

Operation & Safety Manual

Model 25RTS 33RTS 40RTS

3120690

May 15, 2003

ANSI







CALIFORNIA PROPOSITION 65 BATTERY WARNING

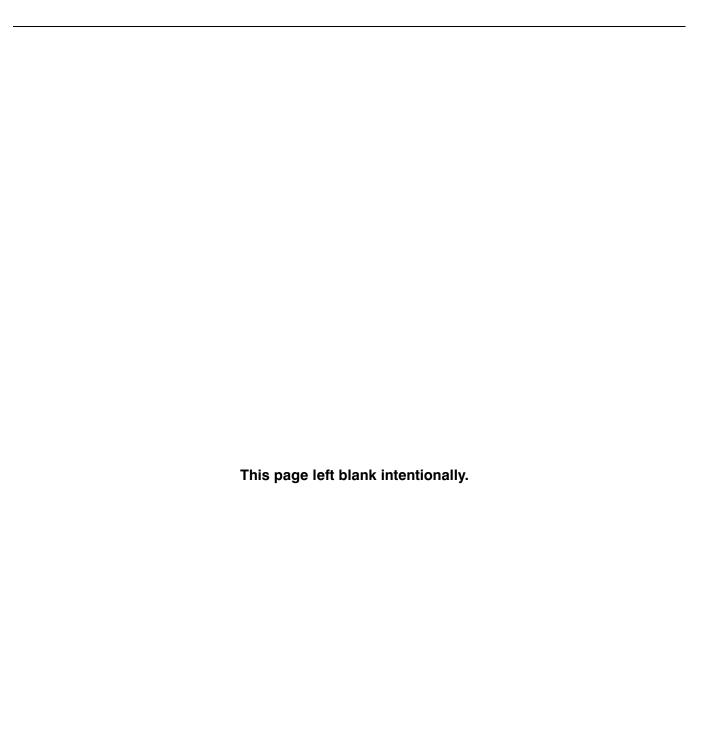
Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm.

WASH HANDS AFTER HANDLING!



The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

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FOREWORD

This manual is a very important tool! Keep it with the machine at all times.

The purpose of this manual is to provide owners, users, operators, lessors, and lessees with the precautions and operating procedures essential for the safe and proper machine operation for its intended purpose.

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

SAFETY ALERT SYMBOLS AND SAFETY SIGNAL WORDS



This is the Safety Alert Symbol. It is used to alert you to the potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death

▲ DANGER

INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, <u>WILL</u> RESULT IN SERIOUS INJURY OR DEATH. ON THE MACHINE THIS WILL HAVE A RED BACKGROUND.

▲ WARNING

INDICATES A POTENTIALITY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, <u>COULD</u> RESULT IN SERIOUS INJURY OR DEATH. ON THE MACHINE THIS WILL HAVE AN ORANGE BACKGROUND.

A CAUTION

INDICATES A POTENTIALITY HAZARDOUS SITUATION WHICH IF NOT AVOIDED, <u>MAY</u> RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO BE USED TO ALERT AGAINST UNSAFE PRACTICES. ON THE MACHINE THIS WILL HAVE A YELLOW BACKGROUND.

IMPORTANT

INDICATES PROCEDURES ESSENTIAL FOR SAFE OPERATION AND WHICH, IF NOT FOLLOWED, MAY RESULT IN A MACHINE MALFUNCTIONED DAMAGE. ON THE MACHINE THIS WILL HAVE A GREEN BACKGROUND.

▲ WARNING

THIS PRODUCT MUST COMPLY WITH ALL SAFETY RELATED BULLETINS. CONTACT JLG INDUSTRIES, INC. OR THE LOCAL AUTHORIZED JLG REPRESENTATIVE FOR INFORMATION REGARDING SAFETY-RELATED BULLETINS WHICH MAY HAVE BEEN ISSUED FOR THIS PRODUCT.

MODIFICATION OR ALTERATION OF AN AERIAL WORK PLATFORM SHALL BE MADE ONLY WITH WRITTEN PERMISSION FROM THE MANUFACTURER

IMPORTANT

JLG INDUSTRIES, INC. SENDS SAFETY RELATED BULLETINS TO THE OWNER OF RECORD OF THIS MACHINE. CONTACT JLG INDUSTRIES, INC. TO ENSURE THAT THE CURRENT OWNER RECORDS ARE UPDATED AND ACCURATE.

IMPORTANT

JLG INDUSTRIES, INC. MUST BE NOTIFIED IMMEDIATELY IN ALL INSTANCES WHERE JLG PRODUCTS HAVE BEEN INVOLVED IN AN ACCIDENT INVOLVING BODILY INJURY OR DEATH OF PERSONNEL OR WHEN SUBSTANTIAL DAMAGE HAS OCCURRED TO PERSONAL

FOR:

- Accident Reporting
- Product Safety Publications
- Current Owner Updates
- Questions Regarding Product Safety
- Standards and Regulations Compliance Information
- Questions Regarding Special Product Applications
- Questions Regarding Product Modifications

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SECTION 1. SAFETY PRECAUTIONS

1.1 GENERAL

This section outlines the necessary precautions for proper and safe machine usage and maintenance. For proper machine use, it is mandatory that a daily routine is established based on the content of this manual. A maintenance program, using the information provided in this manual and the Service and Maintenance Manual, must also be established by a qualified person and followed to ensure that the machine is safe to operate.

The owner/user/operator/lessor/lessee of the machine should not operate this machine until this manual has been read, training is accomplished, and operation of the machine has been completed under the supervision of an experienced and qualified operator.

If there are any questions with regard to safety, training, inspection, maintenance, application, and operation, please contact JLG Industries, Inc. ("JLG").

A WARNING

FAILURE TO COMPLY WITH THE SAFETY PRECAUTIONS LISTED IN THIS MANUAL COULD RESULT IN MACHINE DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

1.2 PRE-OPERATION

Operator Training and Knowledge

 Read and understand this manual before operating the machine.



- Do not operate this machine until complete training is performed by authorized persons.
- Only authorized and qualified personnel can operate the machine.
- Read, understand, and obey all DANGERS, WARN-INGS, CAUTIONS, and operating instructions on the machine and in this manual.
- Use the machine in a manner which is within the scope of its intended application set by JLG.
- All operating personnel must be familiar with the emergency controls and emergency operation of the machine as specified in this manual.
- Read, understand, and obey all applicable employer, local, and governmental regulations as they pertain to operation of the machine.

Workplace Inspection

- The operator is to take safety measures to avoid all hazards in the work area prior to machine operation.
- Do not swing turntable or raise the platform while on trucks, trailers, railway cars, floating vessels, scaffolds or other equipment unless approved in writing by JLG.
- Do not operate the machine in hazardous environments unless approved for that purpose by JLG.
- Be sure that the ground conditions are able to support the maximum load shown on the decals located on the machine.
- This machine can be operated in temperatures of 0° F to 104° F (-20° C to 40° C). Consult JLG for operation outside this range.

Machine Inspection

- Before machine operation, perform inspections and functional checks. Refer to Section 2 of this manual for detailed instructions.
- Do not operate this machine until it has been serviced and maintained according to requirements specified in the Service and Maintenance Manual.
- Be sure all safety devices are operating properly. Modification of these devices is a safety violation.
- Do not operate any machine on which safety or instruction placards or decals are missing or illegible.
- Avoid any buildup of debris on the platform floor. Keep mud, oil, grease, and other slippery substances from footwear and platform floor.

1.3 OPERATION

General

- Do not use the machine for any purpose other than positioning personnel, their tools, and equipment.
- Never operate a machine that is not working properly.
 If a malfunctions occurs, shut down the machine.
- Never slam a control switch or lever through neutral to an opposite direction. Always return switch to neutral and stop before moving the switch to the next function. Operate controls with slow and even pressure.
- Hydraulic cylinders should never be left fully extended or fully retracted before shutdown or for long periods of time.
- Do not allow personnel to tamper with or operate the machine from the ground with personnel in the platform, except in an emergency.
- Do not carry materials directly on platform railing unless approved by JLG.
- When two or more persons are in the platform, the operator shall be responsible for all machine operations
- Always ensure that power tools are properly stowed and never left hanging by their cord from the platform work area.
- Supplies or tools which extend outside the platform are prohibited unless approved by JLG.

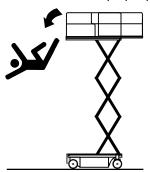
- Do not assist a stuck or disabled machine by pushing, pulling, or by using machine functions. Only pull the unit from the tie-down lugs on the chassis.
- Stow elevating assembly and shut off all power before leaving machine.

Trip and Fall Hazards

 When operating a boom lift, occupants in the platform must wear a full body harness with a lanyard attached to an authorized lanyard anchorage point. When operating a scissor lift or vertical mast lift, JLG recommends wearing a full body harness. Attach only one (1) lanyard per lanyard anchorage point.



 Before operating the machine, make sure all gates are closed and fastened or in their proper position.

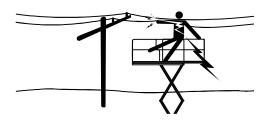


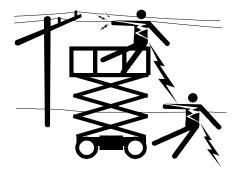
- Keep both feet firmly positioned on the platform floor at all times. Never use ladders, boxes, steps, planks, or similar items on platform to provide additional reach.
- Never use the elevating assembly to enter or leave the platform.
- Use extreme caution when entering or leaving platform. Be sure that the platform is fully lowered. Face the machine, maintain "three point contact" with the machine, using two hands and one foot or two feet and one hand during entry and exit.
- Check orientation of directional arrows on chassis before driving. The direction of drive and steer may be opposite from normal operation based upon orientation of chassis.

 Platform-to-structure transfers at elevated positions are discouraged. Where transfer is necessary, enter/exit through the gate only with the platform within 1 foot (0.3m) of a safe and secure structure. 100% tie-off is also required in this situation using two lanyards. One lanyard must be attached to the platform with the second lanyard attached to the structure. The lanyard connected to the platform must not be disconnected until the transfer to the structure is safe and complete.

