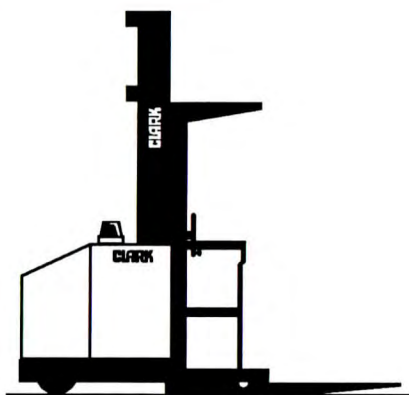


---

# Operator's Manual

Do not remove this manual  
from the truck.



OP15B

---

# CLARK

Book No. 2779293  
OM-576

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 \_\_\_\_\_  
Truck Gross Weight, Loaded w/ Rated Load \_\_\_\_\_  
Special Equipment or Attachments \_\_\_\_\_

### IMPORTANT

**Do not expose this manual to hot water or steam.**

The following warnings are provided pursuant to  
California Health & Safety Code Sections 25249.5 et. seq:



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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 Safety Standard for Powered Industrial Trucks. Also, all 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, flashing red light, as standard equipment.

ANSI B56.1 is the standard for lift truck operation, which includes rules about operation, selection, training, supervision and maintenance. We suggest you read this standard and make it available for your operators and their supervisors. If you do not have this standard, 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.

Safe, productive operation of a lift truck calls for both skill and knowledge from 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 needed, 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 limits, and see that it is kept in a safe operating condition.

## 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.

Prior to driving a lift truck, it must be examined by the user to be sure it is safe to operate. This is a requirement of OSHA & ANSI. The importance of such a procedure is stressed 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 help you with this examination.

## **User Daily Inspection - Safety and Operating Checks**

### **Planned Maintenance Program**

Besides, the daily user inspection, Clark recommends that a planned maintenance and safety inspection program (PM) be done by a trained and authorized mechanic regularly. 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.

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 ready to help you with a Planned Maintenance Program. They have trained service personnel who know your truck and can keep it operating safely and efficiently. If you will perform your own maintenance or repairs, contact your Clark dealer for copies of the appropriate service and parts literature. Always use genuine Clark parts for maximum service life.

This manual (stored in the front cover pocket) should remain with the truck at all times. It is intended as a ready reference for anyone who may operate or service the truck. If the truck you operate is not equipped with this manual, ask your supervisor to get 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 more information should you need it. He is glad to help you.

## About This Manual

This manual is to provide 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 meet 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 help 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, and 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 or cause personal injury or possible death. Please refer to the following (Safety Signs and Safety Messages) pages for further definition and explanation of the messages.

## 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 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's safety rules, regulations and procedures. Accidents can be avoided by recognizing dangerous procedures or situations before they happen.

**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 needed to clarify procedures or identify components on the truck.

### **IMPORTANT**

This message is used when more attention is needed for proper operation or maintenance of the truck.

## Safety Signs and Safety Messages

### **CAUTION:**

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

### **WARNING:**

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

### **DANGER:**

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

## Safety Signs and Safety Messages

**For safe operation only authorized and trained personnel should be allowed to operate this truck.**

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 do specific jobs. Their function and operation are unlike a car or ordinary truck. They need specific instructions and rules for safe operation and maintenance.

Safe operation of lift trucks are 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

CLARK wants you to know 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. Correct operating procedures are shown and explained. Illustrations and important safety messages are included for clear understanding. And 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 lead to 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.

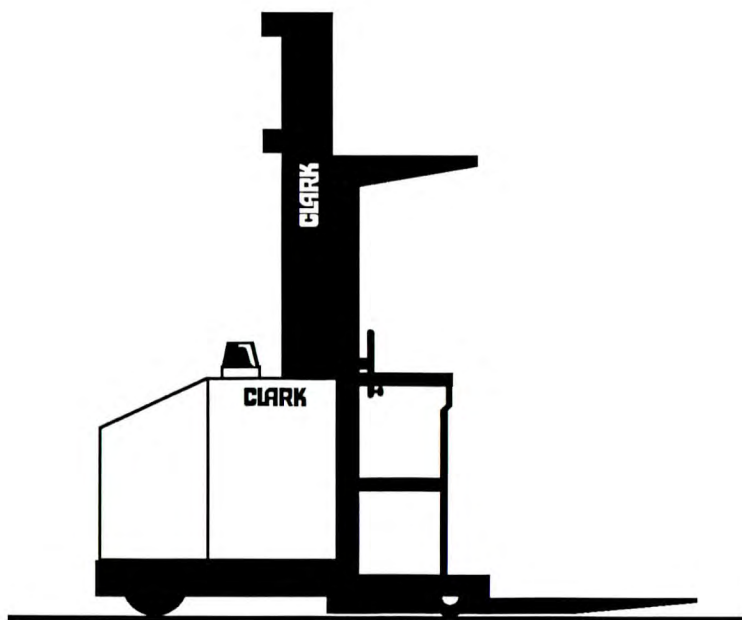
CLARK lift trucks are built to take hard work, but not abuse. They are built to be dependable, but they are only as safe and efficient as the operator and the persons responsible for maintaining them. Do not make any repairs to this truck unless you have been trained in lift truck repair procedures and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

Notice — The descriptions and specifications 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.

## 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.



The Clark OP15B provides manual access to either side of narrow high-rise, high-density storage aisles. Its combined load capacity, lift height, speed and maneuverability leads to best performance at a maximum fork height of 24 feet. Simultaneous horizontal and vertical travel allows efficient transport to storage destinations.

(

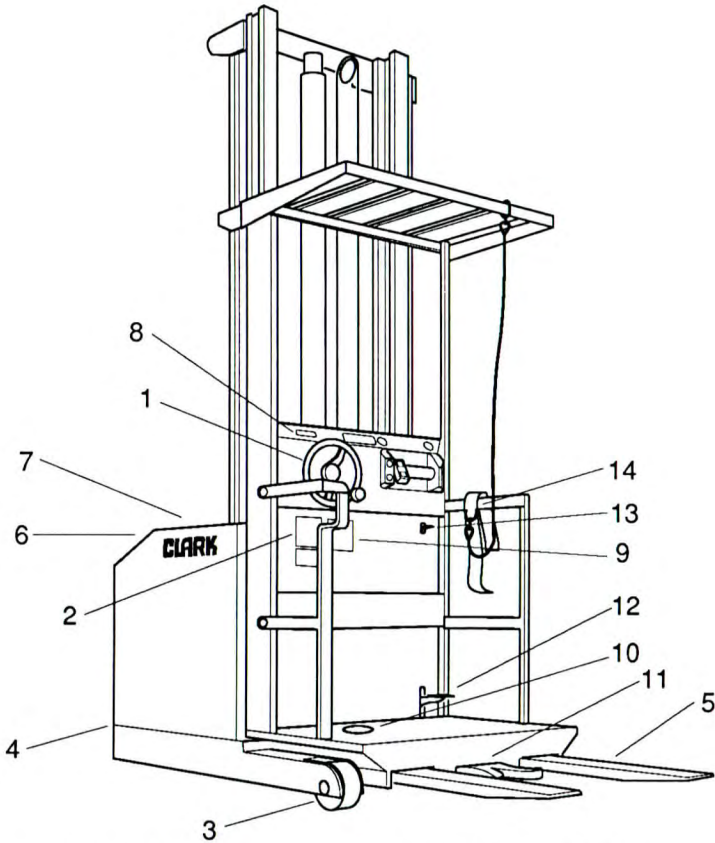


# 1 Know Your Truck

- 1.2 Component Location
- 1.3 Operator's Controls
- 1.4 Maintenance Component Location
- 1.5 System Description
- 1.7 Nameplate Description
- 1.8 Warning Decals

# Know Your Truck

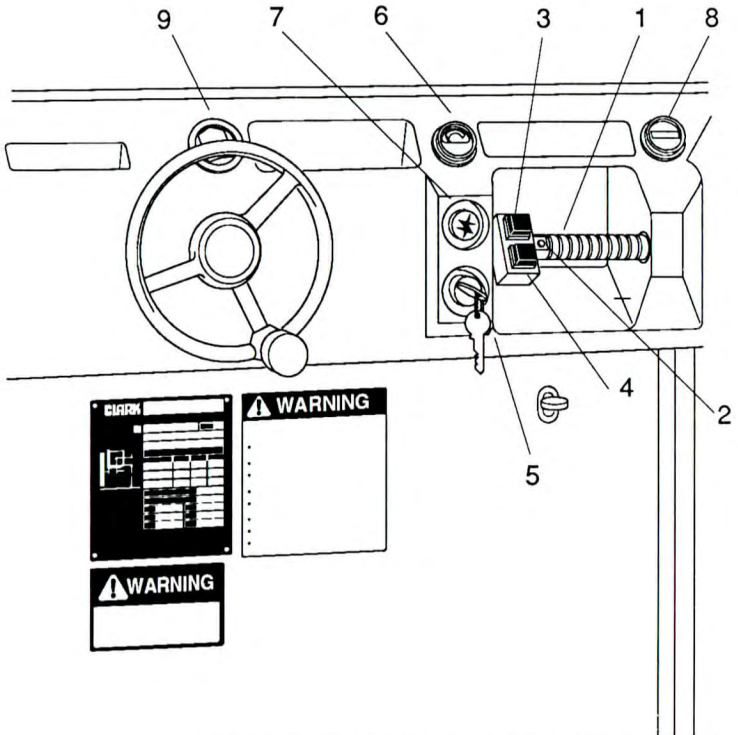
## Component Location



- |                     |                                |
|---------------------|--------------------------------|
| 1. Steering Wheel   | 8. Operator's Manual           |
| 2. Truck Data Plate | 9. Warning Decals              |
| 3. Load Wheels      | 10. Brake Pedal                |
| 4. Drive Wheel      | 11. Pallet Clamp               |
| 5. Load Forks       | 12. Pallet Clamp Foot Control  |
| 6. Cover            | 13. Pallet Clamp Release Lever |
| 7. Battery          | 14. Tether Belt and Lanyard    |

