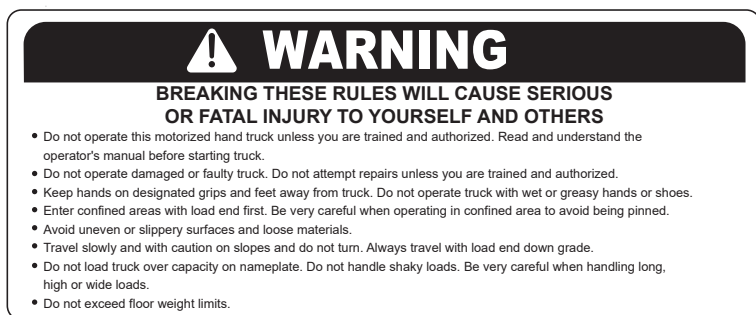
Anytime the truck is modified or attachments are added, this will affect the capacity of your lift truck. Contact your authorized CLARK dealer and request a new data plate showing the revised capacity.

Warning Decals

The following are examples of decals which give important information about operation and safety. OSHA and ANSI mandate that any missing or unreadable safety decals must be replaced. Become familiar with the decals on your truck and follow the instructions they describe. If you do not understand, ask your supervisor for assistance.

Operator Safety Warning Decal

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



- Do not operate this motorized hand truck unless you are trained and authorized. Read and understand the operator's manual before starting truck.
- Do not operate damaged or faulty truck.
- Keep hands on designated grip and feet away from truck. Do not operate truck with wet or greasy hands or shoes.
- Enter confined areas with load end first. Be very careful when operating in confined area to avoid being pinned.
- Avoid uneven or slippery surfaces and loose materials.
- Travel slowly and with caution on slopes and do not turn. Always travel with load end down grade.
- Do not load truck over capacity on nameplate. Do not handle shaky loads. Be very careful when handling long, high or wide loads.
- Do not exceed floor weight limits.

Know Your Truck

No Riding Decal (PWXE)

This safety decal is placed on the top cover to warn of the danger of injury by attempting to ride PWXE model trucks. Always walk when operating a PWXE model truck.



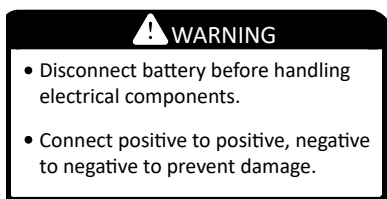
No Passengers Decal (HWXE)

This decal is placed on the top cover to warn of the danger when attempting to ride as a passenger on HWXE model trucks. The operator must be the only rider on HWXE model trucks.



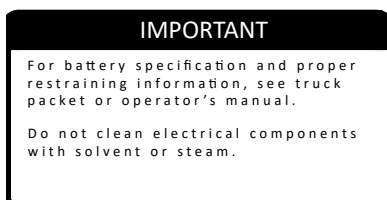
Battery Warning Decal

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



Battery Important Decal

This decal is located on the right cover to give important information on correct battery specification and cleaning electrical components.



Contents

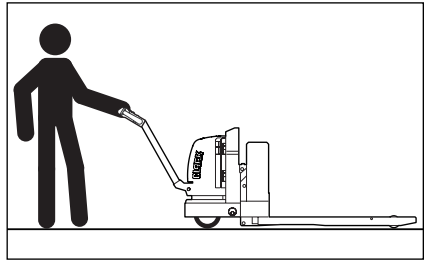
| | |
|---|-------------|
| Beginning Operation | 4.2 |
| Travel Control | 4.3 |
| Emergency Reversal Switch..... | 4.4 |
| Horn Button..... | 4.4 |
| Lift and Lower Controls | 4.5 |
| Braking | 4.6 |
| Plugging | 4.6 |
| Load Handling..... | 4.7 |
| Coast Control (Optional - HWXE)..... | 4.8 |
| Dash Display | 4.9 |
| Parking | 4.10 |

Operating Your Truck

Beginning Operation

Before Operating:

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



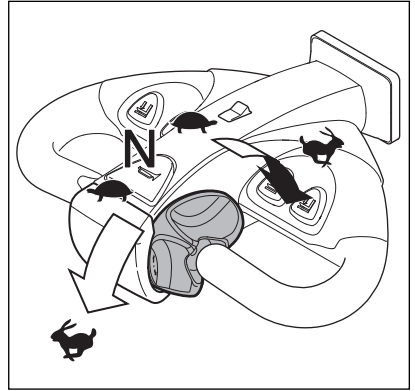
HWXE Models Only:

- Make sure truck is completely stopped before you get on or off.
- Keep one hand on control handle and other on the hand rail control.
- Keep your feet from the edge of the operator's platform while riding.
- Do not ride while traveling on inclines, picking up or depositing loads, or maneuvering in close quarters.

Travel Control

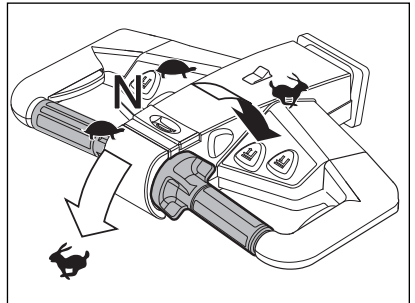
PWXE Travel Control

Rotate the direction/speed control as shown to travel FORWARD. Rotate the direction/speed in the opposite direction to travel in REVERSE. Reverse is defined as the direction in which the forks point. Truck speed increases the further you rotate the direction/speed control. When you release the control, it returns back to the NEUTRAL position.



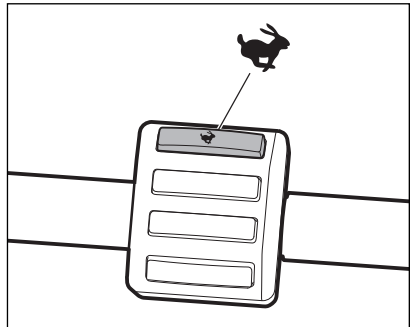
HWXE Travel Control

Rotate the direction/speed control as shown to travel FORWARD. Rotate the direction/speed in the opposite direction to travel in REVERSE. Reverse is defined as the direction in which the forks point. Truck speed increases the further you rotate the direction/speed control. When you release the control, it returns back to the NEUTRAL position.



HWXE Speed Control Button (Hand Rail)

When riding long distances, you can use the speed control button on the operator hand rail to provide additional speed (rabbit mode). Rotate the direction/speed control fully to the maximum speed position, then press the speed control button. The truck accelerates to a higher speed and holds there until the throttle is returned to NEUTRAL.

