



People. Products. Productivity.

OPERATING MANUAL

MOTORIZED HAND TRUCKS

MPB 040 E (B827)

MPW 045 E (B802)

PART NO. 524148616

6/05

**DO NOT REMOVE THIS MANUAL
FROM THIS UNIT**

YALE

FOREWORD

TO OWNERS, USERS, AND OPERATORS:

The safe and efficient operation of a lift truck requires skill and alertness on the part of the operator. To develop the skill required the operator must:

- Receive training pursuant to OSHA 1910.178 (1), 12/98 in the proper operation of this lift truck.
- Understand the capabilities and limitations of the lift truck.
- Become familiar with the construction of the lift truck and see that it is maintained in good condition.
- Read and understand the warnings and operating procedures contained in this manual.

In addition, a qualified person, experienced in lift truck operation, must guide a new operator through several driving and load handling operations before the new operator attempts to operate the lift truck alone.

It is the responsibility of the employer to make sure that the operator can see, hear, and has the physical and mental ability to operate the equipment safely.

Various laws and regulations require the employer to train lift truck operators. These laws and regulations include:

Occupational Safety and Health Act (OSHA) (USA) Canada Material Handling Regulations

NOTE: A comprehensive operator training program is available from **YALE COMPANY**. For further details contact your **YALE** lift truck dealer.

This OPERATING MANUAL is stored in the container on the drive unit cover. Read and understand this manual before operating the lift truck. This is a permanent reference and must be available for use at all times.

Some of the components and systems described in this OPERATING MANUAL will NOT be installed on your unit. If you have a question about any item described, contact your dealer for **YALE** lift trucks.

This OPERATING MANUAL contains information necessary for the operation and maintenance of a basic fork lift truck. Optional equipment is sometimes installed that can change some operating characteristics described in this manual. Make sure the necessary instructions are available and understood before operating the lift truck.

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OPERATING MANUAL contains information necessary for the operation and maintenance of a basic fork lift truck. Additional equipment is sometimes installed that can change some operating characteristics described in this manual. Make sure the necessary instructions are available and understood before operating the lift truck.

The manual for Users of Industrial Lift Trucks describes lift truck safety, good maintenance practices, and training. Additional copies are available from your dealer for lift trucks.

Additional information that describes the safe operation and use of lift trucks is available from the following sources:

- Employment safety and health standards or regulations (Examples: "Occupational Safety and Health Standards (USA)", "Canada Material Handling Regulations").
- Safety codes and standards (Example: American National Standard, ANSI B56.1, *Safety Standard for Low Lift and High Lift Trucks*).
- Publications from government safety agencies, government insurers, private insurers and private organizations (Example: *Accident Prevention for Industrial Operations* from the National Safety Council).

NOTE: YALE lift trucks are not intended for use on public roads.

NOTE: Throughout this manual, the terms right, left, front and rear relate to the viewpoint of an operator walking with or riding on the lift truck - forks/platform trailing.

NOTE: The following symbols and words indicate safety information in this manual:

 **WARNING**

Indicates a condition that can cause injury.

 **CAUTION**

Indicates a condition that can cause property damage!

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 **WARNING**

FAILURE TO COMPLY WITH THESE WARNINGS WILL CREATE AN UNREASONABLE RISK OF INJURY TO YOURSELF AND OTHERS.

Know Your Truck - Do not operate or repair truck unless trained and authorized. Know all warnings and instructions on truck and in Operating Manual.

Check Your Truck - Check truck before use. If repairs are needed, tag truck and do not operate. Have repairs completed before using.

Protect Others and Yourself - Do not transport people in any portion of truck. Allow no one on truck, battery, forks or load. Do not ride truck unless it is designated as a rider truck by manufacturer. Do not move truck if anyone is in or on truck and stationary object. Keep hands within safety guards and feet clear of truck. Do not handle loads

taller than load backrest or extension unless load is secured so that no part of it can move toward the operator.

4. Know the Area - Check dockboard or bridgeplate width, capacity and security. Never enter a trailer or railcar unless its wheels are blocked. Watch floor strength.

5. Know Your Load - Never overload. Handle loads only within capacity and load center shown on the nameplate. Do not handle unstable or loosely stacked loads. Use special care when handling long, high or wide loads.

6. Drive Carefully - Use common sense. Obey all traffic rules. Yield right-of-way to pedestrians. Avoid bumps, holes, slick spots and loose materials.

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WARNING

FAILURE TO COMPLY WITH THESE WARNINGS WILL CREATE AN UNREASONABLE RISK OF INJURY TO YOURSELF AND OTHERS.

Slow down and sound horn at cross aisles and where vision is obstructed. Watch side clearance when turning corners. Operate truck with forks trailing whenever possible. Always face direction of travel. WHEN WALKING, control truck with one hand, using steer handle. Walk to the side of the steer handle. When truck is operated forks first, use two hands on steer handle.

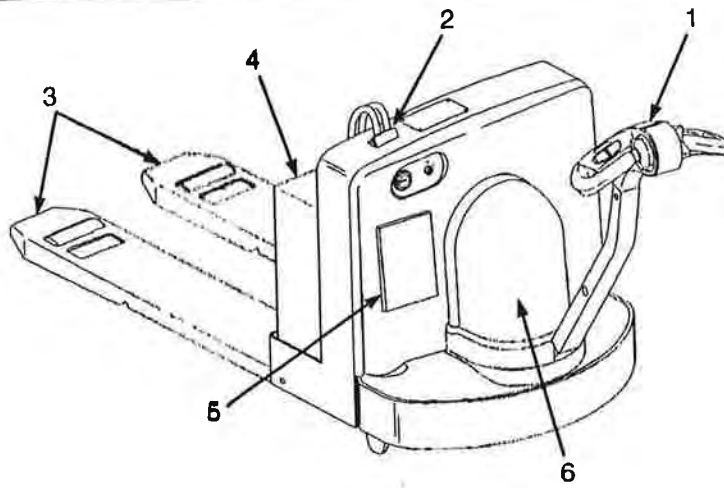
7. Don't Go If You Can't See - Always look in direction of travel. Keep a clear view.

8. Avoid Sudden Movement - Start, stop, travel, steer and brake smoothly. Avoid bumps, holes and loose material. Turn carefully. Side tipover can occur even when unloaded.

9. Use Special Care When Operating On Ramps - Travel slowly and do not angle or turn. Always travel with lifting mechanism downhill. Disengage coast control.

10. Shutdown Completely - When leaving truck unattended, fully lower lifting mechanism, shut-off power, set brakes, remove key and disconnect battery. Disengage coast control. Block wheels if truck is parked on an incline.

11. Take Care When Charging - Charge battery only in designated area. When charging battery, keep vent caps clear. Avoid sparks or open flame. Provide ventilation. Disconnect battery during servicing.

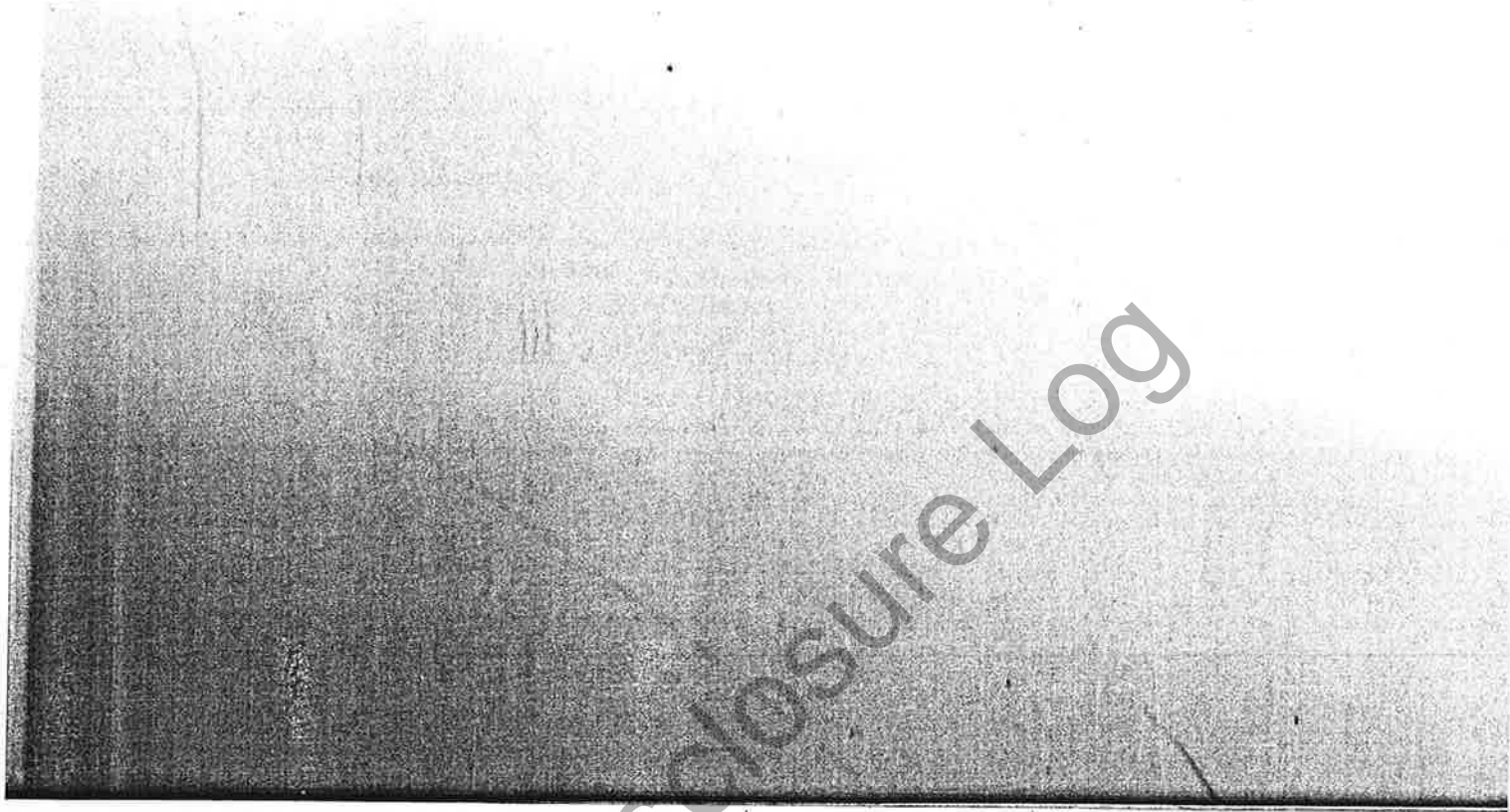


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FIGURE 1. MODEL VIEW SHOWING MAJOR COMPONENTS
1. CONTROL HANDLE
2. BATTERY CONNECTOR
3. WORKS
4. BATTERIES AND BATTERY CHARGER (4000 LBS MODEL)
5. OPERATORS MANUAL
6. DRIVE UNIT

CONTROL HANDLE
BATTERY CONNECTOR
WORKS

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MODEL DESCRIPTION

MODEL DESCRIPTION

The YALE MPB040E and MPW045E lift trucks are pedestrian operated lift trucks with lifting capacities of 1,815 kg, (4,000 lbs.) and 2,040 kg (4,500 lbs.).