Electrocution Hazards

 This machine is not insulated and does not provide protection from contact or proximity to electrical current.





- Maintain safe distance from electrical lines, apparatus, or any energized (exposed or insulated) parts according to the Minimum Safe Approach Distance (MSAD) as shown in Table 1-1.
- Allow for machine movement and electrical line swaying.

Table 1-1.Minimum Safe Approach Distances (M.S.A.D.)

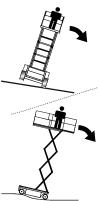
| Voltage Range (Phase to Phase) | MINIMUM SAFE APPROACH DISTANCE in Meters (Feet) |
|-----------------------------------|---|
| 0 to 300 V | AVOID CONTACT |
| Over 300V to 50 KV | 3 (10) |
| Over 50KV to 200 KV | 5 (15) |
| Over 200 KV to 350 KV | 6(20) |
| Over 350 KV to 500 KV | 8 (25) |
| Over 500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

▲ DANGER

DO NOT MANEUVER MACHINE OR PERSONNEL INSIDE PROHIBITED ZONE (MSAD). ASSUME ALL ELECTRICAL PARTS AND WIRING ARE ENERGIZED UNLESS KNOWN OTHERWISE.

Tipping Hazards

 The user should be familiar with the surface before driving. Do not exceed the allowable sideslope and grade while driving..

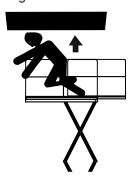


- Do not elevate platform or drive with platform elevated while on a sloping, uneven, or soft surface.
- Before driving on floors, bridges, trucks, and other surfaces, check allowable capacity of the surfaces.
- Never exceed the maximum platform capacity. Distribute loads evenly on platform floor.

- Do not raise the platform or drive from an elevated position unless the machine is on firm, level surfaces and evenly supported.
- Keep the chassis of the machine at least 2 ft. (0.6m) from holes, bumps, drop-offs, obstructions, debris, concealed holes, and other potential hazards on the floor/surface unless approved by JLG.
- Never attempt to use the machine as a crane. Do not tie-off machine to any adjacent structure.
- Do not operate the machine when wind conditions exceed the maximum allowable wind speed.
- Do not increase the surface area of the platform or the load. Increase of the area exposed to the wind will decrease stability.
- Do not increase the platform size with unauthorized deck extensions or attachments.
- If elevating assembly or platform is in a position that one or more wheels are off the ground, all persons must be removed before attempting to stabilize the machine. Use cranes, forklift trucks, or other appropriate equipment to stabilize machine and remove personnel.

Crushing and Collision Hazards

- Approved head gear must be worn by all operating and ground personnel.
- Keep hands and limbs out of the elevating assembly during operation.
- Check work area for clearances overhead, on sides, and bottom of platform when lifting or lowering platform, and driving.



- During operation, keep all body parts inside platform railing.
- Use elevating assembly functions, not the drive function to position the platform close to obstacles
- Always post a lookout when driving in areas where vision is obstructed.
- Keep non-operating personnel at least 1.8m (6 ft.) away from machine during all driving operations.

- Limit travel speed according to conditions of ground surface, congestion, visibility, slope, location of personnel, and other factors which may cause collision or injury to personnel.
- Be aware of stopping distances in all drive speeds.
 When driving in high speed, switch to low speed before stopping. Travel grades in low speed only.
- Do not use high speed drive in restricted or close quarters or when driving in reverse.
- Exercise extreme caution at all times to prevent obstacles from striking or interfering with operating controls and persons in the platform.
- Be sure that operators of other overhead and floor level machines are aware of the aerial work platform's presence. Disconnect power to overhead cranes.
- Warn personnel not to work, stand, or walk under a raised platform. Position barricades on floor if necessary.

1.4 TOWING, LIFTING, AND HAULING

- Never allow personnel in platform while towing, lifting, or hauling.
- This machine should not be towed, except in the event of emergency, malfunction, power failure, or loading/ unloading. Refer to the Emergency Procedures section of this manual for emergency towing procedures.
- The platform must be completely empty of tools.
- When lifting machine, lift only at designated areas of the machine. Lift with lifting equipment of adequate capacity.
- Refer to the Machine Operation section of this manual for lifting information.

1.5 ADDITIONAL HAZARDS / SAFETY

- · Do not use machine as a ground for welding.
- Do not refuel the machine with the engine running.
- Battery fluid is highly corrosive. Avoid contact with skin and clothing at all times.
- · Charge batteries only in a well ventilated area.

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, SAFETY 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 paragraph 2-3, Delivery and Periodic 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 preparations 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 and brakes operate properly) coupled with a series of visual inspections. The mandatory requirements are given in paragraph 2-4, Daily Walk Around Inspection.
- 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 on the frame provides a place to record (stamp) inspection dates. Check decal and notify dealer if inspection is overdue.

An annual inspection shall be performed on the aerial platform no later than thirteen (13) months from the date of the prior annual inspection. The inspection shall be performed by person(s) certified as a mechanic on the specific make and model of the aerial platform.

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

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

Handrail Assemblies

Properly installed; no loose or missing parts; no visible damage.

Platform Assembly

No visible damage; free of dirt and debris.

Sizzor Arms

No visible damage, abrasions and/or distortions.

Electrical Cable

No visible damage; properly secured.

Pivot Pins

No loose or missing retaining hardware; no damage or wear to pin heads which would cause pin to rotate; no evidence of pin or bushing wear.

Lift Cylinder

No rust, nicks, scratches or foreign material on piston rod. No leakage. Evidence of proper lubrication.

Frame

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

Drive Hubs

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

NOTE: Torque Hubs should be one-half full of lubricant.

Tire and Wheel Assemblies

No loose or missing lug nuts; no visible damage.

Sliding Wear Pad Blocks

No excessive wear; adequate lubrication.

Hydraulic Oil Supply

Operate hydraulic systems through one complete cycle before checking oil level in hydraulic oil tank. Oil should be visible in ADD sight window on hydraulic oil tank. If oil is not visible, add oil until oil is visible in both ADD and FULL sight windows on tank. Do not overfill tank.

Steer Cylinder

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

Steer Linkage

No loose or missing parts; no visible damage.

Steer Spindle Assemblies

No excessive wear; no damage.

Control Boxes (Console and Ground)

Switches operable; no visible damage; placards secure and legible. Hand controller operable; no visible damage.

Battery

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

Engine

Engine oil level - full mark on dipstick; filler cap secure; air filter secure.

Hydraulic Pump and Valves

No visible damage; no evidence of leakage; units secure.

Platform Placards

No visible damage; placards secure and legible.

Lock-Out Cylinders (If Equipped)

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

2.4 DAILY WALK-AROUND INSPECTION

It is the users 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.

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

Overall Cleanliness

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

Placards

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

Operators and Safety Manual

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

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.

Daily Lubrication

For those items pointed out in the Daily Walk-Around Inspection requiring daily lubrication Refer to Table 2-1, Lubrication Chart, for specific requirements.

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

▲ WARNING

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

- Start each day with a full fuel tank. If operating an electric machine, start each day with fully charged batteries.
- Ensure that all items requiring lubrication are serviced in accordance with the Lubrication Chart. Refer to Table 2-1. Lubrication Chart.
- 3. Perform functional checks in accordance with paragraph 2-5, Daily Functional Check.

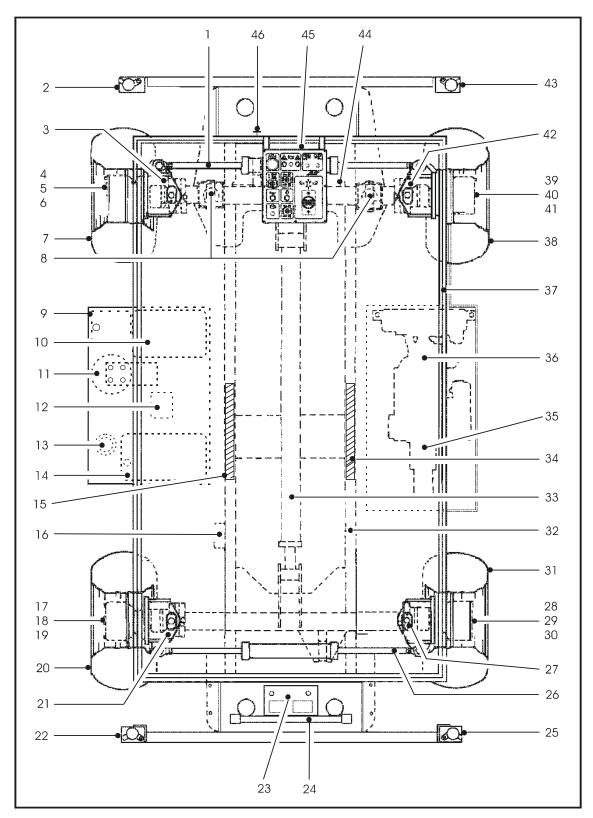


Figure 2-1. Walk-Around Inspection Diagram

GENERAL

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

▲ WARNING

TO AVOID INJURY DO NOT OPERATE MACHINE UNTIL ALL MAL-FUNCTIONS HAVE BEEN CORRECTED. USE OF A MALFUNC-TIONING MACHINE IS A SAFETY VIOLATION. TO AVOID POSSIBLE INJURY, BE SURE MACHINE POWER IS "OFF" DUR-ING "WALK-AROUND INSPECTION".

- **NOTE:** Do not overlook visual inspection of chassis underside. Checking this area often results in discovery of conditions which could cause extensive machine damage.
 - Steer Cylinder and Tie Rod Ends No loose or missing parts, no visible damage. No steer cylinder leaks or damage.
 - Leveling Jack, Left Front (If Equipped) No loose or missing parts, no visible damage. No cylinder leaks or damage.
 - Steer Spindle, Left Front No loose or missing parts, no visible damage, evidence of proper lubrication.
 - 4. Drive Motor, Left Front (4 Wheel Drive) No visible damage, no evidence of leakage.
 - Drive Brake, Left Front (4 Wheel Drive) No loose or missing parts, no visible damage, no evidence of leakage.
 - Drive Hub, Left Front (4 Wheel Drive) No visible damage, no evidence of leakage. Drive hubs should be one half full of EPGL SAE 90.
 - Steer/Drive Wheel and Tire Assembly, Left Front -Properly secured, no loose or missing lug nuts, no visible damage. Refer to inflation psi stenciled on frame.
 - Oscillating Axle (If Equipped) Properly secured, evidence of proper lubrication. No lockout cylinder leaks or damage.
 - 9. Ground Controls Switches operable, no visible damage, placards secure and legible.
 - Hydraulic Reservoir No visible damage or missing parts. No evidence of leaks. Recommended oil level in sight glass. Breather cap secure and working.

