OPERATORS AND SAFETY MANUAL

WORLD HEADQUARTERS

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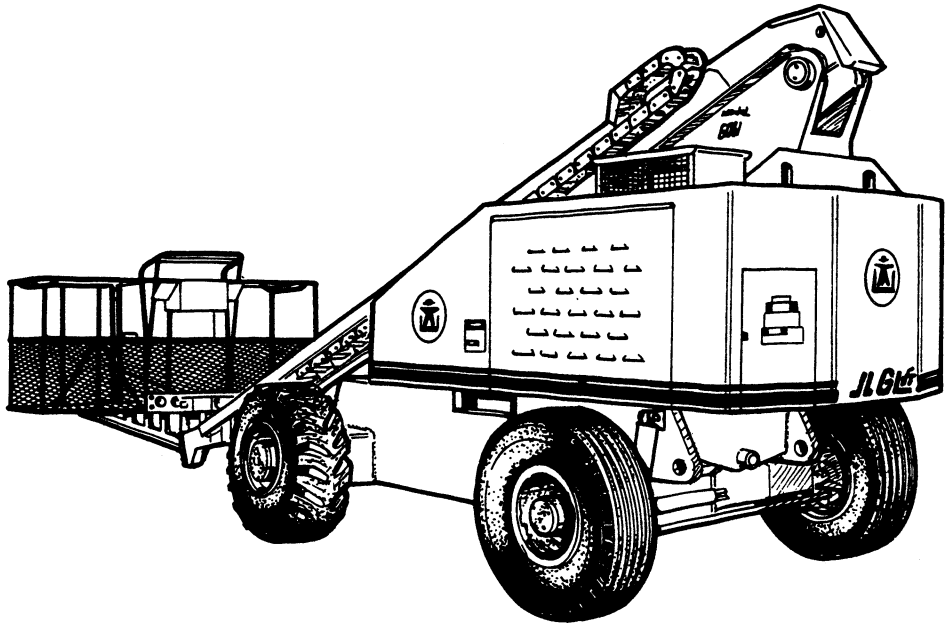

MODEL 80H

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FOREWORD

The purpose of this manual is to provide the customer with the operating procedures essential for the promotion of proper machine operation for its intended purpose. It is impossible to over-stress proper usage. All information in this manual should be READ and UNDERSTOOD before any attempt is made to operate the machine. YOUR OPERATING MANUAL IS YOUR MOST IMPORTANT TOOL - Keep it with the machine.

SINCE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICE IN THIS AREA IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

ALL PROCEDURES HERE IN ARE BASED ON THE USE OF THE MACHINE UNDER PROPER OPERATING CONDITION, WITH NO DEVIATIONS FROM THE ORIGINAL DESIGN. ALTERATION AND/OR MODIFICATION OF THE MACHINE IS STRICTLY FORBIDDEN WITHOUT WRITTEN APPROVAL FROM JLG INDUSTRIES. INC.

A MOST IMPORTANT FACT TO REMEMBER IS THAT ANY EQUIPMENT IS ONLY AS SAFE AS THOSE WHO OPERATE IT.

DANGER, WARNING, CAUTION, IMPORTANT, INSTRUCTIONS AND NOTE DEFINITIONS

Since safety of personnel and proper use of the machine are of primary concern, DANGER, WARNING, CAUTION, IMPORTANT, INSTRUCTIONS and NOTES are inserted throughout this manual and on the machine to emphasize these areas. They are defined as follows:

DANGER

IF NOT CORRECTLY FOLLOWED THERE IS A HIGH PROBABILITY OF SERIOUS INJURY OR DEATH TO PERSONNEL.

WARNING or CAUTION

IF NOT CORRECTLY FOLLOWED THERE IS SOME POSSIBILITY OF SERIOUS INJURY OR DEATH TO PERSONNEL.

THE "SAFETY ALERT SYMBOL" IS USED TO CALL ATTENTION TO POTENTIAL HAZARDS WHICH MAY LEAD TO DEATH OR SERIOUS INJURY IF IGNORED.

IMPORTANT or INSTRUCTIONS

DENOTES PROCEDURES ESSENTIAL TO SAFE OPERATION AND PREVENTION OF DAMAGE OR DESTRUCTION TO MACHINE.

Note

Provides information of special interest to illustrate the text.

All procedures herein are based on the use of the machine under proper operating conditions, with no deviations from original design intent ... as per OSHA regulations.

READ & HEED!

The ownership, use, service, and/or maintenance of this machine is subject to various federal, state and local laws and regulations. It is the responsibility of the owner/user to be knowledgeable of these laws and regulations and to comply with them. The most prevalent regulations of this type are the Federal OSHA Safety Regulations*. Listed below, in abbreviated form are some of the requirements of Federal OSHA regulations in effect as of the date of publication of this handbook.

The listing of these requirements shall not relieve the owner/user of the responsibility and obligation to determine all applicable laws and regulations and their exact wording and requirements, and to comply with the requirements. Nor shall the listing of these requirements constitute an assumption of responsibility or liability on the part of JLG Industries, Inc.

1. Only trained and authorized operators shall be permitted to operate the aerial lift.
2. A malfunctioning lift shall be shut down until repaired.
3. The controls shall be plainly marked as to their function.
4. The controls shall be tested each day prior to use to determine that they are in safe operating condition.
5. All personnel in the platform shall wear an approved safety belt with the lanyard attached to the platform attachment point.
6. Load limits specified by the manufacturer shall not be exceeded.
7. Instruction and warning placards must be legible.
8. Aerial lifts may be "field modified" for uses other than those intended by the manufacturer only if certified in writing by the manufacturer or an equivalent entity, such as a nationally recognized testing lab, to be in conformity to applicable OSHA safety regulations and to be at least as safe as it was prior to modification.
9. Aerial lifts shall not be used near electric power lines unless the lines have been deenergized or adequate clearance is maintained (see OSHA 29 CFR 1910.67 and 1926.400).
10. Employees using aerial lifts shall be instructed how to recognize and avoid unsafe conditions and hazards.
11. Ground controls shall not be operated unless permission has been obtained from personnel in the platform, except in case of an emergency.
12. Regular inspection of the job site and aerial lift shall be performed by competent persons.
13. Personnel shall always stand on the floor of the platform, not on boxes, planks, railing or other devices for a work position.

*Applicable Federal OSHA regulations, as of the date of publication of this handbook, include, but are not limited to, 29 CFR 1910.67, 29 CFR 1926.20, 29 CFR 1926.21, 29 CFR 1926.28, 29 CFR 1926.400 and 29 CFR 1926.556. Consult the current regulations for the exact wording and full text of the requirements and contact the closest Federal OSHA office for specific interpretations.

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LIST OF ILLUSTRATIONS

SECTION 1 — SAFETY PRECAUTIONS

1-1. GENERAL.

a. This section prescribes proper and safe practices for normal machine usage which has been divided into two basic categories: Driving and Platform Operation. In order to safely and properly use the machine, it is necessary that a daily preparation routine be established by a qualified person, this must be followed to ensure that the machine is safe to operate.

b. The user/operator of the machine should not accept operating responsibility until this manual has been read and operation of the machine, under the supervision of an experienced and qualified operator, has been completed. If there is a question on application and/or operation, JLG Industries Safety Engineering should be consulted.

WARNING

MODIFICATION OF THE MACHINE WITHOUT APPROVAL OF JLG INDUSTRIES, OR CERTIFICATION BY A NATIONALLY RECOGNIZED TESTING LAB TO BE IN CONFORMITY WITH APPLICABLE OSHA REGULATIONS, AND TO BE AT LEAST AS SAFE AS BEFORE MODIFICATION, IS PROHIBITED AND IS A VIOLATION OF OSHA RULES.

1-2. DRIVING/TOWING.

a. Before driving the machine the user must be familiar with the drive, steer and stopping characteristics. This is especially important when driving in close quarters.

b. The user should be familiar with the driving surface before driving. The surface should be firm and level and grades should not exceed the allowable grade, as indicated on the CAUTION placard at the platform control station.

Note

Remember that the key to safe and proper usage is common sense and its careful application.

c. Standard machine is not equipped with provisions for towing.

SPECIAL NOTE:

THE CARTOONS IN THIS PUBLICATION SHOULD IN NO WAY BE CONSTRUED AS SHOWING THE PROPER USE OF THE MACHINES. THEY ARE INCLUDED TO PROVIDE VISUAL INDICATIONS OF INCORRECT EQUIPMENT OPERATION AND APPLICATION.

WARNING

FAILURE TO COMPLY WITH THE SAFETY REGULATIONS LISTED IN THIS SECTION MAY RESULT IN PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION.

DRIVING.

DO NOT USE HIGH SPEED DRIVE CONTROLS (Engine Speed and Drive Speed) IN RESTRICTED OR CLOSE AREAS OR WHEN DRIVING IN REVERSE.

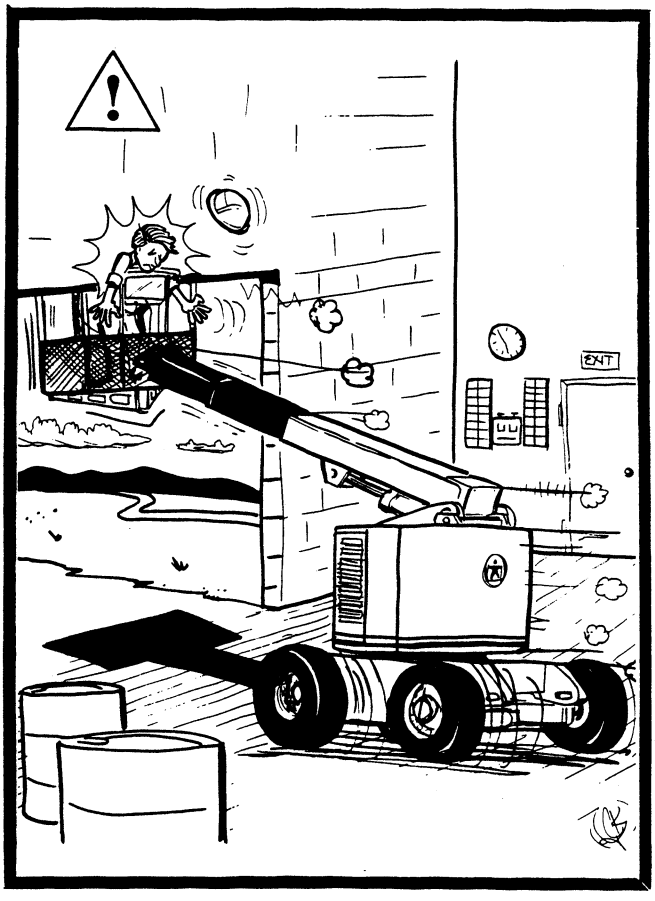
REVERSE TRAVELING IS INTENDED FOR WORK SITE MOBILITY ONLY.

ALWAYS POSITION BOOM OVER REAR (DRIVE) AXLE IN LINE WITH DIRECTION OF TRAVEL. NOTE DIRECTIONAL ARROWS ON MACHINE. REMEMBER, IF BOOM IS OVER FRONT (STEER) AXLE, THE DIRECTION OF STEER AND DRIVE MOVEMENT WILL BE OPPOSITE FROM THE DIRECTION OF CONTROL MOVEMENT.

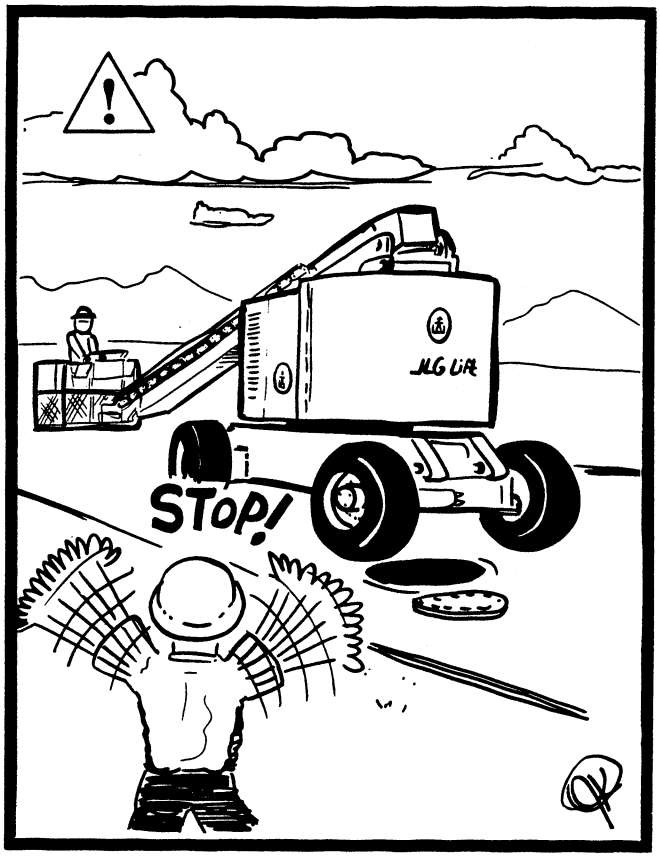
ALWAYS POST A LOOKOUT AND SOUND HORN WHEN DRIVING IN AREAS WHERE VISION IS OBSTRUCTED.

DO NOT USE DRIVE FUNCTION TO POSITION PLATFORM CLOSE TO OBSTACLES. USE TELESCOPE OR SWING.

CHECK TRAVEL PATH FOR PERSONS, HOLES, BUMPS, DROP-OFFS, OBSTRUCTIONS, DEBRIS, AND COVERINGS WHICH MAY CONCEAL HOLES, AND OTHER HAZARDS.



KEEP YOUR EYES AND MIND FIXED IN THE DIRECTION OF TRAVEL.



ALWAYS POST A LOOKOUT WHEN USERS VIEW IS OBSTRUCTED.

STANDARD MACHINE IS NOT EQUIPPED WITH PROVISIONS FOR TOWING.

WATCH FOR OBSTRUCTIONS AROUND MACHINE AND OVERHEAD WHEN DRIVING.

DO NOT DRIVE MACHINE ON GRADES AND SIDE SLOPES EXCEEDING THOSE SPECIFIED ON CAUTION PLACARD AT PLATFORM.

DO NOT TRAVEL ON SOFT OR UNEVEN SURFACES, AS TIPPING WILL OCCUR.

IF PLATFORM OR BOOM IS CAUGHT SO THAT ONE OR MORE WHEELS ARE OFF THE FLOOR, ALL PERSONNEL MUST BE REMOVED FROM PLATFORM BEFORE OPERATING GROUND CONTROLS TO FREE MACHINE. CONTROL MACHINE STABILITY WITH LIFT TRUCK OR CRANE.

BEFORE DRIVING ON FLOORS, BRIDGES, TRUCKS AND OTHER SURFACES CHECK ALLOWABLE CAPACITY OF SURFACES.

LOCK TURNTABLE BEFORE TRAVELING LONG DISTANCES OR HAULING MACHINE ON A TRUCK OR TRAILER.