These lift trucks are electric power vehicles. A battery provides the electric power for travel and hoist functions. The battery is located on the fork frame and moves with the forks. The battery/battery compartment also acts as a load backrest and helps to steady the load.

The control handle is used to select the various functions of the truck, including: steering, selectable performance modes, braking, direction and speed control, lifting, lowering, and horn. See **FIGURE 1**.

This lift truck can be stopped by one of three methods of braking: 1) Plugging, 2) Neutral Braking, or 3) Returning the

control handle to the brake **ON** position. A detailed operating instruction is provided in the Operating Procedures Section of this manual.

The operator has a choice of three performance modes that are selectable through the control handle. The mode selection is made at start-up or key **ON**. Performance parameters that vary are: 1) Acceleration, 2) Deceleration (neutral braking), and 3) Top travel speed. A detailed operating instruction is provided in the Operating Procedures section of this manual.

The Operating Manual is stored in the container on the drive unit cover. This is a permanent reference and must be available for use at all times.

NAMEPLATE

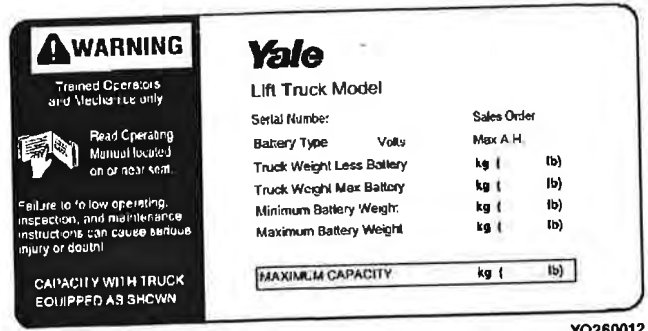
⚠ WARNING

Any change to the lift truck or its equipment can change the lifting capacity. If the Nameplate does not show the maximum capacity, or if the lift truck equipment, including the battery, does not match that shown on the Nameplate, then the lift truck must not be operated.

The Nameplate for the lift truck is found on the frame. The capacity shown is for a lift truck equipped as shown on the nameplate. The capacity is specified in kilograms (kg) and pounds (lb). The capacity is the maximum load that the lift truck can handle for the load condition shown on the Nameplate. See FIGURE 2.

The maximum capacity for the lift truck must be shown on the nameplate. If the lift truck nameplate already has a capacity for special load handling equipment, it will be listed. Make sure the Nameplate data is complete and fully understood before operating the lift truck.

The lift truck serial number code is on the Nameplate. The serial number code is also stamped on the lift truck frame.



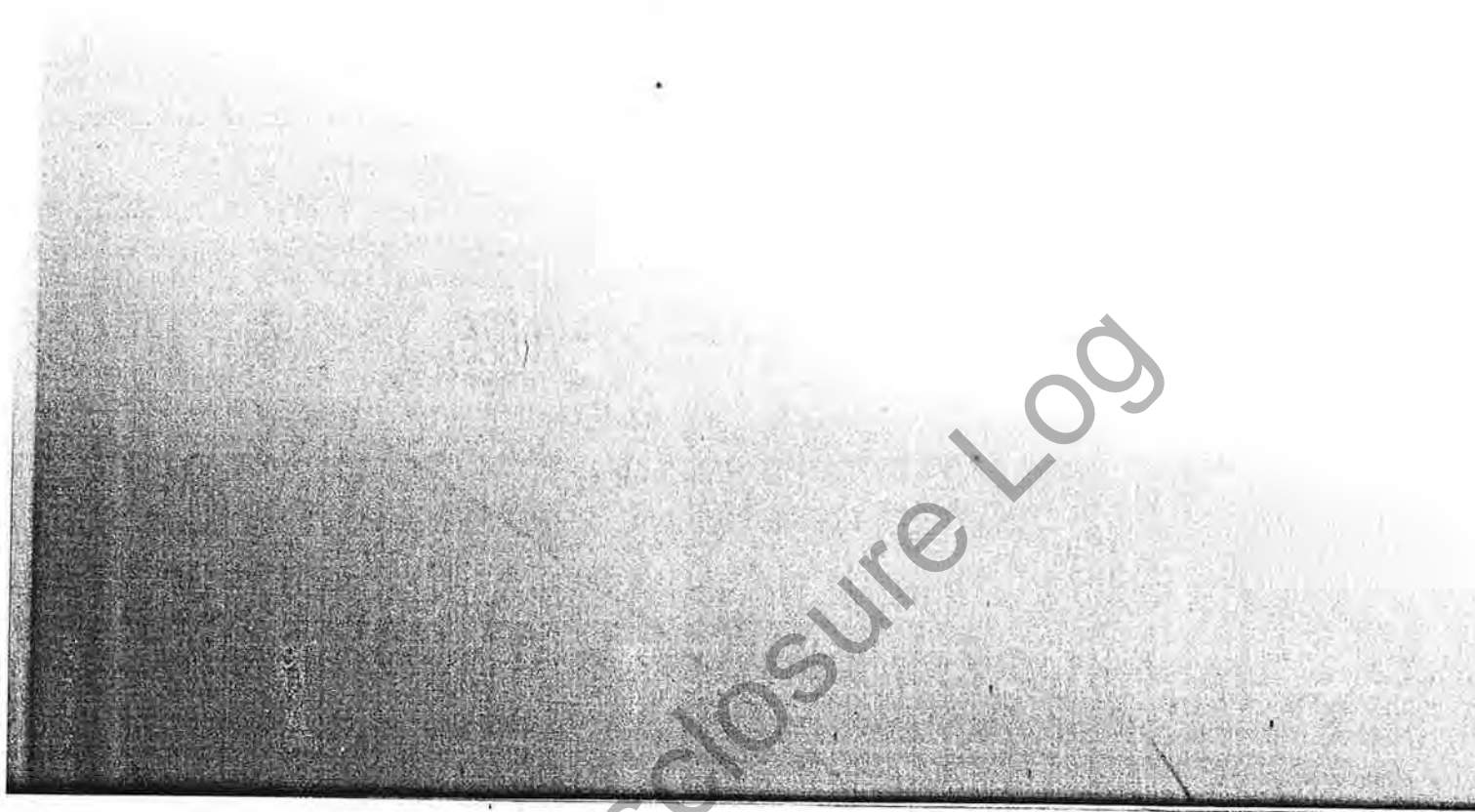
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FIGURE 2. NAMEPLATE AND LABEL

SAFETY LABELS

Safety labels are installed on the lift truck to give information about possible hazards. It is important that all safety labels are installed on the lift truck and can be read. See FIGURE 3.

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MODEL DESCRIPTION

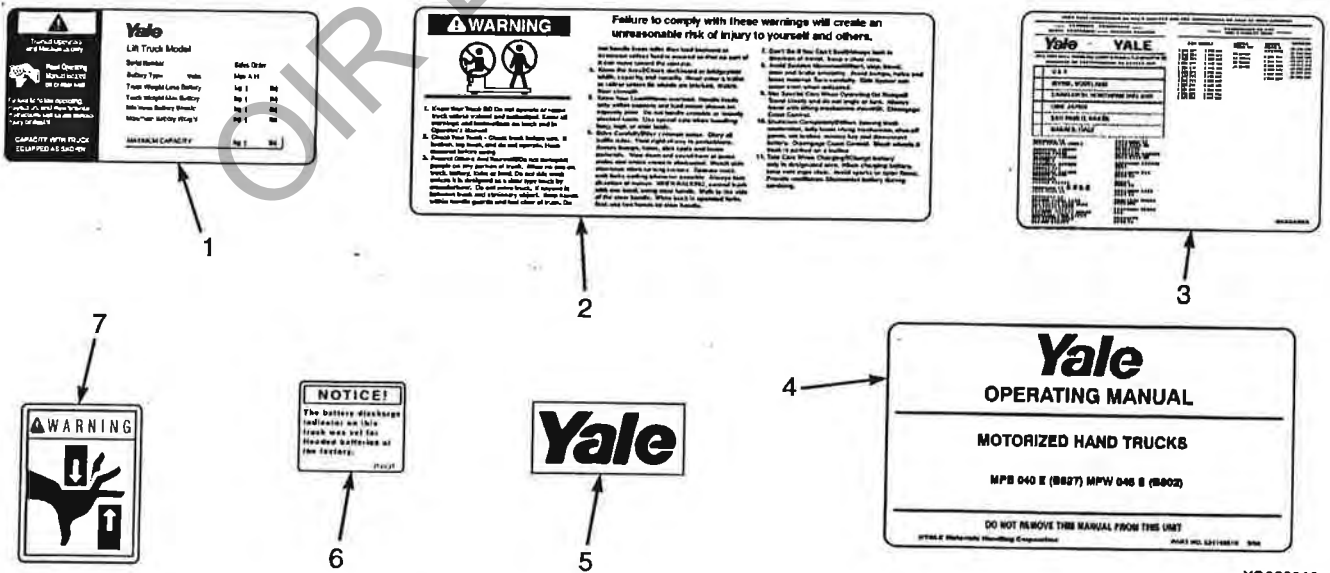
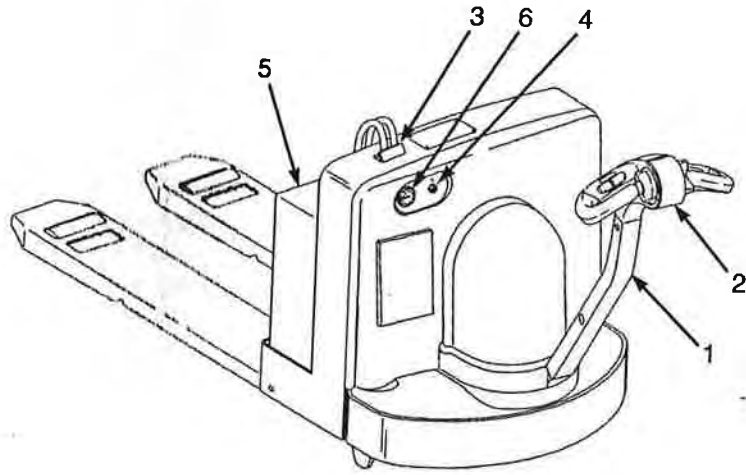


FIGURE 3. WARNING AND SAFETY LABELS

1. NAMEPLATE
2. DECAL WARNING
3. LABEL PATENTS AND TRADEMARKS
4. OPERATOR MANUAL

5. DECAL - YALE BLACK
6. LABEL - BATTERY DISCHARGE NOTICE
7. LABEL - WARNING



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FIGURE 4. INSTRUMENTS AND CONTROLS

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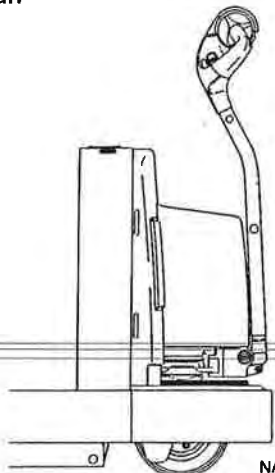
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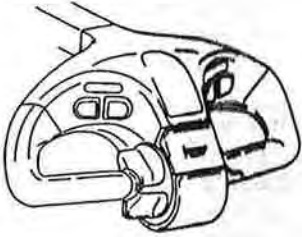
MODEL DESCRIPTION

⚠ WARNING

If any of the instruments, levers, or pedals do not operate as described in the following tables, report the problem immediately. **DO NOT** operate the lift truck until the problem is corrected.

