

OPERATORS & SAFETY

Models
10VP
15VP
20VP

3120727

April 20, 2000



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**CALIFORNIA PROPOSITION 65
BATTERY WARNING**

**Battery posts,
terminals and related
accessories contain
lead and lead compounds,
chemicals known to the
State of California
to cause cancer and
reproductive harm.**

**WASH HANDS
AFTER HANDLING !**

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 SERIOUS INJURY OR DEATH 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 SERIOUS INJURY OR DEATH.

WARNING

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

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.

Also in this Manual "Notes:" are used to provide information of special interest.

IMPORTANT

JLG INDUSTRIES, INC. MAY HAVE ISSUED SAFETY RELATED BULLETINS FOR YOUR JLG PRODUCT. CONTACT JLG INDUSTRIES, INC. OR THE LOCAL AUTHORIZED JLG DISTRIBUTOR FOR INFORMATION CONCERNING SAFETY RELATED BULLETINS WHICH MAY HAVE BEEN ISSUED FOR YOUR JLG PRODUCT. ALL ITEMS REQUIRED BY THE SAFETY RELATED BULLETINS MUST BE COMPLETED ON THE AFFECTED JLG PRODUCT.

Due to the continuous product improvements, JLG Industries, Inc. reserves the right to make specification changes without prior notification. Contact JLG Industries, Inc. for updated information.

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INTRODUCTION - OPERATION/SAFETY PRECAUTIONS

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

READ & HEED!

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

The listing of these requirements shall not relieve the owner/user of the responsibility and obligation to determine all applicable laws and regulations and their exact wording and requirements, and to comply with the requirements. Nor shall the listing of these requirements constitute an assumption of responsibility 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. Load limits specified by the manufacturer shall not be exceeded.
6. Instruction and warning placards must be legible.
7. 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.
8. Aerial lifts shall not be used near electric power lines unless the lines have been deenergized or adequate clearance is maintained (see OSHA 29 CFR 1910.67 and 1926.400).
9. Employees using aerial lifts shall be instructed how to recognize and avoid unsafe conditions and hazards.
10. Ground controls shall not be operated unless permission has been obtained from personnel in the platform, except in case of an emergency.
11. Regular inspection of the job site and aerial lift shall be performed by competent persons.
12. Personnel shall always stand on the floor of the platform, not on boxes, planks, railing or other devices for work positioning.

*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 1926.453. Consult the current regulations for the exact wording and full text of the requirements and contact the closest Federal OSHA office for specific interpretations.

INTRODUCTION - MAINTENANCE SAFETY PRECAUTIONS

A. GENERAL

This section contains the general safety precautions which must be observed during maintenance of the aerial platform. It is of utmost importance that maintenance personnel pay strict attention to these warnings and precautions to avoid possible injury to themselves or others or damage to the equipment. A maintenance program must be established by a qualified person and must be followed to ensure that the machine is safe to operate.

⚠ WARNING

MODIFICATION OF THE MACHINE WITHOUT CERTIFICATION BY A RESPONSIBLE AUTHORITY THAT THE MACHINE IS AT LEAST AS SAFE AS ORIGINALLY MANUFACTURED IS A SAFETY VIOLATION.

The specific precautions to be observed during machine maintenance are inserted at the appropriate point in the manual. These precautions are, for the most part, those that apply when servicing hydraulic and larger machine component parts.

Your safety, and that of others, is the first consideration when engaging in the maintenance of equipment. Always be conscious of component weight and never attempt to move heavy parts without the aid of a mechanical device. Do not allow heavy objects to rest in an unstable position. When raising a portion of the equipment, ensure that adequate support is provided.

⚠ WARNING

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

B. HYDRAULIC SYSTEM SAFETY

1. It should be particularly noted that the machines hydraulic systems operate at extremely high and potentially dangerous pressures. Every effort should be made to relieve any system pressure prior to disconnecting or removing any portion of the system.
2. Relieve system pressure by activating the lift DOWN control with the platform completely lowered to direct any line pressure back into the return line to the reservoir. Pressure feed lines to system components can then be disconnected with minimal fluid loss.

C. MAINTENANCE

⚠ WARNING

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

- REMOVE ALL RINGS, WATCHES, AND JEWELRY WHEN PERFORMING ANY MAINTENANCE.
- DO NOT WEAR LONG HAIR UNRESTRAINED, OR LOOSE FITTING CLOTHING AND NECKTIES WHICH ARE APT TO BECOME CAUGHT ON OR ENTANGLED IN EQUIPMENT.
- OBSERVE AND OBEY ALL DANGER, WARNING, CAUTION AND OTHER INSTRUCTIONS ON MACHINE AND IN SERVICE MANUAL.
- KEEP STANDING SURFACES AND HAND HOLDS FREE OF OIL, GREASE, WATER, ETC.
- NEVER WORK UNDER AN ELEVATED PLATFORM UNTIL PLATFORM HAS BEEN SAFELY RESTRAINED FROM ANY MOVEMENT BY BLOCKING OR OVER-HEAD SLING.
- BEFORE MAKING ADJUSTMENTS, LUBRICATING OR PERFORMING ANY OTHER MAINTENANCE, SHUT OFF ALL POWER CONTROLS.
- BATTERY SHOULD ALWAYS BE DISCONNECTED DURING REPLACEMENT OF ELECTRICAL COMPONENTS.
- KEEP ALL SUPPORT EQUIPMENT AND ATTACHMENTS STOWED IN THEIR PROPER PLACE.
- USE ONLY APPROVED, NONFLAMMABLE CLEANING SOLVENTS.

EFFECTIVITY CHANGES

September 15, 1997 - Date of Issue

January 20, 2000 - Revised

February 7, 2000 - Revised - Section-2, Page 2-5, (removed lube check requirement for drive wheel gear box).

March 22, 2000 – Revised – Added 20VP UL-EE Option.

April 20, 2000 – Revised – Added Proposition 65 to front of manual.

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SECTION 1. SAFETY PRECAUTIONS

1.1 GENERAL

This section prescribes the proper and safe practices for major areas of machine usage which have been divided into three basic categories: Transporting, Pre-Operation 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 also be established by a qualified person and must be followed to ensure that the machine is safe to operate.

The user/operator of the machine should not accept operating responsibility until this manual has been READ and UNDERSTOOD, and operating instructions of the machine under the supervision of an experienced and qualified operator, has been completed. If there is a question on application and/or operation, JLG Industries Product Safety and Reliability personnel 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 ANSI STANDARDS, AND TO BE AT LEAST AS SAFE AS BEFORE MODIFICATION, IS PROHIBITED, AND IS A VIOLATION OF OSHA RULES.

1.2 ELECTROCUTION HAZARD

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

DO NOT MANEUVER MACHINE OR PERSONNEL TO DISTANCE LESS THAN M.S.A.D (SEE TABLE 1-1.). ASSUME ALL ELECTRICAL PARTS AND WIRING ARE ENERGIZED UNLESS KNOWN OTHERWISE.

THIS MACHINE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR. MAINTAIN A CLEARANCE OF AT LEAST 10 FT. (3M) BETWEEN ANY PART OF THE MACHINE AND ANY ELECTRICAL LINE OR APPARATUS CARRYING UP TO 50,000 VOLTS. 1 FT. (0.3M) ADDITIONAL CLEARANCE IS REQUIRED FOR EVERY ADDITIONAL 30,000 VOLTS OR LESS. ALLOW FOR PLATFORM SWAY, ROCK OR SAG AND ELECTRICAL LINE SWAYING, (SEE FOLLOWING TABLE).

Table 1-1. Minimum Safe Approach Distance (to energized power lines or parts)

VOLTAGE RANGE (PHASE TO PHASE)	MINIMUM SAFE DISTANCE - Feet [m]
0-300V	Avoid Contact
Over 300V to 50KV	10 ft. [3 m]
Over 50KV to 200KV	15 ft. [4.6 m]
Over 200KV to 350KV	20 ft. [6 m]
Over 350KV to 500KV	25 ft. [7.6 m]
Over 500KV to 750KV	35 ft. [10.6 m]
Over 750KV to 1000KV	45 ft. [13.7 m]

1.3 TRANSPORTING MACHINE

Before transporting (*hauling*) the machine the user/ operator must be familiar with the proper procedures for transporting the machine (*see Section 4-5*), as well as the weight and size of the machine.

The user/operator should be familiar with the surrounding work area and surface before transporting the machine. The work area must be a firm surface capable of supporting the combined weight of the transport vehicle and the machine.

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

⚠ CAUTION

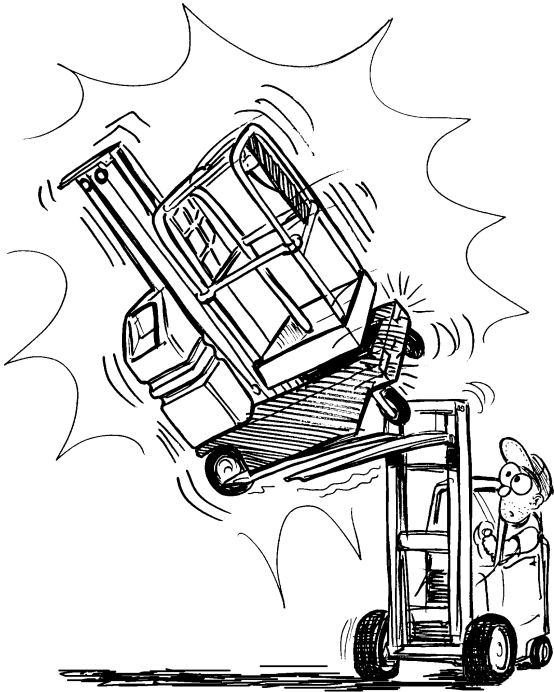
ALWAYS RELEASE THE DRIVE MOTOR BRAKES ON THE MACHINE WHEN MANUALLY PUSHING, PULLING, OR WHEN TRANSPORTING MACHINE BY FORK-LIFT TRUCK. THIS WILL ALLOW THE REAR DRIVE WHEELS, GEAR BOX DRIVE SHAFT AND GEARS TO ROTATE FREELY PREVENTING ANY DAMAGE TO THE DRIVE SYSTEM.

IF MACHINE IS PLACED ON A TRANSPORT VEHICLE, RE-ENGAGE THE BRAKES IN COMBINATION WITH PROPER MACHINE TIE DOWN, TO RESTRAIN MACHINE FROM ANY MOVEMENT DURING TRANSPORT.

ALWAYS REMEMBER TO RE-ENGAGE THE BRAKE SYSTEM BEFORE OPERATING MACHINE.

⚠ WARNING

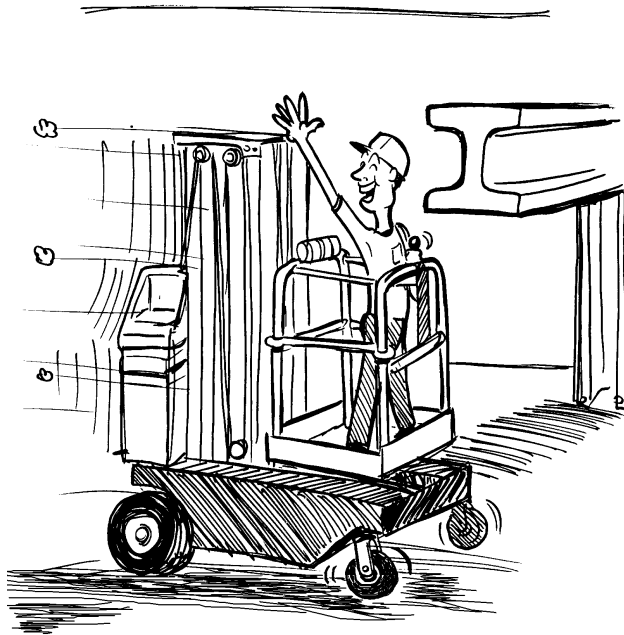
FAILURE TO COMPLY WITH SAFETY PRECAUTIONS LISTED IN THIS SECTION AND ON MACHINE COULD RESULT IN MACHINE DAMAGE, PERSONAL INJURY OR DEATH AND IS A SAFETY VIOLATION.



**LIFT MACHINE AT DESIGNATED
LIFTING POINTS ONLY**

1.4 PRE-OPERATIONAL SAFETY

- 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 OVERHEAD ELECTRIC LINES. (SEE ELECTROCUTION HAZARD, SECTION 1-2.)
 - STUDY THE WORK AREA FOR AREAS TO AVOID SUCH AS; SURFACE EDGES THAT DROP-OFF, HOLES OR DIPS IN SURFACE, OR ANY UNLEVEL AREAS WHICH COULD CAUSE THE UNIT TO TIP OVER.
- ALSO BEFORE OPERATION CHECK WORK AREA FOR MACHINE TRAFFIC SUCH AS FORKLIFTS, CRANES, AND OTHER CONSTRUCTION EQUIPMENT.
 - ENSURE THAT OPERATORS OF OTHER OVERHEAD AND FLOOR LEVEL MACHINES ARE AWARE OF THE AERIAL PLATFORMS PRESENCE. DISCONNECT POWER TO OVERHEAD CRANES. BARRICADE FLOOR AREA IF NECESSARY.
 - 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. HAVE AUTHORIZED PERSONNEL TAKE ANY NECESSARY CORRECTIVE ACTION BEFORE PLACING MACHINE INTO OPERATION.
 - NEVER DISABLE OR MODIFY ANY SAFETY DEVICE. ANY MODIFICATION OF THE MACHINE IS A SAFETY VIOLATION AND IS A VIOLATION OF OSHA AND ANSI RULES.
 - DO NOT OPERATE MACHINE WHEN EXPOSED TO HIGH WIND, RAIN OR SNOW.
 - NEVER OPERATE OR RAISE PLATFORM WHEN MACHINE IS ON A TRUCK OR OTHER VEHICLE.
 - APPROVED HEAD GEAR (I.E. HARD HAT, ETC.) MUST BE WORN WHEN REQUIRED BY ALL OPERATING AND GROUND PERSONNEL.
 - READ AND OBEY ALL DANGER, WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS ON MACHINE AND IN THIS MANUAL.
 - BE FAMILIAR WITH LOCATION AND OPERATION OF GROUND CONTROLS AND EMERGENCY CONTROLS.



