



An Oshkosh Truck Corporation Company

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# Operation & Safety Manual

## **Models** **400RTS** **500RTS**

**3120828**

*November 9, 2007*



An Oshkosh Truck Corporation Company

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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. It is important to stress proper machine usage at all times. All information in this manual must be read and understood before any attempt is made to operate the machine.

Because the manufacturer has no direct control over machine operation and application, proper safety practices are the responsibility of the owners, users, operators, lessors, and lessees.

All instructions in this manual are based upon the use of the machine under proper operating conditions, with no deviations from the original design. Any alteration or modification of the machine is strictly forbidden without written approval from JLG Industries, Inc.

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.

**Other Publications Available:**

Service and Maintenance Manual .....	3120829
Illustrated Parts Manual .....	3120830

## **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

The Safety Alert Symbol will be used with the appropriate Safety Signal Word of “DANGER” “WARNING” or “CAUTION” to a potential hazard and designate a level of seriousness. The Safety Signal Words are inserted throughout this manual in Black/White. On the machine, the Safety Signal Words will have either a Red, Orange, or Yellow background as part of a safety sign or decal. The “DANGER”, “WARNING”, and “CAUTION” Safety Signal Words, definitions, and associated colors are as follows:

### **⚠ DANGER**

INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN SERIOUS INJURY OR DEATH. THIS SIGNAL WORD IS USED IN THE MOST EXTREME CASES. WHEN INSTALLED ON THE MACHINE, THIS SIGNAL WORD WILL HAVE A RED BACKGROUND AS PART OF A DECAL.

### **⚠ WARNING**

INDICATES A POTENTIALITY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN SERIOUS INJURY OR DEATH. WHEN INSTALLED ON THE MACHINE, THIS SIGNAL WORD WILL HAVE AN ORANGE BACKGROUND AS PART OF A DECAL.

### **⚠ CAUTION**

INDICATES A POTENTIALITY HAZARDOUS SITUATION WHICH IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO BE USED TO ALERT AGAINST UNSAFE PRACTICES. WHEN INSTALLED ON THE MACHINE, THIS SIGNAL WORD WILL HAVE A YELLOW BACKGROUND AS PART OF A DECAL.

The “IMPORTANT” Safety Signal Word may also appear in this manual or on the machine. This Safety Signal Word typically will not appear with the Safety Alert Symbol, but contains important information that must be followed for safe and proper operation, The “IMPORTANT” Safety Signal Word definition and associated color is as follows.

### **NOTICE**

INDICATES PROCEDURES ESSENTIAL FOR SAFE OPERATION AND WHICH, IF NOT FOLLOWED, MAY RESULT IN A MACHINE MAL-FUNCTIONED DAMAGE. WHEN INSTALLED IN A MACHINE, THIS SIGNAL WORD WILL HAVE A GREEN BACKGROUND AS PART OF A DECAL.

**⚠ WARNING**

ALL SAFETY-RELATED BULLETINS MUST BE ACCOMPLISHED ON THIS PRODUCT. JLG INDUSTRIES, INC. MAY HAVE ISSUED SAFETY-RELATED BULLETINS FOR THIS JLG PRODUCT. CONTACT JLG INDUSTRIES, INC. OR THE LOCAL AUTHORIZED JLG DEALER FOR INFORMATION REGARDING SAFETY-RELATED BULLETINS WHICH MAY HAVE BEEN ISSUED FOR THIS PRODUCT.

**NOTICE**

FOR THE PURPOSE OF RECEIVING SAFETY-RELATED BULLETINS, IT IS IMPORTANT THAT THE CURRENT OWNER OF THIS UNIT ENSURES JLG INDUSTRIES, INC. HAS UPDATED OWNERSHIP INFORMATION. CONTACT JLG INDUSTRIES, INC. TO ENSURE THAT THE CURRENT OWNER RECORDS ARE UPDATED AND ACCURATE.

**NOTICE**

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 PROPERTY OR THE JLG PRODUCT.

**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. In order to promote proper machine usage, 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 must be followed to ensure that the machine is safe to operate.

The owner/user/operator/lessor/lessee of the machine should not accept operating responsibility 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.

These sections contain the responsibilities of the owner, user, operator, lessor, and lessee concerning safety, training, inspection, maintenance, application, and operation. If there are any questions with regard to safety, training, inspection, maintenance, application, and operation, please contact JLG Industries, Inc. ("JLG").

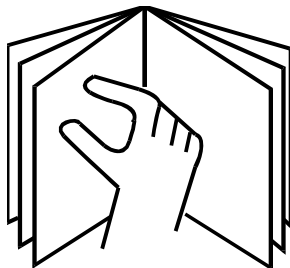
#### **⚠ WARNING**

**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**

- The Operators and Safety Manual must be read in its entirety before operating the machine. For clarification, questions, or additional information regarding any portions of this manual, contact JLG Industries, Inc.



- An operator must not accept operating responsibilities until adequate training has been given by competent and authorized persons.

- Allow only those authorized and qualified personnel to operate the machine who have demonstrated that they understand the safe and proper operation and maintenance of the unit.
- Read, understand, and obey all DANGERS, WARNINGS, CAUTIONS, and operating instructions on the machine and in this manual.
- Ensure that the machine is to be used in a manner which is within the scope of its intended application as determined 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 your utilization and application of the machine.

#### **Workplace Inspection**

- Precautions to avoid all hazards in the work area must be taken by the user before operation of the machine.
- Do not operate or raise the platform from a position on trucks, trailers, railway cars, floating vessels, scaffolds or other equipment unless the application is approved in writing by JLG.
- Before operation, check work area for overhead hazards such as electric lines, bridge cranes, and other potential overhead obstructions.
- Check floor surfaces for holes, bumps, drop-offs, obstructions, debris, concealed holes, and other potential hazards.
- Check the work area for hazardous locations. Do not operate the machine in hazardous environments unless approved for that purpose by JLG.
- Ensure that the ground conditions are adequate to support the maximum tire load indicated on the tire load decals located on the chassis adjacent to each wheel.
- Do not operate the machine when wind conditions exceed 28 mph (12.5 m/s).
- This machine can be operated in nominal ambient temperatures of 0° F to 104° F (-20° C to 40° C). Consult JLG to optimize operation outside of this temperature range.

#### **Machine Inspection**

- Do not operate this machine until the inspections and functional checks have been performed as specified in Section 2 of this manual.

## SECTION 1 - SAFETY PRECAUTIONS

- Do not operate this machine until it has been serviced and maintained according to the maintenance and inspection requirements as specified in the machine's Service and Maintenance Manual.
- Ensure all safety devices are operating properly. Modification of these devices is a safety violation.

### **⚠ WARNING**

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

- Do not operate any machine on which the safety or instruction placards or decals are missing or illegible.
- Check the machine for modifications to original components. Ensure that any modifications have been approved by JLG.
- Avoid accumulation of debris on platform deck. Keep mud, oil, grease, and other slippery substances from footwear and platform deck.

## 1.3 OPERATION

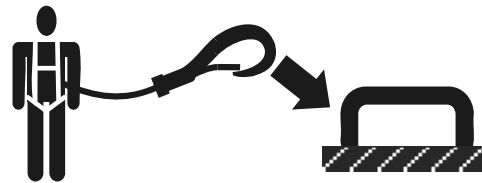
### General

- Do not use the machine for any purpose other than positioning personnel, their tools, and equipment.
- Before operation, the user must be familiar with the machine capabilities and operating characteristics of all functions.
- Never operate a malfunctioning machine. If a malfunction occurs, shut down the machine. Remove the unit from service and notify the proper authorities.
- Do not remove, modify, or disable any safety devices.
- 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 at end of travel (fully extended or fully retracted) before shutdown or for long periods of time. Always "bump" control in opposite direction slightly when function reaches end of travel. This applies both to machines in operation or in the stowed position.
- 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.

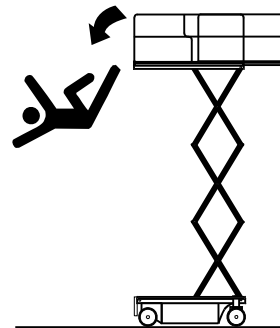
- When two or more persons are in the platform, the operator shall be responsible for all machine operations.
- Always ensure that power tools are properly stowed and never left hanging by their cord from the platform work area.
- Do not assist a stuck or disabled machine by pushing or pulling except by pulling at the chassis tie-down lugs.
- Stow scissor arm assembly and shut off all power before leaving machine.

### Trip and Fall Hazards

- JLG Industries, Inc. recommends that all persons in the platform wear a full body harness with a lanyard attached to an authorized lanyard anchorage point while operating this machine. For further information regarding fall protection requirements on JLG products, contact JLG Industries, Inc.



- Prior to operation, ensure all gates and rails are fastened and secured in their proper position. Identify the designated lanyard anchorage point(s) at the platform and securely attach the lanyard. Attach only one (1) lanyard per lanyard anchorage point.

