Operators and Safety Manual

Model
40H

3120239
December 5, 2002

ANSI

FOREWORD

The purpose of this manual is to provide users with the operating procedures essential for the promotion of proper machine operation for its intended purpose. It is important to over-stress proper machine 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. REMEMBER ANY EQUIPMENT IS ONLY AS SAFE AS THE OPERATOR.

BECAUSE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, PROPER SAFETY PRACTICES ARE THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

ALL INSTRUCTIONS IN THIS MANUAL ARE BASED ON THE USE OF THE MACHINE UNDER PROPER OPERATING CONDITIONS, WITH NO DEVIATIONS FROM THE ORIGINAL DESIGN. ALTERATION AND/OR MODIFICATION OF THE MACHINE IS STRICTLY FORBIDDEN WITHOUT WRITTEN APPROVAL FROM JLG INDUSTRIES, PER OSHA REGULATIONS.

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

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

DANGER

DANGER INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED WILL RESULT IN DEATH OR SERIOUS INJURY.

WARNING

WARNING INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED COULD RESULT IN DEATH OR SERIOUS INJURY.

CAUTION

CAUTION INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO BE USED TO ALERT AGAINST UNSAFE PRACTICES.

IMPORTANT

IMPORTANT OR INSTRUCTIONS PROCEDURES ESSENTIAL FOR SAFE OPERATION AND WHICH, IF NOT FOLLOWED, MAY RESULT IN A MALFUNCTION OR DAMAGE TO THE MACHINE.

In this Manual, "Notes" is used to provide information of special interest.

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. Owner/user/operator must be familiar with Sections 6,7,8,9, and 10 of ANSI A92.5-1992. These sections contain the responsibilities of the owner, users, operators, lessors and lessees concerning safety, training, inspection, maintenance, application and operation. The most prevalent regulations of this type are the Federal OSHA Safety Regulations*. Listed below, in abbreviated form are some of the requirement 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 of 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 at all times, wear approved fall protection devices and other safety gear as required.
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 de energized or adequate clearance is maintained (See OSHA 29 CFR 1910.67 AND 1926.400).
10. Employees using aerial lift 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 manual, 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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1-1. GENERAL.

a. This section prescribes the proper and safe practices for major areas of machine usage which have been divided into two basic categories; Driving and Operation. In order to promote proper usage of the machine, it is mandatory that a daily routine be established based on instruction given in this section. A maintenance program must be also be established by a qualified person and must be followed to ensure that the machine is safe to operate.

b. The owner/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. Owner/user/operator must be familiar with Sections 6, 7, 8, 9, and 10 of ANSI A92.5-1992. These sections contain the responsibilities of the owner, users, operators, lessors and lessees concerning safety, training, inspection, maintenance, application and operation. If there is a question on application and or operation, JLG Industries 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. If machine is not equipped with optional tow package, refer to Section 6 for emergency towing procedures.

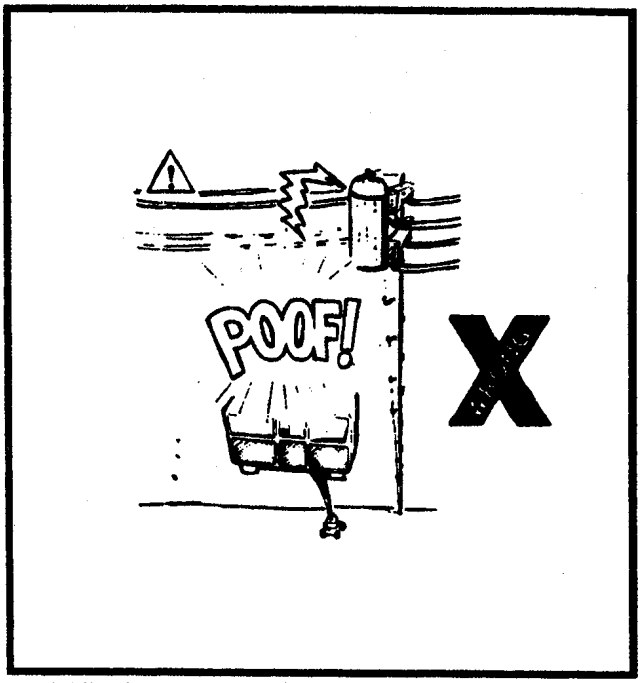
SPECIAL NOTE:

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

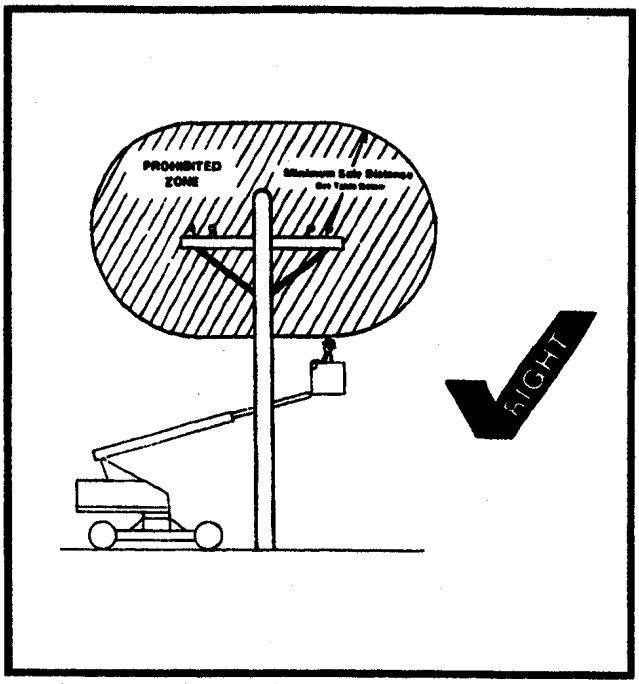
⚠ WARNING

FAILURE TO COMPLY WITH SAFETY PRECAUTIONS LISTED IN THIS SECTION AND ON MACHINE MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION.

1-3. ELECTROCUTION HAZARD.



MAINTAIN A SAFE CLEARANCE FROM ELECTRICAL LINES AND APPARATUS.



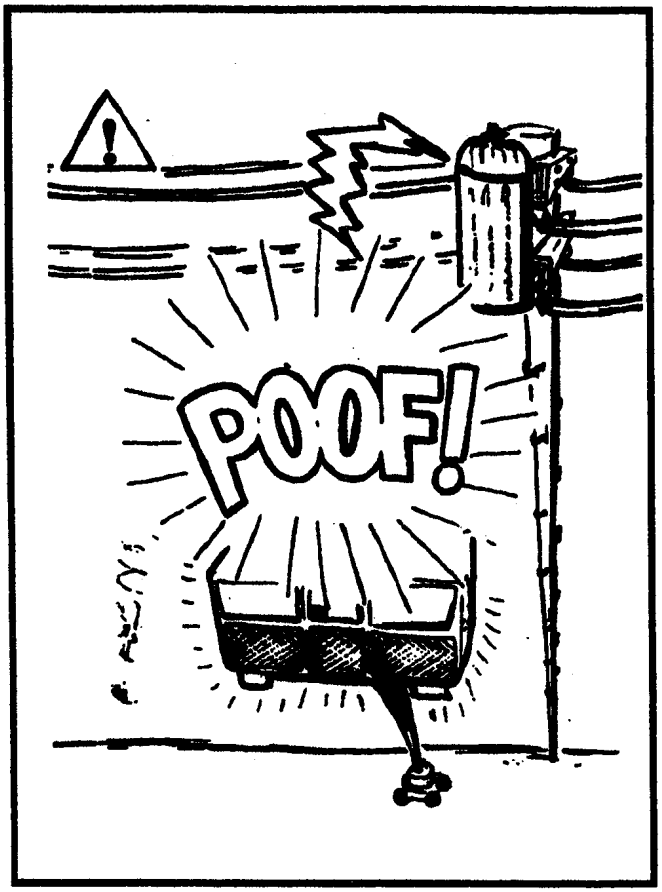
MAINTAIN A SAFE CLEARANCE FROM ELECTRICAL LINES AND APPARATUS.

Table

Minimum safe approach distances (M.S.A.D.) to energized (exposed or insulated) power lines and parts.

VOLTAGE RANGE (Phase to Phase)	MINIMUM SAFE APPROACH DISTANCE Feet	(Meters)
0 to 300V	AVOID CONTACT	
Over 300V to 50KV	10	3
Over 50KV to 200KV	15	5
Over 200KV to 350KV	20	6
Over 350KV to 500KV	25	8
Over 500KV to 750KV	35	11
Over 750KV to 1000KV	45	14

DANGER: DO NOT manever machine or personnel inside PROHIBITED ZONE.
ASSUME all electrical parts and wiring are ENERGIZED unless known otherwise.



MAINTAIN A SAFE CLEARANCE FROM ELECTRICAL LINES AND APPARATUS.

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 (3 M) 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.

1-4. PRE-OPERATIONAL.

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

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.

BEFORE OPERATION, CHECK WORK AREA FOR BARE OVERHEAD ELECTRIC LINES, 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.

DO NOT OPERATE THIS MACHINE UNLESS IT HAS BEEN SERVICED AND MAINTAINED ACCORDING TO THE MANUFACTURERS SPECIFICATIONS AND SCHEDULE.

ENSURE DAILY INSPECTION AND FUNCTION CHECK IS PERFORMED PRIOR TO PLACING MACHINE INTO OPERATION.

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.

DO NOT OPERATE MACHINE WHEN WIND CONDITIONS EXCEED 30 MPH (48 KMH).

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

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

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

BE FAMILIAR WITH LOCATION AND OPERATION OF GROUND STATION CONTROLS.

1-5. DRIVING.

WATCH FOR OBSTRUCTIONS AROUND MACHINE AND OVERHEAD WHEN DRIVING.

ALWAYS POSITION BOOM OVER REAR (DRIVE) AXLE IN LINE WITH DIRECTION OF TRAVEL. REMEMBER, IF BOOM IS OVER FRONT (STEER) AXLE, DIRECTION OF STEER AND DRIVE MOVEMENT WILL BE OPPOSITE FROM NORMAL OPERATION.

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

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

WHEN DRIVING IN HIGH SPEED, SWITCH TO LOW BEFORE STOPPING. TRAVEL GRADES IN LOW DRIVE, HIGH ENGINE ONLY.

TRAVEL IS PERMITTED ON GRADES AND SIDESLOPES NO GREATER THAN THOSE INDICATED IN CAUTION PLACARD AT MACHINE PLATFORM.

OPERATION WITH BOOM RAISED IS RESTRICTED TO FIRM, LEVEL AND UNIFORM SURFACE.

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

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

DO NOT DRIVE MACHINE NEAR PITS, LOADING DOCKS OR OTHER DROP-OFFS.

DO NOT USE HIGH SPEED DRIVE WHEN IN RESTRICTED OR CLOSE QUARTERS OR WHEN DRIVING IN REVERSE.

BE AWARE OF STOPPING DISTANCES WHEN TRAVELING IN HIGH AND LOW SPEEDS.

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

TOWING WITH THE OPTIONAL TOW PACKAGE IS PERMITTED ONLY ON THE JOBSITE FOR SHORT DISTANCES. DO NOT TOW AT SPEEDS OVER 5 MPH (8.05 KMH).

KEEP NON-OPERATING PERSONNEL AT LEAST 6 FEET (1.83 M) AWAY FROM MACHINE DURING DRIVING OPERATIONS.

1-6. OPERATION.

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

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

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.

PRIOR TO ENTERING AND EXITING PLATFORM AT GROUND LEVEL, FULLY LOWER BOOM. EXTEND BOOM UNTIL END OF FLY BOOM CONTACTS GROUND. WITH BOOM LIFT IN THIS CONFIGURATION, ENTER AND/OR EXIT PLATFORM THROUGH GATE OPENING.

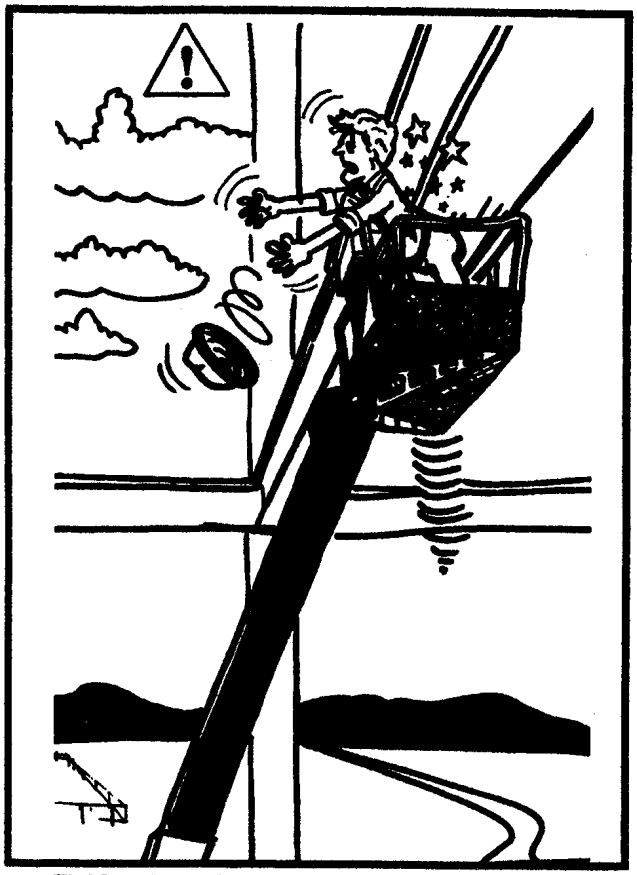
OSHA REQUIRES ALL PERSONS IN THE PLATFORM TO WEAR SAFETY BELTS OR OTHER APPROVED FALL PROTECTION DEVICES. SECURE BELT LANYARD TO PROPER ATTACH BAR ON PLATFORM. KEEP GATE CLOSED AT ALL TIMES.

DURING ENTRY OR EXIT ABOVE GROUND, OSHA REQUIRES THAT OPERATORS SAFETY BELT OR APPROVED FALL PROTECTION DEVICE WITH LANYARD BE ATTACHED TO THE STRUCTURE BEING ENTERED. OTHERWISE, DO NOT STEP OUTSIDE OF PLATFORM.

TO AVOID FALLING - USE EXTREME CAUTION WHEN ENTERING OR LEAVING PLATFORM ABOVE GROUND. ENTER OR EXIT THRU GATE ONLY. PLATFORM MUST BE WITHIN 1 FOOT (30 CM) OF ADJACENT - SAFE AND SECURE - STRUCTURE. ALLOW FOR PLATFORM VERTICAL MOVEMENT AS WEIGHT IS TRANSFERRED TO OR FROM PLATFORM.

IF PLATFORM OR BOOM IS CAUGHT SO THAT ONE OR MORE WHEELS ARE OFF THE FLOOR, ALL PERSONNEL MUST BE REMOVED FROM PLATFORM BEFORE ATTEMPTING TO FREE MACHINE. USE CRANES, FORKLIFT TRUCKS OR OTHER EQUIPMENT TO REMOVE PERSONNEL AND STABILIZE MACHINE MOTION, IF NECESSARY.

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



THOROUGHLY CHECK ALL CLEARANCES BEFORE POSITIONING PLATFORM.