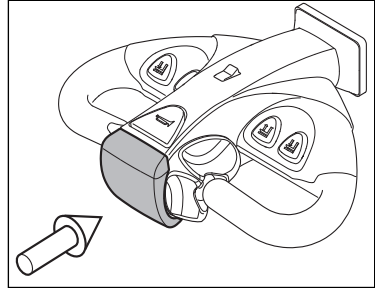


Operating Your Truck

Emergency Reversal Switch

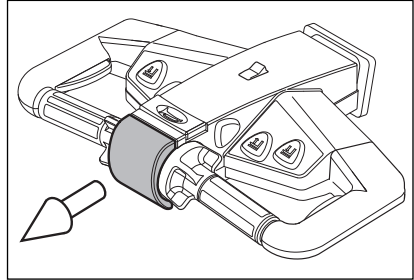
When the emergency reversal switch strikes an object or person (or is held in by the operator), the truck automatically REVERSES direction.

REVERSE is defined as the direction in which the forks point.



When the emergency reversal switch no longer contacts the person or object, the switch returns and the truck resumes normal operation.

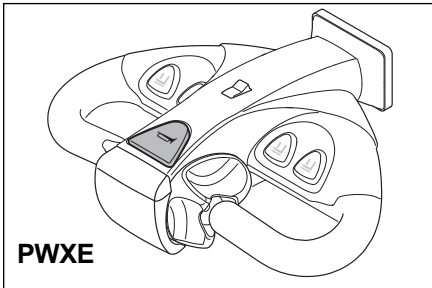
Emergency reversal is disabled when the brake is ON or when the truck is in high speed (rabbit) mode.



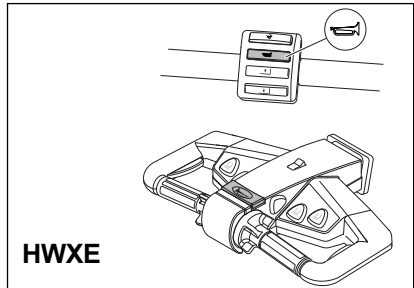
CAUTION

Be careful NOT to accidentally activate the Emergency Reversal Switch when pulling down the handle from the parked position.

Horn Button



PWXE

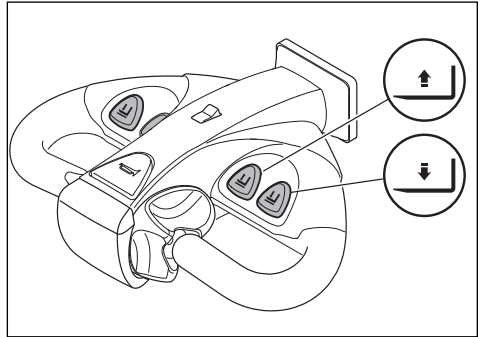


HWXE

Lift and Lower Controls

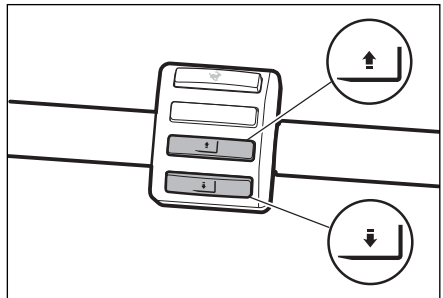
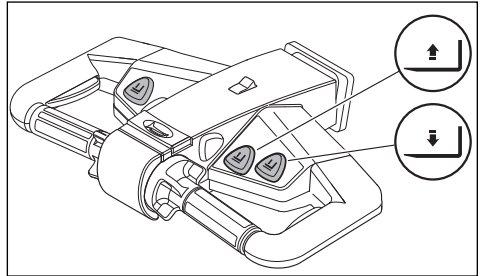
Lift and Lower Control (PWXE)

- Press the LIFT control button to raise the load forks.
- Press the LOWER control button to lower the load forks.



Lift and Lower Control (HWXE)

- Press the LIFT control button to raise the load forks.
- Press the LOWER control button to lower the load forks.

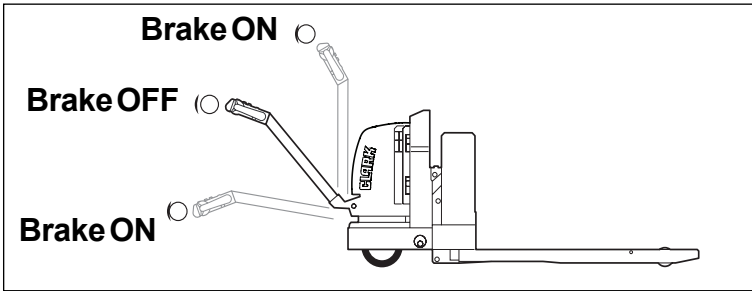


IMPORTANT!

Always travel with the load forks fully elevated to provide maximum ground clearance.

Operating Your Truck

Braking



Pushing the control handle to the UP position or pulling the control handle to the DOWN position applies the electromagnetic (EM) brake and shuts off the drive motor.

Lowering the control handle to the operating position disengages the brake.

To stop the truck during operation, release the travel control and push the control handle to the UP position to apply the EM brake. This will bring the truck to a smooth, controlled stop.

Plugging

CAUTION

Use care when plugging. Any sudden change of direction can cause the load to shift or fall off the forks.

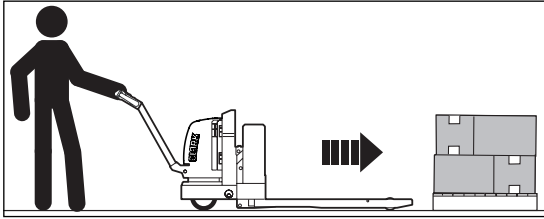
You can change direction and stop the truck without braking, by "plugging". As you are traveling, move the travel control to the opposite direction. The truck should slow to a smooth, controlled stop and then accelerate in the opposite direction.

You can control the plugging distance with the travel control (direction/speed). The further the direction speed control is rotated, the shorter the reversal distance.

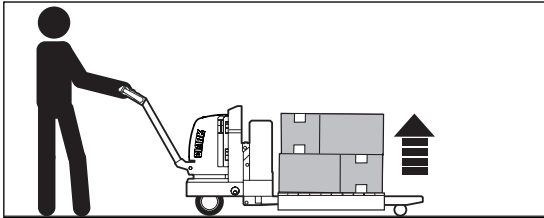
CAUTION

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

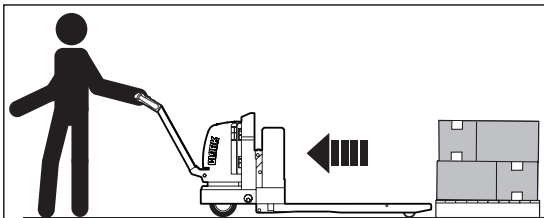
Load Handling



- Lower the forks completely before engaging the load.
- Center the forks with the load as you approach.
- Enter the load as far as possible.



