



An Oshkosh Corporation Company

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# ***Operation and Safety Manual***

*Original Instructions - Keep this manual with the machine at all times.*

***Boom Lift Models***

***600S***

***660SJ***

***S/N 0300235168 &***

***B300002655 to Present***

*\* See inside front cover for exceptions.*

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**ANSI**   **CE**      **AS/NZS**

**3121727**

*February 20, 2019 - Rev G*

***This manual also covers the following Serial Numbers.***

0300224266

0300224756

0300233720

B300002216

0300224267

0300224757

0300233721

B300002217

0300224755

0300224758

0300233722

B300002383



## WARNING

Operating, servicing and maintaining this vehicle or equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle or equipment in a well-ventilated area and wear gloves or wash your hands frequently when servicing. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## **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. IF NOT AVOIDED, WILL RESULT IN SERIOUS INJURY OR DEATH. THIS DECAL WILL HAVE A RED BACKGROUND.

### **⚠ WARNING**

INDICATES A POTENTIALLY HAZARDOUS SITUATION. IF NOT AVOIDED, COULD RESULT IN SERIOUS INJURY OR DEATH. THIS DECAL WILL HAVE AN ORANGE BACKGROUND.

### **⚠ CAUTION**

INDICATES A POTENTIALLY HAZARDOUS SITUATION. IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO ALERT AGAINST UNSAFE PRACTICES. THIS DECAL WILL HAVE A YELLOW BACKGROUND.

### **NOTICE**

INDICATES INFORMATION OR A COMPANY POLICY THAT RELATES DIRECTLY OR INDIRECTLY TO THE SAFETY OF PERSONNEL OR PROTECTION OF PROPERTY.

**⚠ 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.**

**NOTICE**

**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.**

**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

**Contact:**

Product Safety and Reliability Department  
JLG Industries, Inc.  
13224 Fountainhead Plaza  
Hagerstown, MD 21742  
USA

or Your Local JLG Office  
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## **REVISION LOG**

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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. It is mandatory that a daily routine is established based on the content of this manual to promote proper machine usage. 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 must 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.

This section contains 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").

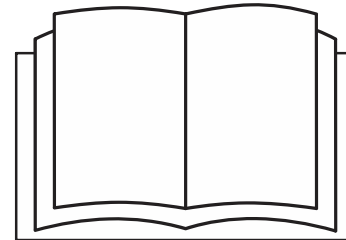
### **⚠ WARNING**

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



## **SECTION 1 - SAFETY PRECAUTIONS**

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- 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 and during 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 operating 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 travel on unsupported surfaces.

## Machine Inspection

- Do not operate this machine until the inspections and functional checks as specified in Section 2 of this manual have been performed.
- 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 floor. Keep mud, oil, grease, and other slippery substances from footwear and platform floor.

## 1.3 OPERATION

### General

- Machine operation requires your full attention. Bring the machine to a full stop before using any device, i.e. cell phones, two-way radios, etc. that will distract your attention from safely operating the machine.
- 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.
- Do not allow personnel to tamper with or operate the machine from the ground with personnel in the platform, except in an emergency.

## SECTION 1 - SAFETY PRECAUTIONS

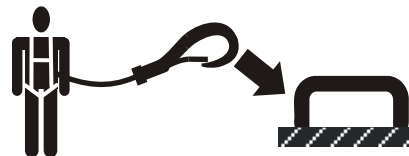
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- Do not carry materials directly on platform railing unless approved by JLG.
- When two or more persons are in the platform, the operator shall be responsible for all machine operations.
- Always ensure that power tools are properly stowed and never left hanging by their cord from the platform work area.
- When driving, always position boom over rear axle in line with the direction of travel. Remember, if boom is over the front axle, steer and drive functions will be reversed.
- Do not assist a stuck or disabled machine by pushing or pulling except by pulling at the chassis tie-down lugs.
- Fully lower platform and shut off all power before leaving machine.
- Remove all rings, watches, and jewelry when operating machine. Do not wear loose fitting clothing or long hair unrestrained which may become caught or entangled in equipment.
- Persons under the influence of drugs or alcohol or who are subject to seizures, dizziness or loss of physical control must not operate this machine.
- Hydraulic cylinders are subject to thermal expansion and contraction. This may result in changes to the boom and/or platform position while the machine is stationary. Factors affecting thermal movement can include the length of time

the machine will remain stationary, hydraulic oil temperature, ambient air temperature, and boom and platform position.

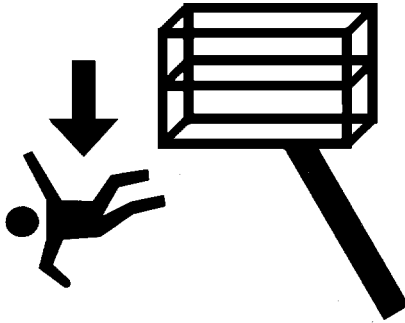
### Trip and Fall Hazards

- During operation, occupants in the platform must wear a full body harness with a lanyard attached to an authorized lanyard anchorage point. Attach only one (1) lanyard per lanyard anchorage point.