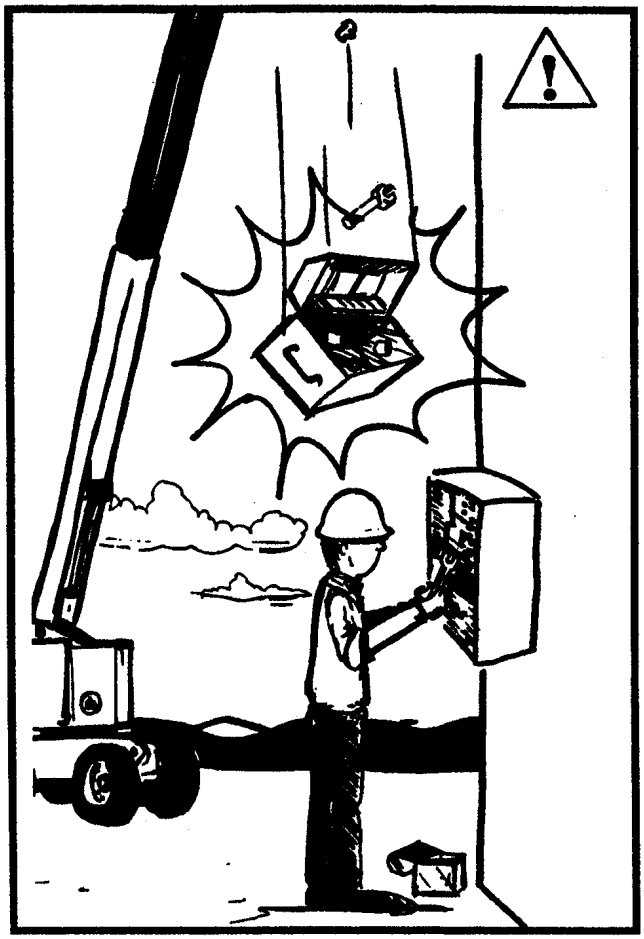
THE OPERATOR IS RESPONSIBLE TO AVOID OPERATING OVER GROUND PERSONNEL AND TO WARN THEM NOT TO WORK, WALK OR STAND UNDER A RAISED BOOM OR PLATFORM.

NEVER 'SLAM' A CONTROL SWITCH OR LEVER THROUGH NEUTRAL TO OPPOSITE DIRECTION. ALWAYS RETURN SWITCH TO NEUTRAL AND STOP; THEN MOVE SWITCH TO THE DESIRED POSITION. OPERATE LEVERS WITH SLOW, EVEN PRESSURE.

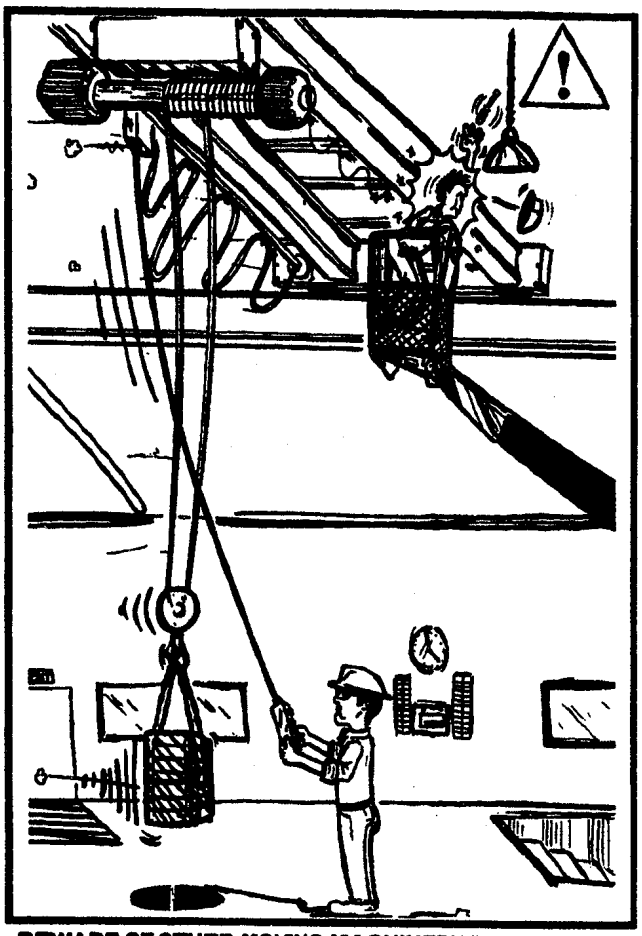
DO NOT CARRY MATERIALS ON PLATFORM RAILING UNLESS APPROVED.

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.



KEEP EVERYONE CLEAR OF A WORKING PLATFORM.



BEWARE OF OTHER MOVING MACHINERY IN YOUR AREA OF OPERATION.

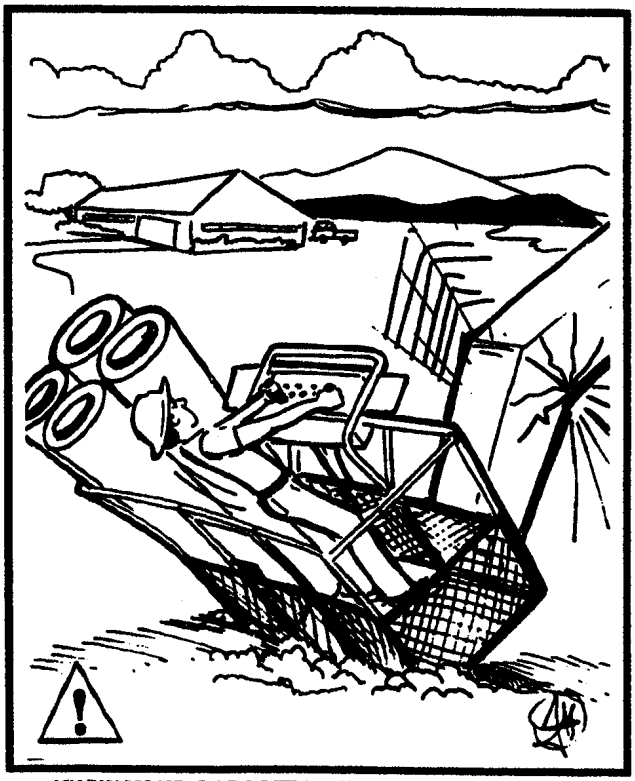
NEVER EXCEED MANUFACTURERS RATED PLATFORM CAPACITY - REFER TO CAPACITY DECAL ON MACHINE. DISTRIBUTE LOADS EVENLY ON PLATFORM FLOOR.

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

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 PLATFORM.

ENSURE THAT OPERATORS OF OTHER OVERHEAD AND FLOOR MACHINES ARE AWARE OF THE AERIAL PLATFORMS PRESENCE. DISCONNECT POWER TO OVERHEAD CRANES. BARRICADE FLOOR IF NECESSARY.



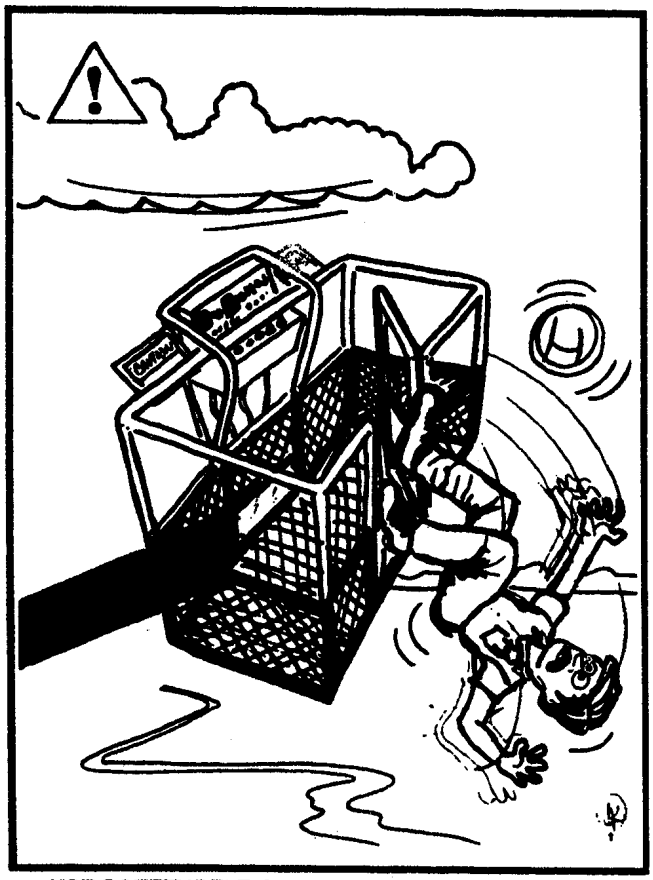
KNOW YOUR CAPACITY AND OPERATE WITHIN IT.

DO NOT REMOVE, MODIFY, OR DISABLE FOOT-SWITCH BY BLOCKING OR ANY OTHER MEANS.

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

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.



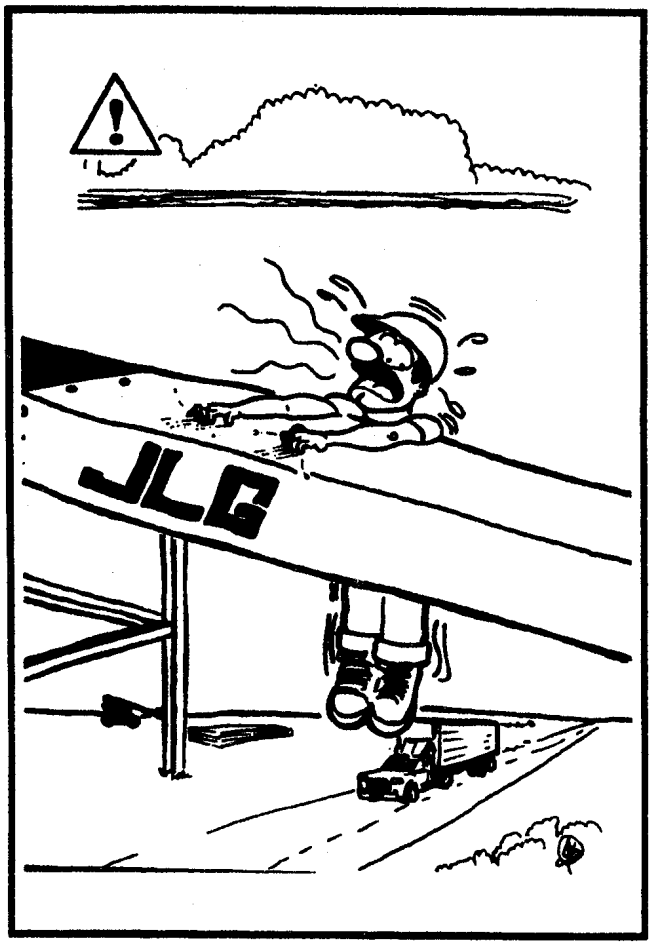
USE SAFETY BELT OR APPROVED FLL PROTECTION DEVICES AND KEEP GATE LATCHED.

NO CIRCUS ACTS IN PLATFORM.

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.



LADDERS ARE FOR CLIMBING — NOT BOOMS.

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 "WALK THE BOOM" TO GAIN ACCESS TO OR LEAVE PLATFORM.

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

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

DO NOT USE THE LIFT, SWING, OR TELESCOPE FUNCTIONS OR THE BOOM TO MOVE EITHER THE MACHINE OR OTHER OBJECTS.

1-7. TOWING AND HAULING.

DO NOT TOW A MACHINE WHICH IS NOT EQUIPPED WITH A TOWING OPTION PROVIDED BY JLG, EXCEPT IN AN EMERGENCY. SEE SECTION 6 FOR EMERGENCY TOWING PROCEDURES.

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

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.

⚠ IMPORTANT

SINCE THE MACHINE MANUFACTURER HAS NO DIRECT CONTROL OVER THE FIELD INSPECTION AND MAINTENANCE, SAFETY 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 start-up 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 are the responsibility of management personnel. Preparation requires good common sense, (i.e. telescope works smoothly and brakes operate properly) coupled with a series of visual inspections. The mandatory requirements are given in the Daily-Walk Around 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 check list provides a systematic inspection to assist in detecting defective, damaged, or improperly installed parts. The check list denotes the items to be inspected and conditions to examine.

Periodic inspection shall be performed quarterly 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 and damage.

(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, tires for wear and damage.

(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 oscillating axle (if equipped) for loose, missing and worn parts, pivot pin and lockout cylinder pins for security, lockout cylinders and hydraulic hoses for damage and leaks.

(7). Check counterbalance and 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 swing drive hub, hydraulic motor, and brake for damage, loose or missing parts, hydraulic 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 connections 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 for visible damage, evidence of 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, 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. Replace elements as required.

Note

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

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

(13). Check boom pivot bushings for evidence of lubrication and wear. (See Figure 2-2, Lubrication Chart).

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

(15). Check all pin and shaft retaining hardware for security and wear.

(16). Check all electrical cables for defects, damage, loose or corroded connections.

d. Boom.

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

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

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

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

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

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

(7). Check limit switches mounted on turntable for security, damage and debris.

(8). Check platform leveling cylinder, cross pins, and hydraulic lines for damage, wear, lubrication, leakage and security.

(9). Check boom/platform pivot pins for lubrication. (See Figure 2-2, Lubrication Chart).

(10). Check lift cylinder to boom attach pivot point for wear and evidence of lubrication. (See Figure 2-2, Lubrication Chart).

(11). Check boom tape for correct length and for tearing or defacing at any point.

e. Extend-A- Reach. (If Equipped).

(1). Check slave cylinder, weld link and cross pins, and lines for visible damage, wear, lubrication, evidence of leakage, and security.

(2). Check extend-a-reach for visible damage, loose or missing parts, and security.

(3). Check hydraulic lines and electrical cable for damage, missing parts and security.

f. 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 is zeroed with boom at horizontal and indicator dial moves in accordance with boom angle.

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

(6). If equipped, check platform rotator mechanism for operation, damage, security and lubrication. Check hydraulic lines for leakage, damage and security.

Note

Check all warning, caution, danger and instruction placards for legibility and security around the entire machine.

f. Torque Requirements.

Perform torque checks as specified in Service and Maintenance manual.

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 as part of the daily inspection:

(1). Overall cleanliness.

Check all standing surfaces for oil, fuel and hydraulic oil spillage and foriegn 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). Operator's and Safety Manual.

Ensure a copy of this manual and the ANSI A92.5-1992 Responsibilities, Service and Maintenance manual are enclosed in the manual storage box.

(4). 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.

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

⚠ WARNINGS

TO AVOID INJURY DO NOT OPERATE A MACHINE UNTIL ALL MALFUNCTIONS HAVE BEEN CORRECTED. USE OF A MALFUNCTIONING MACHINE IS A SAFETY VIOLATION.

TO AVOID POSSIBLE INJURY, BE SURE MACHINE POWER IS "OFF" DURING WALK-AROUND INSPECTION.

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:

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

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

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.

(8). Assure that all items requiring lubrication are serviced. Refer to Lubrication Chart, Figure 2-2, for specific requirements.

