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Section A: Operation & Service Instructions

I. INTRODUCTION

This section contains a general description of operating instructions and service instructions for 1,000 pound through 150,000 pound capacity trucks. The two basic types of trucks covered in these instructions are walkie and rider units. These designations refer to basic chassis configurations. The trucks are designed for use on smooth, relatively level surfaces such as warehouse and factory floors, loading docks, and paved areas.

II. GENERAL DESCRIPTION

A. General Operation

1. Walkie trucks are designed for operation with the operator standing and walking at the front of the truck. No provision is made for the operator to ride on any part of these trucks. Travel may be in either the forward or reverse direction.
2. Walk-ride trucks are designed for operation with the operator standing or walking at the front of the truck or riding on a platform specifically provided for this purpose. Travel may be either in the forward or reverse direction.
3. Rider trucks are designed for operation with the operator standing and riding on the front of the truck. Travel may be in either the forward or reverse direction.

NOTE - Due to the various options available, refer to the data plate attached to the truck for information regarding:

1. **Truck model.**
2. **Serial number.**
3. **Truck weight (including battery).**
4. **Truck capacity.**
5. **Battery type.**
6. **System voltage.**

B. Electrical System

1. All trucks are battery powered for both lifting of loads and travel. Tractive effort is provided through a motor-driven wheel located at the front end of the truck. A separate electric motor drives the hydraulic pump which supplies hydraulic pressure for raising the load to be transported. A hydraulic valve is used to control the lowering of the load. The travel motor is controlled through an AC Motor Controller (vector control).

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C. Hydraulic System

1. A hydraulic system is used to raise the load. Pressure is applied by an electric motor driven pump. A single or dual hydraulic cylinder raises through mechanical linkages. A valve controls the lowering of the load.
2. Steering is controlled by means of a control handle or steering wheel located at the front of the truck. This handle or wheel is used to swivel the drive wheel.

D. Brake

1. A band or disc brake is mounted on the drive unit.
2. On walkie trucks, the brake is controlled by the control handle. When the control handle is in the vertical position, the brake is applied, preventing truck movement. When the control handle is either in the vertical and the horizontal position, the brake is applied to prevent truck movement. (See Figure 1).
3. On rider trucks, the brake is controlled by a foot pedal which is activated by the operator while standing on the front of the truck, depressing the pedal will release the brake. Releasing the pedal engages the brake.

E. Chassis

1. The chassis comprises of two basic elements: the drive unit mount plate assembly and the load handling system (i.e. forks, platform, die table, roll cradle, etc.). On rider trucks, the chassis may be articulated as an optional feature to improve performance over uneven surfaces. The drive unit and the hydraulic pump drive motor and pump are mounted on the drive unit mount plate assembly. The load handling system is supported at the front end by the drive unit mount plate assembly. The battery compartment is integral with the load handling system.

III. TRAVEL CONTROLS

This section is to point out the location of the operating controls found on most walkie and rider units. (See Figure 1).

1. **Lower Push Button**
2. **Lift Push Button**
3. **Horn**

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IV. BASIC OPERATING PROCEDURES

A. Check Before Operation

1. Check that the battery is clean, externally dry, and charged to 1.250 specific to gravity. Check electrolyte level of all cells. Add water to cover the plates if needed.
2. With the load handling system fully lowered, check hydraulic fluid level.
3. Visually check truck for obvious discrepancies such as hydraulic fluid leaks, and loose or damaged parts.
4. Operational Check before Use:
 - a. Check operation of brake and steering.
 - b. Check operation of drive and hydraulic pump motors.
 - c. Check operation of lifting mechanism.
 - d. Check for unusual noises while traveling unloaded in both forward and reverse.

B. Forward & Reverse Travel, Steering, Braking and Stopping

1. Assume the operator's position:
 - a. **Walkie:** Standing at the front of the truck facing the steering handle end and grasping the hand guards with both hands.
 - b. **Rider:** Standing on the right side of the front riding compartment of the truck and grasping the control handle with the right hand and the steering wheel knob with the left hand.

THE FOLLOWING CONTROL FUNCTIONS FOR WALKIE TRUCKS SHOULD ONLY BE INITIATED WITH THE TILLER HANDLE PLACED IN THE UPRIGHT POSITION.

2. Raise the load handling system.
 - a. **Walkie:** Depress the push button located in the right end or center of the control handle until the load handling system is fully raised.
 - b. **Rider:** Depress the push button located in the top end of the "T" bar control handle.
 - c. **Walkie or Rider:** Manual control valve levers mounted on the operator's right. Pull lever toward operator to accomplish the raise function.

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3. Release the brake.
 - a. **Walkie:** With hands placed on the handle guards, gently swing the control handle downward.