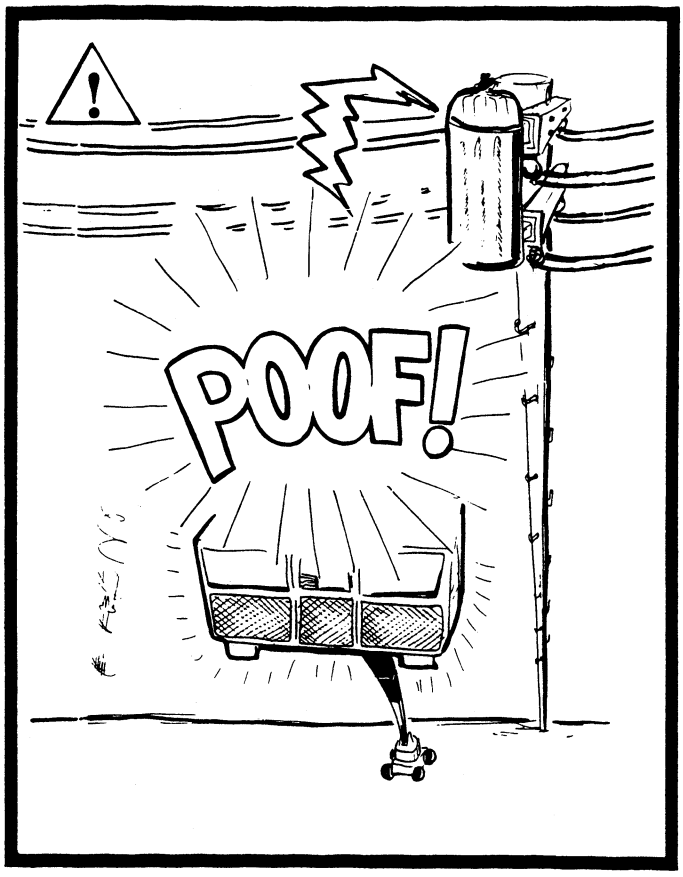
OPERATION.

BEFORE OPERATION CHECK WORK AREA FOR BARE OVERHEAD ELECTRIC WIRES, MACHINE TRAFFIC SUCH AS BRIDGE CRANES, HIGHWAY, RAILWAY AND CONSTRUCTION EQUIPMENT.

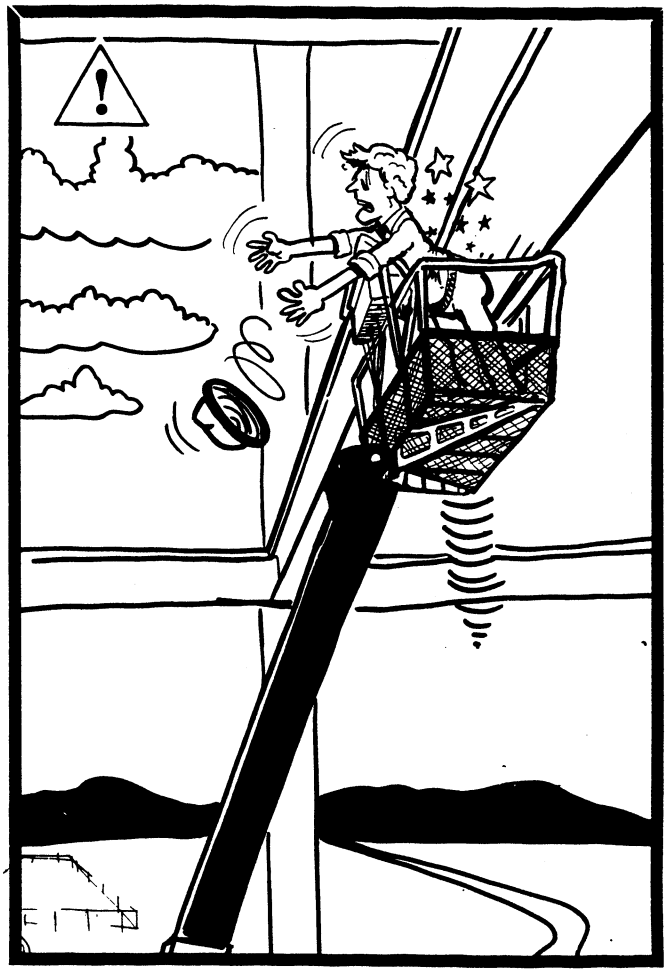
PRECAUTIONS TO AVOID ALL KNOWN HAZARDS IN THE WORK AREA MUST BE TAKEN BY THE OPERATOR AND HIS SUPERVISOR BEFORE STARTING THE WORK.

MAINTAIN SAFE CLEARANCE FROM ELECTRICAL LINES AND APPARATUS. ALLOW FOR BOOM SWAY, ROCK OR SAG AND ELECTRICAL LINE SWAYING. THE MACHINE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR.

MAINTAIN A CLEARANCE OF AT LEAST 10 FEET BETWEEN ANY PART OF THE MACHINE OR ITS LOAD AND ANY ELECTRICAL LINE OR APPARATUS CARRYING UP TO 50,000 VOLTS. ONE FOOT ADDITIONAL CLEARANCE IS REQUIRED FOR EVERY ADDITIONAL 30,000 VOLTS OR LESS.



MAINTAIN A SAFE CLEARANCE FROM ELECTRICAL LINES AND APPARATUS.



THOROUGHLY CHECK ALL CLEARANCES BEFORE POSITIONING PLATFORM.

ALLOW ONLY THOSE AUTHORIZED AND QUALIFIED PERSONNEL TO OPERATE MACHINE WHO HAVE DEMONSTRATED THAT THEY UNDERSTAND SAFE AND PROPER OPERATION AND MAINTENANCE OF THE UNIT.

AN OPERATOR MUST NOT ACCEPT OPERATING RESPONSIBILITIES UNTIL ADEQUATE TRAINING HAS BEEN GIVEN BY COMPETENT AND AUTHORIZED PERSONS.

CHECK CLEARANCES ABOVE, ON SIDES AND BOTTOM OF PLATFORM WHEN RAISING, LOWERING, SWINGING, AND TELESCOPING BOOM.

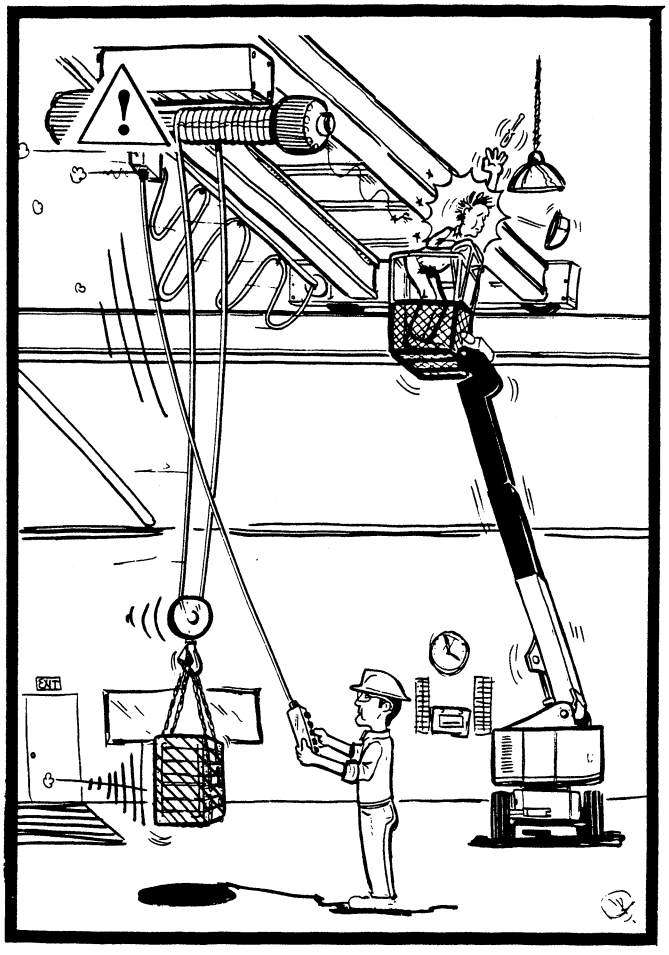
NEVER DISABLE OR MODIFY THE FOOTSWITCH OR ANY OTHER SAFETY DEVICE. ANY MODIFICATION OF THE MACHINE IS A SAFETY VIOLATION AND IS A VIOLATION OF OSHA RULES.

ENSURE MACHINE IS POSITIONED ON A FIRM, LEVEL AND UNIFORM SUPPORTING SURFACE BEFORE RAISING OR EXTENDING BOOM.

OBSERVE EXTREME CAUTION AT ALL TIMES TO PREVENT OBSTACLES FROM STRIKING OR INTERFERING WITH OPERATING CONTROLS AND PERSONS IN THE PLATFORM.

DO NOT OPERATE MACHINE WHEN WIND CONDITIONS EXCEED 30 MPH.

WHEN WORKING IN THE AREA OF OTHER MOVING MACHINES, BARRICADE THE WORK AREA OR TURN OFF AND RED TAG THE OTHER MACHINES TO PREVENT THEIR USE.

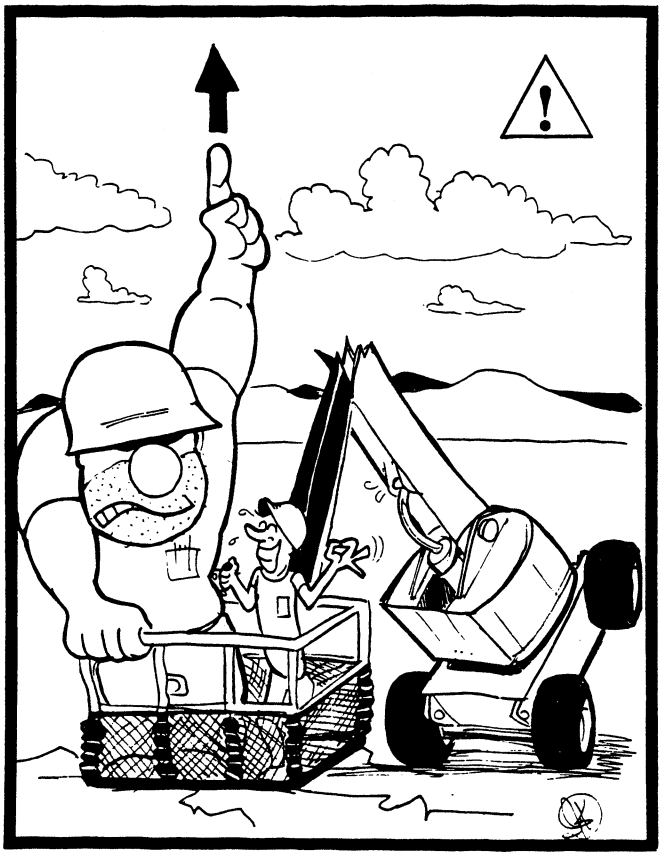


BE AWARE OF OTHER MOVING MACHINERY IN YOUR AREA OF OPERATION.

NEVER OPERATE OR RAISE BOOM WHEN MACHINE IS ON A TRUCK, OTHER VEHICLE OR ABOVE GROUND STRUCTURE.

NEVER EXCEED MANUFACTURER'S RATED PLATFORM CAPACITY — REFER TO CAPACITY INDICATOR ON MACHINE. DISTRIBUTE LOAD EVENLY ON PLATFORM FLOOR.

NEVER OPERATE A MALFUNCTIONING MACHINE. IF A MALFUNCTION OCCURS, SHUT DOWN THE MACHINE, RED TAG IT, AND NOTIFY PROPER AUTHORITIES.



KNOW YOUR CAPACITY AND OPERATE WITHIN IT.

READ AND OBEY ALL WARNING, CAUTIONS AND OPERATING INSTRUCTIONS ON MACHINE AND IN THIS MANUAL.

BE FAMILIAR WITH LOCATIONS AND OPERATION OF MANUAL DESCENT AND GROUND STATION CONTROLS.

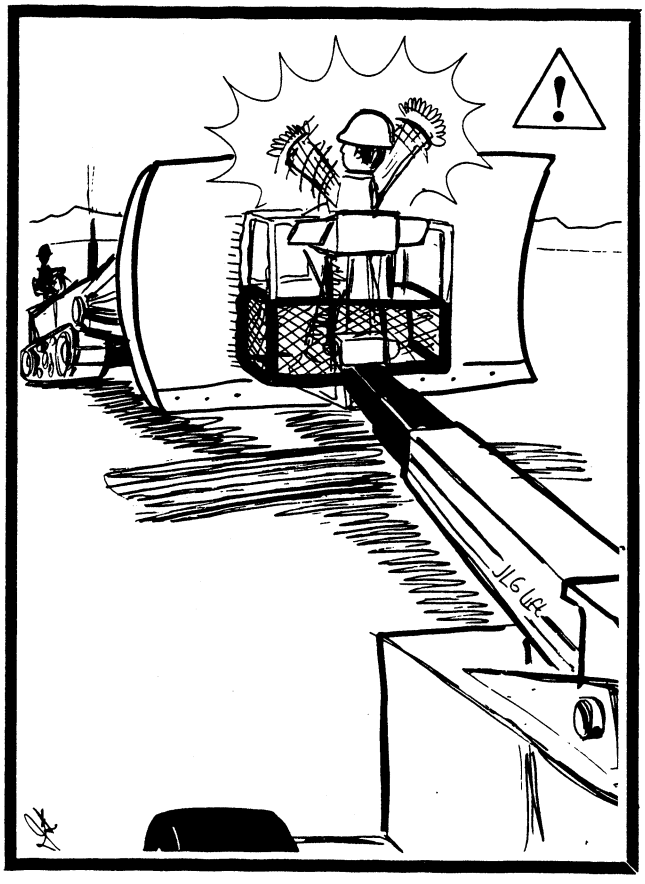
MACHINE MUST ALWAYS BE SHUT DOWN WHEN REFUELING. 'NO SMOKING' IS MANDATORY. NEVER REFUEL DURING AN ELECTRICAL STORM. ENSURE THAT FUEL CAP IS CLOSED AND SECURE AT ALL OTHER TIMES.

DO NOT OPERATE ANY MACHINE ON WHICH DANGER, WARNING, CAUTION OR INSTRUCTION PLACARDS OR DECALS ARE MISSING OR ILLEGIBLE.

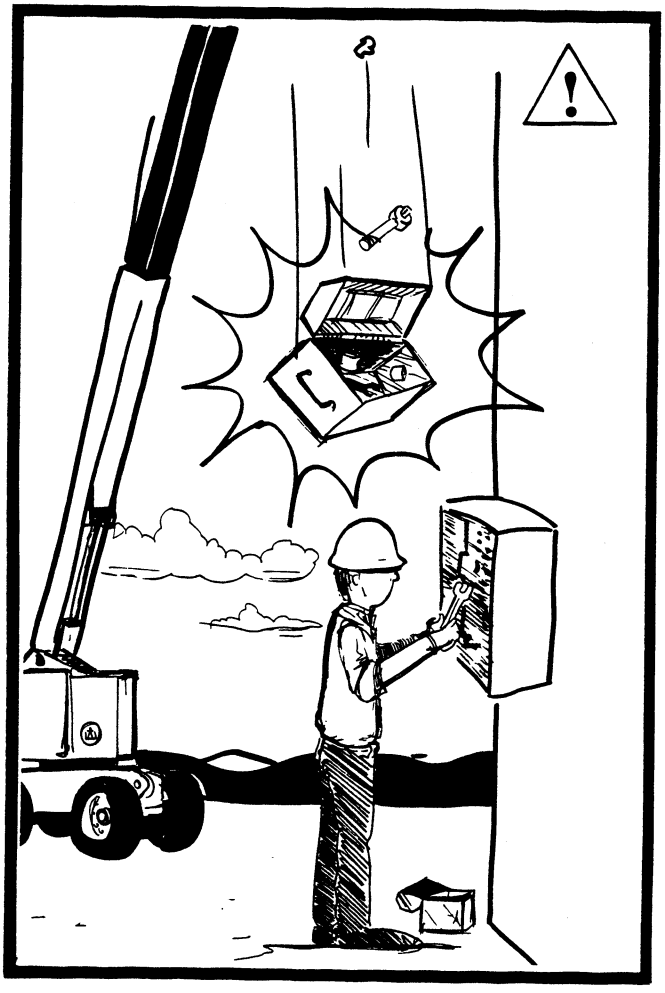
THE OPERATOR IS RESPONSIBLE TO AVOID OPERATING OVER GROUND PERSONNEL AND TO WARN THEM NOT TO WORK OR WALK UNDER A RAISED BOOM OR PLATFORM.

APPROVED HEAD GEAR MUST BE WORN WHEN REQUIRED BY ALL OPERATING AND GROUND PERSONNEL.

ALWAYS ACTUATE CONTROLS WITH SLOW EVEN PRESSURE.