# Know Your Truck

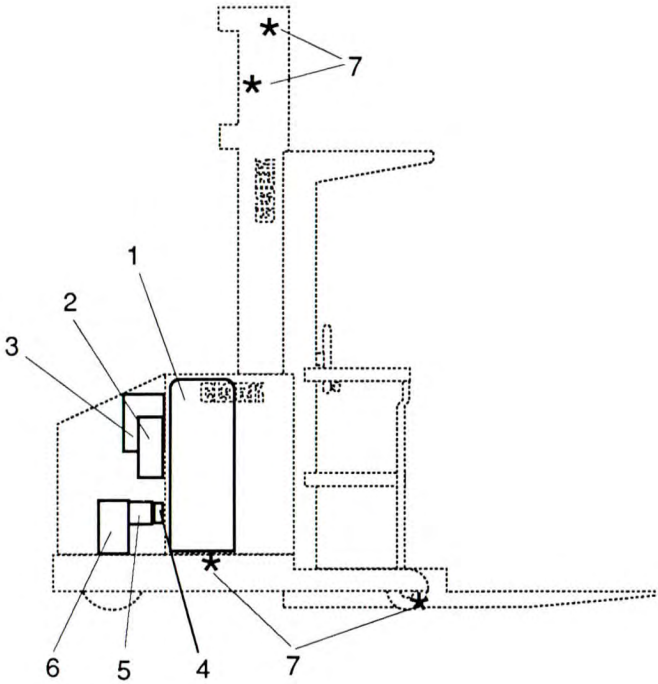
## Operator's Controls



1. Forward/Reverse and Speed Control
2. Horn
3. Lift Control
4. Lower Control
5. Key Switch
6. Battery Discharge Indicator
7. Emergency Disconnect
8. Hour Meter
9. Directional Indicator

# Know Your Truck

## Maintenance Component Location



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

### Operator Comfort/Convenience

- Easy three-way compartment access
- Low effort controls
- Full time power steering

### Motors

- Drive motor and hydraulic pump motors are heavy-duty series wound for high starting torque at low speeds and are ventilated and insulated to Class H rating - industry's highest rated insulation normally available.
- Integrally mounted to eliminate connecting shafts and couplings.

### Electrical Controls

- General Electric EV-100 SCR drive motor control
- Infinitely variable travel speeds in forward and reverse
- Large contactors have silver alloy replaceable tip assembly
- All circuits are fuse protected

### Drive Line

- Totally enclosed
- Double reduction
- Heavy duty bearings

### Brakes

- Double disc
- Sealed in oil
- Externally adjustable

### Hydraulic System

- Two lifting speeds
- Solenoid activated valves control lowering speeds
- Excess flow protector prevents runaway platform drop

### Steering

- Full time power steering
- 90° right angle maneuverability
- Drive wheel position indicator

# Know Your Truck

## System Description

### Chassis and Uprights

- Chassis is bolted to the upright for maximum structural integrity
- Uprights, standard two-stage or optional triple-stage
- Uprights are rugged steel I-beam sections with ball bearing rollers
- Door at rear of machine swings out for service access
- Components are in logical sequence for quick inspection

### Standard Equipment

Power steering, two speed lift, EV-100 SCR travel control, cushioning accumulator, drive wheel position indicator, emergency power disconnect, work-order holder, laminated safety glass barrier, key switch, electric horn, cantilever overhead guard, flashing red light, operator's belt and tether. Finish is high visibility Clark green and flat black.

### Optional Equipment

Curtis 933-3 battery discharge indicator with lift interrupt, battery discharge meter, red strobe light, battery compartment rollers, aisle guide rollers, freezer conditioning, cold storage conditioning, fire extinguisher, work lights, compartment fan, and 48", 54", 60" or 72" platform widths.

# Know Your Truck

## Nameplate Description

<b>CLARK</b>		1		
MODEL NO.	6	2	TYPE 3	
SERIAL NO.	4			
ATTACHMENTS	5			
<p>FLOOR</p>	CAPACITY WITH ATTACHMENTS D ABOVE OR WITHIN DIMS UPRIGHTS VERTICAL			
	LBS	A	B	C
APPROX. WT. (ALL TRUCKS)	LESS BATT ELECTRICS		7	
APPROX. WT. (ELECTRICS ONLY)	WITH MAX BATT WT.		8	
BATTERY WT.	MAX 9	MIN	10	
BATTERY	AH 11	NO	12	
CAPACITY	LBS 13	VOLT	14	
<small>FOR OTHER CAPACITIES CONSULT MANUFACTURER AS RELEASED FROM FACTORY CLARK TRUCKS MEET THE FOLLOWING DESIGN SPECIFICATIONS FOR POWERED INDUSTRIAL TRUCKS UT AND IT MODELS PART 3 ANSI B56.6 1978 ALL OTHER MODELS PART 2 ANSI B56.1 1969 AND 1976</small>				
PN 2315709				

## Know The Data On The Nameplate

1. Truck name
2. Truck model number
3. Battery type
4. Truck serial number
5. Attachment serial number
6. Truck type
7. Truck weight (less battery)
8. Truck weight (with max battery weight)
9. Maximum battery weight
10. Minimum battery weight
11. Battery maximum AMP hours
12. Battery type
14. Battery weight
13. Battery voltage

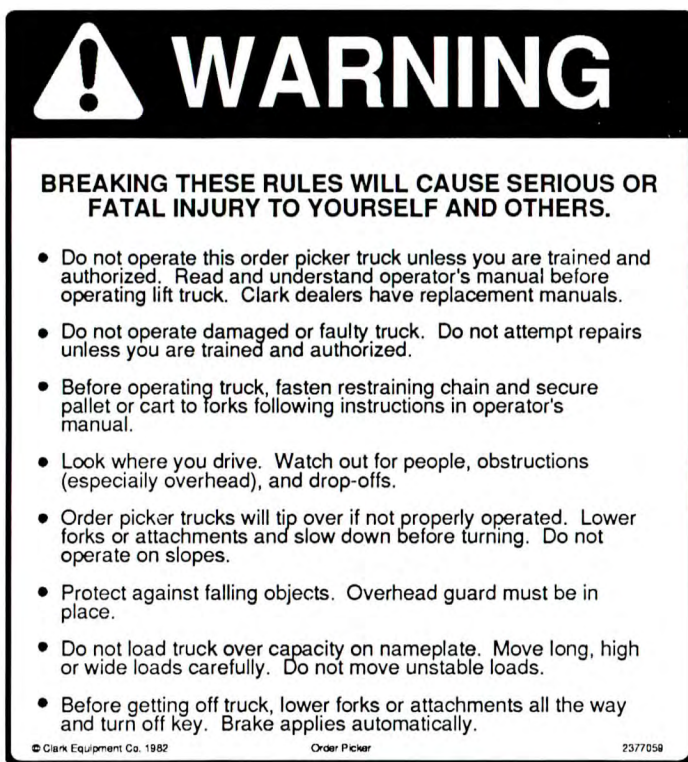
### IMPORTANT:

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.



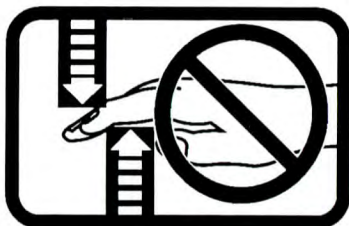
## Operator Warning Decal

Decal is located directly to the right of the data plate and below steering wheel. It gives basic warnings for safe operation of this truck. Carefully read it and make sure you understand the warnings and instructions.



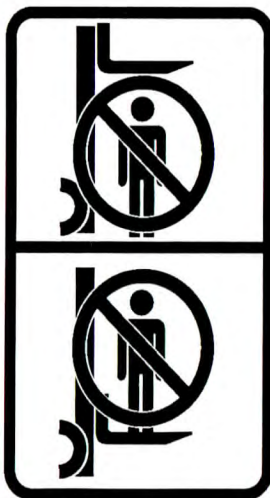
# Know Your Truck

## Warning Decals



### Keep Hands Clear Decal

Decals are located on the upright. DO NOT reach into or climb on the upright. Personal injury will result if any part of your body is put between the moving parts of the rails, chains, sheaves, forks, carriage, and other parts of the upright.



### Keep Away from forks Decal

Decals are located on the lift cylinder in front of the operator's compartment. DO NOT ride on or stand under forks or attachments when they are being raised or lowered. Always make sure forks or attachments are in the locked position. Accidental lowering of the forks or platform will cause injury or death.

## Know Your Truck

### Warning Decals



#### Safety Belt Decal

This decal is located below the operating instructions decal and below the steering wheel. Buckle-up before operating your order selector truck.



#### Battery Warning Decal

This decal gives 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 Tether Belt and Lanyard
- 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.



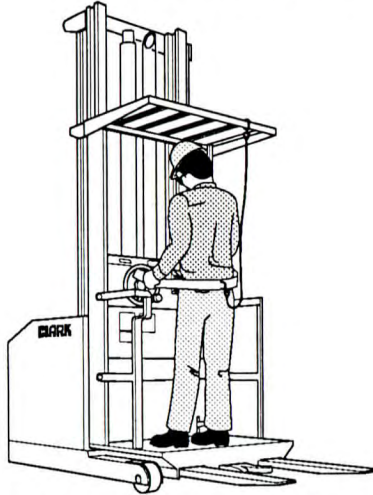
Do wear all the required safety equipment.