ROTATING HANDLE GRIPS BEYOND SLOW SPEED BEFORE RELEASING THE BRAKE MAY CAUSE THE TRUCK TO LURCH.

- b. **Rider:** When standing and riding on the front rider platform, the brake is disengaged by depressing the pedal. Remove foot from brake pedal to engage the brake.
4. Travel and Steering.
 - a. **Walkie with AC Motor Controller:** Move hands to the control handle grips and rotate the grips in the direction you want to travel. Since the two handle grips are linked together, rotation by either hand is sufficient. For smoother operation, rotate handle grips slowly until truck reaches desired speed. Speed is proportional to rotation of the handle grips. Steer the truck by swinging the control handle to the left or right as required. Walk with the truck as it travels; traveling with the load trailing is recommended where distance is a factor. Walk ahead and to the side of the front of the truck.
 - b. **Rider with AC Motor Controller:** Rotate the control handle in the direction you want to travel. Speed of travel is proportional to rotation of handle. For smooth operation, rotate the handle slowly until the truck reaches the desired speed. Steer the truck by rotating the steering wheel in the clockwise or counter-clockwise direction
 5. Braking and Stopping.
 - a. **Walkie:** Relax hold on the control handle grip(s), allowing them to return to the neutral position. Then depress the control handle to the nearly horizontal position or allow the control handle to return to the vertical position, thus applying the brake.
 - b. **Rider:** Relax hold on the control handle allowing it to return to the neutral position. When operating in the riding mode, depress brake pedal to disengage brake. Remove foot from brake pedal to engage brake.(Stand up rider)

C. Approaching, Lifting, Transporting and Depositing Loads

1. Lowering the load handling system.
 - a. **Walkie:** Depress the push button labeled "lower".
 - b. **Rider:** Depress the push button labeled "lower".
 - c. **Walkie or Rider:** Manual control valve levers mounted on the operator's right. Push lever forward to lower load handling system.

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2. Approaching the Load.
 - a. Approach the load squarely with load handling system fully lowered and approximately centered under the load. Move truck until the handling device is completely under the load.
3. Lifting the Load.
 - a. **Walkie:** Depress the push button located in the right end or center of the control handle until the load clears the floor.
 - b. **Rider:** Depress the push button located in the top of the "T" bar control handle until the load clears the floor.
 - c. **Walkie or Rider:** Manual control valve levers are mounted on the operator's right. Pull lever toward the operator to raise the load.
4. Transporting the Load
 - a. Operate the truck as previously described to transport the load to the desired location. Avoid sharp turns, sudden stops, and rapid acceleration when traveling with loads
5. Depositing the Load
 - a. **Walkie:** Depress the push button located in the left end or center of the control handle until the load handling system is in a fully lowered position and the load is independent of the load handling device. Slowly withdraw from underneath the load.
 - b. **Rider:** Depress the push button located in the right end of the "T" bar control handle until the load handling system is in a fully lowered position and the load is independent of the load handling device. Slowly withdraw from underneath the load.
 - c. **Walkie or Rider:** Manual control valve levers mounted on the operator's right. Push lever forward to lower until the load handling system is in a fully lowered position and the load is independent of the load handling device. Slowly withdraw from underneath the load.

NOTE - Trucks may be equipped with special controls. See label on each truck before operating.

V. SAFETY

Safety should be your primary concern when operating and maintaining the truck. Most accidents are caused by operator carelessness or misjudgment. Adhere to the following safety hints, and at all times, use good common sense.

1. Report any malfunctions to your supervisor & remove truck from service until it can be repaired.

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A. VISUAL CHECKS

1. Battery is charged. Battery water level is OK. Vent caps are in place. Connector is secure.
2. Lifting chains are in place (if applicable).
3. Tires and load wheels are in good operating condition.
4. Safety shield(s) are clean (if applicable).
5. Forks are in place and properly secured.

B. OPERATIONAL CHECKS

1. Operate and re-engage the emergency power disconnect or battery connector.
2. Make sure horn is operational (toot it).
3. Raise the forks / platform.
4. Lower the forks / platform
5. Travel (slowly).
6. Apply brakes to make sure they are efficiently braking properly.
7. Check the steering.
8. Test the travel through full speed range in both forward and reverse.
9. Extend and retract reach mechanism for proper operation (if applicable).
10. Tilt the mast forward and reverse or fork tips downward or upward (if applicable).
11. Pay attention to all labels and markings on truck including all attachments (if applicable).
12. YOU - are you well and alert?

C. SAFEGUARDING YOUR UNIT

1. Make safety checks and observations before use. Report any issues or concerns to your Immediate supervisor.
2. Don't let others operate your unit unless they are properly and fully authorized and trained to run that particular unit(s).
3. Use caution when changing direction with your truck. Come to a complete stop before changing direction whether it is traveling forward, reverse, left, or right.
4. Don't overload your truck (know its capacity). Overloading could upset your unit and cause hydraulic or mechanical failure endangering both you and the components on the truck.