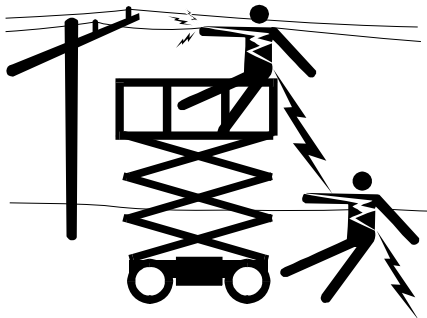
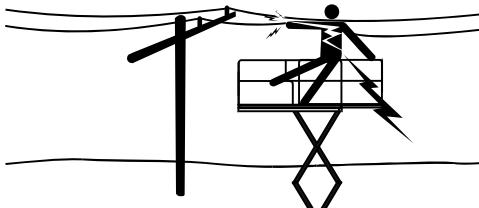


- Keep both feet firmly positioned on the platform floor at all times. Never position ladders, boxes, steps, planks, or similar items on unit to provide additional reach for any purpose.
- Never use the scissor arm assembly to gain access to or leave the platform.

- Use extreme caution when entering or leaving platform. Ensure that the scissor arm assembly is fully lowered. Face the machine when entering or leaving the platform. Always maintain “three point contact” with the machine, using two hands and one foot or two feet and one hand at all times during entry and exit.
- 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 utilizing 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 such time the transfer to the structure is safe and complete.
- Keep oil, mud, and slippery substances cleaned from footwear and the platform floor.

**Electrocution Hazards**

- This machine is not insulated and does not provide protection from contact with an electrically charged conductor.



- Maintain safe clearance from electrical lines, apparatus, or any energized (exposed or insulated) parts in accordance with the Minimum Approach Distance (MSAD) as specified in Table 1-1.
- Allow for machine movement and electrical line swaying.

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

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

**NOTE: This requirement shall apply except where employer, local or governmental regulations are more stringent.**

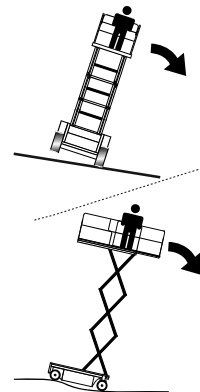
- Maintain a clearance of at least 10 ft. (3m) between any part of the machine and its occupants, their tools, and their equipment from any electrical line or apparatus carrying up to 50,000 volts. One foot additional clearance is required for every additional 30,000 volts or less.

**⚠ DANGER**

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

**Tipping Hazards**

- Ensure that the ground conditions are adequate to support the maximum tire load indicated on the tire load decals located on the chassis adjacent to each wheel. Do not travel on unsupported surfaces.
- The user should be familiar with the driving surface before driving. Do not exceed the allowable sideslope and grade while driving.



## SECTION 1 - SAFETY PRECAUTIONS

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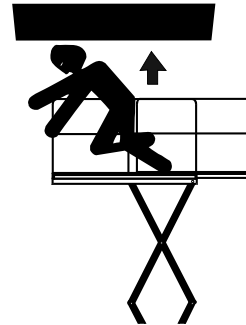
- Do not elevate platform or drive with platform elevated while on or near a sloping, uneven, or soft surface. Ensure machine is positioned on a firm, level and uniformly supported surface before elevating platform or driving with the platform in the elevated position.
- Before driving on floors, bridges, trucks, and other surfaces, check allowable capacity of the surfaces.
- Never exceed the maximum work load as specified on the platform. Keep all loads within the confines of the platform, unless authorized by JLG.
- Keep the chassis of the machine a minimum of 2 ft. (0.6m) from holes, bumps, drop-offs, obstructions, debris, concealed holes, and other potential hazards at the ground level.
- Never attempt to use the machine as a crane. Do not tie-off machine to any adjacent structure. Never attach wire, cable, or any similar items to platform.
- Do not operate the machine when wind conditions exceed 28 mph (12.5 m/s). Unless otherwise specified on machine or accessory.
- Do not cover the platform sides or carry large surface-area items in the platform when operating outdoors. The addition of such items increases the exposed wind area of the machine.
- Do not increase the platform size with unauthorized deck extensions or attachments.
- If scissor arm assembly or platform is caught so that one or more wheels are off the ground, all persons must be removed before attempting to free the machine. Use cranes, forklift trucks, or other appropriate equipment to stabilize machine and remove personnel.

### Crushing and Collision Hazards

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- Approved head gear must be worn by all operating and ground personnel.
- Keep hands and limbs out of the scissor arm assembly during operation.

- Watch for obstructions around machine and overhead when driving. Check clearances above, on sides, and bottom of platform when lifting or lowering platform.



- During operation, keep all body parts inside platform railing.
- Always post a lookout when driving in areas where vision is obstructed.
- Keep non-operating personnel at least 6 ft. (1.8m) away from machine during all driving operations.
- Under all travel conditions, the operator must limit travel speed according to conditions of ground surface, congestion, visibility, slope, location of personnel, and other factors causing hazards of 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.
- Ensure that operators of other overhead and floor level machines are aware of the aerial work platform's presence. Disconnect power to overhead cranes. Barricade floor area if necessary.
- Avoid operating over ground personnel. Warn personnel not to work, stand, or walk under a raised platform. Position barricades on floor as necessary.

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### 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 Section 6 for emergency towing procedures.
- Ensure platform is fully retracted and completely empty of tools prior to towing, lifting or hauling.

- When lifting machine with a forklift, position forks only at designated areas of the machine. Lift with a forklift of adequate capacity.
- Refer to Section 4 for lifting information.

### 1.5 MAINTENANCE

#### General

- This section contains general safety precautions which must be observed during maintenance of this machine. Additional precautions to be observed during machine maintenance are inserted at the appropriate points in this manual and in the Service and Maintenance Manual. It is of utmost importance that maintenance personnel pay strict attention to these precautions to avoid possible injury to personnel or damage to the machine or property. A maintenance program must be established by a qualified person and must be followed to ensure that the machine is safe.

#### Maintenance Hazards

- Shut off power to all controls and ensure that all operating systems are secured from inadvertent motion prior to performing any adjustments or repairs.
- Never work under an elevated platform until it has been fully lowered to the full down position, if possible, or otherwise supported and restrained from movement with appropriate safety props, blocking, or overhead supports.
- Always relieve hydraulic pressure from all hydraulic circuits before loosening or removing hydraulic components.
- Always disconnect batteries when servicing electrical components or when performing welding on the machine.
- Shut down the engine (if equipped) while fuel tanks are being filled.
- Ensure replacement parts or components are identical or equivalent to original parts or components.
- Never attempt to move heavy parts without the aid of a mechanical device. Do not allow heavy objects to rest in an unstable position. Ensure adequate support is provided when raising components of the machine
- Remove all rings, watches, and jewelry when performing any maintenance. Do not wear loose fitting clothing or long hair unrestrained which may become caught or entangled in equipment.
- Use only clean approved non-flammable cleaning solvents.
- Never alter, remove, or substitute any items such as counterweights, tires, batteries, platforms or other

items that may reduce or affect the overall weight or stability of the machine.

- Reference the Service and Maintenance Manual for the weights of critical stability items.

#### **⚠ WARNING**

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

#### Battery Hazards

- Always disconnect batteries when servicing electrical components or when performing welding on the machine.
- Do not allow smoking, open flame, or sparks near battery during charging or servicing.
- Do not contact tools or other metal objects across the battery terminals.
- Always wear hand, eye, and face protection when servicing batteries. Ensure that battery acid does not come in contact with skin or clothing.

#### **⚠ WARNING**

**BATTERY FLUID IS HIGHLY CORROSIVE. AVOID CONTACT WITH SKIN AND CLOTHING AT ALL TIMES. IMMEDIATELY RINSE ANY CONTACTED AREA WITH CLEAN WATER AND SEEK MEDICAL ATTENTION.**

- Charge batteries only in a well ventilated area.
- Avoid overfilling the battery fluid level. Add distilled water to batteries only after the batteries are fully charged.



## SECTION 2. MACHINE 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.

#### **NOTICE**

**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

1. 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.
2. 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.
3. 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.*

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

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

This inspection checklist is also applicable and must be followed for all machines that have been in storage or for all machines that will be exposed to harsh or changing climates

#### **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

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**NOTE:** Prior to checking the hydraulic oil level, operate the machine through one complete cycle of the lift function (full up and down). Failure to do so will result in an incorrect oil level reading on the hydraulic tank.

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

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

### Steer Linkage

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No loose or missing parts; no visible damage.

### Steer Spindle Assemblies

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No excessive wear; no damage.

### Control Boxes (Console and Ground)

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

### Battery

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

### Engine

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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)

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

### Leveling Jacks (If Equipped)

---

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

### Traversing Platform (If Equipped)

---

No loose or missing parts; no visible damage; free of dirt and debris.

## 2.4 DAILY WALK-AROUND INSPECTION

---

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

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

---

Maintain an "Operating Record". Before operating the machine check the "Operating Record" to ensure it is not in an unsafe condition.

### Daily Lubrication

---

For those items pointed out in the Daily Walk-Around Inspection requiring daily lubrication, refer to Figure 2-4., Lubrication Diagram 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.**

1. Ensure that all items requiring lubrication are serviced in accordance with the Lubrication Chart.
2. Perform functional checks in accordance with paragraph 2-5, Daily Functional Check.