Don't smoke in "No Smoking" areas.

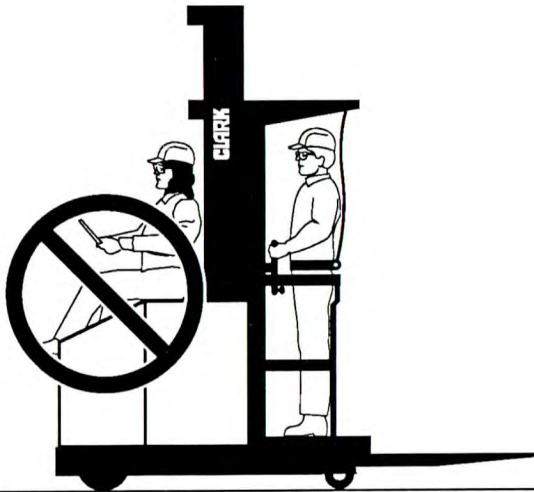
# General Safety Rules

## Tether Belt and Lanyard



Wear your tether belt and lanyard when operating the order selector.

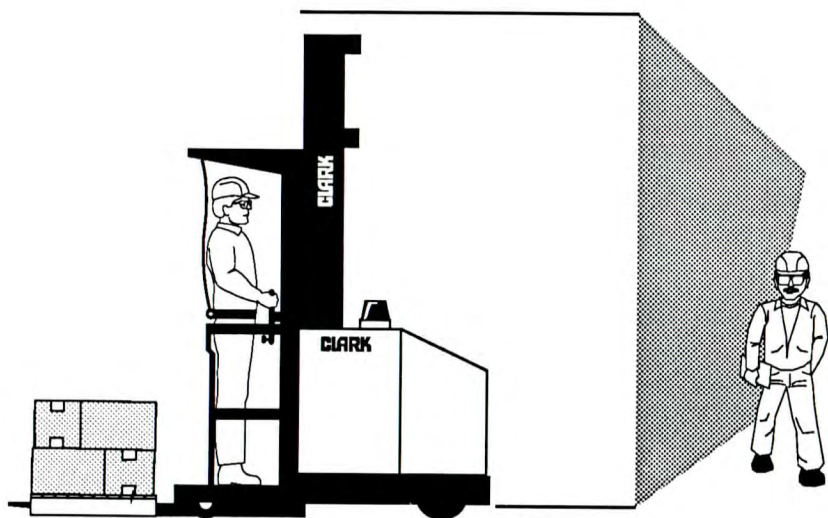
## No Riders



Never carry passengers. They can fall off or cause you to have an accident.

# General Safety Rules

## Pedestrians

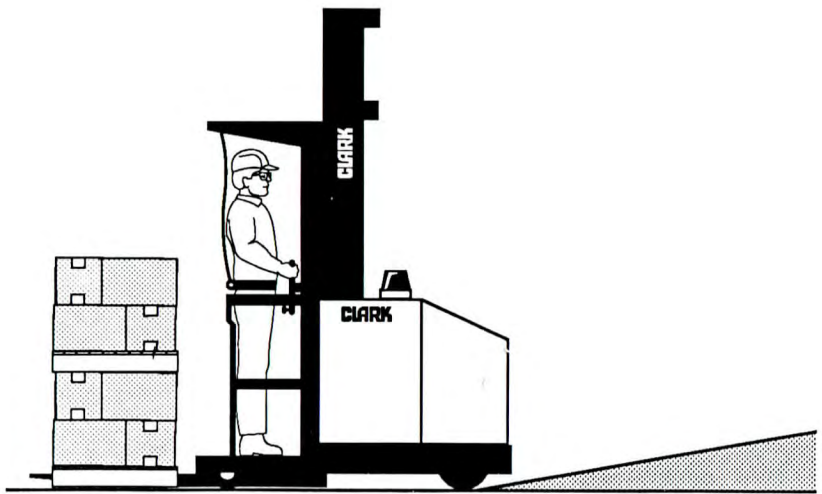


Watch where you are going. Pedestrians may use the same roadway you do. Sound your horn at all intersections.

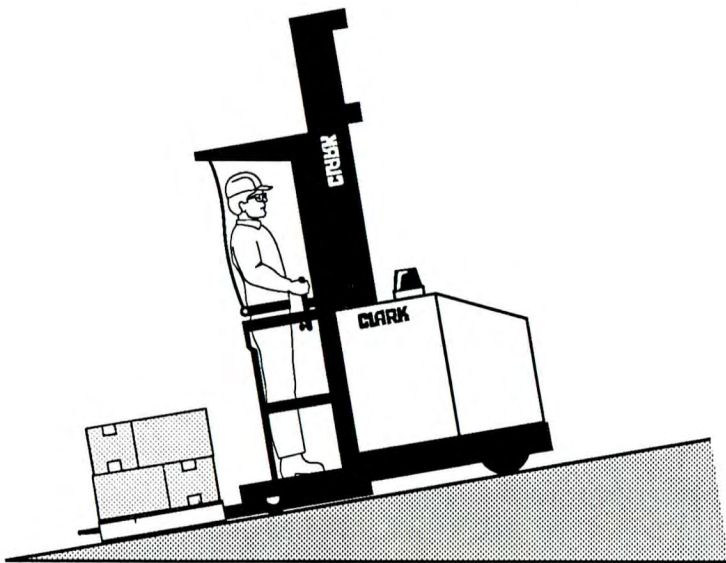
Watch for people in your work area. They may not watch for you.

# General Safety Rules

## Grades



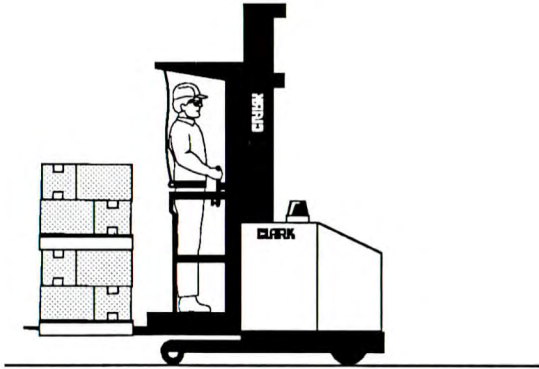
THESE TRUCKS ARE DESIGNED FOR LEVEL FLOOR OPERATION. If it is necessary to operate them on a slight grade, ramp, or incline be sure to do so slowly and cautiously.



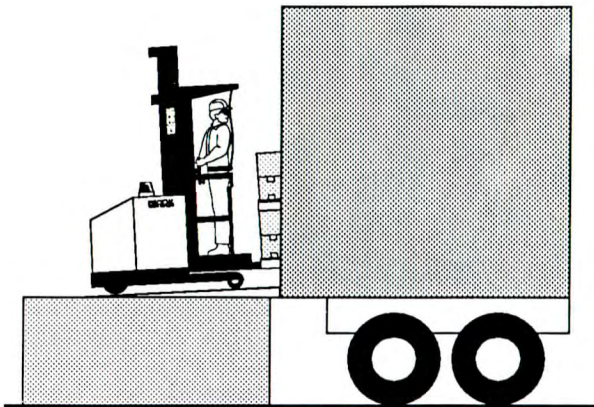
It is recommended that the truck be operated at less than full capacity. Never attempt to turn on a grade, ramp, or incline.

# General Safety Rules

## Travel



Always travel with the operators platform (loaded or unloaded) elevated slightly above the straddle arms and high enough to avoid hitting obstacles. Make certain your load is well stacked and evenly positioned as shown here. If the stability of a load is questionable, don't move it.

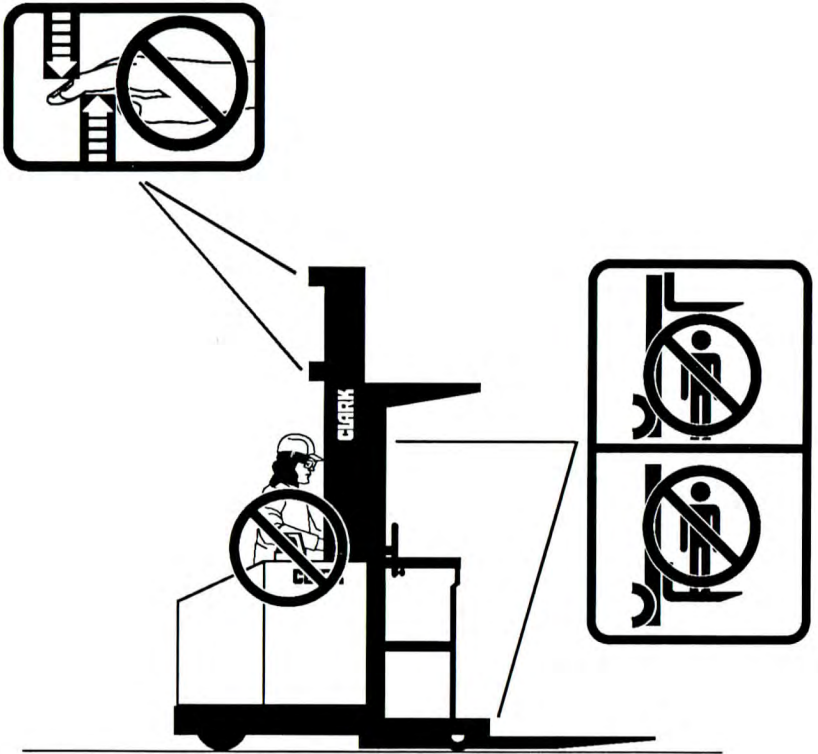


Enter confined areas such as semi-trailers, trucks, boxcars or elevators with load end of your truck first. This will minimize the maneuvering necessary to exit. If load blocks your view while traveling in reverse, make sure path is clear of personnel and obstructions.