- 11. Hydraulic Filter No visible damage, properly secured, no evidence of leakage.
- Control Valves Valves properly secured, no visible damage, no evidence of leakage. Hoses and fittings properly secured, no visible damage, no evidence of leaks.
- Tilt Alarm Switch Properly secured, no loose or missing parts, no visible damage.
- Fuel Tank Filler cap secure, sight gauge visible, no damage or leaks.
- 15. Safety Prop Stored securely, no missing parts.
- Travel/Descent/Motion Alarm Properly secured, no loose or missing parts, no visible damage.
- Drive Motor, Left Rear No visible damage, no evidence of leakage.
- 18. Drive Brake, Left Rear No loose or missing parts, no visible damage, no evidence of leakage.
- Drive Hub, Left Rear No visible damage, no evidence of leakage. Drive hubs should be one half full of EPGL SAE 90.
- Drive Wheel and Tire Assembly, Left Rear Properly secured, no loose or missing lug nuts, no visible damage. Refer to inflation psi stenciled on frame or wheel rims.
- Steer Spindle, Left Rear (If Equipped) No loose or missing parts, no visible damage, evidence of proper lubrication.
- Leveling Jack, Left Rear (If Equipped) No loose or missing parts, no visible damage. No cylinder leaks or damage.
- Battery Installation (Gasoline or Diesel Engine) -Proper electrolyte level, cables secure, no damage or corrosion. Hold-downs secure.
- 24. Ladder No damage, securely attached.
- 25. Leveling Jack, Right Rear (If Equipped) No loose or missing parts, no visible damage. No cylinder leaks or damage.
- 26. Rear Steer Cylinder and Tie Rod Ends (If Equipped)
 No loose or missing parts, no visible damage. No steer cylinder leaks or damage.
- Steer Spindle, Right Rear (If Equipped) No loose or missing parts, no visible damage, evidence of proper lubrication.

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

- Drive Motor, Right Rear No visible damage, no evidence of leakage.
- 29. Drive Brake, Right Rear No loose or missing parts, no visible damage, no evidence of leakage.
- Drive Hub, Right Rear No visible damage, no evidence of leakage. Drive hubs should be one half full of EPGL SAE 90.
- Drive Wheel and Tire Assembly, Left Rear Properly secured no loose or missing lug nuts, no visible damage. Refer to inflation psi stenciled on frame or wheel rims.
- Sizzor Arms and Sliding Wear Pads Properly secured, no visible damage, evidence of proper lubrication. Inspect sizzor arm guards for damage and proper installation.
- 33. Lift Cylinder Properly secured, no visible damage, no loose or missing parts, no evidence leakage.
- 34. Safety Prop Stored securely, no missing parts.
- Hydraulic Pump Pump properly secured, no visible damage, no evidence of leakage. Hoses and fittings properly secured, no visible damage, no evidence of leaks.
- 36. Engine Installation Engine oil to full mark on dipstick, oil fillercap secure. Muffler/exhaust system properly secured, no leakage. Air filter assembly secure, no loose or missing parts, element clean. Gasoline Engine Only - Radiator cap secure, coolant to correct level.
- Handrail installation All railings securely attached, no damage or missing parts, chains securely attached.

- 38. Steer/Drive Wheel and Tire Assembly, Right Front Properly secured, no loose or missing lug nuts, no visible damage. Refer to inflation psi stenciled on frame or wheel rims.
- 39. Drive Motor, Right Front (4 Wheel Drive) No visible damage, no evidence of leakage.
- Drive Brake, Right Front (4 Wheel Drive) No loose or missing parts, no visible damage, no evidence of leakage.
- Drive Hub, Right Front (4 Wheel Drive) No visible damage, no evidence of leakage. Drive hubs should be one half full of EPGL SAE 90.
- Steer Spindle, Right Front No loose or missing parts, no visible damage, evidence of proper lubrication.
- 43. Leveling Jack, Right Front (If Equipped) No loose or missing parts, no visible damage. No cylinder leaks or damage.
- 44. Drive and Lift Cutout Switches (If Equipped) No visible damage, properly secured.
- 45. Platform Controls Properly secured, no loose or missing parts, no visible damage. Placards secure and legible, control switches return to neutral. Control markings legible, manual in manual storage box.
- 46. Manual Descent Cable Properly secured, no loose or missing parts, no visible damage.

Figure 2-3. Walk-Around Inspection Points (Sheet 2 of 2)

2.5 DAILY FUNCTIONAL CHECK

A WARNING

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

A functional check of all systems should be performed, under no load, once the walk-around inspection is complete, in an area free of overhead and ground level obstructions. Perform pre-load functional check in accordance with the following procedure:

- Raise and lower platform several times. Check for smooth elevation and lowering. Check that high function speeds cut out at 6 in. (15.2 cm) above fully retracted platform height.
- Drive forward and reverse, check for proper operation.
- Check that drive brakes hold when machine is driven up a hill, not to exceed rated gradeability, and stopped.
- 4. Steer left and right. Check for proper operation.
- Check hydraulic oil reservoir sight gauge. Refer to Lubrication Chart.

▲ WARNING

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

2.6 LOCK-OUT CYLINDER CHECK - (IF EQUIPPED)

To be performed quarterly, any time a system component is replaced, or when improper system operation is suspected on machines with oscillating axles.

NOTE: Ensure platform is fully lowered prior to beginning lockout cylinder check.

- 1. Place an 8 in (20 cm) high block with ascension ramp in front of the left front wheel.
- 2. Activate the machines hydraulic system from the platform control station.
- 3. Place the engine speed and drive speed control switches to their respective low positions.
- 4. Place the drive controller to the forward position and carefully drive the machine up the ascension ramp until the left front wheel is on top of the block.
- Raise the machine platform approximately 24 in. (61 cm.); ensure the lockout cylinder cam valve is free of the sizzor arm trip bar.
- Place the drive controller to the reverse position and carefully drive the machine off of the block and ramp.
- 7. Have an assistant check to see that the left front wheel remains locked in position off of the ground.
- 8. Lower the machine platform; the lockout cylinder should then release the wheel and allow it to rest on the ground.
- If the lockout cylinder does not function properly, have qualified personnel correct the malfunction prior to any further operation.

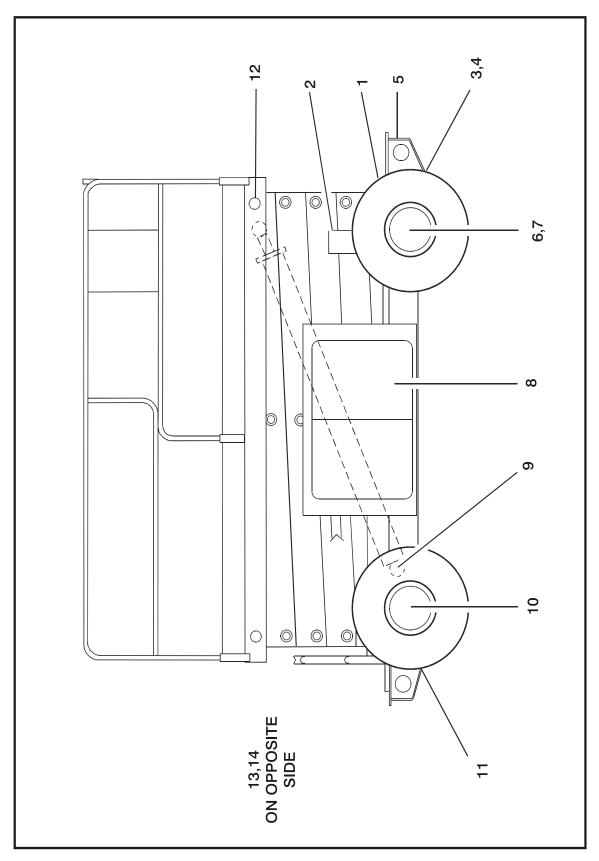


Figure 2-4. Lubrication Diagram

Table 2-1. Lubrication Chart

| INDEX NO | COMPONENT | NUMBER/TYPE LUBE POINTS | LUBE METHOD | INTERVAL HOURS |
|-------------|---|-------------------------------------|---|-------------------|
| 1 | Oscillating Axle Pivot Point (Optional) | 1 Grease Fitting | MPG - Pressure Gun | 100 |
| 2 | Lockout Cylinders (Optional) | 2 Grease Fittings (1 each cylinder) | MPG - Pressure Gun | 100 |
| 3 | Front Steering Spindles (2-W/D) | 2 Grease Fittings | MPG - Pressure Gun | 100 |
| 4 | Front Steering Spindles (4-W/D) (Optional) | 2 Grease Fittings | MPG - Pressure Gun | 100 |
| 5 | Tow Bar Hitch (Optional) | 1 Grease Fitting | MPG - Pressure Gun | 100 |
| 6 | Wheel Bearings (2-W/D) | N/A | MPG - Repack | 2000 |
| 7 | *Wheel Drive Hub (4-W/D) (Optional) | Fill Plug | EPGL (SAE 90) | 500 |
| 8 | Engine Crankcase | Fill Cap/Drain Plug | Check Engine Oil Level | 10/100 |
| 9 | Lift Cylinder | 2 Grease Fittings | MPG - Pressure Gun | 100 |
| 10 | *Wheel Drive Hub | Fill Plug | EPGL (SAE 90) | 500 |
| 11 | Rear Steering Spindles (4-W/S) (Optional) | 2 Grease Fittings | MPG - Pressure Gun | 100 |
| 12 | Rail Slides | N/A | MPG - Brush | 100 |
| 13 | Hydraulic Oil Reservoir | Fill Cap/Drain Plug | HO - Check HO Level (See note 4)/ HO - Change HO | 10/500 |
| 14 | ** Hydraulic Filter Element | N/A | Initial Change - 40 Hours | 250 |

KEY TO LUBRICANTS:

MPG - Multi-purpose Grease

EPGL - Extreme Pressure Gear Lube

HO - Hydraulic Oil (Mobil 424)

M WARNING

TO AVOID PERSONAL INJURY, USE SAFETY PROP FOR ALL MAINTENANCE REQUIRING PLATFORM TO BE ELEVATED.