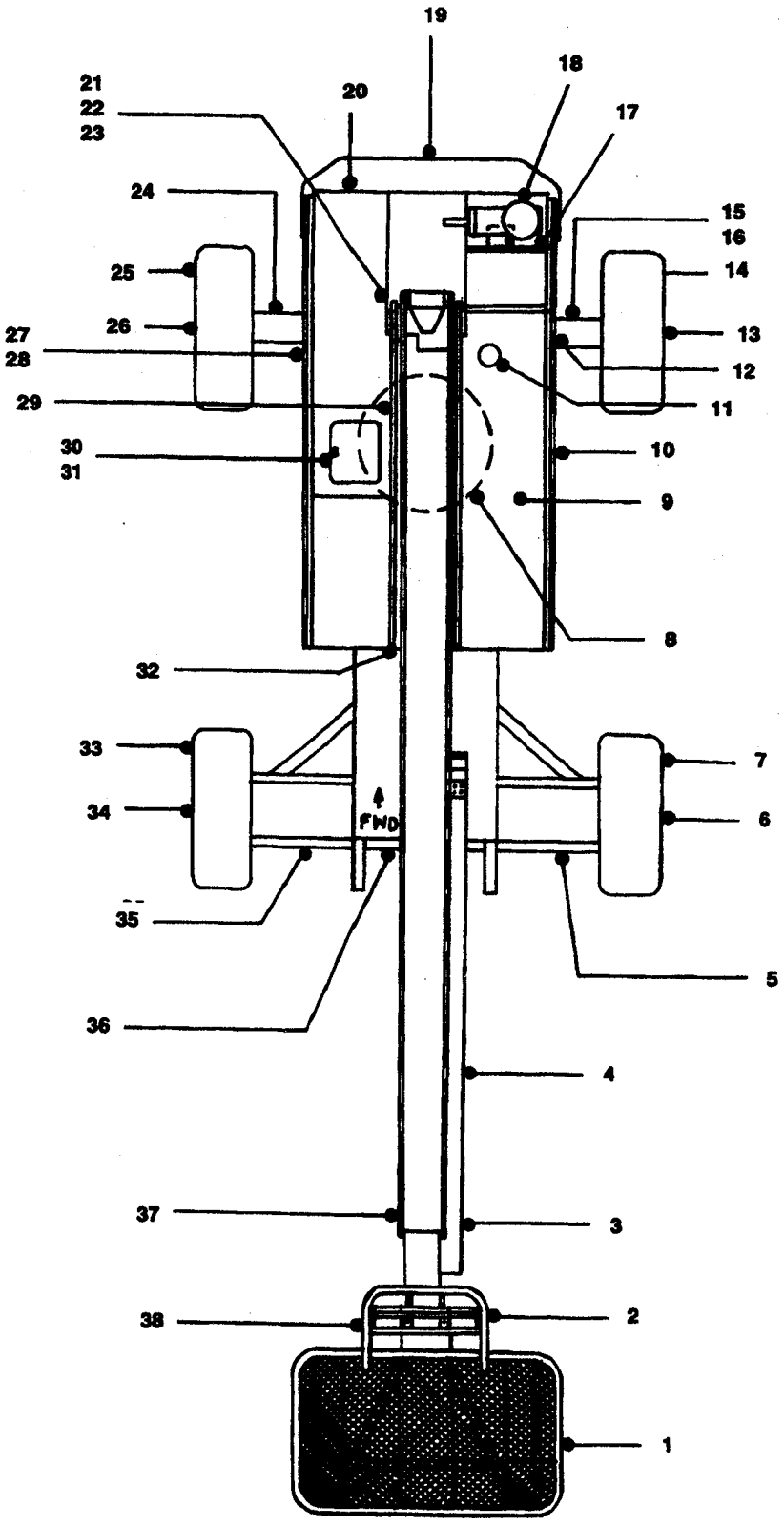
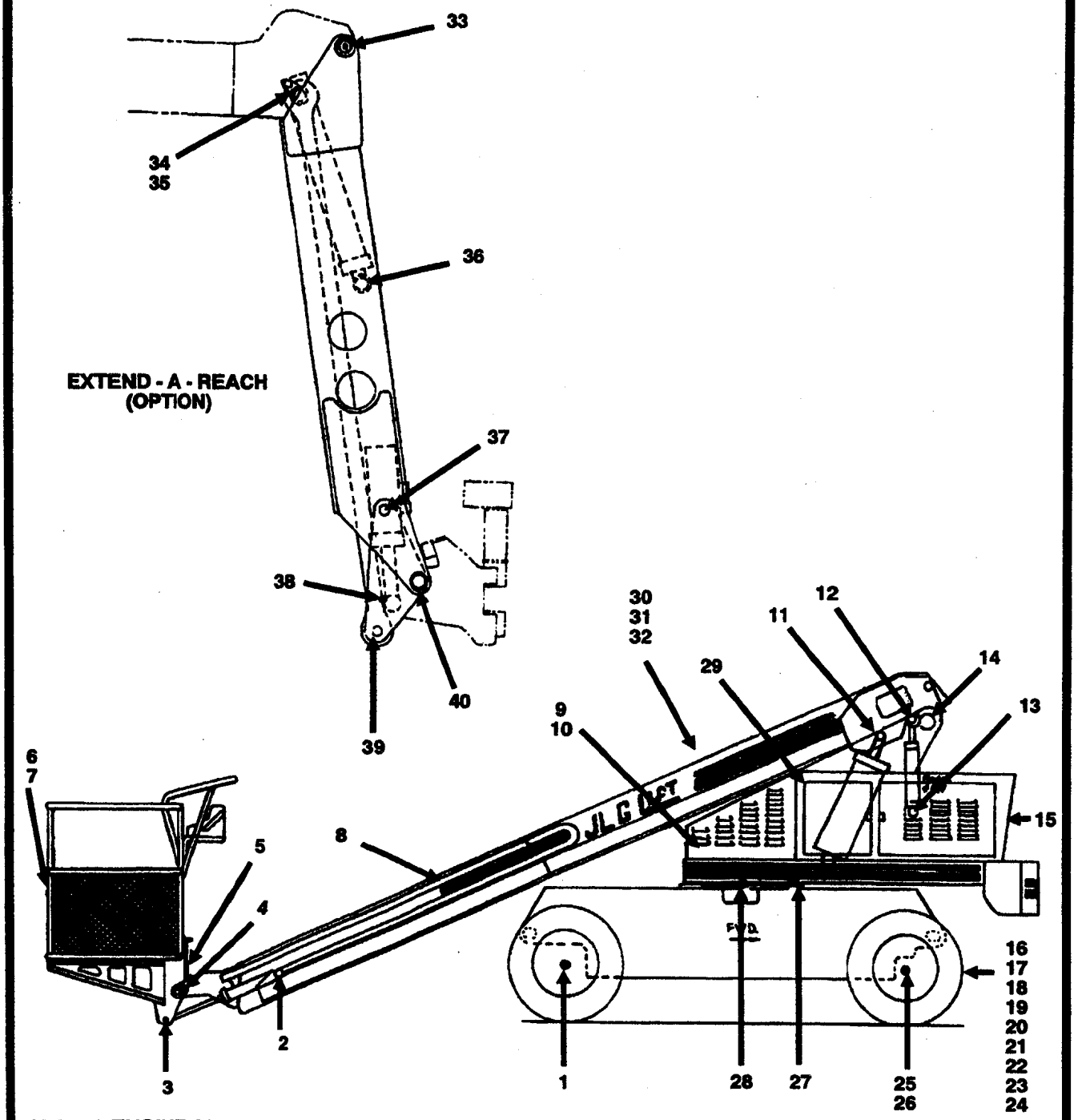


Figure 2-1. Daily Walk-Around Inspection (Sheet 1 of 2).

1. Platform Assembly - No loose or missing parts, no visible damage. Lockbolts in place. Footswitch in good working order, not modified, disabled or blocked.
2. Platform Control Console - Switches and levers return to neutral and properly secured, no loose or missing parts, no visible damage, placards secure and legible, control markings legible.
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, Right Rear - No visible damage, no evidence of leakage.
6. Drive Hub, Right Rear - No visible damage, no evidence of leakage.
7. Wheel/Tire Assembly, Right Rear - Properly secured, no loose or missing lugnuts, no visible damage.
8. Turntable Bearing and Pinion - No loose or missing hardware, no visible damage, evidence of proper lubrication. No evidence of loose bolts or looseness between bearing and structure.
9. Fuel Supply - Fuel filler cap secure. Tank, no visible damage, no evidence of leaks.
10. Hydraulic Pump - No loose or missing parts, no evidence of leakage.
11. Muffler and Exhaust System - Properly secured, no evidence of leakage.
12. Engine Oil Supply - Full mark on dipstick, fill cap secure.
13. Drive Hub, Right Front - No visible damage, no evidence of leakage. **(4 Wheel Drive)**
14. Wheel/Tire Assembly, Right Front - Properly secured, no loose or missing lugnuts, no visible damage.
15. Tie Rod and Steering Linkage, Right Front - No loose or missing parts, no visible damage. Tie rod end studs locked.
16. Steer Cylinder Assembly - Properly secured, no visible damage or signs of leakage, evidence of proper lubrication. Oscillating Axle - Properly secured, no loose or missing parts, no evidence of damage, evidence of proper lubrication. **(If Equipped)**
17. Cowling and Latches, Right Side - All cowling and latches in working condition, properly secured, no loose or missing parts.
18. Engine Air Filter - No loose or missing parts, no visible damage, element clean.
19. Battery - Proper electrolyte levels, cables tight, no visible damage or corrosion.
20. Ground Controls - Switches operable, no visible damage, placards secure and legible.
21. Lift Cylinder - Properly secured, evidence of proper lubrication.
22. Boom Pivot Shaft - Properly secured, evidence of proper lubrication.
23. Master Cylinder - Properly secured, evidence of proper lubrication.
24. Towing Package - No loose, damaged or missing parts, no visible damage. **(If Equipped)**
25. Wheel/Tire Assembly, Left Front - Properly secured, no loose or missing lugnuts, no visible damage.
26. Drive Hub/Brake/Motor, Left Front - No visible damage, no evidence of leakage. **(4 Wheel Drive)**
27. Auxiliary Power Pump - No loose or missing parts, no evidence of leakage, no damage wires.
28. Control Valves (Engine Compartment) - No visible damage, no evidence of leakage, no unsupported wires or hoses, no damaged wires.
29. Lift Cylinder - Properly secured, evidence of lubrication.
30. Hydraulic Oil Filter Housing - Housing secure, no visible damage, no evidence of leakage.
31. Hydraulic Oil Supply - Recommended oil level in sight glass. (Check with oil cold, systems shut down, machine in stowed position). Cap secure.
32. Turntable Lock - Operable, no loose or missing parts, no visible damage.
33. Wheel/Tire Assembly, Left Rear - Properly secured, no loose or missing lugnuts, no visible damage.
34. Drive Hub, Left Rear - No visible damage, no evidence of leakage.
35. Drive Motor and Brake, Left Rear - No visible damage, no evidence of leakage.
36. Frame - No visible damage, no loose or missing hardware (top and underside).
37. Boom Sections - No visible damage, wear pads secure.
38. Platform Pivot - Properly secured, evidence of lubrication.

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



30,31,32 ENGINE OIL, HYDRAULIC FILTER ELEMENTS, HYDRAULIC FLUID SIGHT GAUGE ARE ON OPPOSITE SIDE OF MACHINE.

Key to Lubrication:

MPG — Multi - Purpose Grease
EPGL — Extreme Pressure Gear Lubricant
EO — Engine Oil
E.A.R. — Extend - A - Reach
HO — Hydraulic Oil - Kendell Hydall 052 or equal

NOTE: IT WILL BE NECESSARY TO SWING BOOM OVER SIDE OF FRAME AND REMOVE FRAME SHIELD TO GAIN ACCESS TO GREASE FITTING #18.

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

INDEX NO.	COMPONENT	NUMBER/TYPE LUBE POINTS	LUBE & METHOD	INTERVAL (HOURS)
1.	Wheel Drive Hub	Fill Plug/1/2 Full	EPGL (SAE - 90)	*50/2000
2.	Slave Leveling Cylinder - Barrel End	1 Grease Fitting	MPG - Pressure Gun	100
3.	Slave Leveling Cylinder - Rod End	1 Grease Fitting	MPG - Pressure Gun	100
4.	Rotary Platform Control Stand (If Equipped) Platform Pivot	2 Grease Fittings 1 Grease Fitting	MPG - Pressure Gun MPG - Pressure Gun	100 100
5.	Rotary Worm Gear (If Equipped)	1 Grease Fitting	MPG - Pressure Gun	100
6.	Platform Hinges	2 Grease Fittings	MPG - Pressure Gun	100
7.	Platform Latch & Control Handle Slide Locks	N/A	SAE 10 - Oil Can	A/R
8.	Telescope Cylinder Sheave (If Equipped)	1 Grease Fitting	MPG - Pressure Gun	100
9.	Swing Bearing (Remote Access)	2 Grease Fittings	MPG - Pressure Gun	100
10.	Lift Cylinder - Barrel End (Remote Access)	1 Grease Fitting	MPG - Pressure Gun	100
11.	Lift Cylinder - Rod End	2 Grease Fittings	MPG - Pressure Gun	100
12.	Master Level Cylinder - Rod End	1 Grease Fitting	MPG - Pressure Gun	100
13.	Master Level Cylinder - Barrel End	1 Grease Fitting	MPG - Pressure Gun	100
14.	Boom Pivot Bushings	2 Grease Fittings	MPG - Pressure Gun	100
15.	Engine Crankcase	Fill Cap/Drain Plug	EO (Refer to Engine Manual)	**10/250
16.	Lockout Cylinder - Barrel End (If Equipped)	1 Grease Fittings	MPG - Pressure Gun	100
17.	Lockout Cylinder - Rod End (If Equipped)	2 Grease Fittings	MPG - Pressure Gun	100
18.	Oscillating Axle Pivot Pin (If Equipped)	1 Grease Fitting	MPG - Pressure Gun	****100
19.	Steer Cylinder	2 Grease Fittings	MPG - Pressure Gun	100
20.	Steer Spindle	2 Grease Fittings	MPG - Pressure Gun	100
21.	Steer Spindle - 4WD (If Equipped)	4 Grease Fittings	MPG - Pressure Gun	100
22.	Tie Rod Ends	2 Grease Fittings	MPG - Pressure Gun	100
23.	Tie Rods - Two Hitch (If Equipped)	4 Grease Fittings	MPG - Pressure Gun	100
24.	Towing Hitch (If Equipped)	1 Grease Fitting	MPG - Pressure Gun	100
25.	Wheel Bearings	N/A	MPG - Repack	500
26.	Wheel Drive Hubs - 4WD (If Equipped)	Fill Plug/1/2 Full	EPGL (SAE - 90)	*50/2000
27.	Swing Hub	Fill Plug	EPGL (SAE - 90)	*50/2000
28.	Swing Bearing & Pinion Gear Teeth	N/A	MPG - Brush	100
29.	Door & Access Panel Hinges	N/A	SAE 10 - Oil Can	A/R
30.	Hydraulic Filter Element, Return	N/A	Replacement Element	***40/250
31.	Hydraulic Filter Element, Inline	N/A	Replacement Element	***40/250
32.	Hydraulic Fluid (Oil)	Fill Plug/1/2 Full	HO	**10/2000
33.	E.A.R. Pivot (If Equipped)	2 Grease Fittings	MPG - Pressure Gun	100
34.	E.A.R. Lift Cylinder Barrel End (If Equipped)	1 Grease Fitting	MPG - Pressure Gun	100
35.	E.A.R. Link Boom End (If Equipped)	2 Grease Fittings	MPG - Pressure Gun	100
36.	E.A.R. Lift Cylinder Rod End (If Equipped)	1 Grease Fitting	MPG - Pressure Gun	100
37.	E.A.R. Slave Cylinder Pivot Points (If Equipped)	2 Grease Fittings	MPG - Pressure Gun	100
38.	E.A.R. Slave Cylinder Rod End (If Equipped)	1 Grease Fitting	MPG - Pressure Gun	100
39.	E.A.R. Link Platform End (If Equipped)	1 Grease Fitting	MPG - Pressure Gun	100
40.	E.A.R. Platform Pivot (If Equipped)	1 Grease Fitting	MPG - Pressure Gun	100

*Check oil level after every 50 hours of operation. Change oil after every 2000 hours of operation.
**Check oil level after every 10 hours of operation. Change oil after every 2000 hours of operation.
***Replace filter element after first 40 hours of operation , then after every 250 hours of operation thereafter.
****It will be necessary to swing the boom over side of frame and remove the frame shield to gain access to the grease fitting.

