Operator's Manual

SES15-25

OM-1212

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

JAN 2025 | REV 1.3

Table of Contents

OM-1212

Lift Truck Information

Model _____

Type _____

Serial No. _____

Truck Weight _____

Rated Capacity _____

Gross Weight _____

Component Serial Number

Drive Axle / Motor (left) _____

Drive Axle / Motor (right) _____

Steer Axle / Motor _____

Hydraulic Pump / Motor _____

Traction Controller _____

Steer Controller _____

Pump Controller _____

Valve Controller _____

YOU can prevent accidents

First: Know the rules of safe lift truck operation and the safety rules specific to your work area.

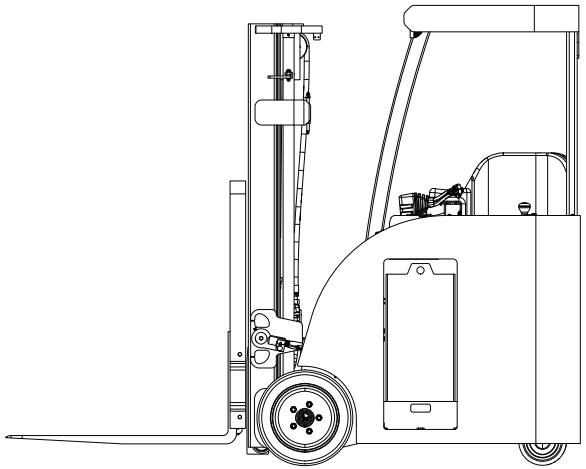
Next: Read the Operator's Manual. If you do not understand something, ask your supervisor.

LEARN about the lift truck you operate!

Know YOUR lift truck

Then: Operate your lift truck safely.

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



WARNING

If you do not follow these rules, there is a risk of injury or death.

IMPORTANT!

Do not expose this manual to hot water or steam.

A Message to Operators

Your CLARK lift truck is a specialized machine with unique operating characteristics, and designed to perform a specific task. It requires specific instructions and rules for safe operation and maintenance.

Its function and operation is not like a car or ordinary passenger vehicle. Specialized instructions and rules are required to ensure safe and correct operation and maintenance.

The safe operation of our lift trucks is of utmost importance to CLARK.

Lift truck accidents are most commonly caused by...

- **An incorrectly trained operator.**
- **An inexperienced operator.**
- **An operator not obeying basic lift truck safety rules.**
- **A damaged or malfunctioning lift truck.**

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

The primary function of this manual is to help you learn how to safely operate your lift truck. This manual gives the correct safety rules and hazards of lift truck operation. It also identifies the special components and features of your specific lift truck and describes their function.

This manual is not a training manual, it is a resource to assist trained and authorized operators how to safely operate their lift truck by showing the correct procedures.

This manual does not include information about every possible condition that may result in an accident. Be aware of all possible hazards in your specific work area and be certain to correct or avoid them.

Always make sure that the lift truck is maintained to a safe, working condition. Do not operate a damaged or malfunctioning lift truck. Practice safe operation every time you operate your lift truck.

Let's set high standards in safety together!

Before beginning operation, make sure you understand the safe and correct operating procedures of your lift truck. It is your responsibility to operate the lift truck safely, correctly, and efficiently.

Know and understand that the federal Occupational Safety and Health Act (OSHA) and state, provincial, and local law, require operators to be trained and certified in the safe operation of their lift truck. It is an OSHA requirement that the lift truck be inspected BEFORE every shift. If you have not been certified (or need recertification) to operate or inspect your lift truck, tell your supervisor.

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

Do not make repairs to any lift truck unless you have been authorized and properly trained to do so. For questions concerning the proper maintenance or repair of your CLARK lift truck, contact your CLARK dealer. **Only use genuine CLARK replacement parts and accessories to ensure optimal performance of your lift truck!**

Foreword

CLARK welcomes you to the growing group of professionals who own, operate, and/or maintain our lift trucks. We take pride in the tradition of high quality and superior value that the CLARK name represents.

This Operator's Manual has been specially prepared to help you use and maintain your CLARK lift truck in a safe and correct manner. It describes the safe operation, maintenance, and features unique to your CLARK lift truck. The safe and efficient operation of your lift truck depends on both operator skill and knowledge.

The operator must always...

- **Read and understand the safety rules described in this Operator's Manual.**
- **Read and practice the safe driving and safe load handling techniques shown in this manual.**
- **Know the construction and features of the lift truck and how they function.**
- **Know the capabilities and limitations of the lift truck.**
- **Ensure the lift truck is maintained to a safe working condition**

Your CLARK lift truck has been designed and built to be as safe and efficient as technology allows. As manufactured, it meets all applicable and mandatory design and construction requirements of the *ANSI / ITSDF B56.1 Safety Standard for Low Lift and High Lift Trucks*.

Importance of Routine Inspection and Maintenance

The regular care and proper maintenance of your CLARK lift truck is absolutely necessary to your safety. It also allows for a lower cost of ownership and optimal productivity. A damaged or malfunctioning lift truck is a potential source of danger to the operator, any personnel working nearby, and anyone else in the work area. Always keep your lift truck in a safe, operating condition by following the recommended service schedule described in the *Planned Maintenance* section of this manual.

Operator's Daily Inspection

You are required to inspect your lift truck daily and to ensure it is safe to operate. The importance of this *Daily Inspection* is described later in this manual. You can provide your own checklist sheet or your CLARK dealer can supply you with copies of a helpful *Operator's Daily Checklist*.

Planned Maintenance

In addition to the *Daily Inspection*, CLARK recommends that a *Planned Maintenance (PM)* program be performed by an authorized and properly trained technician. This safety and maintenance inspection and service will provide an opportunity to thoroughly examine the operating condition of your lift truck. Any *Planned Maintenance* can be scheduled through your CLARK dealer to meet your specific lift truck application and usage.

The *Planned Maintenance* program covers periodic inspections, checks, cleaning, lubrication, and minor adjustments. Any necessary adjustments and timely maintenance will be performed to maximize the service life of components and reduce unscheduled downtime. These procedures are described in detail in your lift truck's service manual. Your CLARK dealer can help with implementing a *Planned Maintenance* program and providing properly trained and authorized service technicians to keep your lift truck operating safely and efficiently.

Always Practice Safe Operation

Incorrect lift truck operation can cause accidents. Do not operate an improperly setup, damaged, or malfunctioning lift truck.

Read and understand the procedures for safe driving and maintenance described in this manual. If you have questions, ask for assistance.

Stay alert and follow the rules, regulations, and procedures for safe lift truck operation. Avoid accidents by identifying and avoiding potentially dangerous procedures or situations.

Drive and work safely and follow the safety messages and warnings found in this manual and attached to your lift truck.

Safety Messages and Warnings

The **safety messages and warnings,** found in this manual and attached to the lift truck, identify specific areas where potential hazards exist. Make sure to **know and understand** the meaning of these instructions, symbols, and messages. Damage to the lift truck, serious injury, or death to you and/or other personnel may result if these messages are not followed.

NOTE
Provides helpful information related to procedures, equipment, tools, specifications, or other special data.

CAUTION
There is a risk of damage to the lift truck or nearby objects.

WARNING
There is a risk of injury or death to the operator or nearby personnel.

How to Use this Manual

The Operator's Manual contains important information about the safe operation, features, functions, and maintenance of your CLARK lift truck.

IMPORTANT!
Read the Operator's Manual before operating your lift truck.

- All descriptions, images, and specifications in this Operator's Manual were correct at the time of printing.
- CLARK Material Handling Company reserves the right to make improvements and changes to the specifications and/or design, without notice and without incurring obligation. Contact your authorized CLARK dealer for information on possible updates or revisions to this or any other CLARK technical information.
- The examples, illustrations, and descriptions in this manual are intended to help improve your skill and knowledge as a professional lift truck operator and to take complete advantage of the capabilities and features of your lift truck.
- Read and understand the information located in the *General Safety Rules* and *Operating Hazards* sections of this Operator's Manual.
- Follow the instructions and procedures about how to correctly maintain your lift truck, including recommended service intervals and component capacities.
- Safe and careful driving is your responsibility! Drive defensively and always be aware of other personnel who are working nearby. Know your lift truck's capabilities and limitations.
- Follow all IMPORTANT, CAUTION, WARNING, and DANGER messages or warnings to avoid damage to the lift truck and/or injury to yourself or others.
- OHSA requires that the Operator's Manual be permanently attached to your lift truck. Keep this manual on the lift truck as a reference for anyone who may operate or service it. If the lift truck you operate is not equipped with an Operator's Manual, alert your supervisor immediately.
- Your authorized CLARK dealer is ready to help and can provide you with additional information about the unique features, operation, and maintenance of your lift truck.

Safety Standards

IMPORTANT!

Familiarize yourself with the safety instructions contained in the following publications:

ANSI / ITSDF B56.1 Safety Standard for Low Lift and High Lift 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 Including Type Designations, Areas of Use, Conversions, Maintenance and Operations

Available from: National Fire Protection Association, Inc., 1 Batterymarch Park, Quincy, MA 02169.

OSHA 1910.178 Powered Industrial Trucks

Available from: Occupational Safety & Health Administration, 200 Constitution Ave NW, Washington, DC 20210.

UL 583 Standard for Electric-Battery-Powered Industrial Trucks

Available from: Underwriters Laboratory Headquarters, 333 Pfingsten Road, Northbrook, IL 60062.

IMPORTANT!

Your CLARK lift truck has been built to meet all applicable mandatory design and construction requirements of the **ANSI / ITSDF B56.1 Safety Standard for Low Lift and High Lift Trucks**. No additions, omissions, or modifications should be made to the lift truck that affect compliance to the above requirements or in any way minimize the effectiveness of it's safety devices.

Section 1. General Safety Rules

Contents

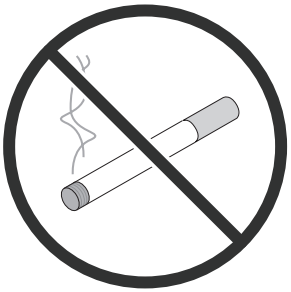
Do’s and Don’ts

DON’T mix drugs or alcohol with your job.

DO watch for pedestrians.

DON’T block safety equipment.

DO wear personal protective equipment.

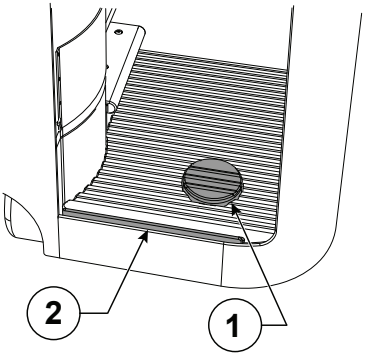


DON’T smoke while operating the lift truck and in NO SMOKING areas.

DON’T operate the lift truck outdoors during poor weather conditions such as rain, snow, or ice.

Operator Protection

Operator Presence System



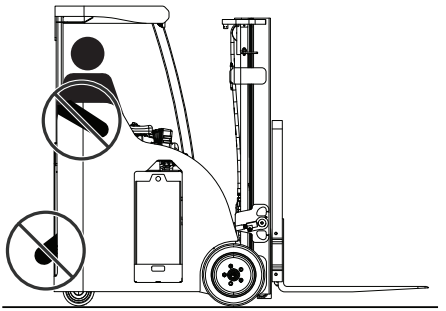
WARNING

When the dead man pedal (**1**) is released or the gate switch (**2**) is depressed, travel and hydraulic functions are stopped and the lift truck will slow to a stop and apply the parking brake.

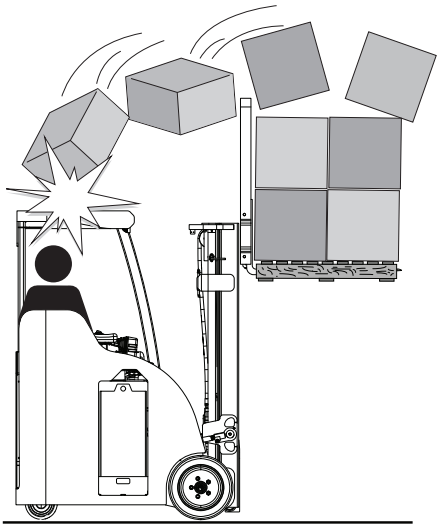
Operator Safety

WARNING

Always keep your feet and hands inside the operator compartment to prevent an accidental crushing injury.



Overhead Guard

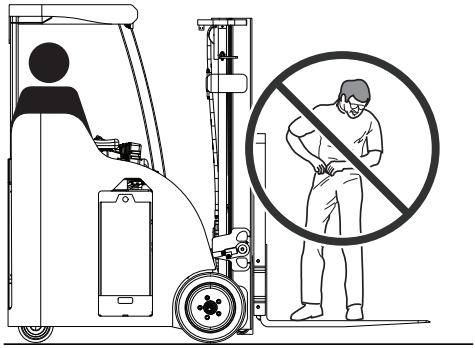


WARNING

- Stay under the overhead guard when operating the lift truck.
- Keep arms and legs inside the operator's compartment.
- Be careful when traveling in reverse and in tight areas.

Pedestrians

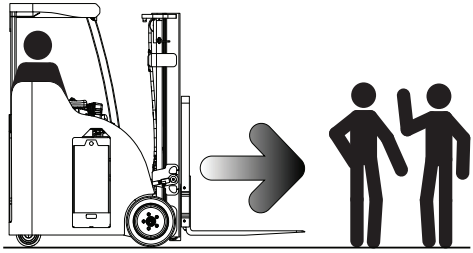
No Riders

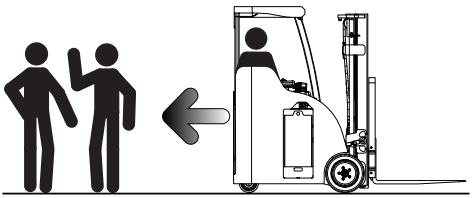


WARNING
The operator is the only person allowed on the lift truck.

WARNING
Do not transport personnel with the lift truck.

Nearby Personnel



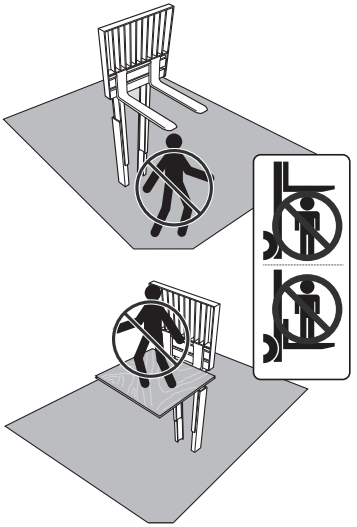


WARNING

- Look in the direction of travel.
- Slow down and operate the horn at every intersection or location with limited visibility.
- Alert personnel to stand back when operating or when parked.
- Be aware of all personnel in your work area.

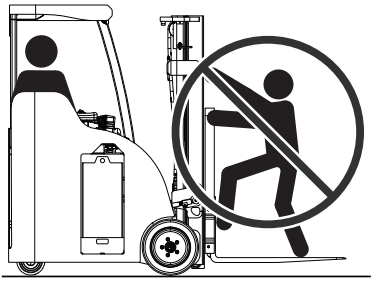
Upright

Forks and Upright



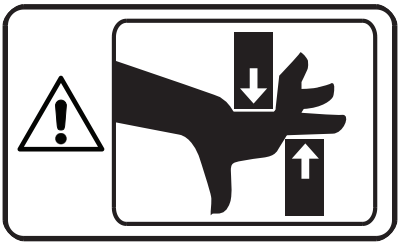
WARNING
Do not walk or stand under raised forks.

WARNING
Do not raise personnel with the lift truck.



WARNING
Do not use the upright as a ladder.

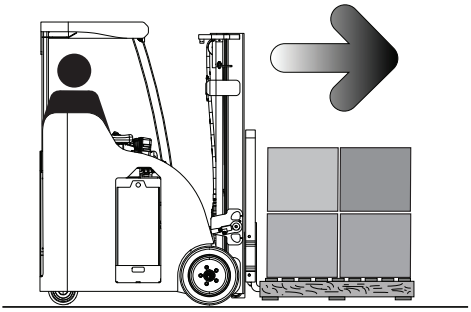
Pinch Points



WARNING
Keep hands, feet, and legs out of the upright.

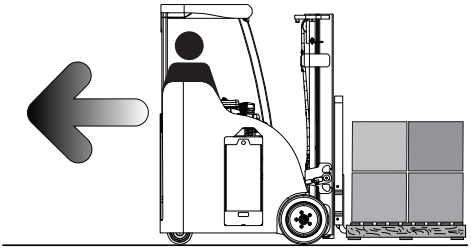
Forward Travel

- Lower the forks to a safe height and tilt the upright back when traveling with a load.
- Do not lift or lower a load while the lift truck is traveling.



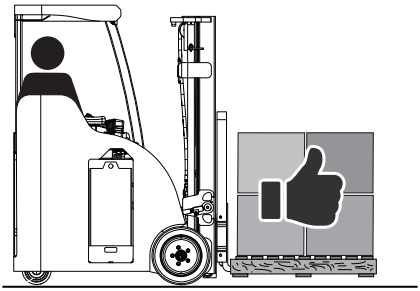
Reverse Travel

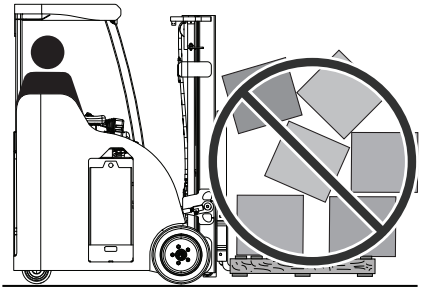
- Travel in reverse when handling loads that restrict your view.
- Always look in the direction of travel when traveling in reverse.