ALWAYS LOOK IN DIRECTION OF TRAVEL

- NEVER POSITION THE UNIT SIDWAYS ON A SLOPE.
- USE CAUTION AND CHECK CLEARANCES WHEN MOVING MACHINE IN RESTRICTED OR CLOSE QUARTERS.
- ALWAYS USE AN ASSISTANT WHEN MOVING MACHINE IN AREAS WHERE VISION IS OBSTRUCTED.

General Operating Safety

- KEEP NON-OPERATING PERSONNEL AT LEAST 6 FEET (1.8 M) AWAY FROM MACHINE DURING OPERATIONS.
- DO NOT OPERATE ANY MACHINE ON WHICH DANGER, WARNING, CAUTION OR INSTRUCTION PLACARDS OR DECALS ARE MISSING OR ILLEGIBLE.
- NEVER EXCEED MANUFACTURERS RATED PLATFORM CAPACITY - REFER TO CAPACITY DECAL ON MACHINE.
- NEVER OPERATE A MALFUNCTIONING MACHINE. IF A MALFUNCTION OCCURS, SHUT DOWN THE MACHINE, RED TAG IT, AND NOTIFY PROPER AUTHORITIES.

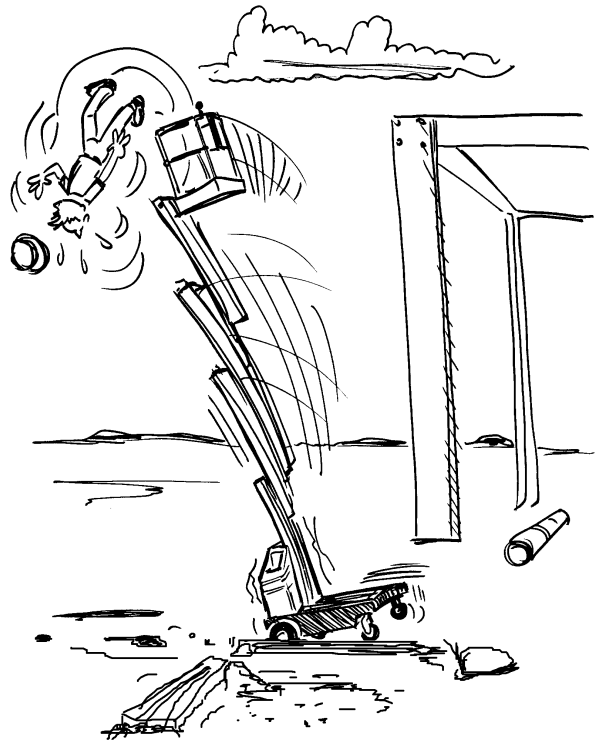
1.5 OPERATING SAFETY

⚠ WARNING

FAILURE TO OBSERVE THE FOLLOWING TIPPING HAZARD INSTRUCTIONS COULD CAUSE THE UNIT TO TIP OVER OR BE HARD TO CONTROL WHEN BEING MOVED, WHICH COULD RESULT IN SERIOUS INJURY OR DEATH DUE TO BEING PINNED OR CRUSHED BY THE UNIT.

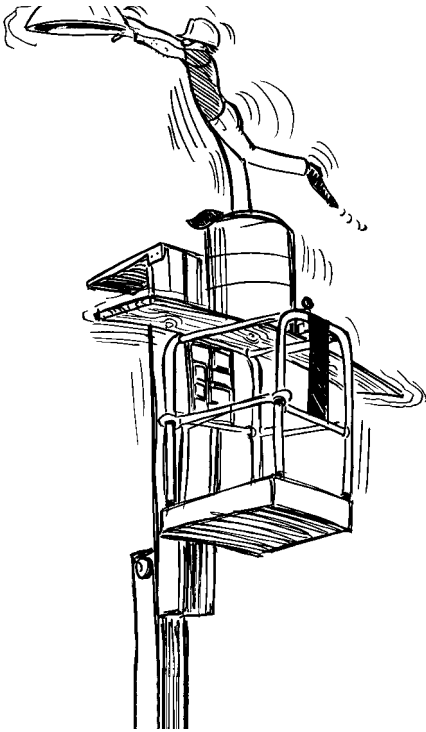
Driving Safety

- READ YOUR MANUAL, UNDERSTAND WHAT YOU'VE READ - THEN BEGIN OPERATIONS.
- WATCH FOR OBSTRUCTIONS AROUND MACHINE AND OVERHEAD WHEN MOVING.
- CHECK TRAVEL PATH FOR PERSONS, HOLES, BUMPS, DROP-OFFS, OBSTRUCTIONS, DEBRIS, AND COVERINGS WHICH MAY CONCEAL HOLES AND OTHER HAZARDS, AS TIPPING COULD OCCUR.
- BEFORE MOVING MACHINE ON FLOORS AND OTHER SURFACES, CHECK ALLOWABLE CAPACITY OF SURFACES.
- DO NOT OPERATE MACHINE ON SOFT FOOTING THAT WILL ALLOW THE WHEELS TO SETTLE INTO OR BREAK THROUGH SURFACE, AS TIPPING WILL OCCUR.

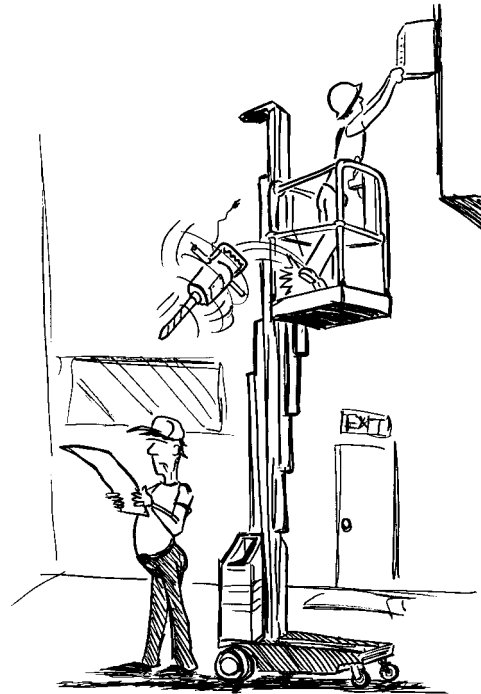


NEVER OPERATE ON SOFT OR UNEVEN SURFACES

SECTION 1 - SAFETY PRECAUTIONS



**ALWAYS STAND ON PLATFORM FLOOR
NOT ON BOXES, PLANKS OR RAILINGS**



**KEEP EVERYONE CLEAR OF A
WORKING PLATFORM**

- ALL PERSONNEL MUST STAND CLEAR WHEN PLATFORM IS BEING RAISED OR LOWERED. BE SURE TO WATCH FOR OVERHEAD AND OTHER OBSTRUCTIONS.
- CHECK CLEARANCES ABOVE, ON SIDES AND BOTTOM OF PLATFORM WHEN RAISING AND LOWERING PLATFORM.
- NEVER USE THE MAST TO GAIN ACCESS TO OR LEAVE PLATFORM.
- DO NOT ATTACH OVERHANGING LOADS TO THE PLATFORM OR INCREASE THE PLATFORM SIZE WITH UNAUTHORIZED DECK EXTENSIONS OR ATTACHMENTS.
- DO NOT TIE OFF MACHINE TO ANY ADJACENT STRUCTURE. NEVER ATTACH WIRE, CABLE OR ANY SIMILAR ITEMS TO PLATFORM.
- TRANSFERS BETWEEN A STRUCTURE AND THE AERIAL PLATFORM EXPOSE OPERATING PERSONNEL TO FALL POTENTIALS. THIS PRACTICE SHOULD BE DISCOURAGED WHEREVER POSSIBLE. WHERE TRANSFER MUST BE ACCOMPLISHED TO PERFORM THE JOB, AN APPROVED FALL PROTECTION DEVICE AND TWO SAFETY LANYARDS WILL BE USED. ONE LANYARD SHOULD BE ATTACHED TO THE AERIAL PLATFORM. THE OTHER TO THE STRUCTURE. THE SAFETY LANYARD THAT IS ATTACHED TO THE

AERIAL PLATFORM SHOULD NOT BE DISCONNECTED UNTIL SUCH TIME AS THE TRANSFER TO THE STRUCTURE IS COMPLETE. WHEN RE-ENTERING THE PLATFORM THIS PROCEDURE MUST BE PERFORMED IN REVERSE. TO AVOID FALLING - USE EXTREME CAUTION WHEN ENTERING OR LEAVING PLATFORM ABOVE GROUND. ENTER OR EXIT THRU GATE ONLY. PLATFORM FLOOR MUST BE WITHIN 1 FOOT (0.3 M) OF ADJACENT - SAFE AND SECURE - STRUCTURE. ALLOW FOR ANY VERTICAL MOVEMENT OF PLATFORM (UP OR DOWN) WHEN ENTERING OR LEAVING PLATFORM.

- NO HORSEPLAY IS PERMITTED IN PLATFORM.
- DO NOT ALLOW PERSONNEL TO TAMPER WITH, SERVICE, OR OPERATE THIS MACHINE FROM THE GROUND WITH PERSONNEL IN PLATFORM EXCEPT IN AN EMERGENCY.
- DURING OPERATION KEEP ALL BODY PARTS INSIDE PLATFORM RAILINGS.
- NEVER POSITION LADDERS, STEPS, OR SIMILAR ITEMS ON UNIT TO PROVIDE ADDITIONAL REACH FOR ANY PURPOSE.

SECTION 2. PREPARATION AND INSPECTION

2.1 GENERAL

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

⚠ IMPORTANT

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

2.2 PREPARATION FOR USE

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 Section 2-3, Delivery and Frequent Inspection. 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.

All preparation necessary to place the machine in operation readiness status are the responsibility of management personnel. Preparation requires good common sense, (*i.e. lift works smoothly*) coupled with a series of visual inspections. The mandatory requirements are given in Section 2-4, Daily Walk Around Inspection.

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

2.3 DELIVERY AND FREQUENT INSPECTION

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. Frequent inspection shall be performed every three (3) months or 150 hours, or more often when required by environment, severity, and frequency of usage.

Platform Assembly

Properly secured; no visible damage; free of dirt and debris. Platform gate functions properly.

Mast

No visible damage, abrasions and/or distortions; no binding; mast sections free of dirt or other foreign material. Sequencing cables properly secured; no visible damage; proper cable tension.

Mast Chains & Cables

No visible damage; proper chain/cable tension; evidence of proper lubrication. Chain/cable sheaves, sheave pins and rollers properly secured; no visible damage.

Platform Controller/(Power) Cable(s)

No visible damage; cable properly tensioned and seated in control cable sheaves; control cable sheaves not damaged and rotating freely.

Lift Cylinder (check w/mast extended)

No rust, nicks, scratches or foreign material on piston rod. No leakage.

Frame

No visible damage; loose or missing hardware (*top and underside*).

Drive Wheels and Front Casters

Castors free rolling; no loose or missing parts; no visible damage. Drive wheel hub retainer ring secure; no damage to wheel tread; electric drive motors secure; no loose or missing wires.

Hydraulic Oil Supply

Check the hydraulic oil level of the hydraulic fluid reservoir located in the lower access hole on the rear cover. Maintain an oil level to the "Fill To Line" indicator on the side of reservoir.

If fluid level is low, see Table 2-1. "Lubrication Interval Chart" for information on hydraulic oil.

SECTION 2 - PREPARATION AND INSPECTION

Controls - (Platform and Ground)

Controls operable; no visible damage; placards secure and legible.

Batteries

Proper electrolyte level; cable connections tight; no visible damage; no corrosion at battery cable connections.

Pump Motor/Hydraulic Pump/Valves and Lines

No leakage; units secure.

Placards

No visible damage; placards secure and legible.

2.4 DAILY WALK-AROUND INSPECTION

It is the user/operator's responsibility to inspect the machine before the start of each work day. It is recommended that each user/operator inspect the machine before operation, even if the machine has already been put into service under another user/operator. This Daily Walk-Around Inspection is the preferred method of inspection.

General

Begin the "Walk-Around Inspection" at item one listed following. Continue around machine checking each item in sequence for the conditions listed in the "Walk-Around Inspection Check list".

WARNING

**TO AVOID INJURY DO NOT OPERATE 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: Do not overlook visual inspection of the base frame underside. Check this area for objects or debris which could cause extensive machine damage.

- 1. Drive and Caster Wheels** - Properly secured and lubricated. Check for any visible damage or debris, stuck to or around wheels.
- 2. Base Frame** - No visible damage; drive wheel motor components properly secured; JLG's Pot-Hole-Protection System components secure; no loose wires or cables dangling below the base; bubble level in place and functioning properly.
- 3. Battery/Battery Charger** - Proper battery electrolyte level, cables secure, no damage or corrosion.
- 4. Motor/Pump/Reservoir Unit** - Properly secured, no visible damage, no evidence of hydraulic leaks. Hydraulic oil level should be filled level with the full line, ("Fill To Line") on the side of the hydraulic reservoir. Also check that reservoir cap is properly secured.
- 5. Ground Controls** - Properly secured, no loose or missing parts, no visible damage; key switch operable, no visible damage; placards secure and legible; emergency stop switch, no visible damage and properly set for operation.
- 6. Mast Assembly** - Mast sections properly secured, no visible damage to mast sections, no loose or missing parts, slide pads properly secured. Mast chains/cables properly secured and lubricated. Sequencing cables properly secured and undamaged. Platform control and power cables (*on side of mast*), no visible damage; cables properly tensioned and seated in sheaves; cable sheaves not damaged and rotating freely. Elevation/Speed Limit switch (*top inside of mast section 1*) secure and working properly.
- 7. Manual Brake Release Control** - Handle secure and undamaged; cables attached properly; control in working order.
- 8. Platform Assembly** - Secure to mast; All railings securely attached; no loose or missing parts, no visible damage; sliding entry bar in proper working order. Platform gate working properly, no visible sign of damage (*if so equipped*).
- 9. Platform Controls** - Platform up/down, function enable and horn buttons on faceplate no loose or missing parts, no visible damage. Joystick control secure. Placards secure and legible, emergency shut-off button set for operation. Control markings legible; Operators manual enclosed in manual storage box.