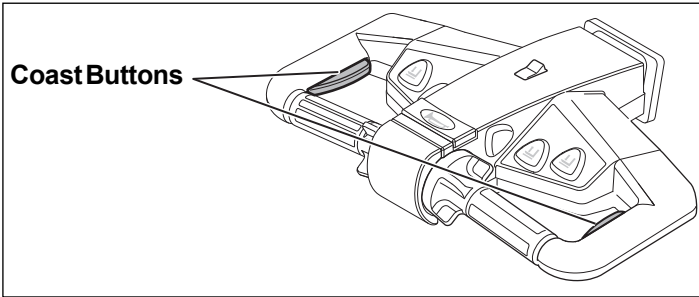
- Check that the lifting area is clear of obstructions before lifting the load.
- Raise the forks completely before the moving truck.
- Avoid operating hazards and observe general safety rules while moving load.



- Always approach load deposit areas squarely and cautiously.
- Use extra care 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 Your Truck

Coast Control (Optional - HWXE)



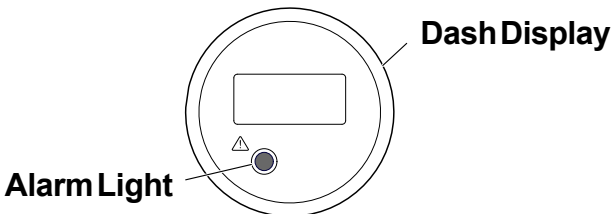
Coast control deactivates the electromagnetic brake and enables the truck to be "jogged" with the travel control and coasted for order picking. It is not necessary to move the control handle from the vertical position.

- **Activate Coast Control:** press both of the coast buttons at the same time and hold for two (2) seconds. The dash display alarm light will start flashing.
- **Deactivate Coast Control:** place the control arm in the vertical position and twist the directional control in the FORWARD direction. Hold both coast buttons for two (2) seconds. The dash display alarm light will turn OFF.



CAUTION

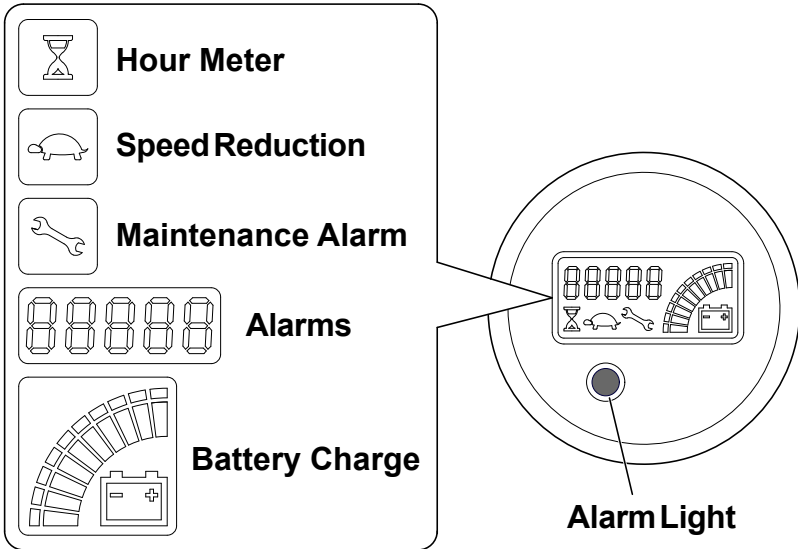
The electromagnetic brake is deactivated when the coast control function is in use.



NOTE

When the Coast Control function is activated, the red alarm light (LED) on the dash display will flash continuously. This indicates that coast is active and the brake is OFF.

Dash Display

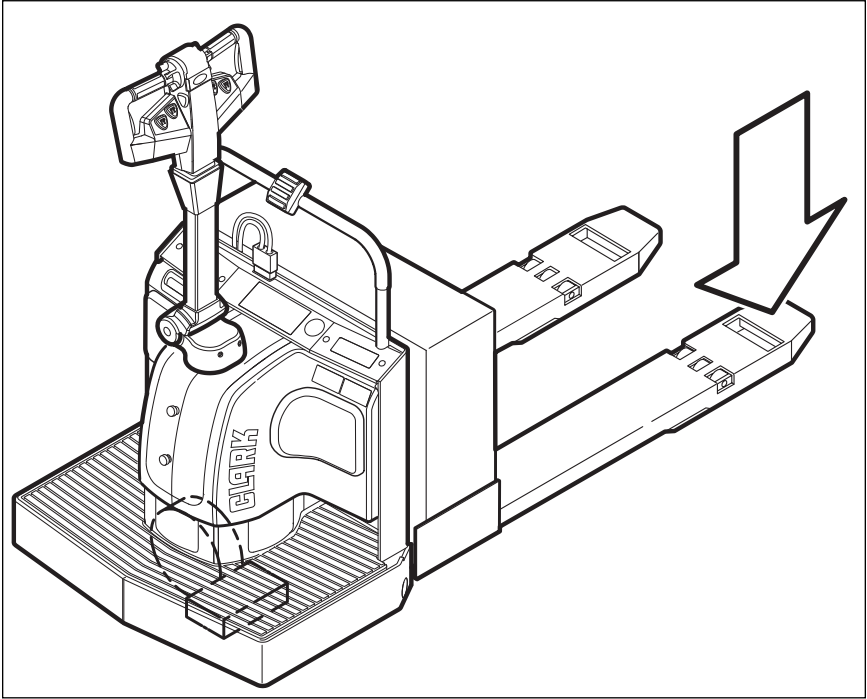


The dash display shows useful information to the operator, including the hour meter, when speed reduction is applied, scheduled maintenance alarm, fault codes, and the battery charge level. The alarm light is a red LED that will blink when an alarm is present.

- **Hour Meter:** amount of time (in hours) that the truck's traction controller has been in use.
- **Speed Reduction:** when this symbol (turtle) appears, the maximum speed and acceleration of the truck has been reduced to their programmed settings. This function is normally OFF.
- **Maintenance Alarm:** when this symbol (wrench) appears, then either a planned maintenance or alarm (fault) code has been triggered.
- **Alarms:** displays any alarm (fault) codes that are triggered due to malfunction.
- **Battery Charge:** indicates the level of remaining charge, each section represents 10% of total remaining battery capacity. When the battery charge reaches LOW, an alarm is triggered and truck function is reduced (limp mode).