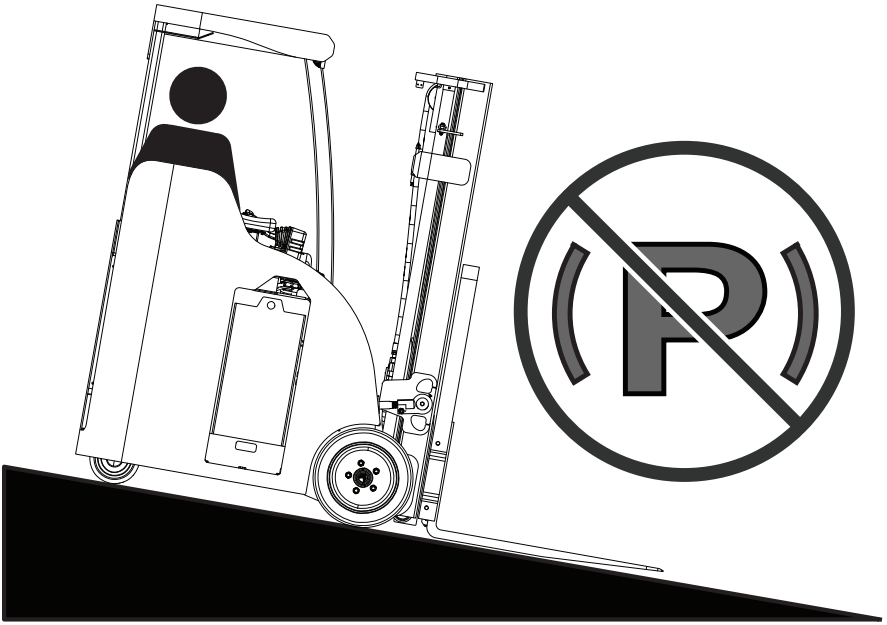
Loaded Travel

- Unstable loads are a hazard to you and other nearby personnel.
- Make sure all loads are stacked correctly and equally positioned across the forks.
- Position the heaviest part of the load closest to the front wheels of the lift truck.
- Do not attempt to lift a load using one fork.





Parking



Parking Rules

- Do not park the lift truck on a ramp or grade.
- Do not leave the lift truck before coming to a complete stop.
- Park the lift truck in authorized areas only.
- Do not block traffic.
- Put the directional control in the neutral position.
- Fully lower the upright and/or attachments to the ground.
- Remove the key when leaving the lift truck for an extended period.

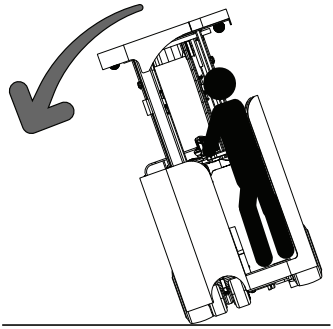
NOTE

The lift truck is equipped with a **self-activating parking brake (SAPB)**. An icon appears on the dash display when engaged.

Tip-Over

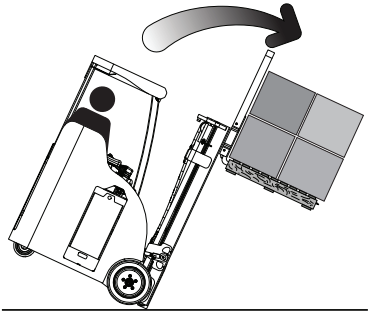
Side Tip-Over

- Tip-overs can occur when a certain combination of travel speed and turn sharpness **exceeds** the stability of the lift truck. This is most likely to occur with an unloaded lift truck.
- Tip-overs can occur while turning with the upright raised or braking in reverse with the upright raised or accelerating during a turn.
- Side tip-overs can occur when attempting to turn on a ramp or grade.



Forward Tipover

- Tip-overs can occur when a certain combination of overloading and load elevation **exceeds** the stability of the truck. This is most likely to occur because of excessive forward tilt, braking when traveling forward, or accelerating in reverse.
- Tip-overs can occur when traveling with the forks pointed down grade with a load.

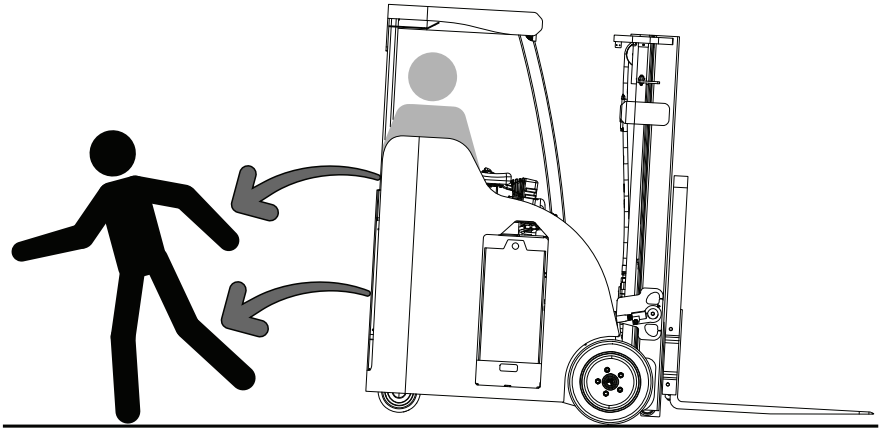


WARNING

To avoid a tip-over, do not operate your lift truck over foreign objects, on rough surfaces, near drop offs, or off-center with a heavy load.

What To Do in Case of a Tipover

WARNING
During a tipover, your best chance of survival is to **step off and away from the lift truck**!



WARNING
If a tip-over occurs while you are operating an electric stand-up lift truck, you can be seriously injured or killed, no matter what you do!

Your best chance of surviving a tip-over in an electric stand-up lift truck is to get away from the falling truck and load by stepping out and away from the operator's compartment.

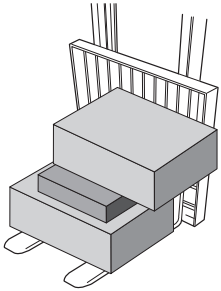
Section 2. Operating Hazards

Contents

Load Handling

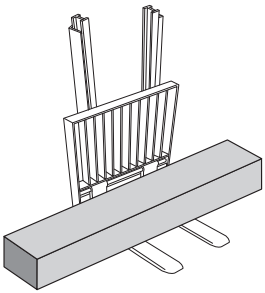
Unbalanced Loads

Do not handle uneven loads.



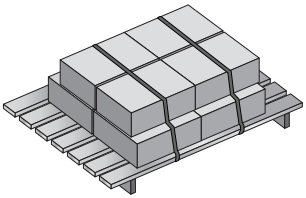
Wide Loads

Center wide loads on the forks.



Loose Material

Stack and band loose material.

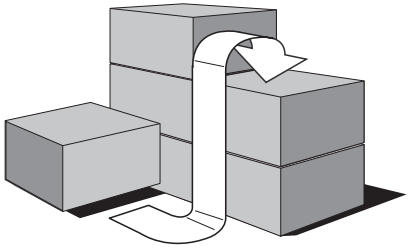


WARNING

- Always secure loose loads before handling.
- Long loads decrease the capacity of your lift truck. Know and understand your lift truck's specific load rating.
- Be careful when traveling with an elevated load and know about load end swing.
- Only travel with a raised load when picking or dropping off a load to a rack or shelf.

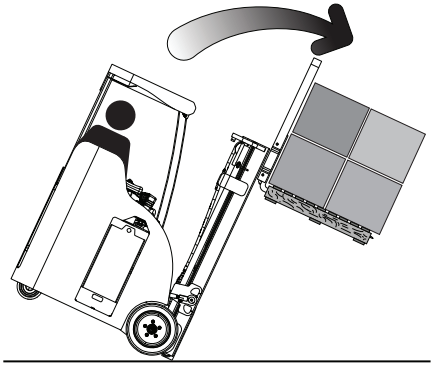
Right-Angle Stacking

Avoid sharp turns and operate slowly.



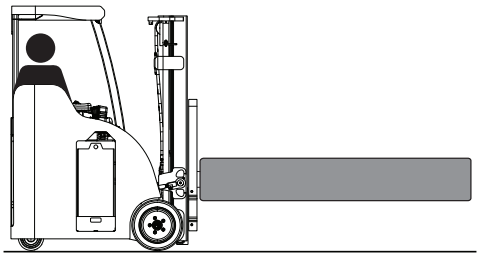
High Loads

Do not turn sharply with a raised load.

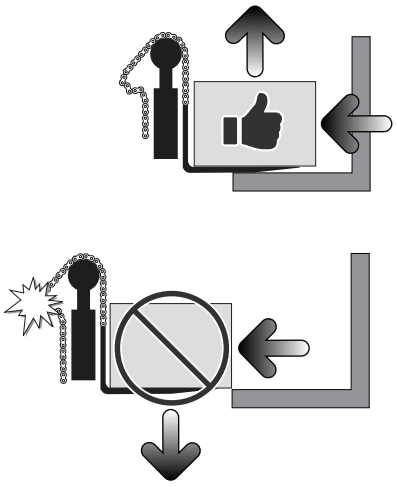


Long or Wide Loads

Long or wide loads require more clearance.



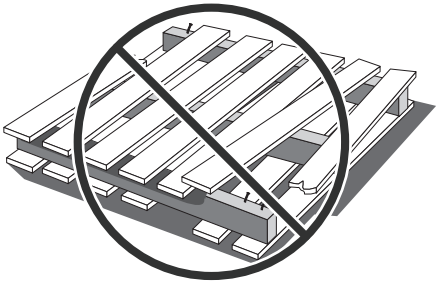
Chain Slack



WARNING

Always check for slack chains before attempting to lower a load or when withdrawing the forks after placing a load. Chain slack is caused by the upright rails, carriage, or forks hanging up. Raise the forks before moving, or damage to the chains may occur.

Pallets and Skids



WARNING

Possibility of crushing injury or death. Do not move or store material on damaged pallets or skids. Damaged skids and pallets can cause material to fall unexpectedly.

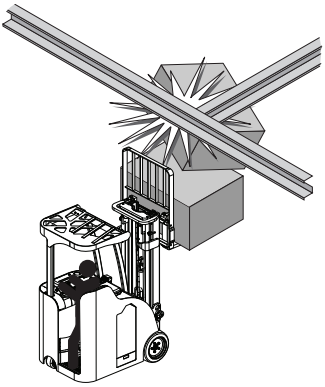
Always use pallets or skids that are in good condition.

Collisions

Overhead Clearance

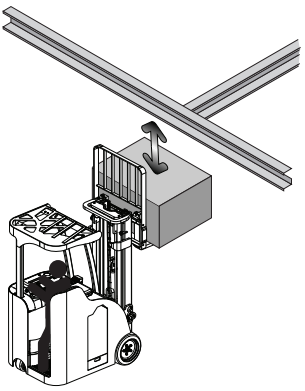
WARNING

- Know your overhead clearance and look for obstacles.
- Colliding with an overhead structure can cause the lift truck to tipover or drop its load.
- Keep the load low and tilted back.

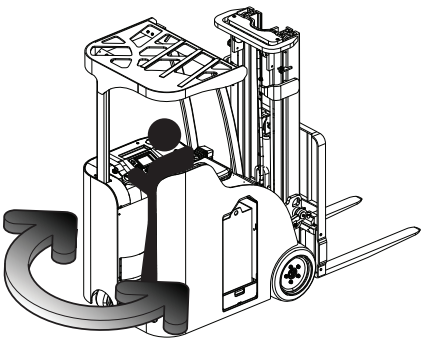


WARNING

- Know the total height of your lift truck, with and without a load.
- Check your surroundings and ceiling height.
- Keep the load low and tilted back when traveling.



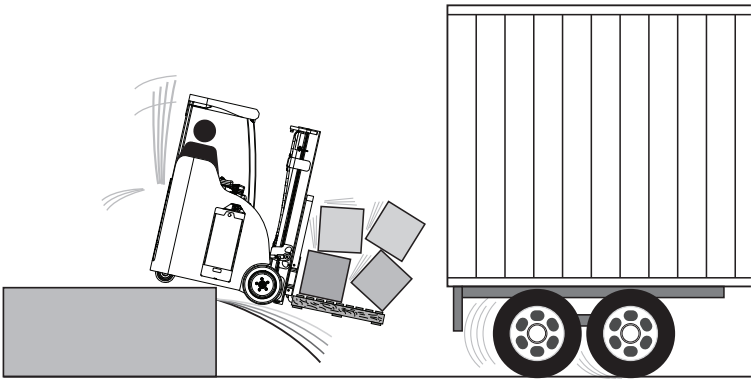
Rear End Swing

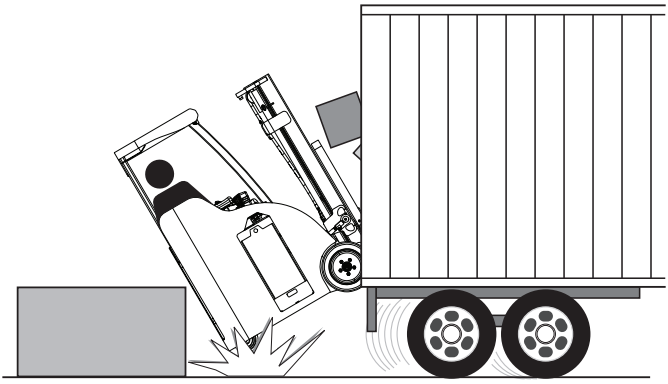


WARNING

Slow down and look for obstacles and other personnel before turning. Always know where the rear of the lift truck is positioned.

Drop-Offs





WARNING

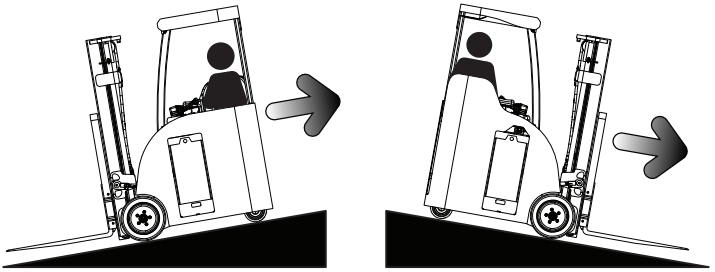
When operating on a dock or drop-off, do the following:

- Tell the driver not to move the trailer and use the trailer brakes.
- Install wheel chocks.
- Use a trailer-to-dock system if available.

The trailer may move unexpectedly while loading or unloading!

Ramps and Grades

Unloaded Travel

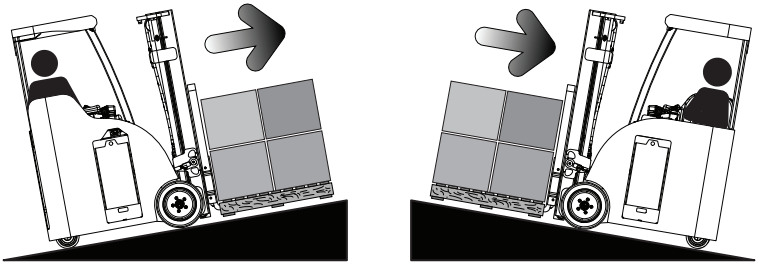


When Traveling Unloaded...
Keep Forks Pointed Down Grade

WARNING
Always look in the direction of travel.

WARNING
Do not turn on a grade.

Loaded Travel

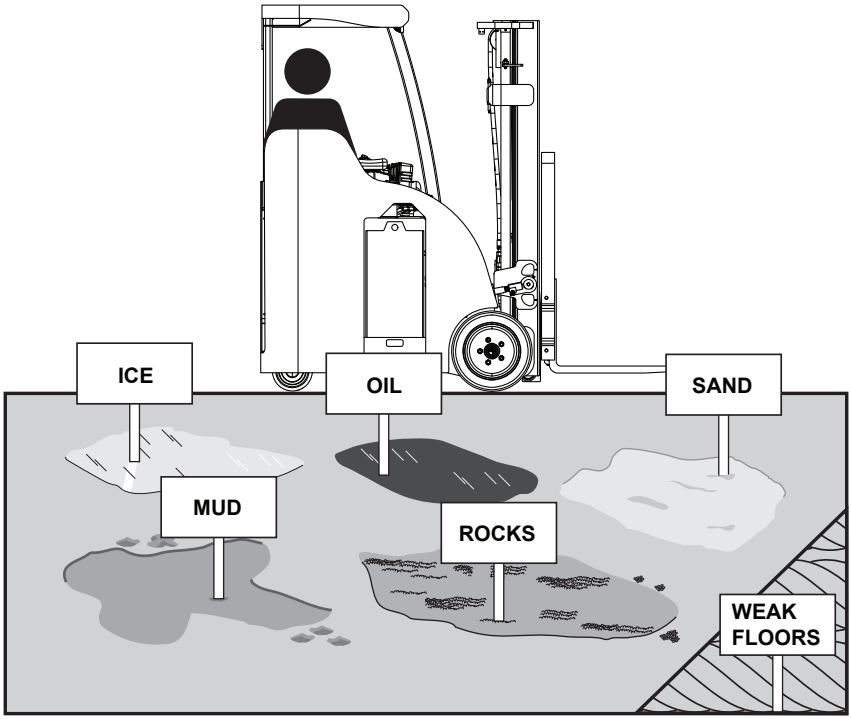


When Traveling Loaded...
Keep Forks Pointed Up Grade

WARNING

- When operating the lift truck, ascend or descend grades slowly, and with caution.
- On grades 10% or greater, always limit travel speed to 4.8 km/h (3.0 mph) or less.
- Do not exceed the maximum operating grade for your specific lift truck model, as defined in this Operator's Manual.
- Do not park on a ramp or grade.

Surface and Capacity



WARNING

Poor ground conditions can cause the lift truck to lose traction when braking or traveling.