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

2-5. DAILY FUNCTIONAL CHECK.

A functional check of all systems should be performed, once the walk-around inspection is complete, in an area free of overhead and ground level obstructions. First, using the ground controls, check all functions controlled by the ground controls. Next, using the platform controls, check all functions controlled by the platform controls.

⚠ WARNING

TO AVOID SERIOUS INJURY, DO NOT OPERATE MACHINE IF ANY CONTROL LEVERS OR TOGGLE SWITCHES CONTROLLING PLATFORM MOVEMENTS DO NOT RETURN TO THE OFF POSITION WHEN RELEASED.

⚠ WARNING

TO AVOID COLLISION AND INJURY IF PLATFORM DOES NOT STOP WHEN A CONTROL SWITCH OR LEVER IS RELEASED, REMOVE FOOT FROM FOOTSWITCH OR USE EMERGENCY STOP TO STOP MACHINE.

Note

Perform checks from ground controls first, then from platform controls.

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

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

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

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.

Note

Step f. Applies Only To Extend-A-Reach Model 40H+6.

e. If equipped with Extend-A-Reach, raise and lower and swing Extend-A-Reach. (Cycle functions several times.) Check for smooth elevation and swing motion.

f. Telescope boom in and out several cycles at various degrees of elevation lengths. Check for smooth telescope operation.

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

h. Check platform level adjustment system for proper operation.

⚠ IMPORTANT

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

i. Swing turntable to LEFT and RIGHT a minimum of 45 degrees. Check for smooth motion.

j. With the aid of an assistant to monitor the CHASSIS OUT OF LEVEL indicator light on the platform control console, manually activate the indicator light by compressing on any one of the three tilt indicator mounting springs. If the light does not illuminate, shut down machine and contact a qualified service technician before continuing operation.

k. **Footswitch.**

⚠ IMPORTANT

FOOTSWITCH MUST BE ADJUSTED SO THAT FUNCTIONS WILL OPERATE WHEN PEDAL IS APPROXIMATELY AT ITS CENTER OF TRAVEL. IF SWITCH OPERATES WITHIN LAST 1/4" OF TRAVEL, TOP OR BOTTOM, IT SHOULD BE ADJUSTED.

(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 service 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 service 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 service technician.

l. **Auxiliary Power.**

Operate each function control switch (e.g. TELE, LIFT, SWING) to assure that they function in both directions using auxiliary power instead of engine power.

m. Ground Controls.

Place GROUND/PLATFORM SELECT switch to GROUND. Start engine. Platform controls should not operate.

2-6. TORQUE REQUIREMENTS.

The Torque Chart (Figure 2-3) 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 the preventive maintenance section in the Service and Maintenance manual, will enhance safety, reliability and performance of the machine.

SIZE	THD	BOLT DIA. (IN)	TENSILE STRESS AREA (SQ. IN.)	SAE GRADE 5 BOLTS				SAE GRADE 8 BOLTS				TORQUE FOR SLIDED TORQUE WRENCH SIZE		
				CLAMP LOAD (LBS.)	TORQUE (DRY) LB. IN.	TORQUE (LUB.) LB. IN.	TORQUE (LUB.) LB. FT.	CLAMP LOAD (LBS.)	TORQUE (DRY) LB. IN.	TORQUE (LUB.) LB. IN.	TORQUE (LUB.) LB. FT.	IN. OZS.	IN. LBS.	FT. LBS.
4	40	0.1120	0.00604	380	8	6	—	540	12	9	—	160	10	—
	48		0.00661	420	9	7	—	600	13	10	—	160	10	—
6	32	0.1380	0.00909	580	16	12	—	820	23	17	—	—	25	—
	40		0.01015	610	18	13	—	920	25	19	—	—	25	—
8	32	0.1640	0.01400	900	30	22	—	1260	41	31	—	—	25	—
	36		0.01474	940	31	23	—	1320	43	32	—	—	25	—
10	24	0.1900	0.01750	1120	43	32	—	1580	60	45	—	—	50	—
	32		0.02000	1285	49	36	—	1800	68	51	—	—	50	—
1/4	20	0.2500	0.0318	2020	96	75	105	2860	144	108	160	—	100	—
	28		0.0364	2320	120	86	135	3280	168	120	185	—	200	—
					LB. FT.	LB. FT.	LB. FT.		LB. FT.	LB. FT.	LB. FT.			
5/16	18	0.3125	0.0524	3340	17	13	19	4720	25	18	30	—	200	—
	24		0.0580	3700	19	14	21	5220	25	20	30	—	200	—
3/8	16	0.3750	0.0775	4940	30	23	35	7000	45	35	50	—	300	25
	24		0.0878	5600	35	25	40	7900	50	35	55	—	300	50
7/16	14	0.4375	0.1063	6800	50	35	55	9550	70	55	80	—	600	50
	20		0.1187	7550	55	40	60	10700	80	60	90	—	600	50
1/2	13	0.5000	0.1419	9050	75	55	85	12750	110	80	120	—	1200	100
	20		0.1599	10700	90	65	100	14400	120	90	135	—	1200	100
9/16	12	0.5625	0.1820	11600	110	80	120	16400	150	110	165	—	1200	100
	18		0.2030	12950	120	90	135	18250	170	130	190	—	1200	100
5/8	11	0.6250	0.2260	14400	150	110	165	20350	220	170	240	—	1800	150
	18		0.2560	16300	170	130	190	23000	240	180	265	—	1800	150
3/4	10	0.7500	0.3340	21300	260	200	285	30100	380	280	420	—	2400	200
	16		0.3730	23800	300	220	330	33600	420	320	465	—	2400	200
7/8	9	0.8750	0.4620	29400	430	320	475	41600	600	460	660	—	3600	300
	14		0.5090	32400	470	350	520	45800	660	500	725	—	3600	300
1	8	1.000	0.6060	38600	640	480	675	51500	900	680	990	—	7200	600
	12		0.6630	42200	700	530	735	59700	1000	740	1100	—	7200	600
1-1/8	7	1.1250	0.7630	42300	800	600	840	68700	1280	960	1400	—	7200	600
	12		0.8560	47500	880	660	925	77000	1440	1080	1575	—	7200	600
1-1/4	7	1.2500	0.9690	53800	1120	840	1175	87200	1820	1360	2000	—	—	Multi*
	12		1.0730	59600	1240	920	1300	96600	2000	1500	2200	—	—	Multi*
1-3/8	6	1.3750	1.1550	64100	1460	1100	1525	104000	2380	1780	2625	—	—	—
	12		1.3150	73000	1680	1260	1750	118100	2720	2040	3000	—	—	—
1-1/2	6	1.500	1.4050	78000	1940	1460	2025	126500	3160	2360	3475	—	—	Multi*
	12		1.5800	87700	2200	1640	2300	142200	3560	2660	3925	—	—	Multi*

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.


SAE Grade 5


SAE Grade 8

Figure 2-3. Torque Chart.

3-1. GENERAL.

⚠ IMPORTANT

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.

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 optimum lift service and safe operation.

3-2. PERSONNEL TRAINING.

a. The aerial platform is a personnel handling device; therefore it is essential that 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.

In addition, personnel operating the machine should be familiar with ANSI standard A92.5-1992. This standard contains sections outlining the responsibilities of the owners, users, operators, lessors and lessees concerning safety, training, inspection, maintenance, application and operation.

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 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 safety belt or other approved fall protection devices 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.

(8). Any other requirements of a specific job or machine application.

c. Training Supervision.

Training must be done 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 Distributor before proceeding.

Note

Manufacturer or distributor will provide qualified persons for training assistance with first unit(s) delivered and thereafter as requested by the user or his personnel.

3-3. OPERATING CHARACTERISTICS AND LIMITATIONS.

a. General.

A thorough knowledge of the operating characteristics and limitations of the machine is always the first requirement for any user, regardless of user's experience with similar 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.

c. Capacities.

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 smooth, firm and level surface.

(2). Load is within manufacturer's rated design capacity.

(3). All machine systems are functioning properly.

(4). Proper tire pressure.

(5). Machine is as originally equipped from JLG.

d. Stability.

This machine as originally manufactured by JLG when operated within its rated capacity on a smooth, firm and level supporting surface provides a stable aerial platform for all platform positions.

Machine stability is based on two positions which are called FORWARD STABILITY and BACKWARD STABILITY. The machines position of least forward stability is shown in Figure 3-1, and its position of least backward stability is shown in Figure 3-2.

⚠ WARNING

TO AVOID FORWARD OR BACKWARD UPSET, DO NOT OVERLOAD MACHINE OR OPERATE ON AN OUT-OF-LEVEL SURFACE.

3-4. CONTROLS AND INDICATORS.

Note

Some machines may be equipped with control panels that use symbols instead of words to indicate control functions. Refer to Table 3-1 for these symbols and the corresponding functions.

a. Ground Control Station - Standard Controls. (See Figure 3-3)

PERFORM PRE-OPERATIONAL CHECKS AND INSPECTIONS FROM THE GROUND CONTROL STATION. WHEN PERSONNEL ARE IN THE PLATFORM, OPERATION OF THE BOOM WILL ONLY BE PERFORMED WITH THE PERMISSION OF THE PLATFORM USER.

⚠ 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, center off, key activated PLATFORM/GROUND SELECT switch supplies power to the platform control console when positioned to PLATFORM. With the switch in GROUND position, power is shut off to the platform station, and only the controls on the ground control panel are operable.

Note

With the Platform/Key Select Switch in the center position, power is shut off to controls at both operating stations.

(3). Ignition.

The Models 40H - 40H+6 machines are 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 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 TELESCOPE control switch affords extension and retraction of the boom, when positioned to IN or OUT.

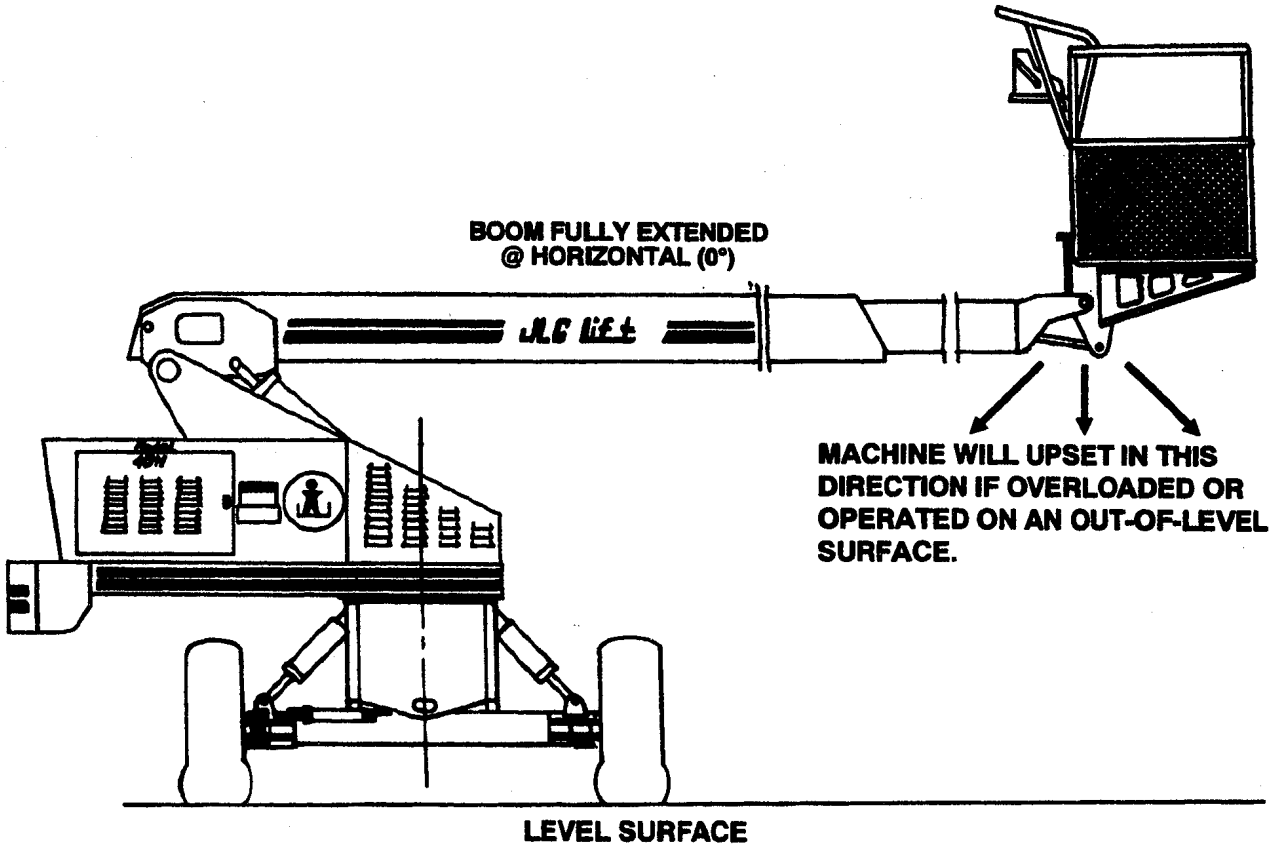


Figure 3-1. Position of Least Forward Stability, 40H.