ASSIST MACHINE ONLY BY PULLING AT CHASSIS TIE-DOWN LUGS.



KEEP EVERYONE CLEAR OF A WORKING PLATFORM.

DO NOT CARRY MATERIALS ON PLATFORM RAILING UNLESS APPROVED.

READ YOUR MANUAL, UNDERSTAND WHAT YOU'VE READ - THEN BEGIN OPERATIONS.

NEVER PUSH OR PULL THE MACHINE, OR OTHER OBJECTS BY TELESCOPING THE BOOM.

NEVER USE BOOM FOR ANY PURPOSE OTHER THAN POSITIONING PERSONNEL, THEIR TOOLS AND EQUIPMENT.

DO NOT ASSIST A STUCK OR DISABLED MACHINE BY PUSHING OR PULLING EXCEPT BY PULLING AT CHASSIS TIE-DOWN LUGS.

DO NOT USE THE DRIVE, LIFT, SWING OR TELESCOPE FEATURES OF THE MACHINE TO MOVE EITHER THE MACHINE OR OTHER OBJECTS.

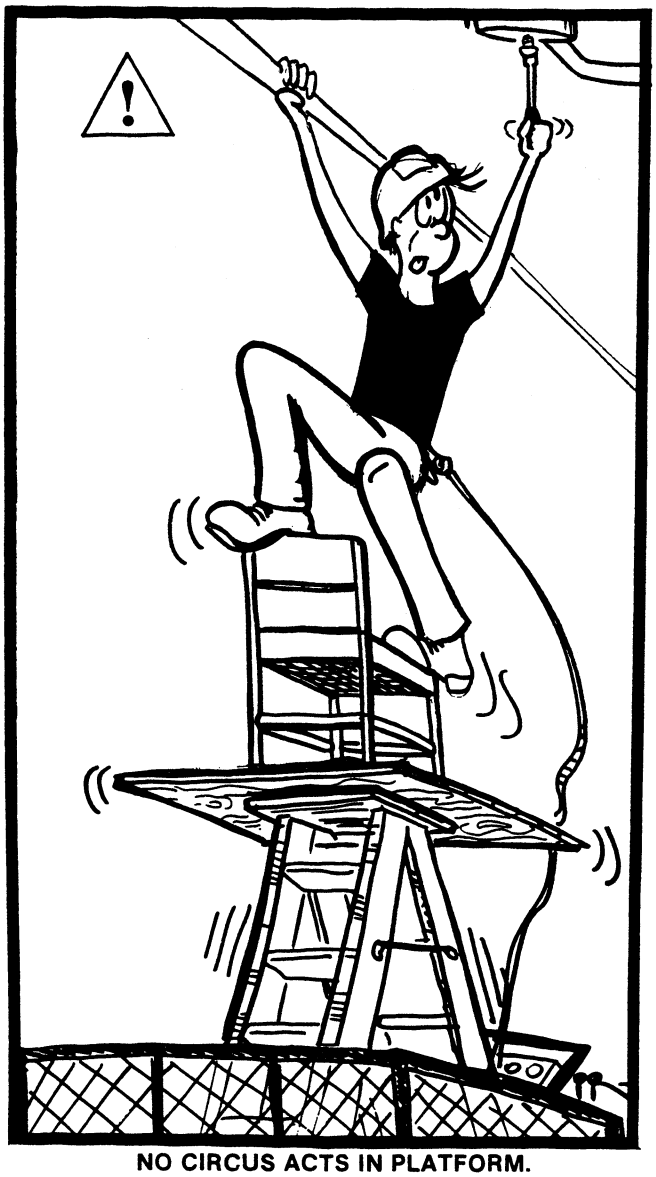
NEVER ATTEMPT USING BOOM AS A CRANE. STRUCTURAL DAMAGE OR TIPPING MAY OCCUR.

NEVER POSITION LADDERS, STEPS, OR SIMILAR ITEMS ON UNIT TO PROVIDE ADDITIONAL REACH FOR ANY PURPOSE.

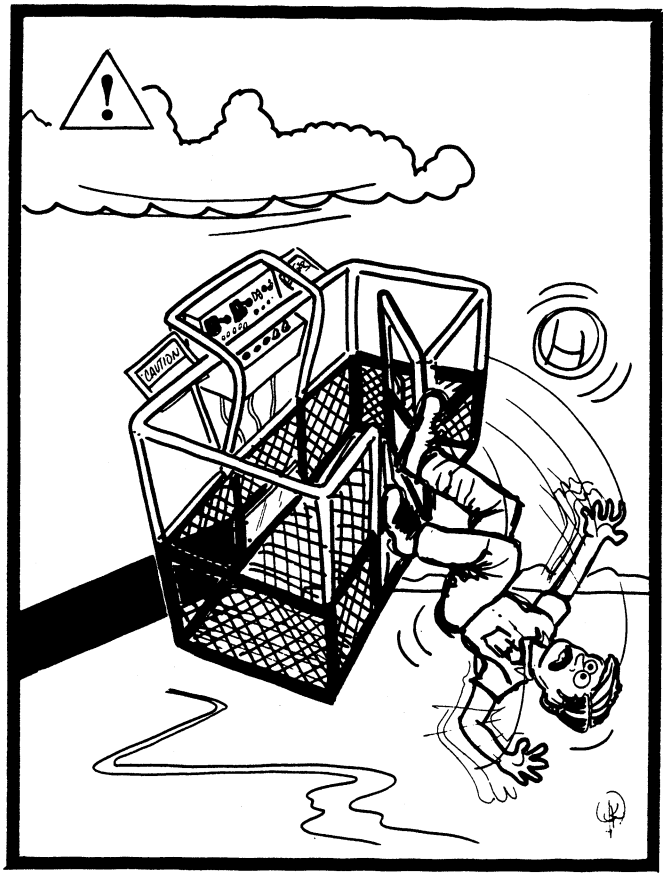
STOW BOOM AND SHUT OFF ALL POWER BEFORE LEAVING MACHINE.

WHEN RIDING IN OR WORKING FROM PLATFORM BOTH FEET MUST BE FIRMLY POSITIONED ON DECK.

NO STUNT DRIVING OR HORSEPLAY IS PERMITTED.



NO CIRCUS ACTS IN PLATFORM.



USE SAFETY BELT AND KEEP GATE LATCHED, OR YOU MAY GO DOWN IN HISTORY.

OSHA REQUIRES YOU TO WEAR A SAFETY BELT. SECURE BELT LANYARD TO PROPER ATTACH BAR ON PLATFORM.

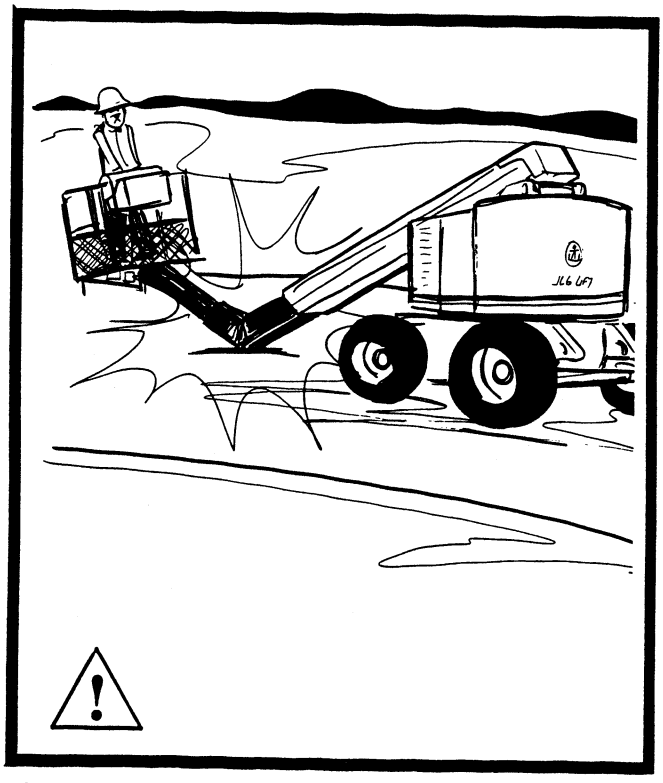
TO AVOID FALLING — USE EXTREME CAUTION WHEN ENTERING/LEAVING PLATFORM ABOVE GROUND. ENTER/EXIT THRU GATE ONLY. PLATFORM MUST BE WITHIN ONE (1) FOOT OF ADJACENT — SAFE AND SECURE — STRUCTURE. ALLOW FOR PLATFORM VERTICAL MOVEMENT WHEN ENTERING OR LEAVING PLATFORM.

DURING ENTRY OR EXIT ABOVE GROUND OSHA REQUIRES THAT YOUR SAFETY BELT BE ATTACHED TO THE STRUCTURE BEING ENTERED.

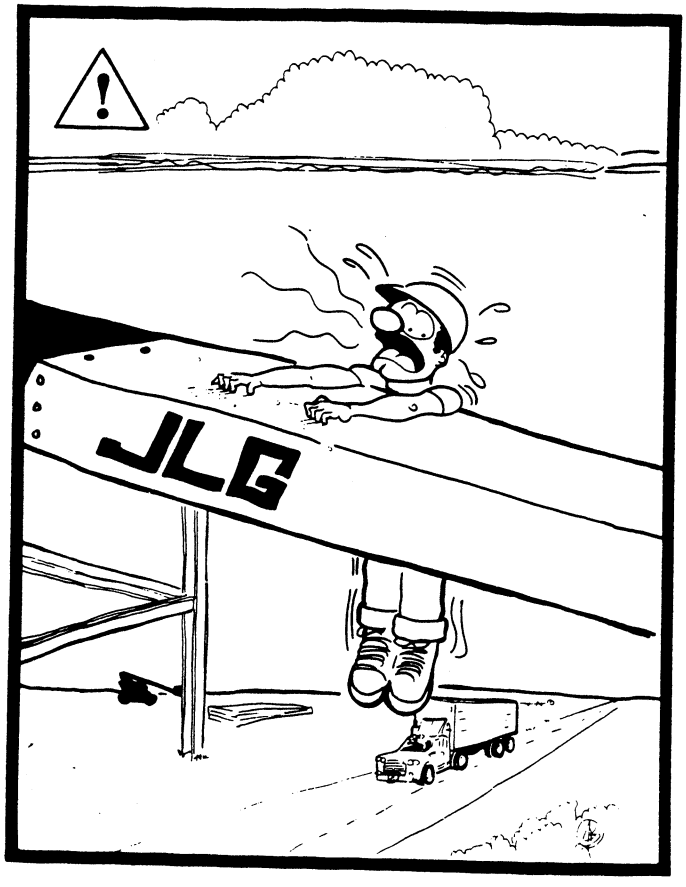
KEEP OIL, MUD AND SLIPPERY SUBSTANCES CLEANED FROM FOOTWEAR AND PLATFORM FLOOR.

NEVER ATTEMPT TO FREE A MACHINE STUCK IN SOFT GROUND OR ASSIST A MACHINE UP A STEEP HILL OR RAMP BY USING BOOM "LIFT", "TELESCOPE", OR "SWING".

NEVER ATTACH WIRE, CABLE, OR ANY SIMILAR ITEMS TO PLATFORM.



THE BOOM IS NOT A JACK. IT ONLY POSITIONS THE PLATFORM.



LADDERS ARE FOR CLIMBING — NOT BOOMS.

NEVER "WALK THE BOOM" TO GAIN ACCESS TO OR LEAVE PLATFORM.

NEVER "SLAM" A CONTROL LEVER THROUGH NEUTRAL TO OPPOSITE DIRECTION; RETURN LEVER TO NEUTRAL; STOP — THEN PROCEED.

DO NOT PLACE BOOM OR PLATFORM AGAINST ANY STRUCTURE TO "STEADY" PLATFORM OR SUPPORT STRUCTURES.

SECTION 2 — PREPARATION AND INSPECTION

2-1. GENERAL.

This section provides the necessary information needed by those personnel that are responsible to place the machine in operation readiness, and lists checks that are performed prior to use of the machine. It is important that the information contained in this section be read and understood before any attempt is made to operate the machine. Ensure that all the necessary inspections have been completed successfully before placing the machine into service. These procedures will aid in obtaining maximum service life and safe operation.

WARNING

SINCE THE MACHINE MANUFACTURER HAS NO DIRECT CONTROL OVER THE FIELD INSPECTION AND MAINTENANCE, SAFETY IN THIS AREA IS THE RESPONSIBILITY OF THE OWNER/OPERATOR.

2-2. PREPARATION FOR USE.

a. Before a new machine is put into operation it must be carefully inspected for any evidence of damage resulting from shipment and inspected periodically thereafter, as outlined in the Delivery and Periodic Inspection (see Paragraph 2-3). The unit should be thoroughly checked for hydraulic leaks during initial startup and run. A check of all components should be made to assure their security.

b. All preparation necessary to place the machine in operation readiness status should be the responsibility of management personnel. Most preparatory requirements are relatively simple and usually involve little more than good common sense, (i.e. telescope works smoothly and brakes operate properly) coupled with a series of visual inspections. This method is most effective toward retaining constant readiness. The mandatory requirements are given in the Machine Daily Inspection (see Paragraph 2-4).

c. It should be assured that the items appearing in the Delivery and Periodic Inspection and Functional Check are complied with prior to putting the machine into service.

2-3. DELIVERY AND PERIODIC INSPECTION.

Note

This machine requires periodic safety and maintenance inspections by a JLG Dealer. A decal located on the turntable provides a place to record (stamp) inspection dates. Check decal and notify dealer if inspection is overdue.

a. The following checklist provides a systematic inspection to assist in detecting defective, damaged, or improperly installed parts. The checklist denotes the items to be inspected and conditions to examine.

Periodic inspection shall be performed monthly or more often when required by environment, severity, and frequency of usage.

b. CHASSIS.

(1). Check front tires and wheel assemblies for loose or worn spindles, components and hardware for security, tires for wear, damage, and proper inflation. (120 PSI)

(2). Check steering assembly for loose or bent tie rod, cylinder and lines for leaks and security, and hardware for proper installation.

(3). Check rear tires and wheel assemblies for security of tires for wear, damage, and proper inflation. (120 PSI)

(4). Check drive hubs, hydraulic motors, brakes, and lines for damage and leaks.

(5). Check oil level in drive hub by removing pipe plug on side and feeling for oil level. (Contact service personnel for assistance if needed.)

Note

Torque hubs should be one-half full of lubricant.

(6). Check counterbalance, flow divider valves, hydraulic swivel assembly and lines for damage, leakage, and security.

c. TURNTABLE.

(1). Check turntable and turntable lock for damage, loose or missing parts, and security. Check lift cylinder and lines for damage, leakage, and security. Check swing drive hub, hydraulic motor, and brake for damage, loose or missing parts, lines and component housings for evidence of leakage; pinion for proper mesh with swing gear.

(2). Check swing bearing for damage, wear, lubrication and loose or missing bearing bolts.

(3). Check solenoid valves and lines for damage, leakage, security, and electrical connection for corrosion and tightness.

(4). Check ground controls for damage, loose or missing parts, security, electrical connections for corrosion and tightness and wiring for insulation damage. Assure that all switches function properly.

(5). Check manual descent valves and lines for damage, leakage, and security. Assure that valves function properly.

(6). Check battery for damage, loose or missing vent caps, electrical connections for corrosion and tightness, holddown brackets for tightness, and electrolyte for proper level. Add only clean distilled water to battery.

(7). Check engine and accessories for damage, loose or missing parts, leakage, and security. Check throttle solenoid and linkage for damage, electrical connections for corrosion and tightness and wiring for insulation damage.

(8). Check fuel lines for damage, leakage, and security.

(9). Check all cowl and access doors for damage, proper operation of latches and props, and security.

(10). Check fuel tank for damage, leakage, and filler cap for security.

(11). Check hydraulic reservoir and lines for damage, leakage, and security. Check filter indicator for condition of element. Clean and/or replace elements as required.