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5. Avoid sudden stops and starts with the truck.
6. Check the work area that you will be operating the truck in. Look for damaged floors. Note overhead obstructions, ramps, and docks. Make certain your unit is intended for ramp use. Check traffic areas for obstructions and pedestrian traffic.
7. When leaving your unit unattended, **Always** observe the following:
 - a. Fully lower forks.
 - b. Turn off key switch (if applicable).
 - c. Apply (set) emergency parking brake (if applicable).
 - d. Avoid parking on inclines when possible.
 - e. Block wheels of unit if you must park on an incline.
8. Maintain a distance of at least three truck lengths from the truck ahead of your unit.
9. Observe all in-plant speed limits.
10. Keep walkie units under control at **ALL** times
11. Don't pass other vehicles traveling in the same direction at intersections, blind spots or other dangerous locations.
12. Avoid running over loose objects in the aisle.
13. When attachments are used, operate the truck with a partial load to prevent tipping of truck.

D. PROTECT OTHER PEOPLE

1. Don't let others operate your unit unless they are properly authorized and trained.
2. No riders!
3. When elevating personnel:
 - a. Use a securely attached safety platform.
 - b. Make certain lifting mechanism is operating properly.
 - c. Mast is vertical (never tilt when elevated if applicable).
 - d. Make certain truck brake is set.
 - e. Lift and lower load smoothly.
 - f. Watch for overhead obstructions and other surroundings that may cause damage to you or the truck.
 - g. Never transport personnel on the platform from one location to another.

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4. Watch for pedestrians when operating the truck and yield to their presence.
5. Slow down and use caution in congested areas.
6. Lower the forks when traveling. When truck is parked, lower the forks to the point where the forks are resting on the floor.
7. Always yield the right-of-way to vehicles on your right. (Except when national customs differ).
8. Don't follow too closely. Leave plenty of room for safe stopping and traveling of truck.
9. Sound your horn when approaching intersecting aisles.
10. Never drive your unit up to anyone standing in front of a fixed object.
11. Do not allow anyone to stand or pass underneath the elevated portion of the truck.
12. Operate at a speed that will permit the truck to be brought to a stop in a safe Manner
13. Spread forks outward as far as the load will permit.
14. Handle only stable loads. Do not even attempt to lift an unstable load. Report any unstable loads to your immediate supervisor.
15. Use extreme care when handling long, high, or wide loads.
16. Tilting (if applicable):
 - a. Tilt forward only to deposit or pick up load.
 - b. Tilt forward only at lower elevations.
 - c. Tilt rearward only to stabilize the load.

E. PROTECT YOURSELF

17. Are you properly trained and authorized to operate this truck?
18. Watch for overhead obstructions.
19. Keep your arms, hands, and legs away from the lifting mechanism on the truck.
20. Keep your feet clear of wheels.
21. Do not drive with wet or greasy hands.
22. Check capacity and mounting of dock boards before using.
23. When using an elevator for unit transporting, please read and observe the following:
 - a. Do not drive onto elevator unless authorized and properly trained to do so.

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- b. Check capacity of elevator before entering.
 - c. Check to make certain all personnel has left the elevator.
 - d. Enter elevator load first.
 - e. Enter squarely and slowly.
 - f. Neutralize control - Shut off power - Set brakes.
24. Never pass or stand under the elevating portion of truck.
 25. Maintain a safe distance from the edges of ramps, dock boards, and docks.
 26. Never use your unit in an unauthorized area or explosive atmosphere
(UNLESS UNIT IS TYPE "EX" RATED)
 27. Ascend or descend grades slowly with loads always down grade.
 28. Don't turn on grades, ramps, or inclines. Always travel straight up or straight down.
 29. Slow down and proceed with caution when making turns.
 30. Travel with load against the vertical face of the forks and with load or lifting mechanism at minimum ground clearance and tilted back.

F. PROTECT OTHER PROPERTY

1. Slow down for hazardous conditions (such as wet or slippery floors).
2. Avoid bumping into objects.
3. Be sure your load or forks are clear before lowering.
4. Be alert - Anticipate.
5. Yield to emergency vehicles.
6. Travel in the direction providing the best visibility.

For additional information pertaining to operating and maintenance procedures, we recommend the American National Standards ANSI B56.1.

VI. PERIODIC MAINTENANCE CHECKLIST

The information which follows describes in detail the maintenance requirements of all standard walkie and rider trucks including trucks equipped with standard optional equipment. Disregard references to any equipment which is not on your truck. Taking care of your truck according to the guidance given here will guarantee long satisfactory service. Your equipment dealer can arrange to have any of the procedures taken care of for you, should they be beyond the scope of your facilities.

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