NOTE: 1. Be sure to lubricate like items on each side

- 2. Recommended lubricating intervals are based on machine operations under normal conditions. For machines used in multi-shift operations and/or exposed to hostile environments or conditions, lubrication frequencies must be increased accordingly.
- **3.** Operate hydraulic functions through one complete cycle before checking hydraulic oil level in tank. Oil should be visible in ADD sight window on hydraulic tank. If oil is not visible, add oil until oil is visible in both ADD and FULL sight windows on tank. Do not overfill tank.
- **4.** Any time the pump coupling is removed, coat splines of coupling with Texaco Code 1912 grease prior to assembly. (gasoline or diesel engine only).

^{*}Torque Hubs should be 1/2 full of lubricant

^{**} JLG Industries recommends replacing the hydraulic filter after the first 40 hours of operation and every 250 hours thereafter.

2.7 DUAL FUEL SYSTEM

▲ 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.

Changing from Gasoline to LP Gas

- 1. Start the engine from the ground control station.
- Open the hand valve on the LP Gas supply tank by turning counterclockwise.

A CAUTION

BE SURE ALL GASOLINE IS EXHAUSTED BEFORE SWITCHING TO LP GAS.

While the engine is operating, place the three position LPG/GAS SELECT switch at the ground control station to the center OFF position. Allow the engine to operate, without load, until the engine begins to stumble from lack of gasoline.

4. As the engine begins to stumble place the switch to the LPG position, allowing the LP fuel to be sent to the fuel regulator.

Changing from LP Gas to Gasoline

- 1. With engine operating on LP under a no-load condition, position the LPG/GAS SELECT switch at ground control to the GAS SELECT position.
- If engine stumbles because of lack of gasoline, place the switch to the LPG position until engine regains smoothness, then return the switch to the GAS SELECT position. Repeat as necessary until engine runs smoothly on gasoline.
- Close the hand valve on the LP gas supply tank by turning clockwise.

2.8 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. Section 1 of 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 Section 2 of the Service and Maintenance Manual, will enhance safety, reliability and performance of the machine.

Note: These torque values do not apply to cadium plated fasteners.

| Part | | | | | | | VALI | JES FOF | S ZINC P | VALUES FOR ZINC PLATED BOLTS ONLY | OLTS ON | II. | | | UNPL CAP SC | UNPLATED CAP SCREWS |
|--|----------|----|--------|-----------|----------------|----------------------|---------|------------------|----------|-----------------------------------|----------------------|---------|------------------|-------------------------|---------------------------|-------------------------|
| This Dia Sirists Clarin Clarin | | | BOLT | THREAD | SAE GR | ADE 5 B | OLTS & | GRADE | 2 NUTS | SAE GR | ADE 8 B | OLTS & | GRADE | | UNBRAKO 19 SOCKET HEAD | 360 SERIES CAP SCREW |
| (IV) (ACC) (ACC) | SIZE | 돧 | DIA | STRESS | CLAMP | 40 2444 | HOL | SOLE SOLE | | CLAMP | a o states | HOH | QUE | | WITH LOC-V | VEL PATCH |
| 40 0.11 0.00644 380 18.0 <th< th=""><th></th><th></th><th>Ë.</th><th>(SQ. IN.)</th><th>LOAD</th><th>(UKY UK LOC. 263)</th><th>(LUB.)</th><th>(LUCIIIE 262)</th><th></th><th>LOAD (B)</th><th>(DRY OR LOC. 263)</th><th>(LUB.)</th><th>(LUCIIIE 262)</th><th>(LUCIIIE 242 OR 271)</th><th></th><th>(as received)</th></th<> | | | Ë. | (SQ. IN.) | LOAD | (UKY UK LOC. 263) | (LUB.) | (LUCIIIE 262) | | LOAD (B) | (DRY OR LOC. 263) | (LUB.) | (LUCIIIE 262) | (LUCIIIE 242 OR 271) | | (as received) |
| 40 0.1120 0.006064 380 8 6 — — 540 12 9 — — — 540 12 9 — — — — 40 0.00 30 22 1 — | | | | | ָרָבָי. נים | LB. IN. | LB IN | LB. IN. | LB.IN. | (בניי) | LB. IN. | LB. IN | LB. IN. | LB. IN. | (rp-) | LB. FT. |
| 48 C.1. I. C. D. O. | _ | 40 | 0 4420 | 0.00604 | 380 | ω | 9 | | 1 | 540 | 12 | တ | | 1 | | |
| 32 0.1890 0.00900 860 16 12 — 920 23 17 — — — 32 0.1840 0.00400 860 16 13 — | 1 | 48 | 0.1120 | 0.00661 | 420 | တ | 7 | | l | 009 | 13 | 10 | | | | |
| 40 0.1380 0.01015 610 18 13 — 920 25 19 — — — 32 0.1640 0.01474 940 31 23 — — 1720 41 31 — | | 32 | 0007 | Ī | 580 | 16 | 12 | | 1 | 820 | 23 | 17 | 1 | | | |
| 32 0.1440 0.01400 900 31 22 — — 1260 41 31 — — — 24 0.1404 900 31 22 — — 180 60 45 — — — 24 0.1400 0.01760 1286 49 36 — | ٥ | 40 | 0.1380 | Ī | 610 | 9 | 13 | | | 920 | 25 | 19 | | | | |
| 36 0.1640 0.01474 940 31 23 — 1320 43 32 — — 24 0.1900 0.01700 1120 33 — — 1800 68 51 — — 29 0.1900 0.01730 1120 32 — — 1800 68 51 — — — 20 0.2500 0.0318 2020 96 75 — 1800 68 51 — | | 32 | | _ | 006 | 30 | 22 | | ١ | 1260 | 41 | 34 | | | | |
| 24 0.1900 0.01750 1120 43 32 — — 1580 60 45 — | χo | 38 | 0.1640 | | 940 | 34 | 23 | | | 1320 | 43 | 32 | | | | |
| 32 0.1900 0.02000 1285 49 36 — — 1800 68 51 — — — 20 0.2500 0.0318 2020 96 75 — 135 2860 144 108 — 185 340 20 0.2500 0.0348 2020 96 75 — 135 380 18 — 185 340 18 0.0312 0.0580 370 19 14 1 1 14 17 13 16 19 4720 25 10 — 185 360 36 36 24 36 36 36 46 36 36 46 36 36 46 36 36 47 46 36 36 36 46 47 46 36 36 36 36 36 36 36 36 36 36 36 36 36 3 | | 24 | | Ĺ | 1120 | 43 | 32 | I | I | 1580 | 09 | 45 | | | | |
| 20 0.2500 0.0318 2020 96 75 — 105 2860 144 108 — 160 3180 28 0.2500 0.0364 2320 126 8 — 185 3280 168 — 186 3180 3640 18 0.03750 0.0584 3340 17 13 16 19 4720 25 18 22 30 5240 24 0.03750 0.0880 3700 19 14 17 21 5220 25 36 40 50 520 30 520 24 50 40 700 45 35 40 500 40 50 52 32 40 7900 45 36 40 50 40 50 40 50 36 40 50 40 50 40 50 36 40 50 40 50 40 50 40 <td< td=""><td>2</td><td>32</td><td>0.1900</td><td></td><td>1285</td><td>49</td><td>36</td><td>1</td><td>I</td><td>1800</td><td>89</td><td>51</td><td> </td><td></td><td></td><td></td></td<> | 2 | 32 | 0.1900 | | 1285 | 49 | 36 | 1 | I | 1800 | 89 | 51 | | | | |
| 28 0.2500 0.0364 2320 120 66 — 135 3280 168 120 — 185 186 — 186 — 135 3280 160 17 186 — 186 — 186 — 186 360 | 7 | 20 | 0 | \vdash | 2020 | 96 | 75 | | 105 | 2860 | 144 | 108 | | 160 | 3180 | 13 |
| National Control Con | <u>_</u> | 28 | 0.2500 | | 2320 | 120 | 86 | | 135 | 3280 | 168 | 120 | | 185 | 3640 | 14 |
| 18 0.3125 0.0524 3340 17 13 16 19 4720 25 18 22 30 5240 24 0.3750 0.0775 4300 19 47 21 5220 25 20 25 30 5800 24 0.03750 0.0878 5600 35 25 32 40 7900 50 35 45 58 880 1800 20 0.0878 5600 35 25 45 55 9550 70 55 63 870 1100 20 0.5000 0.149 9050 75 45 65 80 10700 80 1070 90 108 1070 90 108 108 1070 90 108 1070 90 108 1070 100 80 108 1070 100 80 1100 100 1100 100 100 100 100 100 | | | | | | LB. FT. | 18. FT. | 18. FT | LB. FT. | | LB. FT. | 18. FT. | LB. FT. | LB. FT. | | |
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| 16 0.3750 0.0775 4940 30 23 28 35 7000 45 35 45 55 7750 24 0.08776 60.0878 5600 55 35 45 55 45 55 45 55 45 55 45 55 40 1000 50 60 70 55 45 55 87 87 100 1050 1000 1000 1000 100 | 2 | 24 | 0.3125 | | 3700 | 19 | 14 | 17 | 21 | 5220 | 25 | 20 | 25 | 30 | 5800 | 27 |
| 24 0.5.7° 0.0878 5600 35 25 40 7900 50 35 45 55 9500 50 35 45 55 9500 70 55 63 46 55 8780 10630 13 0.1063 6800 50 35 45 55 68 85 170 55 63 80 11870 20 0.500 0.1419 9050 75 55 68 85 12750 110 80 96 120 14180 12 0.500 0.1419 9050 75 68 80 100 14400 120 10 14180 130 14180 | α/ α | 16 | 0.07 | 0.0775 | 4940 | 30 | 23 | 28 | 35 | 2000 | 45 | 35 | 40 | 20 | 7750 | 45 |
| 14 0.4375 0.1063 6800 50 35 45 55 9550 70 55 63 80 10630 20 0.4375 0.1187 7550 55 40 50 60 170 50 60 14190 13 0.5000 0.1419 9050 75 56 80 100 170 80 187 180 170 180 14190 12 0.5625 0.1820 11600 110 80 98 120 1400 150 170 180 180 170 1490 14100 180 180 170 1490 1480 180 170 1490 14400 150 1400 180 180 170 1490 180 | 2 | 24 | 0.3750 | 0.0878 | 2600 | 35 | 25 | 32 | 40 | 2006 | 20 | 35 | 45 | 22 | 8780 | 50 |
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| 6 1.500 1.1550 64100 1460 1100 1322 1525 104000 2380 1780 1907 2625 115500 12 1.500 1.3150 73000 1680 1260 156 1750 148100 2720 2040 2165 3000 131500 6 6 1.4050 78000 1940 1460 1755 2025 126500 3160 2360 2530 3475 140500 12 1.5800 87700 2200 1640 1974 2300 142200 3560 2660 2844 3925 158000 | † | 12 | 1.2500 | 1.0730 | 29600 | 1240 | 920 | 1118 | 1300 | 00996 | 2000 | 1500 | 1610 | 2200 | 107300 | 1880 |
| 12 .300 1.3150 73000 1680 1260 1506 1750 118100 2720 2040 2165 3000 131500 131500 14050 78000 1940 1460 1755 2025 126500 3160 2360 2530 3475 140500 15800 87700 2200 1640 1974 2300 142200 3560 2660 2844 3925 158000 | 1,7 | 9 | 7 | 1.1550 | 64100 | 1460 | 1100 | 1322 | 1525 | 104000 | 2380 | 1780 | 1907 | 2625 | 115500 | 2320 |
| 6 1.500 1.4050 78000 1940 1460 1755 2025 126500 3160 2360 2530 3475 140500 12 1.5800 87700 2200 1640 1974 2300 142200 3560 2660 2844 3925 158000 | 7/1-1 | 12 | 000. | 1.3150 | 73000 | 1680 | 1260 | 1506 | 1750 | 118100 | 2720 | 2040 | 2165 | 3000 | 131500 | 2440 |
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| | 7/1-1 | 12 | 000.1 | 1.5800 | 87700 | 2200 | 1640 | 1974 | 2300 | 142200 | 3560 | 2660 | 2844 | 3925 | 158000 | 3270 |