# General Safety Rules

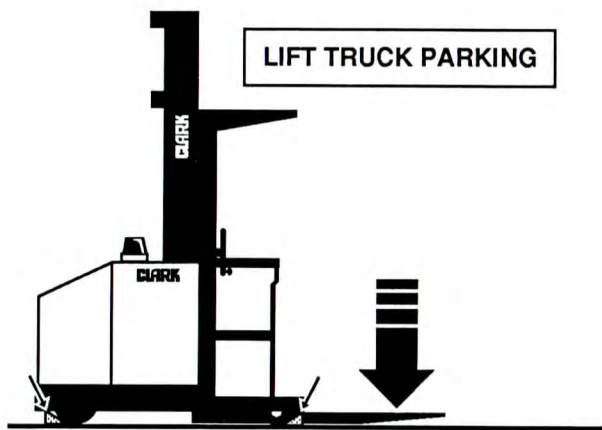
## Pinch Points



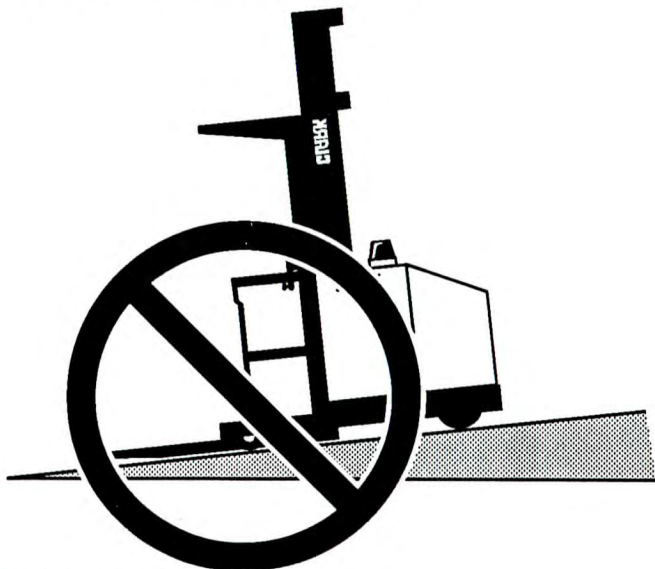
Never allow anyone to reach under or around the edge of the truck. Be especially careful not to put any portion of your body under the load forks. Keep your feet clear of the truck when traveling.

# General Safety Rules

## Parking



Park trucks in designated parking areas only. Do not obstruct traffic lanes or aisles. Lower forks to floor. Turn key switch off and remove key. Unplug battery connector. Block drive wheel to prevent accidental roll. Turn key in to proper authority.



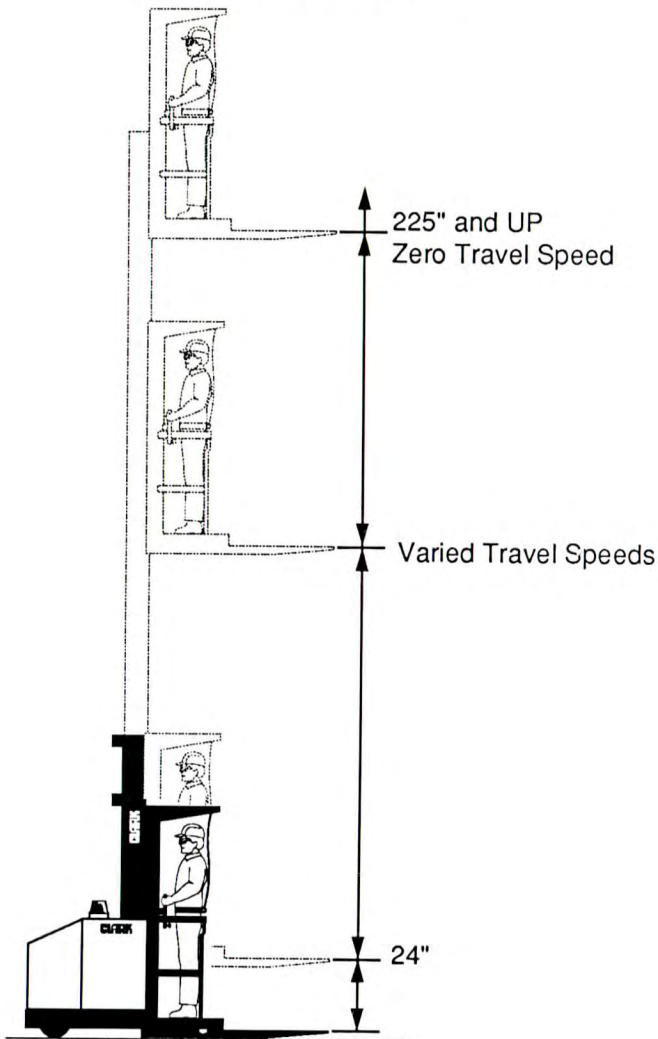
Never park on a grade.

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

## Operating Hazards

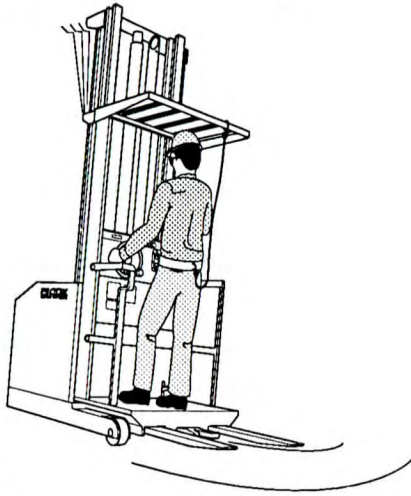


### **WARNING:**

#### **Travel at Varied Heights:**

Travel is permitted at varied heights. However, when negotiating a turn, always travel at a slow rate of speed (loaded or empty). Abrupt turns at a fast rate of speed and with the mast elevated could cause the truck to become unstable and overturn.