TABLE 1. INSTRUMENTS AND CONTROLS (SEE FIGURE 4.)

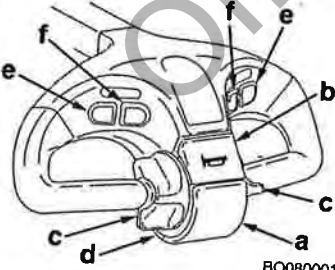
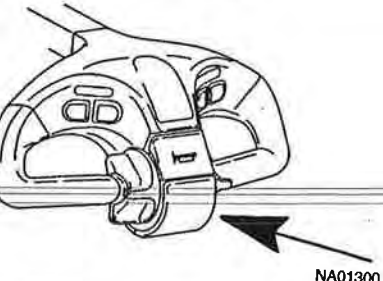
ITEM NO.	ITEM	FUNCTION
1	Control Handle 	Move the control handle to the right or left to steer the truck. Fully raise or fully lower the control handle to engage the brake. When the control handle is released from the operating position, it will automatically return to the vertical position and engage the brake. Arrows on the butterfly-type knobs, speed/direction control, indicate the direction of travel of the lift truck. Lift, lower, traction reverse, and the horn, are controlled by separate buttons on the control handle.


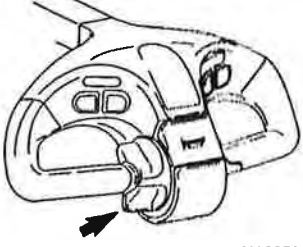

ITEM NO.	ITEM	FUNCTION
1	<p>Selectable Performance Modes</p> 	<p>The user has a choice of three performance modes that are selectable through the control handle. The mode selection is made at start-up, or key ON. Performance parameters that vary are: Acceleration, Deceleration (neutral braking), and Top travel speed.</p> <p>The three user selectable performance modes are factory programmed per the following:</p> <ul style="list-style-type: none"> Mode 1: Economy Mode (Battery saver) <ul style="list-style-type: none"> Acceleration - soft Top Speed - 80% of full speed Neutral Braking - medium level Mode 2: Performance with Neutral Braking <ul style="list-style-type: none"> Acceleration - medium Top Speed - 90% of full speed Neutral Braking - medium level Mode 3 Performance without Neutral Braking <ul style="list-style-type: none"> Acceleration - maximum Top Speed - 100% of full speed Neutral Braking - off

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MODEL DESCRIPTION

ITEM NO.	ITEM	FUNCTION
2	<p>Control Head Assembly</p> 	<p>The control handle assembly has the following controls:</p> <ul style="list-style-type: none"> (a) Traction Reverse button. (b) Horn button. (c) Direction and speed control. (d) Slow speed button. (e) Lower button. (f) Lift button. <p>NOTE: Operation of these controls are described in the following paragraphs.</p>
a	<p>Traction Reverse Button</p> 	<p>The traction reverse button is on the end of the control handle. The button is pushed when it contacts the operator or another object. When the button is pushed, the lift truck will move away from the operator (forks first), and a series of beeps will sound. When the button is released, the traction motor will be turned OFF. The traction motor will not move the lift truck in the direction of the control handle until the control is reset. To reset, move the speed/direction control to the OFF position or move the handle to the BRAKE ON position.</p> <p>WARNING The traction reverse button causes rapid acceleration and should not be used for changing direction.</p>

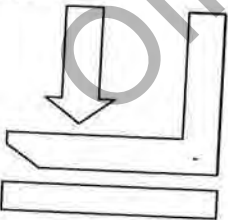
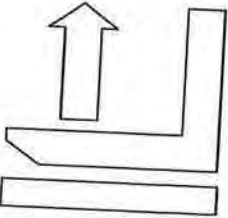
ITEM NO.	ITEM	FUNCTION
b	Horn Button 	The horn operates when the key is in the ON position and the horn button is pushed. The horn beeps if the traction reverse button is pressed and/or if the battery is low and the lift button is pressed.
c	Speed/Direction Control 	The speed/direction control is for selecting forward or reverse movement and the travel speed of the lift truck. The control automatically returns to the OFF position when released. The operator controls the speed and direction of travel by rotating the control in the desired direction. Maximum rotation of the control causes maximum travel speed. To stop or change direction, the operator rotates the control in the opposite direction. The lift truck will come to a stop. If the speed/direction control is not returned to OFF when the lift truck stops, it will accelerate in the opposite direction. Changing direction with the speed/direction control is called plugging. Arrows on the control indicate the direction of travel.
d	Slow Speed Button 	The creep speed or turtle mode button enables the truck to be operated at a slower speed with the control handle in the fully upright position. To operate, press and hold the slow speed button and rotate the speed/direction control button in the direction of desired travel. Releasing the button will re-apply the brake. If the control handle is lowered to the normal drive position while the slow speed button is depressed, the truck will continue to operate in the slow speed mode until the button is released.

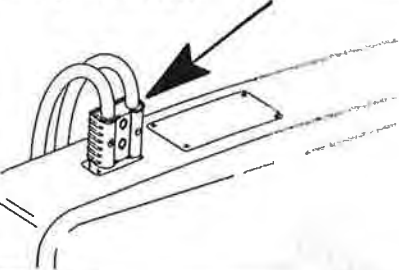
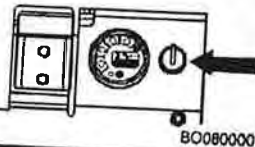
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MODEL DESCRIPTION

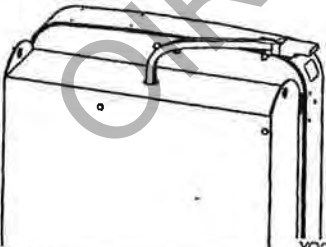
ITEM NO.	ITEM	FUNCTION
e	Lower Button  <small>HO190368</small>	Press the button to lower the forks. Release the button to stop lowering.
f	Lift Button  <small>HO190367</small>	<p>Press the button to raise the forks. Release the button to stop lifting. If the truck is trying to lift too much weight, the hydraulic pump will to to bypass and the controller will shut off the hydraulic motor. The lift function is timed, if held for more than seven seconds, the lift function will stop.</p> <p>If the horn sounds when the lift button is pressed, this indicates that the battery is discharged below 70% and needs to be changed or re-charged. Lift is disabled at 80% discharge of the battery.</p>

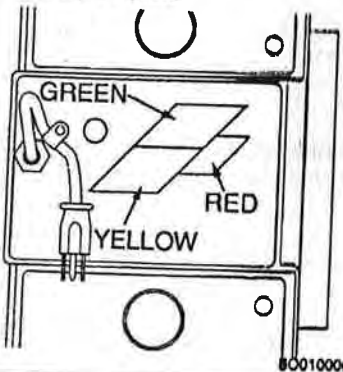
ITEM NO.	ITEM	FUNCTION
3	<p>Battery Connector</p> 	<p>The battery connector is on top of the cowl. The battery connector is in two parts. One half of the connector is attached to the battery cables. The other half of the connector is connected to the electrical system of the lift truck. Make sure both halves of the connector are of the same type and color.</p> <p>CAUTION Make sure the voltage of the battery is the same as specified on the nameplate. The connector halves must be connected for operation. To disconnect the battery, separate the halves of the connector.</p>
4	<p>Key Switch</p> 	<p>The key switch has two positions, OFF and ON. Traction or hydraulic functions will NOT operate with the key switch in the OFF position.</p> <p>NOTE: Always raise the control handle to the full upright position and move the key to the OFF position when leaving the lift truck.</p>

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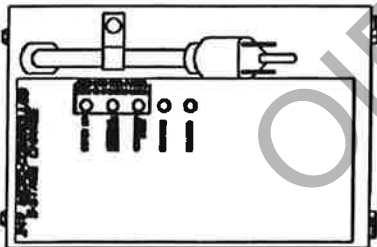
MODEL DESCRIPTION

ITEM NO.	ITEM	FUNCTION
5	Battery Charger  YO260014	<p>For lift trucks equipped with maintenance-free batteries or industrial batteries, the battery connector must be disconnected from the truck and connected to a suitable battery charger. Refer to Charging The Battery in the Maintenance section of this manual.</p> <p>⚠ CAUTION To reduce the risk of fire, use only on circuits provided with 15 amps branch circuit protection in accordance with the National Electrical Code, ANSI/NFPA 70.</p>

ITEM NO.	ITEM	FUNCTION
5	Battery Charger (MPB040E Only) Earlier Models 	For lift trucks equipped with the standard battery pack and on-board charger, it is not required to disconnect the battery connector before charging the battery. Connect AC cord to a 120 volt AC outlet. This will automatically charge the batteries. The battery charger has status indicators: Steady Yellow - Battery on charge Flashing Yellow - Equalizing charge Green - Battery Ready (Fully charged) Flashing Red - Charger error Steady Red - Battery error NOTE: If a steady red light or error occurs, contact maintenance.

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MODEL DESCRIPTION

ITEM	FUNCTION										
<p>Battery Charger (MPB040E Only) Later Models</p> 	<p>For lift trucks equipped with the standard battery pack and on-board charger, it is not required to disconnect the battery connector before charging the battery. Connect AC cord to a 120 volt AC outlet. This will automatically charge the batteries. The battery charger has status indicators:</p> <table border="0"> <tr> <td>Power On - Connected to AC</td> <td>Red Indicator</td> </tr> <tr> <td>Abnormal Shutdown</td> <td>Red Indicator</td> </tr> <tr> <td>Detection Error</td> <td>Red Indicator</td> </tr> <tr> <td>Charging</td> <td>Yellow Indicator</td> </tr> <tr> <td>Charged</td> <td>Green Indicator</td> </tr> </table> <p>NOTE: If any of the RED indicators is flashing during the charging cycle - contact maintenance.</p>	Power On - Connected to AC	Red Indicator	Abnormal Shutdown	Red Indicator	Detection Error	Red Indicator	Charging	Yellow Indicator	Charged	Green Indicator
Power On - Connected to AC	Red Indicator										
Abnormal Shutdown	Red Indicator										
Detection Error	Red Indicator										
Charging	Yellow Indicator										
Charged	Green Indicator										

OPERATING PROCEDURES

YALE

that could become dislodged and fall. The operator must exercise extreme care while working near such objects.