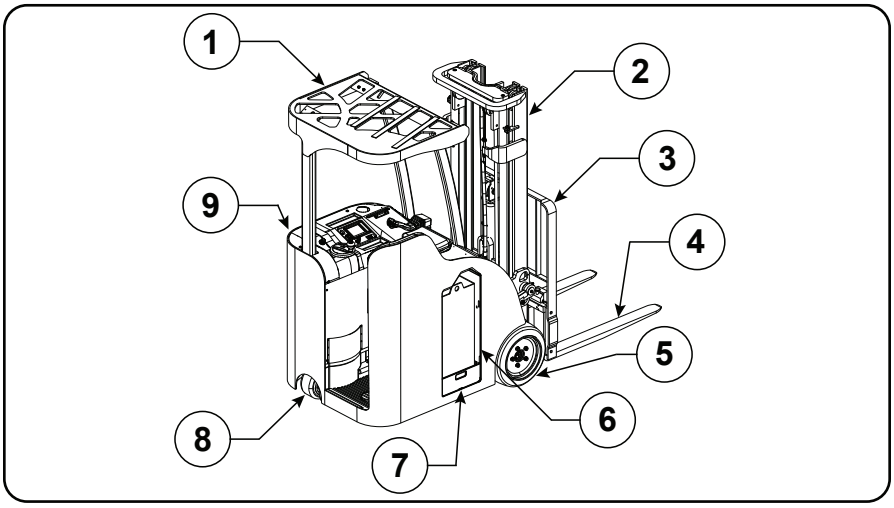
WARNING

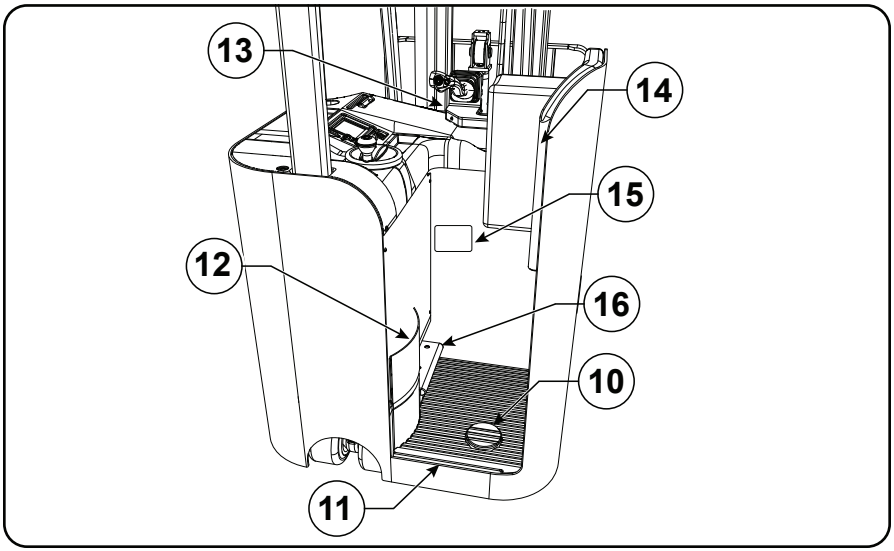
Do not travel over a surface that cannot support the weight of a loaded lift truck. Know the combined (gross) weight of the lift truck and the load.

Section 3. Know Your Lift Truck

Contents

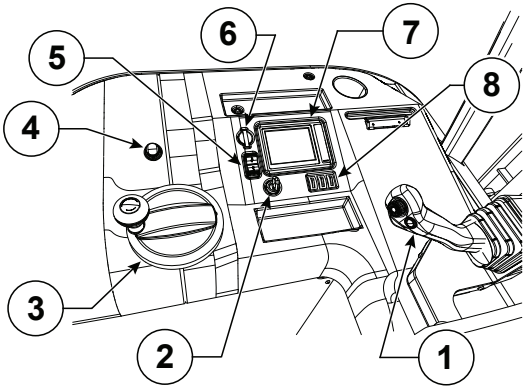
Lift Truck Components





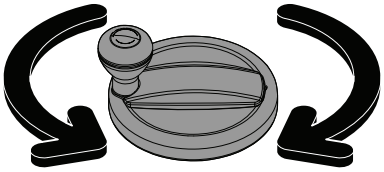
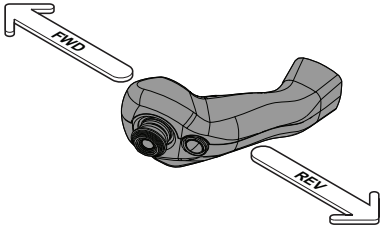
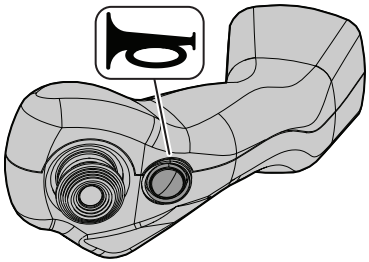
1.	Overhead Guard	**9.**	Counterweight
2.	Upright	**10.**	Foot Switch
3.	Load Backrest	**11.**	Gate Switch
4.	Forks	**12.**	Operator's Manual
5.	Drive Wheels	**13.**	Adjustable Armrest
6.	Battery Compartment	**14.**	Cushion
7.	Battery Retainer	**15.**	Data Plate
8.	Steer Wheels	**16.**	Footrest

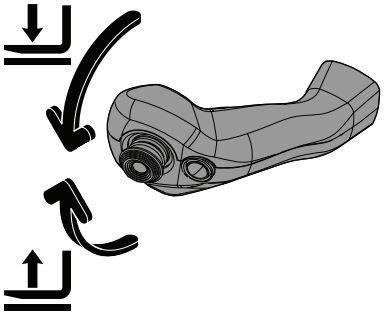
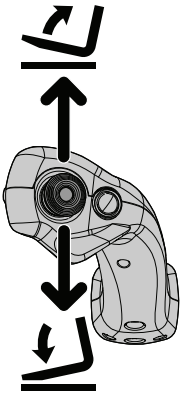
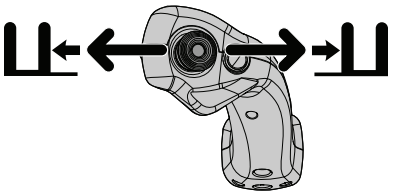
Operator Compartment

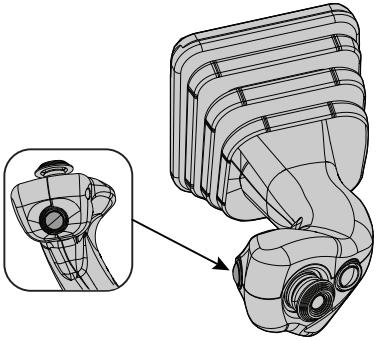
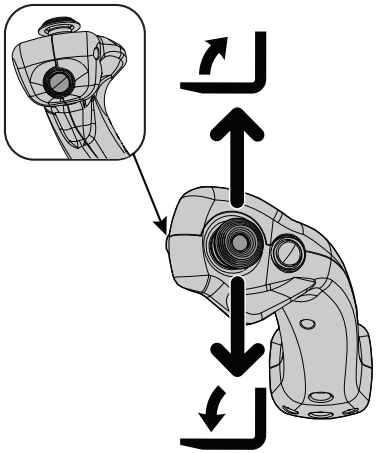
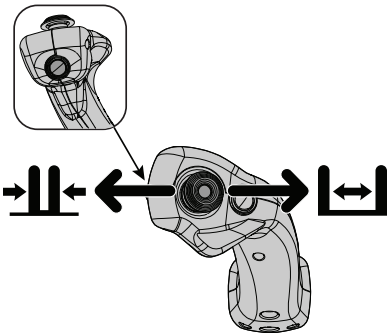


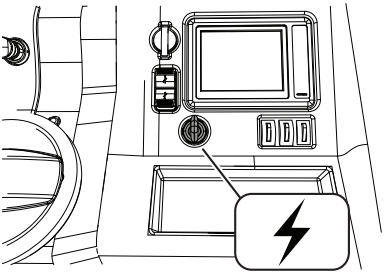
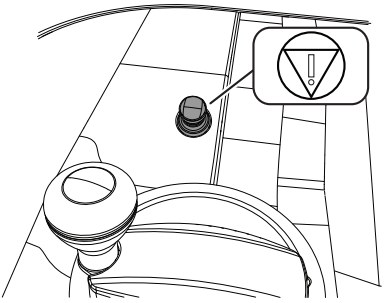
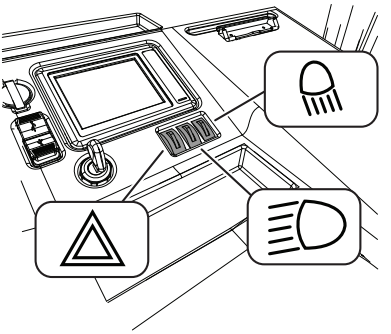
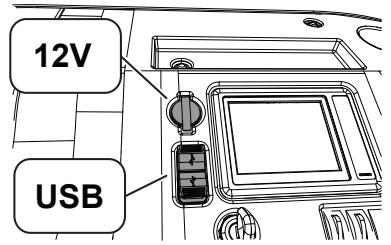
1. Joystick
2. Key Switch
3. Steering Tiller
4. Emergency Disconnect
5. USB Accessory Ports
6. 12V Accessory Port
7. Dash Display
8. Accessory Switches

NOTE
Your lift truck may vary in appearance depending on the model and optional equipment.

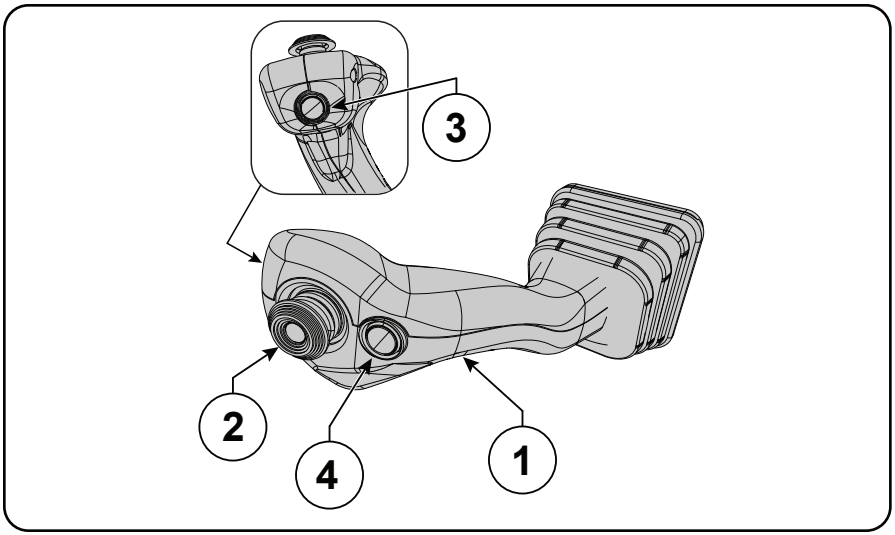
Travel Functions		
Steering Tiller	Rotate the steering tiller clockwise to turn right. Rotate the steering tiller counterclockwise to turn left.	
Directional Controls	Move the joystick forward to travel in the forward direction. Move the joystick back to travel in the reverse direction. Release the joystick back to neutral to allow the lift truck to coast.	
Horn Button	Press the horn button to sound the horn.	

Hydraulic Functions		
Lift / Lower Controls	Move the joystick up to raise the forks. Move the joystick down to lower the forks.	
Tilt Control	Move the mini-joystick up to tilt the forks back. Move the mini-joystick down to tilt the forks forward.	
Side-shift Control (optional)	Move the mini-joystick forward to shift the carriage to the left. Move the mini-joystick back to shift the carriage to the right.	

Hydraulic Functions (continued)		
Function Button	The function button is used to change the hydraulic function controlled by the mini-joystick. The function button can be operated in two ways: • Press and hold the function button while operating the mini-joystick. • Press and release the function button and then operate the mini-joystick within two (2) seconds.	
Tilt Leveling Control	Press the function button and then move the mini-joystick up to return the forks to level when tilted forward. Press the function button and then move the mini-joystick down to return the forks to level when tilted back.	
Fork Positioner Control (optional)	Press the function button and then move the mini-joystick forward to close the forks. Press the function button and then move the mini-joystick back to open the forks.	

Additional Functions		
Key Switch	Rotate the key switch clockwise to turn the lift truck ON. Rotate the key switch counterclockwise to turn the lift truck OFF.	
Emergency Disconnect Switch	Press the emergency disconnect switch down to immediately remove battery power from the lift truck. Pull the emergency disconnect switch up to apply battery power to the lift truck.	
Accessory Switches (optional)	The accessory switches control electrical options such as headlights, work lights, and hazard lights.	
Accessory Ports (optional)	The 12V charging port allows the operator to charge or power a variety of electronic devices. The USB charge ports allow the operator to charge or power a variety of electronic devices.	

Joystick



The joystick is used to operate the lift truck's travel, hydraulic, and horn functions. It has a unique contoured grip which can accommodate different hand sizes and is ergonomically designed to provide optimal operator comfort during prolonged lift truck operation.

Joystick Functions

To travel, the operator must move the joystick (**1**) forward or backward. By moving the joystick further forward or back, the operator can vary the lift truck's travel speed. This allows for precise control of the lift truck, especially within a confined area. When the joystick is released back to the neutral position, the lift truck will coast.

To raise or lower the forks, the operator must move the joystick (**1**) up or down. By moving the joystick further up or down, the operator can vary the lift truck's lifting or lowering speed. This is essential for precise loading and unloading of loads at different heights and positions.

Mini-Joystick Functions

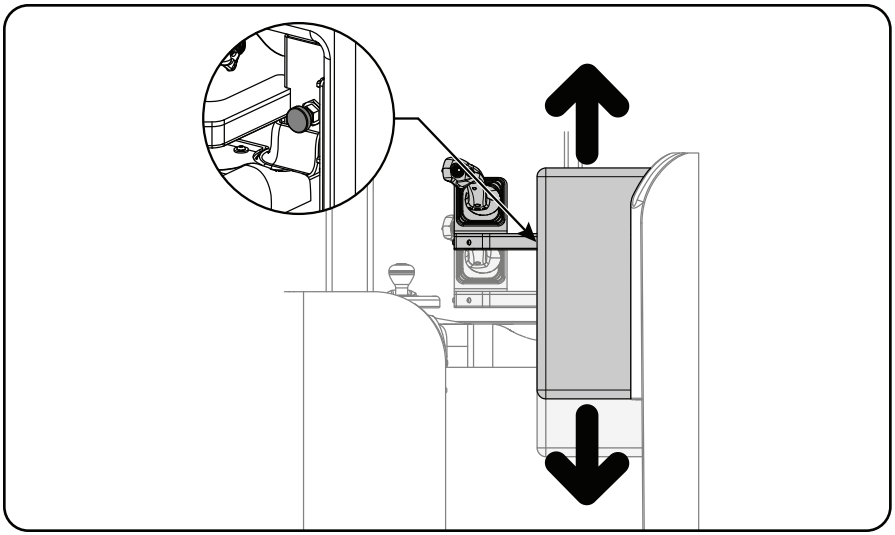
The joystick also includes a mini-joystick (**2**) which controls various auxiliary hydraulic functions such as tilting, side-shifting, fork positioning, and tilt leveling. To tilt the forks, move the mini-joystick (**2**) up or down. To shift the carriage, move the mini-joystick (**2**) forward or backward.

To use the fork positioning or tilt leveling functions, the operator must first press the function button (**3**), and within two seconds, use the mini-joystick (**2**) or press and hold the function button while using the mini-joystick to operate these functions.

Horn Function

The horn button (**4**) is used to alert nearby personnel when operating the lift truck. To sound the horn, press the horn button (4).

Adjustable Armrest



The armrest is adjustable to accommodate operators of different heights when using the joystick. The adjuster uses a six (6) position detent which allows for 3.25 inches (83 mm) of vertical adjustment.

Raising the Armrest

- Pull the latch out and then lift up on the armrest assembly to raise it to the desired position. The detent latch should lock into a secure position.

Lowering the Armrest

- Pull the release latch out and then push down slightly to lower the armrest to the desired height. The detent latch should lock into a secure position.

WARNING
Do not attempt to adjust the armrest while operating the lift truck.

WARNING
Always check that the armrest is securely locked in place before operating the lift truck.

Parking Brake

The lift truck is equipped with a self-activating parking brake (SAPB) system which consists of electromagnetic (EM) brakes attached to each drive motor. During normal operation, the EM brakes are disengaged to allow the drive motors to turn freely. When the truck is stopped, the EM brakes automatically engage and prevent the lift truck from traveling. The parking brake icon will appear on the display when the EM brakes are applied.

If battery power is interrupted while traveling, such as when the emergency disconnect is depressed or the battery is disconnected, the EM parking brakes will be immediately applied and the lift truck will come to an abrupt stop. **The repeated use of the parking brake in this way is considered operator abuse and will damage the self-activating parking brake system**.

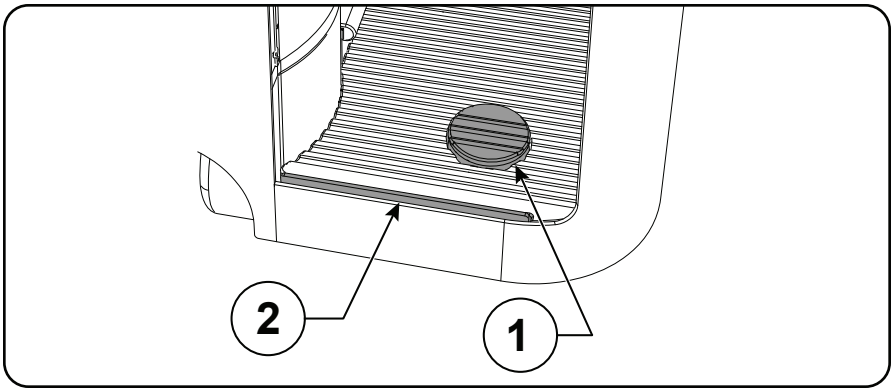
The Self-Activating Parking Brake Applies When...

- The lift truck is stopped.
- The emergency disconnect switch is depressed.
- The key switch is turned off.
- The battery cable is disconnected from the battery.

CAUTION

Damage will occur to the EM parking brakes if they are used repeatedly to stop the lift truck while traveling.

Operator Presence System



Operator Presence System

The operator presence system (OPS) consists of a foot switch (**1**) and a gate switch (**2**) which are located on the floor of the operator's compartment.

Foot Switch

The purpose of the foot switch (**1**) is to ensure that the operator is positioned safely inside the lift truck during operation. If the foot switch is not depressed by the operator, then both travel and hydraulic functions will be disabled. The operator must depress the foot switch before attempting to command a travel or hydraulic function. An alarm will appear on the dash display to notify the operator if an incorrect operating sequence is performed.

If the foot switch is released while traveling, then hydraulic functions will be disabled and the lift truck will slow to a controlled stop. An alarm will appear on the dash display to notify the operator if this occurs. The foot switch must be depressed to resume normal operation.

Gate Switch

The purpose of the gate switch (**2**) is to protect the operator if their foot is sensed to be resting outside the protected area of the operator's compartment while operating the lift truck. If the gate switch is depressed by the operator, then both travel and hydraulic functions will be disabled. The gate switch must be released for travel and hydraulic functions to be enabled.