**2.5 DAILY FUNCTIONAL CHECK**

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

1. From the ground control station, raise and lower the platform several times and check for the following:
  - a. Smooth elevation and lowering.
  - b. High function speeds cut out as soon as possible after the platform lifts beyond the stowed position and begins to elevate. High function speeds must cut out prior to a maximum platform height of 4.2 m (14 ft).
  - c. If equipped with oscillating axles - Make sure that the axle lockout valve switch is free of debris and the plunger of the switch actuates properly. As shown below, the plunger must extend (out) a minimum of 5.6 mm (0.22 in) to lock the axles when the scissor arms are raised. When fully

lowered, the scissor arms will press the plunger in to allow the axles to oscillate.

2. Ensure the machine is on a firm level surface. Check for proper operation of the leveling jack limit switch first from the ground control station and then from the platform controls. With all the leveling jacks retracted, check that the platform will not raise above the following limits:

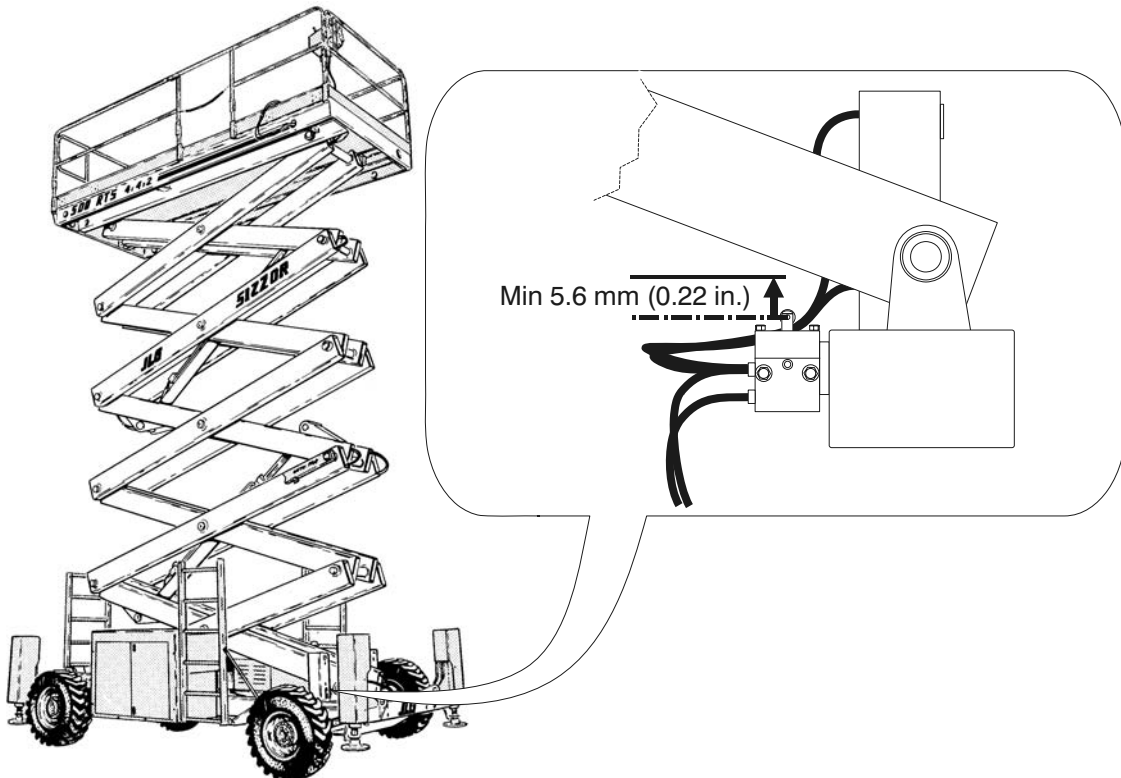
**400RTS - 8.0m (26ft) Approximate elevation 65%**

**500RTS - 6.7m (22ft) Approximate elevation 44%**

3. Drive forward and reverse, check for proper operation.
4. Check that drive brakes hold when machine is driven up a hill, not to exceed rated gradeability, and stopped.
5. Steer left and right. Check for proper operation.
6. 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.**



SECTION 2 - MACHINE PREPARATION AND INSPECTION

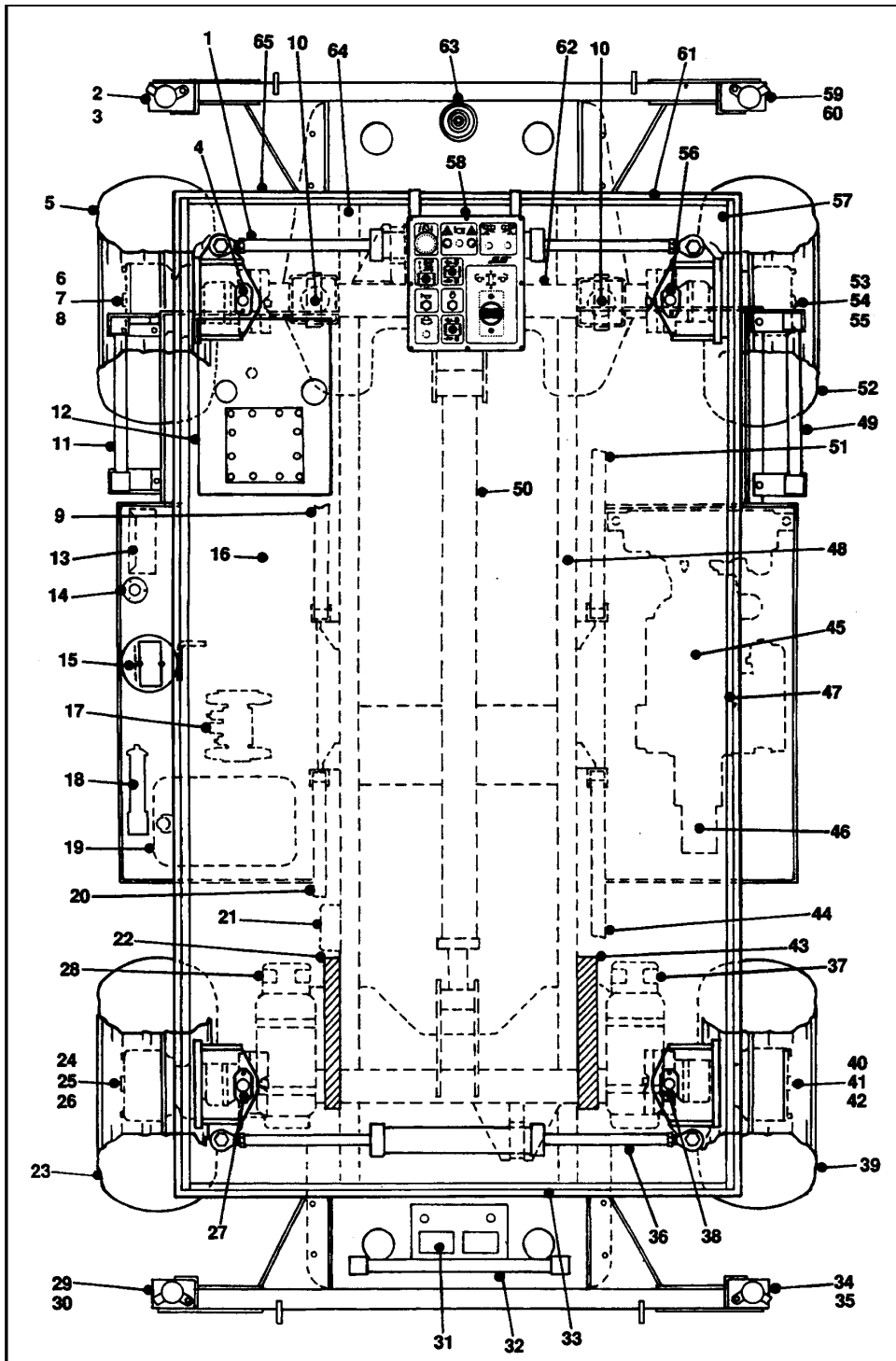


Figure 2-1. Daily Walk-Around Inspection Diagram

**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 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”.**

**NOTICE**

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

**INSPECTION NOTE:** On all components, make sure there are no loose or missing parts, that they are securely fastened, and that no visible damage, leaks or excessive wear exists in addition to any other criteria mentioned.