4. NO RIDERS! The operator's platform on Walkie Rider units is built for only one rider - the operator. It is dangerous for anyone to ride on the forks or anywhere else on the lift truck.

5. Keep hands and fingers inside the control handle guard to avoid injury from passing obstructions. Keep feet clear of the lift truck when walking with the lift truck. Keep feet on the rider platform when operating a rider truck.

NOTE: The proper operator position for walking with a motorized hand lift truck is shown in **FIGURE 5.**

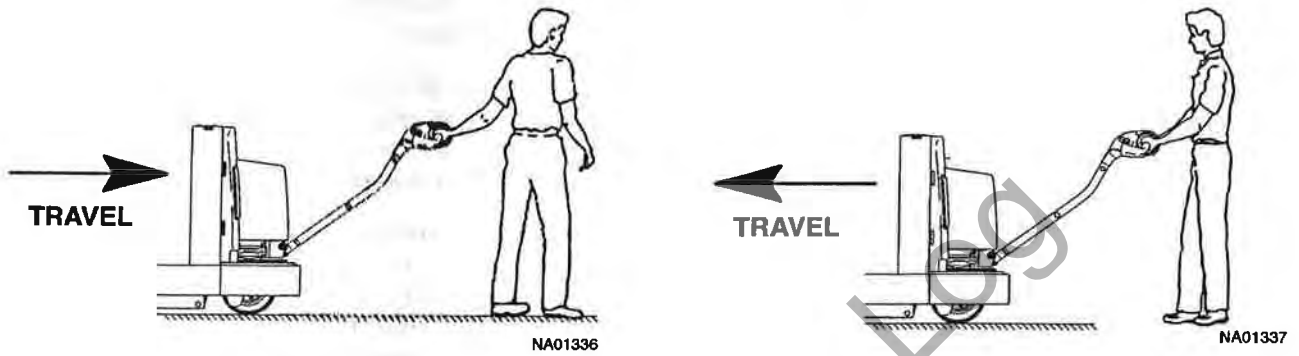


FIGURE 5. DESIGNATED OPERATOR POSITION

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6. Keep yourself and others clear of the lift mechanism. Allow no one near the load or lift mechanism during operation.
7. Avoid bumps, holes, slick spots, and loose materials that may cause the lift truck to swerve, tip or cause the control handle to jerk sideways. If unavoidable, travel slowly and carefully. These lift trucks are designed to operate on very smooth, firm surfaces. Always pick the smoothest route for your lift truck.
8. Travel slowly when turning. When approaching blind intersections or turns slow down and sound the horn.
9. When leaving the lift truck, lower the forks, turn the key to **OFF**, and set the brake. Block the wheels when on an incline or working on the lift truck. A driverless lift truck does not have to move very far in close quarters to cause serious damage or injury.
10. On inclines, travel with the load or forks downhill. If the operator should lose footing or control of the lift truck, the operator will not be in the path of travel. Do not turn on an incline. For stability reasons, a lift truck must not be driven across an incline. Walkie lift trucks are not intended for operation on grades greater than 10% (a grade that changes 1 foot in elevation for every 10 feet of horizontal travel).
11. Charge the battery only in a designated area and observe the following:
 - Do not use open flame to check battery electrolyte level.
 - Disconnect battery before performing service or repair.
 - When charging battery, keep vent caps installed and functioning properly. Take precautions to keep sparks and open flames away from the battery. Position battery cover to allow for ventilation and dispersion of explosive fumes.
12. Before operating in highway trucks or railcars, observe the following:
 - Check that highway truck brakes are set and that wheel blocks have been placed under the rear wheels. Fixed jacks may be necessary to support the rear of a semi-trailer to prevent it from moving when loading or unloading.
 - Make sure that railcar brakes are set and wheels are blocked while loading or unloading.
 - Check condition and load carrying capacity of driving surface.
 - Maintain a safe distance from the edge of docks or platforms.
 - If you can't see, don't go.

13. Avoid sudden starts or stops. People can be hurt and material can be damaged by a lift truck suddenly jumping into motion and possibly going out of control. Sudden starts also can damage the lift truck. Sudden stops can cause the operator to lose a load. Remember, skid marks and damaged equipment are signs of bad driving.

14. Watch clearances, especially around forks. Watch tailswing. The operator must be aware that the forks can sometimes extend beyond the load. This may cause the operator to hit an object or lift another load.

15. Look in the direction of travel and keep a clear view of the path of travel.

16. Strictly observe the following load handling procedures:

- Handle only loads within the capacity shown on the nameplate. This rating represents the maximum load that should be lifted. However, such factors as weak floors, uneven terrain, or loads having a high center of gravity may mean that the safe working load is less than the rated capacity. When such conditions do exist, the operator must reduce the load so that the lift truck will remain stable.

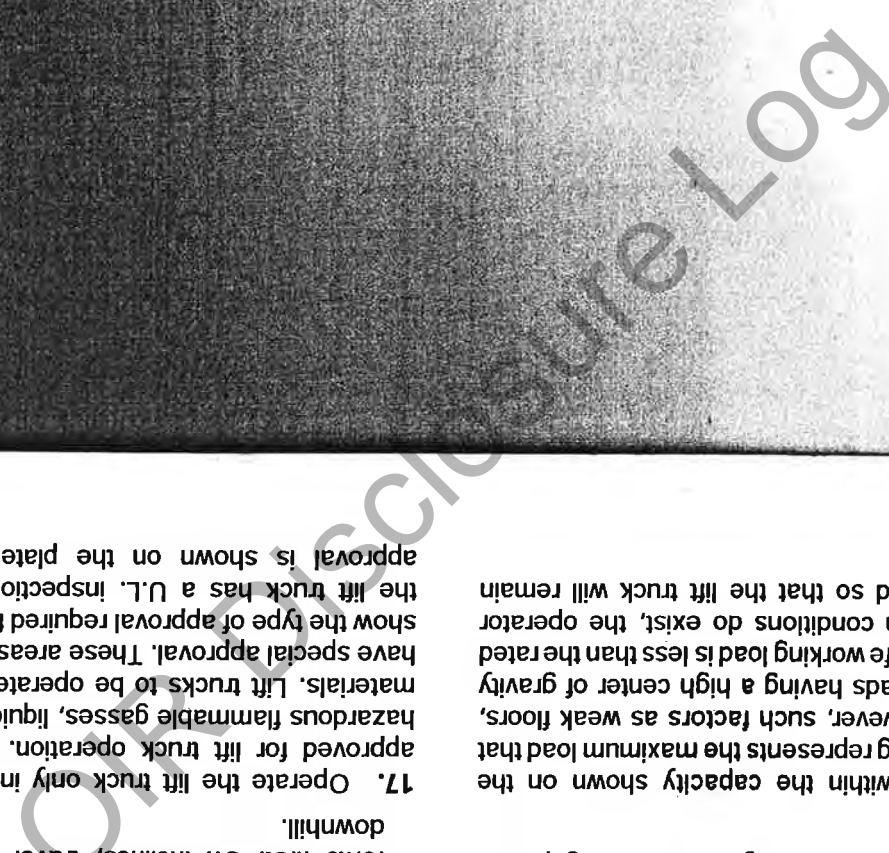
- Keep the load against the battery compartment. The battery compartment acts as a load backrest to help steady the load.

- Handle only stable loads. Unstable loads can easily shift and fall. Do not handle loads taller than the load backrest unless the load is secured so that no part of it can shift toward you.

NOTE: Load backrest extensions are available for this lift truck as optional equipment.

- For better visibility and steering, travel or walk with the forks trailing. When walking, lead the lift truck from either side of the control handle facing the direction of travel. When the lift truck must be driven close to a wall or other obstruction, or into an elevator or semi-truck trailer, travel forks first. On inclines, travel with the load or forks downhill.

17. Operate the lift truck only in areas that have been approved for lift truck operation. Certain areas contain hazardous flammable gasses, liquids, dust, fibers or other materials. Lift trucks to be operated in these areas must have special approval. These areas must be designated to show the type of approval required for lift truck operation. If the lift truck has a U.L. inspection plate the fire safety approval is shown on the plate. Changes to special



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equipment or poor maintenance can make the lift truck lose its special approval.

18. Drive carefully, observe traffic rules and be in full control of the lift truck at all times. Be completely familiar with all the safe driving and load handling techniques contained in this Operating Manual.

19. Enter elevators with care. **Know the combined weight of your lift truck and load.** The lift truck weight is shown on the nameplate.

- Know the load capacity of authorized elevators. Never exceed this load limit.
- When waiting for an elevator, park at least six feet away, at an angle to the elevator doors.
- **No one** may be in an elevator when the lift truck is entering or leaving.
- Drive on squarely and center the lift truck and load in the available space.
- Enter elevator with load end forward.
- Turn **OFF** the power, set the parking brake, and lower the load before operating the elevator.

INSPECTION BEFORE OPERATING

WARNING

Inspect the lift truck and check the operation of the systems at the start of the day or shift. Do the inspections and checks before lift truck operation. If a repair is required, put a tag on the control handle stating DO NOT OPERATE. Do not operate the lift truck until the problems are corrected. Remove the key.

See Checks and Inspection Procedures in the Maintenance Section of this manual for detailed instructions. Also refer Table 1 for operation and description of controls.

Before using the lift truck, make the following checks:



Checks With the Key Switch OFF

- Oil leaks and oil level in the hydraulic tank
- Electrical connections and condition of the battery case
- Condition of wheels and tires
- Warning labels and Operating Manual in place
- Condition of forks/lifting mechanism

- Electrolyte level and specific gravity of the battery (not a necessary check for maintenance-free batteries)



Checks With the Key Switch ON

⚠ WARNING

Do the checks before operation in an area clear of other personnel or equipment. Proceed with caution.

Lower the control handle without moving the speed/direction control. Turn the key switch to ON and check the operation of the following:

- Horn
- Lift and lower functions
- Speed/direction control
- Traction reverse function (if equipped)
- Brake

OPERATING TECHNIQUES

⚠ CAUTION

Make sure the operating area is kept free of loose material that can make the lift truck wheels skid or otherwise interfere with the lift truck operation.