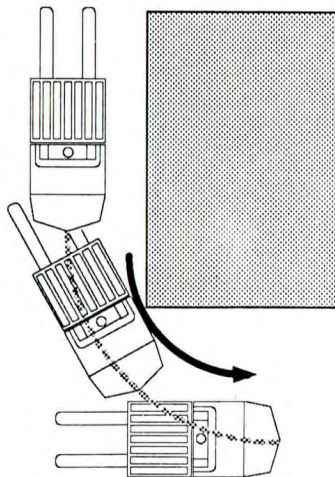
## Operating Hazards



### **WARNING:**

#### **Fast Turns**

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

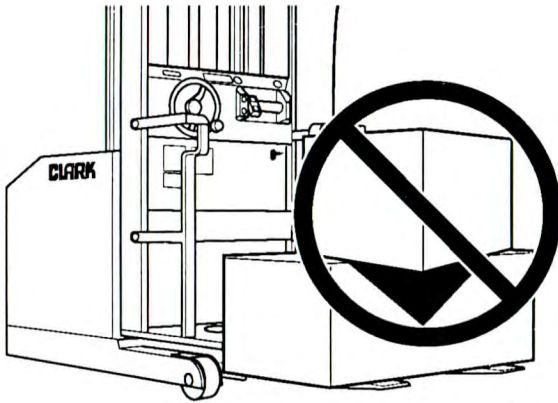


### **WARNING:**

#### **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.

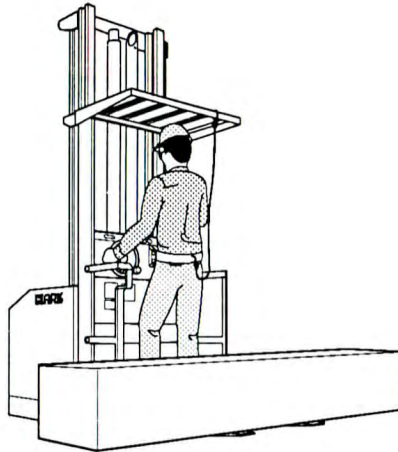
## Operating Hazards



### **WARNING:**

#### **Loose Loads**

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

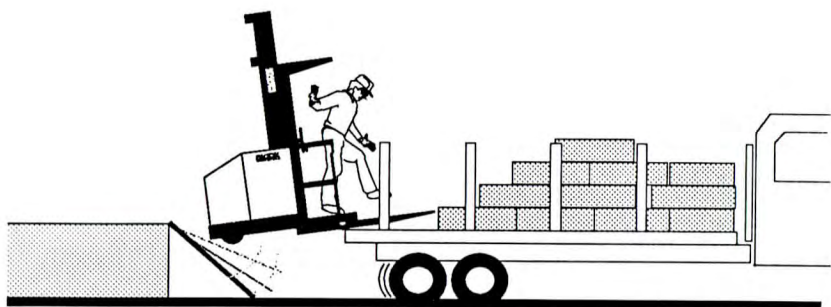


### **WARNING:**

#### **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.

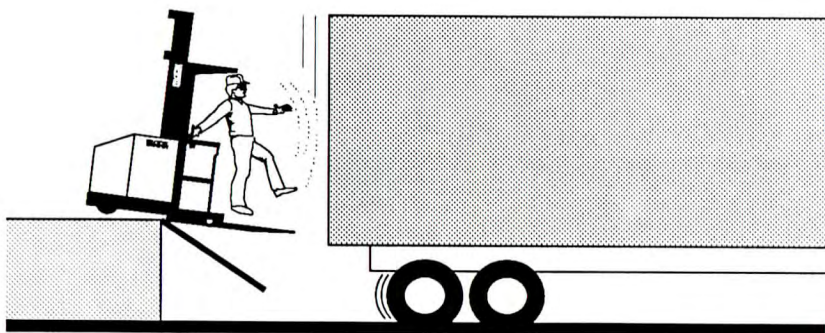
## Operating Hazards



### **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.

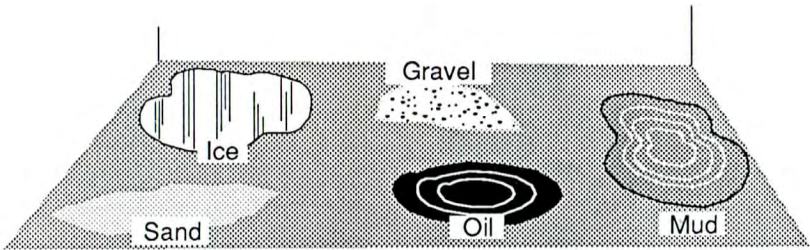


### **WARNING:**

#### **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.

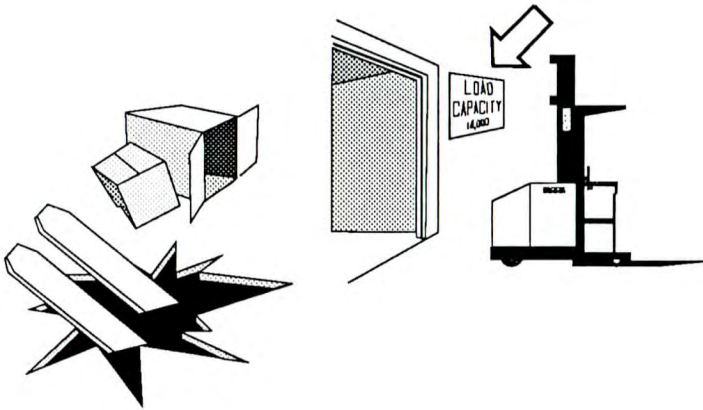
## Operating Hazards



### **!** 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.



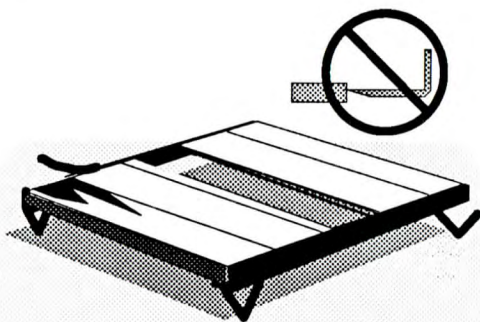
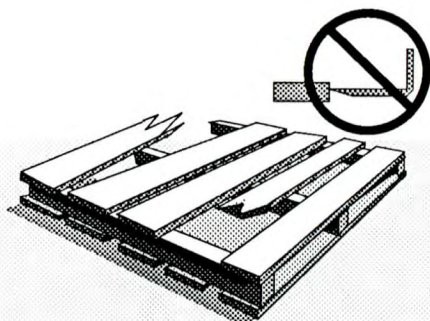
### **!** WARNING:

#### **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

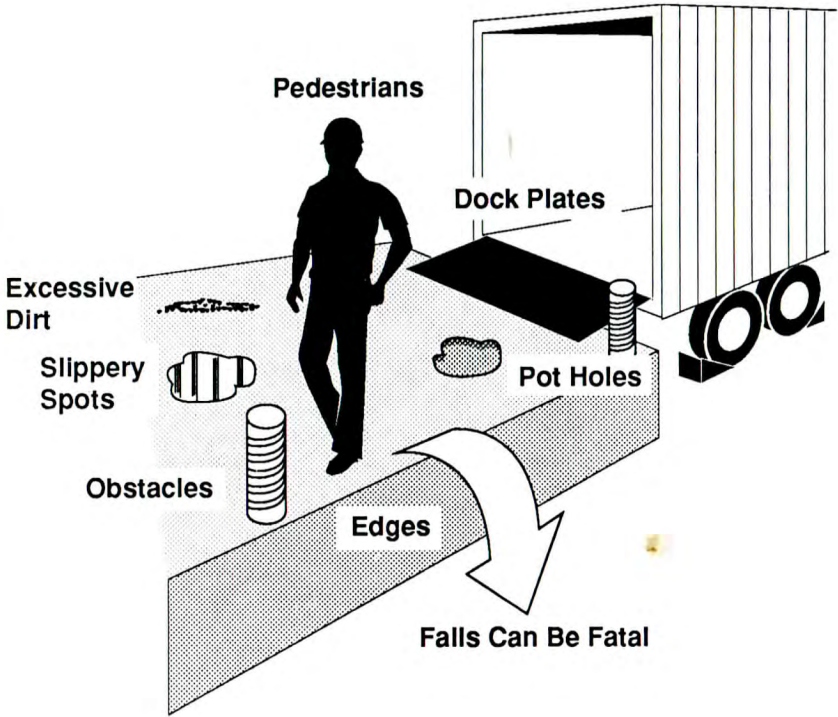


### **WARNING:**

#### **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**

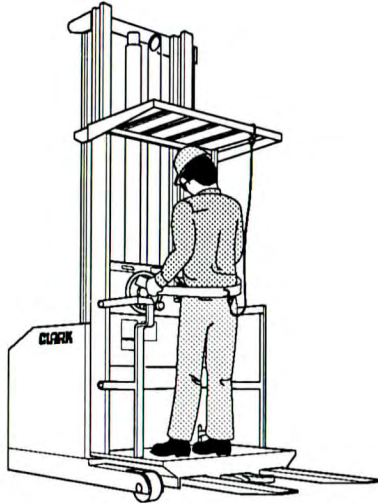
Shown are a few of the things that the operator should be aware of when operating in the dock area.

## 4 Operating Procedures

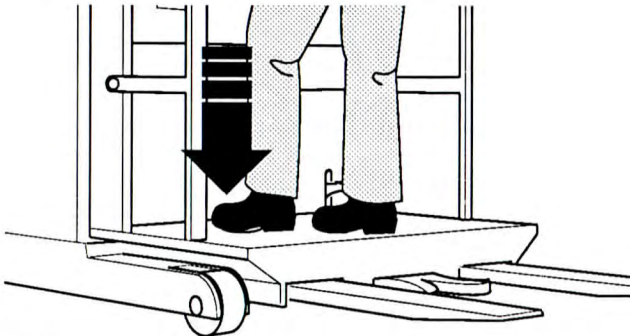
- 4.2 Beginning Truck Operation
- 4.3 Travel
- 4.5 Raise and Lower
- 4.6 Braking
- 4.7 Horn Control
- 4.8 Load Handling
- 4.9 Parking

# Operating Procedures

## Beginning Truck Operation



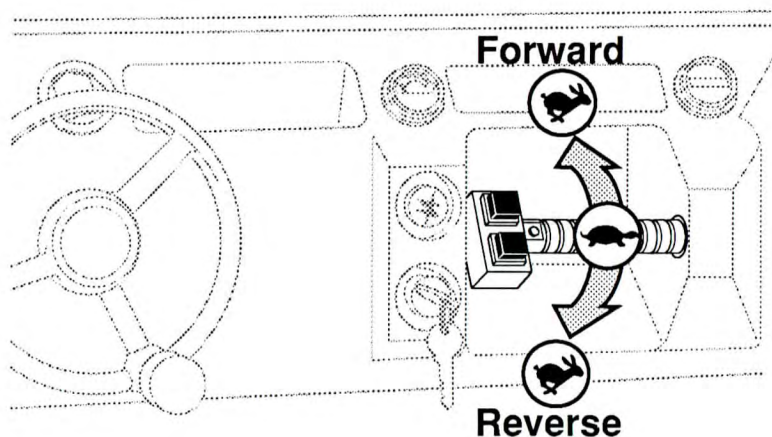
Remove chocks from drive wheel. Connect the battery to the truck. Enter the operator's compartment. Put on the safety belt and attach the safety line to the overhead guard. Insert key and turn clockwise to "on" position. Check to make sure your path of travel is clear of people or obstructions.



Put your left foot on the brake pedal and press down. This will release the brake and make power available to the drive motor. Turn steer hand wheel until steering direction indicator points in the desired direction of forward travel or opposite the desired line of reverse travel.

# Operating Procedures

## Travel



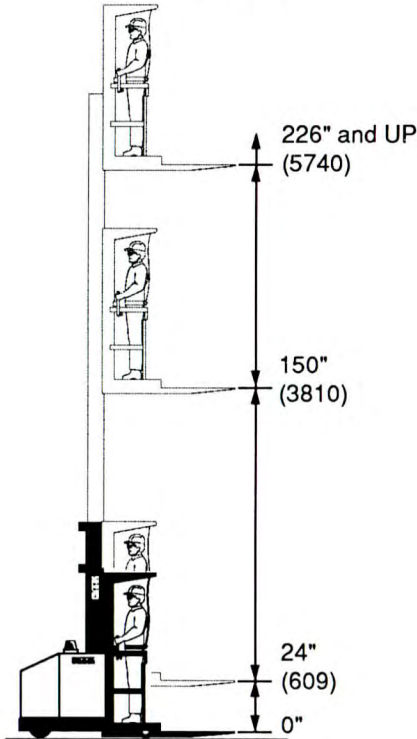
Twist the directional control away from you to travel forward.  
Twist the directional control toward you to travel in reverse.  
Truck speed will increase as you continue to twist the directional control.

This unit is equipped with a plugging feature which means that you need not brake to a complete stop to change directions. Use the direction/speed control handle to change direction.