Note

JLG recommends replacing the hydraulic filter element after the first 40 hours and then every 250 hours thereafter, unless unusual operating conditions require earlier replacement.

(12). Check master leveling cylinder and cross pins, and lines for damage, wear, lubrication, leakage, and security.

(13). Check boom pivot bushings for lubrication and wear. (Lubricate every 10 hours of operation.)

(14). Check lift cylinder and hydraulic lines for damage, leakage, and security.

(15). Check lift cylinder cross pins for damage, wear and security.

d. BOOM.

(1). Check pivot and lift cylinder shaft retainer screws for damage and security. Lubricate pins as required.

(2). Check telescope cylinder and cross pins, and lines for damage, wear, lubrication, leakage, and security.

(3). Check boom for damage, missing parts, and security.

(4). Check wear pads for damage, wear, and security.

(5). Check hydraulic line and electrical cable track assembly for damage, missing parts, and security.

(6). Check hydraulic and electrical lines in cable track for damage and leaks.

(7). Check slave leveling cylinder and cross pins and lines for damage, wear, lubrication, leakage, and security.

(8). Check boom/platform pivot pin for security and lubrication. (Lubricate every 10 hours of operation.)

(9). Check lift cylinder to boom attach pivot point and pin for wear and lubrication. (Lubricate every 50 hours of operation.)

(10). Check boom tape for tearing or defacing at any point.

(11). Check boom chains and chain attach hardware for damage, wear, and security.

e. PLATFORM.

(1). Check platform and Control Console for damage, loose or missing parts, and security.

(2). Check control switches and levers for damage, loose or missing parts and security. Assure that levers and lever locks function properly.

(3). Check control switches, levers, and electrical connections for corrosion and tightness, and wiring for defects and chafing damage. Assure that switches function properly.

(4). Check capacity indicator for correct operation, any damage and that decals are not defaced. Ensure indicator dial moves in accordance with boom angle.

(5). Check access gate hinges and latch for operation, damage and security.

Note

Check all warnings, cautions, dangers, and instruction placards for legibility and security around the entire machine.

WARNING

DO NOT OPERATE MACHINE IF ALL PLACARDS ARE NOT ON MACHINE OR ARE DEFACED AND NOT READABLE, USE OF MACHINE WITHOUT CORRECT PLACARDS IS A SAFETY VIOLATION.

2-4. DAILY WALK-AROUND INSPECTION.

a. It is the user's responsibility to inspect the machine before the start of each workday. It is recommended that each user inspect the machine before operation, even if the machine has already been put into service under another user. This Daily Walk-Around Inspection is the preferred method of inspection. (See Figure 2-1.)

b. In addition to the Daily Walk-Around Inspection, be sure to include the following items:

(1). **Overall Cleanliness.**

Check all standing surfaces for oil, fuel and hydraulic oil spillage and foreign objects. Ensure overall cleanliness.

(2). **Placards.**

Keep all information and operating placards clean and unobstructed. Cover when spray painting or shot blasting to protect legibility.

(3). **Machine Log.**

Ensure a machine operating record or log is kept, check to see that it is current and that no entries have been left uncleared, leaving machine in an unsafe condition for operation.

(4). **Daily Lubrication.**

For those items pointed out in the Daily Walk-Around Inspection requiring daily lubrication, refer to the Lubrication Chart (Figure 2-3), for specific requirements.

(5). **Brakes.**

Check that drive brakes hold when machine is driven up a grade and stopped.

c. Perform the following checks and services before attempting to operate the machine.

WARNING

DO NOT OPERATE A MALFUNCTIONING MACHINE UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN AND ALL MALFUNCTIONS HAVE BEEN CORRECTED. USE OF A MALFUNCTIONING MACHINE IS A SAFETY VIOLATION.

Note

Check boom horizontal limit switch for proper operation and security both visually and manually. Switch must shut down high engine and high drive speed when boom is raised above horizontal.

(1). Start each day with a full fuel tank.

(2). Check platform footswitch for proper operation. Switch must be released to start engine and depressed to operate machine.

(3). Check that brakes activate and restrain machine with traveling controls in neutral-engine operating.

Note

Cold hydraulic fluid may give a false reading on filter indicator. Check indicator when hydraulic oil is at normal operating temperature.

Note

On new machines, those recently overhauled, or after changing hydraulic oil, operate all systems a minimum of two complete cycles and recheck oil level in reservoir.

(4). Assure that all items requiring lubrication are serviced. Refer to Lubrication Chart for specific requirements.

(5). Refer to Torque Requirements and assure torques are complied with.

2-5. FUNCTIONAL CHECK.

A functional check of all systems, under no load, should be performed once the machine is ready for service from the ground control panel if possible. Perform Functional Check in accordance with the following procedure:

a. Drive forward and reverse; check for proper operation.

b. Steer left and right, check for proper operation.

c. If equipped, check rotator for smooth operation and assure platform will rotate 90 degrees in both directions from centerline of boom.

IMPORTANT

TURNTABLE LOCK MUST BE DISENGAGED PRIOR TO ATTEMPTING TO SWING BOOM.

Note

Turntable lock is on left side of turntable facing basket. Pull pin and lower lock handle into notch on frame to engage. Replace pin. To disengage lock, pull pin, raise handle, replace pin so handle stays in raised position.

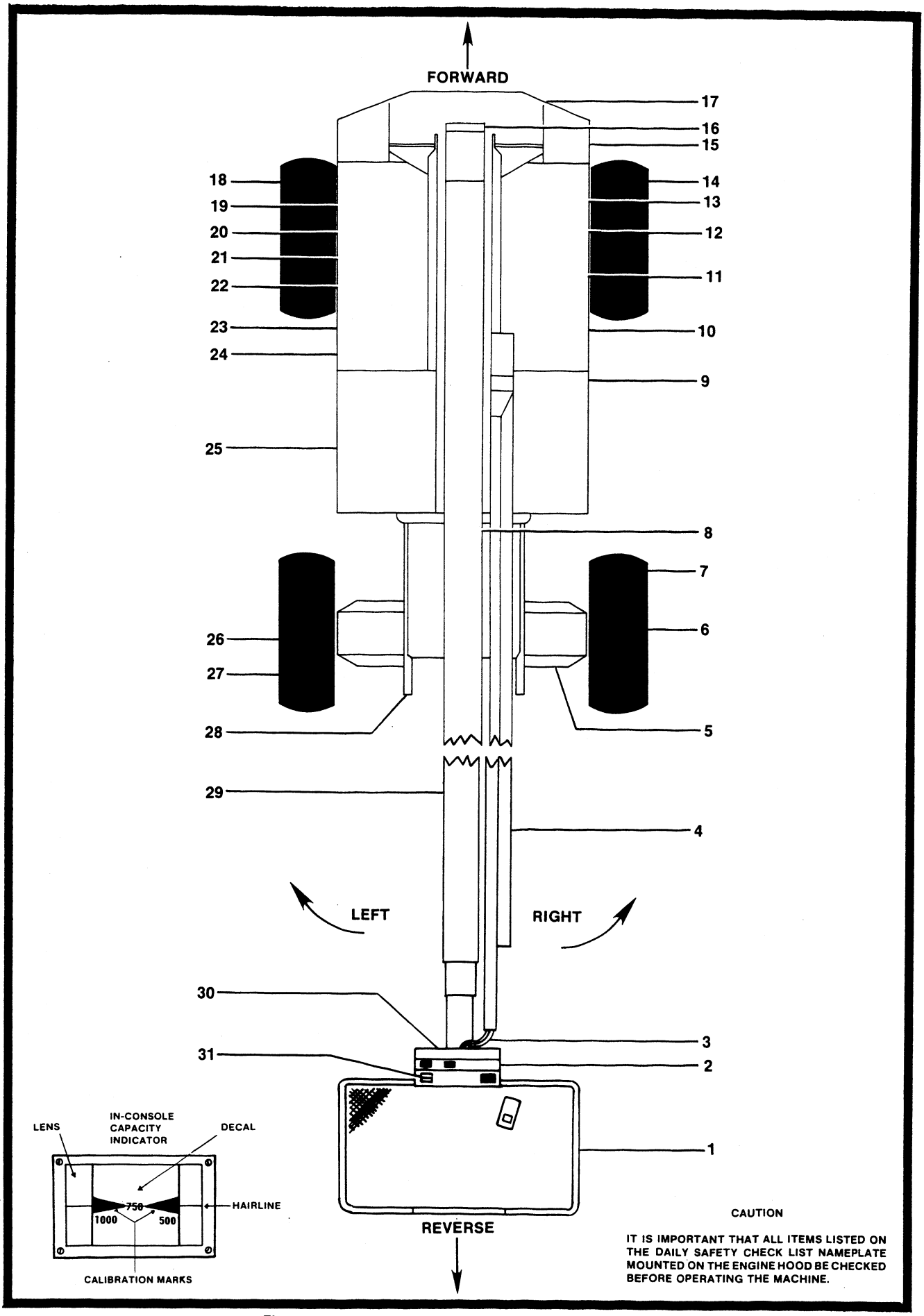


Figure 2-1. Daily Walk-Around Inspection. (Sheet 1 of 2)

GENERAL.

Every Prestart Inspection must include more than simply checking the fuel and oil supplies. It is the user's responsibility to inspect the machine before the start of each workday. It is also a good practice to personally inspect any machine you are assigned to use, even though it has already been put into service under other personnel.

The most efficient method of checking your machine is by conducting a "Walk-Around Inspection".

Begin your "Walk-Around Inspection" at Item 1, as noted on the diagram. Continue to your right (counterclockwise viewed from top) checking each item in sequence for the conditions listed in the "Walk-Around Inspection Checklist".

WARNING

DO NOT OPERATE MACHINE UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN AND ALL DISCREPANCIES HAVE BEEN CLEARED BY A QUALIFIED JLG MECHANIC.

CAUTION

DO NOT OVERLOOK VISUAL INSPECTION OF CHASSIS UNDERSIDE. CHECKING THIS AREA OFTEN RESULTS IN DISCOVERY OF CONDITIONS WHICH COULD CAUSE EXTENSIVE MACHINE DAMAGE.

1. Platform Assembly - No loose or missing parts; no visible damage. Lock pins/bolts in place. Footswitch in good working order; not modified, disabled, or blocked.
2. Platform Control Console - Switches and levers properly secured; no loose or missing parts; visible damage; placards secured and legible, levers and switches return to neutral. Control markings legible. Lever neutral locks function.
3. Hose and Cable Guards/Clamps - Properly secured; no visible damage.
4. Power Track - No loose, damaged or missing parts; hydraulic and electrical lines - no visible damage.
5. Drive Motor and Brake - No visible damage; evidence of leakage. Check both sides.
6. Drive Hub - No visible damage; evidence of leakage. Check both sides.
7. Drive Wheel/Tire Assembly R.R. - Properly secured, no loose or missing lug nuts; no visible damage. Tire Pressure - 120 PSI.
8. Lift Cylinder Rod End Shaft - Properly secured; evidence of proper lubrication (lubricate every 10 hours).
9. Fuel Supply - Fuel filler cap secure; tank - no visible damage. No leaks.
10. Control Valve Compartment - No loose or missing parts; evidence of leakage; unsupported wires or hoses; damaged or broken wires.
11. Hydraulic Oil Supply - Recommended oil level to middle of sight gauge (cold oil, systems shut down, machine in stowed position). Cap secure and in place.
12. Hydraulic Oil Filter Housing - Housing secure; no visible damage or signs of leakage.
13. Hydraulic Oil Breather - Element in place, not clogged, no signs of overflow.
14. Steer Wheel/Tire Assembly R.F. - Properly secured; no loose or missing lug nuts; no visible damage. Tire Pressure - 120 PSI.
15. Tie Rods and Steering Linkage - No loose or missing parts; no visible damage. Tie rod end studs locked. No steer cylinder leaks or damage.
16. Boom Pivot Shaft - Properly secured; evidence of proper lubrication (lubricate every 10 hours).
17. Ground Controls - Switches operable; no visible damage; placards secure and legible. Manual descent valves operable; no visible damage; placard secure and legible. Turntable lock operable; no visible damage.
18. Steer Wheel/Tire Assembly L.F. - Properly secured; no loose or missing lug nuts; no visible damage. Tire Pressure - 120 PSI.
19. Muffler and Exhaust System - Properly secured; no evidence of leakage.
20. Engine Oil Supply - Full mark on dipstick; filler cap secure.
21. Battery - Proper electrolyte level; cables tight, no visible damage or corrosion.
22. Cowling and Latches - All cowling, doors and latches in working condition, properly secured, no loose or missing parts. Check both sides.
23. Air Shrouding - No visible damage; loose or missing hardware. No obstructions. Check both sides.
24. Engine Air Filter Assembly - No loose or missing parts, no visible damage, element clean.
25. Turntable Bearing and Pinion - No loose or missing hardware; visible damage, evidence of proper lubrication. No evidence of loose bolts or looseness between bearing and structure.
26. Drive Hub - No visible damage; evidence of leakage.
27. Drive Wheel/Tire Assembly L.R. - Properly secured; no loose or missing lug nuts; no visible damage. Tire Pressure - 120 PSI.
28. Frame - No visible damage; loose or missing hardware (top and underside).
29. Boom Sections - No visible damage; wear pads secure; boom chain adjusting nuts secure and undamaged.
30. Platform Pivot and Slave Cylinder Attach Pins - Properly secured, evidence of proper lubrication (where applicable).
31. Capacity Indicator - Lens clear, secure and undamaged, decal secure and legible, cable free of visible damage or kinking. Ensure hairline aligns (with calibration marks) with boom in horizontal position and retracted. (See illustration in Figure 2-1, Sheet 1.)

Figure 2-1. Daily Walk-Around Inspection. (Sheet 2 of 2)

d. Raise, lower, and swing boom to LEFT and RIGHT a minimum of 45 degrees. (Cycle functions several times.) Check for smooth elevation and swing motion.

e. Telescope boom IN and OUT several cycles at various degrees of elevation lengths. Check for smooth telescope operation.

f. Check that platform automatic self-leveling system functions properly, during raising and lowering of boom.

g. Check platform level adjustment system for proper operation.

h. With the aid of an assistant to monitor tilt alarm indicator light on platform control console, manually activate indicator light by compressing one of the three tilt indicator mounting springs located behind the Ground Control Box. If light does not illuminate, shut down machine and contact a qualified service technician before continuing operation.

i. FOOTSWITCH.

(1). Activate hydraulic system. Activate footswitch. Operate telescope and hold control. Remove foot from footswitch, motion should stop. If it does not, shut down machine and contact a qualified JLG Technician.

(2). With hydraulic system and footswitch activated, operate lift and hold control. Remove foot from footswitch, motion should stop. If it does not, shut down machine and contact a qualified JLG Technician.

(3). With hydraulic power shut down, place foot on footswitch. Attempt to start engine. Engine should not attempt to start when footswitch is engaged. If starter engages or engine turns over, shut down machine and contact a qualified JLG Technician.

j. GROUND CONTROLS.

(1). Place ground/platform select switch to ground. Start engine. Platform controls should not operate.

(2). From ground controls, operate each control (LIFT, SWING, TELESCOPE) to assure that they function in both directions.

(3). Repeat step (2) above using AUXILIARY POWER instead of engine power.

2-6. TORQUE REQUIREMENTS.

The Torque Chart (Figure 2-2) consists of standard torque values based on bolt diameter and grade, also specifying dry and wet torque values in accordance with recommended shop practices. This chart is provided as an aid to the operator in the event he/she notices a condition that requires prompt attention during the walk-around inspection or during operation until the proper service personnel can be notified. The Service and Maintenance manual provides specific torque values and periodic maintenance procedures with a listing of individual components. Utilizing this Torque Chart in conjunction with preventive maintenance section in the Service and Maintenance manual, will enhance safety, reliability, and performance of the machine.