1. Steer Cylinder and Tie Rod Ends - See Inspection Note.
2. Leveling Jack, Left Front (If Equipped) - See Inspection Note.
3. Drive and Lift Cutout Switches (If Equipped) - See Inspection Note.
4. Steer Spindle, Left Front - Evidence of proper lubrication. See Inspection Note.
5. Steer/Drive Wheel and Tire Assembly, Left Front - Refer to inflation psi stenciled on frame. See Inspection Note.
6. Drive Motor, Left Front (4 Wheel Drive) - See Inspection Note.
7. Drive Brake, Left Front (4 Wheel Drive) - See Inspection Note.
8. Drive Hub, Left Front (4 Wheel Drive) - Drive hubs should be one half full of EPGL SAE 90. See Inspection Note.
9. Traversing Platform Extension Cylinder (If Equipped) - See Inspection Note.
10. Oscillating Axle (If Equipped) - See Inspection Note.
11. Ladder - See Inspection Note.
12. Hydraulic Reservoir - Recommended oil level in sight glass. Breather cap secure and working. See Inspection Note.
13. Ground Controls - Switches operable, no visible damage, placards secure and legible.
14. Tilt Alarm Switch - See Inspection Note.
15. Hydraulic Filter - See Inspection Note.
16. Auxiliary Power Pump - See Inspection Note.
17. Control Valves - See Inspection Note.
18. Hand Pump Manual Descent - See Inspection Note.
19. Fuel Tank (Gasoline or Diesel Engine) - Filler cap secure, sight gauge visible, no damage or leaks.
20. Traversing Platform Extension Cylinder (If Equipped) - See Inspection Note.
21. Travel/Descent/Motion Alarm - See Inspection Note.
22. Safety Prop - Stored securely, no missing parts.
23. Drive Wheel and Tire Assembly, Left Rear - Refer to inflation psi stenciled on frame. See Inspection Note.
24. Drive Motor, Left Rear - See Inspection Note.
25. Drive Brake, Left Rear - See Inspection Note.
26. Drive Hub, Left Rear - Drive hubs should be one half full of EPGL SAE 90. See Inspection Note.
27. Steer Spindle, Left Rear (If Equipped) - Evidence of proper lubrication. See Inspection Note.
28. LP Tank and Bracket (If Equipped) - See Inspection Note.
29. Leveling Jack, Left Rear (If Equipped) - See Inspection Note.
30. Drive and Lift Cutout Switches (If Equipped) - See Inspection Note.
31. Battery Installation (Gasoline or Diesel Engine) - See Inspection Note.
32. Ladder - See Inspection Note.
33. Traversing Platform (If Equipped) - See Inspection Note.
34. Leveling Jack, Right Rear (If Equipped) - See Inspection Note.
35. Drive and Lift Cutout Switches (If Equipped) - See Inspection Note.
36. Rear Steer Cylinder and Tie Rod Ends (If Equipped) - See Inspection Note.

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

## SECTION 2 - MACHINE PREPARATION AND INSPECTION

37. LP Tank and Bracket (If Equipped) - See Inspection Note.	51. Traversing Platform Extension Cylinder (If Equipped) - See Inspection Note.
38. Steer Spindle, Right Rear (If Equipped) - Evidence of proper lubrication. See Inspection Note.	52. Steer/Drive Wheel and Tire Assembly, Right Front - Refer to inflation psi stenciled on frame. See Inspection Note.
39. Drive Wheel and Tire Assembly, Right Rear - Refer to inflation psi stenciled on frame. See Inspection Note.	53. Drive Motor, Right Front (4 Wheel Drive) - See Inspection Note.
40. Drive Motor, Right Rear - See Inspection Note.	54. Drive Brake, Right Front (4 Wheel Drive) - See Inspection Note.
41. Drive Brake, Right Rear - See Inspection Note.	55. Drive Hub, Right Front (4 Wheel Drive) - Drive hubs should be one half full of EPGL SAE 90. See Inspection Note.
42. Drive Hub, Right Rear - Drive hubs should be one half full of EPGL SAE 90. See Inspection Note.	56. Steer Spindle, Right Front - See Inspection Note.
43. Safety Prop - Stored securely, no missing parts.	57. High Speed Limit Switch - See Inspection Note.
44. Traversing Platform Extension Cylinder (If Equipped) - See Inspection Note.	58. 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.
45. Engine Installation - Engine oil to full mark on dipstick, oil filler cap 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.	59. Leveling Jack, Right Front (If Equipped) - See Inspection Note.
46. Hydraulic Pump - Pump properly secured, no visible damage, no evidence of leakage. Hoses and fittings properly secured, no visible damage, no evidence of leaks.	60. Drive and Lift Cutout Switches (If Equipped) - See Inspection Note.
47. Handrail installation - All railings securely attached, no damage or missing parts, chains securely attached.	61. Traversing Platform (If Equipped) - See Inspection Note.
48. Sizzor Arms and Sliding Wear Pads - Inspect sizzor arm guards for damage and proper installation. See Inspection Note.	62. Drive Cutout Switch and High Speed Cutout Switch - See Inspection Note.
49. Ladder - See Inspection Note.	63. Leveling Gauge - See Inspection Note.
50. Lift Cylinder - See Inspection Note.	64. Traversing Platform Valve (If Equipped) - See Inspection Note.
	65. Platform Assembly - See Inspection Note.

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

### 2.6 LOCKOUT 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 a 20 cm (8 in) high block with ascension ramp in front of the left front wheel.
2. Activate the machine's 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.
5. Raise the machine platform approximately 61 cm (2 ft); ensure the lockout cylinder cam valve is free of the sizzor arm trip bar.
6. 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.
9. If the lockout cylinder does not function properly, have qualified personnel correct the malfunction prior to any further operation.

---

### 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.
2. Open the hand valve on the LP Gas supply tank by turning counterclockwise.

#### **⚠ CAUTION**

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

3. 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.
2. 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.
3. Close the hand valve on the LP gas supply tank by turning clockwise.

---

### 2.8 TORQUE REQUIREMENTS

The Torque Chart (See Figure 2-5.) 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.

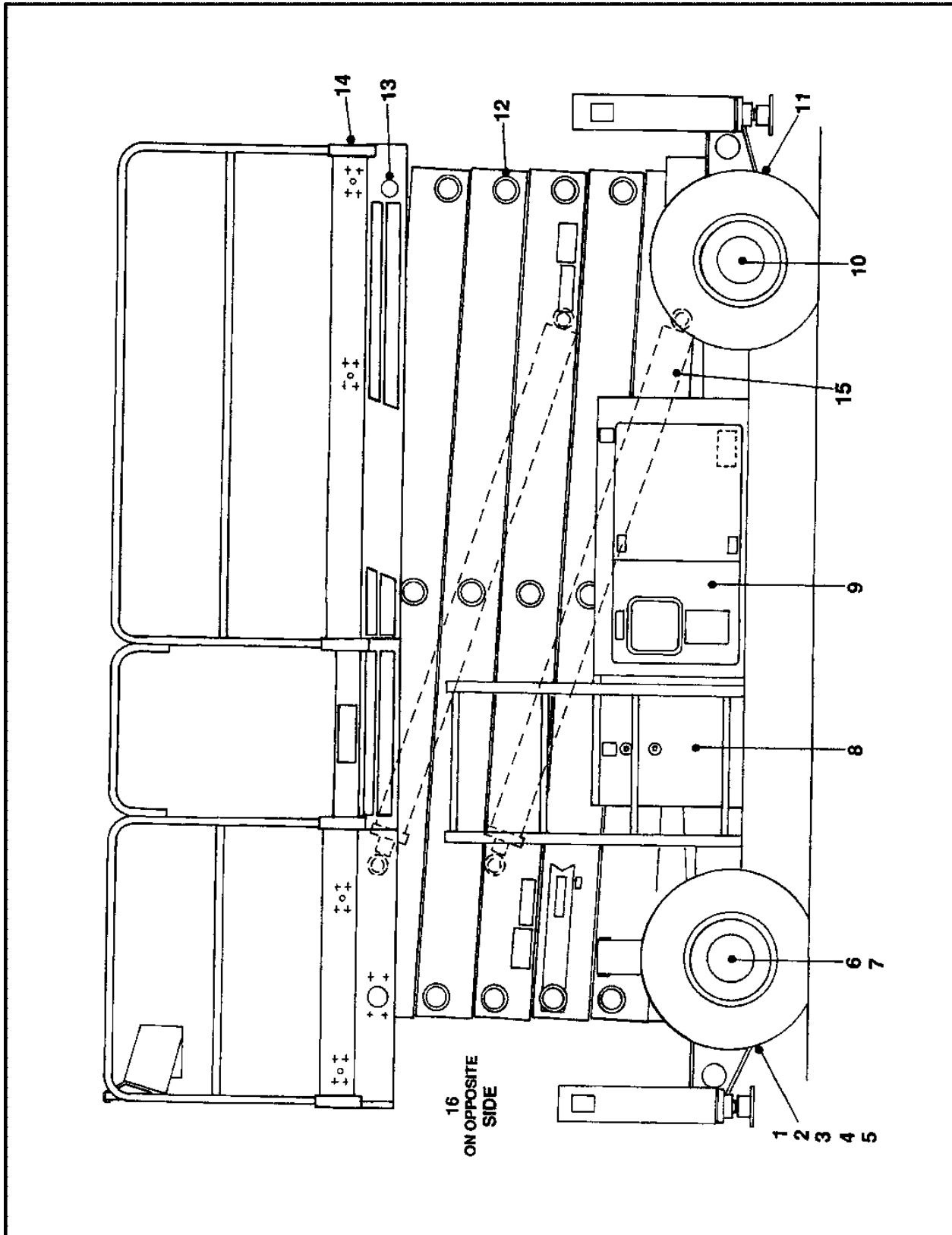


Figure 2-4. Lubrication Diagram

**Table 2-1. Lubrication Chart**

INDEX NO	COMPONENT	NUMBER/TYPER 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	Hydraulic Oil Reservoir	Fill Cap/Drain Plug	HO - Check HO Level (See note 4)/ HO - Change HO	10/500
9	** Hydraulic Filter Element	N/A	Initial Change - 40 Hours	250
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	400 RTS Sizzor Arm Pivot Pins 500 RTS Sizzor Arm Pivot Pins	30 Grease Fittings (400 RTS) 38 Grease Fittings (500RTS)	MPG - Pressure Gun MPG - Pressure Gun	100
13	Rail Slides	N/A	MPG - Brush	100
14	Platform Extension Slides (Optional)	N/A	MPG - Brush	100
15	Lift Cylinder	4 Grease Fittings	MPG - Pressure Gun	100
16	Engine Crankcase	Fill Cap/Drain Plug	Check Engine Oil Level	10/100

\*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.