Operating Your Truck

Parking



How to Safely Park Your Lift Truck:

1. Park the truck in a designated parking area.
2. Fully lower the forks.
3. Turn the control handle fully and raise the handle to the UP position.
4. Turn key switch to the OFF position and remove the key.
5. Unplug the battery connector.
6. Block the drive wheel to prevent accidental movement.
7. Remove the key from the keyswitch.

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| Check Horn | 5.3 |
| Check Emergency Reversal Switch..... | 5.3 |
| Check Travel Controls..... | 5.4 |
| Check Speed Control | 5.4 |
| Check Lift and Lower Controls | 5.5 |
| Check Braking | 5.6 |
| Check Coast Control (Optional - HWXE) | 5.6 |
| Check Wheels and Tires | 5.7 |
| Maintenance Issues..... | 5.7 |

IMPORTANT!

OSHA requires the operator to inspect the lift truck before beginning each shift to help ensure a safe operating condition. The following information identifies the important areas to check during these inspections.

Daily Inspection

Daily Inspection Sheet



Operator's Daily Checklist
Check each item before start of each shift Date: _____

Check one: Gas/LPG/Diesel Truck Electric Sit-down Electric Stand-up Electric Pallet

Truck Serial Number: _____ Operator: _____ Supervisor's OK: _____

Hour meter reading: _____

Check each of the following items before the start of each shift. Let your supervisor and/or maintenance department know of any problem. DO NOT OPERATE A FAULTY TRUCK. Your safety is at risk. After checking, mark each item accordingly. Explain below as necessary.

Check boxes as follows: OK NG, needs attention or repair. Circle problem and explain below.

| OK | NG | Visual Checks | OK | NG | Visual Checks |
|----|----|---|----|----|---|
| | | Tires/Wheels: wear, damage, nuts tight | | | Engine: runs rough, noisy, leaks |
| | | Head/Tail/Work Lights: damage, mounting, operation | | | Steering: loose/binding, leaks, operation |
| | | Clamp/Instrument(s): damage, operation | | | Service Brake: linkage loose/binding, stops OK, grab |
| | | Operator Restraint: damage, mounting, operation, oily, dirty | | | Parking Brake: loose/binding, operational, adjustment |
| | | Warning Decals/Operator's Manual: missing, not readable | | | Seat Brake (if equipped): loose/binding, operational, adjustment |
| | | Data Plate: not readable, missing | | | Horn: Operation |
| | | Overhead Guard: bent, cracked, loose, missing | | | Backup Alarm (if equipped): mounting, operation |
| | | Load Back Rest: bent, cracked, loose, missing | | | Warning Lights (if equipped): mounting, operation |
| | | Forks: bent, worn, stops OK | | | Lift/Lower: loose/binding, excessive drift, leaks |
| | | Engine Oil: level, dirty, leaks | | | Tilt: loose/binding, excessive drift, "chatters," leaks |
| | | Hydraulic Oil: level, dirty, leaks | | | Attachments: mounting, damaged, operation, leaks |
| | | Radiator: level, dirty, leaks | | | Battery Test (electric trucks only): indicator in green while holding full forward tilt |
| | | Fuel: level, leaks | | | Control Levers: loose/binding, freely return to neutral |
| | | Battery connections loose, charge, electrolyte low | | | Directional Control: loose/binding, fwd neutral OK |
| | | Covers/Sheet metal: damaged, missing | | | |
| | | Brakes: linkage, reservoir fluid level, leaks debris on floor | | | |

Explanation of problems marked above:

To assist in completing the OSHA required daily inspection, CLARK offers a prepared form called an **Operator's Daily Checklist**. These forms can be requested from your CLARK dealer. We recommend that you use this form (or similar) to keep a record of your daily inspections and truck condition.



CAUTION

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

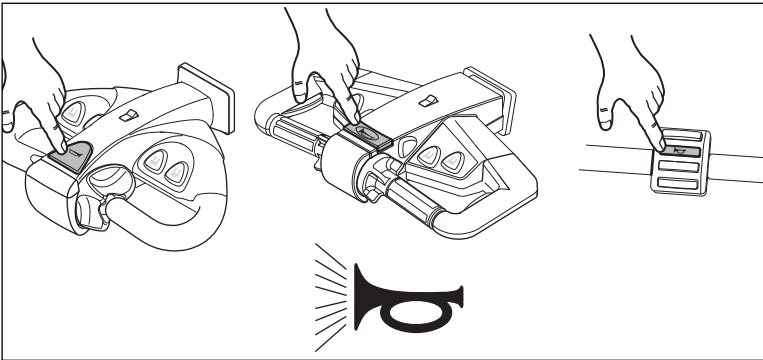
Daily Inspection



WARNING

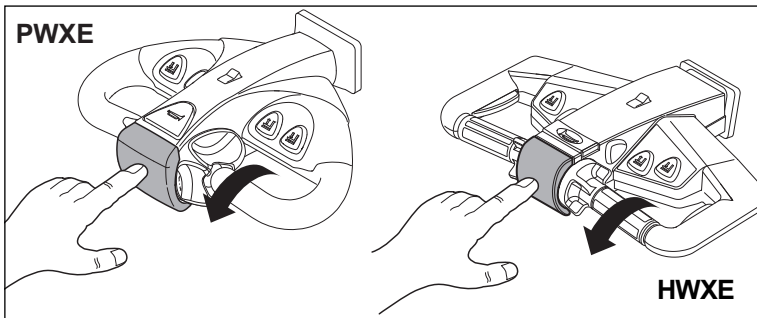
Perform the following operational checks in a safe area away from people, equipment, or other obstructions. Do not operate the truck if you find a problem. Remove the truck from service and report the problem.

Check Horn



Make sure the horn works properly.

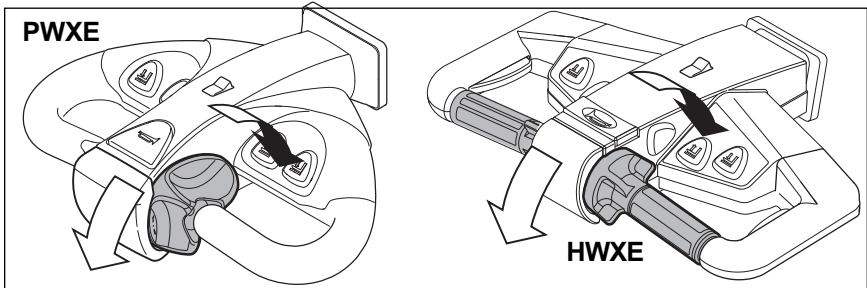
Check Emergency Reversal Switch



Position the control handle to release the brake. Then, with the truck in NEUTRAL or FORWARD, depress the emergency reversal switch. The truck should move away from you until you release the switch or apply the brake. The switch should depress and return easily on its own, without sticking.