Selectable Performance Modes

The user has a choice of three performance modes that are selectable through the control handle. The mode selection is made at start-up, or key ON. Performance parameters that vary are: Acceleration, Deceleration (neutral braking), and Top travel speed. The three user selectable performance modes are factory programmed per the following:

Mode 1: Economy Mode (Battery saver)

- Acceleration - soft
- Top Speed - 80% of full speed
- Neutral Braking - medium level

Mode 2: Performance with Neutral Braking

- Acceleration - medium
- Top Speed - 90% of full speed
- Neutral Braking - medium level

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Mode 3: Performance without Neutral Braking

Acceleration - maximum

Top Speed - 100% of full speed

Neutral Braking - off

To select the desired performance mode, perform the following procedures:

1. **Mode 3** is the default setting from the factory.
2. The control handle must be in the full upright position, brake **ON**, key **OFF**, then key **ON**.
3. Press and hold the horn button while turning the key switch to the **ON** position.
4. The horn will sound, then release the horn button.
5. Toggle through the modes by pressing the lift or lower buttons.
6. The horn provides an audible indication as to the mode selected. One beep represents **Mode 1**, two beeps represents **Mode 2** and three beeps represents **Mode 3**.
7. Lower the control handle to begin operation of the lift truck. The performance mode selected is stored in memory.

Traveling

There is one control for changing speed or direction and for normal stopping of the lift truck. The control is the

speed/direction control. The control is spring loaded to the **OFF** position. The control is designed to be operated by either hand. Rotate the control in the desired direction of travel. Maximum rotation of the control causes maximum travel speed.

To change direction or to stop the lift truck (regardless of lift truck speed), rotate the control in the opposite direction. The lift truck will come to a stop and then, unless the control is returned to the **OFF** position, accelerate in the opposite direction. This is called **plugging**. Stop the lift truck as gradually as possible. Rapid starting and stopping can be dangerous as well as unnecessary.

Steering

Turn the lift truck to the right or left by moving the control handle in the desired direction. Make sure there is adequate turning clearance. When travelling in reverse (forks first) the lift truck will move to the side when turning. This movement is called **tailswing**. The operator must be aware of tailswing and always check to make sure the tailswing area is clear before turning.

Turning

Slow the lift truck before turning into an aisle. Drive forward (control handle leading) for best visibility and easiest handling. As the forks clear a corner, turn the control handle

sharply. Entering an aisle requires a skillful and alert operator. The location of the load and load wheels require the operator to closely observe the movement of the lift truck in relation to the aisle, rack posts and other loads. To prevent cutting corners when traveling with the load trailing, make wide turns and watch clearances.

Braking

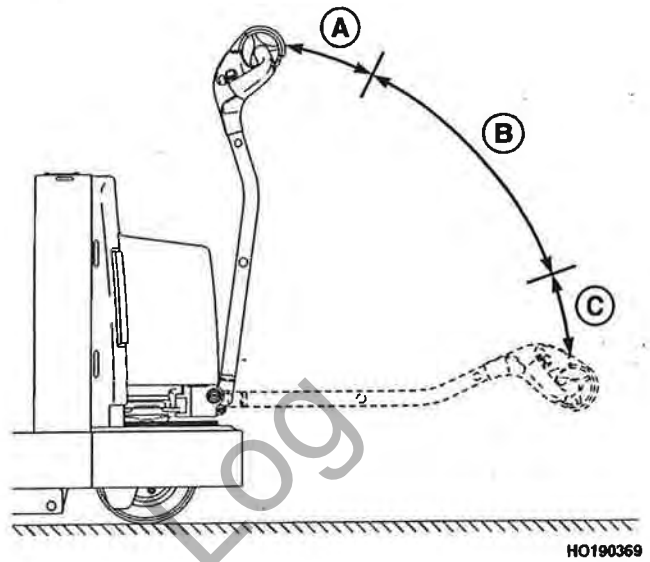
Motorized hand trucks have three methods of braking: 1) Neutral Braking, 2) Plugging, or 3) Returning the control handle to the brake ON position.

1) Neutral braking applies a retarding force to the drive wheels through the traction motor, allowing the unit to slow to a stop. It is applied by returning the speed/direction control to the OFF position. To remain stopped, the speed/direction control must be in the OFF position.

2) Plugging is reversing the speed/direction control while traveling, causing the unit to stop. Return the speed/direction control to the OFF position to remain stopped. If the control is not returned to OFF, the truck will accelerate in the opposite direction.

3) The brake is applied when the control handle is in the full up or full down position, or in the event a traction control fault occurs. The brake is released by lowering the control handle

to the operating position and selecting a direction with the speed/direction control. See FIGURE 6.



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FIGURE 6. BRAKE POSITIONS

- A. BRAKE ON
- B. BRAKE OFF
- C. BRAKE ON

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Stopping

Stop the lift truck as gradually as possible. Rapid starting and stopping can be dangerous as well as unnecessary. Rapid starting or stopping with the control handle to one side or the other results in tipping forces to the lift truck and may cause the control handle to jerk sideways.

Load Handling

⚠ WARNING

Use caution when handling loads. Handle only loads arranged for stability. Do not handle loose loads higher than the load backrest. Be careful to raise or lower the load smoothly so that the load will not fall.

⚠ WARNING

Make sure the load is within the capacity of the lift truck. See the nameplate for the lift truck capacity.

- Approach the load slowly. Make sure the lift truck and forks are correctly aligned with the load.
- Make sure the forks do not extend beyond the load where they could damage or tip over another load.
- Make sure the load is against the battery compartment or load backrest.

- Travel with the forks trailing except in confined areas.
- Always look in the direction of travel. Watch clearances, avoid racks and other obstructions. If you can't see, don't go.
- Avoid sudden starts and stops.
- Travel slowly around corners.
- Use special care when traveling on inclines, travel slowly and do not angle or turn.

⚠ CAUTION

If the lift truck is equipped with forks to handle two pallets, make sure the second pallet is against the first. The pallet on the end of the forks must be positioned correctly to prevent pallet damage as the load wheels lift the load.

- Carefully lower the load after the load is in the correct position. Maintain even clearances around load. Slowly move the forks out of the pallet to free them from the load.
- Be careful not to damage or move adjacent loads.

MAINTENANCE

HOW TO MOVE A DISABLED LIFT TRUCK

This lift truck is not normally towed. If the traction system will not operate, make repairs at the location if possible. If the lift truck must be towed, the brake **MUST** be released, refer to the Maintenance Manual.

⚠ WARNING

Never carry a disabled lift truck unless the lift truck **MUST** be moved. The lift truck used to lift the disabled lift truck **MUST** have a rated capacity equal to or greater than the weight of the disabled lift truck. The capacity must be for a load center equal to half the width of the disabled lift truck. See the capacity plate on the disabled lift truck for the approximate total weight. The forks must extend the full width of the disabled lift truck. Put the weight of the disabled lift truck at the center of the forks and be careful not to damage the under side of the disabled lift truck. Tilt the mast back and travel slowly.

⚠ WARNING

Make sure no one except the driver is near the lift trucks during towing. Both the tow truck and the disabled truck can cause a personal injury during towing.

⚠ WARNING

To avoid personal injury use extra care when moving a lift truck during the following conditions:

1. Brake does not operate correctly
2. Steering does not operate correctly
3. Tire is damaged
4. Traction conditions are bad

⚠ WARNING

Never carry the lift truck faster than the speed of a person walking. Steering can be difficult and motor damage can occur at higher speeds. Always travel smoothly without sudden starts. The electric brake must be released before the lift truck can be moved. If there is not sufficient battery power, placing

YALE

MAINTENANCE

the control handle in the operating position will not release the electric brake. Refer to Section 1 - Towing The Lift Truck of the Maintenance Manual. Use the control handle to steer the lift truck while it is being towed. Use one hand and walk to one side of the lift truck. Do not walk or stand between the towing vehicle and the lift truck.

The electric brake must be released before the lift truck can be moved. If there is not sufficient battery power, placing the control handle in the operating position will not release the electric brake. Refer to Section 1 - Towing The Lift Truck of the Maintenance Manual. Use the control handle to steer the lift truck while it is being towed. Use one hand and walk to one side of the lift truck. Do not walk or stand between the towing vehicle and the lift truck.

WARNING

Until repairs are complete keep a tag on the control handle stating - DO NOT OPERATE. Remove the key.

HOW TO PUT A LIFT TRUCK ON BLOCKS

WARNING

Do not put the lift truck on blocks if the surface is not solid, even and level. Make sure that any blocks used to support

the lift truck are solid, one-piece units. Put a block in front and back of the tires touching the ground to prevent movement of the lift truck.

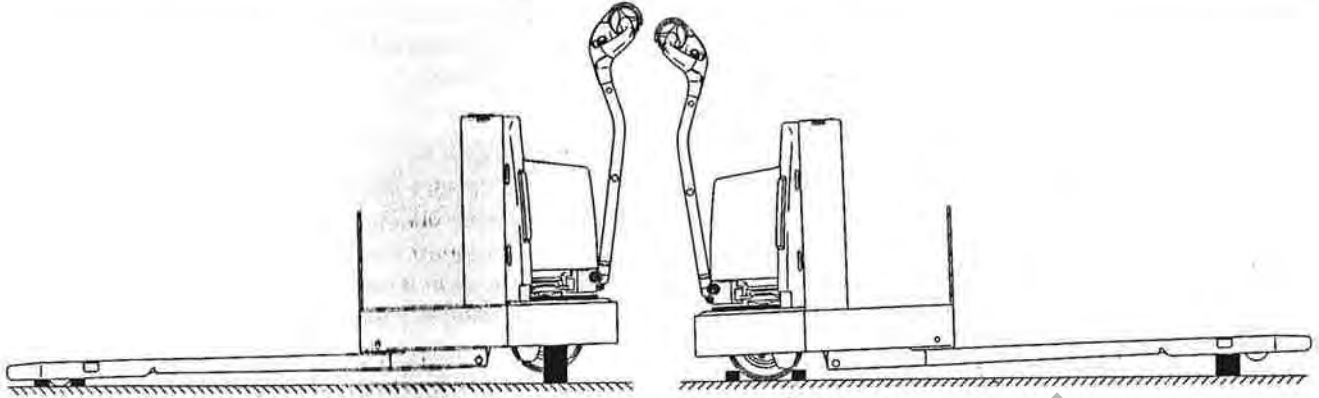
WARNING

Do not raise the lift truck by attaching an overhead crane to areas that will be damaged. Some of these points are not designed to support the weight of the lift truck. The lift truck can be damaged or it can fall causing serious injury. Attach the chain or sling to a support structure of the lift truck frame.

WARNING

Never raise the forks any higher than necessary to change the load wheels. Always raise both forks at the same time. Raising the forks too high or uneven can make the lift truck tip over and cause personal injury, product, or property damage.

Use a crane or jack to raise the forks or motor compartment assembly. Put blocks under the forks or the edge plates of the motor compartment assembly. Make sure the lifting device has a capacity of at least two-thirds (2/3) of the combined weight of the lift truck and the battery as listed on the nameplate. See FIGURE 7.