In addition to the Daily Walk-Around Inspection, be sure to include the following as part of the daily inspection:

Batteries Charged

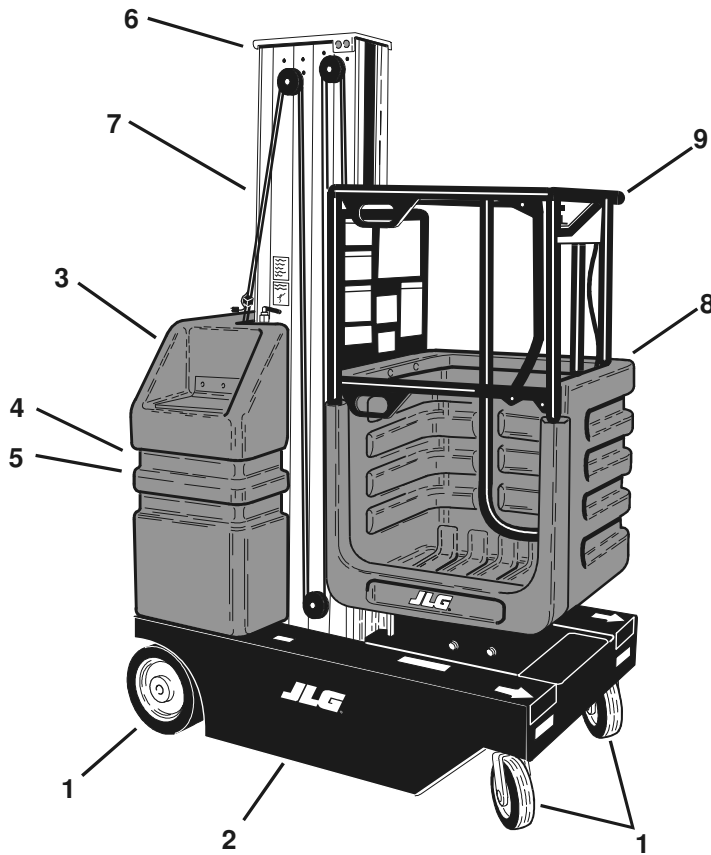
Start each day with fully charged batteries. (See Section 2-7. "Battery Charging & Maintenance")

Overall Cleanliness

Keep oil, grease, water, etc. wiped from standing surfaces and hand holds.

Placards

Keep all information and operating placards clean and unobstructed. Cover areas where placards are present when using the machine for spraying paint or any material which could cover these surfaces and reduce legibility.



Daily Walk-Around Inspection Items	
1.	Drive and Castor Wheels
2.	Base Frame
3.	Battery/Battery Charger
4.	Motor/Pump/Reservoir Unit
5.	Ground Controls
6.	Mast Assembly
7.	Manual Brake Release Control
8.	Platform Assembly
9.	Platform Controls

Figure 2-1. Daily Walk-Around Inspection.

Operation and Safety and ANSI Responsibilities Manual

Ensure a copy of manual is enclosed in the manual storage box.

Lubrication

For those parts pointed out in the Walk-Around Inspection requiring lubrication, refer to the Lubrication Chart, Table 2-1., for specific time interval requirements.

Hydraulic oils must have anti-wear qualities at least to API Service Classification GL-3, and sufficient chemical stability for mobile hydraulic system service. JLG Industries, recommends Mobilfluid 424 hydraulic oil, which has an SAE viscosity of 10W-30 and a viscosity index of 152.

For cold weather applications, i.e. when temperatures remain consistently below + 20°F (-7°C) JLG recommends using Mobil DTE 13 hydraulic oil.

2.5 DAILY FUNCTIONAL CHECK

⚠ WARNING

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

Once the Walk-Around Inspection is complete, a Functional Check of all systems should be performed in an area free of overhead and ground level obstructions. Perform a Functional Check in accordance with the following procedures:

Set-up machine for operation, according to instructions in Section 4-3, "Machine Operation".

NOTE: 20VP MODELS WITH UNDERWRITERS LABORATORY (EE) RATING OPTION ONLY, include a master ON/OFF switch located on top of the rear cover of the machine. This control must be set to the ON position before the following function checks can be completed.

⚠ IMPORTANT

SEE SECTION-3 FOR SPECIFIC INFORMATION ABOUT OPERATING MACHINE CONTROLS AND SECTION-4 FOR OPERATION OF MACHINE.

Ground Controls Function Check

1. With key switch turned to GRND position (*clockwise*), operate the platform up and down switch (*located in lower access hole with hydraulic fluid reservoir*). Raise and lower platform 2 ft. to 3 ft. (.5m to 1m) several times. Check for smooth elevation and lowering of platform.
2. With platform completely lowered, check hydraulic oil level in hydraulic fluid reservoir. If necessary, add hydraulic fluid to proper level (*full line*). NEVER USE HYDRAULIC BRAKE FLUID, refer to the Lubrication Chart (*Table 2-1.*) for specific requirements.
3. Depress EMERGENCY STOP (*red*) button (*next to key switch*), all machine operations will be disabled if functioning properly. If ok, reset EMERGENCY STOP for operation.
4. Operate the MANUAL BRAKE RELEASE CONTROL (*Over-center handle mounted on the right side of the mast*). When the handle is in the vertical position it is set for normal operation, brakes ENGAGED. When the handle is pulled DOWN to a horizontal position, the brakes are DISENGAGED.
5. Set key switch to PLAT (*platform operation, all the way counterclockwise*) and continue with the following steps.

Platform Controls

NOTE: Check that the MANUAL BRAKE RELEASE CONTROL (*Over-center handle mounted on side of mast*), is set for normal operation (brakes engaged) before entering platform.

1. Check that the PLATFORM CONTROL box is properly mounted (*facing forward*) and secure on the platform's rail.
2. On the PLATFORM CONTROL box, check the BATTERY STATUS INDICATOR LED's for charge status of batteries.
3. Check for proper operation of the FUNCTION ENABLE pad, and that the JOYSTICK CONTROL moves freely.
4. Activate the JOYSTICK and slowly move it in all directions, if operating properly the machine will move in the direction the JOYSTICK is pointed.

5. While driving the machine forward rotate the SPEED CONTROL knob from maximum to minimum (*clockwise to counterclockwise*) checking for proper operation. If operating properly, speed should vary from 2 mph to 1/2 mph.

NOTE: A short delay between lift motor start and platform movement is normal.

6. Activate the platform UP and DOWN buttons (*up arrow and down arrow*) to raise and lower platform 2 ft. to 3 ft. (.5m to 1m) several times. Check for smooth elevation and lowering of platform.
7. With the platform elevated check the JLG Automatic Pot-Hole-Protection system, if operating properly, the PHP bars on each side of the machine base will be automatically engaged (*lowered*) with the platform raised approximately 2 ft.
8. With the platform still elevated approximately 2 ft., drive machine and check if SPEED CUT-BACK is operating properly, machine should drive at 1/4 of speed when platform was completely lowered.
9. Depress the EMERGENCY STOP (*red*) button on the Platform Control box, all machine operations will be disabled if functioning properly. RESET the EMERGENCY STOP.

Tilt Sensor (1.5°) and Drive Brakes

1. With the platform lowered, drive the machine onto a grade within the allowable grade and slope limits of the machine (*maximum grade of 15% or 8.5°, maximum side slope of 5°*). Stop the machine part of the way up the grade, check if the drive brakes hold the machine in place. Also while on the grade (*of greater than 1.5°*), attempt to raise the platform. The tilt sensor (1.5°) must prevent the platform from elevating and will sound a beeping alarm at the platform controller box.

If all machine functions are operating properly, machine is ready for operation.

2.6 TORQUE REQUIREMENTS

The Torque Chart, Figure 2-5., consists of standard torque values based on bolt diameter and grade, it also specifies dry and wet torque values in accordance with recommended shop practices. This chart is provided as an aid to the user/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. Utilizing this Torque Chart in conjunction with the Preventive Maintenance and Inspection Schedule table in the Service Manual, will enhance the safety, reliability, and performance of the machine.

2.7 BATTERY CHARGING & MAINTENANCE

VP Models are equipped with 24 volt, 10 amp output battery chargers (U.S.A. - 120 Volt AC input/60Hz and Brazil - 220 Volt AC input/60 Hz). The battery charger includes a microprocessor controlled automatic charge sensing circuit which can determine cell voltage and regulate charger output as required. The charger automatically terminates charging when a full battery charge is achieved. Also a built-in interlock device prohibits driving the machine while the battery charger is plugged in.

Battery Maintenance and Safety Practices

(Refer to Figure 2-2.)

CAUTION

ENSURE THAT BATTERY ACID DOES NOT COME INTO CONTACT WITH SKIN OR CLOTHING. WEAR PROTECTIVE CLOTHING AND EYEWEAR WHEN WORKING WITH BATTERIES. NEUTRALIZE ANY BATTERY ACID SPILLS WITH BAKING SODA AND WATER.

BATTERY ACID RELEASES AN EXPLOSIVE GAS WHILE CHARGING, ALLOW NO OPEN FLAMES, SPARKS OR LIGHTED TOBACCO PRODUCTS IN THE AREA WHILE CHARGING BATTERIES. CHARGE BATTERIES ONLY IN A WELL VENTILATED AREA.

ADD ONLY DISTILLED WATER TO BATTERIES. WHEN ADDING DISTILLED WATER TO THE BATTERIES, A NON-METALLIC CONTAINER AND/OR FUNNEL MUST BE USED.

As with any wet cell battery, check the electrolyte level of the batteries often, adding only distilled water when required. When fully charged, battery fluid level should be 1/8" below vent tubes. (See Figure 2-2.).

- DO NOT fill to bottom of vent tubes.
- DO NOT allow fluid level to go below the top of the plates when charging or operating.

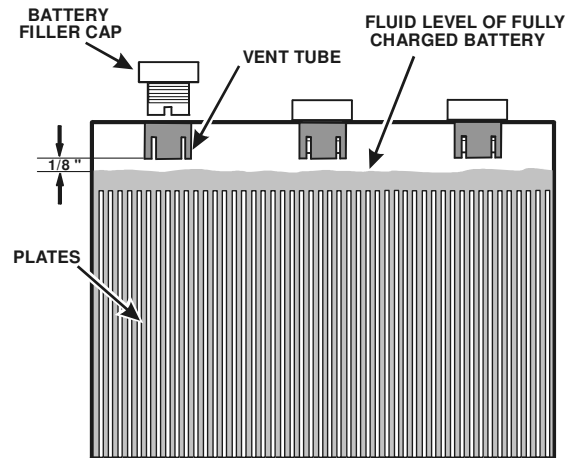


Figure 2-2. Battery Fluid Level.

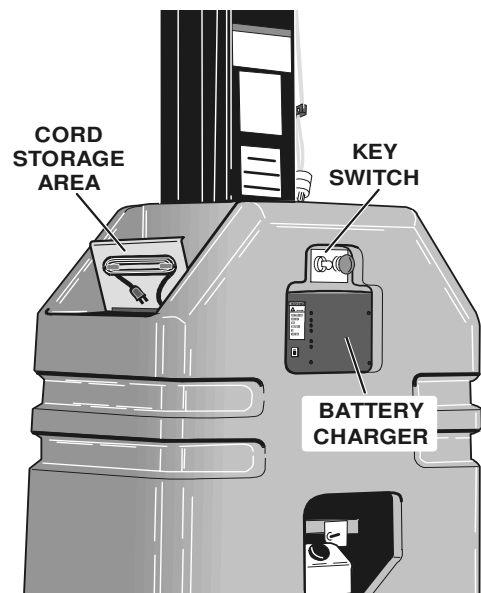


Figure 2-3. Charger Assembly and Power Cord Storage.

Battery Charger Operation

(Refer to Figure 2-3 & 2-4.)

1. Position machine in well ventilated area near an AC electrical outlet and set the Ground Control-PLAT/OFF/GRND key switch to the OFF position.
2. Open the left battery cover and unwrap the battery charger AC power cable from under the cover.

SECTION 2 - PREPARATION AND INSPECTION

3. Connect the battery charger AC power cable to a properly grounded receptacle, use a suitable extension cord, if necessary.
4. When powered on, the charger runs through a self-diagnostic check which lights all five (5) lights on the face of the charger three (3) times, then each light in sequence, then all five (5) lights three (3) times again on the front panel of the battery charger.
5. When ready to charge, the CHARGER ON light and the INCOMPLETE light on the front panel of the charger will light up, the charger will then begin to charge the batteries.

NOTE: If the ABNORMAL CYCLE light comes on and stays on at any time during the charge cycle, see sub-section following about the ABNORMAL CYCLE indicator light.

6. When the battery cell voltage reaches 2.37 V/cell the 80% CHARGE light on the front panel of the charger will light up. The charger then continues to monitor the increase in charge until it sees no increase, and then terminates the charging process.
7. The CHARGE COMPLETE light will come on when the charging process is finished.
8. Unplug the charger AC power cord and wrap around storage lugs under the left battery cover.

Abnormal Cycle Indicator Light

If the ABNORMAL CYCLE indicator light should come on during the normal charging cycle of the batteries, it could indicate any of the following conditions;

- The AC input to the charger was interrupted, i.e. local power failure or charger cable was unplugged or bumped and power was interrupted intermittently.
- A dead cell or cells in either battery would prevent the charger from sensing enough voltage to complete the battery charge.
- One or more of the batteries terminal connections loose resulting in an intermittent incomplete circuit.