- Enter and exit only through gate area. Use extreme caution when entering or leaving platform. Ensure that the platform 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.

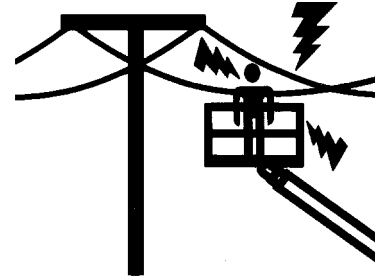
- Before operating the machine, make sure all gates are closed and fastened in their proper position.

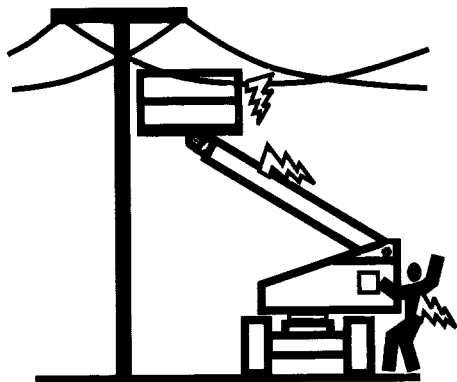


- Keep both feet firmly positioned on the platform floor at all times. Never position ladders, boxes, steps, planks, or similar items on unit to provide additional reach for any purpose.
- Keep oil, mud, and slippery substances cleaned from footwear and the platform floor.

### Electrocution Hazards

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





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

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

| Voltage Range<br>(Phase to Phase)                                                                                      | MINIMUM APPROACH DISTANCE<br>in Feet (Meters) |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 0 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)                                       |
| <b>NOTE: This requirement shall apply except where employer, local or governmental regulations are more stringent.</b> |                                               |

- 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.

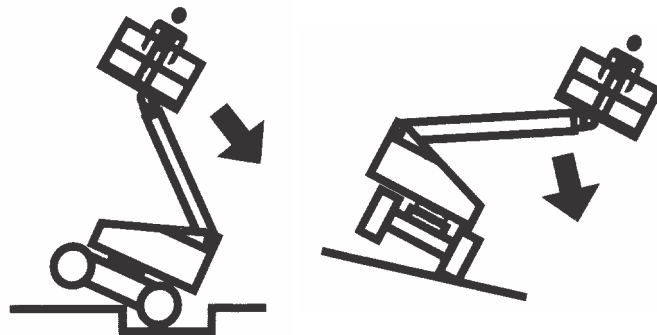
- The minimum approach distance may be reduced if insulating barriers are installed to prevent contact, and the barriers are rated for the voltage of the line being guarded. These barriers shall not be part of (or attached to) the machine. The minimum approach distance shall be reduced to a distance within the designed working dimensions of the insulating barrier. This determination shall be made by a qualified person in accordance with the employer, local, or governmental requirements for work practices near energized equipment.

### **DANGER**

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

### Tipping Hazards

- The user must 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 or near a sloping, uneven, or soft surface. Ensure machine is positioned on a firm, level and smooth 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.

## **SECTION 1 - SAFETY PRECAUTIONS**

---

- 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.
- Do not push or pull any object with the boom.
- 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.
- If boom 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.
- Do not operate the machine when wind conditions, including gusts, may exceed 28 mph (12.5 m/s). Factors affecting wind speed are; platform elevation, surrounding structures, local weather events, and approaching storms. Refer to Table 1-2, Beaufort scale (For Reference Only) or use other means to monitor wind conditions.
- Wind speed can be significantly greater at height than at ground level.
- Wind speed can change rapidly. Always consider approaching weather events, the time required to lower the platform, and methods to monitor current and potential wind conditions.
- Do not increase surface area of the platform or the load. Increased areas exposed to wind will decrease stability.
- Do not increase the platform size with unauthorized modifications or attachments.