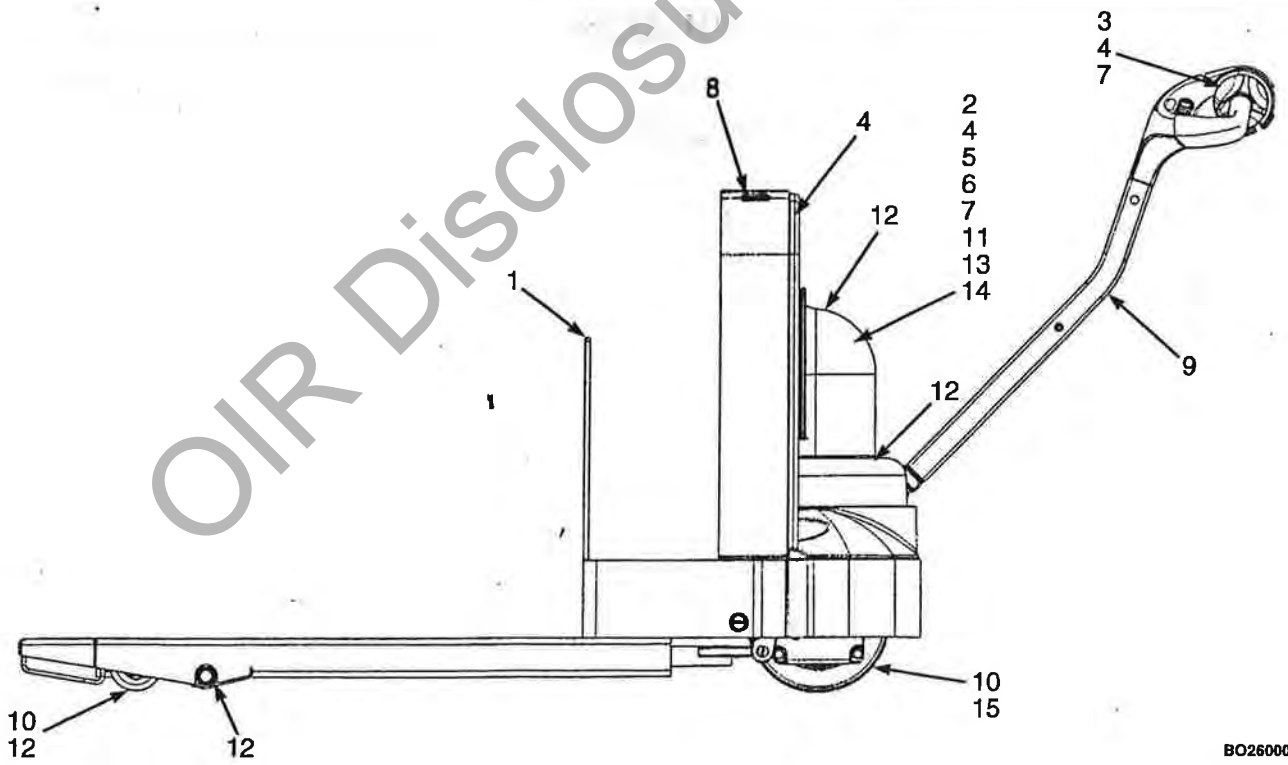


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FIGURE 7. PUTTING THE LIFT TRUCK ON BLOCKS

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MAINTENANCE



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FIGURE 8. MAINTENANCE POINTS

MAINTENANCE SCHEDULE

TABLE 2. MAINTENANCE SCHEDULE (See FIGURE 8.)

Item No.	ITEM	8 Hr/ 1 day ⁹	350 Hr/ 2 month ⁹	2000 Hr/ 1 year ⁹	PROCEDURE OR QUANTITY	SPECIFICATION
1	Battery	X	X ⁵		Check Level	See Specifications
2	Brake	X			Check Operation	Hold On 10% Grade ⁸
3	Directional/Speed Control	X			Check Operation	
4	Gauges, Horn, Fuses	X			Check Operation	
5	Hydraulic Oil (Full Mark)		X ¹⁰	C	Maximum - 1.0 liter (1.06 qt) ^{1,2} Minimum - .8 liter (.85 qt) ^{1,2}	+0° C (32° F) ³ , -0° C ⁴

X = Check C = Change L = Lubricate

- 1 YALE Part Number 580023313
- 2 Chevron EP Hydraulic Oil 68 or equivalent
- 3 Chevron AW46 or equivalent
- 4 MIL-H-5606
- 5 Equalization Charge approximately each month but not more than each week

NOTE: Never use steam to clean electrical parts.

- 6 Multi-Purpose Grease with 2-4% Molybdenum Disulfate for normal operations
- 7 For freezer or other cold operation, MIL-G-7711A
- 8 With rated load
- 9 Whichever comes first
- 10 Hydraulic and MDU Gear oil changed at initial 350 hour interval.

TABLE 2. MAINTENANCE SCHEDULE (CONTINUED)

Item No.	ITEM	8 Hr/ 1 day ⁹	350 Hr/ 2 month ⁹	2000 Hr/ 1 year ⁹	PROCEDURE OR QUANTITY	SPECIFICATION
6	Oil Leaks	X			Check for Leaks	
7	Lift, Lower Operation	X			Check Operation	
8	Safety Labels and Operator's Manual	X			Replace if Necessary	See Parts Manual
9	Steering Operation	X			Check Operation	
10	Tire, Wheels and Caster	X			Check Condition	

X = Check C = Change L = Lubricate
¹ YALE Part Number 580023313
² Chevron EP Hydraulic Oil 68 or equivalent
³ Chevron AW46 or equivalent
⁴ MIL-H-5606
⁵ Equalization Charge approximately each month but not more than each week
NOTE: Never use steam to clean electrical parts.
⁶ Multi-Purpose Grease with 2-4% Molybdenum Disulfate for normal operations
⁷ For freezer or other cold operation, MIL-G-7711A
⁸ With rated load
⁹ Whichever comes first
¹⁰ Hydraulic and MDU Gear oil changed at initial 350 hour interval.

TABLE 2. MAINTENANCE SCHEDULE (CONTINUED)

Item No.	ITEM	8 Hr/ 1 day ⁹	350 Hr/ 2 month ⁹	2000 Hr/ 1 year ⁹	PROCEDURE OR QUANTITY	SPECIFICATION
11	Contactors Tips			X	Check Condition	
12	Lubrication Fittings		L		Lubricate	Multi-Purpose Grease ⁶ Low Temp. Grease ⁷
13	Master Drive Unit Oil		X ¹⁰	C	1.42 liter (1.5 qt)	SAE 80W-90 or Mobilgear 627
14	Motor Brushes		X		Check Condition	
15	Wheel Bolt Torque		X		Tighten if Required	115 N•m (85 lbf ft)
16	Caster Wheel (Optional)		X		Check Condition	

X = Check C = Change L = Lubricate
¹ YALE Part Number 580023313
² Chevron EP Hydraulic Oil 68 or equivalent
³ Chevron AW46 or equivalent
⁴ MIL-H-5606
⁵ Equalization Charge approximately each month
but not more than each week

NOTE: Never use steam to clean electrical parts.
⁶ Multi-Purpose Grease with 2-4% Molybdenum Disulfate
for normal operations
⁷ For freezer or other cold operation, MIL-G-7711A
⁸ With rated load
⁹ Whichever comes first
¹⁰ Hydraulic and MDU Gear oil changed at initial 350 hour
interval.

CHECKS AND INSPECTION PROCEDURES

The Checks and Inspection Procedures and Maintenance Instructions are located in this section. The Checks and Inspection Procedures are used for inspecting the truck daily and after every eight hours of use. The Maintenance Schedule has the time intervals for inspection, lubrication and maintenance. The Maintenance Schedule is based on normal operations. Severe or unusual operating conditions will require a reduction in the recommended time periods in the Maintenance Schedule.

Your YALE dealer has the facilities and trained personnel to do complete lift truck maintenance. A complete program of inspection, lubrication and maintenance will help your lift truck perform efficiently and operate over a longer period of time. Service manuals are available from your YALE dealer to help users who do their own maintenance.

Put the lift truck on a level surface. Lower the forks, disconnect the battery and remove the hood. Check for any leaks and conditions that are not normal. Clean any oil spills.

WARNING

Disconnect the battery before removing the hood.

WARNING

Do not operate a lift truck that needs repairs. Report the need for repairs immediately. If repair is necessary, put a DO NOT OPERATE tag on the control handle. Remove the key from the key switch.

CAUTION

Disposal of lubricants and fluids must meet local environmental regulations.

HYDRAULIC SYSTEM

Make sure the temperature of the oil is at least 32° C (90° F) Make sure the forks are fully lowered. The fluid level mark is labeled on the hydraulic tank. The hydraulic tank fluid level can be seen through the tank. Do not overfill. Oil will leak from the breather if too full. After filling, make sure to tighten the breather cap to prevent oil leaks. Check the hydraulic system for leaks and damaged or loose components.

⚠ WARNING

The operating temperature of the hydraulic oil is 32 to 72° C (90 to 162° F).

NOTE: The location of the breather cap on your lift truck may differ from the illustration but the procedure will be the same. See FIGURE 9.

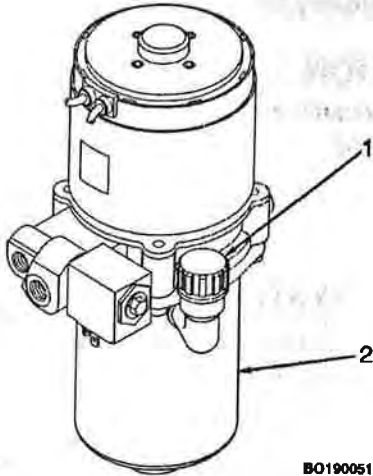


FIGURE 9. CHECK AND FILL HYDRAULIC TANK

1. BREATHER CAP
2. HYDRAULIC OIL TANK

⚠ CAUTION

Do not permit dirt to enter the hydraulic system when oil is added.

NOTE: There is no filter on this hydraulic system. There is a screen on the pump inlet. This screen must be cleaned each time the tank is removed for repairs.

⚠ CAUTION

Never operate the pump without oil in the hydraulic system. Operation of the hydraulic pump without oil will damage it.

⚠ WARNING

Do not try to locate hydraulic leaks by putting hands on pressurized hydraulic lines. Hydraulic oil can be injected into the body by pressure. Clean oil spills from the floor.

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MAINTENANCE

LIFTING MECHANISM

1. Raise the forks slowly without a load. Check for smooth operation and mechanical interference. Mechanical interference is caused by damaged or worn linkage or shafts or by incorrect adjustment of the tension rods.
2. Check for damaged or worn linkage bushings or shafts.
3. Check for missing or loose shaft pins.
4. Check load wheels and support bearings, shafts and shaft pins for wear, damage or missing parts.

CONTROLS

Check that all controls operate as described in TABLE 1.

WARNING

If any function does not operate or operates incorrectly, report the faulty operation immediately. Do not operate the lift truck until the problem is corrected. Put a tag on the control handle stating **DO NOT OPERATE**. Remove the key and disconnect the battery.