The unit will not travel if turned more than 10° either side of center while platform is in a raised position of 150 inches (3810) or more. To resume travel, lower platform below 150 inches (3810) or turn the steering wheel to the center position.

# Operating Procedures

## Travel

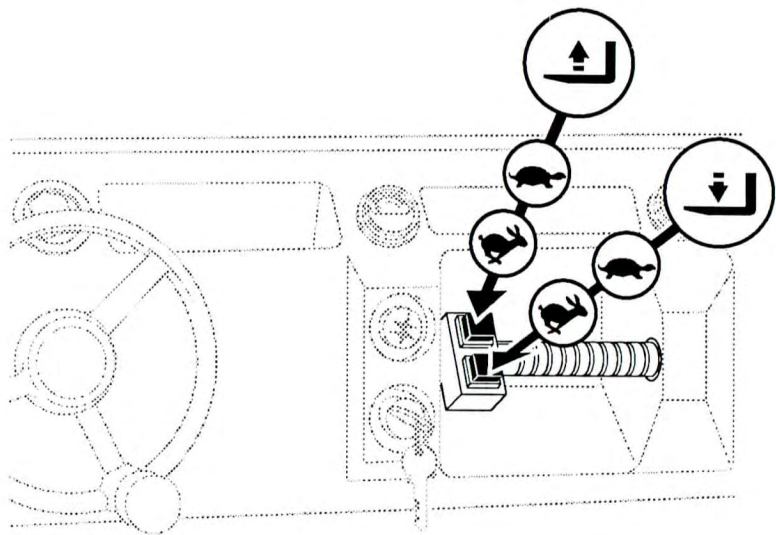


### TRAVEL SPEED/TIMES BASED ON PLATFORM FORK HEIGHT AND MAXIMUM LOAD CAPACITY.

	Empty	time/50"	loaded	time/50"
Below 24" (609)	5.50 mph (8.8)	6.2 sec.	5.00 mph (8.0)	6.8 sec.
24" to 150" (609)-(3810)	2.25 mph (3.6)	16.0 sec.	1.80 mph (2.8)	20.0 sec.
151" to 225" (3835)-(5715)	1.00 mph (1.6)	34.0 sec.	0.85 mph (1.3)	40.0 sec.
Above 225" (5715)	NO TRAVEL			

# Operating Procedures

## Raise and Lower



Raise and lower switches have two speeds, low and high.

**RAISE** - Push the raise switch, with your thumb, to the first position. The platform and forks will raise at low speed until the switch is released or lifting stops are reached. To raise at high speed, push the raise switch to the second position.

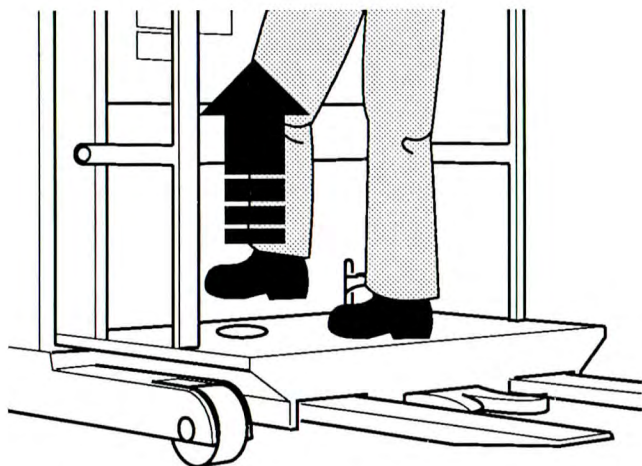
**LOWER** - Push the lower switch, with your thumb, to the first position. The platform and forks will lower at low speed until the switch is released or lowering stops are reached. To lower at high speed, push the lower switch to the second position.

If platform and forks are lowered on an obstruction, travel will automatically stop. To regain full operation, push the raise switch and raise platform and forks.

To lower the forks and platform during a power failure, push the lower switch or open the drive unit doors and rotate the red emergency lowering screw on the control valve.

# Operating Procedures

## Braking



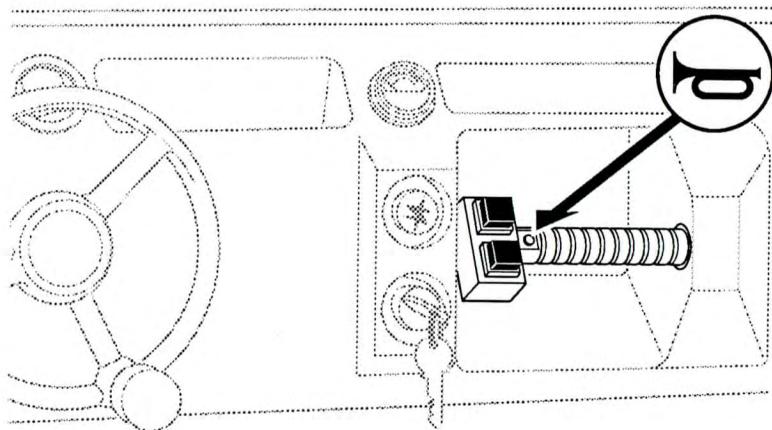
To stop the truck, lift your foot from the brake. During operation, release the travel control and apply the brake to bring the truck to a smooth stop.

Always bring the truck to a complete stop, fully lower the forks and turn the power key switch off before leaving the platform. If the truck is to be parked, refer to Page 4.9.



# Operating Procedures

## Horn Control



Press the horn control to sound the horn.

# Operating Procedures

## Load Handling

Handle only stable and properly arranged loads. When handling off-center loads which cannot be centered, operate with extra caution.

Handle only loads within the capacity of the unit as rated on name-plate.

Handle long and wide loads exceeding the dimensions used to establish truck capacity with extra caution. Stability and maneuverability may be adversely affected.

When attachments are used, extra care shall be taken in securing, manipulating, positioning and transporting the load. Operate trucks equipped with attachments as partially loaded trucks when not handling a load.

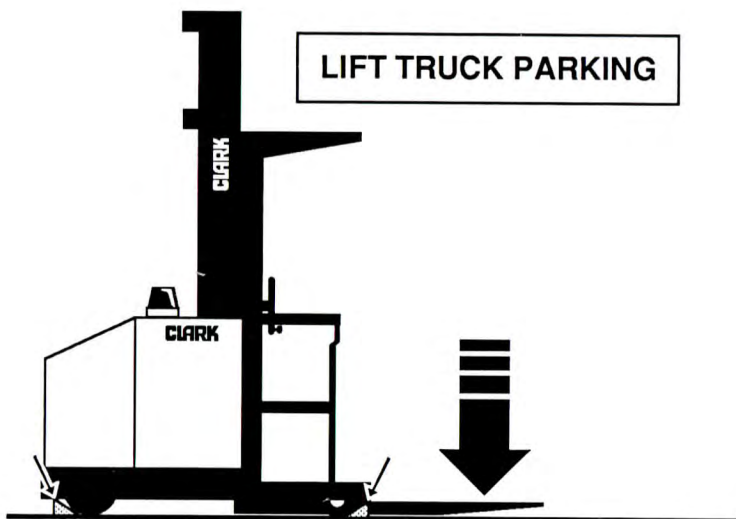
The handling of suspended loads by means of a crane arm ("boom") or other devices can introduce dynamic forces affecting the stability of a truck that are not considered in the stability criteria. Sudden starts, stops, and turns can cause the load to swing and create a hazard.

The load shall be lifted vertically and never dragged horizontally.

The load shall only be transported with the bottom of load and forks as low as possible.

# Operating Procedures

## Parking



Park truck in designated parking area.

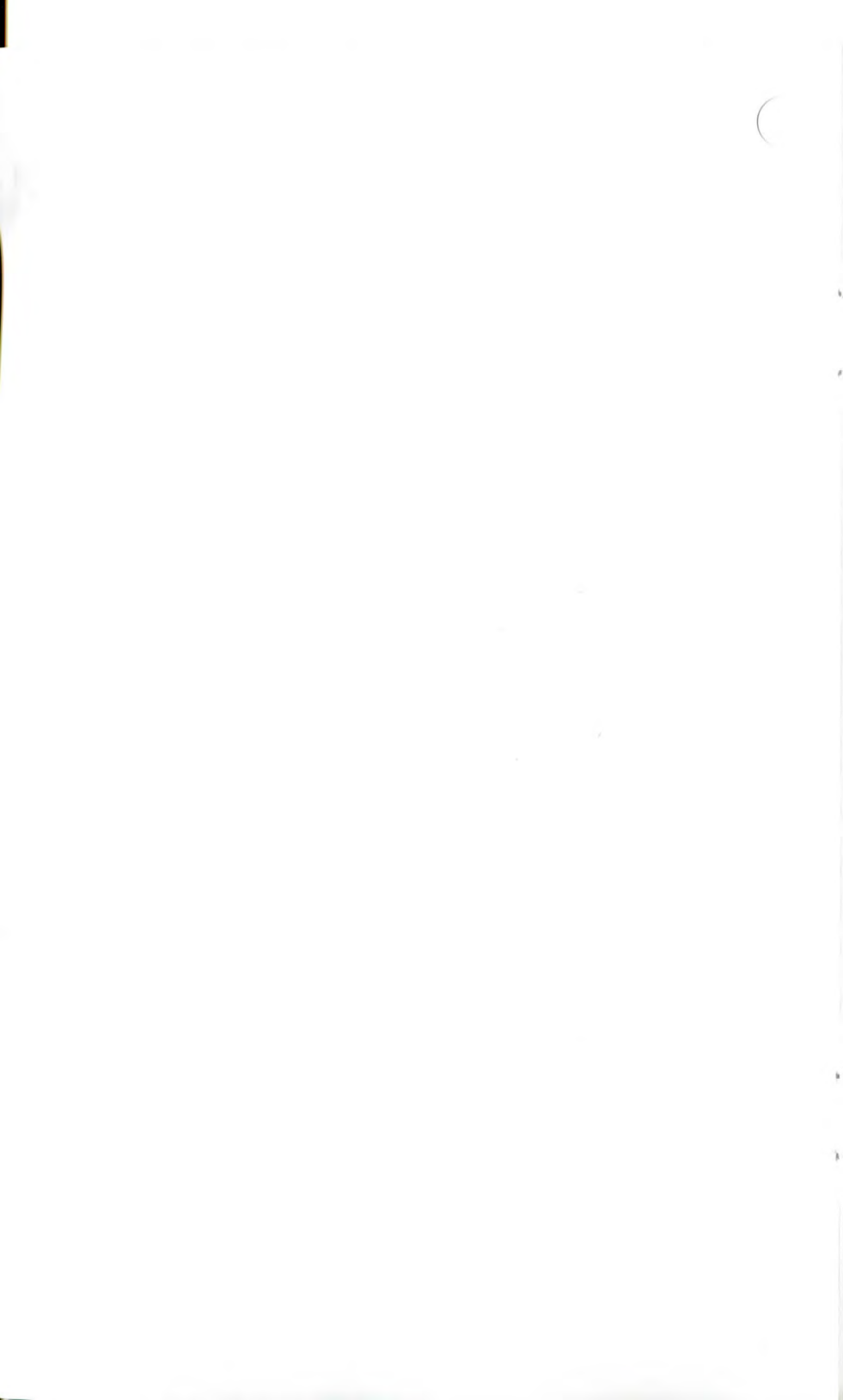
Lower forks to floor.