If the gate switch is depressed while traveling, then hydraulic functions will be disabled and the lift truck will slow to a controlled stop. An alarm will appear on the dash display to notify the operator if this occurs. The gate switch must be released to resume normal operation.

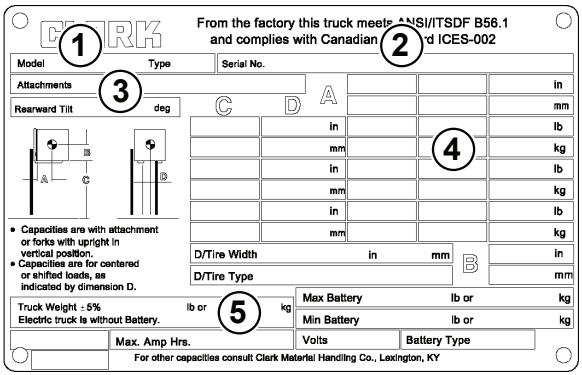
WARNING

Do not attempt to leave the operator's compartment while the lift truck is moving. Remain in the operator's compartment, with the dead man pedal depressed, until the lift truck is fully stopped and the parking brake icon appears on the display.

Data Plate

Data Plate

The data plate contains important information about the specifications, weight, and lifting capacity of your specific lift truck. If it is missing or damaged, remove the lift truck from service and contact your authorized CLARK dealer for a replacement.



(1) Model and Type: Identifies the model and type of lift truck. Certain types of lift trucks are not permitted in areas that contain fire hazards - watch for marked areas.

(2) Serial Number: A unique identification number assigned to your lift truck. It is also stamped on the frame of your lift truck. Use this number when requesting service information or ordering replacement parts to ensure accuracy.

(3) Attachments: Lists the current attachment(s) installed on the lift truck. The operator must make sure this matches with what is actually installed on the lift truck.

(4) Capacity: Shows the maximum lifting capacity of the lift truck with respect to the load center and the fork height.

(5) Weight: The unloaded weight of the lift truck. It does not include the weight of the battery. Always use the total (loaded) weight of the lift truck when operating on elevators, dock boards, or floors with a limited capacity.

WARNING

By law, all modifications affecting capacity or safety must be approved by the manufacturer before changes to the lift truck can be made. A new data plate is required whenever modifications are made to the lift truck that may affect capacity, such as adding an attachment. Contact your authorized CLARK dealer for an updated data plate showing the correct capacity.

WARNING

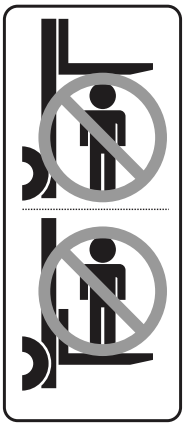
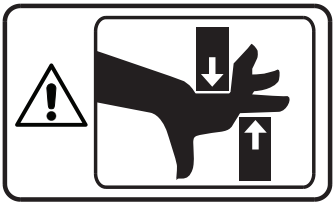
The maximum load capacity of the lift truck DOES NOT increase if the load center is less than what is shown on your data plate. DO NOT exceed the maximum load capacity!

Decals

Decals

WARNING
Safety or warning decals that are unreadable or missing must be replaced immediately.

Safety Decals		
Name	**Description**	**View**
Operator Warning	The operator warning decal describes warnings related to safely operating the lift truck.	
Service Warning	The service warning decal describes how to safely prepare the lift truck for service or maintenance.	

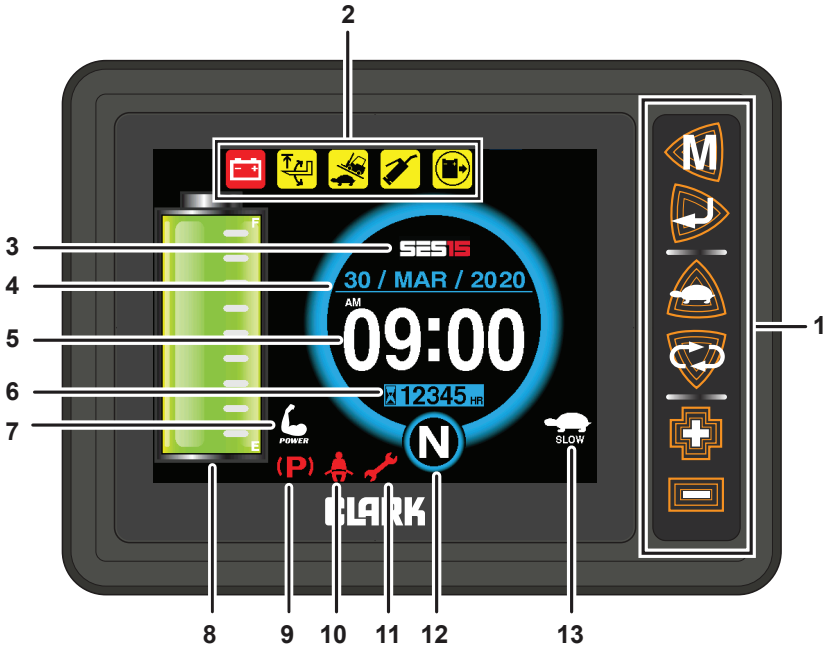
Safety Decals		
Name	**Description**	**View**
Fork Safety	The fork safety decals show the risk of serious injury or death when the forks are in a raised position.	
Upright Safety	The upright safety decal warns of the risk of serious injury when placing body parts between the moving components of the upright.	

Section 4. Operating the Display

Contents

Display Overview

Dash Display

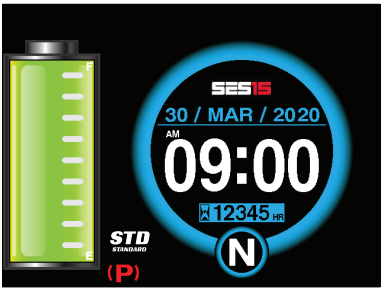
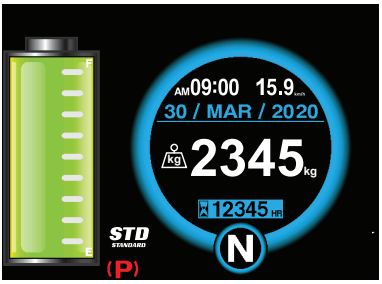
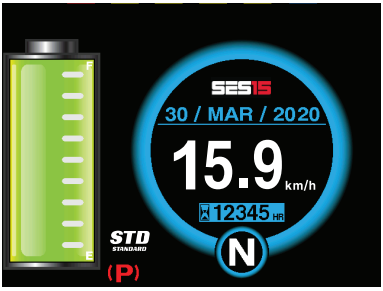


1. Menu Buttons
2. Warning Icons
3. Model
4. Date
5. Time
6. Hour Meter / Odometer
7. Performance Mode
8. Battery Level
9. Parking Brake
10. Operator Presence
11. Controller Alarm
12. Direction / Steer Position
13. Low Speed Mode

Menu Buttons

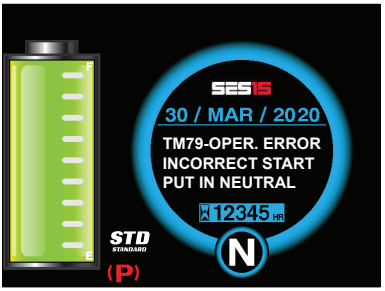
Menu OR Back Button		Press the MENU button to enter the operator menu. When in a menu, press the BACK button to return to the previous screen.
Enter OR Next Button		Press the ENTER button to enter the service menu. A password is required. When in a menu, press the NEXT button to enter a menu or save a selected value.
Low Speed OR Up Button		Press the LOW SPEED button to enable or disable low speed mode. When in a menu, press the UP button to move to a higher menu level.
Mode OR Down Button		Press the MODE button to change the performance mode (if enabled). When in a menu, press the DOWN button to move to a lower menu level.
Plus Button		When in a menu, press the PLUS button to increase a value.
Minus Button		When in a menu, press the MINUS button to decrease a value. Press the MINUS button to hide or show any active controller alarm message(s). To enter the sales menu, press and hold the MINUS button when in the home screen. A password is required.

Main Screen - Functions and Alarms

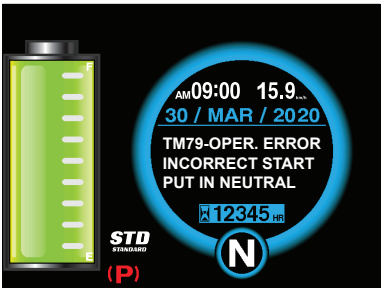
Stopped		When travel speed is less than 0.5 km/h (0.3 mph), the time is shown.
Stopped **(Load Weight)**		When stopped, or when not operating a hydraulic function, the load weight is shown.
Traveling		When travel speed is greater than 0.5 km/h (0.3 mph), or when operating the hydraulics, the speed is shown.

Main Screen - Functions and Alarms (continued)

Stopped OR Traveling

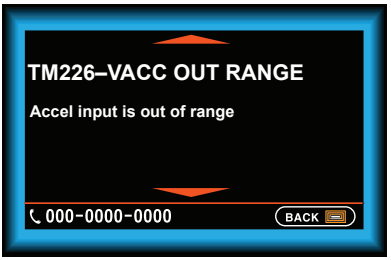


Stopped OR Traveling (Load Weight)



When an operator alarm occurs, the alarm code and description are shown on the screen.

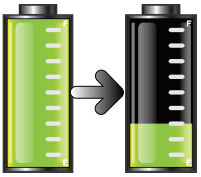
Controller Alarm



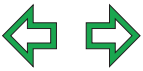
When a service alarm occurs, the alarm code and description are shown in a new window. Press the MINUS button to hide the alarm message.

Main Screen - Indicators		
Date and Time	30 / MAR / 2020 AM 09:00	The time and date icon shows the current time and date.
Speedometer	15.9 km/h	The speedometer icon shows the lift truck's travel speed.
Load Weight (optional)	kg 2345 kg	The load weight icon displays the weight of the current load.
Hour Meter	12345 HR	The hour meter icon shows the total operating hours of the lift truck.
Odometer (if enabled)	12345 km	The odometer icon shows the total distance the lift truck has traveled.
Direction and Steer Position	  	The direction icon shows the current direction of travel. The three directions of travel are forward, reverse, and neutral. The steer icon (white arrow) corresponds with the current position of the rear steer tires.

Icons

Normal Battery		The battery indicator shows the remaining battery charge level. Each increment on the icon is equal to approximately 10% of total battery charge. The icon will be green, indicating adequate battery charge, when the battery charge level is greater than 20%.
Low Battery		The battery icon will change to yellow and a warning message will appear on the display when the battery charge level reaches 20% or less.
Charge Soon		The battery icon will change to red and a warning message will appear on the display when the battery charge level reaches 15% or less.
Charge Now		The battery icon will flash, an alarm will sound, and a warning message will appear on the display when the battery charge level reaches 10% or less. When the battery charge level reaches 10% or less, the lift interrupt feature will automatically reduce the maximum travel speed and disable hydraulic lift function.
Parking Brake		The parking brake icon is displayed when the self-activating parking brake system is active.
Controller Alarm		The controller alarm icon is displayed when a controller has issued an active controller fault (error).
Low Speed Mode		The speed mode icon is displayed when the lift truck is in low speed (turtle) mode and operating at a reduced travel speed. Press the LOW SPEED button to turn this feature on or off.

Icons (continued)

Operator Presence		The operator presence icon is displayed when the lift truck is turned on and the operator has not pressed the foot switch or the gate switch is active.
Performance Mode (if enabled)	  	The performance mode icon shows the lift truck's current operating mode. The three levels of performance are **economy**, **standard**, and **power**. Press the MODE button to change the current performance mode.
Hazard		The hazard icons are displayed when the hazard switch is on.
Battery		The battery warning icon is displayed when the battery charge level reaches 10% or less. A message will be appear on the display indicating that the battery must be charged.
Fork Leveling	    	The fork leveling warning icon color changes depending on the position of the forks. • Green: forks are at the level position. • White: forks are between the restricted back tilt position and the level position. • Yellow: forks are between the restricted forward tilt position and the level position. • Orange: forks are between the restricted back tilt position and the full back tilt position. • Red: forks are between the restricted forward tilt position and the full forward tilt position.

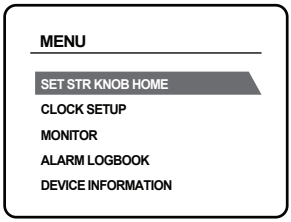
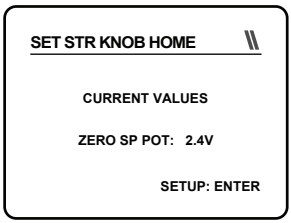
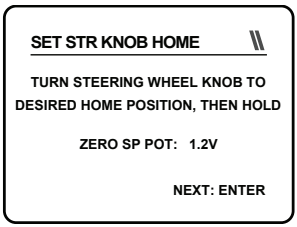
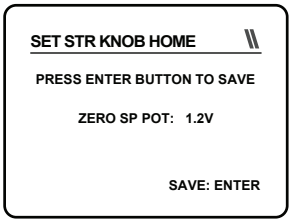
Icons (continued)		
Hill Hold (optional)		The hill hold warning icon is displayed when stopped on a ramp and this function is in use.
Maintenance		The maintenance warning icon is displayed when the preset service interval has been reached.
Battery Gate (optional)		The battery gate warning icon is displayed when the battery gate switch is active.

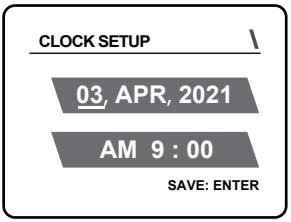
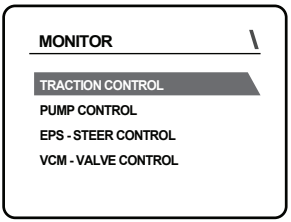
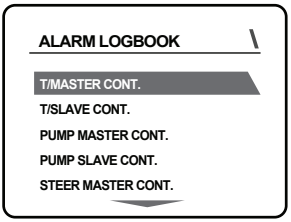
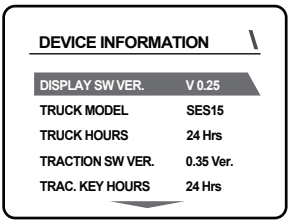
Menus

Operator Menu

The operator menu allows the operator to adjust or change features that can assist them with effectively operating the lift truck. To enter the operator menu, press the MENU button. A password is **not required** to enter this menu.

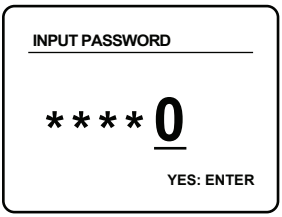
NOTE
For additional information regarding the specific use and operation of the display menus, refer to the Service Manual.

Operator Menu		
Name	**View**	**Description**
Menu		The operator menu has five (5) submenus. • Set Steer Knob Home • Clock Setup • Monitor • Alarm Logbook • Device Information
Set Steer Knob Home	  	The set steering knob home menu allows the operator to adjust the position of the steering wheel knob when the rear steer wheels are in the straight ahead (0°) position. To set the steering knob position, select SET STR KNOB HOME and follow the instructions shown on the display.

Operator Menu		
Name	**View**	**Description**
Clock Setup		The clock setup menu allows adjustment of the date and time shown on the display.
Monitor		The monitor menu shows the lift truck controller readings in real time.
Alarm Logbook		The alarm logbook menu shows the previous five (5) recorded controller alarms for each controller.
Device Information		The device information menu various information about the lift truck, including: • Truck model • Controller software version(s) • Display software version • Truck operating hours • Truck key-on hours • Motor operating hours • Lift truck model

Sales Menu

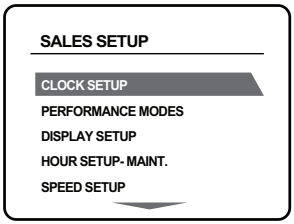
The sales menu allows the dealer or salesperson to view all current settings and features found in the service menu, but only allows for limited adjustment. In this menu, the performance modes, display setup, and speed setup can be adjusted. A password **is required** to enter this menu, refer to the service manual for this password.

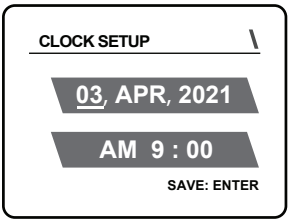
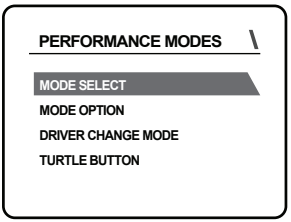
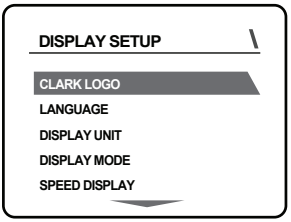
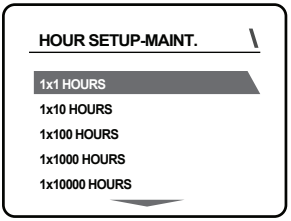
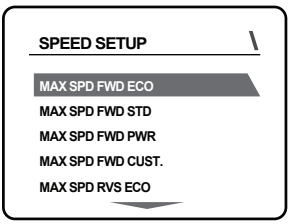


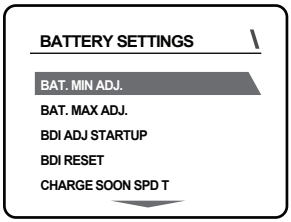
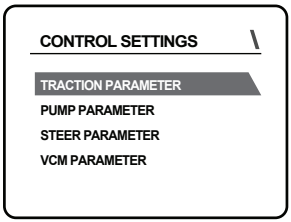
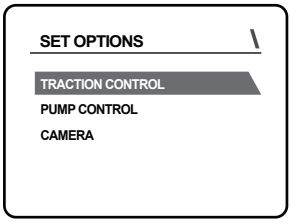
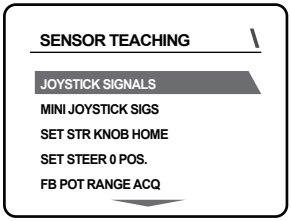
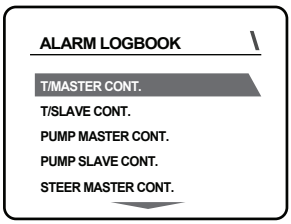
Entering the Sales Menu

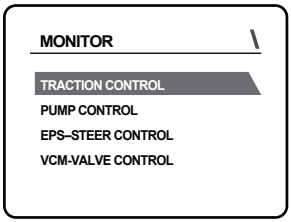
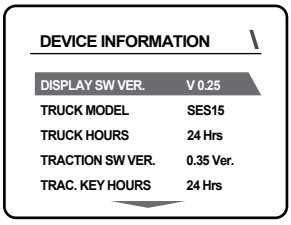
- Press and hold the MINUS button until a screen appears.
- Use the PLUS or MINUS and UP or DOWN buttons to enter the sales password.
- Press the ENTER button.