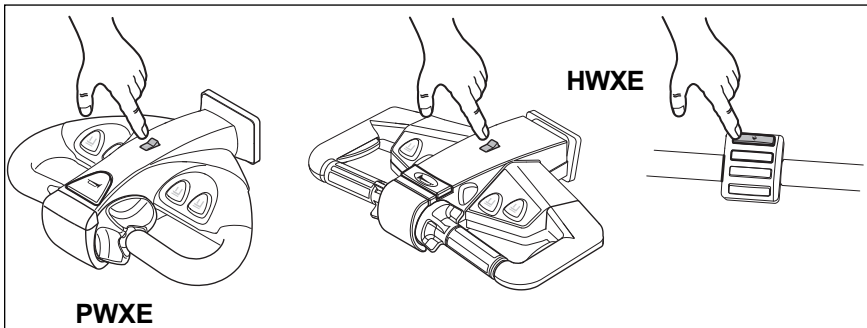
Daily Inspection

Check Travel Controls



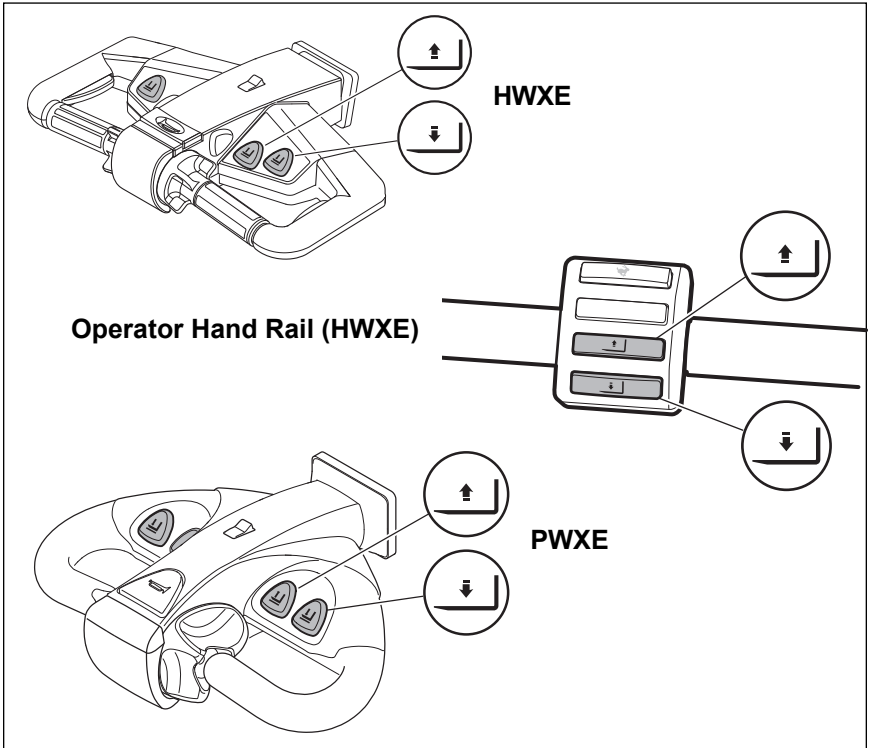
Operate truck in both FORWARD and REVERSE directions. The direction/speed controls must return to the NEUTRAL position when released.

Check Speed Control



- **HWXE:** while riding the truck, rotate the direction/speed control fully FORWARD. Depress the HIGH SPEED CONTROL button on the control handle. The truck goes into high speed (rabbit) mode and stays there until you return the throttle to NEUTRAL. Repeat this check using the operator hand rail button.
- **PWXE:** rotate the direction/speed control FORWARD. Select the speed control button on the control handle. The truck goes into lower speed (turtle) mode and stays there until you return the throttle to NEUTRAL.

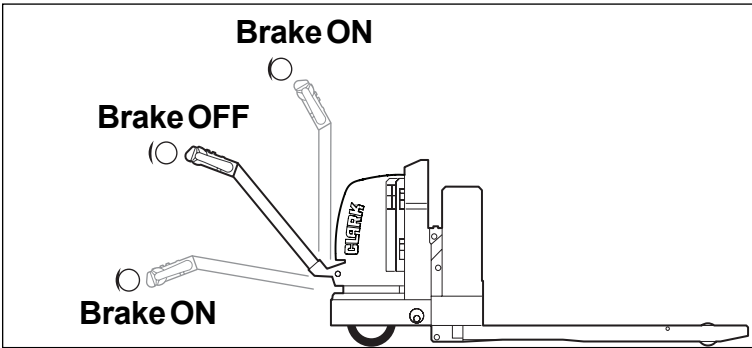
Check Lift and Lower Controls



Fully raise and lower the load forks. The control buttons should return to the OFF position when released. The hydraulic pump motor should stop when maximum lift height is reached. Check for any binding in the linkage, report any issues to your supervisor or service technician.

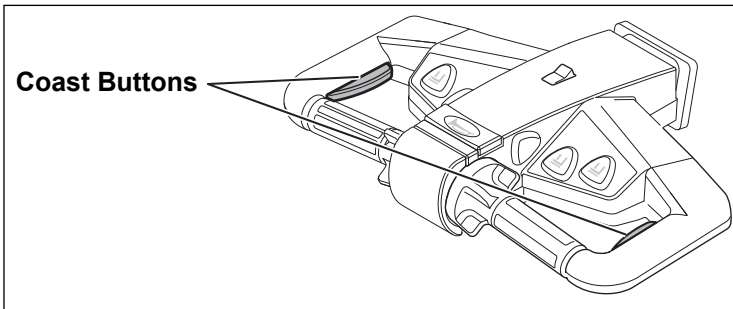
Daily Inspection

Check Braking



The brake should be applied with the control handle in the fully raised and fully lowered positions. The drive motor should stop when the brake is applied.