**KEY TO LUBRICANTS:**

MPG - Multi-purpose Grease

EPGL - Extreme Pressure Gear Lube

HO - Hydraulic Oil (Mobil 424)

**⚠ 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).

SIZE	THD	BOLT DIA. (CM)	THREAD STRESS AREA (SQ. CM)	VALUES FOR ZINC PLATED BOLTS ONLY										UNPLATED CAP SCREWS	
				SAE GRADE 5 BOLTS & GRADE 2 NUTS			SAE GRADE 8 BOLTS & GRADE 8 NUTS			TORQUE				UNBRANCO 1960 SERIES SOCKET HEAD CAP SCREW WITH LOC-WEEL PATCH	
				CLAMP LOAD (KG)	(DRY OR LOC. 263) NM	(LUB.) NM	(LOCTITE 262) NM	(LOCTITE 242 OR 271) NM	CLAMP LOAD (KG)	(DRY OR LOC. 263) NM	(LUB.) NM	(LOCTITE 262) NM	(LOCTITE 242 OR 271) NM	CLAMP LOAD (KG)	TORQUE (as received) NM
4	40	0.2845	0.0153	172	1	1	1	1	1	245	2	1	1	1	1
4	48	0.2845	0.0168	191	1	1	1	1	1	272	2	1	1	1	1
6	32	0.3505	0.0232	263	2	2	2	2	2	372	3	2	2	2	2
6	40	0.3505	0.0258	277	2	2	2	2	2	417	3	2	2	2	2
8	32	0.4166	0.0356	408	4	3	3	3	3	572	5	4	4	4	4
8	36	0.4166	0.0374	426	4	3	3	3	3	599	5	4	4	4	4
10	24	0.4826	0.0445	508	5	4	4	4	4	717	7	5	5	5	5
10	32	0.4826	0.0508	583	6	4	4	4	4	817	8	6	6	6	6
1/4	20	0.6350	0.0808	916	11	9	9	9	9	1297	16	12	12	12	12
1/4	28	0.6350	0.0925	1052	14	10	10	10	10	1488	19	14	14	14	14
5/16	18	0.7938	0.1331	1515	23	18	18	18	18	2141	34	25	30	41	2377
5/16	24	0.7938	0.1473	1678	26	19	23	29	29	2821	34	27	34	41	2631
3/8	16	0.9525	0.1969	2241	41	31	38	48	48	3175	61	48	54	68	3493
3/8	24	0.9525	0.2230	2540	48	34	43	54	54	3583	68	48	61	75	3983
7/16	14	1.1112	0.2700	3085	68	48	61	75	75	4352	95	75	85	109	4822
7/16	20	1.1112	0.3015	3425	75	68	68	81	81	4854	109	81	95	122	5384
1/2	13	1.2700	0.3604	4105	102	75	92	115	115	5783	149	109	130	163	6437
1/2	20	1.2700	0.4061	4854	122	88	108	136	136	6532	163	122	146	183	7253
9/16	12	1.4288	0.4623	5262	149	109	133	163	163	7539	204	149	188	224	8256
9/16	18	1.4288	0.5156	5874	163	122	148	183	183	8278	231	176	209	258	9208
5/8	11	1.5875	0.5740	6532	204	149	183	224	224	9231	298	231	244	326	10251
5/8	18	1.5875	0.6502	7394	231	176	207	258	258	10433	326	244	277	359	11612
3/4	10	1.9050	0.8484	9662	353	271	325	387	387	13653	515	380	408	570	15150
3/4	16	1.9050	0.9474	10796	407	298	363	448	448	15241	570	434	456	631	16919
7/8	9	2.2225	1.1735	13336	583	434	523	644	644	18870	814	624	658	895	20956
7/8	14	2.2225	1.2929	14697	637	475	576	705	705	20775	895	678	724	983	23088
1	8	2.5400	1.5392	17509	868	651	785	915	915	23360	1220	922	931	1342	27488
1	12	2.5400	1.6840	19142	949	719	858	997	997	27080	1356	1003	1079	1492	30074
1-1/8	7	2.8575	1.9380	19187	1085	814	968	1139	1139	31162	1736	1302	1396	1898	34610
1-1/8	12	2.8575	2.1742	21546	1193	895	1087	1254	1254	34927	1953	1464	1566	2136	38828
1-1/4	7	3.1750	2.4613	24404	1519	1139	1368	1593	1593	38554	2468	1844	1970	2712	43954
1-1/4	12	3.1750	2.7254	27035	1681	1247	1516	1762	1762	43818	2712	2034	2183	2983	48671
1-1/2	6	3.4925	2.9337	29076	1980	1492	1792	2068	2068	47174	3227	2413	2586	3559	52391
1-1/2	12	3.4925	3.3401	33113	2278	1708	2042	2373	2373	53570	3688	2766	2935	4068	59648
1-1/2	6	3.8100	3.5687	35381	2630	1980	2379	2746	2746	57380	4284	3200	3430	4712	63731
1-1/2	12	3.8100	4.0132	39781	2983	2224	2676	3118	3118	142200	4827	3607	3856	5322	71669

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



SAE GRADE 5



SAE GRADE 8

Figure 2-5. Torque Chart



## SECTION 3. USER RESPONSIBILITIES AND MACHINE CONTROL

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### 3.1 GENERAL

#### **NOTICE**

**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 A92.6-1990 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.
2. Knowledge and understanding of this manual and of the control markings, instructions and warnings on the machine itself.

3. Knowledge and understanding of all safety work rules of the employer and of Federal, State and Local Statutes, including training in the recognition and avoidance of potential hazards in the work place; with particular attention to the work to be performed.
4. Proper use of all required personnel safety equipment.
5. Sufficient knowledge of the mechanical operation of the machine to recognize a malfunction or potential malfunction.
6. The safest means to operate near overhead obstructions, other moving equipment, obstacles, depressions, holes, dropoffs, etc. on the supporting surface.
7. Means to avoid the hazards of unprotected electrical conductors.
8. Any other requirements of a specific job or machine application.

---

#### **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.*

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### 3.3 OPERATING CHARACTERISTICS AND LIMITATIONS

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#### **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.

## SECTION 3 - USER RESPONSIBILITIES AND MACHINE CONTROL

### 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 stowed position with or without any load in platform, is based on the following criteria:

1. Machine is positioned on a smooth, firm and level surface.
2. Load is within manufacturer's rated capacity.
3. All machine systems are functioning properly.
4. Leveling Jacks properly set (If Equipped).

### 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

### Ground Control Station

#### **⚠ WARNING**

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

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

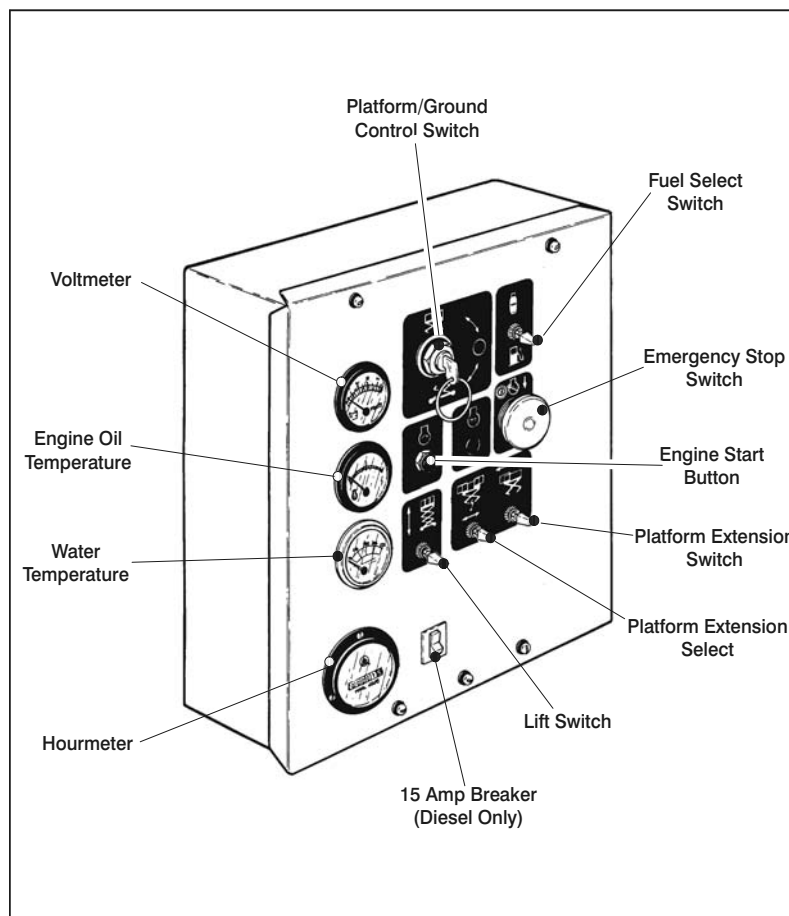


Figure 3-1. Ground Control Station

1. **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. 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. **Power Selector Switch** - A three position key-operated power selector 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.