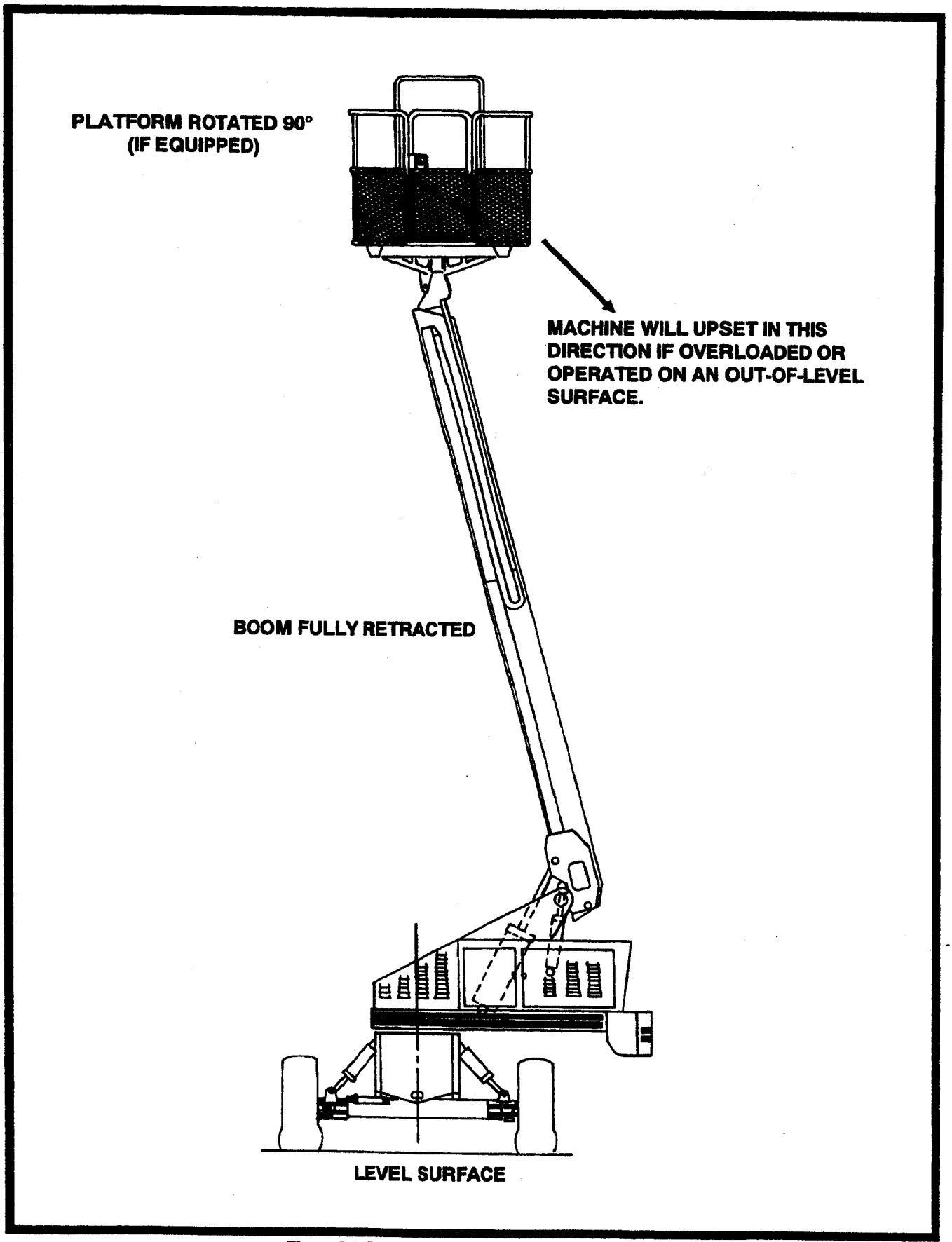


Figure 3-2. Position of Least Backward Stability, 40H.

⚠ CAUTION

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

(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).

(8). Glow Plug Switch.(Deutz 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 LP gas shut-off solenoid when placed in the "GASOLINE" position. This switch supplies electrical power to open the LP gas shut-off solenoid and closes the gasoline shut-off solenoid when positioned to the "LP" position.

(10). Circuit Breakers.

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

(a). 35 AMP - Master

(b). 10 AMP - High Engine

(c). 10 AMP - Choke

(d). 10 AMP - Ground Controls

(11). Extend-A-Reach. (If Equipped)

The EXTEND-A-REACH control switch allows the operator to raise or lower the snoot, as required.

(12). Hourmeter.

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

(13). Ammeter.

An ammeter, installed on the bracket 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.)

(14). 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.

(15). Temperature Gauge.

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

(16). Dual Fuel. (If Equipped with gas engine)

A three position, center off toggle switch supplies electrical power to open the gasoline shut-off solenoid and closes the LP gas shut-off solenoid when placed in the GASOLINE position. This switch supplies electrical power to open the LP gas shut-off solenoid and closes the gasoline shut-off solenoid when placed in the LP position.

(17). Choke. (If Equipped)

This pushbutton switch when depressed supplies power to the choke solenoid to enrich the fuel mixture for cold weather starting.

(18). Preheat. (If Equipped)

This pushbutton switch when depressed supplies power to the diesel engine glow plugs for cold weather start. See diesel engine operator manual for instructions.

A push button reset circuit breaker returns interrupted power to the designated function when depressed.

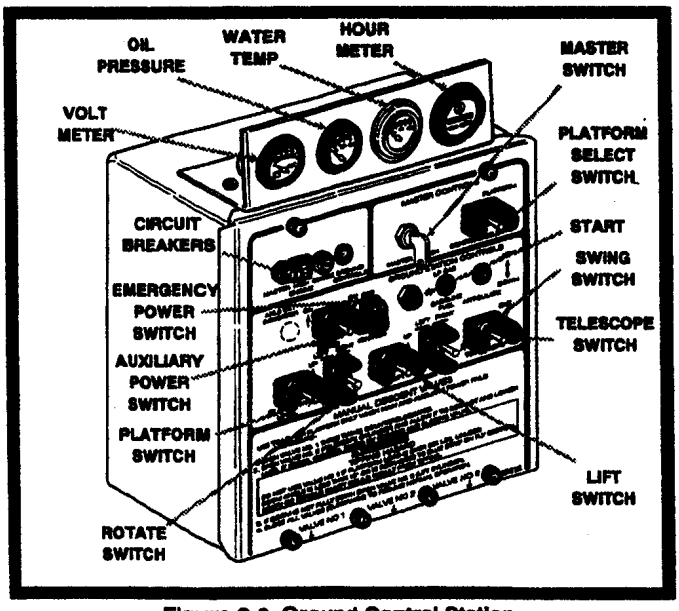


Figure 3-3. Ground Control Station.

(19). Manual Descent.

The MANUAL DESCENT valves should be used, in the event of a total power failure, to lower the work platform in the event of an emergency. The valves permit the use of gravity to retract and lower the boom. Refer to Section 6 for a complete description of the manaul descent systems, their application and their operation.

Note

Some machines may be equipped with control panels that use symbols instead of words to indicate control functions. Refer to Table 3-1 for these symbols and the corresponding functions.

b. Ground Control Station - Hydraulic Controls. (See Figure 3-4)

⚠ WARNING

DO NOT OPERATE FROM GROUND CONTROL STATION WITH PERSONNEL IN THE PLATFORM EXCEPT IN AN EMERGENCY.

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

Note

When the machine is shut down the ignition switch must be placed to the "off" position to prevent draining the battery.

(1). Ignition/Emergency Stop.

A combined IGNITION/EMERGENCY STOP switch. The guarded-type switch serves as the ignition switch when positioned to IGNITION ON and as an EMERGENCY STOP switch when the red guard is pushed down.

(2). Start Button.

A momentary contact, push button type switch that supplies electrical power to the starter solenoid, when the key switch and ignition switch are in the ON position, and the start button is depressed.

(3). Platform/Ground Select Switch.

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

Note

With the Platform/Key Select Switch in the center position, power is shut off to controls at both operating stations.

(4). Auxiliary Power Switch.

A toggle type AUXILIARY POWER control switch, 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 pump or engine fail during operation. The auxiliary pump enables the boom lift, telescope and swing functions to be operated.

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

Note

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 PLATFORM/GROUND SELECT switch to GROUND.

(d). Position IGNITION/EMERGENCY STOP switch to ON.

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

(f). Position AUXILIARY POWER switch to ON and hold.

(g). Release both AUXILIARY POWER switch and selected function switch.

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

Note

Switches controlling platform movement automatically return to the center off position when released.

⚠ WARNING

TO AVOID SERIOUS INJURY, DO NOT OPERATE MACHINE IF ANY CONTOL LEVERS OR TOGGLE SWITCHES CONTROLLING PLATFORM MOVEMENT DO NOT RETURN TO THE OFF POSITION WHEN RELEASED.

(5). Rotate. (If Equipped)

A three position ROTATE control switch permits rotation of the platform when positioned to LEFT or RIGHT.

(6). Level.

A three position LEVEL control switch allows the operator to compensate for any difference in the automatic self leveling system by positioning the control switch to UP or DOWN.

(7). Boom Lift.

The BOOM LIFT control knob provides raising and lowering of the boom when pushed in to UP or DOWN.

(8). Telescope.

The TELESCOPE control knob provides extension and retraction of the boom when pushed in to IN or OUT.

(9). Swing.

The SWING control knob provides 360 degree continuous (w/hydraulic swivel) turntable rotation. To activate SWING, position and hold in control knob to LEFT or RIGHT.

(10). High Engine Circuit Breaker.

A push button reset circuit breaker returns interrupted power to the designated function when depressed.

(11). Extend-A-Reach. (If Equipped)

The EXTEND-A-REACH control switch allows the operator to raise or lower the snoot, as required.

(12). Hourmeter.

The HOURMETER records the engine operating time.

(13). Voltmeter.

With the key switch to either 'on' position, and before starting the engine, the VOLTMETER indicates the condition of the battery. With the engine running, the VOLTMETER indicates output voltage of the alternator.

Normal reading for the voltmeter will be 12-14 volts with a properly charged or charging battery.

(14). Oil Pressure Gauge.

An OIL PRESSURE GAUGE provides an indication of the engine lubrication system pressure.

(15). Temperature Gauge. (water cooled engines only)

A coolant TEMPERATURE GAUGE provides a visual indication of engine coolant temperature.

(16). Dual Fuel. (If Equipped with gas engine)

A three position, center off toggle switch supplies electrical power to open the gasoline shut-off solenoid and closes the LP gas shut-off solenoid when placed in the GASOLINE position. This switch supplies electrical power to open the LP gas shut-off solenoid and closes the gasoline shut-off solenoid when placed in the LP position.

(17). Choke. (If Equipped)

This pushbutton switch, when depressed, supplies power to the choke solenoid to enrich the fuel mixture for cold weather starting.

(18). Preheat. (If Equipped)

This pushbutton switch, when depressed, supplies power to the diesel engine glow plugs for cold weather start. See diesel engine operator manual for instructions.

A push button reset circuit breaker returns interrupted power to the designated function when depressed.

(19). Manual Descent.

The MANUAL DESCENT valves should be used, in the event of a total power failure, to lower the work platform in the event of an emergency. The valves permit the use of gravity to retract and lower the boom. Refer to Section 6 for a complete description of the manaul descent systems, their application and their operation.

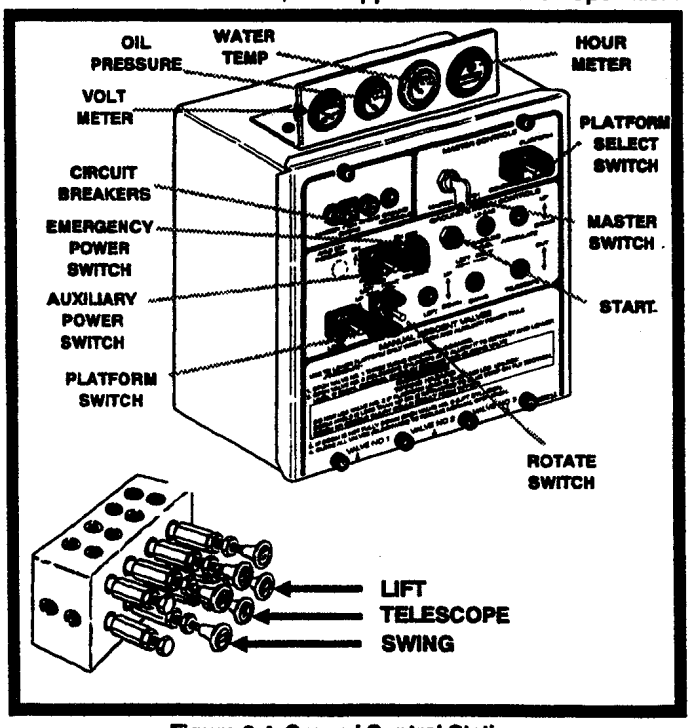


Figure 3-4. Ground Control Station. (All Hydraulic Controls)

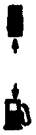
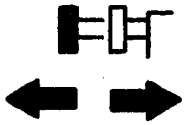
FUNCTION	SYMBOL	FUNCTION	SYMBOL
AUXILIARY POWER		DUAL FUEL	
AXLE EXTEND/RETRACT		ELECTRICAL HAZARD	
AXLE SET		ELECTRICAL PREHEAT/ CHOKE	
BROKEN CHAIN		EMERGENCY SHUT-OFF	
CAUTION		EMERGENCY SWITCH DOWN	
CAUTION		EMERGENCY SWITCH UP	
CHASSIS OUT LEVEL		ENGINE COLD START DEVICE (ETHER)	
CIRCUIT BREAKER		ENGINE DISTRESS	
CREEP		ENGINE SPEED	
DANGER		EXTEND-A-REACH	
DRIVE		FACTORY MUTUAL	

Table 3-1. Control Panel Symbols. (Sheet 1 of 3)

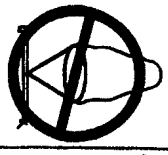
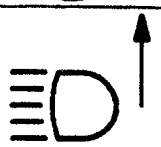
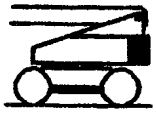
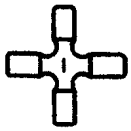
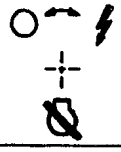
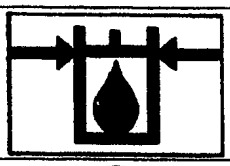
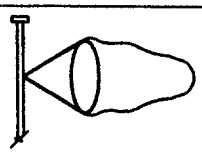
FUNCTION	SYMBOL	FUNCTION	SYMBOL
FAN		INDOOR USE ONLY	
FAST		LIGHT	
FUEL		LP/GAS	
GROUND CONTROL		LIFT	
HIGH ENGINE FUSE		TELESCOPE	
HORN		MANUAL	
HYD OIL		MANUAL DESCENT KNOB	
HYD OIL LEVEL (LOW)		MASTER SWITCH	
HYD OIL LEVEL (HIGH)		MASTER SWITCH OFF	
IGNITION		MAXIMUM WIND SPEED	
IMPORTANT		NO TIE DOWN/LIFT	

Table 3-1. Control Panel Symbols. (Sheet 2 of 3)

FUNCTION	SYMBOL	FUNCTION	SYMBOL
PLATFORM CONTROL		SWING	
PLATFORM LEVEL		TELESCOPE	
PLATFORM ROTATE		TIE-DOWN/LIFT	
PUMP VOLUME		"UL" DOUBLE E RATED	
SLOW		WARNING	
START		WHEEL SPEED	
STEER			

Table 3-1. Control Panel Symbols. (Sheet 3 of 3)

c. Platform Station. (Figure 3-5)
Machines built prior to September 1991.

Note

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

(1). Footswitch.

A safety feature makes it necessary to depress the footswitch to allow operation of the controls.

⚠ WARNING

TO AVOID SERIOUS INJURY, DO NOT REMOVE, MODIFY OR DISABLE THE FOOTSWITCH BY BLOCKING OR ANY OTHER MEANS.

⚠ IMPORTANT

FOOTSWITCH MUST BE ADJUSTED SO THAT FUNCTIONS WILL OPERATE WHEN PEDAL IS APPROXIMATELY AT ITS CENTER OF TRAVEL. IF SWITCH OPERATES WITHIN LAST 1/4" OF TRAVEL, TOP OR BOTTOM, IT SHOULD BE ADJUSTED.

(2). Ignition/Emergency Stop

An ON-OFF IGNITION/EMERGENCY STOP switch and a separate START push button on the platform console supply 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). Engine Speed Control.

A two-position ENGINE SPEED control switch affords the operator either high or low engine RPM as required for operation. When lifting boom, HIGH ENGINE will cut-out when boom lifts above horizontal.

(4). Drive Speed Control.

A two-position DRIVE SPEED control switch affords additional oil flow to the drive circuit when positioned to HIGH.

(5). Two-Speed Drive Motor.

A two-position TWO-SPEED DRIVE control switch shifts motor plates to high speed when positioned to HIGH.

Note

HIGH DRIVE SPEED, TWO SPEED DRIVE MOTOR and HIGH ENGINE SPEED are automatically cut out when boom is raised above horizontal.