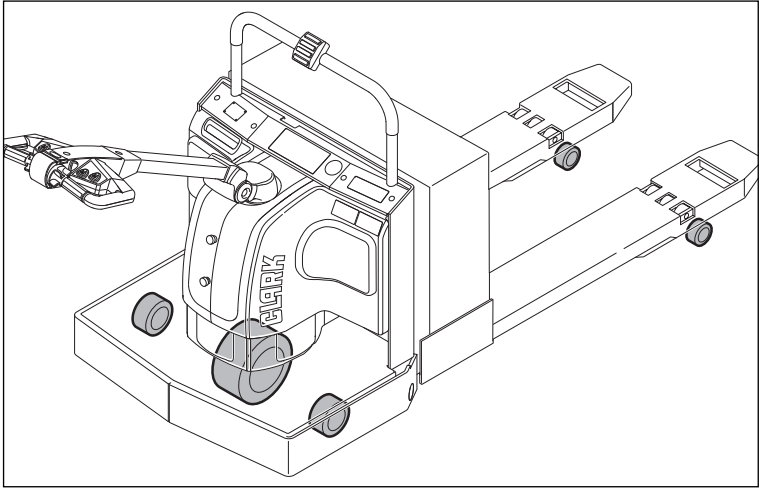
Check Coast Control (Optional - HWXE)



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

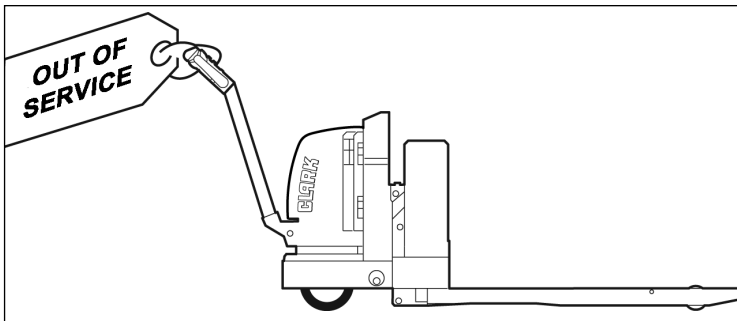
- **Activate Coast Control:** press both of the coast buttons at the same time and hold for two (2) seconds. The dash display alarm light will start flashing.
- **Deactivate Coast Control:** place the control arm in the vertical position and twist the directional control in the FORWARD direction. Hold both coast buttons for two (2) seconds. The dash display alarm light should turn OFF.

Check Wheels and Tires



Check for excessive wear, cracks, chunking, or bond failure. Remove any embedded objects. Check the wheel fasteners for proper torque. Check for loose or worn wheel bearings. Report any issues to your supervisor.

Maintenance Issues



Do not operate a truck that has a maintenance issue. Park the truck properly and remove the key. Place an "Out of Service" tag on the truck. Report any issues to your supervisor or certified technician.

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| Safe Maintenance Practices | 6.4 |
| Battery Maintenance Overview | 6.7 |
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| Battery Removal | 6.10 |
| Battery Care | 6.11 |
| Battery Life..... | 6.12 |
| Battery Installation | 6.12 |

IMPORTANT!

THIS SECTION IS FOR TRAINED SERVICE TECHNICIANS ONLY. Use the information in this section as a reference for determining your Planned Maintenance procedure. Complete maintenance and service information is located in your truck's Service Manual (available from your CLARK dealer).

Planned Maintenance

Typical Operating Conditions

The maintenance intervals are mainly determined by operating conditions. The intervals specified in the following table are for normal operation only. For severe or extreme operation, the maintenance intervals should be shortened accordingly. Contact your CLARK dealer for recommendations.

Normal Operation:

Standard, 8-10 hour material handling shift in a clean location with smooth level floors and clean air.

Severe Operation:

Extended operating hours or continuous usage, with ramps and/or rough floors.

Extreme Operation:

- Sandy or dusty locations.
- High temperature locations.
- Sudden temperature changes such as refrigeration facilities.

Planned Maintenance

| Planned Maintenance | Every 8-10 hours or daily | Every 50-250 hours or monthly | Every 450-500 hours or 3 months | Every 900-1000 hours or 6 months | Every 1800-2000 hours or 12 months |
|--|---------------------------|-------------------------------|---------------------------------|----------------------------------|------------------------------------|
| CHECK | | | | | |
| Obvious damage and leaks | ■ | | | | |
| Battery electrolyte level / specific gravity | ■ | | | | |
| Capacity plate, warning plates, decals | ■ | | | | |
| Tire and wheel condition | ■ | | | | |
| Wheel fastener torque | ■ | | | | |
| Hour meter and battery indicator | ■ | | | | |
| Brake operation | ■ | | | | |
| Horn operation | ■ | | | | |
| Emergency reversal switch operation | ■ | | | | |
| Direction and speed control operation | ■ | | | | |
| Lift and lower operation | ■ | | | | |
| Battery cable, terminals, receptacle | ■ | | | | |
| Torque on critical fasteners | | ■ | | | |
| Drive motor | | ■ | | | |
| Hydraulic unit and fluid level | | ■ | | | |
| Drive unit and fluid level | | ■ | | | |
| CLEAN | | | | | |
| Truck with compressed air | | ■ | | | |
| Battery terminals and receptacle | | ■ | | | |
| Drive motor air vents | | ■ | | | |
| LUBRICATE | | | | | |
| Apply grease at lubrication points | | ■ | | | |
| TEST | | | | | |
| Truck ground | | ■ | | | |
| Battery load | | ■ | | | |
| REPLACE | | | | | |
| Hydraulic unit fluid | | | | | ■ |
| Drive unit fluid | | | | | ■ |

Planned Maintenance

Safe Maintenance Practices

The following instructions have been prepared from current industry and government safety standards applicable to industrial truck operation and maintenance. They are listed here for the reference and safety of all workers during inspection and maintenance operations.

If you have any questions regarding the inspection or maintenance procedures for your lift truck, 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. Operation of the truck to check performance must be conducted in an authorized, safe, clear area.
8. Before Starting To Work On Truck:
 - Raise drive wheel free of floor or disconnect power source and use blocks or other positive truck positioning devices.
 - Put blocks under the load-engaging means, or chassis before working on them.
 - Disconnect battery before working on the electrical system.
 - When working on hydraulic system, be sure the battery is disconnected.

Planned Maintenance

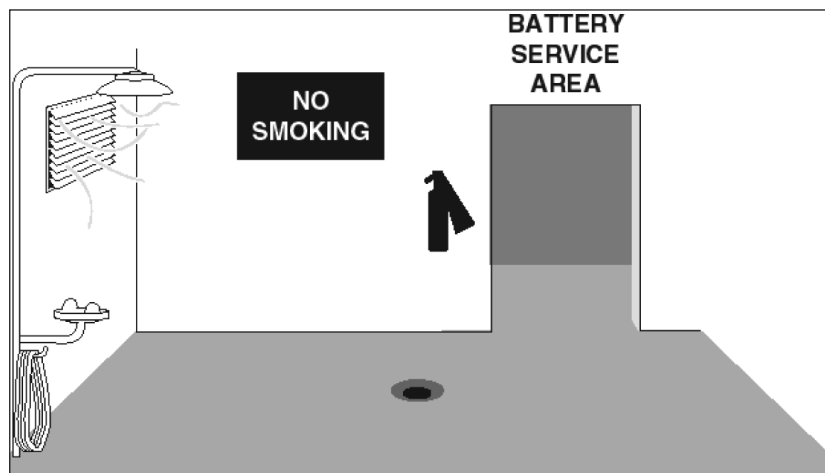
9. Before Starting to Drive the Truck:
 - Remove drive wheel chocks.
 - Plug-in battery connector.
 - Lower and turn control handle to operating position.
 - Insert key and turn to ON position.
 - Make sure path of travel is clear.
 - Check function of controls and emergency reversal switch.
 - Check function of brakes.
10. Before Leaving the Truck:
 - Park truck in designated area.
 - Fully lower forks.
 - Raise and turn control handle.
 - Turn key switch to OFF and remove key.
 - Unplug battery connector.
 - Block drive wheel.
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 leakage (drift) has not developed to the extent that it would create a hazard.
14. When working on the hydraulic system, make sure the battery is disconnected, the forks are fully lowered, and hydraulic pressure has been relieved in the hoses and tubing.