3. **Lift Switch** - A three position, momentary contact lift control switch provides raising and lowering of the platform when positioned to UP or down.
4. **High Engine Circuit Breaker (Diesel Engine)** - A push button reset 3 Amp circuit breaker located on ground control panel returns interrupted power to diesel engine throttle when depressed.
5. **Start Button** - A momentary contact, push-button type switch supplies electrical power to the starter solenoid when the IGNITION switch is positioned up and the START button is depressed.
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. **Platform Extension Switch (If Equipped)** - A double throw, momentary contact toggle-type platform traversing switch permits the operator to hydraulically extend and retract the platform extension as needed for "up and over" work access.
8. **Platform Extension Select Switch (If Equipped)** - A full throw, momentary contact toggle-type platform traversing select switch that works simultaneously with the platform traversing switch to permits the operator to hydraulically extend and retract the rear platform extension as needed for "up and over" work access.
9. **Gasoline/LPG Select Switch (Duel 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

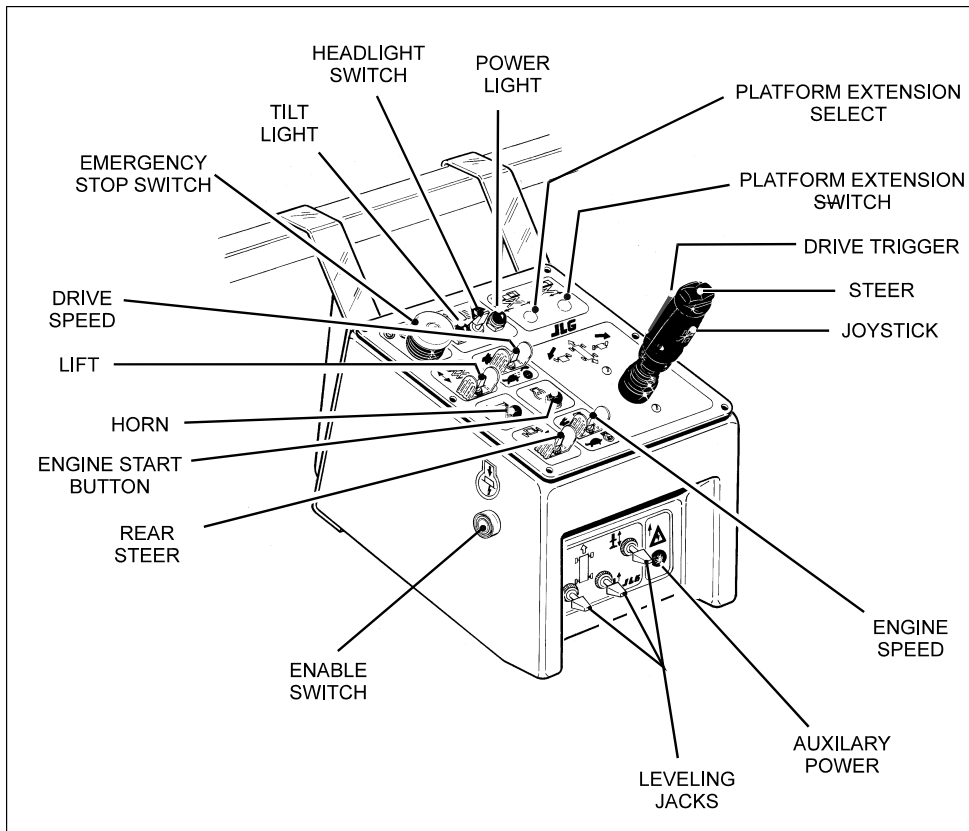
from the lp gas supply tank and allows fuel flow from the gasoline tank. Moving the switch to the lpg position shuts off fuel flow from the gasoline tank and allows lp gas from supply tank to be used to power the unit. With the switch in the center position, fuel flow is restricted from both supply tanks.

10. **Hourmeter** - The hourmeter records engine or electric motor operating time.
11. **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.
12. **Water Temperature Gauge** - The water temperature gauge provides a visual display of the engine coolant temperature.
13. **Oil Pressure Gauge** - The oil pressure gauge displays the engine lubrication system operating pressure.

### Platform Control Station

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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** - An ignition/emergency stop red 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.
3. **Start Button** - A momentary contact, push-button-type 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.



**Figure 3-2. Platform Control Station**

- Tilt Alarm Warning Horn (Optional on 400 RTS)** - The Tilt Alarm Warning Horn is activated by the Tilt Alarm Switch when the chassis is on a severe slope (over 5° on the 400RTS and 2° on the 500RTS) 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 (If Equipped)** - A warning light on the control console that lights when the chassis is on a severe slope (over 5° on the 400RTS and 2° on the 500RTS).

**⚠ WARNING**

**TO AVOID SERIOUS INJURY, DO NOT OPERATE MACHINE IF TOGGLE SWITCHES DO 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.
- 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.*

**⚠ 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.**

## SECTION 3 - USER RESPONSIBILITIES AND MACHINE CONTROL

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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.
10. **Auxiliary Power (If Equipped)** - A toggle type auxiliary power control switch energizes the electrically-operated hydraulic pump, when actuated. Switch must be held ON for the duration of auxiliary pump use.

The auxiliary power pump functions to provide sufficient oil flow to operate the Traversing Platform Extensions should the main pump or engine fail during operation.

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

**NOTE:** *Auxiliary power pump only operates the Traversing Platform Extensions.*

11. **Platform Traversing Switch (If Equipped)** - This is a double throw, momentary contact toggle-type switch which permits the operator to hydraulically extend and retract the platforms as needed for "up and over" work access.
12. **Platform Traversing Select Switch (If Equipped)** - In order to select the platform to traverse there is a full throw, momentary contact toggle-type platform traversing select switch, that works in conjunction with the platform traversing switch to permit the operator to hydraulically extend and retract the platforms as needed for "up and over" work access.
13. **Travel Warning Horn** - A push-button type horn switch supplies electrical power to an audible warning device when pressed.
14. **Choke (If Equipped)** - A push-button type switch supplies power, when depressed, to the choke solenoid for cold start operations.
15. **Leveling Jacks (If Equipped)** - The four momentary contact type toggle switches correspond to the four leveling jacks, one at each corner of the machine.

### CAUTION

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

16. **Engine Distress Light (Gasoline Engine)** - The engine distress light is connected to a sensor on the engine that detects when coolant temperature rises above a preset level, illuminating the warning light.
17. **Engine Distress Light (Diesel Engine)** - 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