NOTE
For additional information regarding the specific use and operation of the display menus, refer to the Service Manual.

Sales Menu		
Name	**View**	**Description**
Sales Setup		The sales menu has twelve (12) submenus. • Clock Setup • Performance Modes • Display Setup • Hour Setup - Maintenance • Speed Setup • Battery Settings • Control Settings • Set Options • Sensor Teaching • Alarm Logbook • Monitor • Device Information

Sales Menu		
Name	**View**	**Description**
Clock Setup		The clock setup menu allows the dealer to adjust the date and time.
Performance Modes		The performance modes menu allows the dealer to adjust, enable, or disable the performance mode features.
Display Setup		The display setup menu allows the dealer to adjust, enable, or disable the lift truck's display features.
Hour Setup-Maint.		The hour setup-maintenance menu allows the dealer to view the lift truck settings related to maintenance.
Speed Setup		The speed setup menu allows the dealer to adjust, enable, or disable the lift truck's maximum speeds.

Sales Menu		
Name	**View**	**Description**
Battery Settings		The battery settings menu allows the dealer to view the lift truck settings related to the battery.
Control Settings		The control settings menu allows the dealer to view the lift truck settings related to the controllers.
Set Options		The set options menu allows the dealer to view the lift trucks currently enabled and disabled options. This menu does allow the dealer to adjust, enable, and disable optional camera(s).
Sensor Teaching		The sensor teaching menu allows the dealer to view the lift truck settings related to sensor calibration.
Alarm Logbook		The alarm logbook menu allows the dealer to view the most recent controller alarms.

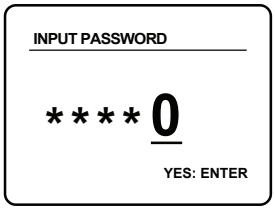
Sales Menu		
Name	**View**	**Description**
Monitor		The monitor menu allows the dealer to view controller readings in real time.
Device Information		The device information menu allows the dealer to view the lift truck model, software versions, and operating hours.

Service Menu

The service menu is intended for use by the technician only. It allows the technician to view and adjust all settings, clear errors, and enable or disable lift truck options. A password **is required** to enter this menu.

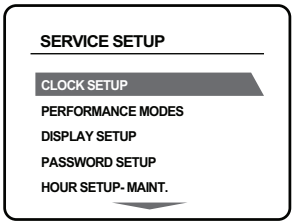
Entering the Service Menu

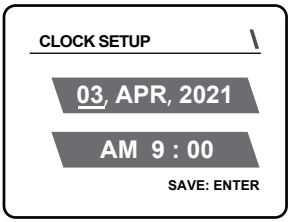
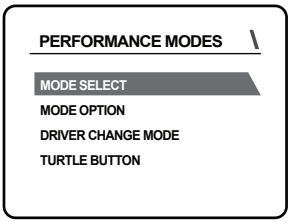
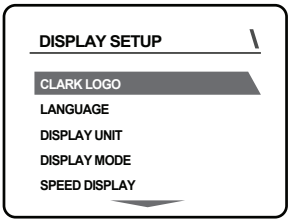
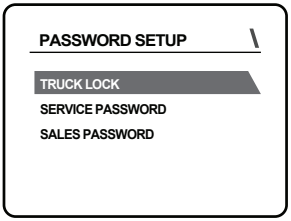
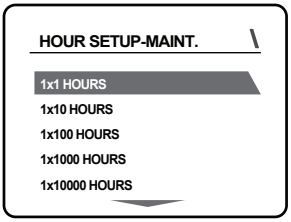
- Press and hold the MENU button until a screen appears.
- Use the PLUS or MINUS buttons and UP or DOWN buttons to enter the service password.
- Press the ENTER button.

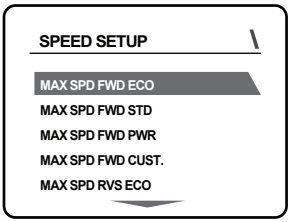
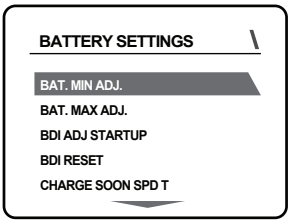
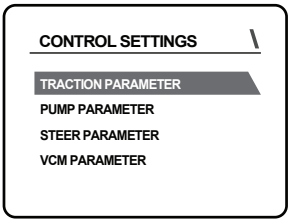
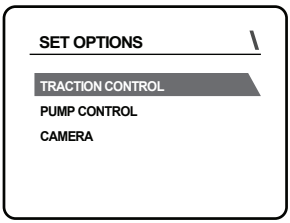
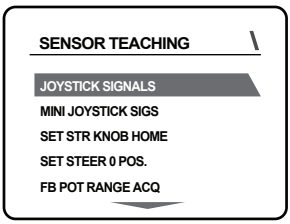


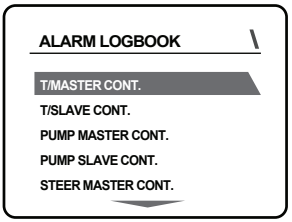
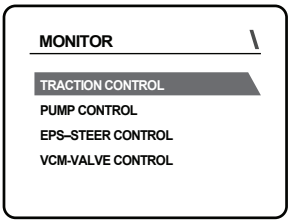
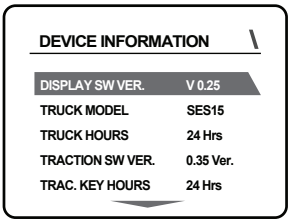
NOTE

For additional information regarding the specific use and operation of the display menus, refer to the Service Manual.

Service Menu		
Name	**View**	**Description**
Service Setup		The service menu has thirteen submenus. • Clock Setup • Performance Modes • Display Setup • Password Setup • Hour Setup - Maintenance • Speed Setup • Battery Settings • Control Settings • Set Options • Sensor Teaching • Alarm Logbook • Monitor • Device Information

Service Menu		
Name	**View**	**Description**
Clock Setup		The clock setup menu allows the technician to adjust the date and time.
Performance Modes		The performance modes menu allows the technician to adjust the performance mode features.
Display Setup		The display setup menu allows the technician to adjust the display features.
Password Setup		The password setup menu allows the technician to adjust the passwords and enable or disable the truck lock feature.
Hour Setup-Maint.		The hour setup-maintenance menu allows the technician to adjust the maintenance feature settings.

Service Menu		
Name	**View**	**Description**
Speed Setup		The speed setup menu allows the technician to adjust the maximum travel speeds.
Battery Settings		The battery settings menu allows the technician to adjust the settings related to the battery.
Control Settings		The control settings menu allows the technician to adjust the lift truck settings related to the controllers.
Set Options		The set options menu allows the technician enable and disable the lift truck's options.
Sensor Teaching		The sensor teaching menu allows the technician to adjust the settings related to sensor calibration.

Service Menu		
Name	**View**	**Description**
Alarm Logbook		The alarm logbook menu allows the technician to view and clear the most recent controller alarms.
Monitor		The monitor menu allows the technician to view controller readings in real time.
Device Information		The device information menu allows the technician to view the lift truck model, software versions, and operating hours.

Standard Features		
Name	**Operation**	**Description**
Clock	**Adjust Time and Date Settings** SETUP → CLOCK SETUP	The date and time is shown on the display when the lift truck is ON and traveling less than 0.5 km/h (0.3 mph) or stopped. The day, month, year, and time can be adjusted using any menu. The clock format can be set to either 12 or 24-hour.
Performance Modes	**Adjust Performance Mode** SETUP → PERFORMANCE MODES → MODE SELECT	The lift truck has three performance operating modes. The performance mode is saved when the lift truck is turned off and resumes when the lift truck is turned on.
	Enable / Disable Custom Mode SETUP → PERFORMANCE MODES → MODE OPTION	If the performance mode feature is enabled, the performance mode will operate normally. If disabled, the icon will be hidden, the mode change button will be disabled, and the lift truck will be locked into custom mode.
	Enable / Disable Driver Change Mode SETUP → PERFORMANCE MODES → DRIVER CHANGE MODE	The performance mode can be locked to prevent the operator from changing the performance mode.
	Enable / Disable Turtle Button SETUP → PERFORMANCE MODES → TURTLE BUTTON	The low speed (turtle) button on the display can be enabled or disabled.
Dealer Information	**Enable / Disable Dealer Information** SETUP → DISPLAY SETUP → DEALER INFO. FUNC.	The dealer information function feature enables the dealers contact information to be shown when an alarm occurs.
	Adjust Dealer Phone Number SETUP → DISPLAY SETUP → DEALER CONTACT	The dealer contact feature allows the dealer's phone number to be entered and saved.

Standard Features		
Name	**Operation**	**Description**
Display Mode	**Enable / Disable Hour Meter or Mileage** SETUP → DISPLAY SETUP → DISPLAY MODE	The display mode allows either the lift truck's total operating hours (hour meter) or mileage to be shown on the display.
Units	**Adjust Unit of Measurement** SETUP → DISPLAY SETUP → DISPLAY UNIT	The unit of measurement can be shown in either SI or US customary.
Language	**Adjust Language** SETUP → DISPLAY SETUP → LANGUAGE	The display can be viewed in a variety of different languages.
Logo	**Enable / Disable CLARK Logo** SETUP → DISPLAY SETUP → CLARK LOGO	The CLARK logo, shown on startup, can be disabled or enabled.
Operator Menu Visibility	**Enable / Disable Monitor Submenu** SETUP → DISPLAY SETUP → DRIVER MONITOR	The monitor submenu in the operator menu can be hidden to prevent access by the operator.
	Enable / Disable Clock Setup Submenu SETUP → DISPLAY SETUP → DRIVER CLOCK SETUP	The clock setup submenu in the operator menu can be hidden to prevent access by the operator.
	Enable / Disable Alarm Logbook Submenu SETUP → DISPLAY SETUP → DRIVER LOGBOOK	The alarm logbook submenu in the operator menu can be hidden to prevent access by the operator.
	Enable / Disable Device Information Submenu SETUP → DISPLAY SETUP → DRIVER DEVICE INFO	The device information submenu in the operator menu can be hidden to prevent access by the operator.
	Enable / Disable Set Steering Knob Home Submenu SETUP → DISPLAY SETUP → DRIV. SET STR HOME	The set steering knob home submenu in the operator menu can be hidden to prevent access by the operator.

Standard Features		
Name	**Operation**	**Description**
Speed Display	**Enable / Disable Speed Display** SETUP → DISPLAY SETUP → SPEED DISPLAY	The travel speed shown on the display can be enabled or disabled.
Truck Lock	**Enable / Disable Truck Lock** SETUP → PASSWORD SETUP → TRUCK LOCK	The truck lock feature allows the technician to disable the lift truck. When enabled, travel and hydraulic operation are disabled and a message appears. To resume operation, enter the service menu and disable truck lock.
Password Setup	**Adjust Service Password** SETUP → PASSWORD SETUP → SERVICE PASSWORD	The service password is programmable and must be five digits in length. If you have lost or forgotten your lift trucks service password, contact your CLARK dealer.
	Adjust Sales Password SETUP → PASSWORD SETUP → SALES PASSWORD	The sales password is programmable and must be five digits in length.

Standard Features		
Name	**Operation**	**Description**
Maintenance	**Enable / Disable Maintenance Type** SETUP → HOUR SETUP-MAINT. → MAINTENANCE TYPE	The lift truck has three maintenance feature options that determine what warning messages are displayed and if travel and hydraulic function will be reduced once the maintenance interval has been reached. This feature can also be turned OFF.
	Adjust Warning Message Time SETUP → HOUR SETUP-MAINT. → MAINT. PRE-WARN TIME	The number of hours before the warning message appears to the operator indicating future maintenance.
	Adjust Maintenance Interval SETUP → HOUR SETUP-MAINT. → MAINTENANCE TIME	The amount of operating hours before maintenance is required. This is based upon the lift trucks hour meter.
	Reset Maintenance Interval SETUP → HOUR SETUP-MAINT. → MAINTEN. RESET	Reset the maintenance interval and return the lift truck to normal operation.
	Adjust Travel Speed Reduction SETUP → HOUR SETUP-MAINT. → MAINT DUE SPD TRAC	Adjust the amount of travel speed reduction when the maintenance interval is reached.
	Adjust Hydraulic Speed Reduction SETUP → HOUR SETUP-MAINT. → MAINT DUE SPD PUMP	Adjust the amount of hydraulic speed reduction when the maintenance interval is reached.

Standard Features		
Name	**Operation**	**Description**
Speed Setup	**Adjust Maximum Forward Speed (Economy Mode)** SETUP → SPEED SETUP → MAX SPD FWD ECO	The maximum forward travel speed for economy mode is adjustable.
	Adjust Maximum Forward Speed (Standard Mode) SETUP → SPEED SETUP → MAX SPD FWD STD	The maximum forward travel speed for standard mode is adjustable.
	Adjust Maximum Forward Speed (Power Mode) SETUP → SPEED SETUP → MAX SPD FWD PWR	The maximum forward travel speed for power mode is adjustable.
	Adjust Maximum Forward Speed (Custom Mode) SETUP → SPEED SETUP → MAX SPD FWD CUST.	The maximum forward travel speed for custom mode is adjustable.
	Adjust Maximum Reverse Speed (Economy Mode) SETUP → SPEED SETUP → MAX SPD RVS ECO	The maximum reverse travel speed for economy mode is adjustable.
	Adjust Maximum Reverse Speed (Standard Mode) SETUP → SPEED SETUP → MAX SPD RVS STD	The maximum reverse travel speed for standard mode is adjustable.

Standard Features		
Name	**Operation**	**Description**
Speed Setup (Continued)	**Adjust Maximum Reverse Speed (Power Mode)** SETUP → SPEED SETUP → MAX SPD RVS PWR	The maximum reverse travel speed for power mode is adjustable.
	Adjust Maximum Reverse Speed (Custom Mode) SETUP → SPEED SETUP → MAX SPD RVS CUST.	The maximum reverse travel speed for custom mode is adjustable.
	Adjust Low Speed (Turtle Mode) SETUP → SPEED SETUP → TURTLE SPEED TRAC.	The low speed cutback is adjustable.
	Adjust Maximum Speed Upright Raised (2nd Stage) SETUP → SPEED SETUP → MAX SPEED HI MAST	The maximum travel speed when the upright is above free lift (second stage) is adjustable.
	Adjust Speed Limit Switch SETUP → SPEED SETUP → ESQ SPEED CUTBACK	If equipped with the speed limit switch option, the maximum travel speed is adjustable.

Optional Features

Optional Features		
Name	**Description**	**Menu Operation**
Camera	The lift truck may be equipped with a fork camera or a rear view camera. The fork camera is activated when a hydraulic function is being used. The rear view camera is activated when the lift truck is being operated in reverse. This feature can also be turned OFF.	**Enable / Disable Camera Type** SETUP → CAMERA → CAMERA TYPE
	The length of time the fork camera view is shown on the display can be adjusted from 0 to 10 seconds.	**Adjust Fork Camera Duration** SETUP → CAMERA → CAMERA TYPE
Load Weight	Shows the load weight that is displayed on the monitor menu.	**View Actual Load Weight** SETUP → LOAD WEIGHT → LOAD WEIGHT
	The actual weight of the reference load used to calibrate the load weight system is entered here.	**Adjust Reference Weight** SETUP → LOAD WEIGHT → SET REF. WEIGHT
	Allows the initial load value to be adjusted to compensate for the weight of the forks or the attachment. The initial load value is the measured weight when there is no load on the forks.	**Adjust Unloaded (1st Stage) Weight** SETUP → LOAD WEIGHT → UNLOADED-1ST STAGE
	This allows for the calibration of the load weight system when a load is raised while in free lift (1st stage of the upright).	**Adjust Loaded (1st Stage) Weight** SETUP → LOAD WEIGHT → LOADED-1ST STAGE
	This allows for the calibration of the load weight system when a load is raised above free lift (2nd stage of the upright).	**Adjust Loaded (2nd Stage) Weight** SETUP → LOAD WEIGHT → LOADED-2ND STAGE

Optional Features		
Name	**Description**	**Menu Operation**
Fork Leveling	The fork leveling feature is activated by pressing a auxiliary hydraulic button. This feature can also be turned OFF. An icon on the dash display will be shown if enabled.	**Enable / Disable Fork Leveling Type** SETUP → SET OPTIONS → PUMP CONTROL → FORK LEVELING
	The following upright tilt limit positions (in degrees) are entered using the dash display: full forward tilt, full backward tilt, and the vertical upright position.	**Adjust Upright Tilt Limit** SETUP → SENSOR TEACHING → FORK LEVELING → TILT FF ANGLE / TILT FB ANGLE / TILT VERT. ANGLE
	This feature allows the technician to teach the full forward and full backward tilt limit voltages for the fork leveling sensor.	**Adjust Fork Leveling Sensor** SETUP → SENSOR TEACHING → FORK LEVELING → LEARN TILT SENSOR
	The angle range from the vertical upright position, when tilt speed is reduced, is adjustable from 0 to 9.	**Adjust Tilt Speed Reduction** SETUP → SENSOR TEACHING → FORK LEVELING → MAST APPR. RANGE
Controller Fan	The controller fans can either be set to: Option 1: on continuously when keyed on. Option 2: the pump or traction controller reaches a set temperature.	**Enable / Disable Controller Fan Mode** SETUP → SET OPTIONS → TRACTION CONTROL → FAN OUTPUT
	The controller temperature (ºC) at which the controller fans are activated is adjustable.	**Adjust Controller Fan Activation Temperature** SETUP → SET OPTIONS → TRACTION CONTROL → C.FAN START TEMP

Optional Features		
Name	**Description**	**Menu Operation**
Hi-Mast Switch	This feature, if enabled, will reduce travel and hydraulic performance when the upright is raised to a certain height.	**Enable / Disable Hi-Mast Switch** SETUP → SET OPTIONS → PUMP CONTROL → HI MAST SWITCH
	Adjust the pump motor speed reduction when the hi-mast switch is activated. This is based on a percentage of maximum lift speed low.	**Adjust Maximum Lifting Speed (Hi-Mast)** SETUP → CONTROL SETTINGS → PUMP PARAMETER → MAX SPD LIFT HI
	Adjust the traction motor speed reduction when the hi-mast switch is activated. This is based on a percentage of maximum speed forward and maximum speed back.	**Adjust Maximum Travel Speed (Hi-Mast)** SETUP → CONTROL SETTINGS → TRACTION PARAMETER → MAX SPD HI MAST
	Adjust the traction motor deceleration rate (braking) when the hi-mast switch is activated.	**Adjust Braking Speed (Hi-Mast)** SETUP → CONTROL SETTINGS → TRACTION PARAMETER → SPEED LIMIT BRK.