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SAE GRADE 5

SAE G

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SECTION 3. USER RESPONSIBILITIES AND MACHINE CONTROL

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 service life and safe operation.

3.2 PERSONNEL TRAINING

The sizzor 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 ANSI standard A92.6-1999 Responsibilities. 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.

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.
- Knowledge and understanding of this manual and of the control markings, instructions and warnings on the machine itself.

- 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.
- Proper use of all required personnel safety equipment.
- Sufficient knowledge of the mechanical operation of the machine to recognize a malfunction or potential malfunction.
- The safest means to operate near overhead obstructions, other moving equipment, obstacles, depressions, holes, dropoffs, etc. on the supporting surface.
- 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 a sizzor 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 unit(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

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.

Capacities

Raising platform above horizontal with or without any load in platform, is based on the following criteria:

- Machine is positioned on a smooth, firm and level surface.
- 2. Load is within manufacturer's rated capacity.
- 3. All machine systems are functioning properly.

Stability

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

3.4 CONTROLS AND INDICATORS

Some machines may be equipped with control panels that use symbols instead of words to indicate control functions. Refer to Figure 3-3., Decal Installation for these symbols and their corresponding functions.

IMPORTANT

RTS SERIES SCISSOR LIFTS MANUFACTURED AFTER AUGUST 26, 1996 ARE EQUIPPED WITH A HYDRAULIC OIL TEMPERATURE SWITCH THAT SHUTS DOWN THE ENGINE WHEN THE HYDRAULIC OIL REACHES A TEMPERATURE OF APPROXIMATELY 230 DEGREES F (111 DEGREES C). THIS SHUT DOWN IS INTENDED TO PROTECT THE HYDRAULIC SYSTEM AND ITS COMPONENTS FROM DAMAGE DUE TO EXCESSIVE HEAT. HEAT MAY BUILD UP DUE TO EXTENDED DRIVING, IN CONJUNCTION WITH HIGH AMBIENT TEMPERATURES, ACTIVATING THIS SWITCH AND SHUTTING DOWN THE MACHINE. IF THE MACHINE SHUTS DOWN, ALLOW THE HYDRAULIC OIL TO COOL, THEN RESUME NORMAL OPERATION.

Ground Control Station

A WARNING

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

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

 Ignition/Emergency Stop - A two-position, red mushroom shaped switch supplies electrical power to the Start button when positioned up. When positioned down, the switch shuts off electrical power to the ignition circuit, acting as an emergency stop switch.

NOTE: With the Main Power switch in the off position, the key can be removed in order to incapacitate the machine on the jobsite to avoid unauthorized use of the machine.

2. Platform/Ground Select Switch - A three position Platform/Ground Select switch supplies operating power to the platform or ground controls, as selected. When positioned to platform, the switch provides power to the platform controls. When positioned to ground, the switch provides power to the ground controls. With the power selector switch in the center off position, power is shut off to both platform and ground controls.

NOTE: With the Platform/Ground Select switch positioned to ground, engine speed will stay in low at all times.

- Start Button A momentary contact, push-buttontype switch that supplies electrical power to the starter solenoid when the ignition/emergency stop switch is in the on position and the start button is depressed.
- Lift Switch A three position, momentary contact lift control switch provides raising and lowering of the platform when positioned to up or down.
- High Engine Circuit Breaker (Diesel Engine) A
 push button reset 3 Amp circuit breaker, located at
 the ground control panel, returns interrupted power
 to the machine functions when depressed.

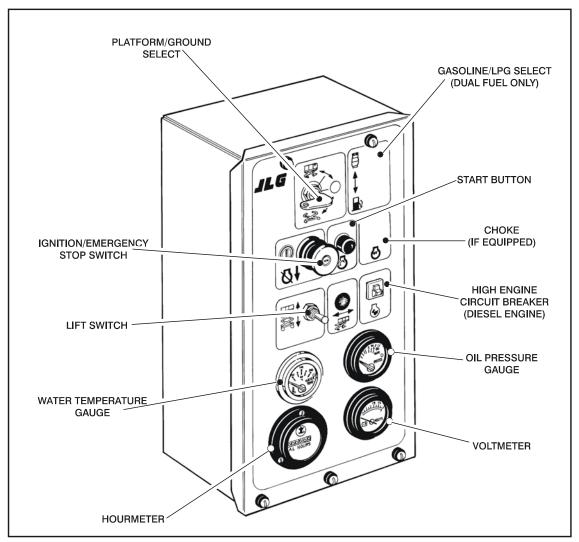


Figure 3-1. Ground Control Station

- 6. **Choke Switch (If Equipped)** A momentary contact, push-button type switch supplies power to the choke solenoid, when depressed, to assist cold start operation.
- 7. Gasoline/LPG Select Switch (Dual Fuel Only) A three position toggle-type switch is used to select the desired method of powering the unit. Placing the switch in the gasoline position shuts off the fuel flow from the LP gas supply tank and allows fuel flow from the gasoline tank. Moving the switch to the LPG position shuts off fuel flow from the gasoline tank and allows LP gas from supply tank to be used to power the unit. With the switch in the center position, fuel flow is restricted from both supply tanks.
- 8. **Hourmeter -** The hourmeter records engine or electric motor operating time.

- Voltmeter With the emergency stop switch in the up position, and before starting the engine, 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.
- Water Temperature Gauge (Gasoline Engine) -The water temperature gauge provides a visual display of the engine coolant temperature.
- Oil Pressure Gauge The oil pressure gauge displays the engine lubrication system operating pressure.

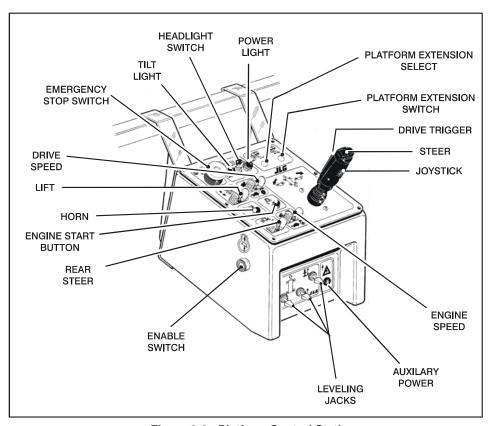


Figure 3-2. Platform Control Station

Platform Control Station

- 1. Enable Switch -These machines are equipped with an enable switch on the side of the platform control console. On machines built with a serial number before 0200058922, the enable switch must be pressed before activating the drive, lift or steer functions. A built-in timer shuts off power to these functions if they are not activated within 3 seconds after the enable switch is depressed. In addition, this timer will shut off power to the drive and lift functions 3 seconds after they are deactivated, making if necessary to depress the enable switch before activating drive and lift again. The steer function, unless activated in conjunction with the drive or lift functions, will automatically cut off after 3 seconds of operation. On machines built from, and including, serial number 0200058922, the enable switch must be depressed and held for the duration of lift. The enable switch works in conjunction with the lift switch only.
- 2. Ignition/Emergency Stop Switch A red ignition/ emergency stop mushroom-type switch is provided in order to turn on machine power in the platform and also to turn off machine power in the event of an emergency. Power is turned on by positioning the switch to the up (on) position, and is turned off by positioning the switch to the down (off) position.
- Start Button A momentary contact, push-buttontype switch that supplies electrical power to the starter solenoid when the ignition/emergency stop switch is in the on position and the start button is depressed.