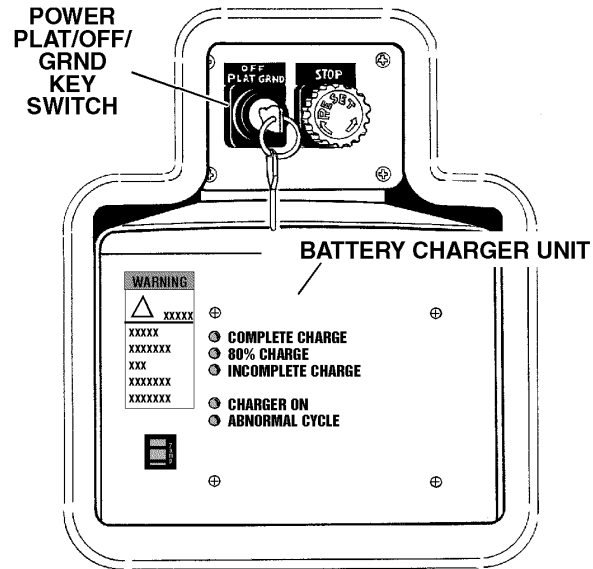


Figure 2-4. Battery Charger Front Panel.

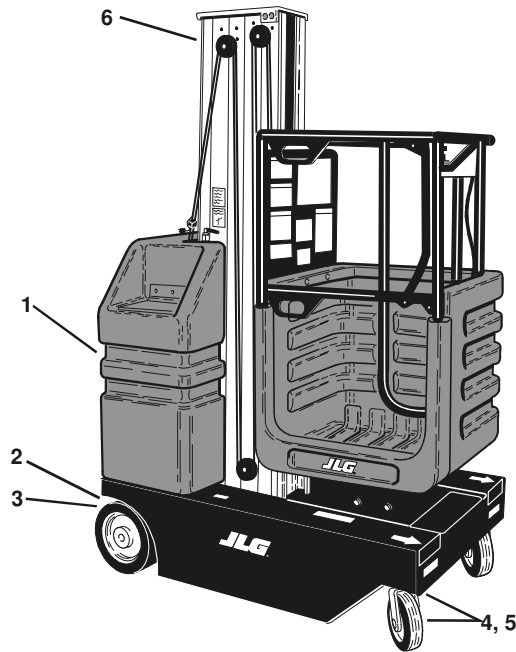


Figure 2-5. Lubrication Chart.

Table 2-1. Lubrication Intervals for Various Components

ITEM	COMPONENT	NO/TYPE LUBE POINTS	LUBE/METHOD	INTERVAL HOURS				COMMENTS
				3 MONTHS 150 Hrs.	6 MONTHS 300 Hrs.	1 YEAR 600 Hrs.	2 YEARS 1200 Hrs.	
1	Hydraulic Oil	Fill To Line on Reservoir 5 Qt. Reservoir	HO - Check Hyd. Oil Level HO - Change Hyd. Oil				✓	Check hydraulic oil every 10 hrs. Change hydraulic oil every 1200 hrs.
2	Drive Wheel Bearings	4 - Grease Fittings	MPG - Pressure Gun	✓				
3	Drive Wheel Gear Box	2 - Gear Box	Gear Oil					Change only when serviced - requires 175cc's to fill.
4	Caster Axles	2 - Grease Fitting	MPG - Pressure Gun	✓				
5	Swivel Raceways	2 - Front Casters	MPG - Pressure Gun	✓				
6	Mast Chains *	2 - Per Section	Chain Lube - Brush or Spray	✓				Inspect, lubricate if dry or rusting.
<p>* Applies Only to Mast Sections with Chains. Key to Lubricants: MPG - Multipurpose Grease HO - Hydraulic Oil - Hydraulic oils must have anti-wear qualities at least to API Service Classification GL-3, and sufficient chemical stability for mobile hydraulic system service. JLG Industries, recommends Mobilfluid 424 hydraulic oil, which has an SAE viscosity of 10W-30 and a viscosity index of 152. For cold weather applications, i.e. when temperatures remain consistently below + 20°F (-7°C) JLG recommends using Mobil DTE 13 hydraulic oil.</p>								
<p>Notes: 1. Be certain to lubricate like items on each side of the machine. 2. Recommended lubricating intervals are based on normal use. If machine is subjected to severe operating conditions, such as a high number of cycles, location, corrosive/dirty environment, etc., user must adjust lubricating requirements accordingly. 3. Prior to checking hydraulic oil level, operate machine through one complete cycle of lift function (full up and down). Failure to do so will result in incorrect oil level reading on the hydraulic reservoir.</p>								

SECTION 3. USER RESPONSIBILITIES & MACHINE CONTROLS

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/operator read and understand the proper procedures before operating the machine. These procedures will aid in obtaining optimum service life and safe operation.

3.2 PERSONNEL TRAINING

The aerial lift 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 Sections - 6, 7, 8, 9, & 10 - "Responsibilities" of the ANSI standard A92.6. This standard contains sections outlining the responsibilities of the owners, users, operators, lessors and lessees concerning safety, training, inspection, maintenance, application and operation. The standard is included with the literature package shipped with the machine.

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

Operator Training

Operator training must include instruction in the following:

1. Use and limitations of the platform controls, ground controls and emergency controls.
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 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.
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, drop-offs, 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.

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 an aerial lift in congested work locations.

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 machine(s) delivered and thereafter as requested by user or his personnel.*

3.3 OPERATING CHARACTERISTICS AND LIMITATIONS

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.

Placards

(See Figures 3-6, 3-7, 3-8 & 3-9.)

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 on the machine for the express purpose of alerting personnel of potential hazards constituted by the operating characteristics and load limitations of the machine. See the Foreword at the start of this manual for a definition of the seriousness of each of the above placard types. See decal location figures in this section for decals which apply to this machine.

Capacities

Raising the platform above the stowed position is based on the following criteria:

- The machine is positioned on a smooth, firm level surface.
- The load is within manufacturer's rated capacity.
- All machine systems are functioning properly.

Stability

This machine, as originally manufactured by JLG and when operated within its rated capacity on a smooth, firm and level supporting surface (*check bubble level indicator on base frame*), provides a stable aerial platform for all platform positions.

3.4 CONTROLS AND INDICATORS

Ground Controls

(See Figure 3-1.)

NOTE: When the machine is not being used or when charging the battery, be sure the POWER PLAT/OFF/GRND KEY SWITCH is positioned to OFF to prevent draining the batteries. For information on battery charging see SECTION 2-7, Battery Charging.

1. MASTER ON/OFF SWITCH (20VP UL-EE OPTION ONLY)

A master ON/OFF switch is included on 20VP machines with the UL - EE option. The master switch is located on top of the rear cover on the left side of the machine. When set to OFF all power is disconnected from the batteries to the machine. When set to ON all power is restored.

2. POWER PLAT/OFF/GROUND KEY SWITCH

A key operated power PLAT/OFF/GROUND switch located in the upper access hole of the rear cover (*on back of machine*), controls power to all functions on the machine. The machine platform controls will not operate without the key inserted and turned to the PLAT (*platform*) position. When the key switch is set to the GRND (*ground*) position this allows use of the platform UP/DOWN switch located next to the hydraulic oil reservoir (*lower access hole*). When left unattended, removing the key will prevent unauthorized machine use.

3. PLATFORM UP/DOWN (GROUND CONTROL)

The ground operated platform control switch is located next to the hydraulic reservoir in the lower access hole of the rear cover. This three position toggle switch will raise (*lift up*) and lower (*lift down*), the platform from the ground control position when the PLAT/OFF/GRND key switch is set to the GRND (*ground*) position.

4. EMERGENCY STOP BUTTON

An EMERGENCY STOP (*red button*) is mounted on both the ground control station and the platform control. When either button is depressed, all machine functions will stop. To re-activate power to the machine, turn button 1/4 turn to RESET the emergency stop switch.

5. EMERGENCY/MANUAL DESCENT KNOB

This (*RED knurled*) knob, located on the electric/hydraulic pump-motor unit in the lower access hole of the rear cover provides for lowering of the platform in the event of an emergency or power failure. Turn knob (*counterclockwise*) to open the valve and

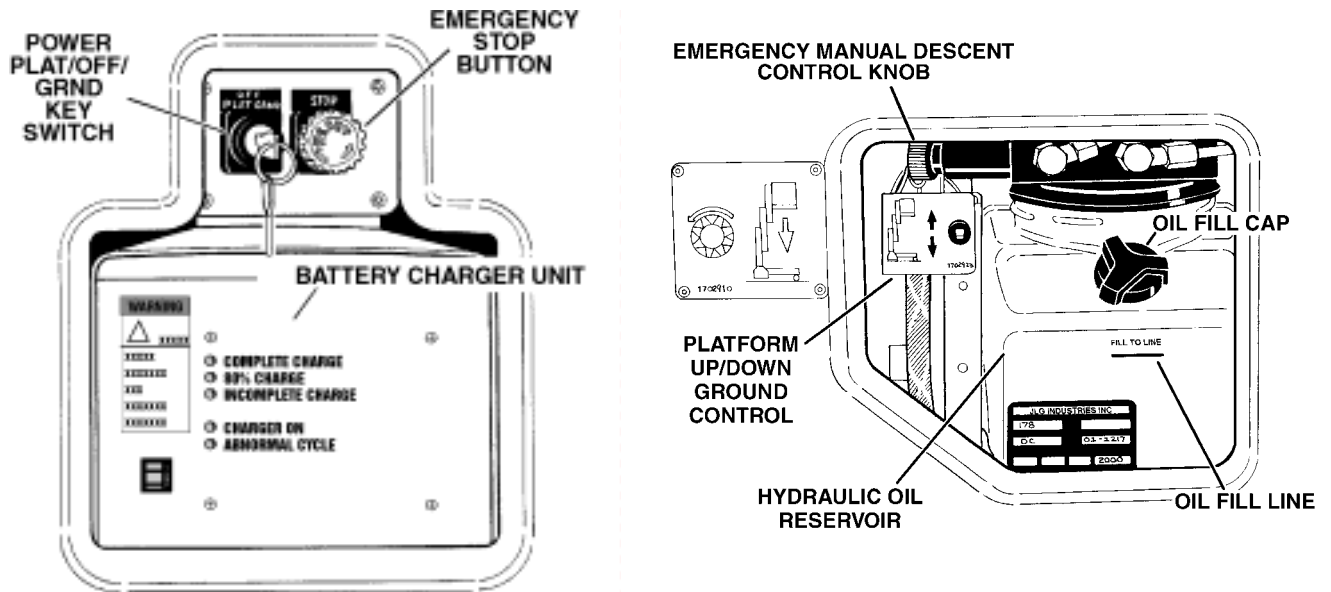


Figure 3-1. Ground Controls.

lower the platform. This valve must be closed (*turned all the way clockwise*) for normal operation of the machine. (Refer to Section 6 for *Emergency Descent operating procedures*.)

6. HYDRAULIC OIL RESERVOIR

The hydraulic oil reservoir is housed inside the lower access hole in the rear cover. Check the hydraulic oil level visually by observing the oil level in the reservoir as compared to the FILL TO LINE indicator on the side of the reservoir. Hydraulic oil can be added if necessary through the OIL FILL CAP on top of the reservoir. DO NOT OVERFILL.

NOTE: Always check hydraulic oil level with oil at operating temperature and with the platform completely lowered.

7. ELECTRICAL CIRCUIT BREAKER PANEL & FUSE (20VP w/UL-EE OPTION ONLY)

20VP machines with the UL-EE option include a circuit breaker panel with five push button type reset circuit breakers, (*two-5 amp and three-1 amp*). The two (5 amp) breakers add protection on the pump valve and key switch circuits. The three (1 amp) breakers add protection to the motion alarm, tilt alarm, and optional beacon circuits. Also an 80 amp fuse is mounted near the breaker panel for added protection on the pump motor circuit. These items are located under the rear cover on top of the mast support bracket.

Platform Controller

(See Figure 3-2. & 3-3.)

The platform controller contains all the controls necessary to operate the lift from the platform.

The following is a description of each function.

1. BATTERY VOLTAGE/FAULT CODE LED INDICATORS.

The LED strip (*green when lit*) running between the pad buttons on the controller pad indicates the battery voltage level when the machine is powered-up. The graduated LED strip indicates batteries at FULL CHARGE (25 volts) when lit all the way to the top (F), and a LOW CHARGE (18 volts) at bottom (E) when one or two LEDs are illuminated.

NOTE: When voltage drops below 16.5 volts an error code is indicated, and the batteries will require a recharge.

This LED strip also acts as a fault code indicator to help diagnose problems with the machines' electrical system. (See *Service Manual Troubleshooting*, for information about reading fault codes).

2. FUNCTION ENABLE SWITCH (OLD STYLE) (Fig. 3-2)

This switch must be pressed before any of the platform or joystick drive functions can be operated. Once activated, the operator has approximately three seconds to activate any of the control functions.

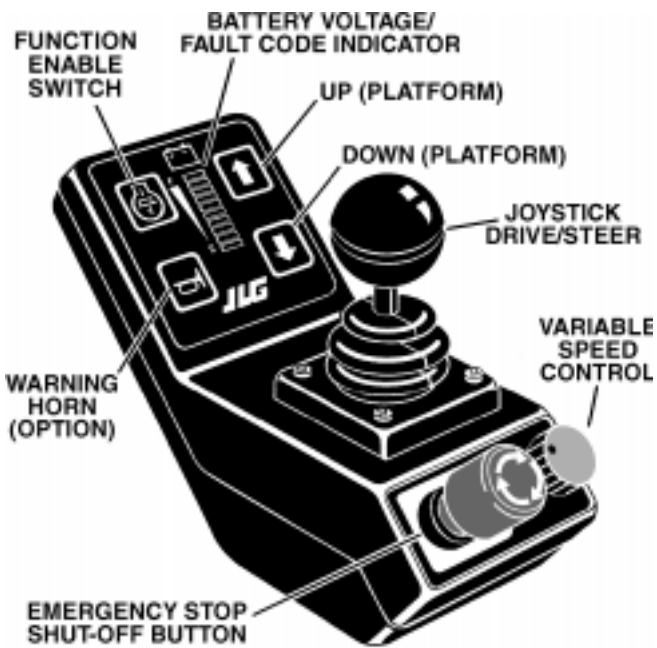


Figure 3-2. Platform Controller. (OLD STYLE)

2. LIFT ENABLE SWITCH (NEW STYLE) (Fig. 3-3.)

The LIFT ENABLE switch must be pressed and HELD before UP/DOWN LIFT of the platform is operational.