(6). Glow Plug. (Diesel Engine Only)

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

⚠ WARNING

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

(7). Tilt Alarm Warning Light.

This red illuminator indicates that the chassis is on a slope. When this light is illuminated the operator should not swing, telescope, or raise the boom above horizontal. Drive machine with boom in the stowed position only.

Note

LIFT, SWING, and DRIVE control levers are spring-loaded and will automatically return to neutral (OFF) position when released.

(8). Lift Control.

The LIFT control lever permits raising and lowering of the boom when positioned to UP or DOWN, as desired.

(9). Swing Control.

The SWING control lever provides 360 degrees continuous swing when positioned to LEFT or RIGHT.

(10). Drive.

The DRIVE control lever permits traveling the machine either forward or backward when positioned to FORWARD or REVERSE.

Note

TELESCOPE, PLATFORM LEVEL and STEER control switches are spring-loaded and will automatically return to neutral (OFF) when released.

(11). Telescope Control.

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

(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 switch to UP or DOWN.

(13). Steer.

Positioning the STEER control switch RIGHT or LEFT enables steering the machine to the right or left respectively.

(14). Steer Wheel. (If Equipped)

Rotating the STEERING WHEEL RIGHT or LEFT enables steering the machine to the right or left respectively.

(15). Travel Warning Horn.

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

⚠ CAUTION

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

⚠ CAUTION

THE PRIMARY FUNCTION OF THE AUXILIARY POWER IS TO PROVIDE AUXILIARY POWER TO LOWER THE PLATFORM. DETERMINE REASON FOR POWER FAILURE AND HAVE THE PROBLEM CORRECTED BY A QUALIFIED SERVICE TECHNICIAN.

(16). Auxiliary Power.

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

The auxiliary pump functions to provide sufficient oil flow to operate the basic machine system should the main pump or engine fail. The auxiliary pump will operate boom lift, telescope and swing.

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

Note

On machines with four wheel steering, the drive controller will have a thumb-rocker switch controlling steer of rear wheels.

(17). 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.

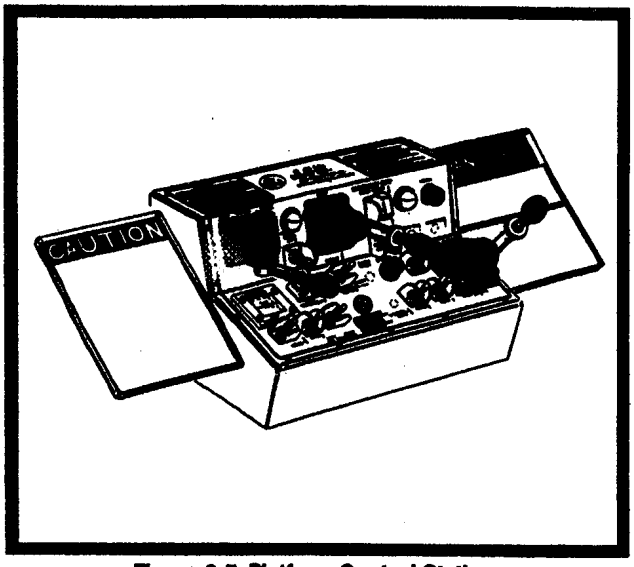


Figure 3-5. Platform Control Station.

d. Platform Station. (Figure 3-6 and 3-7). Machines with hydraulic controls and machines built with electrical controls from September 1991 to present.

Note

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

(1). Footswitch.

A safety feature makes it necessary to depress the footswitch to allow operation of the controls.

⚠ WARNING

TO AVOID SERIOUS INJURY, DO NOT REMOVE, MODIFY OR DISABLE THE FOOTSWITCH BY BLOCKING OR ANY OTHER MEANS.

⚠ IMPORTANT

FOOTSWITCH MUST BE ADJUSTED SO THAT FUNCTIONS WILL OPERATE WHEN PEDAL IS APPROXIMATELY AT ITS CENTER OF TRAVEL. IF SWITCH OPERATES WITHIN 1/4" OF TRAVEL, TOP OR BOTTOM, IT SHOULD BE ADJUSTED.

(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). Start Button.

The START button is a momentary contact, push button type switch. With the IGNITION/EMERGENCY STOP switch positioned up and the START button depressed, electrical power is supplied to the start solenoid.

(4). Warning Horn.

The HORN push button switch, when pressed, supplies electrical power to activate the horn. Also, anytime the boom is not in the stowed position, or the machine is on a 5 degree or more slope, the horn is activated.

(5). Tilt Alarm Warning Light. (Red)

A warning light on the console that lights when the chassis is on a severe slope (over 5 degrees).

⚠ CAUTION

IF TILT ALARM IS ON WHEN BOOM IS RAISED OR EXTENDED, RETRACT AND LOWER PLATFORM TO NEAR GROUND LEVEL, THEN REPOSITION MACHINE SO THAT IT IS LEVEL BEFORE EXTENDING OR RAISING BOOM.

Note

Toggle switches or control levers controlling platform movement automatically return to center OFF position when released.

⚠ WARNING

TO AVOID SERIOUS INJURY, DO NOT OPERATE MACHINE IF ANY TOGGLE SWITCHES OR CONTROL LEVERS CONTROLLING PLATFORM MOVEMENT DO NOT RETURN TO THE CENTER OFF POSITION WHEN RELEASED.

(6). Lift.

The LIFT controller (proportional controls) or LIFT control lever (hydraulic controls) provides raising and lowering of the boom when positioned to UP or DOWN.

(7). Telescope.

The TELESCOPE control switch or TELESCOPE control lever (hydraulic controls or proportional) provides extension and retraction of the boom when positioned to IN or OUT.

(8). Steer.

Positioning the STEER control switch RIGHT or LEFT enables steering the machine to the right or left respectively.

(9). Swing.

The SWING controller (proportional controls) or SWING control lever (hydraulic controls) provides 360 degrees continuous rotation when positioned to LEFT or RIGHT.

Note

When boom is above horizontal and any of the following switches, HIGH ENGINE, PUMP VOLUME, or WHEEL MOTOR SPEED, are positioned to HIGH, high speed functions are automatically cut out and the machine continues to operate at a lower speed.

⚠ CAUTION

DO NOT OPERATE MACHINE IF HIGH ENGINE SPEED, HIGH WHEEL MOTOR SPEED OR HIGH PUMP VOLUME OPERATE WHEN BOOM IS ABOVE HORIZONTAL.

(10). Engine Speed.

The two position HIGH ENGINE speed control switch allows the operator to select higher function speeds or higher drive speed when positioned to HIGH.

(11). Wheel Speed.

The two position WHEEL SPEED control switch allows the operator to select high wheel motor speed when positioned to HIGH. When used in conjunction with high HIGH ENGINE speed, it gives the machine a faster drive speed range.

⚠ CAUTION

TO AVOID PERSONNEL INJURY OR MACHINE DAMAGE, USE SLOW FUNCTION SPEED CONTROL WHEN POSITIONING PLATFORM IN CLOSE QUARTERS.

(12). Pump Volume.

The two-position PUMP VOLUME control switch allows the operator to select high pump flow, providing additional speed to all functions when positioned to HIGH. When used in conjunction with high HIGH ENGINE and WHEEL MOTOR SPEED switches, it gives the machine a faster drive speed range.

(13). Creep.

The CREEP control switch allows the operator to select a lower speed for DRIVE, LIFT, SWING and TELESCOPE, when positioned to ON.

(14). Drive.

The DRIVE controller (proportional controls) or DRIVE control lever (hydraulic controls) provides driving either forward or backward when positioned to FORWARD or REVERSE. The controller is ramped to allow infinitely variable driving speed between fast and slow.

(15). Platform Level.

The PLATFORM LEVEL control switch allows the operator to compensate for any difference in the automatic self-leveling system by positioning the switch to UP or DOWN.

(16). Platform Rotate. (If Equipped)

The PLATFORM ROTATE control switch allows operator to rotate the basket to the left or right when positioned to the desired direction.

(17). Extend-A-Reach.(If Equipped)

The EXTEND-A-REACH control switch allows operator to raise or lower the snoot, as required.

(18). Choke. (If Equipped)

A pushbutton switch supplies power to the choke solenoid for cold weather starting.

(19). Preheat. (If Equipped)

A pushbutton switch supplies power to the diesel engine heater for cold weather starting.

(20). Engine Distress Light. (Red)

This light notifies the operator that the engine has no oil pressure, is overheating (water or oil), or is not producing voltage. It will come on if the engine has stalled.

(21). Auxiliary Power.

The AUXILIARY POWER control switch energizes the electrically operated hydraulic pump, when actuated. Switch must be held ON for duration of auxiliary pump use.

The auxiliary pump functions to provide sufficient oil flow to operate the basic machine system should the main pump or engine fail. The auxiliary pump will operator boom lift, telescope and swing.

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

⚠ 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.

Note

The main function of the auxiliary power is to lower the platform in the event of primary power failure. Determine the reason for primary power failure and have the problem corrected by a qualified service technician.

Note

Auxiliary power is primarily intended for platform lowering in the event of primary power failure. However, auxiliary power may be used for platform positioning when operating in close quarters in the following sequence:

(a). Position PLATFORM/GROUND switch to PLATFORM.

(b). Position IGNITION/EMERGENCY STOP switch to ON.

(c). Depress and hold footswitch.

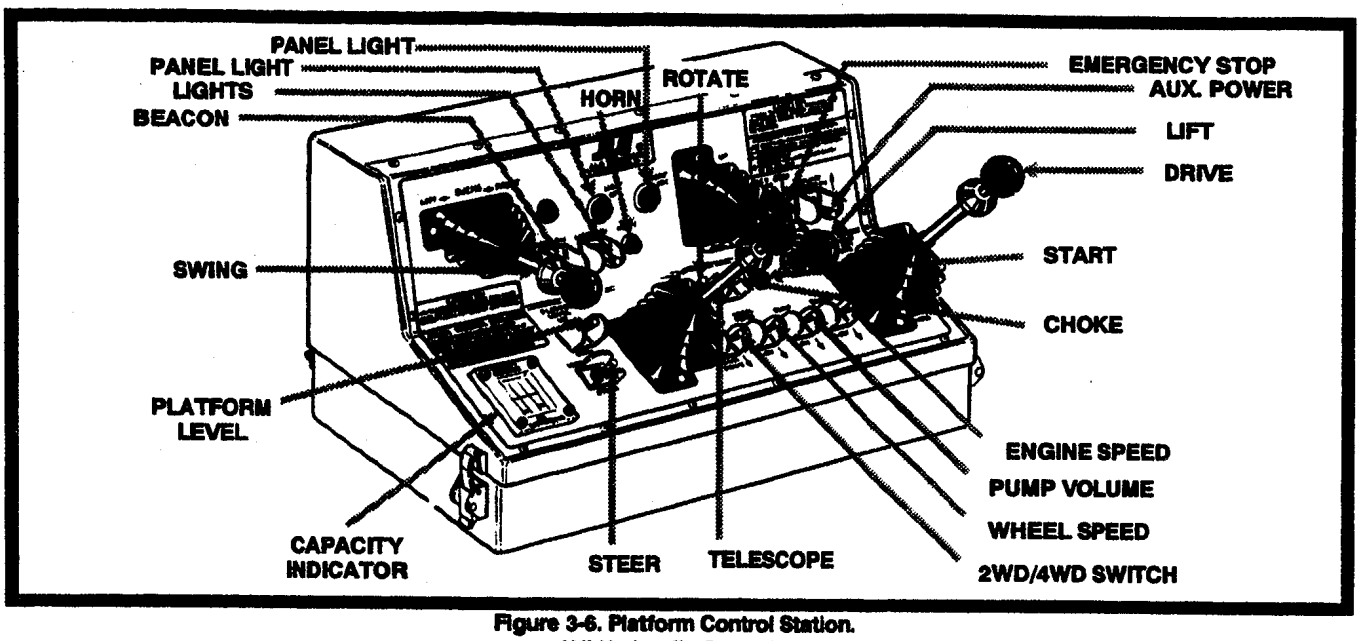


Figure 3-6. Platform Control Station. (All Hydraulic Controls)

(d). Operate approriate control switch or lever for desired function and hold.

(e). Position AUXILIARY POWER switch to ON and hold.

(f). Release AUXILIARY POWER switch, selected control switch or lever, and footswitch.

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

(22). 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.

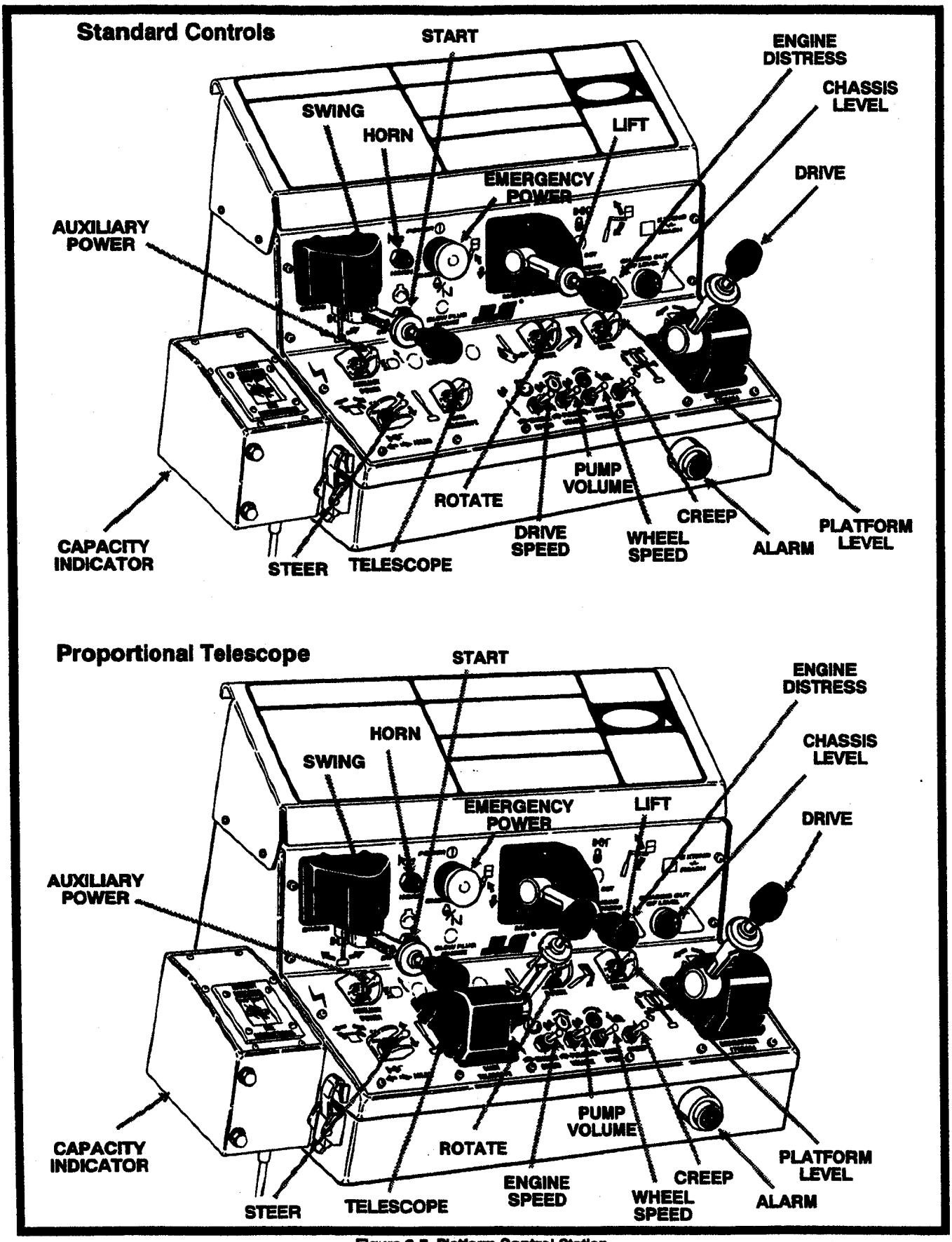


Figure 3-7. Platform Control Station.
(Standard Controls & Proportional Telescope)

4-1. DESCRIPTION.