 Tilt Alarm Warning Horn - The Tilt Alarm Warning Horn is activated by the tilt alarm switch when the chassis is on a severe slope (over 3°) with the platform raised.

▲ CAUTION

IF TILT ALARM IS ON WHEN PLATFORM IS RAISED, LOWER PLATFORM COMPLETELY, THEN REPOSITION MACHINE SO THAT IT IS LEVEL BEFORE RAISING PLATFORM.

 Tilt Alarm Warning Light - A warning light on the control console that lights when the chassis is on a severe slope (over 3°).

NOTE: The lift toggle switch automatically returns to the center off position when released.

A WARNING

TO AVOID SERIOUS INJURY, DO NOT OPERATE MACHINE IF LIFT TOGGLE SWITCH DOES NOT RETURN TO THE CENTER OFF POSITION WHEN RELEASED.

- Lift Switch The lift toggle switch provides for raising and lowering the platform when positioned to up or down.
- Engine Speed Switch A two position engine speed control switch provides the operator either high or low engine rpm as required.
- 8. **Pump Speed Switch -** A two position pump speed control switch allows the operator to select low (one pump section operating) or high (both pump sections operating) speed pump operation.

NOTE: HIGH ENGINE speed, high drive speed (SPEED), and HIGH PUMP speed functions will cut-out when platform is raised above stowed position, leaving only low function speeds available until platform is lowered completely.

A CAUTION

DO NOT OPERATE MACHINE IF HIGH DRIVE SPEED, HIGH ENGINE SPEED, AND HIGH PUMP SPEED FUNCTIONS OPERATE WHEN PLATFORM IS RAISED ABOVE THE STOWED POSITION.

- 9. PQ Controller The PQ Controller performs three functions: Drive, Steer and Drive Speed. On all machines built before serial number 0200058922, tilting the controller in the direction you want to go (forward or reverse) activates drive in that direction. The thumb-operated steer switch on top of the controller handle activates the steer wheels in the direction it is moved. If machine is equipped with four wheel steer, this switch operates only the front steer wheels. On all machines built after, and including, serial number 0200058922 there is a red trigger switch on the front of the controller. This switch must be depressed and held in order to drive the machine.
- Travel Warning Horn A push-button type horn switch supplies electrical power to an audible warning device when pressed.
- 11. **Light (If Equipped)** A two position LIGHT control switch supplies electrical power to lights.
- Leveling Jacks (If Equipped) The four momentary contact type toggle switches correspond to the four leveling jacks, one at each corner of the machine.

A CAUTION

BE AWARE OF OTHER PERSONNEL AND EQUIPMENT WHEN EXTENDING OR RETRACTING LEVELING JACKS.

13. Engine Distress Light - The engine distress light is connected to a sensor on the engine that detects when oil pressure falls below a preset level, illuminating the warning light.

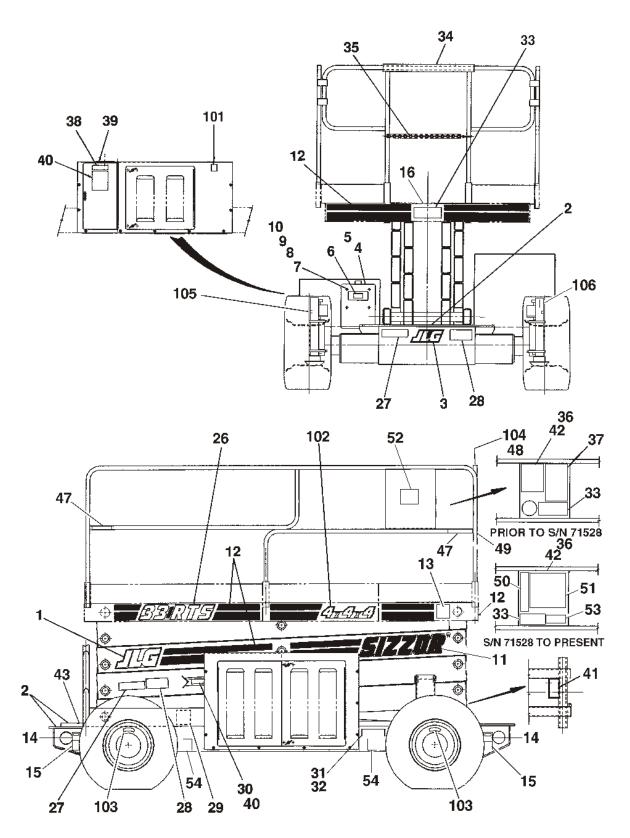


Figure 3-3. Decal Installation

Table 3-1. Decal Installation

| FIG & ITEM # | PART NUMBER | Table 3-1. Decal Installation DESCRIPTION | QTY. | REV. |
|--------------|---------------|--|---------|------|
| | | DECALS INSTALLATION - STANDARD | Ref. | |
| | 0253661 | Decal Installation - Common Parts | Ref. | 8 |
| | 0271148 | Decal Installation - JLG | Ref. | 1 |
| | | | | |
| 1 | | Decal - JLG Options: | 2 | |
| | 1701832 | (Prior to S/N 81608) | | |
| | 1701871 | (S/N 81608 to Present) | | |
| 2 | 4420039* | Tape, Safety Tread (Prior to S/N 65031) | 3ft/.9m | |
| 3 | 1701871 | Decal - JLG | 3 | |
| 4 | 0860520 | Box, Manual Storage | 1 | |
| 5 | 1060279 | Cable, Lanyard | 1 | |
| 6 | | Decal - Manual Options: | 1 | |
| | Use 1703788 | Prior to S/N 71528 (was p/n 1701509*) | | |
| | 1703788 | S/N 71528 to Present | | |
| 7 | 0641405 | Bolt 1/4"-20NC x 5/8" | 4 | |
| 8 | 4751400 | Flatwasher 1/4" | 4 | |
| 9 | 4761400 | Lockwasher 1/4" (Prior to S/N 71528) | 4 | |
| 10 | 3311405 | Locknut 1/4"-20NC | 4 | |
| 11 | 1701843* | Decal - Sizzor | 2 | |
| 12 | 1701837* | Decal - Stripe (Black) (Prior to S/N 67941) | 30ft/9m | |
| 13 | Not Available | Decal - Bar Code | 1 | |
| 14 | | Decal - Tie Down Options: | 4 | |
| | Use 1703814 | S/N45396 to S/N 71528 (was p/n 1702300*) | | |
| | 1703814 | S/N 71528 to Present | | |
| 15 | 1703811 | Decal - Lifting Lug (S/N 71528 to Present) | 4 | |
| 16 | 4420067 | Tape, Safety Tread (S/N 71528 to Present) | 2ft/.6m | |
| | | DECAL INSTALLATIONS - MODEL SPECIFIC | Ref. | |
| | 0253662 | 25RTS | Ref. | 8 |
| | 0253669 | 33RTS | Ref. | 8 |
| | 0253676 | 40RTS | Ref. | 7 |
| 26 | | Decal - Model Designation Options: | 2 | |
| | 1701885* | 25RTS | | |
| | 1701886* | 33RTS | | |
| | 1701887* | 40RTS | | |
| 27 | | Nameplate - Danger Options: | 4 | |
| | Use 1703818 | Prior to S/N 71528 (was p/n 3250873*) | | |
| | 1703818 | S/N 71528 to Present | | |
| 28 | 1701841* | Decal - Crushing Hazard (Prior to S/N 71528) | 4 | |
| 29 | | Decal - Inspection Options: | 1 | |
| | Use 1702153 | Prior to S/N23500 (was p/n 1700593) | | |
| | 1702153* | S/N23500 to Present | | |
| 30 | | Decal - Safety Prop Options: | 1 | |
| | Use 1704526 | Prior to S/N 71528 (was p/n 1701839*) | | |
| | 1704526 | S/N 71528 to Present | | |

Table 3-1. Decal Installation

| FIG & ITEM # | PART NUMBER | DESCRIPTION | QTY. | REV. |
|--------------|---------------|--|------------|------|
| 31 | Not Available | Nameplate - Serial Number | 1 | |
| 32 | 3820001 | Rivet | 4 | |
| | | | | |
| 33 | | Decal - Capacity Options: | 3 | |
| | | 25RTS Options: | | |
| | 3252754 | Fixed Deck | | |
| | 3252750 | Extension Deck | | |
| | | 33RTS Options: | | |
| | 3252755 | Fixed Deck | | |
| | 3252751 | Extension Deck | | |
| | | 40RTS Options: | | |
| | 3252756 | Fixed Deck | | |
| | 3252752 | Extension Deck | | |
| 34 | 3340564 | Pad | 1 | |
| 35 | 2820024 | Tubing Options: | | |
| | 2820024 | Tubing, Vinyl (Prior to S/N 71528) | 30in./76cm | |
| | 2820097 | Tubing, Mesh (S/N 71528 to Present) | 2ft/.6m | |
| 36 | | Nameplate - Billboard | 1 | |
| | Use 3572123 | Prior to June 1993 (was p/n 3252223) | | |
| | Use 3572123 | June 1993 to S/N 71528 (was p/n 3252309) | | |
| | 3572123 | S/N 71528 to Present | | |
| 37 | Not Used | | | |
| 38 | 1701840* | Decal - Ground/Emergency Controls | 1 | |
| 39 | 1701504* | Decal - Hydraulic Fluid | 1 | |
| 40 | 3251249* | Nameplate - Daily Safety Check List (Prior to S/N 71528) | 1 | |
| | 1704478 | Decal - Safety Prop (S/N 71528 to Present) | 1 | |
| 41 | | Decal - Manual Lowering Options: | 1 | |
| | Use 1703822 | Prior to S/N 26763 (was p/n 1701437) | | |
| | Use 1703822 | S/N 26763 to S/N 71528 (was p/n 1701510) | | |
| | 1703822 | S/N 71528 to Present | 1 | |
| 42 | 3820019 | Rivet | 4 | |
| 43 | | Decal - Battery Options: | 1 | |
| | Use 1704479 | Prior to S/N 71528 (was p/n 1700719*) | | |
| | 1704479 | S/N 71528 to Present | | |
| 44 to 46 | Not Used | | | |
| 47 | | Decal - Attach Lanyard Here Options: | 4 | |
| | Use 1704277 | Prior to S/N 71528 (was p/n 1702612) | | |
| | 1704277 | S/N 71528 to Present | | |
| 48 | 1703821 | Decal - Control Box Location (S/N 71528 to Present) | 1 | |
| 49 | 1702249 | Decal - Gate (S/N 71528 to Present) | 1 | |
| 50 | 1704480 | Decal - Legend (S/N 71528 to Present) | 1 | |
| 51 | 1703816 | Decal - Danger/Warning (S/N 71528 to Present) | 1 | |
| 52 | 3251813 | Nameplate - USA (S/N 71528 to Present) | 1 | |
| 53 | 1704521 | Decal - Gradeability (S/N 71528 to Present) | 1 | |
| 54 | | Decal - Max Tire Load Options: | 4 | |