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

Unplug battery connector.

Block wheels 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 Daily Inspection

# 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 operate truck if you find a maintenance problem. Remove truck from service and report the problem.

If the truck is found to be in need of repair or in any way unsafe, or contributes to an unsafe condition, the matter shall be reported immediately to the designated authority; and the truck shall not be operated until it has been restored to proper operating condition by a properly trained mechanic.

If, during operation, the truck becomes unsafe in any way, the matter shall be reported immediately to the designated authority, and the truck shall not be operated until it has been restored to proper operating condition.

1.  **WARNING: Disconnect Battery.**
2. Lift the drive unit cover, unlock drive unit compartment door latch and open door.
3. Inspect unit and look for damage and leakage. If any DO NOT operate unit until it is repaired.
4. Inspect hydraulic system. Look for leakage around filter, hoses, fittings, and pumps.
5. Inspect steering linkage and steer chain for looseness or lack of lubrication. Steering chain are next to the hydraulic fluid reservoir.
6. Inspect drive unit. Look for leakage.
7. Inspect all wheels for flat spots or pieces of material missing from tires. Also check tightness of all drive wheel bolts.
8. Check the turn limit switch on top of the drive unit. Make sure it activates and operates correctly.



## Daily Inspection

9. Inspect speed limit switches on upright. Make sure switch roller is against upright rail and the switch operates correctly.
10. Lift and fully open the battery access cover. Unlock the battery compartment doors and open them. Inspect the battery connectors. Check the condition of electrical cables and wiring and make a report of all worn or cracked cables. Close the battery compartment doors, turn the latch to the locked position and close the battery access cover.
11. Inspect the lift forks for cracks, breaks, bending and wear. The fork tips should be level and even with each other.
12. Connect the battery to unit.
13. Enter operator's compartment. Lower the side bars, put on tether belt and attach the lanyard to overhead guard. Make sure the equipment has no damage.
14. Check condition of the overhead guard. If it has damage, report it to your supervisor.
15. Make sure the OPERATORS MANUAL is in compartment and tethered to machine.
16. Turn key to "RESET" and release.
17. Check the operation of the hour meter (if equipped).
18. Check the charge condition of the battery. If gauge shows reading in the red area, have battery charged before operating unit.
19. Press horn button to check horn function. If horn does not function, report the failure and have it repaired before the unit is put into operation.
20. Before operating unit, look in all directions to make sure your path of travel is clear.

## Daily Inspection

21. Put your left foot on the brake pedal and step down. This will release the brake and make power available to the drive motor.
22. Turn steering wheel until steering directional indicator points in the desired direction of forward travel or opposite the desired line of reverse travel.
23. The unit should "NOT" operate with the platform side bars in the raised position.
24. Put your left hand on the steering wheel to guide the machine.
25. Turn directional control handle up (away from you) slowly. The unit must move slowly in a forward direction. Turn the handle more to increase speed. Unit should accelerate smoothly to maximum speed. Return the handle to "NEUTRAL" position and remove your left foot from the brake pedal to stop the unit.
26. Turn directional control handle down (toward you) slowly. The unit must move slowly in a rearward direction. Turn the handle more to increase speed. Return the handle to "NEUTRAL" position and remove your left foot from the brake pedal to stop the unit.
27. Lift your foot from the brake pedal to apply brake and stop units travel. Brake action should be smooth and stop the unit in normal distance.
28. Report any unusual brake operations to your supervisor.
29. Check the operation of the flashing red light.
30. The warning light should illuminate when the key switch is in the "ON" position and the brake pedal is pressed down.
31. Check steering wheel while truck is moving. Turn the steering wheel fully left and then right. Steering wheel should turn smoothly without binding or any loss of steering control.

## Daily Inspection

32. Raise and lower platform and forks several times. Both lifting and lowering should be smooth. Make sure unit can travel while lifting or lowering a load below 24". Report any unusual or erratic action to your supervisor.

NOTE: All units have a two (2) speed RAISE and LOWER function.

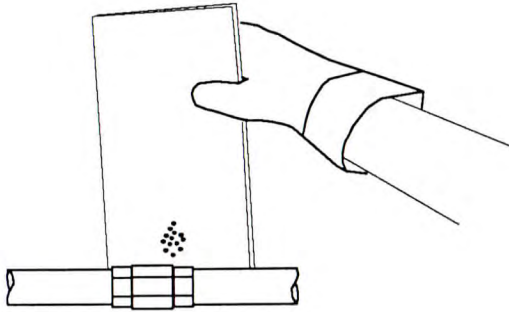
33. Check the operation of the 10° turn switch.
- A. Make sure there is enough overhead clearance and raise forks above 150".
  - B. Go in a forward direction and slowly and cautiously turn steering wheel left and right of center position. Unit should stop moving when steering wheel is turned more than 100° past center. Lower the platform and continue inspection.
34. Check the operation of the hydraulic emergency release valve.
- A. Raise the platform one foot.
  - B. Turn the key switch to the "OFF" position and carefully step off the platform.
  - C. Raise drive unit cover. Push in and rotate the red emergency lowering screw counterclockwise on the control valve to lower the platform.
  - D. The lift platform will lower after about 2-4 seconds. To stop lowering, push in and rotate red emergency lowering screw clockwise.

NOTE: After lowering the platform, using the emergency lowering screw, the screw must be reset by pushing in and rotating clockwise. Release after rotating.

35. Turn key switch to "OFF" position and remove, and place in a designated area.
36. Before leaving unit, make a final check to be sure the unit is properly parked and can be left safely in this location.
37. If the unit is to be left in a parked position for an extended period disconnect the battery, put chocks at drive wheel, and remove

## 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.

## **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 directional and speed control operation.

Check lift and lower operation.

## Planned Maintenance and Lubrication

### Recommended Planned Maintenance and Lubrication Schedule

<b>Recommended Planned Maintenance Intervals</b>
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

<b>PLANNED MAINTENANCE and LUBRICATION</b>					
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 block and/or chain the carriage and upright rails to work with the upright in an elevated position. Be sure to disconnect the truck battery

## 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: 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 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.**

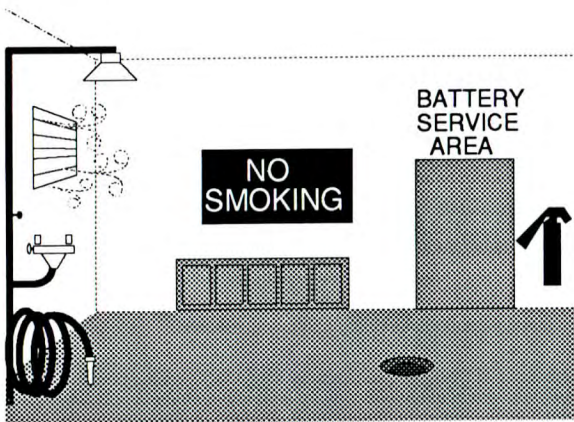


#### **WARNING:**

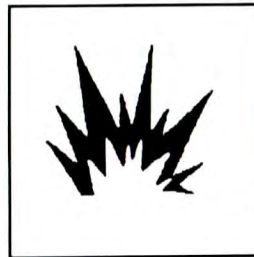
**Electric truck batteries are heavy and awkward to handle. On charge, they give off hydrogen and oxygen which, in certain concentrations, are explosive. Electric truck batteries are also costly, so before you remove, service, or install a truck battery, consult the BATTERY MANUFACTURER, SUPPLIER or 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.



### **WARNING:**

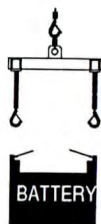
Explosive gas is always present around batteries, especially when they are being charged. No smoking must be allowed in the charging area. Do not check the battery electrolyte level with an open flame. Do not allow open flame, sparks, or electric arcs in the battery charging area.