SIZE		BOLT DIAMETER D (IN.)	TENSILE STRESS AREA (SQ. IN.)	SAE GRADE 5 BOLTS			SAE GRADE 8 BOLTS			RECOMMENDED TORQUE WRENCH SIZE (PRODUCTION)		
				CLAMP LOAD P (LB.)	TIGHTENING DRY K = 0.20	TORQUE LUB. K = 0.15	CLAMP LOAD P (LB.)	TIGHTENING DRY K = 0.20	TORQUE LUB. K = 0.15	IN-OZS.	IN-LBS.	FT-LBS.
					LB. IN.	LB. IN.		LB. IN.	LB. IN.			
4	40	0.1120	0.00604	380	8	6	540	12	9	160	10	
	48	0.1120	0.00661	420	9	7	600	13	10	160	10	
6	32	0.1380	0.00909	580	16	12	820	23	17		25	
	40	0.1380	0.01015	610	18	13	920	25	19		25	
8	32	0.1640	0.01400	900	30	22	1260	41	31		25	
	36	0.1640	0.01474	940	31	23	1320	43	32		25	
10	24	0.1900	0.01750	1120	43	32	1580	60	45		50	
	32	0.1900	0.02000	1285	49	36	1800	68	51		50	
1/4	20	0.2500	0.0318	2020	96	75	2860	144	108		100	
	28	0.2500	0.0364	2320	120	86	3280	168	120		200	
					LB. FT.	LB. FT.		LB. FT.	LB. FT.			
5/16	18	0.3125	0.0524	3340	17	13	4720	25	18		200	
	24	0.3125	0.0580	3700	19	14	5220	25	20		200	
3/8	16	0.3750	0.0775	4940	30	23	7000	45	35		300	25
	24	0.3750	0.0878	5600	35	25	7900	50	35		300	50
7/16	14	0.4375	0.1063	6800	50	35	9550	70	55		600	50
	20	0.4375	0.1187	7550	55	40	10700	80	60		600	50
1/2	13	0.5000	0.1419	9050	75	55	12750	110	80		1200	100
	20	0.5000	0.1599	10700	90	65	14400	120	90		1200	100
9/16	12	0.5625	0.1820	11600	110	80	16400	150	110		1200	100
	18	0.5625	0.2030	12950	120	90	18250	170	130		1200	100
5/8	11	0.6250	0.2260	14400	150	110	20350	220	170		1800	150
	18	0.6250	0.2560	16300	170	130	23000	240	180		1800	150
3/4	10	0.7500	0.3340	21300	260	200	30100	380	280		2400	200
	16	0.7500	0.3730	23800	300	220	33600	420	320		2400	200
7/8	9	0.8750	0.4620	29400	430	320	41600	600	460		3600	300
	14	0.8750	0.5090	32400	470	350	45800	660	500		3600	300
1	8	1.0000	0.6060	38600	640	480	51500	900	680		7200	600
	12	1.0000	0.6630	42200	700	530	59700	1000	740		7200	600
1 1/8	7	1.1250	0.7630	42300	800	600	68700	1280	960		7200	600
	12	1.1250	0.8560	47500	880	660	77000	1440	1080		7200	600
1 1/4	7	1.2500	0.9690	53800	1120	840	87200	1820	1360			Mult*
	12	1.2500	1.0730	59600	1240	920	96600	2000	1500			Mult*
1 3/8	6	1.3750	1.1550	64100	1460	1100	104000	2380	1780			
	12	1.3750	1.3150	73000	1680	1260	118100	2720	2040			
1 1/2	6	1.5000	1.4050	78000	1940	1460	126500	3160	2360			Mult*
	12	1.5000	1.5800	87700	2200	1640	142200	3560	2660			Mult*

NOTE: Tensile strength for bolt size 4 to 1 - 120,000 (min. psi), size 1 1/8 to 1 1/2 - 105,000 (min. psi).

*Torque multiplier.
Torque specifications are usually given in foot-pounds - - - lower ranges in inch-pounds or inch-ounces.
This chart is DEFINITELY NOT to be used for specific torque applications.


Grade 5


Grade 8

Figure 2-2. Torque Chart.

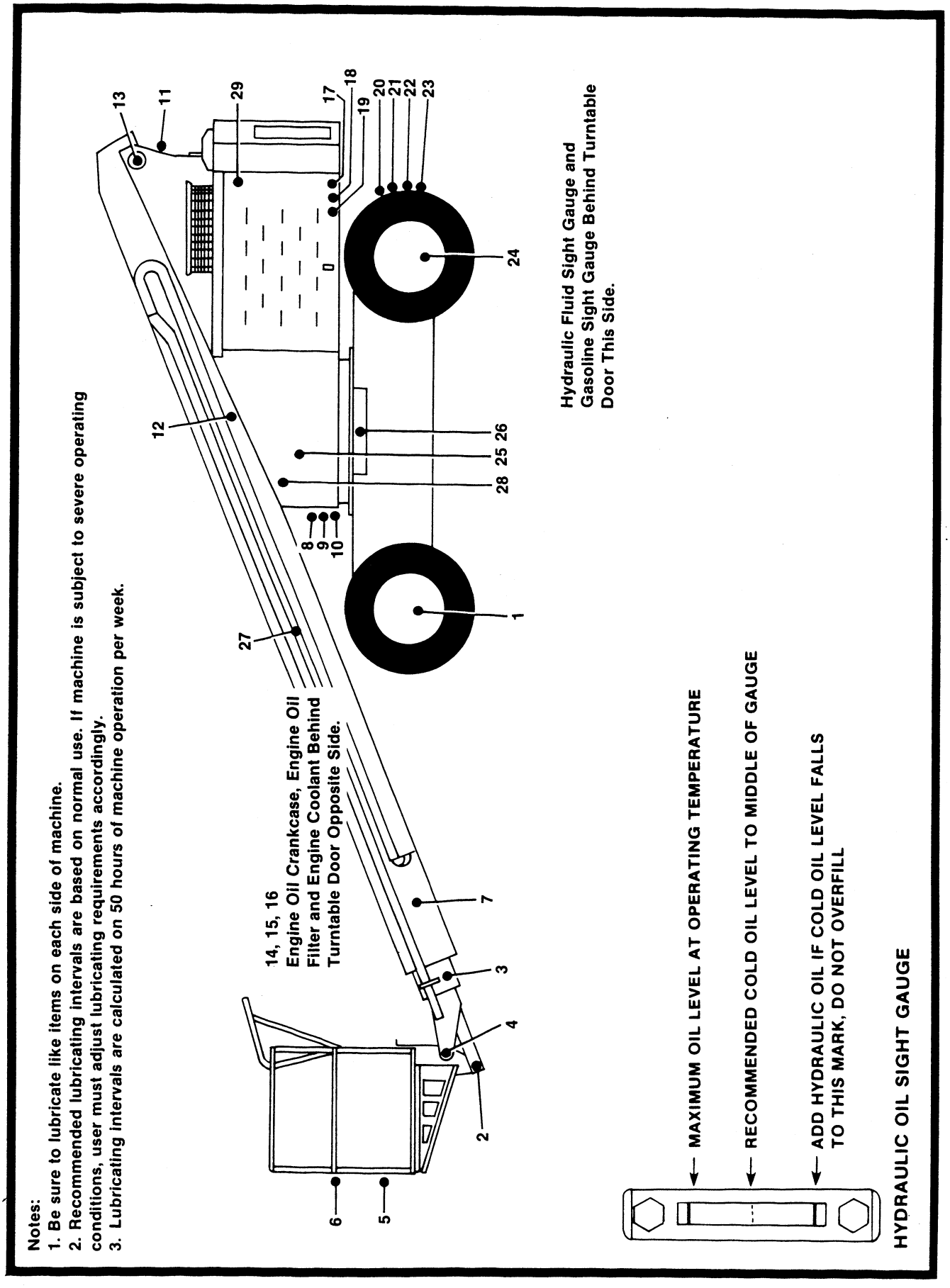


Figure 2-3. Lubrication Chart. (Sheet 1 of 2)

INDEX NUMBER	COMPONENT	NO/TYPE LUBE POINTS	LUBE/METHOD	INTERVAL HOURS	COMMENTS
1	Wheel Drive Hubs	Fill Plug	EPGL (SAE-90)	50/500	Check oil every 50 hours. Hubs should be one-half full of lubricant. Change oil every 500 hours.
2	Slave Cylinder (Rod End)	1 Grease Fitting	MPG-Pressure Gun	50	N/A
3	Slave Cylinder (Barrel End)	1 Grease Fitting	MPG-Pressure Gun	50	Lube through hole in fly boom.
4	Platform Pivot	1 Grease Fitting	MPG-Pressure Gun	50	N/A
	Rotating Column (Optional)	2 Grease Fittings	MPG-Pressure Gun	50	N/A
	Rotary Worm Gear (Optional)	N/A	MPG-Brush	100	N/A
5	Platform Door Hinges	2 Grease Fittings	MPG-Pressure Gun	100	N/A
6	Platform Door Latch	N/A	SAE10-Oil Can	100	N/A
7	Boom Chain Extension Sheave	1 Grease Fitting	MPG-Pressure Gun	50	Align access holes in mid and fly boom.
8	Swing Bearing	1 Grease Fitting	MPG-Pressure Gun	50	Remote access.
9	Lift Cylinder (Barrel End)	1 Grease Fitting	MPG-Pressure Gun	50	Remote access.
10	Master Cylinder (Barrel End)	1 Grease Fitting	MPG-Pressure Gun	50	Remote access.
11	Master Cylinder (Rod End)	1 Grease Fitting	MPG-Pressure Gun	50	N/A
12	Boom Chain Retract Sheave	1 Grease Fitting	MPG-Pressure Gun	50	Align with access hole in base boom.
13	Boom Pivot Bushing	2 Grease Fittings	MoS_2-Pressure Gun	50	N/A
14	Engine Oil Crankcase	Fill Cap	Refer to Engine Manual (EO-SAE 30)	10 50	Check oil level every 10 hours/ Change oil in accordance with engine manual.
15	Engine Oil Filter	N/A	Refer to Engine Manual	Refer to Engine Manual	Spin-off type replaceable cartridge.
16	Engine Coolant	Radiator Cap	Refer to Engine Manual	50	Check coolant level when engine is cold.
17	Hydraulic Fluid	Fill Cap	Sunco #2105 SAE 5W-20	10/1000	Check oil level every 10 hours/ Change oil every 1000 hours.
18	Hydraulic Oil Return Filters* (Racine Valve Only)	N/A	Initial Change 40 Hours	250	Check filter gauges for element condition every 10 hours/ Replace as necessary.
19	Hydraulic Oil Reservoir* Suction Filter	N/A	Initial Change 40 Hours	250	Replace filter element every 250 hours/Clean mesh as necessary.
20	Tie Rod Ends	2 Grease Fittings	MPG-Pressure Gun	100	N/A
21	Steer Spindle	2 Grease Fittings	MPG-Pressure Gun	50	N/A
22	Steer Cylinder (Rod End)	1 Grease Fitting	MPG-Pressure Gun	50	N/A
23	Steer Cylinder (Barrel End)	1 Grease Fitting	MPG-Pressure Gun	50	N/A
24	Wheel Bearings	N/A	MPG-Repack	500	N/A
25	Swing Drive Hub	Fill Plug	EPGL (SAE-90)	50/500	Check oil level every 50 hours/ Hub should be one-half full of lubricant. Change oil every 500 hours.
26	Swing Bearing Gear and Pinion Gear Teeth	N/A	MPG-Brush	500	N/A
27	Boom Chains	N/A	Chain Lube/Hot Oil Dip	500	Hot Oil Dip: 50° and up - SAE 40 30° to 50° - SAE 30 0° to 30° - SAE 20
28	Lift Cylinder (Rod End)	1 Grease Fitting	MPG-Pressure Gun	50	N/A
29	Door and Access Panel Hinges	N/A	SAE-10 Oil Can	200	N/A

Key to lubricants:

MPG - Multi-Purpose Grease
EPGL - Extreme Pressure Gear Lubricant
MoS_2 - Molybdenum Disulphide Dry Film Lubricant
EO - Engine Oil
Hydraulic Fluid - Sunco 2105 or equal

*JLG Industries recommends replacing the hydraulic tank filter after the first 40 hours of operation and every 250 hours thereafter. Inspect tank filter gauge daily for element condition and replace as necessary.

Figure 2-3. Lubrication Chart. (Sheet 2 of 2)

SECTION 3 — USER RESPONSIBILITY AND MACHINE CONTROLS

3-1. GENERAL.

This section provides the necessary information needed to understand control functions. Included in this section are the operating characteristics and limitations, and functions and purposes of controls and indicators. It is important that the user read and understand the proper procedures before operating the machine. These procedures will aid in obtaining maximum service life and safe operation.

WARNING

SINCE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICES IN THESE AREAS IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

3-2. PERSONNEL TRAINING.

a. The aerial platform is a personnel handling device; therefore, it is essential it be operated and maintained only by authorized personnel who have demonstrated that they understand the proper use and maintenance of the machine. It is important that all personnel who are assigned to and responsible for the operation and maintenance of the machine undergo a thorough training program and check out period in order to become familiar with the characteristics prior to operating the machine.

Persons under the influence of drugs or alcohol or who are subject to seizures, dizziness or loss of physical control must not be permitted to operate the machine.

b. OPERATOR TRAINING.

Operator training must include instruction in the following:

(1). Use and limitations of the platform controls, ground controls, emergency controls and safety systems.

(2). Knowledge and understanding of this Operating and Safety Manual and of the control markings, instructions and warnings on the machine itself.

(3). Knowledge and understanding of all safety work rules of the employer and of Federal, State and Local Statutes, including training in the recognition and avoidance of potential hazards in the work place with particular attention to the work to be performed.

(4). Proper use of all required personnel safety equipment, in particular the wearing of a body belt with a lanyard attached to the platform at all times.

(5). Sufficient knowledge of the mechanical operation of the machine to recognize a malfunction or potential malfunction.

(6). The safest means to operate near overhead obstructions, other moving equipment, obstacles, depressions, holes, dropoffs, etc. on the supporting surface.

(7). Means to avoid the hazards of unprotected electrical conductors.

c. TRAINING SUPERVISION.

Training must be under the supervision of a qualified operator or supervisor in an open area free of obstructions until the trainee has developed the ability to safely control a lift in congested work locations.

d. OPERATOR RESPONSIBILITY.

The operator must be instructed that he has the responsibility and authority to shut down the machine in case of a malfunction or other unsafe condition of either the machine or the job site and to request further information from his supervisor or JLG Dealer before proceeding.

Note

Manufacturer or Dealer will provide qualified persons for training assistance with first unit(s) delivered.

3-3. OPERATING CHARACTERISTICS AND LIMITATIONS.

a. GENERAL.

A thorough knowledge of the operating characteristics and limitation of the machine is always the first requirement for any user, regardless of user's prior experience with similiar types of equipment.

b. PLACARDS.

Important points to remember during operation are provided at the control stations by DANGER, WARNING, CAUTION, IMPORTANT and INSTRUCTION placards. This information is placed at various locations for the express purpose of alerting personnel of potential hazards constituted by the operating characteristics and load limitations of the machine. See foreword for definitions of the above placards.

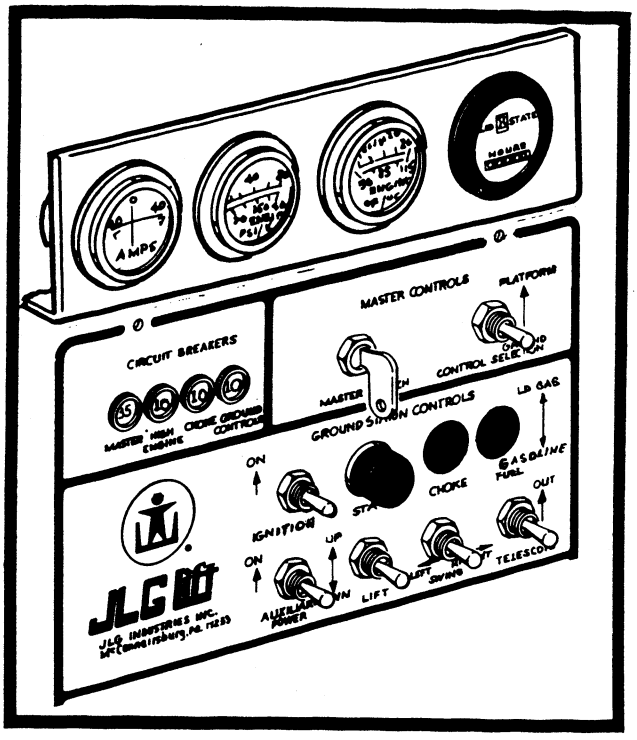


Figure 3-1. Ground Control Station.

c. CAPACITIES AND STABILIZATION.