Table 3-1. Decal Installation

| FIG & ITEM # | PART NUMBER | DESCRIPTION | QTY. | REV. |
|--------------|-------------|---|------|------|
| | 1704522 | 25RTS | | |
| | 1704523 | 33RTS | | |
| | 1704524 | 40RTS | | |
| | | | | |
| | | | | |
| | | | | |
| | | DECAL INSTALLATION - OPTIONAL | Ref. | |
| | | | | |
| 101 | | Decal - Fuel Options: | 1 | |
| | Use 1701542 | Gas Machines (Prior to May 1993 was p/n1700430) | | |
| | 1701542 | Gas Machines (May 1993 to Present) | | |
| | Use 1701505 | Diesel Machines (Prior to May 1993 was p/n1700428) | | |
| | 1701505 | Diesel Machines (May 1993 to Present) | | |
| 102 | | Decal - Drive/Steer Designation Options: | 2 | |
| | 1701833 | Decal - 4x2x2 (2WD/2WS Machines) | | |
| | 1701834 | Decal - 4x2x4 (2WD/4WS Machines) | | |
| | 1701835 | Decal - 4x4x2 (4WD/2WS Machines) | | |
| | 1701836 | Decal - 4x4x4 (4WD/4WS Machines) | | |
| 103 | 1702137 | Decal - Tire Pressure (with Pneumatic Tires) | 4 | |
| 104 | 1703792 | Decal - Platform Extension Capacity | 1 | |
| 105 | | Decal - Leveling Jack Maximum Load Options: | 4 | |
| | 1703875 | 25RTS | | |
| | 1703874 | 33RTS/40RTS | | |
| 106 | 1701214 | Decal - O/R Warning(S/N 71528 to Present) | 8 | |
| | 2910009* | Decal Kit - Domestic 25/33/40RTS (Includes Items with Asterisk *) | 1 | |
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SECTION 4. MACHINE OPERATION

4.1 DESCRIPTION

This machine is a self-propelled elevating 'sizzor' aerial work platform. The Sizzor 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 machinery or equipment.

The JLG Sizzor 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 as well as raise and lower the platform. The machine has a Ground Control Station which will override the Platform Control Station. Ground Controls operate Lift Up and Lift Down and are to be used only for daily check or in an emergency to lower the platform to the ground should the operator in the platform be unable to do so.

Instructions and hazard warnings are posted adjacent to both operator control stations and at other places on the machine. It is extremely important that operators know what instructions and warnings are placed on the machine, and review these periodically so that they are fresh in their minds. Vibrations emitted by these machines are not hazardous to an operator in the work platform.

The JLG Sizzor Lift is designed to provide efficient and safe operation when maintained and operated in accordance with warnings on the machine, the Operating 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 A92.6-1999. 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 Sizzor 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 Sizzor 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 has a manual descent system which will allow the platform to lowered without power from the engine/motor powered pump.

The JLG Sizzor Lift is powered using hydraulic motors and cylinders for the various machine motions. The hydraulic components are controlled by electrically activated hydraulic valves using switches and the joystick controller. The machine is equipped with a Enable Switch which must be pressed before activating the DRIVE, LIFT or STEER functions. The Enable Switch has a built-in timer which shut off power to these functions if they are not activated within 3 seconds after Enable Switch is depressed. The speeds of functions controlled by the joystick controller are variable from zero to maximum speed depending upon the position of the controller. Functions controlled by toggle switches are either on or off and higher or lower speed is possible only when the applicable high function speed control switch at the Platform Control Station is used in conjunction with the function toggle switch. All switches at the platform are guarded to prevent inadvertent operation by individual switch guards.

The JLG Sizzor is a two or four wheel drive 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 brakes are automatically applied anytime the Drive controller is returned to the neutral position.

The capacities of all models are listed in Table 4-1, Operating Characteristics and based on a load uniformly distributed in the center of the platform. This means that the total combined weight of personnel, tools and supplies must not exceed the given capacity for a particular model.

The platform may be raised only when positioned on firm, level and uniform surfaces. Leveling jacks, if provided, are to assist in leveling the Sizzor Lift. The Sizzor Lift must be level when operating on leveling jacks.

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.

Table 4-1. Operating Characteristics

| | 25RTS | 33RTS | 40RTS | |
|--|----------------------------|------------------------|------------------------|--|
| Maiximum Occupants | 2 | 2 | 2 | |
| Maximum Workload | 1750 lb (795 kg) | 1250 (570 kg) | 750 (340 kg) | |
| Max Travel Grade 2WD (Gardeability) | 25% | 25% | 25% | |
| Max Travel Grade 4WD (Gradeability) | 45% | 45% | 45% | |
| Max Platform Height | 25 ft (7.6 m) | 33 ft (10 m) | 40 ft (12 m) | |
| Max Tire Load | Reference Decal on Machine | | | |
| Gross Machine weight | 7,600 lb (3,447 kg) | 8,200 lb (3,719 kg) | 9,200 lb (4,173 kg) | |

4.3 ENGINE OPERATION

IMPORTANT

RTS SERIES SCISSOR LIFTS MANUFACTURED AFTER AUGUST 26, 1996 ARE EQUIPPED WITH A HYDRAULIC OIL TEMPERATURE SWITCH THAT SHUTS DOWN THE ENGINE WHEN THE HYDRAULIC OIL REACHES A TEMPERATURE OF APPROXIMATELY 230 DEGREES F (111 DEGREES C). THIS SHUT DOWN IS INTENDED TO PROTECT THE HYDRAULIC SYSTEM AND ITS COMPONENTS FROM DAMAGE DUE TO EXCESSIVE HEAT. HEAT MAY BUILD UP DUE TO EXTENDED DRIVING, IN CONJUNCTION WITH HIGH AMBIENT TEMPERATURES, ACTIVATING THIS SWITCH AND SHUTTING DOWN THE MACHINE. IF THE MACHINE SHUTS DOWN, ALLOW THE HYDRAULIC OIL TO COOL, THEN RESUME NORMAL OPERATION.

NOTE: Initial starting should always be performed from the Ground Control Station.

Starting Procedure

- Check engine oil before attempting to start engine; if necessary, add oil in accordance with Engine Manufacturers Manual.
- Pull the red mushroom-type Ignition/Emergency Stop switch at the Ground Control Station to the UP position (ON).

- Place the PLATFORM/GROUND SELECT switch to the applicable position for desired control station operation.
- If operating a dual fuel machine, place the LP/GAS-OLINE SELECT switch to the desired position.

NOTE: If LPG system is selected, ensure that the hand valve on the LPG supply tank is opened prior to attempting to start the engine.

IMPORTANT

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

NOTE: If starting machine from the platform control station, place the engine speed control switch to the LOW position prior to starting the engine.

- If starting machine from ground controls, position IGNITION/EMERGENCY STOP switch to ON and depress START button and hold until engine starts.
 If starting from platform controls, position POWER ON switch to ON and depress START button and hold until engine starts.
- 6. Check engine voltmeter when starting engine and monitor gauge periodically during operation.

IMPORTANT

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

7. After engine has had sufficient time to warm up, proceed with operation of unit.

4.4 RAISING AND LOWERING - (LIFTING)

A WARNING

DO NOT RAISE PLATFORM EXCEPT ON A HARD, LEVEL SURFACE FREE OF OBSTRUCTIONS AND HOLES.

NOTE: This machine is equipped with a Enable Switch on the side of the platform control console. This switch must be depressed before activating DRIVE, LIFT, or STEER functions from the platform control console.

Raising

- Position MAIN POWER switch to desired position and position POWER ON (platform) or EMERGENCY STOP (ground) switch, as applicable, to ON. If machine has been shut down, start engine and allow warm-up period before beginning any lifting.
- 2. Pull LIFT toggle switch, then move it to UP and hold until desired elevation is achieved.

Lowering

WARNING

ENSURE SIZZOR ARM AREA IS FREE OF PERSONNEL PRIOR TO LOWERING PLATFORM.

DO NOT 'LIFT DOWN' WITHOUT COMPLETELY RETRACTING PLATFORM EXTENSION OR OPTIONAL TRAVERSING DECK.

Pull LIFT toggle switch, then move it to DOWN and hold until desired elevation is achieved or until platform is fully lowered

4.5 LEVELING JACKS (OPTIONAL)

NOTE: The machine may be equipped with leveling jacks enabling the operator to level the machine on uneven surfaces.

Lower leveling jacks until the bubble level located on the platform of the machine reads level. The tilt warning light and the tilt warning alarm must not be on. When using leveling jacks, always deploy all four.

NOTE: The operational characteristics on CE/Australian machines are as follows:

All 4 leveling jacks must be deployed to permit lift function above 8 m (26 ft). (Optional for ANSI/CSA)

The operational characteristics ANSI/CSA machines are as follows:

Lift function is permitted to full height with all 4 leveling jacks retracted or all 4 leveling jacks deployed. If using leveling jacks all 4 must be deployed before lifting is permitted.

A WARNING

IT IS AN UNSAFE PRACTICE TO LIFT THE PLATFORM OF THE MACHINE IF THE TILT WARNING LIGHT IS ON AND/OR THE TILT WARNING ALARM IS SOUNDING. BE SURE AND USE LEVELING JACKS TO LEVEL MACHINE BEFORE LIFTING..