3. PLATFORM UP SWITCH (Up Arrow)

When pressed and HELD (in conjunction with the enable pad switch) this switch raises the platform to a higher level, when released the upward movement is stopped.

4. PLATFORM DOWN SWITCH (Down Arrow)

When pressed and HELD (in conjunction with the enable pad switch) this switch lowers the platform from a raised position, when released, the downward movement is stopped.

5. EMERGENCY STOP/SHUT-OFF BUTTON

An EMERGENCY STOP (RED) button is provided in order to immediately stop machine functions from the platform in the event of an emergency. When button is depressed, all machine functions will stop. To re-activate power to the machine, turn button clockwise to RESET the emergency stop.

6. JOYSTICK DRIVE/STEER CONTROL (OLD STYLE)

This is a "Point & Go™" control which moves the platform in the direction which the stick is moved. It is a fully proportional control, the further from the center position the joystick is moved, the faster the machine travels. To activate the control depress the FUNCTION ENABLE pad switch and within three (3) seconds, move the joystick in the direction desired.

7. JOYSTICK DRIVE/STEER CONTROL and DRIVE ENABLE BUTTON (NEW STYLE)

This is a "Point & Go™" control which moves the machine in the direction which the stick is moved. It is a fully proportional control, the further from the center position the joystick is moved, the faster the machine travels. To activate the control PRESS and HOLD the DRIVE ENABLE BUTTON on the top of the joystick and move the joystick in the direction desired.

8. VARIABLE SPEED CONTROL

The variable speed control knob can be used to increase or decrease the maximum drive speed of the machine. Clockwise rotation increases speed, counterclockwise decreases speed.

When platform the elevated more than 2 ft. (approx.) drive speed is automatically cut to 1/4 the speed from when the platform was completely lowered.



Figure 3-3. Platform Controller. (NEW STYLE)

9. WARNING HORN PAD

If machine is equipped with (optional) mounted horn, this pad when pressed sounds the horn.

Brake Release Control

(See Figure 3-4.)

Standard equipment on all VP Series lifts is a braking system integrated into the electric motor drive system. The braking system is spring engaged and released electrically while the machine is being driven with the joystick controller. When the lift is at rest or the power is turned off, the brakes are automatically engaged.

If the lift must be moved around manually as a result of the batteries become depleted and the machine needs to be moved from an aisleway, or machine is being winched onto a roll-back truck bed, etc. To release the brakes, a brake release control has been provided to engage/disengage the brake system.

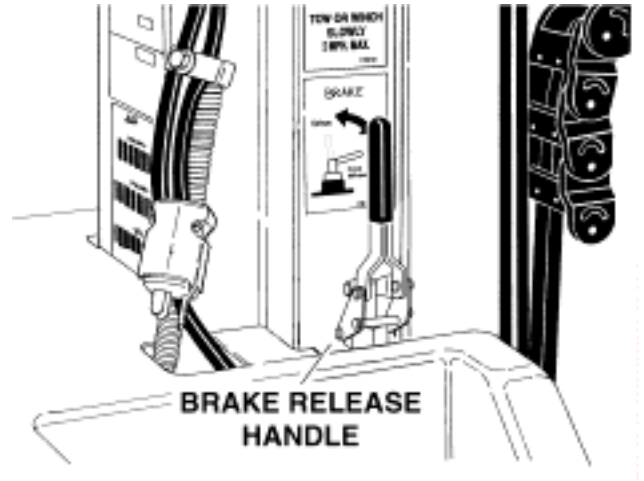


Figure 3-4. Brake Release Handle.

⚠ CAUTION

FOLLOW ALL APPLICABLE SAFETY PRECAUTIONS WHEN MANUALLY MOVING MACHINE AROUND (SEE SECTION 1-3).

⚠ IMPORTANT

WHEN PUSHED OR PULLED MANUALLY, THE MACHINE'S BRAKES MUST BE DISENGAGED AND THE EMERGENCY STOP BUTTON SET TO THE OFF POSITION, (DEPRESSED). DO NOT ATTEMPT TO TOW OR WINCH THE MACHINE AT A SPEED GREATER THAN (2) MPH, OR DAMAGE COULD OCCUR TO THE MACHINE'S ELECTRONIC CONTROLLER BOX. (DUE TO HIGH VOLTAGE BEING GENERATED BY THE DRIVE MOTORS FEEDING BACK INTO THE CONTROLLER BOX).

The brake release control lever is located on the right side of the mast (*bubble level side*). To disengage or engage the brakes, check the brake decal located just above the handle assembly to see which direction the handle needs to be pointed, (the brakes are ENGAGED (*normal driving position*) when the handle is in the up (*vertical*) position, and DISENGAGED (*machine can be moved manually when the handle is pulled down in a horizontal position*)). When brakes are disengaged the machine can then be moved around manually.

⚠ CAUTION

AFTER THE MACHINE HAS BEEN MANUALLY MOVED AND BEFORE DRIVING MACHINE, ALWAYS RE-ENGAGE THE BRAKE SYSTEM.

3.5 JLG POT-HOLE PROTECTION DEVICE

(See Figure 3-5.)

All VP Series lifts are equipped with JLGs Pot-Hole-Protection system (PHP). The PHP system consists of hinged PHP bars extending from the bottom edge of both sides of the base frame, as well as actuating cables and limit switch assemblies, the PHP bars are actuated by an assembly mounted at the base of the mast. The PHP bars are automatically ENGAGED (*lowered*) when the platform is raised more than (*approximately*) six (6") inches. The bars have a ground clearance of approximately three quarters (3/4") inch when ENGAGED (*lowered*), and are designed to support the weight of the machine should one of its wheels drop into a hole or crack. As the machine drops onto the PHP bar, the bar will limit the amount of tilt the machine will incur and reduce the likelihood of the machine tipping over. If this condition should occur, the operator must then fully lower the platform, exit the platform, and safely remove the machine from the situation.

When the machine is driven in areas where obstacles are higher than three quarters (3/4") inch off the work surface (*door sills, thick carpeting, etc.*) the platform must be completely lowered to allow the PHP bars to DISENGAGE (*retract*), allowing sufficient clearance of the machine's base frame.

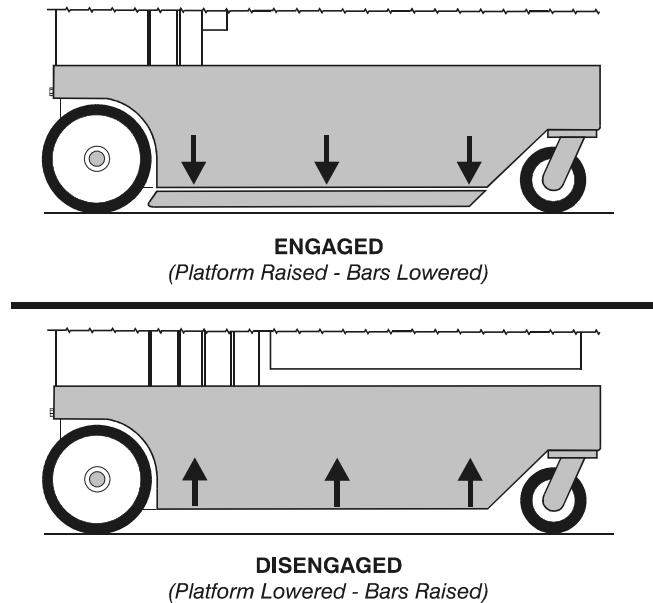
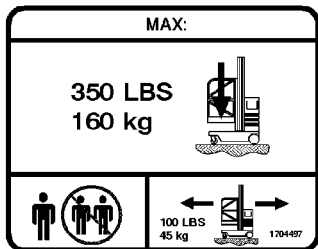


Figure 3-5. JLGs Pot-Hole-Protection Device - PHP Bar Operation.

STANDARD PLATFORM CAPACITY DECAL

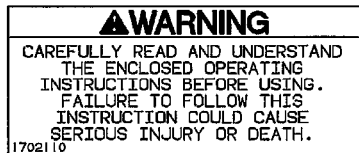
P/N-1704497 - (350 LBS 160kgs)
(DOM/CSA/LAT/BRZ/JPN/CHI)



P/N - 1703635



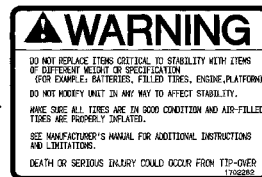
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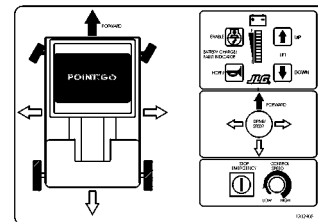
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P/N - 1702361



P/N - 1702282



P/N - 1702905

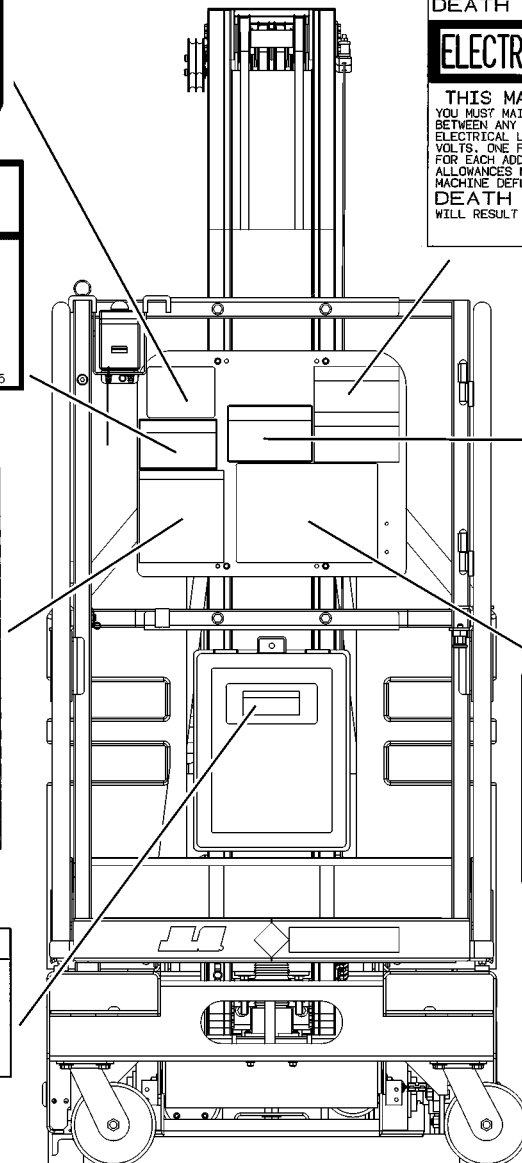


Figure 3-6. Decal Locations (Front View)

SECTION 3 - USER RESPONSIBILITIES & MACHINE CONTROLS

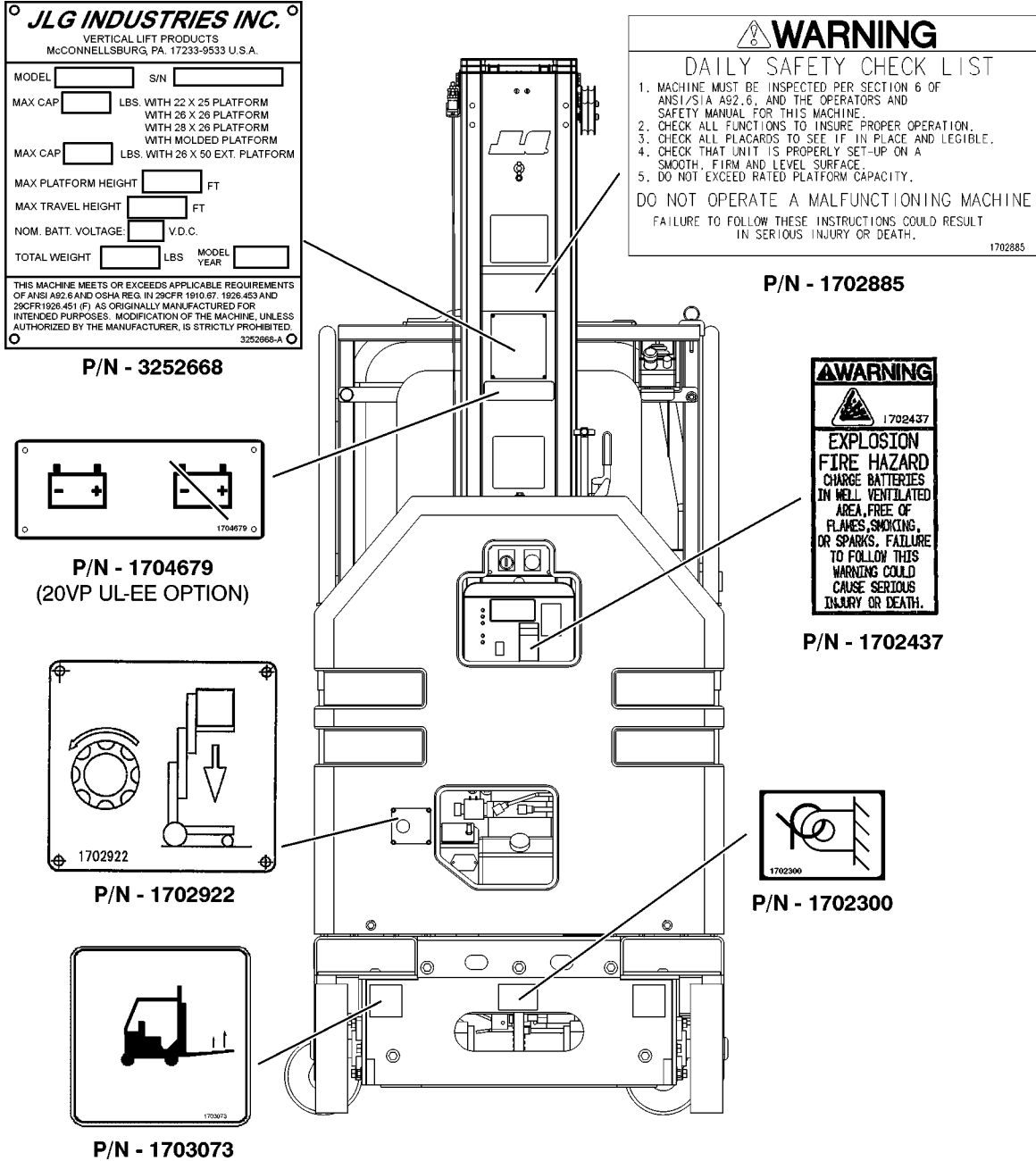


Figure 3-7. Decal Locations (Rear View)