Raising boom above horizontal and/or extension of boom beyond retracted position with or without any load in platform, is based on the following criteria:

(1). Machine is positioned on a firm, level surface.

(2). Load is within manufacturer's rated capacity, as indicated by capacity indicator.

(3). Machine is equipped with 15 x 22.5, 16 ply tires. 120 PSI.

3-4. CONTROLS AND INDICATORS.

a. GROUND STATION. (Figure 3-1.)

WARNING

DO NOT OPERATE FROM GROUND STATION WITH PERSONNEL IN THE PLATFORM.

PERFORM AS MANY PRE-OPERATIONAL CHECKS AND INSPECTIONS FROM THE GROUND STATION AS POSSIBLE.

CAUTION

WHEN THE MACHINE IS SHUT DOWN THE MASTER SWITCH MUST BE POSITIONED TO THE "OFF" POSITION TO PREVENT DRAINING THE BATTERY AND BURNING IGNITION POINTS.

(1). **Master Switch.**

A two-position key operated switch furnishes battery power to the platform or ground control switches when station power is selected from the ground control panel and the master switch is turned "ON".

(2). **Control Station Selector.**

A three-position PLATFORM/GROUND SELECT control switch supplies operating power to the controls on the platform control console, when positioned to PLATFORM. With the switch in GROUND position, power is shut-off to the controls at the platform station, and only the controls on the ground control panel are operable.

Note

With GROUND/PLATFORM SELECT control switch in center position, power is shut off to controls at both operating stations.

(3). **Ignition.**

The machine is equipped with an on-off ignition switch and a separate start push button switch on the ground control panel which supplies electrical power to the start solenoid when the ignition switch is placed in the ON position and the START button is depressed.

Note

LIFT, SWING, and TELESCOPE control switches are spring-loaded and will automatically return to neutral (off) when released.

WARNING

WHEN OPERATING THE BOOM ENSURE THERE ARE NO PERSONNEL IN, AROUND OR UNDER PLATFORM.

(4). **Lift Control.**

A three-position LIFT control switch permits raising and lowering of the boom when positioned to UP or DOWN.

(5). **Swing Control.**

A three-position SWING control switch, provides 360 degrees continuous turntable rotation when positioned to RIGHT or LEFT.

(6). **Telescope Control.**

A three-position TELE control switch affords extension and retraction of the boom, when positioned to IN or OUT.

(7). **Auxiliary Power Control.**

A toggle-type AUXILIARY POWER control switch, on the ground control panel, energizes the electrically-operated auxiliary hydraulic pump, when actuated. (Switch must be held "on" for duration of auxiliary pump use.)

(a). The auxiliary pump functions to provide sufficient oil flow to operate the basic machine system should the main pumps or engine fail during operation. The auxiliary pump enables the extension or retraction of the boom, lift and descent and swing left and right.

(b). It should be noted that the functions will operate at a slower than normal rate because of the lower gpm delivered.

INSTRUCTIONS

WHEN OPERATING ON AUXILIARY POWER, DO NOT OPERATE MORE THAN ONE FUNCTION AT A TIME (SIMULTANEOUS OPERATION CAN OVERLOAD THE 12-VOLT AUXILIARY PUMP MOTOR).

(c). Position IGNITION switch to ON.

(d). Position the AUX. POWER switch to ON and hold.

(e). Operate the appropriate switch for desired function and direction.

(f). Release both AUX. POWER and selected function switches.

(8). **Choke/Glow Plug.**

(a). Choke Switch. (Wisconsin Engine Only)

An optional momentary contact toggle switch is located on the Ground Control Panel. When positioned to CHOKE it supplies power to the choke solenoid to enrich the fuel mixture on cold start operations.

(b). Glow Plug Switch. (Diesel Engine Only).

This two-position (on-off) momentary contact toggle switch relays power to the glow plugs used to warm the air intake on cold start operations.

(9). **L.P. Gas/Gasoline Select Switch.**

An optional two position contact toggle switch supplies electrical power to open the gasoline shut-off solenoid and closes the L.P. Gas shut-off solenoid when positioned to "GASOLINE". This switch supplies electrical power to open the L.P. Gas shut-off solenoid and closes the gasoline shut-off solenoid when positioned to "L.P. GAS".

(10). **Circuit Breakers.**

Four push-button reset circuit breakers return control power to the following functions when depressed.

(a). 35 AMP - Master.

(b). 3 AMP - High Engine.

(c). 10 AMP - Choke (Wisconsin Engine Only).

(d). 10 AMP - Ground Controls.

(11). **Hourmeter.**

An hourmeter, installed above the Ground Control box, records the engine operating time.

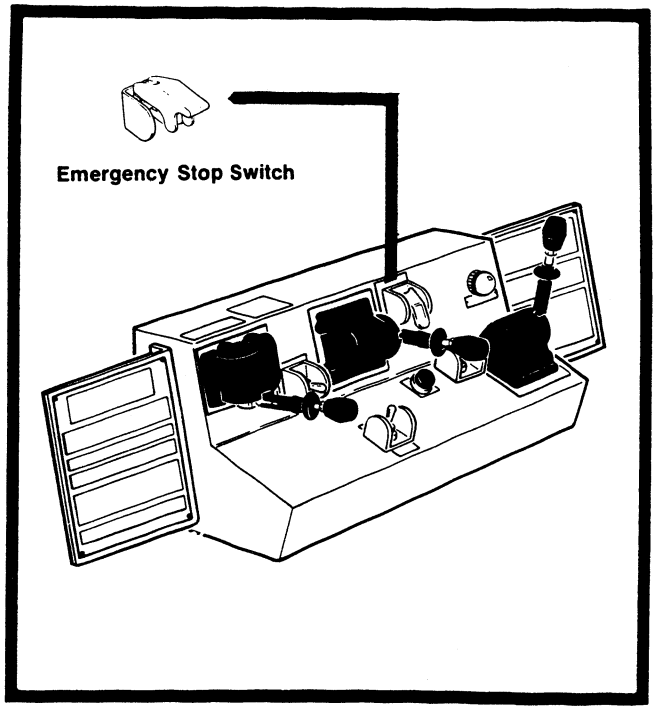


Figure 3-2. Platform Control Station.

(12). **Ammeter.**

An ammeter, mounted above the ground control box indicates the battery condition, i.e., charging, charged or discharging. (Ammeter pointed vertical indicates charged battery, with engine operating.)

(13.) **Oil Pressure Gauge.**

An oil pressure gauge, installed above the ground control box, provides an indication of the engine lubrication system pressure. Normal operating pressure at 2000 RPM is 40-60 PSI. (Ford LSG-423 Engine)

(14). **Temperature Gauge.**

A coolant temperature gauge is installed above the ground control box. The gauge provides a visual indication of an engine overheat condition.

b. PLATFORM STATION. (Figure 3-2.)

Note

For engine starting, the footswitch must be in the released (up) position. Footswitch must be actuated in order for controls to function.

(1). **Platform Footswitch.**

This is a design safety feature which must be depressed to allow operation of the platform controls. Releasing the switch disables all functions except for the HORN, EMERGENCY STOP, CHOKE and START.

WARNING

NEVER REMOVE, MODIFY OR DISABLE THE FOOTSWITCH BY BLOCKING OR ANY OTHER MEANS.

(2). **Ignition/Emergency Stop.**

An on-off IGNITION/EMERGENCY STOP switch and a separate START push button on the platform console supplies electrical power to the starter solenoid, when the ignition switch is placed in the ON position and the START button is depressed. The on-off IGNITION/EMERGENCY STOP switch is protected by a guard which must be raised before the switch can be moved to the ON position. The guard permits easy movement of the switch to the OFF position in case of an emergency.

(3). **Drive Speed Control.**

A two-position DRIVE MOTOR control switch, a two-position ENGINE SPEED control switch and a two-position DRIVE SPEED control switch allow the operator to select higher DRIVE speeds anytime the boom is below horizontal.

Note

When boom is above horizontal and DRIVE MOTOR, ENGINE SPEED or DRIVE SPEED switches are in the HIGH position, the high speed functions are automatically cut out.

WARNING

DO NOT OPERATE MACHINE IF HIGH SPEED ENGINE OR DRIVE OPERATES WHEN BOOM IS ABOVE HORIZONTAL.

(4). **Engine Speed Control.**

See (3). above.

(5). **Drive Motor Control.**

See (3) above.

(6). **Choke.** (Wisconsin Engine Only)

A momentary toggle switch installed on the platform control console supplies power to the choke solenoid when positioned to choke for cold start operations.

(7). **Glow Plug.** (Diesel Engine Only)

A two-position momentary contact toggle switch supplies power to the glow plugs used to warm the air intake on cold start operations.

WARNING

IF TILT ALARM LIGHT IS ON WHEN BOOM IS RAISED OR EXTENDED, RETRACT AND LOWER BOOM TO BELOW HORIZONTAL, THEN REPOSITION MACHINE SO THAT IT IS LEVEL BEFORE EXTENDING BOOM OR RAISING BOOM ABOVE HORIZONTAL.

(8). **Tilt Alarm Warning Light.**

This red illuminator indicates that the chassis is on a severe slope. When this light is illuminated the operator should not swing, telescope, or raise the boom above horizontal.

WARNING

DO NOT OPERATE MACHINE IF ANY CONTROL LEVERS OR SWITCHES FAIL TO RETURN TO THE "OFF" POSITION WHEN RELEASED.

(9). **Lift Control.**

The LIFT control lever provides raising and lowering of the boom when positioned to UP or DOWN, and automatically returns to OFF when released.

(10). **Swing Control.**

The SWING control lever provides 360 degrees continuous swing when positioned to LEFT or RIGHT and automatically returns to OFF when released.

(11). **Telescope Control.**

A three-position TELE control switch provides extension and retraction of the boom, when positioned to IN or OUT and automatically returns to OFF when released.

(12). **Platform Leveling Control.**

A three-position LEVEL control switch allows the operator to compensate for any difference in the automatic self-leveling system by positioning the control to UP or DOWN, and automatically returns to OFF when released.

(13). **Drive Control.**

The DRIVE control lever provides driving either forward or to the rear when positioned to FORWARD or REVERSE and automatically returns to OFF when released.

(14). **Steer Control.**

Positioning the STEER control switch RIGHT or LEFT enables steering the machine to the right or left respectively. For machines equipped with the optional steering wheel, rotate the wheel clockwise to turn right, or rotate the wheel counterclockwise to turn left.

(15). **Platform Rotate Control.** (Optional)

The optional three-position ROTATE control switch allows the operator to rotate the basket to the left or right. Machines equipped with the optional steering wheel will have a manually operated valve located below the console. Move the lever in the desired direction to rotate the basket.

(16). **Travel Warning Horn.**

A button-type HORN switch supplies electrical power to an audible warning device when pressed.

IMPORTANT

WHEN OPERATING ON AUXILIARY POWER, DO NOT OPERATE MORE THAN ONE FUNCTION AT THE SAME TIME (SIMULTANEOUS OPERATION CAN OVERLOAD THE AUXILIARY PUMP MOTOR).

INSTRUCTIONS

THE MAIN FUNCTION OF THE AUXILIARY POWER CONTROL IS TO PROVIDE AUXILIARY POWER TO LOWER THE PLATFORM. DETERMINE REASON FOR PRIMARY POWER FAILURE AND HAVE THE PROBLEM CORRECTED BY QUALIFIED PERSONNEL.

(17). **Auxiliary Power.**

A toggle-type AUXILIARY POWER control switch energizes the electrically-operated hydraulic pump, when actuated. (Switch must be held ON for the duration of auxiliary pump use.)

(a). The auxiliary pump functions to provide sufficient oil flow to operate the basic machine system should the main pumps or engine fail during operation. The auxiliary pump enables the extension or retraction of the boom, lift and descent and swing left and right.

(b). It should be noted that the functions will operate at a slower than normal rate because of the lower gpm delivered.

Note

Auxiliary power is primarily intended for platform lowering only. However, auxiliary power may be used for platform positioning when operating in close quarters or congested work areas.

CAUTION

WHEN OPERATING ON AUXILIARY POWER, DO NOT OPERATE MORE THAN ONE FUNCTION AT A TIME (SIMULTANEOUS OPERATION CAN OVERLOAD THE 12-VOLT AUXILIARY PUMP MOTOR).

(c). Position IGNITION switch to ON.

(d). Position the AUX. POWER switch at either platform or ground station to on and hold.

(e). Operate the appropriate switch for desired function and direction.

(f). Release both AUX. POWER and selected function switches.

(18). **Capacity Indicator.**

The capacity indicator gauge is visible through a lens located on the left side of the control console. This gauge indicates the maximum platform load allowable at any given boom angle and extension based on the color stripe visible at the point where the fly boom enters the mid boom.

3-5. CONTROL RELATED SAFETY ITEMS - DESCRIPTION, USE, AND WARNINGS.

ITEM	DESCRIPTION AND USAGE	WARNINGS
Footswitch	A foot operated switch located in the platform used to stop the machine if an emergency occurs. Footswitch must be released to start engine and depressed to operate all controls.	Do not remove, modify, or disable footswitch by blocking or any other means.
Control Lever Locks	A locking device on the control levers for Drive, Swing and Lift, which must be released before control levers can be moved out of the "off" position.	Lever locks must be in place and functional before operating machine.
Ground Control Station	Controls which can be operated from the ground level if an emergency occurs. Ground controls override platform controls.	Do not use ground controls when personnel are in platform except in an emergency. Do not use if personnel in platform are in tight quarters or are being crushed. Lowering platform by Manual Descent Valves is preferred if personnel are in tight quarters or are being crushed.
Auxiliary Power	A battery operated hydraulic pump which can be operated from either the platform or ground control station if the primary power source (gasoline or diesel engine) fails to function.	
Manual Descent Valves	Hand operated valves located at the Ground Control Station which are used to lower and retract the boom when an emergency occurs.	After use, make sure all valves are turned off (rotate clockwise).
High Speed Drive Cutout Switch	A switch which cuts out the High Speed Drive Motor, High Speed Engine and High Speed Drive automatically when the boom is raised above horizontal and thus limits the maximum speed of drive when boom is elevated.	Do not operate machine if High Speed Drive Cutout Switch does not cut out high speed engine and drive when boom is above horizontal.
Tilt Alarm	A sensing device which senses when the chassis of the machine is out of level in any direction approximately 5 degrees and lights a light in the platform control station warning the operator of the out of level condition.	Do not rely upon the tilt alarm to indicate a dangerous out of level condition. Machine must be level for all operations with platform above horizontal or boom extended.

SECTION 4 — MACHINE OPERATION

4-1. DESCRIPTION.

This machine is a self-propelled aerial work platform equipped with a platform on the tip of an elevating, telescoping and rotating boom. The JLG lift's intended purpose is to position personnel with their tools and supplies at positions overhead. The machine can be used to reach work locations located above and over machinery or equipment positioned at ground level.

The JLG lift has a primary operator Control Station in the platform. From this Control Station, the operator can drive and steer the machine in both forward and reverse directions. The operator can raise and lower the boom, extend and retract the boom, swing the boom to the left and to the right, and when equipped with a platform rotator, can rotate the platform around the boom tip. The machine has a Ground Control Station which will override the Platform Control Station. Ground controls operate boom swing, telescope and lift and are to be used only in an emergency to lower the platform to the ground should the operator in the platform be unable to do so.