**NOTICE**

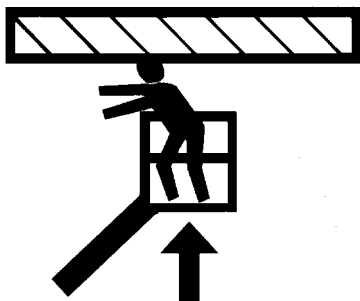
**DO NOT OPERATE THE MACHINE WHEN WIND CONDITIONS EXCEED 28 MPH (12.5 M/S).**

**Table 1-2. Beaufort Scale (For Reference Only)**

| Beaufort Number | Wind Speed |           | Description             | Land Conditions                                                                         |
|-----------------|------------|-----------|-------------------------|-----------------------------------------------------------------------------------------|
|                 | mph        | m/s       |                         |                                                                                         |
| 0               | 0          | 0-0.2     | Calm                    | Calm. Smoke rises vertically                                                            |
| 1               | 1-3        | 0.3-1.5   | Light air               | Wind motion visible in smoke                                                            |
| 2               | 4-7        | 1.6-3.3   | Light breeze            | Wind felt on exposed skin. Leaves rustle                                                |
| 3               | 8-12       | 3.4-5.4   | Gentle breeze           | Leaves and smaller twigs in constant motion                                             |
| 4               | 13-18      | 5.5-7.9   | Moderate breeze         | Dust and loose paper raised. Small branches begin to move.                              |
| 5               | 19-24      | 8.0-10.7  | Fresh breeze            | Smaller trees sway.                                                                     |
| 6               | 25-31      | 10.8-13.8 | Strong breeze           | Large branches in motion. Flags waving near horizontal. Umbrella use becomes difficult. |
| 7               | 32-38      | 13.9-17.1 | Near Gale/Moderate Gale | Whole trees in motion. Effort needed to walk against the wind.                          |
| 8               | 39-46      | 17.2-20.7 | Fresh Gale              | Twigs broken from trees. Cars veer on road.                                             |
| 9               | 47-54      | 20.8-24.4 | Strong Gale             | Light structure damage.                                                                 |

### Crushing and Collision Hazards

- Approved head gear must be worn by all operating and ground personnel.
- 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 the boom 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 6 ft. (1.8m) away from machine during all driving and swing 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 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 boom or 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.
- Ensure boom is in the stowed position and, if equipped, the turntable locked prior to towing, lifting or hauling. The platform must be completely empty of tools.
- When lifting machine, lift only at designated areas of the machine. Lift the unit with equipment of adequate capacity.
- Refer to the Machine Operation section of this manual for lifting information.

## **1.5 MAINTENANCE**

This sub-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.

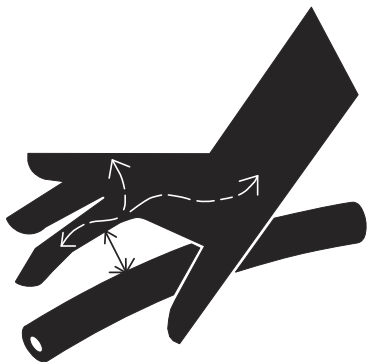
### **Maintenance Hazards**

- Shut off power to all controls and ensure that all moving parts 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.
- DO NOT attempt to repair or tighten any hydraulic hoses or fittings while the machine is powered on or when the hydraulic system is under pressure.
- Always relieve hydraulic pressure from all hydraulic circuits before loosening or removing hydraulic components.

## SECTION 1 - SAFETY PRECAUTIONS

---

- DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks. Wear gloves to help protect hands from spraying fluid.



- 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.

- Do not use machine as a ground for welding.
- When performing welding or metal cutting operations, precautions must be taken to protect the chassis from direct exposure to weld and metal cutting spatter.
- Do not refuel the machine with the engine running.
- Use only approved non-flammable cleaning solvents.
- Do not replace items critical to stability, such as batteries or solid tires, with items of different weight or specification. Do not modify unit in any way to affect stability.
- Refer to 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.

### CAUTION

**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 1 - SAFETY PRECAUTIONS**

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**NOTES:**

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## **SECTION 2. USER RESPONSIBILITIES, MACHINE PREPARATION, AND INSPECTION**

### **2.1 PERSONNEL TRAINING**

The aerial platform is a personnel handling device; so it is necessary that it be operated and maintained only by trained personnel.

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

#### **Operator Training**

Operator training must cover:

1. Use and limitations of the controls in the platform and at the ground, emergency controls and safety systems.
2. Control labels, instructions, and warnings on the machine.
3. Rules of the employer and government regulations.
4. Use of approved fall protection device.
5. Enough knowledge of the mechanical operation of the machine to recognize a malfunction or potential malfunction.

6. The safest means to operate the machine where overhead obstructions, other moving equipment, and obstacles, depressions, holes, or drop-offs exist.
7. Means to avoid the hazards of unprotected electrical conductors.
8. Specific job requirements or machine application.

#### **Training Supervision**

Training must be done under the supervision of a qualified person in an open area free of obstructions until the trainee has developed the ability to safely control and operate the machine.

#### **Operator Responsibility**

The operator must be instructed that he/she 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.

### **2.2 PREPARATION, INSPECTION, AND MAINTENANCE**

The following table covers the periodic machine inspections and maintenance required by JLG Industries, Inc. Consult local regulations for further requirements for aerial work platforms. The frequency of inspections and maintenance must be increased as necessary when the machine is used in a harsh or hostile environment, if the machine is used with increased frequency, or if the machine is used in a severe manner.