This machine is a self-propelled aerial work 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 above ground level. The machine can be used to reach work areas 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, lower, extend or retract the boom; swing the boom to the left or right; and when equipped with a platform rotator, can rotate the platform around the boom tip. Standard boom swing is 360° continuous left and right of the stowed position. The machine has a Ground Control Station which will override the Platform Control Station. Ground Controls operate boom lift, telescope, swing, 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.

Instruction 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 warnings on the machine, the Operators and Safety Manual, the Service and Maintenance Manual and all jobsite and government rules and regulations. As with any type of machinery, the operator is very important to efficient and safe operation. Owner/user/operator must be familiar with Sections 6, 7, 8, 9, and 10 of ANSI A92.5-1992. These sections contain the responsibilities of the owner, users, operators, lessors and lessees concerning safety, training, inspection, maintenance, application and 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 modification to the machine be reported immediately to the machine owner or the jobsite 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, crane, 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 Control Station or the Ground Control Station. Follow the instructions placed at the control stations.

The JLG Lift is hydraulically powered using hydraulic motors and cylinders for 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 higher or lower speed is possible only when the Pump Volume control switch is used in conjunction with the function toggle switch. A foot operated switch in the platform must be depressed before any controls will function and provides a means of emergency stop when the operator's foot is removed from the footswitch.

The JLG Lift is a two wheel drive (four wheel drive available) machine with drive power being supplied by a hydraulic motor for each drive 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 any time the Drive or Swing controller (proportional controls) or control lever (hydraulic controls) is returned to the neutral position.

The unrestricted capacity of the JLG Lift is 500 lbs. (227 kg.) With a platform load of 500 lbs. (227 kg.) or less, the platform may be positioned anywhere the boom will reach.

The restricted capacity of the JLG Lift is 800 lbs. (363 kg.) The machine is equipped with a capacity indicator system incorporating a tri-colored tape design on the boom. A capacity indicator wheel revolves according to changes in boom angle to determine allowable platform load.

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 and transporting. 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 station.

a. Starting Procedure.

(1). Check engine oil. If necessary, add oil in accordance with the Engine Manufacturer's manual.

(2). Check fuel level. Add fuel if necessary.

(3). Check that air cleaner components are in place and securely fastened.

⚠ 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 2-3 MINUTES. IF ENGINE FAILS AFTER SEVERAL ATTEMPTS, REFER TO ENGINE MAINTENANCE MANUAL.

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

Note

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

(5). Turn key of SELECT switch to GROUND. Position IGNITION switch to ON, then depress and hold START button until engine starts.

⚠ CAUTION

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

(6). After engine has had sufficient time to warm up, position ENGINE SPEED/HIGH ENGINE 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/HIGH ENGINE control switch on platform control console to LOW.

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

(3). Position IGNITION switch to OFF.

(4). Turn key of MASTER switch to OFF position.

Note

Refer to Engine Manufacturer's manual for detailed information.

4-4. TRAVELING (Driving).

⚠ WARNING

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

TO AVOID LOSS OF TRAVEL CONTROL OR UPSET ON GRADES AND SIDESLOPES, DO NOT DRIVE MACHINE ON GRADES OR SIDESLOPES EXCEEDING THOSE SPECIFIED ON CAUTION PLACARD AT PLATFORM.

ASSURE THAT TURNTABLE LOCK IS ENGAGED BEFORE BEGINNING ANY EXTENDED TRAVELING. AVOID ANY TERRAIN FEATURES WHICH COULD CAUSE THE MACHINE TO UPSET.

TRAVEL GRADES IN "LOW" WHEEL MOTOR SPEED AND "HIGH" ENGINE SPEED ONLY. USE EXTREME CAUTION WHEN DRIVING IN REVERSE AND AT ALL TIMES WHEN DRIVING WITH PLATFORM ELEVATED AND ESPECIALLY WHEN DRIVING WITH ANY PART OF MACHINE WITHIN 6 FEET (1.83 M) OF AN OBSTRUCTION. DO NOT USE DRIVE TO MANEUVER PLATFORM CLOSE TO AN OBSTRUCTION...USE ONE OF BOOM FUNCTIONS.

⚠ CAUTION

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

a. Traveling Forward or Reverse.

(1). With engine running, depress footswitch and position DRIVE control to FORWARD and hold for the duration of forward travel desired.

Note

When DRIVE or STEER functions are being operated there is an interlock which prevents operation of boom functions.

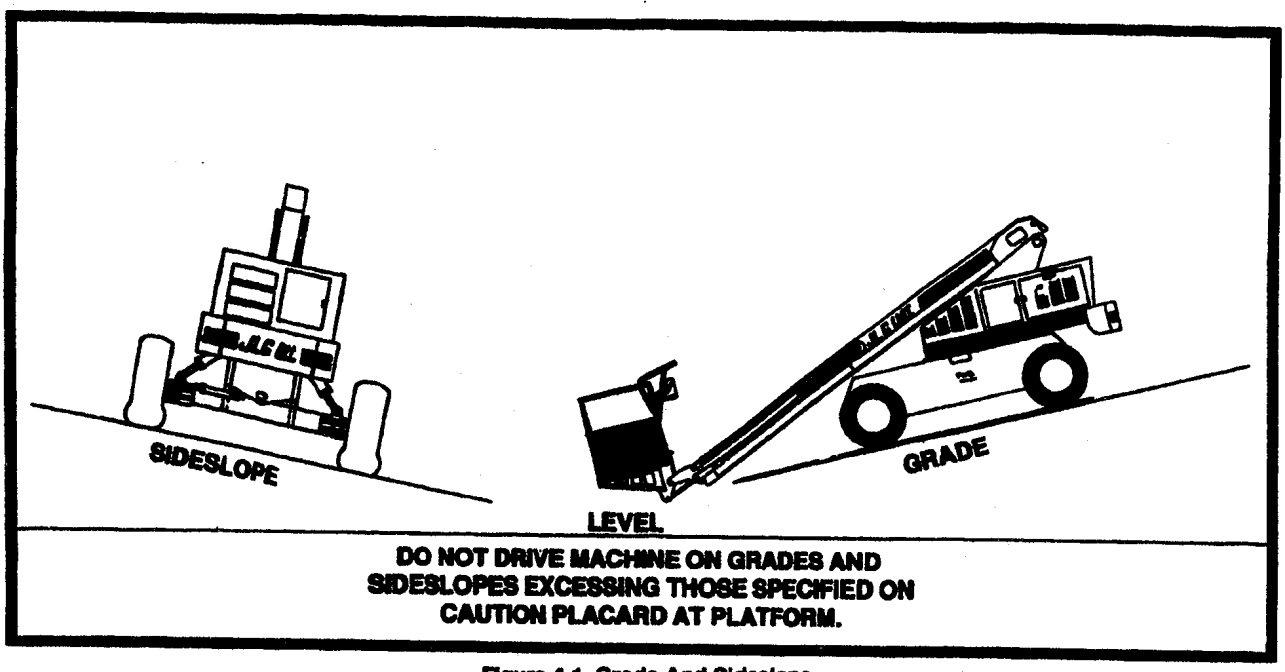


Figure 4-1. Grade And Sideslope.

(2). Depress footswitch and position DRIVE control to REVERSE and hold for duration of reverse travel desired.

(3). Position STEER control to RIGHT for traveling right and LEFT for traveling left.

(4). To obtain maximum travel speed, position the DRIVE controller to FAST and activate the following switches:

(a). Position ENGINE SPEED switch to HIGH.

(b). Position WHEEL SPEED switch to HIGH.

(c). Position PUMP VOLUME switch to HIGH.

(5). Prior to stopping the machine, position switches as follows:

(a). Position ENGINE SPEED switch to LOW.

(b). Position WHEEL SPEED switch to LOW.

(c). Position PUMP VOLUME switch to LOW.

(6). For going up grades, position switches as follows:

(a). Position ENGINE SPEED switch to HIGH.

(b). Position WHEEL SPEED switch to LOW.

(c). Position PUMP VOLUME switch to LOW.

Note

For smoother operation when driving with fully extended boom, place DRIVE control to SLOW before stopping.

4-5. STEERING.

To steer machine, position STEER control switch 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, ignition off, turntable locked.

b. Check that brakes hold machine in position.

c. Chock wheels front and rear.

d. Turn off SELECT switch and remove key.

4-7. PLATFORM.

a. 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. (227 kg) or less, distribute load uniformly on platform floor and proceed to work position.

b. Loading From Positions Above Ground Level.

Before loading weight to platform above ground level:

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

(2). If total weight in platform will be 500 lbs. (227 kg) or less, proceed with adding weight.

c. Platform Level Adjustment.

(1). Leveling UP. To raise platform, position PLATFORM LEVEL control switch UP and hold until platform is level.

(2). Leveling DOWN. To lower platform, position PLATFORM LEVEL control switch to DOWN and hold until platform is level.

d. Platform Rotation.

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

(2). To rotate platform to the right, PLATFORM ROTATE control is positioned to the RIGHT and held until desired 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 (5 DEGREES OR GREATER). DO NOT SWING, EXTEND OR RAISE BOOM ABOVE HORIZONTAL WHEN LIT.

DO NOT DEPEND ON TILT ALARM AS A LEVEL INDICATOR FOR THE CHASSIS. TILT ALARM INDICATES CHASSIS IS ON A SEVERE SLOPE (5 DEGREES 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.

TO AVOID UPSET, IF RED TILT ALARM WARNING LIGHT LIGHTS WHEN BOOM IS EXTENDED OR RAISED ABOVE HORIZONTAL, RETRACT AND LOWER PLATFORM TO NEAR GROUND LEVEL. THEN REPOSITION MACHINE SO THAT CHASSIS IS LEVEL BEFORE EXTENDING OR RAISING BOOM.

TO AVOID SERIOUS INJURY, DO NOT OPERATE MACHINERY IF ANY CONTROL LEVERS OR TOGGLE SWITCHES CONTROLLING PLATFORM MOVEMENT DO NOT RETURN TO THE OFF POSITION WHEN RELEASED.

TO AVOID A COLLISION AND INJURY IF PLATFORM DOES NOT STOP WHEN A CONTROL SWITCH OR LEVER IS RELEASED, REMOVE FOOT FROM FOOTSWITCH OR USE EMERGENCY STOP TO STOP MACHINE.

a. Swinging the Boom.

⚠ IMPORTANT

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

(1). To swing boom, position SWING controller (standard controls) or control lever (hydraulic controls) to RIGHT or LEFT for direction desired.

Note

When boom functions are being operated there is an interlock preventing the use of DRIVE and STEER functions.

b. Raising and Lowering the Boom.

To raise or lower the boom, position LIFT controller (standard controls) or control lever (hydraulic controls) to UP or DOWN and hold until desired height is reached.

c. Telescoping the Boom.

To extend or retract boom, position TELESCOPE control switch or control lever (hydraulic controls) to IN or OUT and hold until platform reaches desired position.

4-9. SHUT DOWN AND PARK.

a. Drive machine to a reasonably well protected area.

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

c. Assure main 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 3-5 minutes at LOW setting to permit faster reduction of engine internal temperatures.

e. At Ground Controls, turn KEY SELECT switch to (center) OFF. Position EMERGENCY STOP switch (down) to OFF. Remove key.

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

4-10. TIE DOWN AND LIFTING.

a. When transporting machine, 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 slab, one at each corner of the 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, and that the turntable lock pin is engaged.

Note

Crane and lifting devices, chains, slings, etc., must be capable of handling at least:

40H - 2W/D - 12,100 lbs. (5,489 kg.)
40H - 4W/D - 12,500 lbs. (5,670 kg.)
40H+6 - 13,850 lbs. (6,283 kg.)

⚠ IMPORTANT

ABOVE ARE MINIMUM WEIGHTS. CHECK WEIGHT OF UNIT PRIOR TO LIFTING.

Note

Lifting eyes are provided at the front and rear in the frame slab. 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.

4-11. OSCILLATING AXLE LOCKOUT TEST (If equipped).

⚠ IMPORTANT

LOCKOUT SYSTEM TEST MUST BE PERFORMED EVERY THREE MONTHS, ANY TIME A SYSTEM COMPONENT IS REPLACED OR WHEN IMPROPER SYSTEM OPERATION IS SUSPECTED.

Note

Ensure boom is fully lowered and centered between drive wheels prior to beginning lockout cylinder test.

a. Place a 6 in. (15.2 cm) high block with ascension ramp in front of left front wheel.

b. From platform control station, activate machine hydraulic system.

c. Place ENGINE SPEED, WHEEL SPEED AND PUMP VOLUME to their respective LOW positions.

d. Place DRIVE control lever to FORWARD position and carefully drive machine up ascension ramp until left front wheel is on top of block.

e. Carefully activate SWING control lever and position boom over right side of machine.

f. With boom over right side of machine, place DRIVE control lever to REVERSE and drive machine off of block and ramp.

g. Have an assistant check to see that left front wheel remains locked in position off of ground.

h. Carefully activate SWING control lever and return boom to stowed position (centered between drive wheels). After boom reaches stowed position, activate DRIVE and lockout cylinders should release and allow wheel to rest on ground.

Note

Earlier machines may not require activating drive to release lockout cylinders.

i. Place the 6 inches (15.2 cm) high block with ascension ramp in front of right front wheel.

j. Place DRIVE control lever to FORWARD and carefully drive machine up ascension ramp until right front wheel is on top of block.

k. Carefully activate SWING control lever and position boom over left side of machine.

l. With boom over left side of machine, place DRIVE control lever to REVERSE and drive machine off of block and ramp.

m. Have an assistant check to see that right front wheel remains locked in position off of ground.

n. Carefully activate SWING control lever and return boom to stowed position (centered between drive wheels). After boom reaches stowed position, activate DRIVE and lockout cylinders should release and allow wheel to rest on ground.

Note

Earlier machines may not require activating drive to release lockout cylinders.

o. If lockout cylinders do not function properly, have qualified personnel correct the malfunction prior to any further operation.

4-12. STEER/TOW SELECTOR. (If Equipped)

⚠ WARNING

DO NOT ATTEMPT TO TOW MACHINE UNLESS EQUIPPED WITH COMPLETE TOW PACKAGE FROM MANUFACTURER.

A push-pull type selector valve located adjacent to the steer cylinder assembly and linkage, regulates oil flow in the steer circuit for steering and towing applications. When steering the unit (self-propelled operation) the valve knob is pushed IN. When towing the unit the valve knob is pulled OUT to the float position.

4-13. TOWING.(If equipped.)