Instructions and hazard warnings are posted adjacent to both operator control stations and at other places on the machine. It is extremely important that operators know what instructions and warnings are placed on the machine, and review these periodically so that they are fresh in their minds.

The JLG lift is designed to provide efficient and safe operation when maintained and operated in accordance with this Operating and Safety Manual, the machine Service and Maintenance Manual and all job site and government rules and regulations. As with any type of machinery, human beings are very important to efficient and safe operation. It is absolutely necessary that the JLG lift be regularly maintained in accordance with this manual and the machine Service and Maintenance Manual, and that any evidence of lack of maintenance, malfunction, excessive wear, damage or modifications to the machine be reported immediately to the machine owner or the job site supervisor or safety manager and that the machine be taken out of service until all discrepancies are corrected.

The JLG lift is not intended to be used to lift material other than supplies which personnel in the platform require to do their job. Supplies or tools which extend outside the platform are prohibited. It must not be used as a forklift, a crane, a support for overhead structure or to push, or pull another object.

The machine is equipped with an auxiliary battery operated power unit which will provide hydraulic power in the event of a primary engine power loss. Auxiliary power can be controlled from either the Platform or the Ground Control Station. Follow the instructions placed at the Control Stations.

The machine also has a gravity powered Manual Descent System which will allow the boom to be lowered and retracted without hydraulic power from either the primary engine powered pump or the auxiliary battery powered pump.

The JLG lift is hydraulic powered using hydraulic motors and cylinders for the various machine motions. The hydraulic components are controlled by electrically activated hydraulic valves using switches and control levers. The speeds of functions controlled by control levers are variable from zero to maximum speed depending upon the position of the control lever. Functions controlled by toggle switches are either on or off and variable speed is not possible. All control levers and switches at the platform are guarded to prevent inadvertent operation by a guard which is part of the platform or by individual switch guards. Control levers also have a center (off) position lock to prevent inadvertent operation. A foot operated switch in the platform must be depressed before any controls will function and provides an emergency stop means when the operator's foot is removed from the footswitch.

The JLG lift is a two wheel drive machine with drive power being supplied by a hydraulic motor for each wheel. Each drive wheel is supplied with a hydraulically released spring applied brake. The swing drive is also equipped with such a brake. These brakes are automatically applied anytime the Drive control or the Swing control levers are returned to the neutral position.

The unrestricted capacity of the JLG lift is 500 lbs. This means that with a platform load of 500 lbs. or less, the platform may be positioned anywhere the boom will reach. With platform loads over 500 lbs., but not exceeding 1000 lbs., the boom reach is restricted. The reach restrictions with loads over 500 lbs. are shown on the Capacity Indicator located in the Platform Control Console. The Capacity Indicator shows reach limits (boom angle and boom length) for two (2) platform loads over 500 lbs. These two (2) restricted loads are 750 lbs. and 1000 lbs. (See Page 4-4 for instructions for using the Capacity Indicator and reach diagram on machine for operating areas with loads over 500 lbs.)

4-2. GENERAL.

This section provides the necessary information needed to operate the machine. Included in this section are the procedures for starting, stopping, traveling, steering, parking, platform loading, swinging, telescope, and lift. It is important that the user read and understand the proper procedures before operating the machine.

4-3. ENGINE OPERATION.

Note

Initial starting should always be performed from the Ground Control.

a. STARTING PROCEDURE.

(1). Check engine oil before attempting to start engine, if necessary, add oil in accordance with Engine Manufacturer's Manual.

CAUTION

IF ENGINE FAILS TO START PROMPTLY, DO NOT CRANK FOR AN EXTENDED PERIOD. SHOULD ENGINE FAIL TO START ONCE AGAIN ALLOW STARTER TO "COOL OFF" FOR 2 TO 3 MINUTES. IF ENGINE FAILS AFTER SEVERAL ATTEMPTS REFER TO ENGINE MAINTENANCE MANUAL.

(2). Place ENGINE SPEED control switch on platform control console to the LOW position.

Note

Footswitch must be in released (pedal up) position before starter will operate. If starter operates with footswitch in the depressed position, DO NOT OPERATE MACHINE.

(3). Position IGNITION/EMERGENCY STOP switch to ON and depress START button and hold until engine starts.

(4). Check engine ammeter, water temp and oil pressure gauges when starting engine and monitor gauges periodically during operation.

CAUTION

ALLOW ENGINE TO WARM UP FOR A FEW MINUTES AT LOW SPEED BEFORE APPLYING ANY LOAD.

(5). After engine has had sufficient time to warm up, position ENGINE SPEED control switch to desired setting.

b. SHUTDOWN PROCEDURE.

CAUTION

IF AN ENGINE MALFUNCTION NECESSITATES UNSCHEDULED SHUTDOWN, DETERMINE AND CORRECT CAUSE BEFORE RESUMING ANY OPERATION.

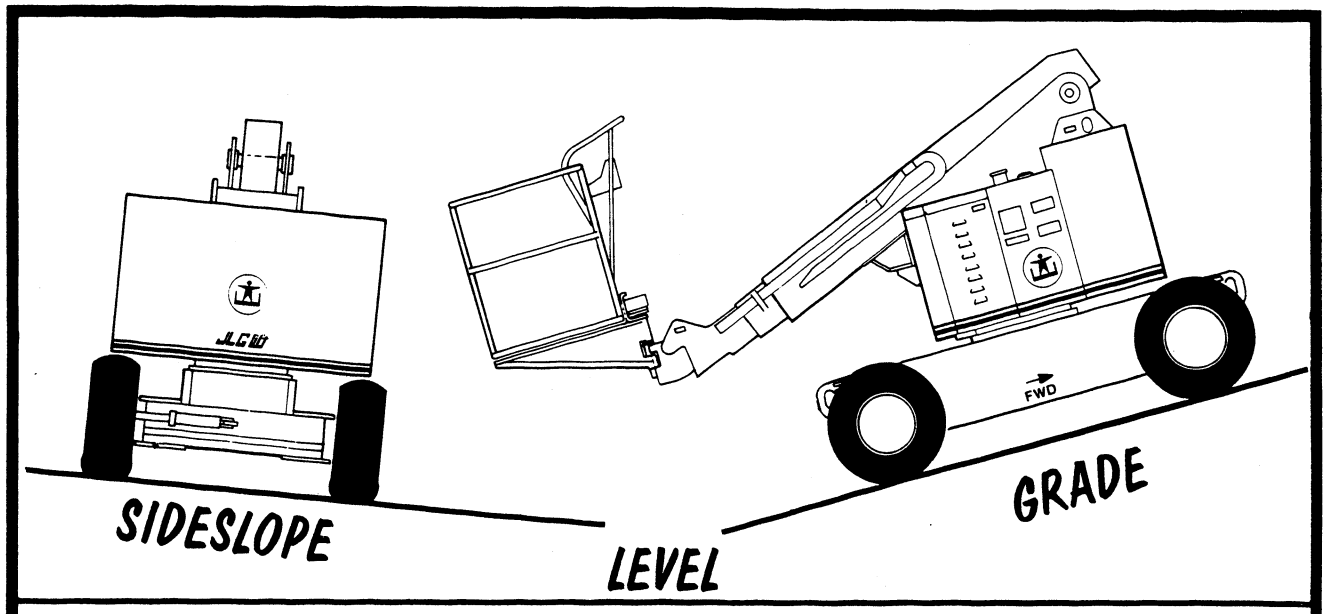
(1). Position ENGINE SPEED control switch on platform control console to LOW.

(2). Remove all load and allow engine to operate at low speed setting for 3 to 5 minutes; this allows for faster reduction of internal engine temperature.

(3). Position IGNITION/EMERGENCY STOP switch to OFF.

Note

Refer to Engine Manufacturer's manual for detailed information.



DO NOT DRIVE MACHINE ON GRADES AND SIDESLOPES EXCEEDING THOSE SPECIFIED ON CAUTION PLACARD AT PLATFORM.

Figure 4-1. Grade And Sideslope.

4-4. TRAVELING (DRIVING).

WARNING

DO NOT DRIVE WITH BOOM EXTENDED OR ABOVE HORIZONTAL EXCEPT ON A SMOOTH, FIRM AND LEVEL SURFACE.

ASSURE THAT TURNTABLE LOCK IS ENGAGED BEFORE BEGINNING ANY EXTENDED TRAVELING. AVOID ANY TERRAIN FEATURES WHICH COULD CAUSE THE MACHINE TO EXCEED ITS RATED TIPPING POINT. TRAVEL GRADES IN "LOW" DRIVE SPEED ONLY. REVERSE TRAVELING INTENDED FOR JOB SITE MOBILITY ONLY. USE EXTREME CAUTION BEFORE DRIVING WHEN ELEVATED; DO NOT DRIVE WITH PLATFORM ELEVATED AND ANY PART OF MACHINE WITHIN 6 FEET OF AN OBSTRUCTION. DO NOT USE DRIVE TO MANEUVER CLOSE TO AN OBSTRUCTION ... USE TELESCOPE OR SWING.

CAUTION

BEFORE DRIVING, MAKE SURE BOOM IS POSITIONED OVER THE REAR AXLE. IF BOOM IS OVER THE STEER WHEELS, STEER AND DRIVE CONTROLS WILL MOVE IN OPPOSITE DIRECTIONS TO MACHINE MOTION.

a. TRAVELING FORWARD.

(1). If machine is shut down, start engine and allow warm-up period before beginning any travel.

(2). Position TWO SPEED DRIVE MOTOR, DRIVE SPEED and ENGINE SPEED control switches to desired positions (HIGH or LOW).

Note

It is recommended that when using two speed drive motor, first place engine speed control to high, next place drive speed control to high. Slowly move drive control lever forward, while machine is in motion, position two speed drive motor control to high for extended travel.

(3). For forward travel, DRIVE control lever is positioned to FORWARD position and held for duration of desired travel.

b. TRAVELING IN REVERSE.

WARNING

TRAVELING IN REVERSE IS TO BE USED ONLY FOR ADDED JOB SITE MOBILITY.

(1). Traveling the machine in reverse is accomplished in the same manner as traveling forward, with the exception of positioning the control lever to REVERSE. (See Traveling Forward.)

4-5. STEERING.

To steer machine, STEER control switch is positioned to RIGHT for traveling right, or to LEFT for traveling left.

4-6. PARKING AND STOWING.

Park and stow machine as follows:

a. Park machine in travel position; boom lowered over rear, all access panels and doors closed and secured, and ignition off; lock turntable.

b. Check that brakes hold machine in position.

c. Chock wheels at front and rear.

d. Turn off master switch and remove key.

WARNING

BEFORE LEAVING MACHINE, ASSURE THAT TURNTABLE LOCK PIN IS ENGAGED.

4-7. PLATFORM.

a. CAPACITY INDICATOR.

Note

All standard production models will incorporate a capacity indicator. This capacity indicator performs the function of indicating to the user the maximum allowable load in accordance with the elevation and extension of the boom. When the boom is raised, a cable with one end attached to the fly section of the boom and the opposite end attached to a pulley in the platform control box, serves to move a color-coded capacity indicator visible through a lens in the control box. By using this reading in conjunction with the appropriately colored extension tape visible at the point where the fly section enters the base section of the boom, the operator will be provided with the maximum allowable platform load for that particular boom extension and boom elevation angle.

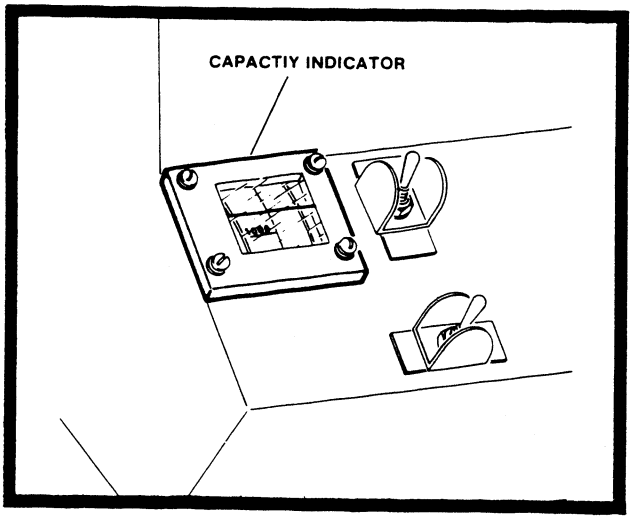


Figure 4-2. Capacity Indicator.

b. LOADING FROM GROUND LEVEL.

(1). Position chassis on a smooth, firm and level surface.

(2). If total load (personnel, tools and supplies) is 500 LBS or less, distribute load uniformly on platform floor and proceed to any work position.

(3). If total load (personnel, tools and supplies) is over 500 LBS, follow instructions in Section 4-9. CAPACITY INDICATOR.

c. Loading from positions above ground level. Before loading weight to platform above ground level:

(1). Determine what the total weight will be after additonal weight is loaded (personnel, tools and supplies).

(2). If total weight in platform will be 500 LBS or less, proceed with adding weight. If total weight will be over 500 LBS, follow steps 3 - 5.

(3). Position platform to the point where weight will be added.

(4). Determine maximum capacity for that position from CAPACITY INDICATOR as noted in Section 4-9.

(5). Load additional weight if total weight does not exceed maximum capacity determined in step 4.

d. PLATFORM LEVEL ADJUSTMENT.

(1). Leveling UP. To raise platform, LEVEL control switch is positioned to UP and held until platform is level.

(2). Leveling DOWN. To lower platform, LEVEL control switch is positioned to DOWN and held until platform is level.

e. PLATFORM ROTATION. (Optional)

(1). To rotate platform to the left, ROTATE control is positioned to LEFT and held until desired platform position is reached.

(2). To rotate platform to the right, ROTATE control is positioned to RIGHT and held until desired platform position is reached.

4-8. BOOM.

WARNING

A RED TILT ALARM WARNING LIGHT IS LOCATED ON THE CONTROL CONSOLE WHICH LIGHTS WHEN THE CHASSIS IS ON A SEVERE SLOPE. DO NOT SWING, EXTEND OR RAISE BOOM ABOVE HORIZONTAL WHEN LIGHT IS LIT. IF BOOM IS EXTENDED, RETRACT IMMEDIATELY.

DO NOT DEPEND ON TILT ALARM AS A LEVEL INDICATOR FOR THE CHASSIS. TILT ALARM INDICATES CHASSIS IS ON A SEVERE SLOPE (5° OR GREATER). CHASSIS MUST BE LEVEL BEFORE SWINGING, EXTENDING OR RAISING BOOM ABOVE HORIZONTAL.

TRAVELING WITH BOOM RETRACTED AND BELOW HORIZONTAL IS PERMITTED ON GRADES AND SIDE SLOPES SPECIFIED ON CAUTION PLACARD AT PLATFORM.

a. SWINGING THE BOOM.

IMPORTANT

ASSURE THAT TURNTABLE LOCK IS DISENGAGED BEFORE STARTING ANY SWING OPERATION.

(1). To swing boom, SWING control lever is positioned to RIGHT or LEFT for direction desired.

b. RAISING AND LOWERING THE BOOM.

To raise or lower the boom, LIFT control lever is placed to the UP or DOWN position and held until desired height is reached.

c. TELESCOPING THE BOOM.

To extend or retract boom, TELESCOPE control switch is positioned to IN or OUT and held until platform reaches desired position.

4-9. CAPACITY INDICATOR.

WARNING

DO NOT OPERATE THE MACHINE WITH A PLATFORM LOAD IN EXCESS OF 500 POUNDS IF THE CAPACITY INDICATOR IS DEFACED OR DAMAGED, OR IF FLY BOOM COLOR CODED STRIPES ARE DAMAGED OR MISSING. NEVER EXCEED PLATFORM RATED CAPACITY AS SHOWN ON THE CAPACITY INDICATOR. IT IS THE RESPONSIBILITY OF THE OPERATOR TO WATCH CAPACITY INDICATOR IF THE LOAD EXCEEDS 500 POUNDS.

a. Before operating with a platform load over 500 pounds. The following steps must be followed:

(1). Know the total weight of the load (personnel, tools and supplies).