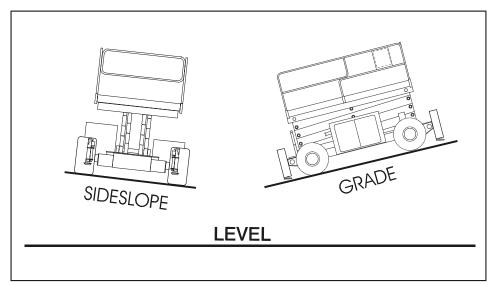


Figure 4-1. Grade and Sideslope

4.6 MECHANICAL PLATFORM EXTENSION (OPTIONAL)

The machine may be equipped with a mechanically extendable deck, adding 4 ft. (1.2 meters) to the front of the platform, giving the operator better access to worksites. The deck extension is manually controlled by a pair of handles connected to latching rods in the platform railing. With the handles in the down (vertical) position, the latching rods are positioned into a pair of holes in the platform deck, securing the extendable portion of the deck in either the extended or retracted position. With the handles in the up (horizontal) position, the latching rods are positioned above the platform deck, allowing the extendable deck to be extended or retracted.

4.7 STEERING

To steer the machine, the thumb operated steer control switch on the controller handle is positioned to the right for traveling right, or to the left for traveling left.

When released, the switch will return to the center-off position and the wheels will remain in the previously selected position. To return the wheels to the straightened position, the switch must be activated in the opposite direction until the wheels are centered.

4.8 TRAVELING - (DRIVING)

▲ WARNING

ALWAYS RAISE LEVELING JACKS, IF EQUIPPED, BEFORE TRAVELING TO AVOID INJURY TO PERSONNEL OR DAMAGE TO MACHINE.

IF MACHINE BECOMES STUCK DURING TRAVEL, DO NOT "ROCK" MACHINE IN AN ATTEMPT TO REGAIN TRACTION, AS DAMAGE TO DRIVE HUBS MAY RESULT.

DO NOT DRIVE WITH PLATFORM RAISED EXCEPT ON A SMOOTH, FIRM, AND LEVEL SURFACE FREE OF OBSTRUCTIONS AND HOLES.

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

TRAVEL GRADES IN "LOW" DRIVE 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 FT (2 M) OF AN OBSTRUCTION.

WARNING

HIGH DRIVE SPEED IS CUT OUT WHEN PLATFORM IS RAISED ABOVE STOWED POSITION. IF LIMIT SWITCH MALFUNCTIONS, SHUT DOWN MACHINE AND HAVE AUTHORIZED SERVICE PERSONNEL REPAIR OR REPLACE LIMIT SWITCH PRIOR TO RESUMING OPERATION.

MACHINE MAY BE EQUIPPED WITH A 3 DEGREE TILT SWITCH THAT ILLUMINATES A LIGHT ON THE PLATFORM CONTROL CONSOLE AND SOUNDS AN AUDIBLE ALARM WHEN THE MACHINE IS ON A SEVERE SLOPE (OVER 3 DEGREES) WITH THE PLATFORM RAISED.

Traveling Forward

- Position main power switch to on (or platform, if applicable) and position power on switch to on. If machine has been shut down, start engine and allow warm-up period before beginning any lifting.
- Position pump and engine control switches to desired positions (high or low) and position drive control switch to desired position (torque or speed).
- Position controller to forward, squeeze red trigger switch on front of controller, and hold controller in position for duration of travel. The red trigger switch must be held for the duration of travel. Drive speed is determined by the distance the controller is moved from the center off position.

Traveling in Reverse

- Position main power switch to desired position and position power on switch to on. If machine has been shut down, start engine and allow warm-up period before beginning any lifting.
- Position pump and engine control switches to desired positions (high or low) and position drive control switch to desired position (torque or speed).
- 3. Position controller to forward, squeeze red trigger switch on front of controller, and hold controller in position for duration of travel. The red trigger switch must be held for the duration of travel. Drive speed is determined by the distance the controller is moved from the center off position.

4.9 PARKING AND STOWING

Park and stow machine as follows:

- Drive machine to a reasonably well-protected and well-ventilated area.
- Ensure platform is fully lowered.
- 3. Position emergency stop switch to off position.
- If necessary, cover the instruction placards, caution and warning decals so that they will be protected from hostile environment.
- Chock at least two wheels when parking machine for an extended period of time.
- Turn Ignition/Emergency Stop switch to off and remove key to disable machine from unauthorized use.

4.10 PLATFORM LOADING

The platform maximum rated load capacity is shown on a placard located on the platform and is based upon the following criteria.

- Machine is positioned on a smooth, firm and level surface.
- 2. All braking devices are engaged.

NOTE: It is important to remember that the load should be evenly distributed on the platform. The load should be placed near the center of the platform when possible.

4.11 SAFETY PROPS

▲ CAUTION

SAFETY PROPS MUST BE USED WHEN MAINTENANCE PER-FORMED ON MACHINE REQUIRES SIZZOR ARMS TO BE RAISED.

To engage safety props, raise platform so that both props can be disconnected from locking arms and lowered to a vertical position. Lower the platform until the safety props rest on the pads provided on the frame. Maintenance can now begin.

To store safety props, raise platform so that props can be pivoted up and secured by their locking arms.

4.12 MACHINE TIE DOWN

When transporting machine, platform must be fully retracted in the stowed mode with machine securely tied down to truck or trailer deck. Four tie down lugs are provided, one at each corner of the machine frame.

A WARNING

USE TIE DOWN LUGS ONLY TO SECURE THE MACHINE FOR SHIPPING. DO NOT USE TIE DOWN LUGS TO LIFT MACHINE.

4.13 TOWING

The machine should not be towed, except in the event of an emergency such as a machine malfunction or a total machine power failure. Refer to Section 6 for emergency towing procedures. This page intentionally left blank.

SECTION 5. EMERGENCY PROCEDURES

5.1 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.

5.2 EMERGENCY TOWING PROCEDURES

Although towing the machine is prohibited, when not equipped with a tow package, 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.
- Disengage (reverse) the disconnect cap on each drive torque hub by removing the two attaching capscrews, turning the cap around, and reinstalling and tightening the capscrews.
- Remove chocks and move the machine to an appropriate maintenance area, using suitable equipment for assistance.

After moving machine, complete the following procedures:

- 1. Position machine on a firm, level surface.
- 2. Chock wheels securely.
- Return disconnect caps to normal (engaged) position.
- 4. Remove chocks from wheels.

5.3 EMERGENCY CONTROLS AND THEIR LOCATIONS

Emergency Stop Switch

At platform controls, red Ignition/Emergency Stop switch when depressed, it will immediately stop the machine.

Ground Control Station

The Ground Control Station is located on the left side of the machine frame. The controls on this panel provide the means for overriding the platform controls and for controlling the platform lift up and down and ignition functions from the ground. Position the Ignition/Emergency Stop switch to ON, position the PLATFORM/ GROUND SELECT switch to the GROUND position and operate the the appropriate switch, LIFT or IGNITION.

IMPORTANT

IF MACHINE IS EQUIPPED WITH PLATFORM EXTENSION OR TRA-VERSING DECK, RETRACT DECK BEFORE LOWERING PLAT-FORM.

Manual Descent - (Engine/Pump Failure - Platform Controls)

In the event of engine/pump failure while operating the machine from the platform console, the following procedure should be followed to lower the platform. Turn the POWER ON switch to ON. Place and hold the lift control switch to down. When platform is completely down, return lift control switch to center off and position power on switch to off.

Manual Descent - (Engine/Pump Failure - Ground Controls)

The following procedure should be used to lower the platform from the ground controls in the event of engine/pump failure. Turn MAIN POWER switch to ON and PLATFORM/GROUND SELECT switch to GROUND. For battery powered machines, position MAIN POWER switch to GROUND. Place LIFT control switch to DOWN. When platform is completely down, return LIFT control switch to center OFF and position MAIN POWER switch to OFF.

Manual Descent - (Complete Loss of Power)

The manual descent valve is used, in the event of total power failure, to lower the platform using gravity. The manual descent handle is located on the center rear of the machine frame, just above the first set of sizzor arms. The handle is connected, by a cable, to the manual descent valve on the lift cylinder. Pulling the manual descent handle opens the valve, lowering the platform.

5.4 EMERGENCY OPERATION

Use of Ground Controls

A WARNING

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.

Operator Unable to Control Machine

A WARNING

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

- USE THE MANUAL DESCENT SYSTEM AS FIRST CHOICE for bringing the platform and operator down, particularly IF THERE IS INDICATION OF CONTROL MALFUNCTION. Further use of hydraulic power may cause severe injury or death.
- Operate the machine from ground controls ONLY with the assistance of other personnel and equipment (cranes, overhead hoists, etc.) as may be required to safely remove the danger or emergency condition.
- Other qualified personnel on the platform may use the platform controls. DO NOT CONTINUE OPERA-TION IF CONTROLS DO NOT FUNCTION NOR-MALLY.
- 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.

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 operate controls to cause one or more wheels to leave the ground.

Righting of Tipped Machine

A forktruck of suitable capacity or equivalent equipment should be placed under the elevated side of the chassis, with a crane or other suitable lifting equipment used to lift the platform while the chassis is lowered by the forklift or other equipment.

Post-Incident Inspection

Following any accident, thoroughly inspect the machine and test all functions first from the ground controls, then from the platform controls. Do not lift above 10 ft (3 m) until you are secure that all damage has been repaired, if required, and that all controls are operating correctly.

5.5 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 factory should be contacted by telephone and provided with all necessary details.

Contact at 1-877-JLG-SAFE (554-7223) between the hours of 8:00 AM - 4:45 PM Eastern Standard time.

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.

SECTION 6. INSPECTION AND REPAIR LOG

Table 6-1.Inspection and Repair Log

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Table 6-1.Inspection and Repair Log

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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: City: _____ State: _____ Zip: ______ Telephone: (______) ____ Date Of Transfer: Current Owner: Address: City: ______ State: _____ Zip: ______ Telephone: (_____) ____ Who in your organization should we notify?



Title:



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Customer Support Toll Free: (877) 554-5438

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