⚠ WARNING

ALWAYS SECURE TURNTABLE WITH BOOM OVER REAR DRIVE WHEELS BEFORE TOWING MACHINE (TURNTABLE CAN BE LOCKED OVER FRONT OR REAR OF CHASSIS). NEVER TOW MACHINE WITH PERSONNEL OR NON-STANDARD EQUIPMENT ON PLATFORM OR ANY OTHER AREA OF MACHINE. TOWING IS PERMITTED ONLY FOR EMERGENCY TRAVEL ON JOBSITE. NO HIGHWAY TOWING PERMITTED. DO NOT TO W AT SPEEDS OVER 5.0 MPH (8.05 KMH.)

⚠ WARNING

TOWING VEHICLE MUST BE ABLE TO CONTROL MACHINE ON ANY GRADE ON WHICH IT IS TOWED.

a. Prior to towing the machine, complete the following:

⚠ CAUTION

DO NOT TOW MACHINE WITH ENGINE OPERATING OR DRIVE HUBS ENGAGED.

(1). Retract, lower and position boom over rear drive wheels in line with direction of travel; lock turntable.

(2). Connect towbar to steering hitch with attach pins, and towbar to towing vehicle.

(3). Disconnect drive hubs by inverting disconnect cap. (See Figure 4-2.)

(4). Actuate steer/tow selector valve for towing; pull valve knob OUT to float position. (This opens the steer circuit to reservoir, allowing the steer cylinder rod free travel.) The machine is now in the towing mode.

b. After towing the machine, complete the following:

(1). Actuate steer/tow selector valve for steering; push valve knob IN to the actuated position.

(2). Reconnect drive hubs by inverting disconnect cap. (See Figure 4-2.)

(3). Disconnect towbar from steering hitch and from towing vehicle. The machine is now in the driving mode.

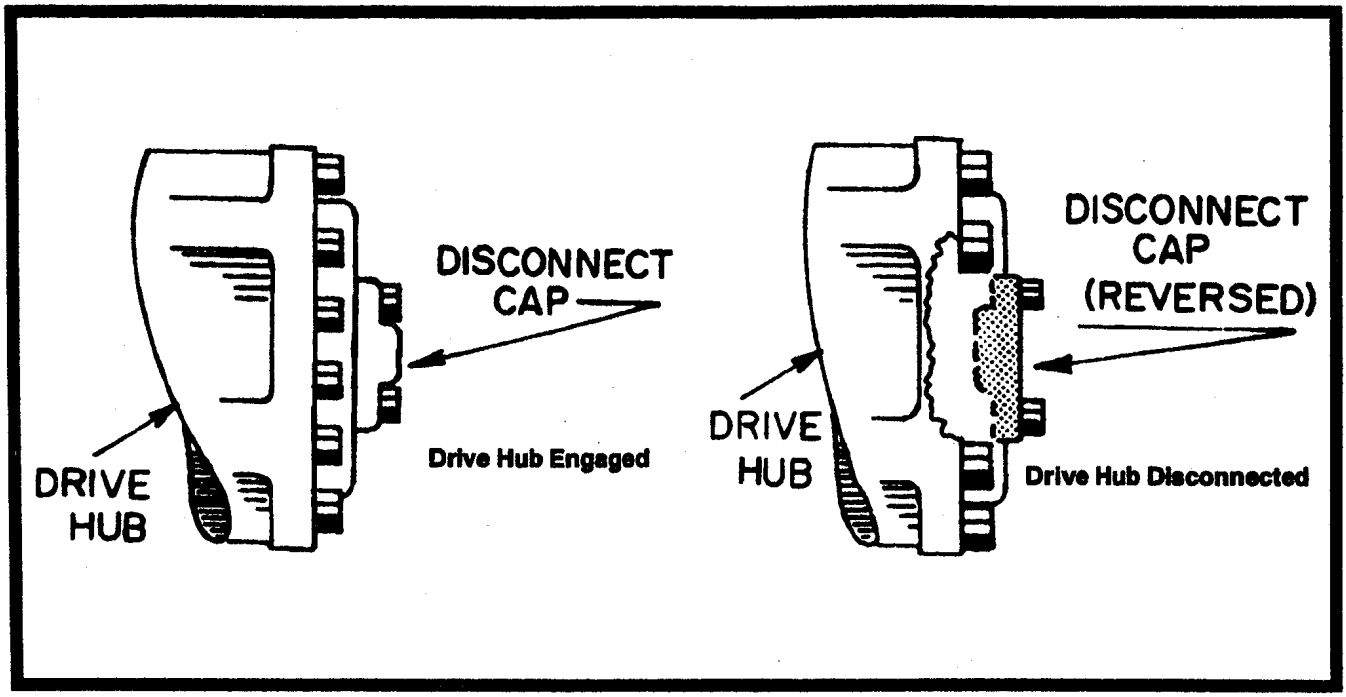


Figure 4-2. Drive Disconnect Hub.

5-1. ROTATOR.

A platform rotator allows for platform rotation 90 degrees from center in either direction. The rotator is designed to give added jobsite versatility, and the platform should be returned to the center position for all other operations.

5-2. DUAL FUEL SYSTEM. (Gas engine only)

a. Description.

The dual fuel system enables the standard gasoline engine to run on either gasoline or LP gas. The system includes pressurized cylinders mounted on the tuntable, and the valves and switches needed to switch the fuel supply from gasoline to LP gas or from LP gas to gasoline.

A three position, center off DUAL FUEL toggle switch at ground control station supplies electrical power to open the LP gas shut-off solenoid and closes the LP gas shut off solenoid when positioned to the GASOLINE position. This switch supplies electrical power to open the LP gas shut-off solenoid and closes the gasoline shut-off solenoid when positioned to the LP position.

⚠ CAUTION

IT IS POSSIBLE TO SWITCH FROM ONE FUEL SOURCE TO THE OTHER WITHOUT ALLOWING THE ENGINE TO STOP. EXTREME CARE MUST BE TAKEN AND THE FOLLOWING INSTRUCTIONS MUST BE FOLLOWED.

b. Changing From Gasoline to LP Gas.

(1). Start engine from Ground Control Station.

(2). Open hand valve on LP gas supply tank by turning counterclockwise.

⚠ CAUTION

BE SURE GASOLINE IS EXHAUSTED BEFORE SWITCHING TO LP GAS. SEE STEP (3) BELOW.

(3). While engine is operating, place DUAL FUEL switch at Ground Control to center OFF position. Allow engine to operate without load, until engine begins to 'stumble' from lack of gasoline.

(4). As engine begins to 'stumble', place switch to LP position, allowing LP gas to flow to the fuel regulator.

c. Changing From LP Gas to Gasoline.

(1). With engine operating on LP under a no-load condition, position DUAL FUEL switch at Ground Control Station to GASOLINE position.

(2). If engine "stumbles" because of lack of gasoline, place switch to LP position until engine regains smoothness, then return switch to GASOLINE position. Repeat as necessary until engine runs smoothly on gasoline.

(3). Close hand valve on LP gas supply tank by turning clockwise.

5-3. OSCILLATING AXLE.

The oscillating front axle is attached to the frame by a pivot pin which allows all four wheels to remain on the ground when traveling on rough terrain. The oscillating axle also incorporates two lockout cylinders connected between the frame and each wheel end. The lockout cylinders permit axle oscillation when the boom is centered over the rear, and lock and hold the axle when the boom is moved off center.

5-4. TOW PACKAGE.

The tow package is required when it is necessary to move the machine without use of the drive and steer system.

⚠ WARNING

TOWING IS PERMITTED ONLY FOR EMERGENCY TRAVEL ON JOBSITE. NO HIGHWAY TOWING IS PERMITTED.

The towing package consists of the tow hitch attached to the front axle, a tie rod which attaches to the tow hitch and the steering spindle, a tow bar which connects to the tow hitch and the towing vehicle, and a tow/steer selector valve which permits the steering system to 'float free' when towing the machine.

5-5. WORK PLATFORMS.

The machine is available with several different sized platforms. The following sizes are available:

40H	40H+6
3' X 6'	3' X 4'
3' X 8'	3' X 5'
3' X 5' Low Mount	3' X 6'
3' x 6' Low Mount	xxx
3' x 8' Low Mount	xxx

5-6. FOUR WHEEL DRIVE.

Provides drive motors, brakes and torque hubs at each wheel to give extra traction. The system is a full time four wheel drive system and is available with either a fixed or oscillating front axle.

5-7. COLD START KIT. (Diesel Engine)

A cold weather start system in the diesel engine functions automatically to provide starting fluid, as necessary, to the engine. A sensor switch mounted on the engine will permit ether injection when the engine is cold. The sensor will not permit ether injection to a warm engine.

5-8. TRAVEL ALARM.

A 12-volt alarm horn, mounted on the turntable, provides an audible warning when the machine is in the travel (DRIVE) mode. It will function in FORWARD or REVERSE to warn jobsite personnel the machine is traveling.

5-9. TILT ALARM.

Senses when the machine is out of level in any direction approximately 3 degrees and illuminates a warning light at the platform control station and sounds the machines horn, signaling the operator. A second switch mounted on the machine senses when the machine is out of level 5 degrees and will cut out two speed drive when activated.

5-10. ELECTRIC GENERATOR.

An electric generator mounted on the machine functions to supply electrical power to the platform. This device will provide enough power to run assorted power tools.

5-11. FOAM FILLED TIRES.

Eliminates flats by filling tires with polyurethane foam. For use where sharp objects are frequently encountered on operating surface of jobsite.

5-12. ROTATING BEACON.

An amber or red rotatating beacon may be installed on the hood or platform, and can be controlled by a two position toggle switch mounted on the platform control console. When the switch is placed in the ON position, the light is activated and provides a visual warning to the machines operation.

5-13. CYLINDER BELLOWS.

A one piece accordion shaped rubber bellows 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 affords 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.

5-14. 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.

5-15. 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 pads, 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, heavy duty reservoir breather, an engine air cleaner and control console cover, as required.

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. EMERGENCY TOWING PROCEDURES.

a. Towing this machine is prohibited, unless properly equipped. However, provisions for moving the machine, in case of a malfunction or power failure, have been incorporated. The following procedures are to be used ONLY for emergency movement to a suitable maintenance area.

(1). Chock wheels securely.

(2). Disengage drive hubs by reversing disconnect caps.

(3). Connect suitable equipment, remove chocks, and move machine.

b. After moving machine, complete the following procedures:

(1). Position machine on a firm and level surface.

(2). Chock wheels securely.

(3). Engage drive hubs by reversing disconnect caps on hubs.

(4). Remove chocks from wheels as needed.

6-3. EMERGENCY CONTROLS AND THEIR LOCATIONS.

a. Emergency Stop Switches.

(1). Installed on the Ground Controls, this toggle switch has a red guard attached to it. When 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 INSTRUCTIONS ARE IN PLACE AND LEGIBLE.

(2). Installed on the Platform Console, this round red switch is pulled up for normal machine functions. In an emergency, push the button to the down position with your palm and machine will immediately stop.

b. Ground Control Station.

The Ground Control Station is located on the right front side of the turntable. The controls on this panel provide the means for overriding the platform control, and for controlling the platform level, boom and swing functions from the ground. Place the KEY SELECT switch to GROUND position and operate the proper switch to lift, swing, or telescope the boom, or level the platform.

c. Auxiliary Power.

A toggle type auxiliary power control switch is located on the platform control station and another is located on the ground control station. Operation of either switch turns on the electrically driven auxiliary hydraulic pump. This should be used in case of failure of the main power plant. The auxiliary pump will operate boom lift, telescope and swing. To activate auxiliary power:

(1). Position PLATFORM/GROUND SELECT KEY SWITCH to PLATFORM.

(2). Position IGNITION switch to ON.

(3). Depress and hold footswitch.

(4). Operate appropriate control switch, lever or controller for desired function and hold.

(5). Position AUXILIARY POWER switch to ON and hold.

(6). Release AUXILIARY POWER switch, selected control switch, lever or controller, and footswitch.

(7). Position IGNITION switch to OFF.

To activate auxiliary power from the ground control station:

(1). Position PLATFORM/GROUND SELECT KEY SWITCH to GROUND.

(2). Position IGNITION switch to ON.

(3). Operate appropriate control switch or controller for desired function and hold.

(4). Position AUXILIARY POWER switch to ON and hold.

(5). Release AUXILIARY POWER switch, and appropriate control switch or controller.

(6). Position IGNITION switch to OFF.

d. Manual Descent and Retraction. (See Figure 6-1.)

The manual descent valves are used, in the event of total power failure, to retract and lower the boom using gravity. The manual descent valves are located on the right side 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.

6-4. EMERGENCY OPERATION.

a. Use of Ground Controls.

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. Operator Unable to Control Machine.

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

⚠ WARNING

DO NOT OPERATE WITH PRIMARY POWER SOURCE (ENGINE OR ELECTRIC MOTOR) IF PERSONS ARE PINNED OR TRAPPED. USE AUXILIARY POWER INSTEAD.

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

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

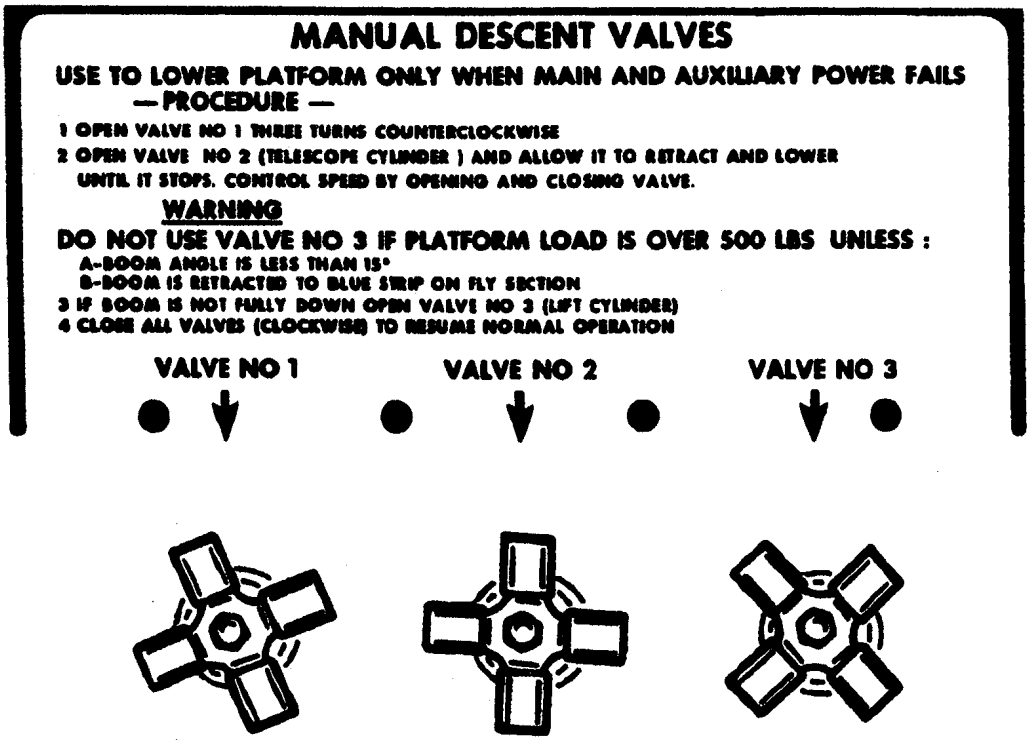


Figure 6-1. Manual Descent Valves.

d. Platform or Boom Caught Overhead.

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.

e. Post Incident Inspection and Repair.

Following any incident, thoroughly inspect the machine and test all functions first from the ground controls, then from the platform controls. Do not lift above 10 feet (3.05 m) until you are sure that all damage has been repaired, if required, and that all controls are operating correctly.

6-5. INCIDENT NOTIFICATION.

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 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

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