# 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 conveyer or overhead hoist equipped with safety hooks.



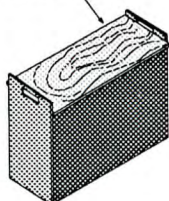
When using an overhead hoist, be sure an insulated spreader bar or similar lifting device is used so the lifting force is vertical.

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.

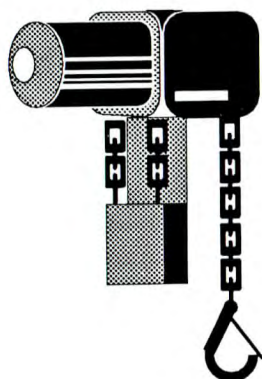
# Planned Maintenance and Lubrication

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



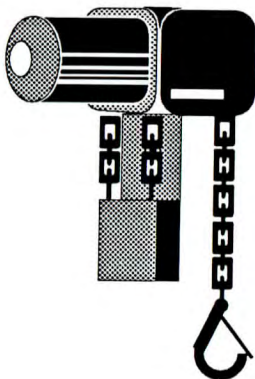
# Planned Maintenance and Lubrication

## Battery Handling



### **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 (if equipped) 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:**

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

### 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 carefully constructed lifting device which will not put pressure on the battery tray.

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

Keep battery clean and dry. Wash down as needed.

Do not over-charge battery.

Keep battery records as indicated above.

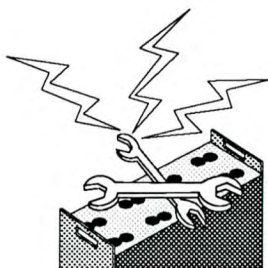
# Planned Maintenance and Lubrication

## Battery Maintenance



### **⚠ 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.



### **⚠ Danger:**

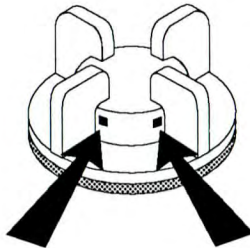
Keep all tools and other metal objects away from the battery terminal. They will cause short circuits and can cause the battery to explode.

# Planned Maintenance and Lubrication

## Battery Maintenance



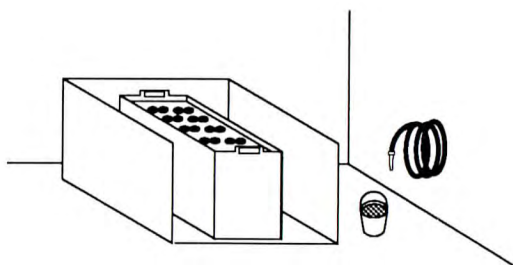
Persons maintaining storage batteries must wear protective clothing such as face shield, long sleeves and gauntlet gloves.



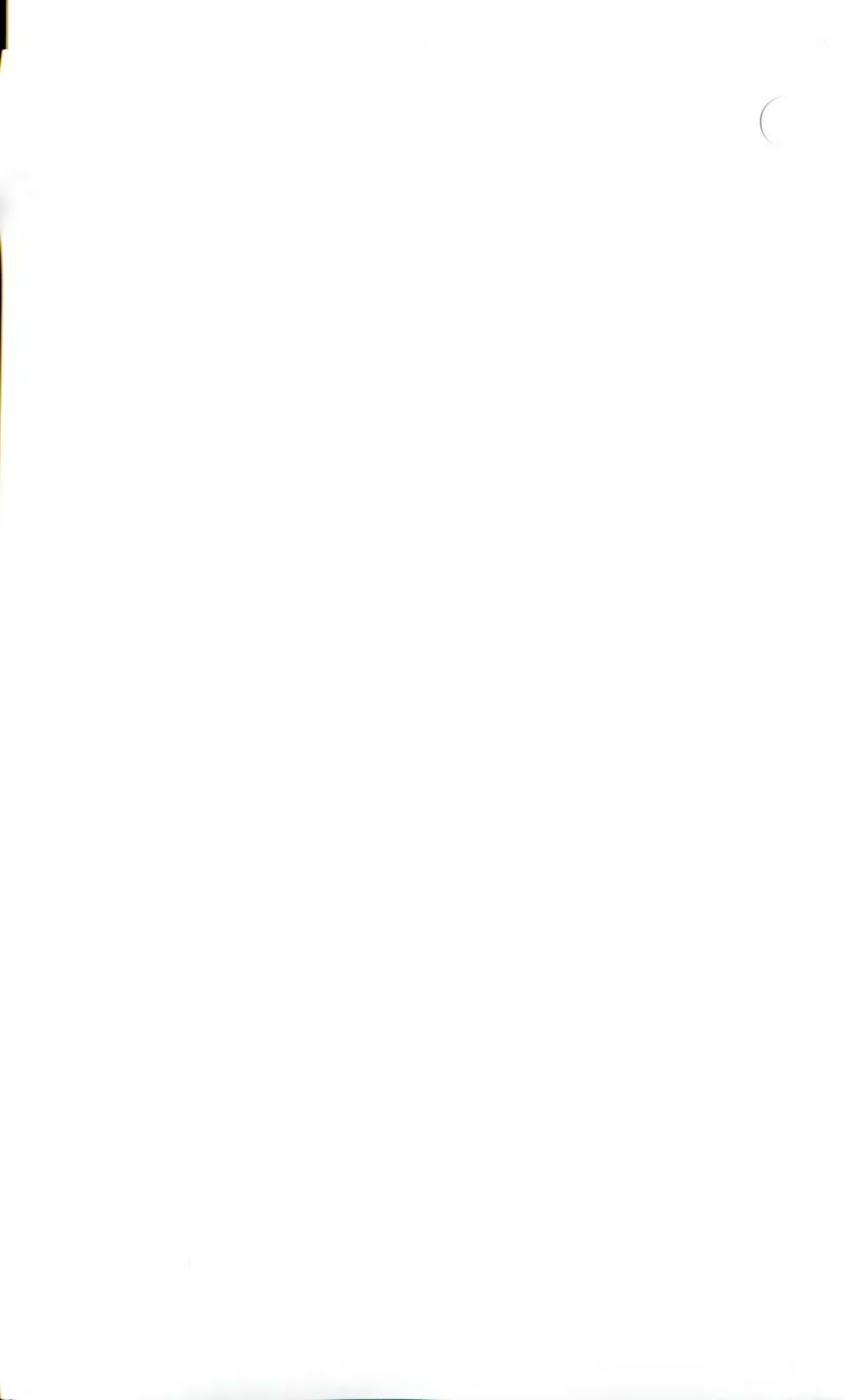
When charging batteries, the vent caps must be kept in place to avoid electrolyte spray. Care must be taken to assure that vent caps are functioning. The vent cap holes must be open to allow the battery to breathe. The battery cover must be open to dissipate heat and explosive gas.

# Planned Maintenance and Lubrication

## Battery Maintenance



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 washed off with a baking soda solution. 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 Transporting

Never drive unit from one job site to the next if any street or highways are to be used.

Use steel ramps when backing the unit on to a trailer. Chain and block the unit securely in place.

When transporting a disabled unit, always release brake. Otherwise, brake damage can result.

Before putting unit in a trailer, remove all ice, oil, and grease from trailer and ramp.

When transporting unit on a trailer, be sure to drive on and off squarely so as not to drive off the side of trailer and tip unit.

Know your regulations and laws of safety in each area that you operate a unit. Make sure that both your trailer and unit are equipped with the necessary safety equipment.

Place blocks at front and rear of each trailer wheels.

Move unit slowly into ramps and trailers.

Lower unit forks to trailer floor.

Stop unit and remove key. (See stopping instructions in this manual).

Place blocks at front and rear of each unit.

Connect chains to front and rear of unit.





## 8 Specifications

Model		OP15D
Load Capacity		3,000 lbs / 1360 kg
Load Center	Fork face to load CG	24 in / 600 mm
Power Unit	Electric	24-volt
Upright (preferred TSU)	Maximum lift, full capacity	225.0 in
	Lift height (preferred TSU)	198.0 in
	Standard fork size (TxWxL)	2x4x42 in
Overall Dimensions	Length to fork face 2	77.0 in
	Width	42.0 in
	Height, upright lowered	90.0 in
	Height, upright extended	283.0 in
Turning Radius		70.0 in
Travel Speeds, Maximum	Below 24 in lift	5.4 mph
	24-150 in lift	2.5 mph
	151-225 in lift	1.0 mph
Lift Speeds, Loaded	Standard upright	41 / 31 fpm
	Triple stage	40 / 30 fpm
Lift Speeds, Empty	Standard upright	67/44 fpm
	Triple stage	62 / 42 fpm
Lower Speeds	All uprights	53 / 30 fpm
Service Weight	With minimum battery weight	6445 lbs
Axle Loading	With load, front	2030 lbs
	With rear, load	7065 lbs
	Without load, front	3495
	Without load, rear	2715 lbs
Tires	front	6.00x4.00 in
	rear	10.5x5.00 in
Wheelbase		58.2
Track	Front	37
Ground Clearance	At center of wheelbase	2.0 in
Battery	Type	Lead acid
	Capacity (6 hr, rate) Min./Max.	960 / 1240 AHC
	Weight, minimum	1600 lbs

### Fluid Capacities and Fluid Recommendations:

Transmission	2 Quarts (1.91) or to bottom of fluid fill hole.
Fluid type	Dexron II ATF
Hydraulic Reservoir	4.75 Gallons (184.15)
Fluid type	Clark Specification MS - 68 (Normal Temperature) Clark Specification MS - 226 (Cold Storage)

### Chain Lubricant:

Clark #886399 chain & cable lube

### 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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Additional Copies of this manual may be purchased from  
YOUR AUTHORIZED CLARK DEALER

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