Planned Maintenance

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 devices, 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 parts!

Battery Maintenance Overview



Battery charging installations must be located in areas designated for that purpose. These areas must be kept free of all nonessential combustible materials.

Facilities must be provided for:

- Flushing spilled electrolyte.
- Fire protection.
- Protecting charging apparatus from damage by trucks.
- Adequate ventilation for dispersal of fumes from gassing batteries.
- When handling acid concentrates greater than 50% acid (above 1.400 specific gravity), an eye wash fountain must be provided.

A conveyor, overhead hoist, or equivalent material handling equipment must be provided for handling batteries.

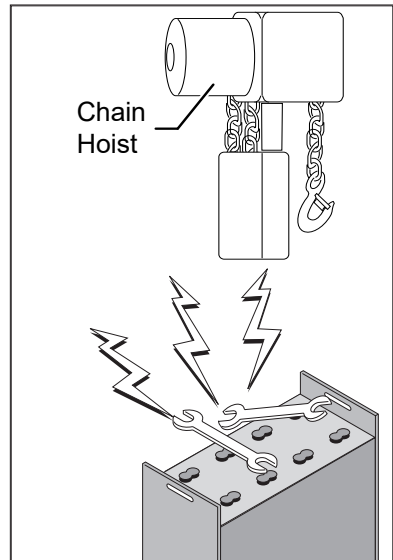
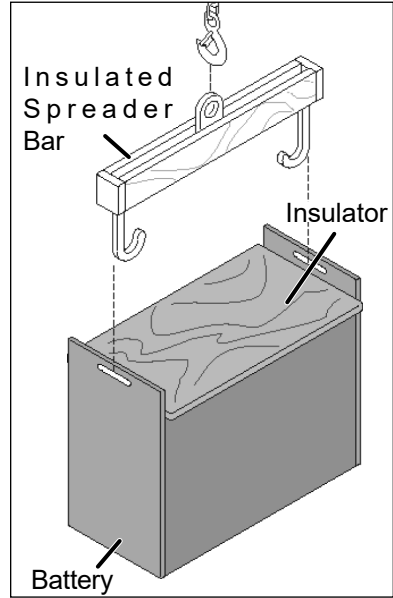
IMPORTANT!

Electric truck batteries are heavy and awkward to handle. They are filled with a hazardous chemical solution. On charge, they give off hydrogen which, in certain concentrations, is explosive. Before you remove, service, or install a truck battery, carefully read the following recommendations and instructions.

Planned Maintenance

Battery Handling

1. Only remove or service storage batteries in an area designated for this purpose.
2. Make sure the battery service area has provisions to flush and neutralize spills, ventilate fumes from gassing batteries, and for fire protection.
3. This area should be equipped with material handling tools designed for removing and replacing batteries, including a conveyor or overhead hoist. Use lift hooks that have safety latches.
4. Always use a special lifting device, such as an insulated spreader bar, to attach the hoist to the battery. The width of the spreader bar must be the same as the lifting eyes of the battery, to prevent damage to the battery. Make sure the lift hooks are the correct size to fit the lifting eyes of the battery.
5. If the battery does not have a cover of its own or has exposed terminals and connectors, cover the top with an insulating (non-conductive) material, such as a sheet of plywood or heavy cardboard, prior to attaching the lifting device.
6. Chain hoists or power battery hoists must be equipped with load chain containers to accumulate the excess lifting chain.
7. Keep all tools and other metal objects away from terminals.



Battery Charging

1. Persons maintaining storage batteries must wear protective clothing such as face shield, long sleeves, and gloves.
2. Hydrogen emissions from charging batteries are flammable. No smoking is allowed in the charging area. Do not check the electrolyte level with an open flame. Do not allow open flame, sparks, or electric arcs in battery charging area. 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 open (clean) and functioning. The battery (or compartment) cover(s) must be open to dissipate heat and gas.
3. If batteries discharge rapidly during normal operation or do not charge to the correct specifications, contact a qualified battery service technician to check the battery for you. Do not add electrolyte or attempt to service the battery.



WARNING

Battery service must be done by trained and authorized personnel. Battery acid can cause severe burns and injury.



WARNING

The battery contains corrosive sulfuric acid that can cause injury. If acid contacts your eyes or skin, flush immediately with water and get medical assistance.



WARNING

The battery emits explosive hydrogen gas. Do not smoke or have open flames or sparks near battery charging areas or batteries. An explosion can occur causing severe injury or death.

Planned Maintenance

Battery Removal

1. Check the designated service and charging area for fire protection, and be sure all sources of ignition are cleared from the area. Do not smoke. Make sure all service equipment in the area is working properly.
2. If the battery is to be serviced, make sure there are provisions to flush and neutralize any spills and to disperse (ventilate) fumes from gassing batteries on charge. And, be sure there are provisions for handling electrolyte.
3. Before attempting to remove or charge a storage battery, the truck should be positioned in the designated battery service area and the parking brake applied so the truck cannot move.
4. Disconnect the battery connector.

 **WARNING**

- Disconnect battery before handling electrical components.
- Connect positive to positive, negative to negative to prevent damage.

5. If the battery to be handled is not equipped with its own insulated cover, cover the battery with a non-conductive (insulating) material. Use a material such as plywood or heavy cardboard, before attaching the lifting device.
6. Use an approved lifting device with an insulated spreader bar, to remove and transport a truck battery. Be sure the hoist and lifting chains are equipped with safety hooks.
7. Remove the battery and move it to a safe, secure storage location. Store batteries either on an approved battery rack or on a wooden pallet.

Battery Care

Battery Cleaning

Never wash the battery when it is in the truck. The easiest and most satisfactory method of cleaning a battery is to wash it occasionally with a low-pressure cold water spray. The top can also be cleaned using a solution of baking soda and water (combine 1/2 lb of baking soda with 1 gallon of clean water, then stir to dissolve) and rinsed with clean water. It is good practice to have this solution in a battery room at all times.