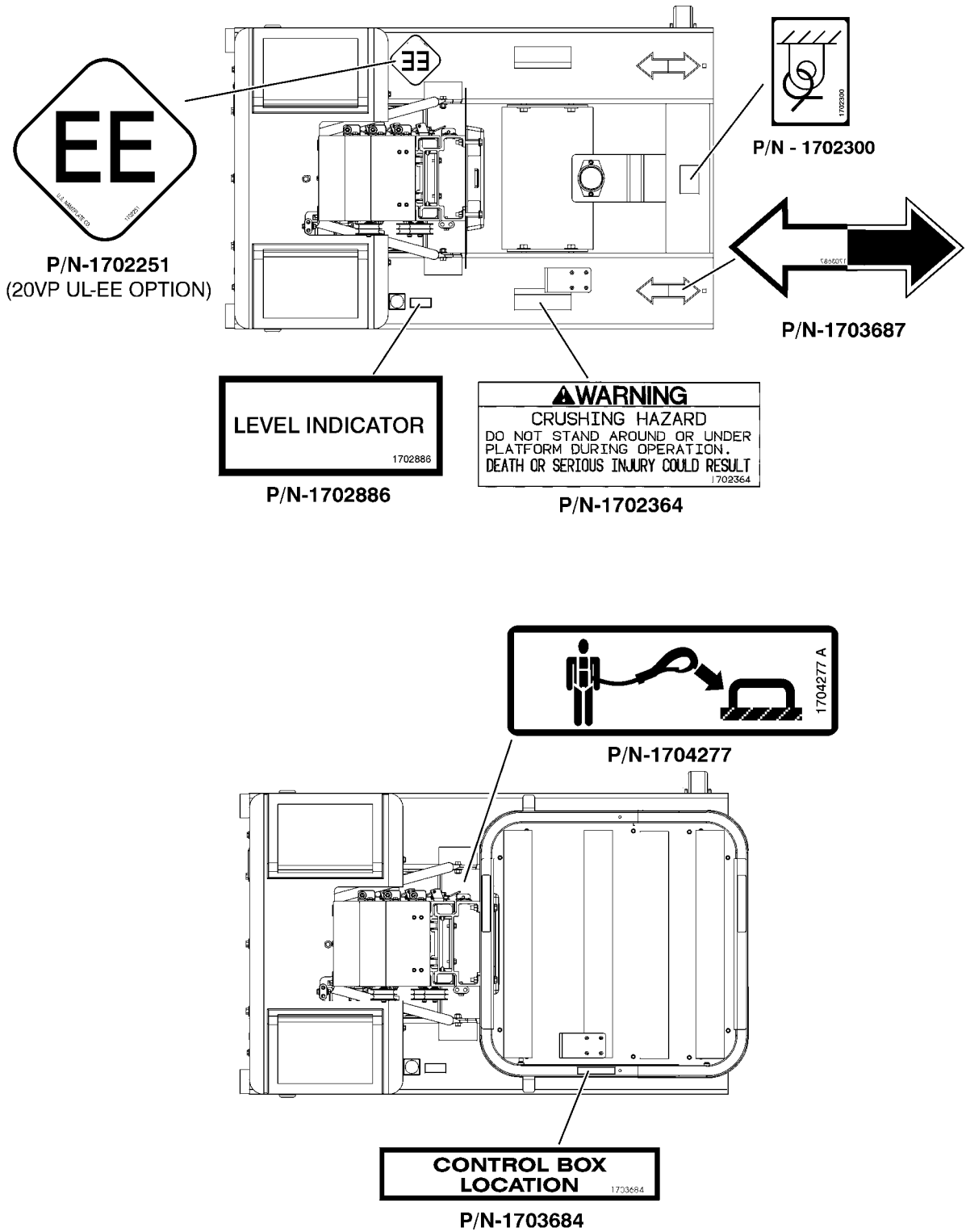


Figure 3-8. Decal Locations (Top View)

SECTION 3 - USER RESPONSIBILITIES & MACHINE CONTROLS

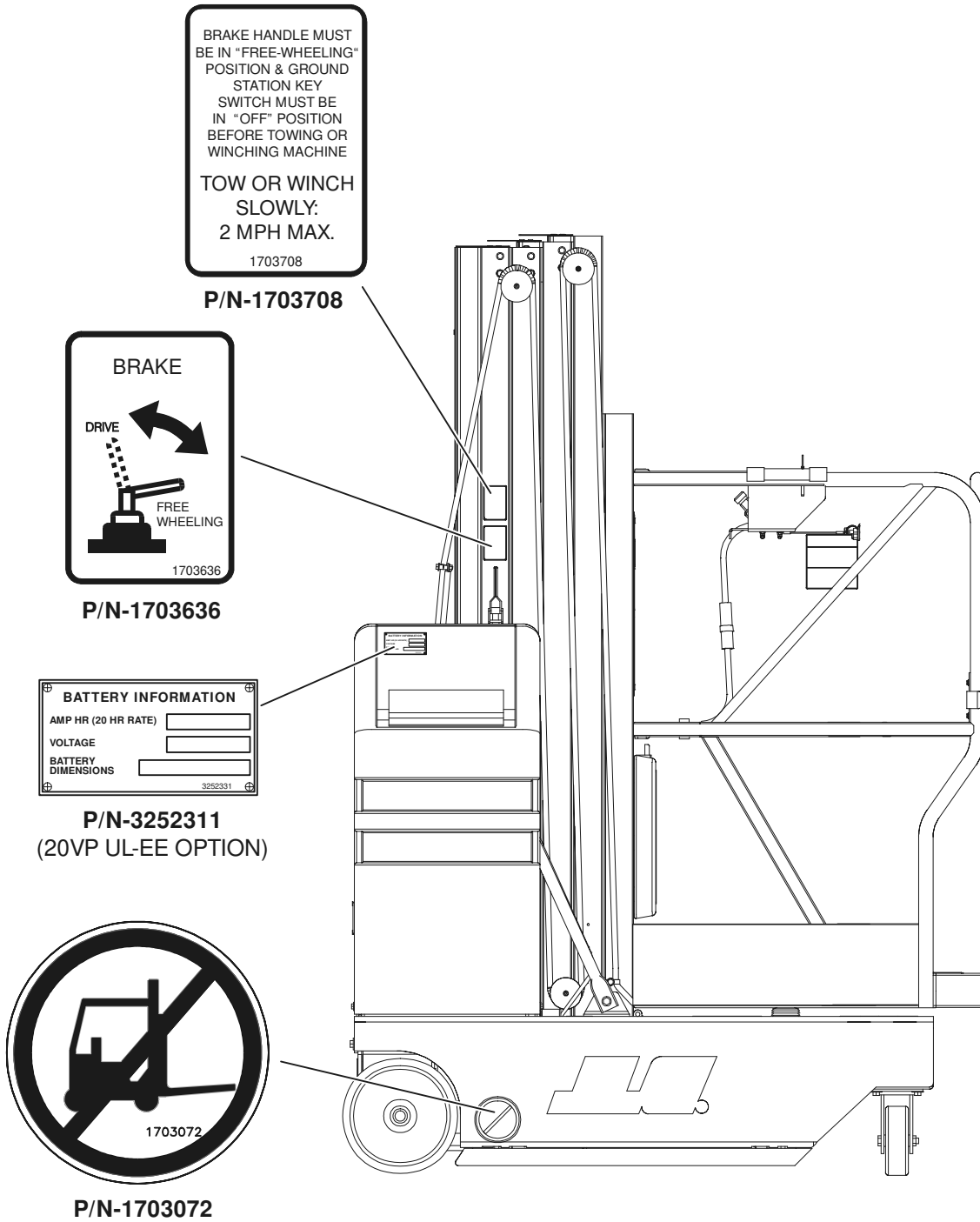


Figure 3-9. Decal Locations (Right/Left View)



10VP

P/N-1704498



15VP

P/N-1704499



20VP

P/N-1704500

Figure 3-10. Wheel Load Decals (10/15/20VP)

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SECTION 4. MACHINE OPERATION

4.1 MACHINE DESCRIPTION

The JLG VP Series model line of lifts are an electric self-propelled machine, with an aerial work platform mounted to an elevating aluminum mast mechanism. The mast is raised and lowered by a hydraulic cylinder extending between mast section-1 and -2, the remaining mast sections are proportionally extended and retracted using steel chains or cables. Hydraulic pressure is supplied to the lift cylinder by an electrically powered hydraulic pump. All VP Series models feature a steel base frame with swivel caster wheels mounted on the front and fixed drive wheels on the rear of the machine. The personnel lift's intended purpose is to provide personnel (*with their tools and supplies*) access to areas above ground level.

The JLG VP lift has a primary controller in the platform. From the platform controller the operator can drive the unit and raise or lower the platform. Ground controls are also provided, these controls consist of a keyed power on/off/grnd switch, an emergency stop button, an emergency/manual decent valve and a platform up/down control switch.

Instructions and warnings are posted adjacent to both platform and ground operator control stations and at other places on the machine. It is extremely important that the user/operator know what instructions and warnings are placed on the machine and in the manual. And that these instructions and warning be reviewed periodically.

The JLG VP personnel lift is designed to provide efficient and safe operation when maintained and operated in accordance with instructions and warnings on the machine, in the Operating, Safety and Maintenance Manual, ANSI Responsibilities Manual and by obeying all job site and government rules and regulations. As with any type of machine, the operator is very important to efficient and safe operation. It is absolutely necessary that the JLG VP lift be regularly maintained in accordance with this manual.

Any evidence of lack of maintenance, malfunction, excessive wear, damage or modification to the machine must be reported immediately to its owner, the job site supervisor, or safety manager and that the machine be taken out of service until all discrepancies are corrected.

The JLG VP personnel 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 except for JLG approved receptacles. The personnel lift must not be used as a forklift, crane, or support for overhead structure.

The total platform capacity of models 10VP, 15VP, 20VP must be uniformly distributed in the center of the platform. This means that the total combined weight of personnel, tools and supplies loaded into the platform must not exceed the platform capacity figures.

4.2 GENERAL

This section provides the necessary information needed to operate the machine. Included in this section are procedures for driving the machine, raising, lowering and loading the platform, and also transporting the machine. It is important that the user read and understand the proper procedures before operating the machine. Although some of the more important operating safety precautions will be listed in the following paragraph sections, IT IS EXTREMELY IMPORTANT ALL SAFETY PRECAUTIONS IN SECTION 1 - SAFETY PRECAUTIONS BE READ AND UNDERSTOOD BEFORE OPERATING MACHINE. If a "Daily Walk-Around Inspection", (*see Section 2-4.*) has not been performed, do so before starting set-up and operation. The operator must also be familiar with all lift controls as described in Section 3 - User/Operator Responsibilities and Machine Controls.

4.3 MACHINE OPERATION

The following sequence of basic procedures must be followed to safely operate the machine.

1. At the ground control station, set power PLAT/OFF/GRND key switch to the PLAT position to operate from platform controller, or GRND to operate from ground controls.
2. Check that the EMERGENCY STOP button at the ground and platform controls are in the RESET position for operation. Also check that EMERGENCY/MANUAL DECENT CONTROL VALVE is CLOSED (lower access hole in rear cover).

NOTE: 20VP MACHINES WITH THE UL-EE OPTION ONLY -
 These machines are equipped with a master ON/OFF switch mounted on the rear cover of the machine. This switch must be set to the ON position to operate the machine.

3. Check LED strip on the platform controller for current battery charge level before operating lift to be certain charge is sufficient to complete your work task. If the battery charger is plugged into an AC outlet, drive functions on the machine will be locked out.

NOTE: If LED'S are flashing a fault code on the platform controller box at machine power-up, see Section-3, "Troubleshooting" of the Service and Maintenance Manual for information on reading fault codes.

⚠ WARNING

WORK AREA MUST BE A SMOOTH, FIRM AND LEVEL SURFACE FREE OF HOLES, LARGE CRACKS OR DEBRIS ON SURFACE. THE WORK SURFACE MUST BE CAPABLE OF SUPPORTING THE WEIGHT OF THE MACHINE PLUS THE PLATFORM'S MAXIMUM RATED LOAD CAPACITY. ALWAYS CHECK THE BUBBLE LEVEL INDICATOR ON BASE FRAME TO BE SURE MACHINE IS LEVEL BEFORE RAISING PLATFORM.

4. Inspect work area before operating lift.

Platform Loading

The platform maximum rated load capacity is displayed on a decal located on the platform. The maximum rated load capacity includes the combined weight of the operator and any materials, tools, etc. placed in the platform with the operator.

Maximum rated load capacity for all platforms (*Except Extendible*) is as follows:

Table 4-1. Maximum Rated Load Capacity
 (for all platforms except Extendible)

Model	Max. Capacity
10VP	350 lb. (159 kg)
15VP	350 lb. (159 kg)
20VP	350 lb. (159 kg)

Table 4-2. Maximum Rated Load Capacity
 (for Extendible Platform*)

Model	Max. Capacity (ANSI - U.S.A.)	Max. Capacity (C.S.A. - Canada)
10VP	Not Available*	Not Available*
15VP	Not Available*	Not Available*
20VP	350/300 lb. (160/135 kg)	350/250 lb. (160/114 kg)

* Extendible Platform available only for 20VP.