WARNING

Do the following checks in an area that is clear of other personnel or equipment.

1. Check the operation of the **key switch**. Function should not operate with the key in the **OFF** position except the steering and brakes. Turn the key to the **ON** position. Release the brake. The horn, hydraulic system and traction system should now be operational.

If the truck is equipped with optional display, check start sequence and fault light. Turn key to **ON** position. When the start sequence is complete, battery discharge indicator lights should show green. If a fault occurs, the fault indicator light flashes red and the LCD displays AL along with the fault symbol (wrench).

2. Check the operation of the **brake switch**. Release the control handle to allow it to return to the vertical position. Move the speed/direction control without lowering the control handle. The traction system must not operate.
3. Check the operation of the **speed/direction control**. Lower the control handle to release the brake. Slowly rotate the speed/direction control. The lift truck must accelerate smoothly. Rotate the control in the opposite direction. The

lift truck must stop smoothly and then change direction. The control must return to the **OFF** position when released.

4. Check the operation of the **lift and lower** functions. Push the lift button and then the lower button. Check that the forks raise and lower.
5. Check the operation of the **traction reverse** function. Slowly rotate the speed/direction control for slow travel in the control handle direction. Push the traction reverse button without changing the position of the speed/direction control. The lift truck must stop and then accelerate in the opposite direction. Once the lift truck changes direction and moves with the control handle trailing, release the traction reverse button without releasing the speed/direction control. The lift truck should **not** accelerate in the control handle direction. (Once the traction reverse button has been pressed, the

traction motor should not accelerate the lift truck toward the control handle). Full direction control may be re-established by rotating the speed/direction control to the **OFF** position or moving the control handle to a brake **ON** position.

6. Check the **steering** function. Move the control handle to the right and left. Check for smooth movement of the steer (drive) wheel in the same direction. Steering will be more difficult if the lift truck is stopped.
7. Check the operation of the **creep speed button**. Move the control handle to the vertical position. Press and hold the Creep Speed button while rotating the direction/speed control. The truck should operate at only 1.6 kmh (1 mph). Lowering the control handle will maintain the Creep Speed until the button is released. To reactivate the Creep Speed, the control handle must be returned to the vertical position.

WHEELS AND TIRES

Check the drive tire, caster and load wheels for foreign material, cuts and tears. Remove all foreign material and smooth any cuts or tears to prevent further damage. See FIGURE 10.

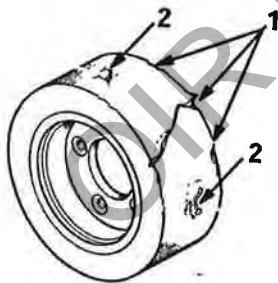


FIGURE 10. TIRES

1. SMOOTH EDGES
2. REMOVE NAILS, GLASS, AND ALL METAL

ELECTRICAL AND BATTERY

Check for loose or broken electrical connections and damaged wires or cables. Examine the battery case for damage and leakage. See the battery dealer in the area to repair any damage to the battery or cables.

⚠ WARNING

Broken electrical connections, damaged wires or cables and leakage or corrosion from the battery can cause the electrical controls of the lift truck to operate incorrectly.

Keep the battery case, top cover and battery areas clean and painted. Use a water and soda solution to clean the battery and the battery area (one pound of baking or commercial soda ash to one gallon of water). Keep the top of the battery clean, dry and free of corrosion.

NOTE: The following electrolyte level and specific gravity checks are not necessary for low maintenance batteries.

Check that the vent caps are clear. Check the electrolyte level daily on a minimum of one cell and on all cells every week. Fill to the correct level according to the battery manufacturer's recommendations. Add only distilled water. Use a hydrometer to check that the battery is not discharged below the minimum specific gravity given by the manufacturer and has enough charge to complete a work period. See FIGURE 11.

⚠ WARNING

Do not put tools on the battery.

⚠ WARNING

The acid in the electrolyte can cause injury. If the electrolyte is spilled, use water to flush the area and make the acid neutral with a solution of soda and water (one pound of baking or commercial soda to one gallon of water). Acid in the eyes must be flushed with water. Have a doctor check the eyes.

⚠ WARNING

Batteries generate explosive fumes. Keep the vents in the caps clean. Keep sparks or open flame away from the battery area. Do not make sparks with the battery connectors. Disconnect the battery when doing maintenance.

CHARGING THE BATTERY**⚠ CAUTION**

Never connect the battery charger to the plug of the lift truck. You will damage the electronic control circuit of the lift truck. Make sure the charger voltage is the same as the battery voltage.

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⚠ WARNING

The acid in the electrolyte can cause injury. Use water to flush the area and make the acid neutral with a solution of soda and water (one pound of baking or commercial soda to one gallon of water). Acid in the eyes must be flushed with water.

Batteries generate explosive fumes during the charging operation. Keep fire, sparks and burning material away from the charging area. When charging the battery, keep the vent caps clear. Avoid sparks or open flame. Provide ventilation. Open the battery cover if equipped. Disconnect the battery during servicing.

⚠ WARNING

If the lift truck was operated with a low battery, check all contactors for welded contactor tips before connecting a charged battery.

⚠ WARNING

California Proposition 65 - This product contains and/or emits chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

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NOTE: Some battery chargers have a program to automatically charge the battery according to battery manufacturer recommendations. Use the recommendations of the manufacturer. Use only battery chargers approved by the battery manufacturer or dealer.

Specific Gravity Corrections

Never let the battery discharge below the minimum value given by the manufacturer. A fully charged battery will have a specific gravity of 1.265 to 1.310 at (77°F) 25°C or the value specified by the manufacturer. The cells must be equally charged. If necessary, give a new battery a slow rate charge for three to six hours after the normal charge is complete for an equal charge on all cells.

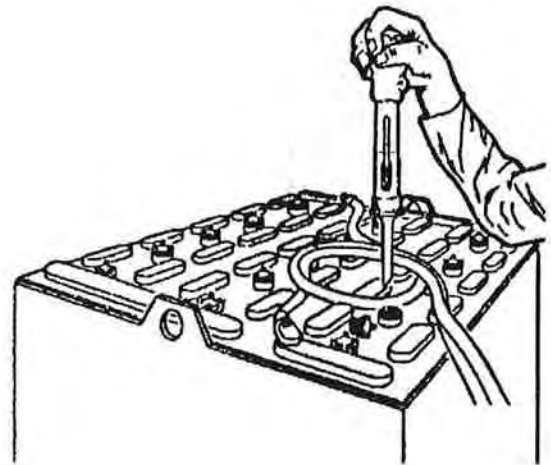


FIGURE 11. CHECKING SPECIFIC GRAVITY WITH HYDROMETER

NOTE: Frequent charging of a battery that has a 2/3 or more charge can decrease battery life.

TABLE 3. SPECIFIC GRAVITY CORRECTIONS

SPECIFIC GRAVITY READING	ELECTROLYTE TEMP.	CORRECTION POINTS	CORRECT VALUE
1.210	87°F (31°C)	+0.003	1.213
1.210	80°F (27°C)	+0.001	1.211
1.210	77°F (25°C)	+0.000	1.210
1.210	64°F (18°C)	-0.004	1.206

+0.001 or -0.001 for each 3° F from the 77° F (25° C) Base Value.
 (°C + 17.8) (1.8) + °F.

⚠ CAUTION

Low battery voltage requires higher current flow to do the same work. This high current flow can damage the motor, contactors and the battery. Do not operate the lift truck with a

battery that has a corrected specific gravity of less than the minimum value specified by the manufacturer.

Proper use of the hydrometer and proper operation of the charger are important. Follow the instructions of the manufacturer. See **FIGURE 11**.

Make specific gravity corrections for the electrolyte temperature as shown in **TABLE 3**.

Remove the vent cap from each cell and make sure the plates have electrolyte over them before charging the battery. Never charge a battery at a rate that will raise the electrolyte temperature above 120° F (49° C). Never let a battery stay completely discharged.

Each battery must have a slow rate charge (equalizer charge) for three to six hours following a normal charge once each month. **DO NOT** give an equalizer charge more than once a week. If the specific gravity difference is more than 0.020 between cells of the battery after an equalizer charge, consult your battery dealer.

CHANGING THE BATTERY - MPB040E**⚠ WARNING**

Batteries are heavy. Use care to avoid injury.

⚠ CAUTION

Disposal of batteries must meet local environmental regulations.

1. Disconnect the battery so that the connector is completely free. See **FIGURE 12**.
2. Pull the tray release lever up and swing the top tray inward for access to the lower batteries.

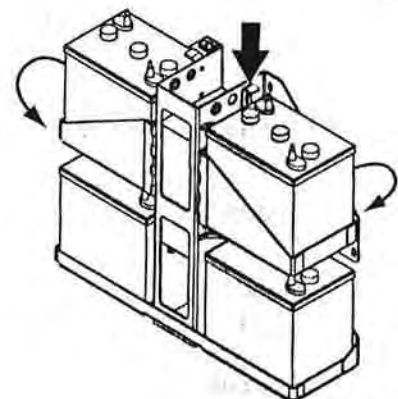


FIGURE 12. BATTERY CONNECTOR

CHANGING THE BATTERY - MPW045E**⚠ WARNING**

Batteries are heavy. Use care to avoid injury.

⚠ WARNING

Make sure the capacity of the crane and the spreader bar is greater than the weight of the battery. The weight of the battery is normally shown on the lift

truck nameplate. If the spreader bar is made of metal, it must have straps that are not made of metal.

⚠ CAUTION

Disposal of batteries must meet local environmental regulations.

1. Disconnect the battery so that the connector is completely free.
2. Use a spreader bar and crane to lift the battery from the lift truck. See FIGURE 13. Before installing the battery, make sure the battery is cleaned and painted. When a replacement battery is installed, make sure the battery fits the battery compartment. Use spacers to prevent the battery from moving more than 13mm (0.5in.) in any horizontal direction. See FIGURE 14. and TABLE 4. and TABLE 5. for the correct battery specifications and adjustments.

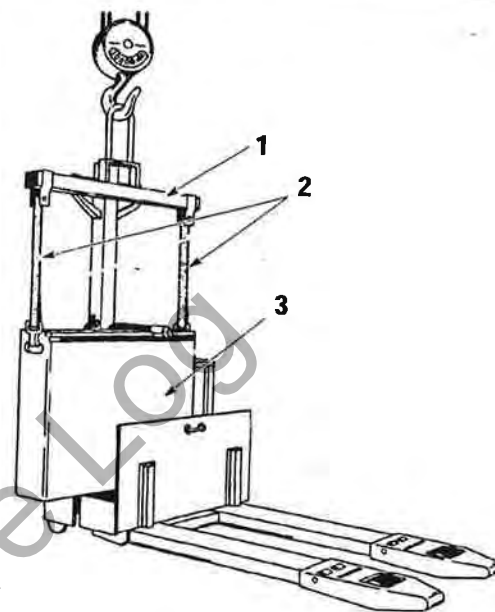


FIGURE 13. CHANGING THE BATTERY

1. SPREADER BAR
2. NON-METAL STRAPS
3. BATTERY

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3. Make sure the weight of the replacement battery is within the maximum and minimum weights shown on the nameplate.
4. The battery must be installed so that the battery connector will connect to the lift truck connector without pulling when the forks are in the lowered position. The battery moves up and down with the forks.