IMPORTANT!

During cleaning, the battery vent caps must be securely installed.

Refer to the battery manufacturer or supplier for their recommended battery maintenance and care procedures.

Use CLARK Battery Saver Oil, to clean and protect the your truck's battery.

New Truck Batteries

Apply a light coat of CLARK Battery Saver Oil to entire surface of battery. Allow to sit for approximately 30 seconds, then wipe thoroughly with a cloth or rag. A chemical reaction will dissolve rust and corrosion. After cleaning, apply a second coat for corrosion protection. This will prevent the battery terminals and cable connections from corroding.

Battery Service Records

Keep a record of battery service and maintenance to get the best service life from your battery and truck. Select a pilot cell, take readings of specific gravity and temperature before and after charging, and record the readings with the date. It is best to change the location of the pilot cell occasionally to distribute any electrolyte loss over the battery.

Every 2 or 3 months, take complete battery readings (specific gravity, temperature, and voltage) and make a record of them.

Planned Maintenance

Battery Life

To maximize battery life:

1. Follow normal battery maintenance procedures, re-charging before 80% discharged and with periodic equalizing charges.
2. Don't add acid to a battery. Only a qualified battery technician should determine if this maintenance is necessary.
3. Lift battery only with a correctly-constructed lifting device that will not put pressure on the battery case.
4. Keep open flames, tools, and metal objects away from the top of battery to prevent short circuits and explosions.
5. Do not overcharge.
6. Check the battery electrolyte level after each charging. Add water if the top of the separator or plates are visible. Do not overfill!
7. Keep the battery clean and dry. Clean as needed.
8. Keep battery service records.

Battery Installation

1. Use only a lead-acid battery with the voltage and ampere-hour rating specified for the truck.
2. When changing batteries on battery electric trucks, replacement batteries must be of the service weight that falls within the minimum and maximum range specified on the truck data plate.
3. Handle battery only with approved lifting device.
4. Install the battery correctly in the truck and secure it in position.

IMPORTANT!

Some trucks are equipped with battery stops or blocks. Others do not require them. If the truck being serviced has battery stops or blocks, be sure none are missing or damaged. Replace them as necessary. If they are an adjustable type, be sure they are correctly adjusted and tightened.

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Storage and Towing

Storing the Truck

Perform the following actions if the truck is not used for one (1) week or longer.

Battery:

Fully charge the battery and perform routing maintenance of the battery.

Charge the battery every three (3) months and check the electrolyte level.

Hydraulic System:

Replace the hydraulic oil when storing the truck for one (1) year or longer.

Drive Unit:

Replace the drive unit gear oil when storing the truck for one (1) year or longer.

Drive and Load Wheels:

Support the driving section of the truck with blocks to prevent extend loading on the drive and load wheels when storing for longer than one (1) week.

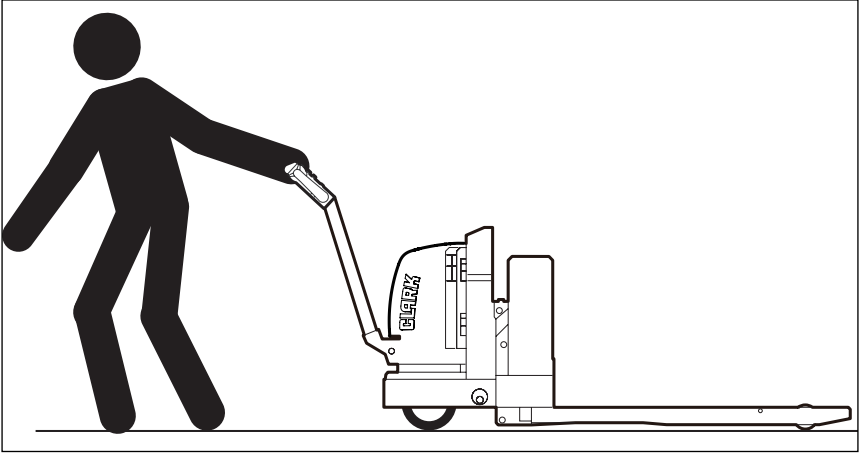
Returning Truck to Service:

Perform the following after storing for an extended period:

- Truck damage or deterioration
- Wheels
- Horn operation
- Brake operation
- Control handle operation
- Lift and lower operation
- Speed and directional control operation
- Apply grease to lubrication points
- Battery electrolyte level and charging rate
- Battery connector, terminals, and receptacle

Storage and Towing

Towing



IMPORTANT!
Pull a disabled truck by hand to a service area.



CAUTION
Do not pull or push the truck with another vehicle.

Contents

Specifications 8.2

Specifications

Specifications

| Model | Rated Load Capacity |
|--------------|----------------------------|
| PWXE 30 | 6000 lb (2720 kg) |
| PWXE 40 | 8000 lb (3630 kg) |
| HWXE 30 | 6000 lb (2720 kg) |
| HWXE 40 | 8000 lb (3630 kg) |

| Service Weight (with minimum battery) | | |
|--|---------------------------------|---|
| Model | Battery Compartment Size | Service Weight (w/ min. battery) |
| PWXE 30 | 7" | 1370 lb (622 kg) |
| PWXE 30 | 13.6" | 1780 lb (808 kg) |
| PWXE 40 | 7" | 1440 lb (654 kg) |
| PWXE 40 | 13.6" | 1850 lb (840 kg) |
| HWXE 30 | 7" | 1800 lb (817 kg) |
| HWXE 30 | 13.6" | 2030 lb (921 kg) |
| HWXE 40 | 7" | 1860 lb (844 kg) |
| HWXE 40 | 13.6" | 2280 lb (1035 kg) |

Specifications

Battery (24 volt, lead acid, 12-cell)

| Minimum Weight | Capacity (6-hour rate max.) | Battery Compartment Size |
|------------------|--------------------------------|-----------------------------|
| 456 lbs (207 kg) | 10.8 kWh | 7" |
| 821 lbs (373 kg) | 21.5 kWh | 13.6" |

Specific Gravity

| Minimum | Fully Charged |
|---------|------------------|
| 1.160 | 1.315 |

Recommended Fluids

| Component | Hydraulic Unit | Drive Unit | Chassis |
|-----------|--|------------------------------|--|
| Type | AW ISO32 (CLARK MS-68) Hydraulic Fluid | 80W-90 (GL-5) Gear Oil | NLGI Grade #2 General Purpose Grease (CLARK MS-107C) |
| Capacity | 1.5 qt (1.42 L) | 1.91 qt (1.8 L) | N/A |

Scan Link Below



Safety Starts with You!



OM-748

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Company**

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Lexington KY 40510**

Additional copies of this manual are available from your CLARK dealer.