Interlock Switch Operating Conditions

Table 4-3. shown, lists machine response to various interlock switch positions.

Table 4-3. Machine Interlock Switch Operating Conditions.

Elevation/Speed Switch	Drive Cutout (PHP System)	Tilt Status	Brake Status	Controller Response
mast retracted	bars raised	(not tilted)	engaged	Full Drive and Lift
mast retracted	bars raised	(not tilted)	disengaged	Drive and Lift disabled
mast extended	bars lowered	(not tilted)	engaged	Drive 25% maximum
mast extended	bars lowered	(not tilted)	engaged	Drive disabled
mast retracted	bars raised	(tilt)	engaged	Lift disabled
mast retracted	bars raised	(tilt)	disengaged	Drive and Lift disabled
mast retracted	bars raised/battery charger plugged-in	(not tilted)	engaged	Drive disabled

Driving

WARNING

WHEN DRIVING WITH PLATFORM LOWERED, DO NOT ATTEMPT TO DRIVE MACHINE UP A RAMP (*GRADE*) OF GREATER THAN FIFTEEN 15% PERCENT (8-1/2° DEGREES), OR SIDE SLOPE GREATER THAN (5° DEGREES), AS TIPPING COULD OCCUR.

NEVER ATTEMPT TO DRIVE ONTO A GRADE WITH THE PLATFORM ELEVATED.

1. Enter the platform and close the gate.
2. Check the floor and overhead area in the direction of travel for obstacles to avoid.

OLD STYLE CONTROLLER

3. On the platform controller the FUNCTION ENABLE switch must be pressed and released before any other platform function will operate. You must activate the desired function within three (3) seconds after pressing the FUNCTION ENABLE switch.
4. Press and release the FUNCTION ENABLE switch then gently point the JOYSTICK in the direction of travel. If necessary, adjust the SPEED CONTROL on the platform controller (*round knurled knob*) while driving.
5. To stop, either release the JOYSTICK (*quick stop*), or slowly move the JOYSTICK back to the neutral (*center*) position (*preferred*), to bring lift to a smooth stop.

NEW STYLE CONTROLLER

3. On the joystick control the DRIVE ENABLE button located on the top of joystick must be pressed and HELD down before driving the machine with the joystick control.
4. Press and HOLD the DRIVE ENABLE button then gently point the JOYSTICK in the direction of travel. If necessary, adjust the VARIABLE SPEED CONTROL knob on the controller (*round knurled knob*) while driving.
5. To stop, either release the JOYSTICK (*quick stop*), or slowly move the JOYSTICK back to the neutral (*center*) position (*preferred*), to bring lift to a smooth stop.

Elevating Platform

WARNING

DO NOT ATTEMPT TO RAISE THE PLATFORM UNLESS ALL FOUR WHEELS OF THE MACHINE ARE RESTING ON A FIRM AND LEVEL SURFACE.

ALWAYS CHECK THE BUBBLE LEVEL OR TILT INDICATOR ON

BASE THE FRAME TO BE SURE MACHINE IS ON A LEVEL SURFACE BEFORE RAISING PLATFORM.

ALSO, OBSERVE SURFACE AREA AROUND MACHINE IF IT IS TO BE MOVED (*DRIVEN*) WHILE PLATFORM IS ELEVATED.

DO NOT ATTEMPT TO DRIVE ONTO A GRADE WITH THE PLATFORM ELEVATED.

1. Drive the machine to the area where overhead work is to be performed and position the machine into its approximate work position. (*Use optional laser positioning pointer if equipped*).
2. Check the tilt indicator or the bubble level indicator on base frame of machine, the bubble inside the level indicator must be inside the small center ring before attempting to raise the platform.

OLD STYLE CONTROLLER

3. To raise the platform, PRESS and RELEASE the FUNCTION ENABLE switch on the platform controller, then within three (3) seconds PRESS the platform UP (*up arrow*) switch on the controller panel. Upon reaching desired elevation level release the UP (*arrow*) switch.

NEW STYLE CONTROLLER

3. To raise the platform, PRESS and HOLD the LIFT ENABLE switch on the platform controller then the platform UP (*up arrow*) switch on the controller panel. Upon reaching desired elevation level release the UP (*arrow*) switch and the LIFT ENABLE switch.

NOTE: Maximum drive speed is automatically decreased to one half (1/2) m.p.h. maximum when platform is elevated.

4. If necessary, reposition (*drive*) lift using platform controller JOYSTICK to bring work object into reach.

Lowering Platform

WARNING

ENSURE AREA BENEATH PLATFORM IS FREE OF PERSONNEL AND OBSTRUCTIONS PRIOR TO LOWERING PLATFORM.

OLD STYLE CONTROLLER

1. To lower platform, press the FUNCTION ENABLE switch and platform DOWN switch (*down arrow*) on the platform controller panel. Upon reaching desired lower level release the DOWN (*down arrow*) switch.

NEW STYLE CONTROLLER

1. To lower platform, PRESS and HOLD the LIFT ENABLE switch and platform DOWN switch (*down arrow*) on the platform controller panel. Upon reaching desired lower level release the DOWN (*down arrow*) switch and the LIFT ENABLE switch.

Parking Machine

1. Drive machine to a well-protected and well-ventilated area.
2. Ensure the platform is fully lowered, turn power PLAT/OFF/GRND key switch to the OFF position (*centered*).
3. Park machine with brakes engaged. (*Brake over-center handle up, drive position*).
4. If necessary, remove key from POWER PLAT/OFF/GRND key switch to disable machine from unauthorized use.

NOTE: If required, plug in AC battery charger so machine batteries will be charged in preparation for next work day in accordance with Section 2-7, "Battery Charging".

4.4 QUICK-CHANGE PLATFORM

(See Figure 4-1.)

⚠ IMPORTANT

PLEASE NOTE THAT THE OPTIONAL EXTENDIBLE PLATFORM IS ONLY AVAILABLE FOR THE 20VP AND CAN ONLY BE MOUNTED ON THAT MODEL.

This design VP model is equipped with quick-change platform mounts which will allow quick removal and installation of the currently available quick-change platforms. The following procedures describe platform removal and installation:

Platform Removal

1. Remove the platform (*joystick*) controller and bracket by turning the bracket clamp screw knob counterclockwise to loosen the clamp screw securing the controller bracket to the platform rail. Remove controller and bracket from platform and lay aside.
2. Remove both pins securing the lower platform support rail to the mast mounting channel.
3. Remove both pins from the upper platform support rail to mast mounting cradle.
4. Using either suitable lifting equipment, capable of lifting the weight of the mounted platform, or another person, swing the lower platform support rail forward, away from the mast to clear the lower channel mount, then lift the upper platform support rail up and out of the top cradle mount. Move platform clear of the machine and carefully set the platform on its base out of the way.

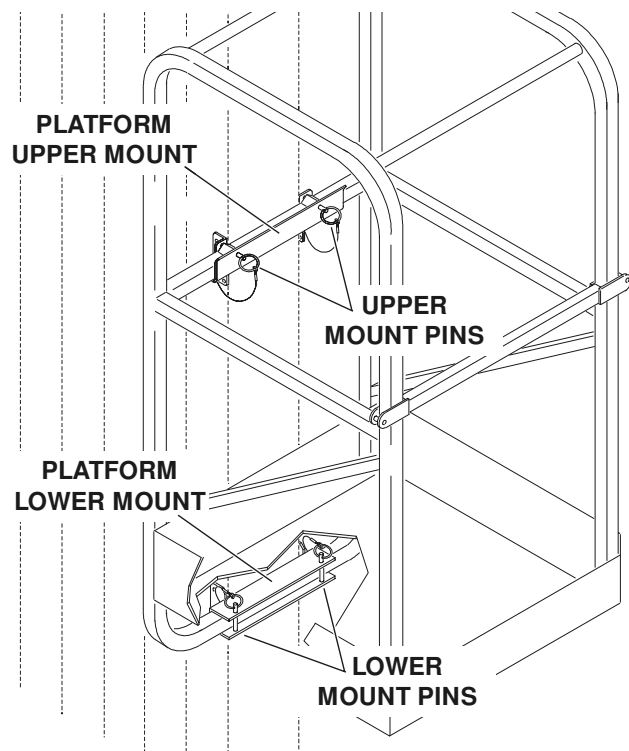


Figure 4-1. Quick-Change Platform Mount.

Platform Installation

1. Using either suitable lifting equipment, capable of lifting the weight of the unmounted platform or another person, lift the platform and set the platform's upper support rail into the mast upper platform cradle mount.
2. Swing the platform lower support rail into the mast lower platform channel mount.
3. Secure the platform support rails with the two (2) upper platform cradle mount pins, and the two (2) lower platform channel mount pins.
4. Install the platform (*joystick*) controller and bracket at its proper position on the platform rail while properly routing the controller cable inside the platform rails.

The platform is now ready for operation.

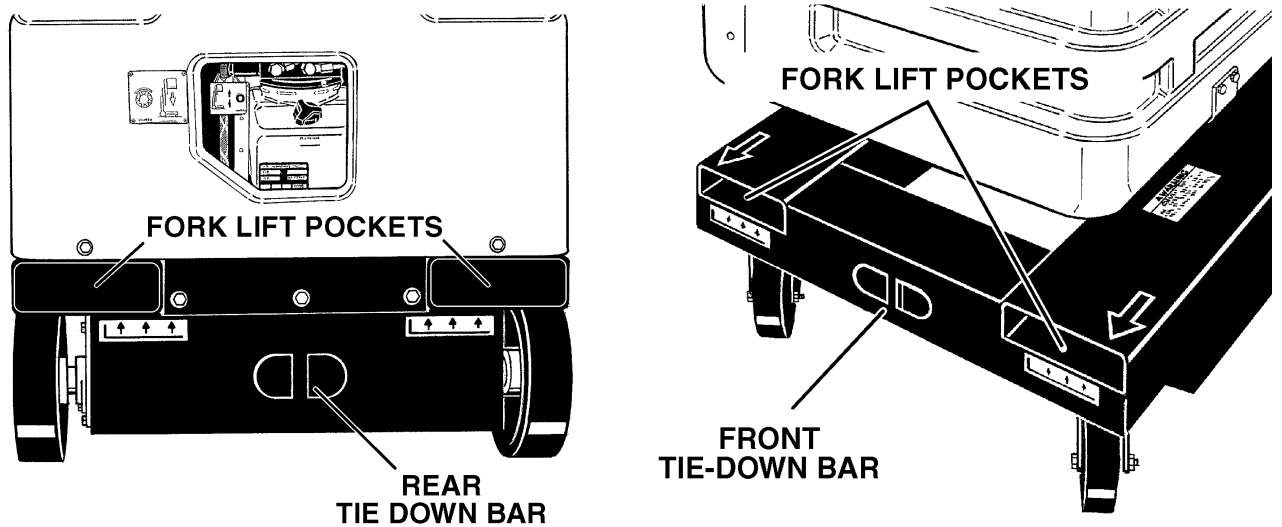


Figure 4-2. Forklift Truck Lifting Pockets and Machine Tie Down Bar Locations.

4.5 TRANSPORTING, LIFTING AND TIE DOWN PROCEDURES

General

All VP Series model personnel lifts may be transported to a work site using the following methods:

- Driving the machine around on its base wheels if travel surface area permits.
- Loaded, IN AN UPRIGHT POSITION ONLY onto a heavy-duty vehicle with the payload capacity capable of supporting the full weight of the machine (*see machine weights in the following sub-section "Fork-lift Truck Transport"*).
- Moved with a fork-lift truck using the fork-lift pockets in the base frame.

⚠ IMPORTANT

THE VP SERIES CONTROLLER COULD SUSTAIN SERIOUS DAMAGE WHEN THE UNIT IS PUSHED, OR TOWED WHILE NOT UNDER POWER, FOR EXAMPLE PUSHING OR TOWING WITH OTHER MACHINERY, AT SPEEDS OF 4 MPH. DO NOT ATTEMPT TO PUSH OR TOW THE MACHINE AT SPEEDS GREATER THAN 2 MPH ALWAYS BE CERTAIN THE MACHINES BRAKES ARE DISENGAGED AND THE EMERGENCY STOP BUTTON IS SET TO THE OFF POSITION (DEPRESSED), WHEN PUSHING, WINCHING OR TOWING.

Driving to Work Area

All VP Series models are capable of being driven to a work area, if the surrounding travel surface permits. Follow the driving and safety instructions as noted in previous Section 4-3., Machine Operation.

Truck Transport

⚠ CAUTION

DO NOT TRANSPORT THE MACHINE IN A HORIZONTAL POSITION DUE TO LEAKAGE OF BATTERY ACID FROM THE BATTERIES OR HYDRAULIC FLUID FROM THE HYDRAULIC RESERVOIR.

VP Series model personnel lifts may be transported to a work site on a truck or trailer in an upright position. The transport vehicle must have a payload capacity capable of supporting the full weight of the machine, (*see machine weights in the following sub-section "Fork-lift Truck Transport"*). The selected transport vehicle must also be equipped with tie-down lugs strong enough to restrain the machine during transport.

JLG recommends loading the machine onto the bed of the transport vehicle using a suitable fork-lift truck or lifting with the (*optional*) crane hook, with the exception of a truck equipped with a tilting-roll-back truck bed.

The machine may be winched onto a tilted roll-back truck bed (*see important note following*) which has been rolled back to ground level. Always winch (*pull*) from the mast (*rear*) end of the machine, using the rear tie-down bar located in the base frame (*see Figure 4-2.*).

⚠ IMPORTANT

DO NOT ATTEMPT TO DRIVE MACHINE ONTO, OFF OF, OR PUSH MACHINE ONTO A TILTED ROLL-BACK TRUCK BED.