MAINTENANCE

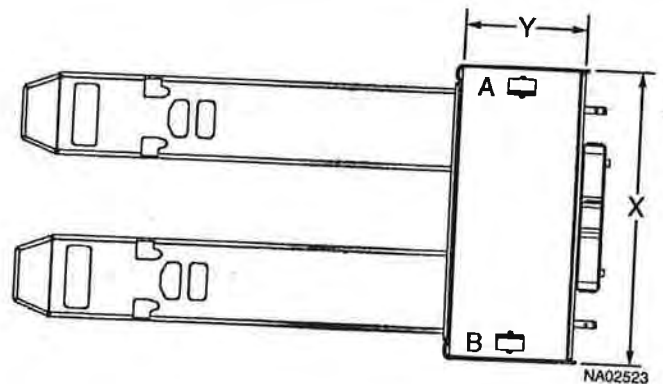


FIGURE 14. BATTERY COMPARTMENT (4500# ONLY)

TABLE 4. BATTERY SPECIFICATIONS AND ADJUSTMENTS MPW 045E - 24 VOLT

VOLTAGE	AMPERE HOURS (MAX)	KILOWATT HOURS (MAX)	COMPARTMENT LENGTH (X) MM (IN.)	COMPARTMENT WIDTH (Y) (MAX) MM (IN.)	RECOMMENDED HEIGHT (MAX) MM (IN.)	WEIGHT (MAX) KG (LBS.)
GNB PalletPro	200	4.6	693.4 (27.3)a	190.5 (7.5)	670.5 (26.4)	163.3 (360)
24	150	3.5	642.6 (25.3)b	162.5 (6.4)	591.8 (23.3)	185.9 (410)
24	170	3.9	642.6 (25.3)b	162.5 (6.4)	591.8 (23.3)	192.8 (425)
24	200	4.6	642.6 (25.3)b	162.5 (6.4)	591.8 (23.3)	213.2 (470)
24	225	5.2	652.8 (25.7)b	223.5 (8.8)	591.8 (23.3)	244.9 (540)
24	255	6.0	652.8 (25.7)b	223.5 (8.8)	591.8 (23.3)	258.5 (570)

Note: If Y is less than 327.6mm (8.5 in) A supplemental retainer is required.
 a - Remove both battery retainers and use accessory bolts to fasten to chassis.
 b - Adjust both A and B retainer

OIR Disclosure Log

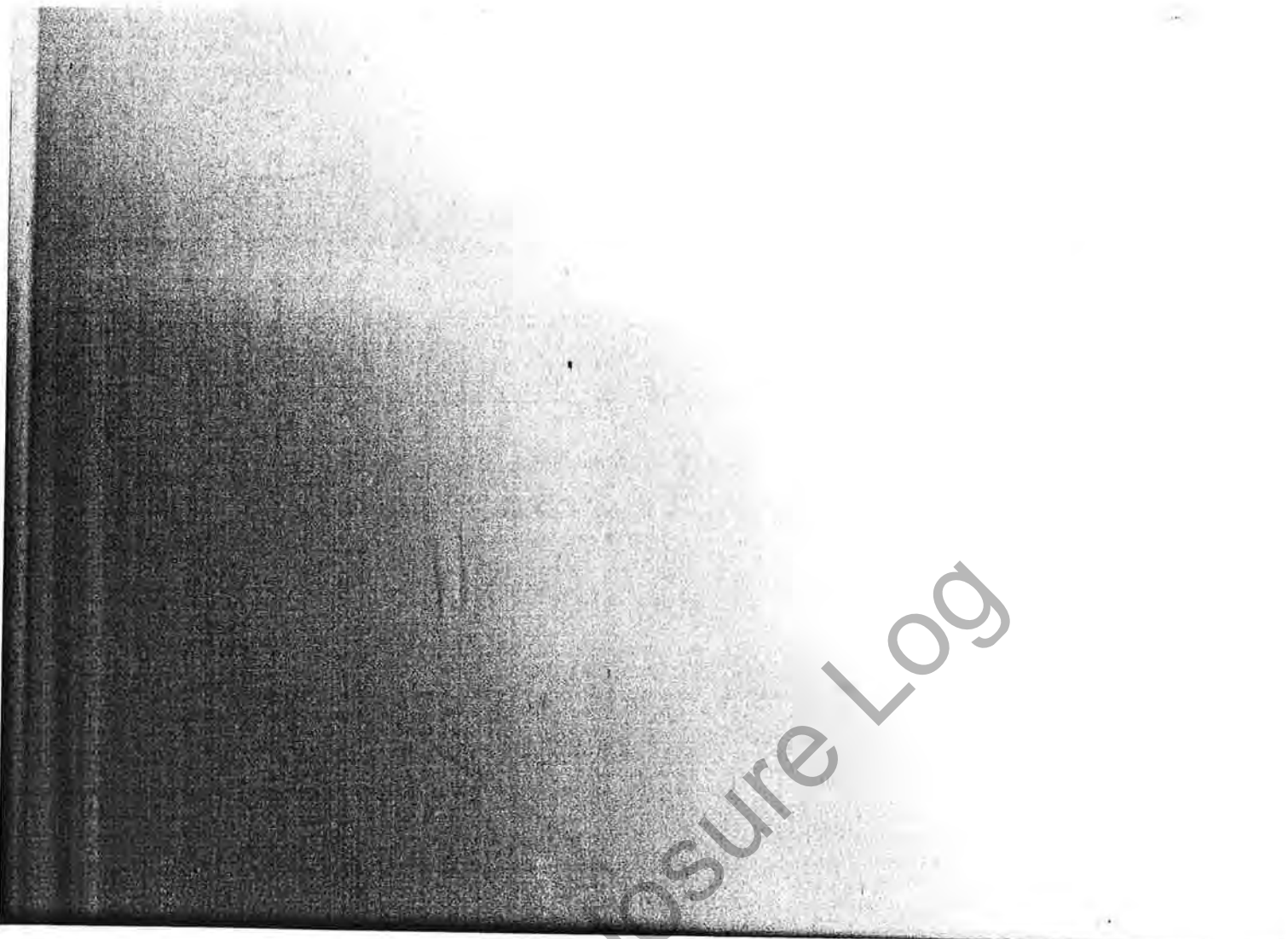
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MAINTENANCE

TABLE 5. BATTERY SPECIFICATIONS AND ADJUSTMENTS MPW 045E - 12 VOLT

VOLTAGE	AMPERE HOURS (MAX)	KILOWATT HOURS (MAX)	COMPARTMENT LENGTH (X) MM (IN.)	COMPARTMENT WIDTH (Y) (MAX) MM (IN.)	RECOMMENDED HEIGHT (MAX) MM (IN.)	WEIGHT (MAX) KG (LBS.)
12	425	5.0	662.9 (26.1)a	195.6 (7.7)	591.8 (23.3)	197.8 (436)
12**	425	5.0	792.5 (31.2)b	198.1 (7.8)	591.8 (23.3)	232.2 (512)
12	510	6.0	777.2 (30.6)c	195.6 (7.7)	591.8 (23.3)	231.3 (510)

NOTE If Y is less than 327.6mm (8.5 in) A supplemental retainer is required.
** - With On-Board Power System
a - Remove both battery retainers and use accessory bolts to fasten to chassis.
b - Adjust B retainer
c - Adjust both A and B retainer.



ITEM NO.	ITEM	FUNCTION
6	<p>Battery Indicator/Hourmeter</p>  <p>NOTE: Fault codes may be generated in response to extreme operating conditions such as rapid stops, potholes, or severely discharged battery, therefore disabling the truck. Most fault codes may be reset by turning the key switch OFF, then returning to the ON position. If the fault code will not reset, report the fault immediately.</p> <p>Diagnostics and Fault Codes</p>	<p>A combination hourmeter, battery state of charge, and fault indicator is available as an option for this lift truck and includes a diagnostic fault code display. The hourmeter continually displays total operation hours when the key switch is ON and current is flowing. Periodic maintenance recommendations are based on these operating hours. As the battery indicator has a LED display of state-of-charge. As the battery's state of charge decreases, successive LED's dim.</p> <p>At 70% of discharge an LED will flash, indicating energy reserve and the horn will sound three (3) times very quickly, indicating that the battery needs to be charged.</p> <p>At 80% of discharge lift is disabled and the horn sounds when the lift button is pressed. Both bottom LED's will alternately flash, indicating empty. The battery MUST be charged. Continued operation with the LED's flashing can damage the battery, motors or the contactors. The system will automatically reset when a charged battery is connected.</p> <p>The discharge indicator is programmed for use with a flooded cell battery. Refer to the maintenance manual for use with a maintenance free battery. A fault indicator is also included. The red LED wrench symbol and AL are displayed if fault occurs. For information about the diagnostics and fault codes, reference the maintenance manual.</p>

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OPERATING PROCEDURES

RULES FOR SAFE OPERATION

Safety is a necessary part of lift truck operation. Many lift truck safety practices are as simple and obvious as driving the family automobile. (e.g. When backing, check behind you. When stopping, do so as gradually as possible.)

However, a lift truck is a special machine designed to do a much different job than an automobile. Because of the close areas in which lift trucks operate, operators must use more caution and receive additional training to operate a lift truck properly.

Travel with forks trailing when possible. Steering the lift truck is easier with the forks trailing. Walk ahead of the lift truck and to one side. Lead the truck with either side of the control handle. Operate the speed/direction control with one hand. Always look in the direction of travel. See **FIGURE 5**.

Operate forks first when entering a confined area or elevator. Operate with the forks downhill when traveling on an incline. Keep both hands on the handle and within the handle guards. Always look in the direction of travel.

NOTE: A flexible and comprehensive operator training program is available from and recommended by **YALE COMPANY**. For further details contact your dealer for **YALE** lift trucks.

The following discussion lists safety techniques applicable to lift truck operation.

1. Inspect the lift truck prior to use. Report damage or faulty operation immediately. Do not operate the lift truck until corrections have been made. The lift truck will only do its job safely when it is in proper working order.
2. The lift truck should only be driven by a properly trained and authorized operator. The operator must thoroughly understand the safety techniques of lift truck operation. A qualified person experienced in operating the lift truck must guide the operator through several driving and load handling operations before the operator attempts to operate the lift truck alone. A basic education in safe driving and load handling techniques is absolutely necessary to prepare the new operator for proper defensive driving.
3. Do not lift or hit anything that may fall on the operator or a bystander. Avoid hitting objects such as stacked material