Optional Features		
Name	**Description**	**Menu Operation**
Lights and Alarms	Enable or disable all accessories that are activated during reverse travel.	**Enable / Disable Reverse Travel Signal** SETUP → SET OPTIONS → TRACTION CONTROL → ACC. TRV. 1
	Option 1: directional control in the forward position. Option 2*: forward travel more than 0.5 km/h (0.3 mph). Option 3: directional control in the reverse position. Option 4*: reverse travel more than 0.5 km/h (0.3 mph). Option 5: directional control in the forward or reverse position. Option 6*: forward or reverse travel more than 0.5 km/h (0.3 mph). *N/A for North America.	**Adjust Reverse Accessory Function** SETUP → SET OPTIONS → TRACTION CONTROL → TRAVEL SIGNAL 1
	Enable or disable all accessories that are activated during forward travel.	**Enable / Disable Forward Travel Signal** SETUP → SET OPTIONS → TRACTION CONTROL → TRAVEL SIGNAL 2
	Option 1: directional control in the forward position. Option 2: forward travel more than 0.5 km/h (0.3 mph). Option 3: directional control in the reverse position. Option 4: reverse travel more than 0.5 km/h (0.3 mph). Option 5: directional control in the forward or reverse position. Option 6: forward or reverse travel more than 0.5 km/h (0.3 mph).	**Adjust Forward Accessory Function** SETUP → SET OPTIONS → TRACTION CONTROL → TRAVEL SIGNAL 2

Optional Features		
Name	**Description**	**Menu Operation**
Auxiliary Hydraulics	Enable or disable an auxiliary function.	**Enable / Disable Auxiliary 1 Function** SETUP → SET OPTIONS → PUMP CONTROL → AUX1 ENABLE
	Enable or disable an auxiliary function.	**Enable / Disable Auxiliary 2 Function** SETUP → SET OPTIONS → PUMP CONTROL → AUX2 ENABLE
	Enable or disable an auxiliary function, most commonly used for a clamp lever lock attachment. Option 1: auxiliary lever (1) and push button. Option 2: auxiliary lever (2) and push button. Option 3: auxiliary lever (1) and push button (clamp lever lock). Option 4: auxiliary lever (2) and push button (clamp lever lock).	**Enable / Disable Auxiliary 3 Function** SETUP → SET OPTIONS → PUMP CONTROL → AUX3 CLL ENABLE
Lift Limit Switch	This feature, if enabled, will not allow the upright to be raised above a determined height. Once reached, the pump motor is stopped and will not respond to a lift lever request.	**Enable / Disable Lift Limit Switch** SETUP → SET OPTIONS → PUMP CONTROL → ESQ LIFT LIMIT

Section 5. Operating Your Lift Truck

Contents

Before Operating the Lift Truck

IMPORTANT!
Read the Operator's Manual before operating the lift truck.

WARNING

- Safe operation is always the responsibility of the operator!
- The operator must be trained and authorized to operate this lift truck.
- Only operate the lift truck in a safe and controlled manner. Improper use of a lift truck is dangerous and can cause injury or death to the operator or nearby personnel.
- Do not operate the lift truck without an overhead guard. Do not remove the overhead guard unless specifically authorized.
- Always inspect the lift truck before starting your shift. Make sure all controls and systems operate correctly and as intended from the manufacturer.
- Do not attempt to start or operate the lift truck from outside of the operator's position. Always sit in the seat with the seat belt correctly latched before operating the lift truck.
- The overhead guard is intended to protect the operator from falling objects but it cannot protect against every possible situation. Always use safe judgment and extra care when handling loads.

Starting From a Safe Condition

Before operating the lift truck, do the following:

1. **Read and understand the Operator's Manual.**
2. **Know the location of the operator controls and how they function.**
3. **Perform the required Daily Inspection.**
4. **Carefully enter the operator's compartment.**
5. **Check that the upright is fully lowered to the ground.**
6. **Check that all lift truck controls are in neutral.**
7. **Adjust the position of the armrest so that it is comfortable.**
8. **Turn the key switch to the ON position.**
9. **Check that the self-activating parking brake is engaged.**

Safe Operation

Look where you are going...

Check that your intended path of travel is clear of obstacles and pedestrians. Watch for other personnel, lift trucks, and any other obstructions in your path of travel and work area. Do not rely on your lift trucks warning lights or alarms to alert others while operating your lift truck. Do not allow personnel to walk under raised forks. Use the horn at intersections and wherever your view is obstructed.

Protect yourself and those around you...

Do not operate the lift truck or it's attachments from outside the operator's position. Keep arms, legs, and hands inside the operator's compartment when operating the lift truck. Do not reach or place hands, arms, legs or head into the upright while operating the lift truck. Do not use the upright as a ladder. Do not allow personnel to be near the upright when operating the lift truck.

Do not allow riders...

Do not use the lift truck to carry other personnel. The operator is the only person allowed on the lift truck.

Always have control of your lift truck...

Do not operate a lift truck if your hands or feet are wet or greasy. Avoid bumps, holes, slick spots, and debris in your path that may cause the lift truck to lose traction or tipover. If unavoidable, slow down and carefully drive past them. Always reduce speed when traveling on wet or slick areas. Avoid sudden movements when operating the lift truck. Start, stop, travel, steer, and brake in a smooth and controlled way. Operate your lift truck at a speed that allows for safe, controlled stopping. Do not raise the load except when stacking. Always travel slowly while turning, especially when unloaded.

Grades, ramps, and inclines...

Use care when operating on ramps, inclines, and uneven areas. Always travel straight up and down slowly when on a sloped surface. Do not attempt to turn or drive at an angle when on sloped surface. When operating a loaded lift truck, always travel with the forks pointed upgrade. When operating an unloaded lift truck, always travel with the forks pointed downgrade.

Practice safe operation every time...

It is your responsibility to safely operate your lift truck. Do not perform stunt driving or horseplay. Observe your work areas traffic rules. Always be in control of your lift truck. Read and understand the information in this Operator's Manual. Stay alert and look for warning icons and indicators that may appear on the display. If an error message appears, immediately stop operating the lift truck. Report the issue to your supervisor or lift truck technician. Do not operate a lift truck that is faulty or is in need of repair.

WARNING

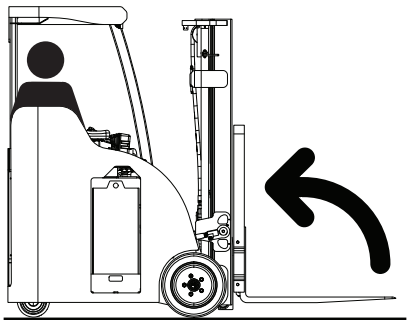
Only operate in work areas that have been approved for your lift truck type. Always check the classification of the work area in which you intend to operate. The type designation for the lift truck is shown on the data and capacity plate.

Forks and Upright

Positioning the Forks for Traveling

When traveling with or without a load, it is recommended to have the forks raised slightly and the upright tilted back. This helps prevent the fork tips from catching on the ground or debris while traveling. It also helps to reduce the amount of fork wear.

1. Raise the forks approximately 150-200 mm (6-8 in) above the floor.
2. Tilt the upright back slightly to raise the fork tips.



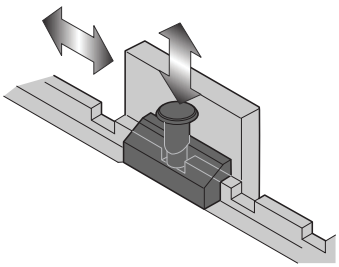
WARNING
Do not travel with a raised upright to avoid possible tipover.

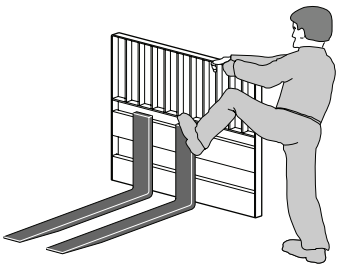
NOTE
The most common conditions that affect lift truck stability are: surface condition, grade, truck speed, load weight, and load size. Lift trucks equipped with optional attachments may have the operating stability of a partially loaded lift truck, even when unloaded.

Adjusting the Forks

The forks are adjustable on the carriage. When carrying a load, the forks should be spaced as far apart as possible. Position each fork an equal distance from the center of the carriage.

1. Raise the carriage so that the forks do not contact the ground.
2. Tilt the upright fully forward.
3. Release the fork locking pin.
4. Slide the fork to the desired position using your foot (as shown below).
5. Secure the fork using the locking pin.
6. Repeat the procedure for the other fork.





WARNING
Forks are heavy and can cause a crushing injury. Use care when adjusting the forks.

Load Handling

Overview

- Always handle loads that are at or below the lift truck's rated capacity. The rated capacity can be found on the lift truck's data plate. This rating specifies the maximum load that should be lifted. However, other factors such as using a special attachment, handling loads with a high center of gravity, or traveling over uneven surfaces may reduce the safe working load to be less than the rated capacity. Under these conditions, the operator must reduce the load carried so that the lift truck remains stable and safe to operate.
- Do not handle loads that are loose, unevenly stacked, or unstable that can easily shift and fall. Only handle stable loads or loads that are safely secured. Always stack and band loose loads. Center the load on the forks. Do not lift a load that may fall.
- Do not handle loads that are taller than the fork carriage unless the load is properly secured to prevent it from sliding back or falling. Always keep the back of the load against the carriage.
- If a load is placed on the end of the forks, it lowers the lift truck's stability. Always lift and lower the load with the upright tilted slightly tilted back or vertical. Do not tilt the upright forward when the load is raised, except to pick up or drop off a load over a rack or stack.
- The lift truck is designed to handle loads positioned forward of the front wheels so that the weight of the load is counterbalanced by the weight of the lift truck.
- The farther the center of gravity of the load is from the lift truck's load center, the greater the leverage and the more force will attempt to lift the rear of the lift truck. Always position the load as close to the front wheels as possible and back against the carriage.
- If the lifting chains become slack, this may indicate there is upright or carriage hang up.

Picking Up and Moving Loads

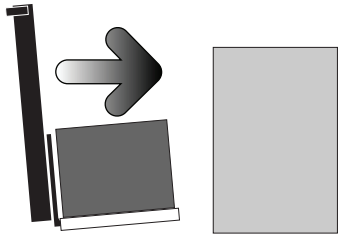
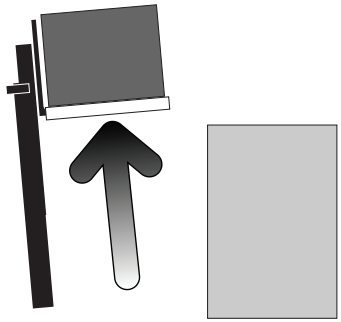
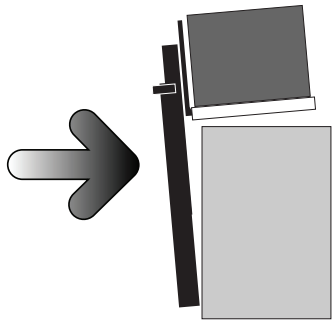
- When picking up a load, approach the load slowly and align the lift truck square with the load. The forks should be adjusted to fit the load or pallet being handled and spaced as wide as possible to provide the best stability and balance. Before lifting, make sure the load is centered and the forks are fully supporting the load. The fork length should be at least two-thirds the length of the load. Use the lift and the tilt controls to adjust the forks to the correct height and angle to easily engage the load pallet. Move forward until the forks are squarely and completely under the load.
- If the forks are longer than the load, move back until they no longer extend beyond the load. Raise the load high enough to clear the floor. Move back slowly, enough to clear any obstacles, and set the load down. Move forward until the load is squarely positioned against the load backrest or carriage.
- Raise the load from the floor or stack by tilting the upright back just enough to lift the load from the surface. When stacking or tiering, only use enough backward tilt to stabilize the load.
- Raise or lower the load to traveling height and tilt the upright fully back to travel, except for loads that must be transported as level as possible.
- Make sure the forks do not extend past the load.

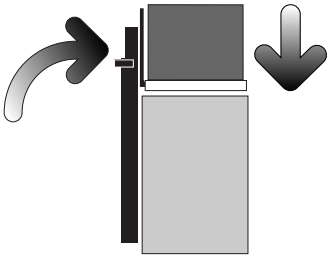
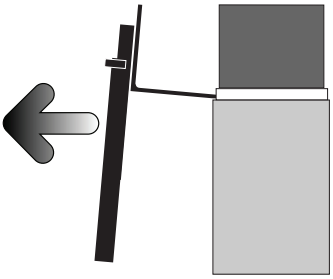
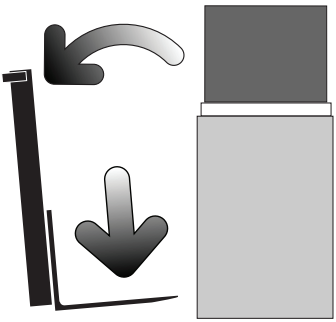
Traveling with a Load

- Always travel with the load as low as possible and the upright tilted back. Do not travel with a raised load. Do not attempt to raise the load except when stopped or stacking.
- Know and follow all traffic rules and regulations for your work area. Look and be aware of other vehicles, personnel, and other obstacles. Always look in the direction of travel and ensure a clear view of your intended path of travel. If a load blocks your visibility, travel in reverse with the load trailing, except when traveling up a slope or incline.
- Avoid sudden movements when carrying a load. Always slow down when turning. During normal operation, always start, stop, travel, steer, and brake smoothly. Operate the hydraulic controls slowly and smoothly.
- Avoid traveling over bumps, holes, and loose materials or debris to prevent loss of control or damage to the lift truck. Always slow down and cross at an angle when traveling over railroad tracks.
- Be careful when traveling with long, high, or wide loads. Look and be aware of the clearances around the lift truck and the load when traveling. Raise the forks or attachment only high enough to pick or stack the load. Look for and avoid obstructions, especially ones that are overhead.
- Know that exaggerated tail swing occurs when turning while traveling forward. This is characteristic of all lift trucks that are steered by the rear wheels. Always check the tail swing area of the counterweight to be sure it is clear before attempting to turn.
- Be aware about the current stability condition of your lift truck. When special attachments are used, additional care should be used when securing, manipulating, positioning, and transporting a load. Special lift truck attachments add weight and complexity to the lift truck, make sure to operate a lift truck equipped with an attachment as partially loaded when not handling a load.

WARNING

- When operating the lift truck, ascend or descend grades slowly, and with caution.
- On grades 10% or greater, always limit travel speed to 4.8 km/h (3.0 mph) or less.
- Do not exceed the maximum operating grade for your specific lift truck model, as defined in this Operator's Manual.

Stacking a Load		
Step	**Procedure**	**View**
1	Drive forward slowly while aligning the load squarely with the stack	
2	Raise the load as the lift truck approaches the stack.	
3	Drive forward slowly until the load is almost touching the stack. The leading edge and sides of the load pallet should be lined up with the near edge and side of the load or rack on which you are stacking.	

Stacking a Load		
Step	**Procedure**	**View**
4	Stop close to the stack and raise the load high enough to clear the top surface of the stack. Position the load slowly so that it aligns with the load or rack beneath it. Use care not to move or damage nearby loads. Once aligned, tilt the upright to the vertical position and carefully lower the load until fully supported on top of the stack.	
5	Lower the forks slightly to disengage the load pallet. Tilt the forks slightly forward, if needed to clear the pallet.	
6	Check for nearby personnel and obstructions, then carefully move backward until the forks are clear of the stack. Stop and lower the forks to the travel position and then tilt the upright fully back.	

Unstacking a Load

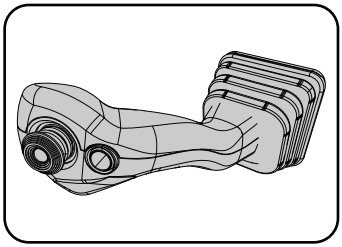
1. Slowly approach the stack with the lift truck lined up squarely with the load.
2. When near the stack, tilt the upright to the vertical position.
3. Raise the forks high enough to freely engage the load pallet. Adjust fork angle as necessary to position the forks squarely under the load.
4. Move forward until the forks are under the load. Make sure that the forks do not extend beyond the load. If the forks are longer than the load, move backward until the fork tips do not extend beyond the load.
5. Raise the load enough to clear the top surface of the stack. Move backward slightly and then set the load down. Move forward until the front face of the forks contacts the load.
6. Tilt the upright back slightly until the load is raised high enough to clear the stack or, with the upright in the vertical position, raise the forks until the load is raised high enough to clear the stack. Tilt the upright back just enough to stabilize the load.
7. Check for nearby personnel and obstructions, then carefully move backward until clear of the stack.
8. Stop and lower the load to the travel position and then tilt the upright back. Make sure the load is fully back against the carriage or front face of the forks. Some loads may have to be transported as level as possible.

Dropping Off a Load

1. Move the load into the correction position.
2. Tilt the upright to the vertical position.
3. Fully lower the load.
4. As needed, adjust the fork height and tilt the upright forward slightly to easily remove the forks from the load pallet.
5. Carefully move backward until the forks are clear from the load.
6. Raise the forks to the travel position and tilt the upright fully back.