(2). Ensure that the machine is level on a firm supporting surface and evenly distribute loads on platform floor.

(3). With boom fully retracted, operate LIFT control and elevate to approximate work angle.

(4). Read the capacity indicator and determine at what color range(s) the machine can be operated safely with the known platform load.

(5). Operate the TELE. control and extend the boom out to the work area while monitoring the color stripes on the fly boom.

(6). If an unsafe color appears, stop operation immediately and if necessary, reposition the machine closer to the work area.

b. To lower platform with a load over 500 pounds, completely retract the boom (Telescope) before lowering the platform.

4-10. SHUT-DOWN AND PARK.

a. Drive machine to a reasonably well protected area.

b. Position ENGINE speed control switch on Platform Console to LOW.

c. Assure boom is fully retracted and lowered over rear (Drive) axle; all access panels and doors closed and secured.

d. Remove all load and allow engine to operate 3 to 5 minutes at LOW setting to permit faster reduction of engine internal temperatures.

e. Turn IGNITION switch off.

f. Cover the Platform Control Console to protect instruction placards, warning decals, and operating controls from hostile environment.

4-11. TIE DOWN AND LIFTING.

a. TIE DOWN.

When transporting, boom must be in the stowed mode with turntable lock pin engaged and machine securely tied down to truck or trailer deck. Four tie down eyes are provided in the frame slabs, one at each corner of machine.

b. LIFTING.

If it becomes necessary to lift the machine using an overhead or mobile crane it is very important that the lifting devices are attached only to the designated lifting eyes.

Note

Crane and lifting devices, chains, slings, etc., must be capable of handling at least 38,000 lbs (17,240 Kgm).

Two lifting eyes are provided at the front of machine, one on each turntable sideplate, next to boom pivot. Two lifting eyes are also provided at the rear of machine in the frame slabs. The two rear lifting eyes are also used for machine tie down. Each of the four chains or slings used for lifting machine must be adjusted individually so machine remains level when elevated.

IMPORTANT

SECURE TURNTABLE WITH TURNTABLE LOCK BEFORE TRAVELING LONG DISTANCES OR HAULING MACHINE ON TRUCK/TRAILER.

SECTION 5 — OPTIONAL EQUIPMENT

5-1. ROTATOR.

Two types of platform rotators are offered, depending on the type of steering specified. A momentary three-position toggle switch located on the platform control console is used in conjunction with the toggle switch type steering. A manually operated control lever, located below the platform control console, is used with machines equipped with a steering wheel. Both rotator systems allow for platform rotation 90 degrees from center in both right and left direction. The rotators are designed to give added jobsite versatility and the platform should be returned to the center position for all other operations.

5-2. BACKUP ALARM.

A 12-volt travel alarm horn, mounted on a bracket attached to the turntable sideplate, provides an audible warning of the machine's movement in the drive reverse mode. Also available, Motion Alarm (drive, lift, swing), Descent Alarm and Tilt Alarm.

5-3. CYLINDER BELLOWS.

A one piece accordian shaped rubber bellow may be attached to the rod end of the cylinder barrel and to the cylinder rod as close to the rod attach bushing as possible. The bellows afford protection to the cylinder rod in either the extended or retracted position. The bellows are installed on the lift cylinder, slave cylinder, master cylinder and steer cylinder.

5-4. BOOM WIPERS.

A one piece u-shaped neoprene strip may be attached to the front of the base boom section which wipes the top and both sides of the fly section. The bottom side of the fly section is protected by a straight neoprene strip which may also attach to the base section.

5-5. HOSTILE ENVIRONMENT PACKAGE.

The Hostile Environment package provides additional protection against the entry of dust, dirt, sand and other abrasive materials into the hydraulic system, control handles and switches, cylinders, boom chains and wear pad areas, and the air inlet of the engine. The package is intended for machines that will be exposed to painting, sandblasting or other similar hostile conditions. The hostile environment package includes boom wipers, cylinder bellows, a heavy duty hydraulic reservoir air breather, an engine air cleaner and a control console cover. Although the boom wipers are contained in the hostile environment package some machines may be equipped with boom wipers only; this depends on the options specified when the machine was ordered from factory.

5-6. DESERT ENVIRONMENT PACKAGE.

The Desert Environment Package is designed to provide additional protection to the machines vital components under extreme hot, dry and sandy conditions. This package includes the boom wipers, cylinder bellows, heavy duty air cleaner, console cover, and air breather described in the Hostile Environment Package in paragraph 5-5. In addition to these items a hydraulic oil cooler fitted with a sand and dust filter is installed on the machine turntable. A hydraulically driven motor serves to turn the fan which draws air down through the sand and dust filter. The air is then forced down through the heat exchanger cooling the constant flow of hydraulic oil within.

5-7. L.P. GAS.

The Liquefied Petroleum Gas system includes twin pressure cylinders which are mounted on the side of the turntable in place of the standard gasoline tank. Mounted in line between the pressure tank and carburetor, this system includes a filter, vaporizer and regulator.

The L.P. gas system provides many advantages over gasoline fuel, such as increased engine life, fewer oil changes, longer ignition and spark plug life, and lower initial operating costs. Refer to applicable manufacturer's instructions for service.

5-8. 110 VOLT GENERATOR. 60 HZ

A 110 volt generator, mounted beside the engine, is belt driven from the output shaft of the engine. This application provides for a 110 volt receptacle at the ground control and also at the platform. The lead from the ground control to the platform is routed along the boom powertrak thus eliminating the use of extension cords hanging freely from the platform. This is a vital option when the job requires the use of electrical power when working in an area where 110 volt power is not available.

5-9. 220 VOLT RECEPTACLE.

A 220 volt receptacle may be mounted on the platform support to eliminate extension cords hanging from the platform. The lead from the receptacle is routed along the boom powertrak to the engine compartment. In the engine compartment a plug is installed on the lead for attachment to an extension cord or a receptacle from a 220 volt power source. When not in use the plug is stored in a junction box mounted on the engine compartment frame.

5-10. FIBERGLASS BUCKET.

A fiberglass bucket is available as an alternative to the standard tubular steel platform.

This bucket offers a lighter weight advantage, although size and capacity do not vary from the comparable metal platforms. (Fiberglass buckets are available in 4 and 5 foot widths only). It should be noted, however, that, although they are made of fiberglass, no electrical insulation is provided by the bucket.

WARNING

FIBERGLASS BUCKETS ARE NOT INSULATED AGAINST ELECTRICAL SHOCK.

5-11. HEATER PACKAGE.

Designed to provide improved operating in cold climates. Junction boxes are mounted under the hood for extension cords to bring power to critical areas such as battery, engine and hydraulic oil.

5-12. ROTATING BEACON.

An amber rotating beacon may be installed on the machine hood and is controlled by a two-position toggle switch which is mounted on the platform control console. When the switch is placed to the ON position the light is actuated and provides a visual warning to the machines operation.

5-13. 110 VOLT RECEPTACLE.

A 110 volt receptacle may be mounted on the platform control console to eliminate extension cords hanging from the platform. The lead from the receptacle is routed along the boom powertrak to the battery and ground control compartment at the front of the machine. A plug is installed on the end of the lead for attachment to an extension cord or a receptacle from a 110 volt power source. When not in use the excess wire and plug are to be stowed beside the battery.

6-1. GENERAL.

This section provides information on the procedures to be followed and on the systems and controls to be used in the event an emergency situation is encountered during machine operation. Prior to operation of the machine and periodically thereafter, the entire operating manual, including this section, should be reviewed by all personnel whose responsibilities include any work or contact with the machine.

6-2. THE EMERGENCY CONTROLS AND THEIR LOCATIONS.

a. Emergency Stop Switch Guard.

This guard is installed directly over the on-off ignition switch located on the platform console panel. When the guard is depressed it will immediately stop the machine.

WARNING

CHECK MACHINE DAILY TO MAKE SURE EMERGENCY STOP SWITCH GUARD IS IN PLACE AND THAT GROUND CONTROL AND MANUAL LOWERING VALVE INSTRUCTIONS ARE IN PLACE AND LEGIBLE.

b. Ground Control Panel.

The ground control panel is located at the right side of the turntable. The controls on this panel provide the means for overriding the platform controls and for controlling the boom lift, swing and telescope functions from the ground. Place the station select switch in GROUND position and operate the proper switch to lift, swing or telescope.

c. Manual Descent And Retraction. (Figure 6-1.)

The manual descent valves are located at the right of the turntable (directly below the ground control box). They should be used if there is a total power failure since the valves will permit use of gravity to retract and lower the boom. The procedures for use of the valves for descent and retraction are given adjacent to the valves.

WARNING

VALVES MUST BE OPENED IN EXACT SEQUENCE AS STATED ON PLACARD ADJACENT TO THE LOWERING CONTROLS.

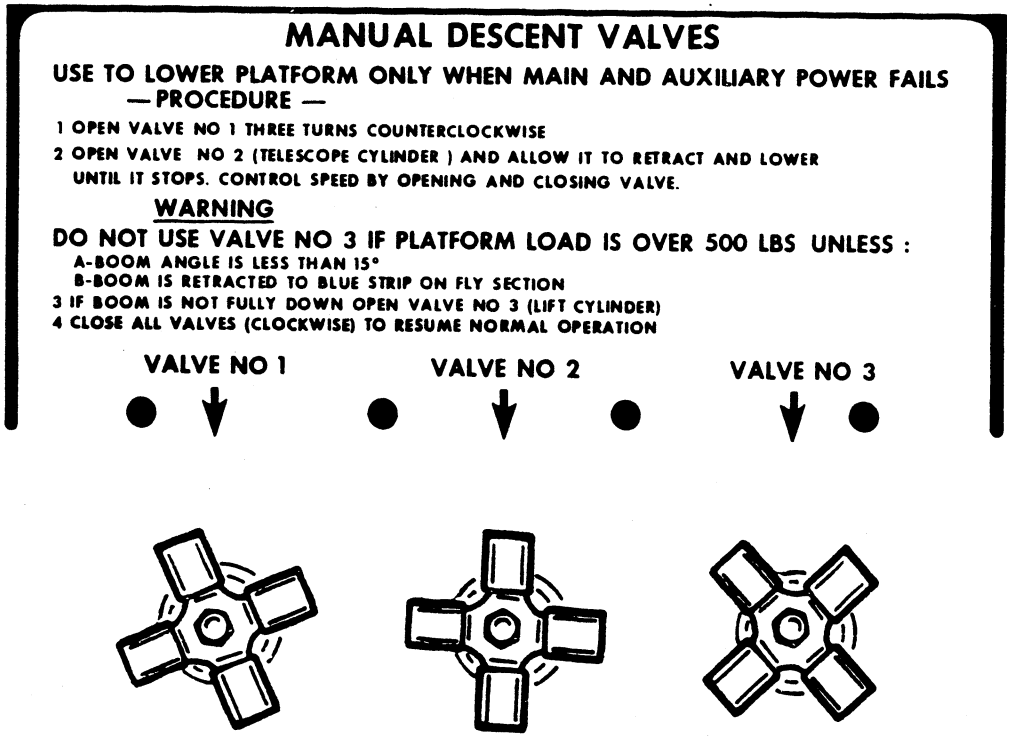


Figure 6-1. Manual Descent Valves

6-3. EMERGENCY PROCEDURES.

a. KNOW HOW TO USE THE GROUND CONTROLS IN AN EMERGENCY SITUATION.

Ground personnel must be thoroughly familiar with the machine operating characteristics and the ground control functions. Training should include operation of the machine, review and understanding of this section and hands-on operation of the controls in simulated emergencies.

b. IF THE PLATFORM OPERATOR IS PINNED, TRAPPED OR UNABLE TO OPERATE OR CONTROL THE MACHINE.

(1). Operate the machine from ground controls **ONLY** with the assistance of other personnel and equipment (cranes, overhead hoists, etc.) as may be required to safely remove the danger or emergency condition.

(2). Other personnel on the platform may use the platform controls with regular or auxiliary power. **DO NOT CONTINUE OPERATION IF CONTROLS DO NOT FUNCTION NORMALLY.**

(3). Use the **MANUAL DESCENT SYSTEM AS FIRST CHOICE** for bringing the platform and operator down, particularly **IF THERE IS INDICATION OF CONTROL MALFUNCTION**. Further use of hydraulic power may cause more severe injury or death.

(4). Cranes, forklift trucks or other equipment which may be available should be used to remove platform occupants and stabilize motion of the machine in case machine controls are inadequate or malfunction when used.

c. IF THE PLATFORM OR BOOM IS CAUGHT OR SNAGGED.

If the platform or boom becomes jammed or snagged in overhead structures or equipment, do not continue operation of the machine from either the platform or the ground until the operator and all personnel are safely moved to a secure location. Only then should an attempt be made to free the platform using any necessary equipment and personnel. Do not operate controls to cause one or more wheels to leave the ground.

d. IF THE MACHINE BECOMES UNSTABLE OR STARTS TO TIP.

If it appears that the machine is becoming unstable and on the verge of tipping, the extent of injury can be greatly reduced or eliminated if the operator stays in the platform with safety belt attached. Platform descent speed in a tipping situation is always less than free fall.

e. RIGHTING OF TIPPED MACHINE.

No attempt should be made to right the machine using platform controls. A forktruck of suitable capacity or equivalent equipment may be placed under the elevated side of the chassis and the manual descent valve opened to permit lowering chassis without elevating platform. A crane or other lifting equipment may also be used to lift the platform while the chassis is lowered by a forktruck, jacks or other means. Remove all personnel and equipment from the area before starting operation.

f. Following any accident, thoroughly inspect the machine and test all functions first from the ground controls, then from the platform controls. Do not lift above ten (10) feet until you are sure that all damage has been repaired, if required, and that all controls are operating correctly.

6-4. INCIDENT NOTIFICATIONS.

a. It is imperative that JLG Industries, Inc. be notified immediately of any incident involving a JLG product. Even if no injury or property damage is evident, the Safety Engineering Department at the factory should be contacted by telephone and provided with all necessary details.

b. It should be noted that failure to notify the Manufacturer of an incident involving a JLG Industries product within 48 hours of such an occurrence may void any warranty consideration on that particular machine.

JLG Industries, Inc.

TRANSFER OF OWNERSHIP

To: JLG, Gradall, Lull and Sky Trak product owner:

If you now own, but ARE NOT the original purchaser of the product covered by this manual, we would like to know who you are. For the purpose of receiving safety-related bulletins, it is very important to keep JLG Industries, Inc. updated with the current ownership of all JLG products. JLG maintains owner information for each JLG product and uses this information in cases where owner notification is necessary.

Please use this form to provide JLG with updated information with regard to the current ownership of JLG Products. Please return completed form to the JLG Product Safety & Reliability Department via facsimile (717) 485-6573 or mail to address as specified on the back of this form.

Thank you,
Product Safety & Reliability Department
JLG Industries, Inc.
1 JLG Drive
McConnellsburg, PA 17233-9533
Telephone: (717) 485-5161
Fax: (717) 485-6573

NOTE: Leased or rented units should not be included on this form.

Mfg. Model: _____

Serial Number: _____

Previous Owner: _____

Address: _____

City: _____ State: _____

Zip: _____ Telephone: (_____) _____

Date Of Transfer: _____

Current Owner: _____

Address: _____

City: _____ State: _____

Zip: _____ Telephone: (_____) _____

Who in your organization should we notify?

Name: _____

Title: _____

Please cut on the dotted line and fax to 717-485-6573

Corporate Office
JLG Industries, Inc.
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McConnellsburg PA. 17233-9533
USA
Phone: (717) 485-5161
Customer Support Toll Free: (877) 554-5438
Fax: (717) 485-6417

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JLG Industries (Pty) Ltd.
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Germiston
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