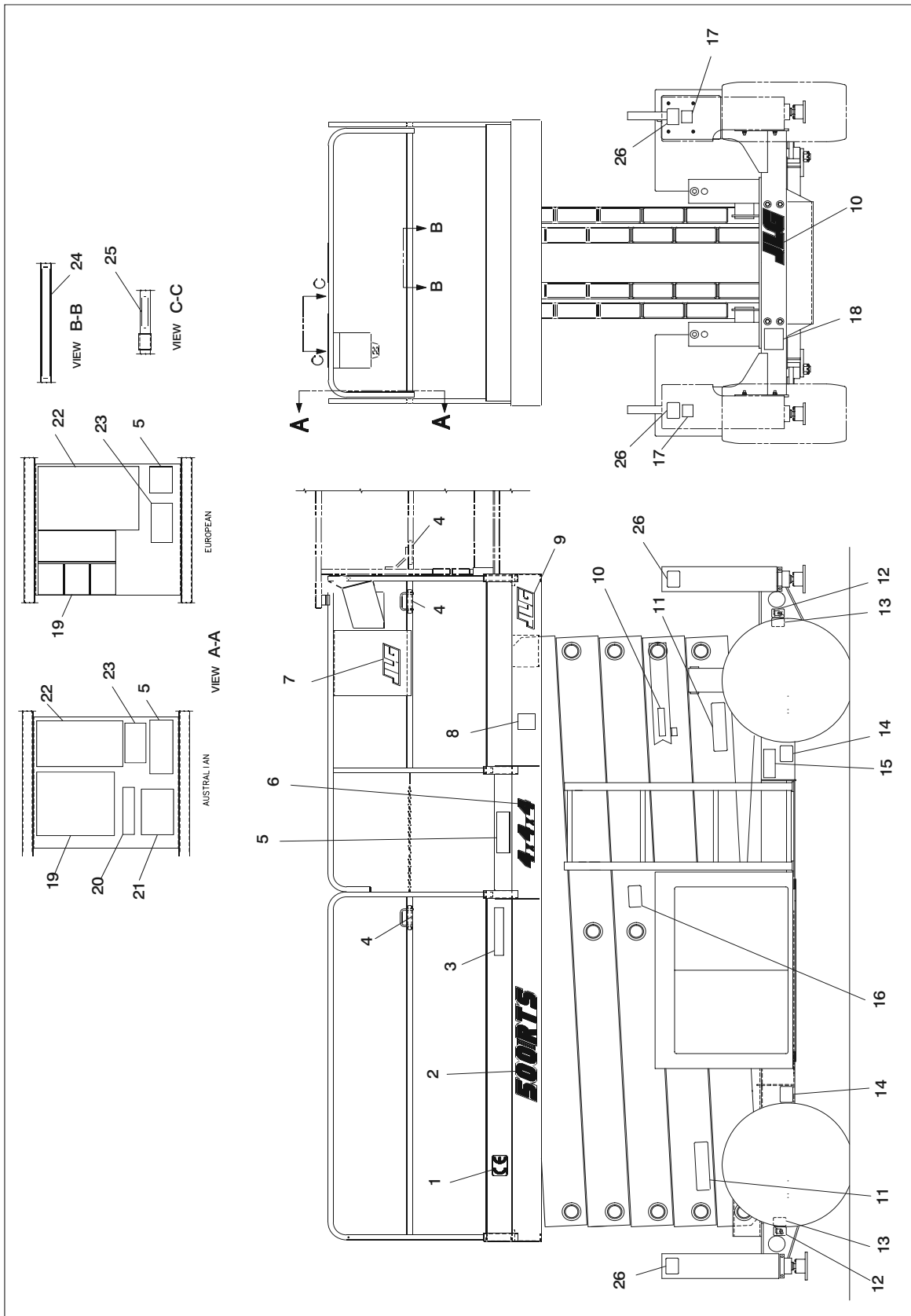


Figure 3-3. Decal Location

**SECTION 3 - USER RESPONSIBILITIES AND MACHINE CONTROL**

**Table 3-1. Decal Location Legend**

<b>Item #</b>	<b>Australian 0257581-4</b>	<b>Dutch 0253525-3</b>	<b>CE/English 0253521-5</b>	<b>German 0253523-4</b>	<b>Italian 0272857-3</b>	<b>Spanish 0253526-3</b>	<b>Norwegian 0273217-1</b>
<b>1</b>	N/A	1705084	1705084	1705084	1705084	1705084	1705084
<b>2</b> 400RTS 500RTS	1702012 1701838	1702012 1701838	1702012 1701838	1702012 1701838	1702012 1701838	1702012 1701838	1702012 1701838
<b>3</b>	1703662	N/A	N/A	N/A	N/A	N/A	N/A
<b>4</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>5</b> 400RTS (Fixed Platform) 400RTS (Single Extension) 400RTS (Dual Extension) 500RTS (Fixed Platform) 500RTS (Single Extension) 500RTS (Dual Extension)	3252573  3252574  3252575  3252576  3252577  3252578	3252573  3252574  3252575  3252576  3252577  3252578	3252573  3252574  3252575  3252576  3252577  3252578	3252573  3252574  3252575  3252576  3252577  3252578	3252573  3252574  3252575  3252576  3252577  3252578	3252573  3252574  3252575  3252576  3252577  3252578	3252573  3252574  3252575  3252576  3252577  3252578
<b>6</b> 4x4x4 4x4x2 4x2x4 4x2x2	1701836 1701835 1701834 1701833	1701836 1701835 1701834 1701833	1701836 1701835 1701834 1701833	1701836 1701835 1701834 1701833	1701836 1701835 1701834 1701833	1701836 1701835 1701834 1701833	1701836 1701835 1701834 1701833
<b>7</b>	1701871	1701871	1701871	1701871	1701871	1701871	1701871
<b>8</b>	1702631	1702631	1702631	1702631	1702631	1702631	1702631
<b>9</b>	1701871	1701871	1701871	1701871	1701871	1701871	1701871
<b>10</b>	1701839	1701615	1701839	1701519	1701524	1701856	1701839
<b>11</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>12</b>	1703814	1703814	1703814	1703814	1703814	1703814	1703814
<b>13</b>	1703811	1703811	1703811	1703811	1703811	1703811	1703811
<b>14</b>	1704525	1704525	1704525	1704525	1704525	1704525	1704525
<b>15</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>16</b>	1701839	1701839	1701839	1701839	1701839	1701839	N/A
<b>17</b>	1703795	1703795	1703795	1703795	1703795	1703795	1703795
<b>18</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>19</b>	1703921	1703921	1703921	1703921	1703921	1703921	1703921

## SECTION 3 - USER RESPONSIBILITIES AND MACHINE CONTROL

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Table 3-1. Decal Location Legend

Item #	Australian 0257581-4	Dutch 0253525-3	CE/English 0253521-5	German 0253523-4	Italian 0272857-3	Spanish 0253526-3	Norwegian 0273217-1
20	1703663	N/A	N/A	N/A	N/A	N/A	N/A
21	1703665	N/A	N/A	N/A	N/A	N/A	N/A
22	1701523	1701617	1701523	1701516	1701520	1701860	1701523
23	3252263	3252267	3252263	3252265	3252266	3252268	1705274
24	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26	1701785	1701785	1701785	1701785	1701785	1701785	1701785



## 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, Lift Down, and Platform Traversing, (If Equipped). The controls 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.

The JLG Sizzor Lift is designed to provide efficient and safe operation when maintained and operated in accordance with warnings on the machine, the Operators & Safety, 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 A92.6-1990. These sections contain the responsibilities of the owner, users, operators, lessors and lessees concerning safety, training, inspection, maintenance, application and operation. It is absolutely necessary that the JLG Lift be regularly maintained in accordance with this section, 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 an Enable Switch which must be pressed before activating the DRIVE, LIFT or STEER functions. The Enable Switch has a built-in timer which shuts 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. 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 drive function. 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 model 400RTS and 500RTS are found on the capacity decals located on the machine. These capacities are 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.

**Table 4-1. Operating Specifications**

Model	400RTS	500RTS
Maximum Occupants	4	4
Maximum Workload (Capacity) Extension Only:	680 kg	900 kg
Maximum Travel Grade (Gradeability) 2 WD 4WD	35% 45%	35% 45%
Maximum Travel Grade (Sideslope)	2 degrees	2 degrees
Maximum Platform Height	12.1m	15.2m
Maximum Tire Load	Reference Decal on Machine	
Approximate Maximum Drive Speed 2 Wheel Drive 4 Wheel Drive	5.6 kmh 4.5 kmh	5.6 kmh 4.5 kmh
Approximate Gross Machine Weight	6,797 kg	6,940 kg

**4.2 GENERAL**

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

**4.3 ENGINE OPERATION**

**NOTICE**

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 111°C (230°F). 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**

1. Check engine oil before attempting to start engine; if necessary, add oil in accordance with Engine Manufacturers Manual.
2. Pull the red mushroom-type Ignition/Emergency Stop switch at the Ground Control Station to the UP position (ON).
3. Place the PLATFORM/GROUND SELECT switch to the applicable position for desired control station operation.
4. If operating a dual fuel machine, place the LP/GASOLINE 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.*

**NOTICE**

**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.*

5. 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.

**NOTICE**

**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)

##### **⚠ WARNING**

**DO NOT RAISE PLATFORM EXCEPT ON A FIRM, 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**

**NOTE:** *On machines equipped with leveling jacks, leveling jacks must be in contacted with the ground for lift system to raise above 6.7 m. (22 ft).*

1. 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 THE 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 TRAVERSING PLATFORM (OPTIONAL)

The machine may be equipped with hydraulically operated traversing platforms that moves 1.2 m (4 ft) at each end of the machine to give the operator “up and over” access to worksites. The traversing platform is operated by either the TRAVERSE toggle switches at platform control console or the TRAVERSE toggle switch at the ground control switches.

##### **⚠ WARNING**

**TO AVOID INJURY TO GROUND PERSONNEL, RETRACT TRAVERSING PLATFORM COMPLETELY BEFORE LOWERING PLATFORM.**

#### 4.6 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.

To steer the machine with the optional 4 wheel steer, position steer control switch to right for traveling right, or to 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.