WHEN TOWING OR WINCHING, THE MACHINE'S BRAKES MUST BE DISENGAGED (SEE SECTION 3-4. CONTROLS AND INDICATOR, SUB-SECTION "BRAKE RELEASE CONTROL"), AND THE EMERGENCY STOP BUTTON SET TO THE OFF POSITION, (DEPRESSED).

DO NOT ATTEMPT TO TOW OR WINCH THE MACHINE AT A SPEED GREATER THAN (2) MPH, OR DAMAGE COULD OCCUR TO THE MACHINES ELECTRONIC CONTROLLER BOX, (DUE TO HIGH VOLTAGE BEING GENERATED BY THE DRIVE MOTORS FEEDING BACK INTO THE CONTROLLER BOX).

RE-ENGAGE THE BRAKES ONCE MACHINE IS IN PLACE WITH TRUCK BED LEVEL AND READY FOR TIE DOWN.

TIE DOWN BARS ARE PROVIDED ON BOTH ENDS OF THE BASE FRAME TO SECURE MACHINE TO BED OF TRANSPORT VEHICLE.

Machine Tie-Down

With machine in position to be tied down and brakes engaged, use the following guidelines for restraining the machine during transport.

⚠ IMPORTANT

USE OF EXCESSIVE FORCE WHEN SECURING MACHINE (DRIVE WHEEL LOAD), CAN CAUSE DAMAGE TO THE MACHINES DRIVE COMPONENTS, I.E. AXLES, AXLE BEARINGS, TORQUE LIMITING CLUTCH, OR DRIVE GEARS.

1. Secure machine with an adequate chain attached through the tie down bars at the front and back of machine. (See Figure 4-2.)
2. The chain should be securely tightened with a force of approximately 100 lb. applied two feet from the pivot handle. (i.e.. the chain is properly tightened when a 200 lb. load placed on the chain (a 200 lb. man standing on the chain), just flexes the chain).

Fork-lift Truck Transport

⚠ IMPORTANT

ALWAYS RELEASE THE DRIVE MOTOR BRAKES AND SET THE EMERGENCY STOP BUTTON TO THE OFF POSITION, (DEPRESSED) ON THE MACHINE WHEN MANUALLY PUSHING, PULLING, OR WHEN TRANSPORTING MACHINE BY FORK-LIFT TRUCK. THIS WILL ALLOW THE DRIVE MOTORS AND GEARS TO ROTATE WITH LEAST RESISTANCE SHOULD THE DRIVE WHEELS COME IN CONTACT WITH ANY SURFACE. IF CONTACT OF THE REAR DRIVE WHEELS DOES OCCUR WHILE FORKLIFT TRUCKING, AT SPEEDS GREATER THAN 2 MPH, DAMAGE COULD OCCUR TO THE MACHINES ELECTRONIC CONTROLLER BOX, (DUE TO HIGH VOLTAGE BEING GENERATED BY THE DRIVE MOTORS FEEDING BACK INTO THE CONTROLLER BOX).

ALWAYS REMEMBER TO RE-ENGAGE THE BRAKE SYSTEM BEFORE MACHINE OPERATION.

As standard equipment, all VP series lift models are equipped with 7-1/2 in. wide fork-lift pockets running through the base frame. This allows the machine to be either transported around a work area or lifted onto a higher level using a standard fork-lift truck.

NOTE: Fork-lift trucks must be capable of handling the following weights:

Table 4-4. Machine Gross Weights

Model	ANSI SPEC (United States)	C.S.A. (Canada)
10VP	930 lb. (422 kg)	930 lb. (422 kg)
15VP	1,355 lb. (615 kg)	1,425 lb. (647 kg)
20VP	1,910 lb. (867 kg)	2,100 lb. (953 kg)

SECTION 5. OPTIONAL EQUIPMENT

5.1 OPTIONAL EQUIPMENT

The VP Series models are available with the following optional equipment:

26" x 28" Quick-Change Platform

The 26" long by 28" wide platform features a gull wing gate and is attached to the mast using the quick change mount.

25" x 22" Quick-Change Platform

The 25" long by 22" wide platform features a gull wing gate and is attached to the mast using the quick change mount.

26" x 50" Quick-Change - Extendible Platform

(See Section 5-2, Extendible Platform Operation)

IMPORTANT

PLEASE NOTE THAT THE OPTIONAL EXTENDIBLE PLATFORM IS ONLY AVAILABLE FOR THE 20VP AND CAN ONLY BE MOUNTED ON THAT MODEL.

The 26" long x 50" wide extendible platform features a gull wing gate and is attached to the mast using the quick change mount.

25" x 26" Step-in Molded Platformw/Swing-up Gate

This fixed mount platform is also available, the platform features a tough molded shell base and sides mounted to a welded steel frame. This step-in platform has a swing-up gate for easy entry.

Tool Tray

The tool tray is attached to the top rail of the platform allowing for quick access to hand tools or other small items placed in the tray.

Fluorescent Tube Caddy

The fluorescent tube caddy is attached to the top rail of the platform allowing for convenient handling when replacing fluorescent tubes.

Laser Positioning Light

The laser positioning light attaches to the platform railing and when powered on projects a laser dot on any surface above the machine. This allows for better positioning of the machine under a work area, before raising the machine platform.

Lifting Hook

The optional lifting hook is mounted at the top rear of the first mast section. The hook is used to lift the machine up or down to another level.

Amber Beacon Light

The revolving amber beacon flashes any time the machine power is turned on, this helps alert others of the presence and operation of the machine.

Motion Alarm

The motion alarm emits a very audible beeping sound and can be set to activate (beep) either when the machine is being driven or if the platform is in motion. It can also be set to activate (beep) for both functions.

Horn

The horn is activated by the horn pad on the platform controller box. It can be used at the discretion of the operator to alert other personnel to the presence of the machine.

Travel/Storage Cover

This cover is custom fit to all VP Series machines. It covers the complete machine from the top of the mast down to the base wheels. It is made of heavy, durable, washable black vinyl material.

UL-EE Rating (20VP Model Only)

The 20VP machine is available with optional protective features designed into the electrical system, which allow it to comply with the Underwriters Laboratory - EE electrical rating.

5.2 EXTENDIBLE PLATFORM OPERATION

⚠ IMPORTANT

PLEASE NOTE THAT THE OPTIONAL EXTENDIBLE PLATFORM IS ONLY AVAILABLE FOR THE 20VP AND CAN ONLY BE MOUNTED ON THAT MODEL.

The optional extendible platform is designed to increase operator reach over the front of the machine, this allows the operator access to work areas which may otherwise be unreachable from the standard platform. The following procedures describe proper use of the Extendible Platform.

Mounting to Mast

The Extendible Platform uses the same quick-mount hardware as the standard platform, see Section 4-4. "Quick-Change Platform" in the Operators and Safety manual for procedures to mount and remove the platform on the mast.

Once the platform is mounted re-check that all mounting pins on upper and lower platform mast mounts, two (2) pins on upper mount and two (2) pins on lower mount are installed and secure.

Entering/Exiting Platform

(Refer to Figure 5-1.)

The Extendible Platform is equipped with a swing-up gull-wing gate for entrance into the platform.

⚠ WARNING

THE TOTAL WEIGHT CAPACITY FOR THE EXTENDIBLE PLATFORM ASSEMBLY IS 350/300 LB. (160/136 KG) – U.S.A AND 350/250 LB. (160/113 KG) – CANADA. A MAXIMUM OF 300 LB. (USA)/250 LB. (CSA), IS ALLOWED ON THE PLATFORM EXTENSION.

1. **To enter the platform**, raise the swing up gate by grasping the front mid rail with one hand and pulling up on the gate release handle on the front of the platform assembly.
2. Next lift the gate high enough to enter the platform. Step into the platform, when completely inside platform, lower the gate until it's closed and the gate latch is engaged and latched.
3. **To exit platform**, repeat the above steps and exit the platform.

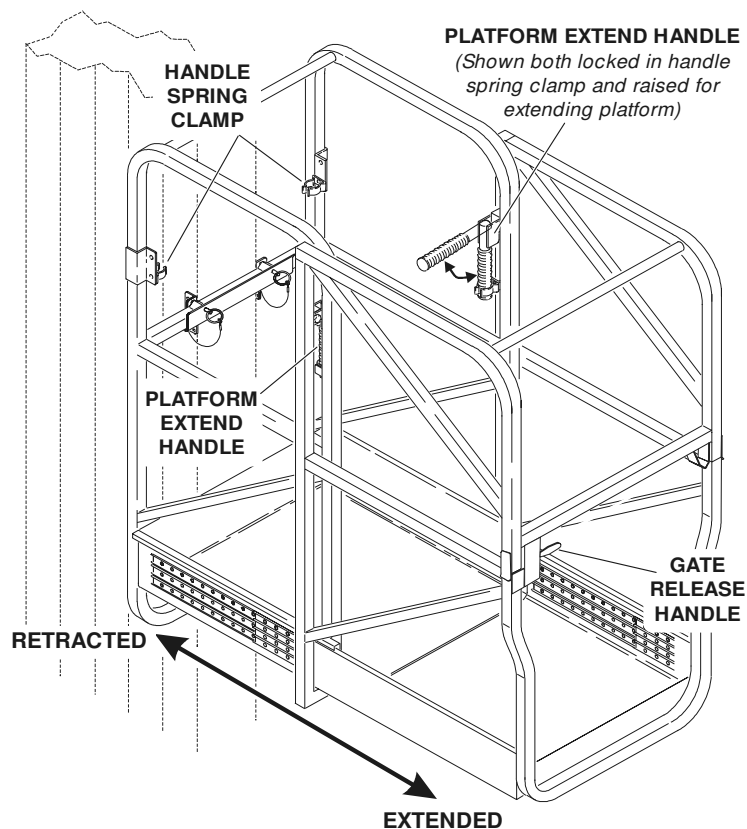


Figure 5-1. Extendible Platform. (Platform shown extended)

Extending Platform

(Refer to Figure 5-1.)

1. Locate the two (2) platform extend handles, one (1) located each side of platform on the vertical rails at the back of the platform.
2. Grasp each extend handle and pull the handle up to a horizontal position releasing it from the spring clamp. Face the mast and pull the extend handles to extend the platform extension forward away from mast.
3. Slide the platform extension forward until it's completely extended, and the extend handles line up with the spring clamps on the vertical rail at the opposite end of the platform.
4. Next fold the extend handles down until they lock into the spring clamps on the vertical rail, this will lock the platform extension in place.

Retracting Platform

(Refer to Figure 5-1.)

1. To retract the platform grasp the extend handles now located at the middle of the extended platform on the vertical rail. Pull up on each handle to a horizontal position to clear the handle spring clamps.
2. Retract the platform extension by standing on the rear (mast) platform section and pulling the extend handles toward the mast, (you may need to pull the handles halfway then turn and push them the rest of the way to fully retract the platform extension).
3. When both extend handles line up with the handle spring clamps on the vertical rail at the rear of the platform, fold the handles down locking them into the spring clamps.

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SECTION 6. EMERGENCY PROCEDURES

6.1 GENERAL INFORMATION

This section provides information on procedures to be followed, and 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 CONTROLS AND THEIR LOCATION

⚠ WARNING

CHECK MACHINE DAILY TO MAKE SURE EMERGENCY STOP SWITCHES ARE IN PLACE AND OPERATIONAL. AND THAT APPLICABLE INSTRUCTIONS ARE IN PLACE AND LEGIBLE.

Platform Emergency Stop Switch

This (RED) button is located on the platform joystick controller box and, when depressed, will immediately stop the machine from the platform.

Ground Emergency Stop Switch

The ground emergency stop switch (RED) button is located inside the rear cover (upper access hole) beside the power ON/OFF/GRND key switch. When depressed, it will immediately stop the machine.

Manual Descent Knob

The manual descent knob is used in the event of either a total power failure, or if the operator in the platform cannot lower the platform himself. The manual descent knob (RED knurled) is located on the electric/hydraulic pump-motor unit inside the rear cover (lower access hole, just above the hydraulic reservoir). To lower the platform, turn the manual descent knob counterclockwise opening the valve. Turn the knob clockwise to stop descent or to close the valve. (The platform will be lowered, unpowered, using gravity.)

6.3 EMERGENCY OPERATION

Use of Ground Controls

⚠ IMPORTANT

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

⚠ DANGER

BEFORE TOUCHING ANY PART OF THE MACHINE IN AN EMERGENCY SITUATION, FIRST DETERMINE IF MACHINE IS IN CONTACT WITH OR IN CLOSE PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR. THIS MACHINE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR. (SEE ELECTROCUTION HAZARD, SECTION 1-3.)

Ground personnel must be thoroughly familiar with the machine operating characteristics and the ground control functions (see Section 3-4. "Controls and Indicators"). Training should include operation of the machine, review and understanding of this section and hands-on operation of the controls in simulated emergencies.

Operator Unable to Control Machine

⚠ IMPORTANT

IF THE PLATFORM OPERATOR IS UNABLE TO OPERATE OR CONTROL THE MACHINE FOR ANY REASON, USE THE FOLLOWING INSTRUCTIONS AS A GUIDELINE.

1. Operate the machine from the ground controls ONLY with the assistance of other personnel and equipment (cranes, overhead hoists, etc.) as may be required to safely remove the danger or emergency condition.
2. 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 help remove the platform occupant and stabilize motion of the machine in case machine controls are inoperable or platform cannot be lowered with the emergency/manual decent valve.

continued next page

Platform Caught Overhead

If the platform 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 attempt to move machine unless a crane, forklift or other suitable equipment is available to support machine.

Post-Incident Inspection

Following any incident, thoroughly inspect the machine and test all functions. Do not lift platform above 10 feet (3 meters) until you are sure that all damage has been repaired and that all controls and machine components are operating correctly.

6.4 INCIDENT NOTIFICATION

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 Product Safety and Reliability Department at the factory should be contacted by telephone and provided with all necessary details.

JLG Phone: 877-JLG-SAFE (554-7233)
(8am till 4:45pm EST)

Email: productsafety@jlg.com

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.



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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