Braking

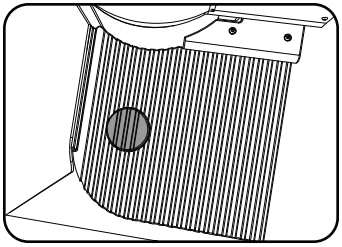
Inversion Braking (Plugging)



The primary braking method for the lift truck is called inversion braking, also known as **plugging**. Plugging is a method of braking an electric lift truck by changing the travel direction quickly while moving.

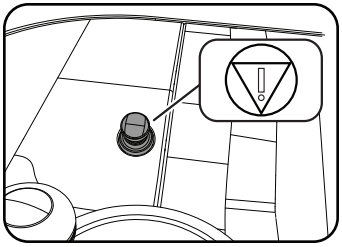
While traveling forward or backward, move the control handle to the opposite travel direction. The lift truck will slow to a controlled stop and then begin to accelerate in the opposite direction. The aggressiveness of the braking is varied by how far the control handle is actuated in the opposite direction of travel. The further the control handle is actuated, the shorter the distance the lift truck will travel until it changes direction.

Release Braking



When the control handle is returned to neutral, or the dead man pedal is released while traveling, the drive motors are proportionally slowed down until the lift truck coasts to a stop. When the lift truck comes to a complete stop, the self-activating parking brakes will be applied.

Emergency Braking



The emergency braking system is activated if one of the following actions occurs while traveling:

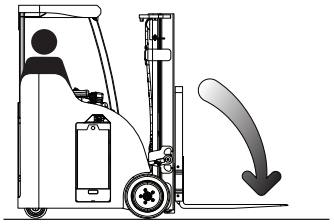
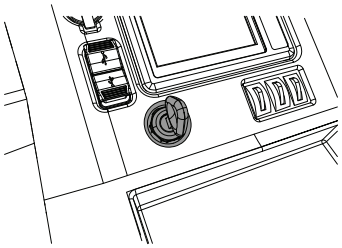
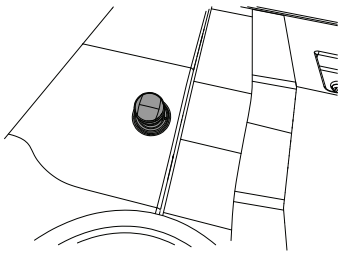
- Depressing the emergency disconnect switch.
- Turning the key switch to the off position.
- Disconnecting the battery.

When one of these occurs during operation, the self-activating parking brakes are immediately applied and the lift truck will come to an immediate and sudden stop. It is important to know that the lift truck should only be stopped this way during an emergency situation. The repetitive use of the parking brake system is considered operator abuse and will cause excessive wear to the parking brake system components.

WARNING

Always stop the lift truck in a smooth, controlled manner. Excessively abrupt braking can cause wheel sliding and loss of control, which can lead to a tipover or accident.

Parking

Parking the Lift Truck		
Step	**Procedure**	**View**
1	• Stop the lift truck. • Put the directional control in neutral. • Lower the upright to the ground.	
2	• The lift truck is equipped with a self-activating parking brake. • An icon on the dash display appears when the parking brake is engaged.	
3	• Turn the key switch OFF.	
4	• If leaving the lift truck for an extended period, press the emergency disconnect, remove the key, and block the wheels.	

WARNING

- Park away from high traffic areas.
- Do not block emergency exits or routes, stairways, or equipment.
- Do not park on a ramp or grade.

Section 6. Maintaining Your Lift Truck

Contents

WARNING

THIS SECTION IS INTENDED FOR SERVICE TECHNICIANS ONLY!
The following information is intended as a reference when determining your lift truck's specific planned maintenance (PM) schedule. For complete maintenance and service information, refer to the service manual or your CLARK dealer.

Safe Maintenance

The following instructions have been prepared using current industry and government safety standards applicable to industrial lift 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 correct inspection or maintenance procedures for your lift truck, please contact your CLARK dealer.

1. Lift 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 lift trucks shall conform with the manufacturer's recommendations.
3. A scheduled planned maintenance, lubrication, and inspection system shall be followed.
4. Properly ventilate all work areas and keep floor clean and dry.
5. Do have fire protection equipment present in the work area. Do not use an open flame to check the battery's electrolyte level. Do not use fuel or flammable cleaning fluids when cleaning parts.
6. Operation of the lift truck to check performance must be conducted in an authorized, safe, and clear area.
7. **Before Starting Maintenance or Repair**:
   - Fully lower the upright and relieve the hydraulic pressure before working on the hydraulic system.
   - Disconnect the battery before working on the electrical system.
   - Raise and support the lift truck using an appropriate lifting device.
   - Install appropriate supports prior to beginning work.
8. **Before Driving the Lift Truck**:
   - Connect the battery connector.
   - Insert the key and turn the key switch to the ON position.
   - Check that the path of travel is clear.
   - Check the function of the directional controls and the emergency disconnect switch.
   - Check the service and emergency brake functions.
9. **Before Leaving the Lift Truck**:
   - Park the lift truck in a designated area.
   - Fully lower the upright to the ground.
   - Turn the key switch off and remove the key.
   - Disconnect the battery from the lift truck.
10. All brakes, steering mechanisms, control mechanisms, warning devices, lights, guards and safety devices, lift mechanisms, and frame members must be carefully and regularly inspected and maintained to a safe operating condition.
11. Specialized lift 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.
12. The hydraulic system must be regularly inspected and maintained to ensure that excessive leakage (drift) has not developed to the extent that it creates a hazard.
13. All batteries, motors, controllers, switches, protective devices, electrical conductors, and connections must be inspected and maintained.
14. Refer to the OEM manufacturer's (CLARK) procedures for replacing battery contacts to avoid injury or damage to the equipment.
15. Lift trucks must be kept clean to minimize the risk of fire and to aide in the detection of damaged or defective parts.
16. Always use replacement parts and fluids that are of a quality at least equal to that of the Original Equipment Manufacturer (OEM).

Operator's Daily Checklist

Operator's Daily Checklist

Date: _____

Truck Type: ☐ IC Ride (LPG/Diesel/Gas) ☐ Electric Ride ☐ Electric Narrow-Aisle ☐ Electric Walkie-Pallet-Stacker

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

Current Hour Meter: _____

Do the following visual checks before the start of each shift:

- Mark each item accordingly: **OK** ☐ **NR** ☒ **NR** = Needs Repair
- Circle the problem and describe in detail using the space provided below.
- Notify your supervisor and/or maintenance department immediately if any issue is found.
- **NEVER OPERATE A DAMAGED OR FAULTY TRUCK!**

OK	NR	VISUAL CHECKS
		Body and Exterior (damaged, worn, missing)
		Wheels and Tires (damaged, worn, loose)
		Battery (damaged, electrolyte level, loose)
		Upright (damaged, loose, missing)
		Forks (damaged, worn, loose)
		Overhead Guard (damaged, loose, missing)
		Data Plate and Decals (damaged, missing)
		Operator's Manual (damaged, missing)
		Hydraulic Fluid (level, dirty, leaking)
		Drive Axle Fluid (level, dirty, leaking)
		Steer Axle Fluid (level, dirty, leaking)
		Brake Fluid (level, dirty, leaking)
		Engine Oil (IC) (level, dirty, leaking)
		Engine Coolant (IC) (level, dirty, leaking)
		Engine (IC) (rough idle, noisy, leaking)

OK	NR	VISUAL CHECKS
		Dash Display (damaged, operation)
		Gauges (damaged, operation)
		Alarm Codes (controller, DTCs)
		Seat Belt (damaged, worn, operation)
		Horn (damaged, operation)
		Lights (damaged, operation)
		Alarms (damaged, operation)
		Direction Control (loose, binding, operation)
		Steering (loose, binding, operation)
		Park Brake (loose, binding, operation, adjustment)
		Service Brake (loose, binding, operation, adjustment)
		Lift (loose, binding, operation, excessive drift)
		Lower (loose, binding, operation, excessive drift)
		Tilt (loose, binding, operation, excessive drift)
		Auxiliary (loose, binding, operation)

Description of Problem(s):

NOTE

CLARK has prepared an *Operator's Daily Checklist* to assist you in performing and documenting your daily inspections. This form is available from your CLARK dealer.

Daily Inspection

Daily Inspection Overview	Every 8-10 Hours (Daily)	OK	NA	Explanation
CHECK				
Obvious damage	●			
Fluid leaks	●			
Drive and steer tires	●			
Capacity plate and warning decals	●			
Load backrest and attachment	●			
Upright and lift chains	●			
Overhead guard	●			
Battery cables and connections	●			
Ground strap chain	●			
Gate switch operation	●			
Foot Switch operation	●			
Seat switch operation	●			
Dash display operation	●			
Error messages or alarms	●			
Horn and light operation	●			
Hydraulic operation	●			
Speed control operation	●			
Steering control operation	●			
Service brake operation	●			
Parking brake operation	●			

WARNING

OSHA requires the operator to inspect the lift truck before beginning each shift to ensure a safe operating condition.

Visual and Operational Inspections

Lift Truck Exterior
- Check for obvious damage, fluid leaks, or other maintenance issues.
- Check that all safety, capacity, and warning plates and decals are attached and legible.

Wheels and Tires
- Check the condition of the tires and tread.
- Check the wheel lug nuts.

Load Backrest and Forks
- Check for excessive wear and damaged or missing parts.
- Check for cracks and bent parts.
- Check that the fork tips are level.

Upright and Lift Chains
- Check the lift chains for excessive stretch and wear, broken links, misaligned pins, and corrosion.
- Check the lift chains for proper lubrication and correct adjustment (equally tensioned).
- Check the upright rails for excessive wear (metal flaking).
- Check the rollers for excessive wear and proper lubrication.
- Check for hydraulic fluid leaks and loose hoses and fittings.

Overhead Guard
- Check for damage to the overhead guard.
- Check that the overhead guard is securely attached to the frame.
- Check that the overhead guard has not been modified.

Battery and Cables
- Check the battery for damage and leaks.
- Check the battery receptacle, cables, and terminals.
- Check that the ground strap chain is installed and touching the floor.

Foot Switch and Gate Switch
- Check for any obvious damage.
- Check that the foot switch and gate switch function correctly.
- Check that the lift truck does not operate when the foot switch is released (up).

Dash Display and Errors
- Check that the dash display boots when the lift truck is turned on.
- Check for any controller alarms (errors).

Horn and Lights
- Check the horn.
- Check that the work lights (if equipped) work correctly.
- Check that the warning lights (if equipped) work correctly.

Hydraulics
- Check the lift, lower, tilt, and auxiliary (if equipped) hydraulic functions.
- Check for hydraulic pump cavitation when the upright is fully raised.
- Check for binding or rough operation of the upright (racking).

Steering and Speed Control
- Check that the directional control changes the lift truck direction properly.
- Check that the steering is smooth and allows for a full range of motion.
- Check that the lift truck accelerates smoothly and with no unusual noises.

Service and Parking Brake
- Check that the service brake function works properly.
- Check that the self-activating parking brake works properly.

Cleaning

Cleaning Rules

Always maintain a clean lift truck. Do not allow debris or contaminants to accumulate on the lift truck. Clean any excess or leaking grease and oil before operating the lift truck. Before attempting to clean the lift truck, make sure to prevent shorting (arcing) of the electric circuits.

Your specific operating environment determines the amount and extent of cleaning required for your lift truck. For severe truck applications, frequent cleaning is required to allow for safe and optimal lift truck operation.

- Disconnect the battery before cleaning the lift truck.
- Use clean, dry low-pressure air and non-conductive, anti-static brushes to clean electrical components.
- Do not use pressurized water to clean the lift truck.
- Do not use flammable solvents to clean the lift truck.
- Clean the lift truck at least every PM interval.
- After cleaning, check all lift truck functions operating and returning to service.

CAUTION

Per OSHA, when using compressed air to clean the lift truck, air pressure must **not** be greater than 207 kPa (30 psi).

WARNING

Always wear appropriate eye protection when cleaning.

Planned Maintenance

Operating Conditions

Planned maintenance intervals are mostly influenced by operating conditions. The service intervals specified in this Operator's Manual are for normal operation only. For severe or extreme operation, the maintenance interval should be shortened to ensure optimal lift truck performance and reliability. Contact your authorized CLARK dealer if you have questions regarding the recommended service intervals for your specific lift truck application.

Normal Operation:

Standard 8 to 10 hour material handling operation in a clean, indoor location with smooth and level floors.

Severe Operation:

Extended operating hours, continuous operation, or routine capacity loads.

Extreme Operation:

High or low temperatures, sudden temperature changes, outdoor use on rough and uneven floors, or dirty environmental conditions.

NOTE

The maintenance intervals described in this Operator's Manual are for lift trucks that operate for a standard 8-10 hour shift in normal operating conditions.

NOTE

- Inspect your lift truck before each shift.
- Fill out a daily inspection sheet. Retain for your records.
- Report any issues to your supervisor or service technician.
- Do not operate your lift truck until any issues have been corrected.

PM Service Intervals	Every 450-500 Hours (6 Months)	Every 900-1000 Hours (12 Months)	Every 2000 Hours (Yearly)
CHECK			
Wheel fastener torque	■		
Drive and steer axle fluid levels	■		
Hydraulic fluid level	■		
Battery electrolyte level	■		
Drive, pump, and steer motors	■		
Lift chain stretch and wear	■		
Critical fastener torques	■		
Steer wheel hub bearings		■	
CLEAN			
Drive, pump, and steer motors	■		
Controllers	■		
Battery vents and terminals	■		
Drive axle breathers	■		
Hydraulic tank breather	■		
LUBRICATE			
Lifting chains	■		
Upright / carriage rails and rollers	■		
Upright mounting pins	■		
Tilt cylinder ends	■		
Steer wheel hub bearings		♦	■
TEST			
Battery voltage (loaded and unloaded)	■		
Lift and tilt cylinder drift	■		
Electromagnetic parking brakes		■	
Main and auxiliary relief pressures			■
REPLACE			
Drive and steer axle fluid		♦	■
Hydraulic tank breather		■	
Hydraulic tank filter			■
Hydraulic tank fluid			■

■ = Normal operation

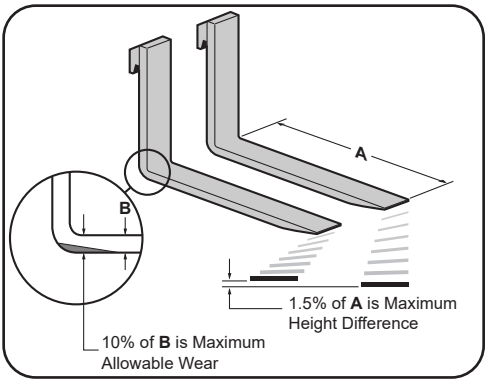
♦ = Severe or extreme operation

Forks and Lift Chain

Fork Inspection

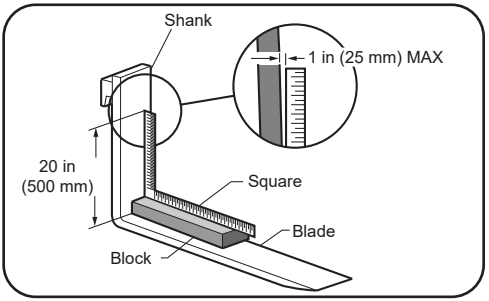
Inspect the forks for bending and wear:

- The top surfaces of the forks should be level with each other.
- If the height difference between the fork tips is greater than 1.5% of the blade length (**A**), then the forks must be replaced.
- If the fork heel is worn by more than 10% of the thickness (**B**) of the fork blade, then the forks must be replaced. The load capacity of the forks is reduced when the forks are excessively worn.



Inspect the forks for twists and bends:

- Position a 50 mm (2 in) thick block, at least 100 mm (4 in) wide and 600 mm (24 in) long, on the blade of the fork with the 100 mm (4 in) surface against the blade.
- Position a 600 mm (24 in) square on the top of the block and against the shank.
- Check the fork gap at 500 mm (20 in) above the blade. If the gap distance is greater than 25 mm (1 in), then the forks must be replaced.



WARNING

Do not operate a lift truck with bent, damaged, or worn forks.

Lift Chain Inspection and Lubrication

During normal operation, inspect and lubricate the lift chains every 450 to 500 hours. If operating in a corrosive or extreme working condition, inspect the lift chains more frequently.

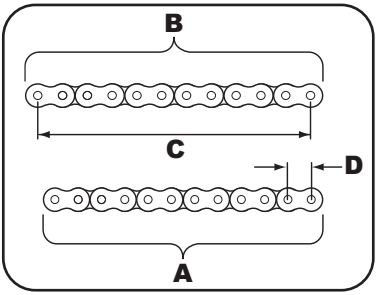
Be sure to check for the following: corrosion, cracked plates, raised or turned pins, tight joints, excessive wear, and worn pins and holes.

Lift chain lubrication is a critical part of your planned maintenance program. The correct and timely lubrication of the lift chains will also maximize their service life.

Lift Chain Wear and Replacement Criteria

The lift chain will gradually stretch over time during normal operation. When a section of chain has stretched 3% or more, it is considered excessively worn and must be replaced. When checking for chain stretch, always measure a segment of chain that moves over a sheave.

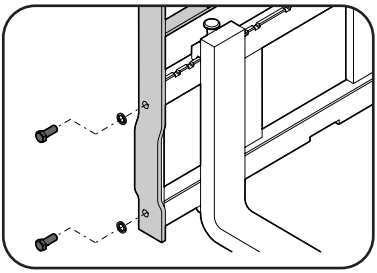
- **New Chain Length (A):** distance from the first pin counted to the last pin counted in a span while the chains are lifting a small load.
- **Worn Chain Length (B):** distance from the first pin counted to the last pin counted in a span while the chains are lifting a small load.
- **Span (C):** number of pins in the segment of chain to be measured.
- **Pitch (D):** distance from the center of one pin to the center of the next pin.



WARNING
Do not attempt to repair a worn or broken lift chain.

Load Backrest

Check the condition of the load backrest. Inspect the welds on the load backrest and carriage for cracks. Check that the load backrest mounting fasteners are not missing and properly tightened to specification. If the load backrest has been removed, make sure that fork stops have been installed on each side of the carriage.