#### 4.7 TRAVELING (DRIVING)

##### **⚠ WARNING**

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

**IF EQUIPPED WITH LEVELING JACKS, DRIVE FUNCTION IS CUT OUT WHEN LEVELING JACKS ARE IN THE SET POSITION.**

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

##### **⚠ WARNING**

**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 EXCEEDING THOSE SPECIFIED FOR THE MACHINE. TRAVEL GRADES AND SIDESLOPES WITH PLATFORM COMPLETELY LOWERED**

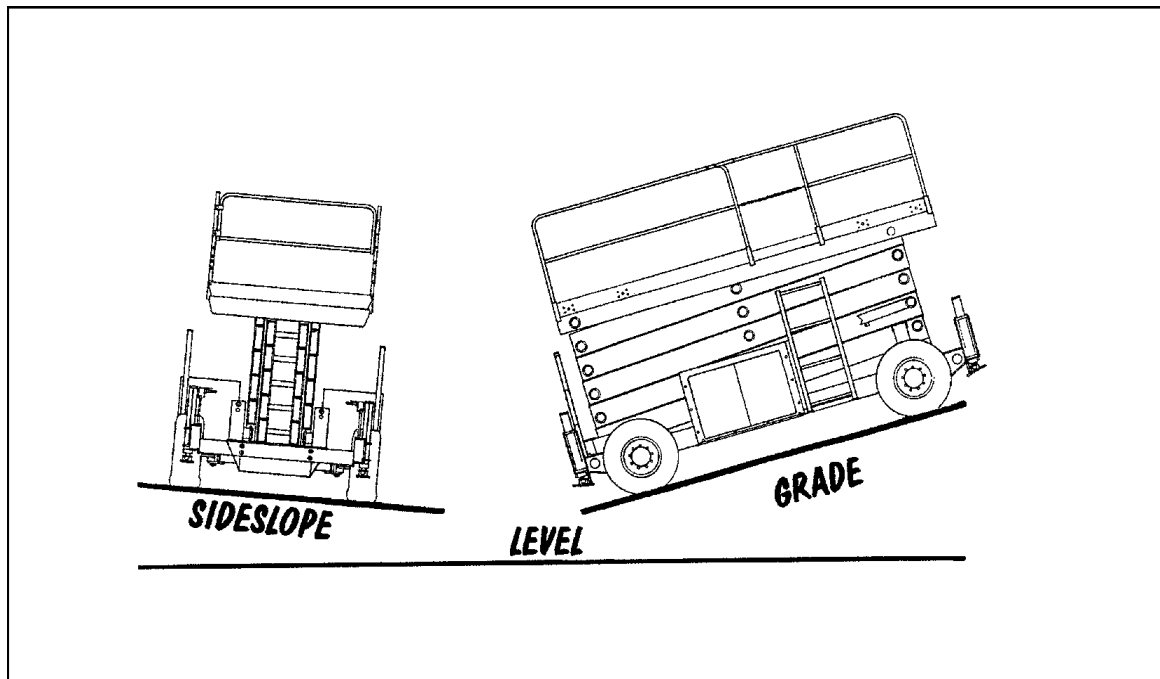


Figure 4-1. Grade and Sideslope

### **⚠ WARNING**

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 2 M (6 FT) OF AN OBSTRUCTION.

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.

THE 400RTS MAY BE EQUIPPED WITH A 5 DEGREES TILT SWITCH THAT ILLUMINATES A LIGHT ON THE PLATFORM CONTROL CONSOLE AND SOUNDS AN AUDIBLE ALARM WHEN THE MACHINE IS ON A SLOPE (OVER 5 DEGREES) WITH THE PLATFORM RAISED.

THE 500RTS IS EQUIPPED WITH A 2 DEGREES TILT SWITCH THAT ILLUMINATES A LIGHT ON THE PLATFORM CONTROL CONSOLE AND SOUNDS AN AUDIBLE ALARM WHEN THE MACHINE IS ON A SLOPE (OVER 2 DEGREES) WITH THE PLATFORM RAISED. WHEN MACHINE IS ON A SLOPE (OVER 2 DEGREES) WITH THE PLATFORM COMPLETELY LOWERED, ONLY THE WARNING LIGHT IS ILLUMINATED.

### **Traveling Forward**

**NOTE:** *On machines equipped with leveling jacks, leveling jacks must be in the stowed position before operation of the drive system.*

1. Position ignition/emergency stop switch to on. If machine has been shut down, start engine and allow warm-up period before beginning any lifting.
2. 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, pull up on safety lock, and hold controller in position for duration of travel. Once drive is initiated, the safety lock can be released and drive will continue to function until controller is returned to the center off position. Drive speed is determined by the distance the controller is moved from the center off position.

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## Traveling in Reverse

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**NOTE:** *On machines equipped with leveling jacks, leveling jacks must be in the stowed position before operation of the drive system.*

1. Position ignition/emergency stop switch to on. If machine has been shut down, start engine and allow warm-up period before beginning any lifting.
2. 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, pull up on safety lock, and hold controller in position for duration of travel. Once drive is initiated, the safety lock can be released and drive will continue to function until controller is returned to the center off position. Drive speed is determined by the distance the controller is moved from the center off position.

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## 4.8 PARKING AND STOWING

Park and stow machine as follows:

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

---

## 4.9 PLATFORM LOADING

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

1. Machine is positioned on a smooth, firm and level surface.
2. All braking devices are engaged.
3. Refer to Section 3 for platform capacities.
4. Leveling Jacks properly set (If Equipped).

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.

---

## 4.10 SAFETY PROPS

### CAUTION

**SAFETY PROPS MUST BE USED WHEN MAINTENANCE PERFORMED 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.

---

## 4.11 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.

### WARNING

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

---

## 4.12 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.



## 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.
2. 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.

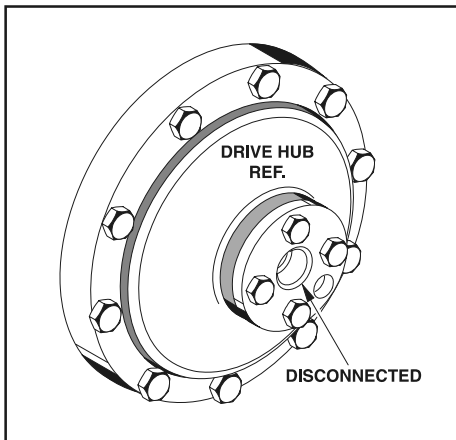


Figure 5-1. Drive Hub Disconnect

3. 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.

3. Return disconnect caps to normal (engaged) position.

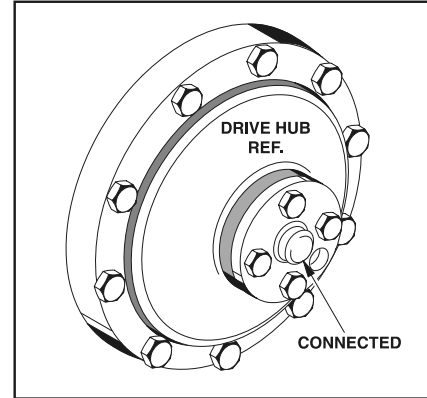


Figure 5-2. Drive Hub Connect

4. Remove chocks from wheels.

### 5.3 EMERGENCY CONTROLS AND THEIR LOCATIONS

#### Emergency Stop Switch

At platform controls, push red Ignition/Emergency stop switch this 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.

#### NOTICE

**IF MACHINE IS EQUIPPED WITH PLATFORM EXTENSION OR TRAVERSING DECK, RETRACT DECK BEFORE LOWERING PLATFORM.**

#### 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 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)

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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)

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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 inside of the valve compartment on the left side of the machine. Turn the release valve on the side of the pump to the closed position and pump the handle. This will release the holding valve, lowering the platform. After the platform reaches the stowed position, open the release valve on the pump.

### Auxiliary Power (If Equipped) (Engine/Pump Failure - Platform Controls)

---

A toggle type auxiliary power control switch is located on the platform control station. Operation of switch turns on the electrically driven auxiliary hydraulic pump. This should be used in the case of failure of the main power plant. The auxiliary pump will operate "only" the traversing platforms. To activate auxiliary power:

1. Position IGNITION switch to off.
2. Operate appropriate control switch for desired function and hold.
3. Position AUXILIARY POWER switch to ON and hold.
4. Release AUXILIARY POWER switch and selected control switch.

### Auxiliary Power (If Equipped) (Engine/Pump Failure - Ground Controls)

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The toggle type traversing platform control switches are located on the ground control station. Operation of switch turns on the electrically driven auxiliary hydraulic pump.

1. Position IGNITION switch to off.
2. Operate appropriate control switch for desired traversing platform function and hold.

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## 5.4 EMERGENCY OPERATION

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### Use of Ground Controls

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#### **NOTICE**

**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

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If the platform operator is pinned, trapped or unable to operate or control the machine.

1. 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.
2. 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.
3. Other qualified personnel on the platform may use the platform controls. DO NOT CONTINUE OPERATION IF CONTROLS DO NOT FUNCTION NORMALLY.
4. 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

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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**

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A forklift 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**

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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 3 m (10 ft) until you are secure that all damage has been repaired, if required, and that all controls are operating correctly.

**5.5 INCIDENT NOTIFICATION**

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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 (554-7233) 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

Date	Comments

**SECTION 6 - INSPECTION AND REPAIR LOG**

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**Table 6-1. Inspection and Repair Log**

Date	Comments





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