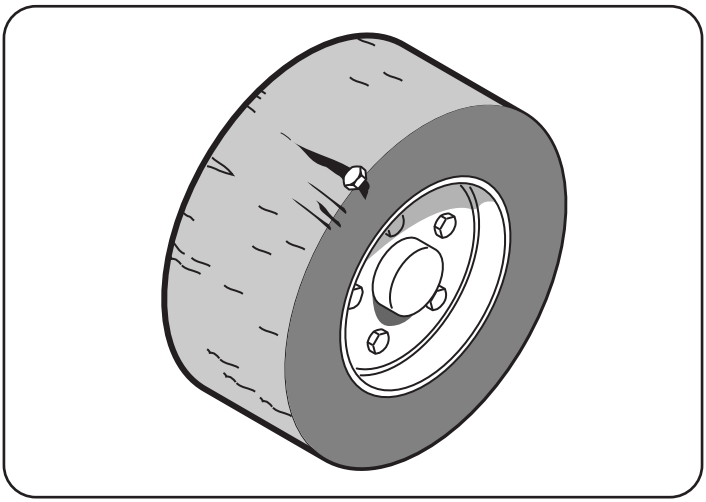
WARNING
If the lift truck is not equipped with a load backrest, or it has been removed, then fork stops must be installed on each side of the carriage to prevent the forks from being unintentionally forced off of the carriage during operation.

Wheels and Tires

Inspect the drive and steer wheels and tires every day before operating the lift truck.

Do the following when inspecting the wheels and tires:

- Inspect the tires for excessive wear. Replace if needed.
- Remove any embedded foreign objects from the tires.
- Inspect the tire for large cracks or missing chunks.
- Check for loose or missing wheel fasteners. Tighten any loose or replaced fasteners to the correct torque specification. Refer to your lift truck's service manual for the correct specifications.

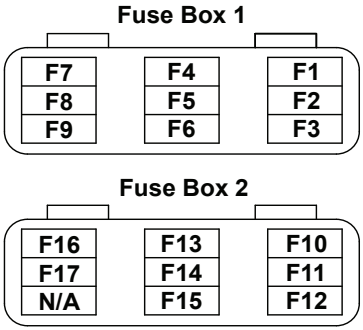


WARNING

Tires that are excessively worn or damaged can lower the lifting capacity of your lift truck. Always replace damaged or worn tires.

Fuses

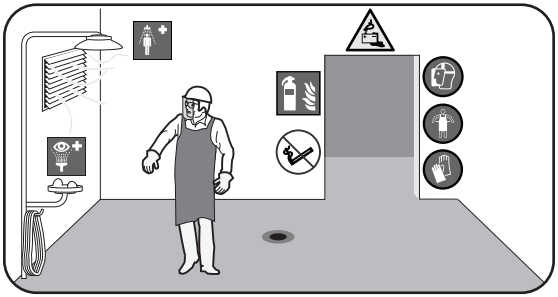
Fuse Descriptions



Number	Description	Amp Rating
F1	Key Switch	10A
F2	Display	2A
F3	12V Converter	10A
F4	FWD / REV Travel Accessories	5A
F5	Headlights / Rear Work Light / Side Marker Lights	5A
F6	Strobe Light / Dome Light / Rear Arch Light	3A
F7	Controller Fans	2A
F8	Horn	5A
F9	12V Accessory / USB	5A
F10	Traction Controller - Key On / Valve Controller - Key On	7.5A
F11	Pump Controller - Key On	7.5A
F12	Steer Controller - Key On	7.5A
F13	Traction Controller - Positive In	10A
F14	Pump Controller - Positive In	10A
F15	Valve Controller - Positive In	10A
F16	Backup Alarm / Backup Lights	5A
F17	Operator Fan	2A
F20	Cold Storage	5A
	Steer Controller (B+)	40A
	Pump Controller (B+)	350A
	Traction Controller (B+)	500A

Battery

Battery Service Area



The industrial battery service area must be in a location dedicated for that purpose. The area must be free of all nonessential combustible materials.

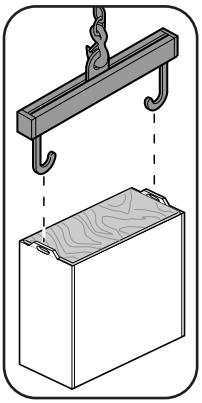
The battery service area must have the following:

- Ability to clean and properly dispose of spilled electrolyte solution.
- Appropriate personal protective equipment (PPE) such as face shields, protective aprons, and rubber gloves.
- Fire prevention and protection.
- Battery charger(s) protected from accidental collision damage.
- Adequate ventilation to allow excess gas to disperse.
- An eyewash station when handling acid concentrates greater than 50% (or a specific gravity greater than 1.40).
- A conveyor, overhead hoist, or other suitable lifting equipment must be provided for safe handling of batteries.

Battery Handling

When removing or installing the battery, do the following:

- Ensure the service area is equipped with the proper tools designed for moving industrial batteries, such as a conveyor or overhead hoist.
- Use lift hooks that have safety latches and are the correct size.
- Use a specialized attachment device, such as an insulted spreader bar, to install the lifting device to the battery. The width of the spreader bar must be the same as the width of the battery, to prevent damage to the battery.
- If the battery does not have a cover or has exposed terminals or connectors, cover the top with an insulating material, before installing the lifting device.
- Chain hoists must be equipped with load chain containers to store excess lifting chain.
- Keep all tools or other metal objects away from the battery terminals.



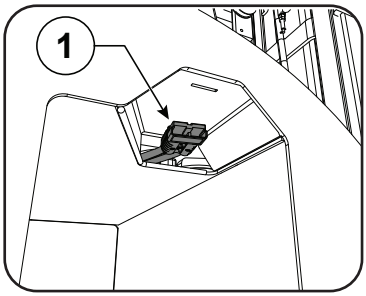
WARNING

Industrial batteries are heavy and awkward to handle. Use an appropriate lifting device and proper attachment to lift the battery.

Battery Charging

Charging the Battery:

1. Safely park the lift truck.
2. Remove the right side battery retainer.
3. Check all cables and connections for damage.
4. Disconnect the battery cable (not shown) from the lift truck's battery receptacle (**1**).
5. Connect the battery cable to the charger.
6. Follow the recommended procedure provided by the battery and/or charging station manufacturer(s).



WARNING

Do not smoke or allow open flames or sparks near battery charging areas or batteries. If electrolyte (sulfuric acid) solution contacts your eyes or skin, flush with water and seek medical attention immediately. Remove the battery from the lift truck before cleaning the battery. Battery service must be performed by authorized personnel only.

Battery Care

Cleaning

The recommended method of cleaning a lead-acid industrial battery is to use a solution of baking soda dissolved in water and rinsed using a low pressure spray of cool, clean water. After cleaning, apply an appropriate protectant to the terminals and cable connections to prevent corrosion. Always refer to and follow the instructions provided by your specific battery manufacturer regarding the correct battery maintenance and care.

Service Records

Record all battery service and maintenance to maximize the service life of your battery and lift truck. Select a test cell and record the readings of the specific gravity and temperature before and after charging along with the date. It is best to vary the location of the test cell to distribute any loss of electrolyte. Every two to three months, record all battery readings including specific gravity, temperature, and voltage.

Optimize Battery Life

- Follow normal battery maintenance procedures, recharging before 80% discharged and with periodic equalizing charges.
- Do not add acid to the battery unless qualified to do so.
- Check the battery electrolyte level after charging. Add distilled water if the top of the separators or plates are visible. Do not overfill!
- Use a proper lifting device that will not put pressure on the battery case when lifting or moving the battery.
- Keep open flames, sparks, tools and other metal objects away from the top of battery to prevent arcing.
- Do not overcharge the battery.
- Keep the battery clean and dry.
- Retain all battery service records.

Section 7. Towing and Lowering

Contents

Emergency Towing

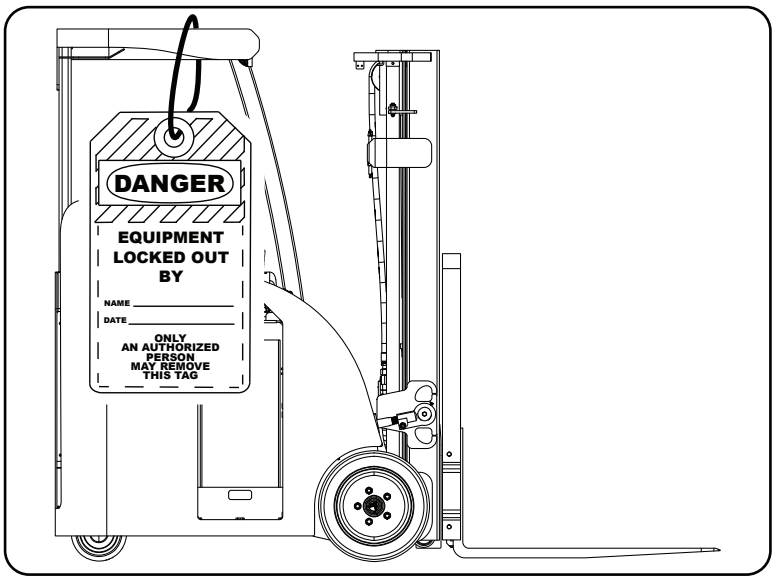
WARNING

THIS SECTION IS INTENDED FOR SERVICE TECHNICIANS ONLY!
The following information is to be used as a reference. For complete maintenance and service information, refer to the service manual.

Disabled Lift Truck

If the lift truck becomes disabled...

- Safely park the lift truck and remove the key.
- Attach an **OUT OF SERVICE** tag.
- Report the issue to your supervisor or certified lift truck technician.



WARNING

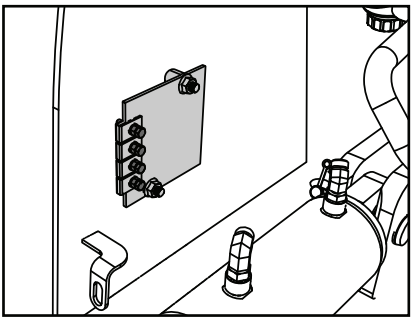
Do not operate a lift truck that requires service or repair. Do not attempt to service or repair a faulty lift truck yourself.

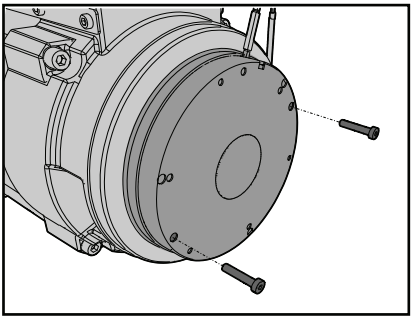
Safe Towing Rules:

- Do not tow on a grade or poor ground conditions.
- If using another lift truck to tow, make sure it is of equal or greater size and carrying a partial load to ensure adequate traction.
- Always use approved tow bars and connections.
- Do not exceed 8 km/h (5 mph) when towing a lift truck.
- An operator must be in the operator's compartment on the lift truck to be towed.
- Make sure the parking brakes are released before attempting to tow the lift truck.

Towing a Disabled Lift Truck:

1. Raise and secure the upright off of the ground.
2. Block the drive wheels.
3. Release the parking brakes:
   a. Remove the four (4) bolts (M5x0.8x25) located on the left side of the frame.
   b. Install two (2) bolts to each EM brake assembly as shown.
   c. Tighten the release bolts until each brake is fully released. Do not over tighten the bolts.
4. Install an approved tow bar to each lift truck.
5. Remove the wheel blocks and tow the disabled lift truck to a designated area.
6. Remove the release bolts before returning the lift truck back into service.





CAUTION

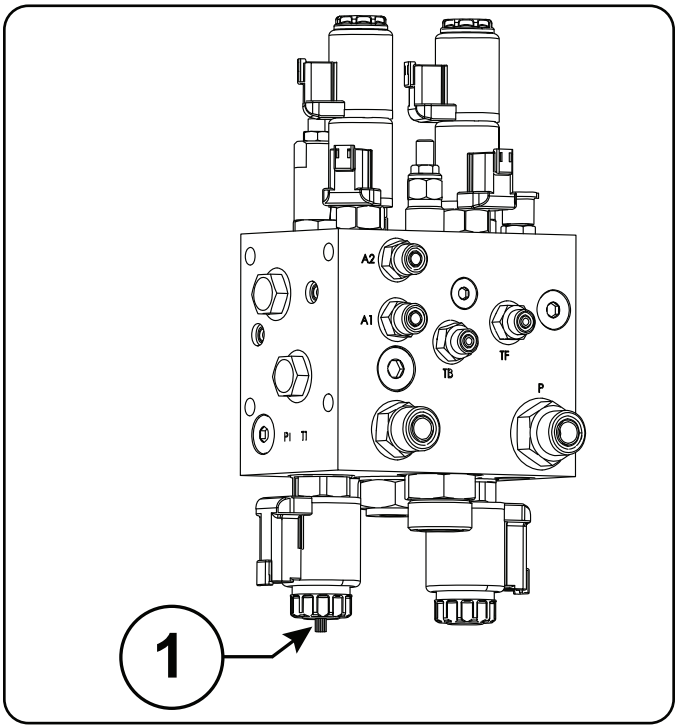
The release bolts must be removed from the EM parking brakes before operating the lift truck or damage will occur.

Emergency Lowering

Lowering the Upright

The hydraulic control valve is equipped with an override release which, during an emergency or lift truck out of service situation, can be used to safely lower the upright from a raised position.

1. Make sure all personnel are a safe distance away from the lift truck and its upright.
2. Loosen the override release (**1**) until the upright begins to lower in a slow and controlled manner. The more the override release is loosened, the faster the upright will lower.
3. Once the upright has been lowered to the desired height, tighten the override release before resuming lift truck operation.



WARNING

Do not stand under or near a raised upright. Make sure all personnel are a safe distance away before attempting to lower the upright.

Section 8. Specifications

Contents

WARNING

Always know the rated load capacity and lift truck weight for your specific lift truck by referring to the data plate attached to the lift truck.

If the data plate is missing, damaged, or modifications have been made to the lift truck that may affect the rated load capacity or weight of the lift truck, then it must be replaced. Contact your CLARK dealer if you require a new or updated data plate.

CAUTION

CLARK products and their specifications are subject to improvements and change without obligation of prior notice.

IMPORTANT!

All specifications and **capacities** shown in this manual are based on lift trucks equipped with a triple stage upright (TSU) with a maximum fork height (MFH) of 4775 mm (188 in), standard forks, and a minimum weight battery.

NOTE

Always use genuine CLARK replacement parts and fluids.

Rated Load Capacity

Model	Rated Load Capacity			
	Load Center: 500 mm (19.6 in)		*Load Center: 24 in (610 mm)*	
	kg	*lb*	*kg*	*lb*
SES15	1500	3306	1360	3000
SES17	1750	3858	1587	3500
SES20	2000	4409	1814	4000
SES25	2500	5511	2267	5000

Lift Truck Weight

Model	Wheelbase		Battery Compartment Width		Gross Weight (Loaded)		Service Weight (Unloaded)	
	mm	*in*	*mm*	*in*	*kg*	*lb*	*kg*	*lb*
SES15	1143	45.0	353	13.8	5224	11515	3862	8515
SES15	1254	49.4	467	18.3	5552	12240	4191	9240
SES17	1254	49.4	467	18.3	5779	12740	4191	9240
SES20	1254	49.4	467	18.3	6102	13452	4287	9452
SES20	1316	51.8	530	20.8	6102	13452	4287	9452
SES25	1316	51.8	530	20.8	6925	15265	4656	10265

Drive Axle Weight

Model	Wheelbase		Battery Compartment Width		Drive Axle (Loaded)		Drive Axle (Unloaded)	
	mm	*in*	*mm*	*in*	*kg*	*lb*	*kg*	*lb*
SES15	1143	45.0	353	13.8	4541	10011	2004	4418
SES15	1254	49.4	467	18.3	4654	10260	2126	4687
SES17	1254	49.4	467	18.3	4654	10260	2126	4687
SES20	1254	49.4	467	18.3	5362	11821	2201	4852
SES20	1316	51.8	530	20.8	5362	11821	2201	4852
SES25	1316	51.8	530	20.8	6193	13653	2307	5086

Minimum Battery Weight

Model	Wheelbase		Battery Compartment Width		Minimum Battery Weight	
	mm	*in*	*mm*	*in*	*kg*	*lb*
SES15	1143	45.0	353	13.8	721	1590
SES15-20	1254	49.4	467	18.3	987	2175
SES20-25	1316	51.8	530	20.8	1116	2460

Battery Compartment

Model	Wheelbase		Battery Compartment Width	
	mm	*in*	*mm*	*in*
SES15	1143	45.0	353	13.8
SES15-20	1254	49.4	467	18.3
SES20-25	1316	51.8	530	20.8

Drive Wheels and Tires

Drive Tires				
Model	**Battery Compartment Width**		**Size**	**Type**
SES15	353 mm	13.8 in	18x7-8	Solid Pneumatic
			18x7x12.125	Cushion
SES15-20	467 mm	18.3 in	18x7x12.125	Polyurethane
			18x8x12.125	Cushion
			18x9x12.125	Cushion
			200x50-10	Solid Pneumatic
SES20-25	530 mm	20.8 in	18x9x12.125	Cushion

Steer Wheels and Tires

Steer Tires				
Model	**Battery Compartment Width**		**Size**	**Type**
SES15	353 mm	13.8 in	9x5x5	Polyurethane
SES15-20	467 mm	18.3 in		
SES20-25	530 mm	20.8 in		

Recommended Lubricants

Type	Specification	Component
CLARK Innerslide Lubricant		Upright rails
CLARK Chain & Cable Lubricant		Lift chains
NLGI #2 EP General Purpose Grease	CLARK MS-107C	Upright / carriage rollers, tilt cylinder ends, upright mounting pins, steer wheel hub bearings

Recommended Fluids

	Drive Axle	Steer Axle	Hydraulic Tank	
Type	SAE 80W-90		AW ISO 32	AW HVI ISO 32
Capacity	0.4 L (0.43 qt)[1]	1.3 L (1.38 qt)	18.9 L (5.0 gal)	
Temperature	All		Normal	Cold Storage
Specification	API GL-5		CLARK MS-68	

[1]Capacity is per drive axle.

Scan Link Below

Safety Starts with You!

OM-1212

CLARK® Material Handling Company

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Lexington KY 40510