#### **NOTICE**

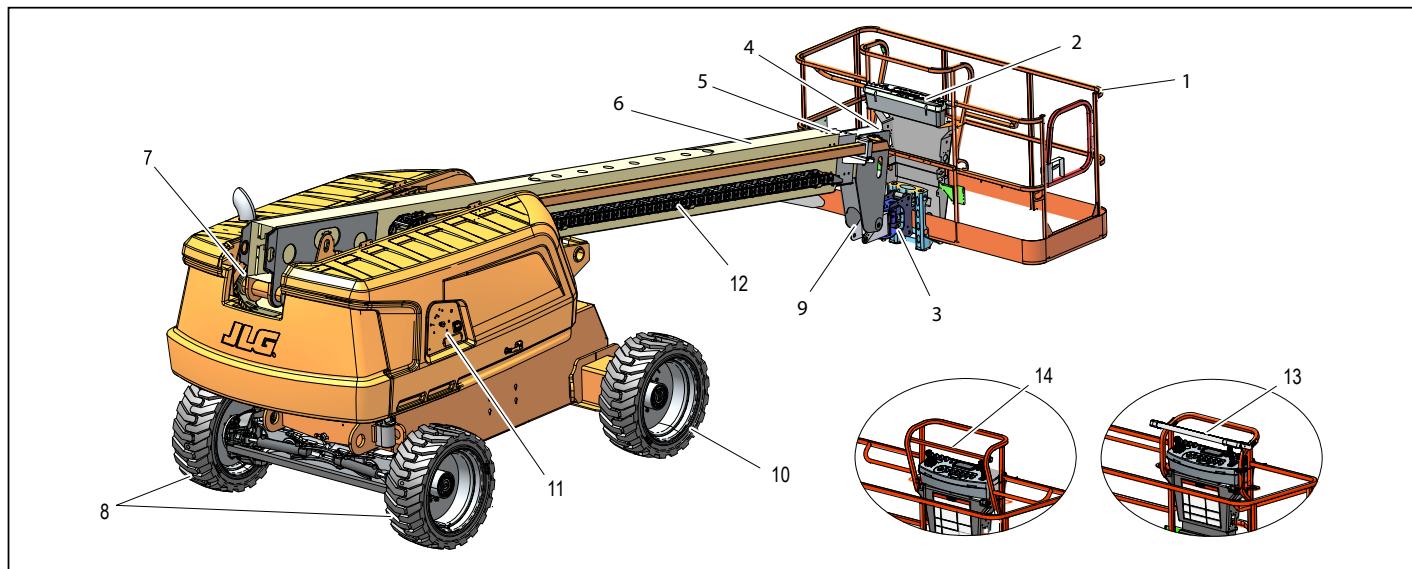
**JLG INDUSTRIES, INC. RECOGNIZES A FACTORY TRAINED SERVICE TECHNICIAN AS A PERSON WHO HAS SUCCESSFULLY COMPLETED THE JLG SERVICE TRAINING SCHOOL FOR THE SPECIFIC JLG PRODUCT MODEL.**

## SECTION 2 - USER RESPONSIBILITIES, MACHINE PREPARATION, AND INSPECTION

**Table 2-1. Inspection and Maintenance Table**

| Type                                                                                                                 | Frequency                                                                                                                                   | Primary Responsibility | Service Qualification                            | Reference                                                         |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------|-------------------------------------------------------------------|
| Pre-Start Inspection                                                                                                 | Before using each day; or<br>whenever there's an Operator change.                                                                           | User or Operator       | User or Operator                                 | Operation and Safety Manual                                       |
| Pre-Delivery Inspection (See Note)                                                                                   | Before each sale, lease, or rental delivery.                                                                                                | Owner, Dealer, or User | Qualified JLG Mechanic                           | Service and Maintenance Manual and applicable JLG inspection form |
| Frequent Inspection (See Note)                                                                                       | In service for 3 months or 150 hours, whichever comes first; or<br>Out of service for a period of more than 3 months; or<br>Purchased used. | Owner, Dealer, or User | Qualified JLG Mechanic                           | Service and Maintenance Manual and applicable JLG inspection form |
| Annual Machine Inspection (See Note)                                                                                 | Annually, no later than 13 months from the date of prior inspection.                                                                        | Owner, Dealer, or User | Factory Trained Service Technician (Recommended) | Service and Maintenance Manual and applicable JLG inspection form |
| Preventative Maintenance                                                                                             | At intervals as specified in the Service and Maintenance Manual.                                                                            | Owner, Dealer, or User | Qualified JLG Mechanic                           | Service and Maintenance Manual                                    |
| <b>NOTE:</b> Inspection forms are available from JLG. Use the Service and Maintenance Manual to perform inspections. |                                                                                                                                             |                        |                                                  |                                                                   |

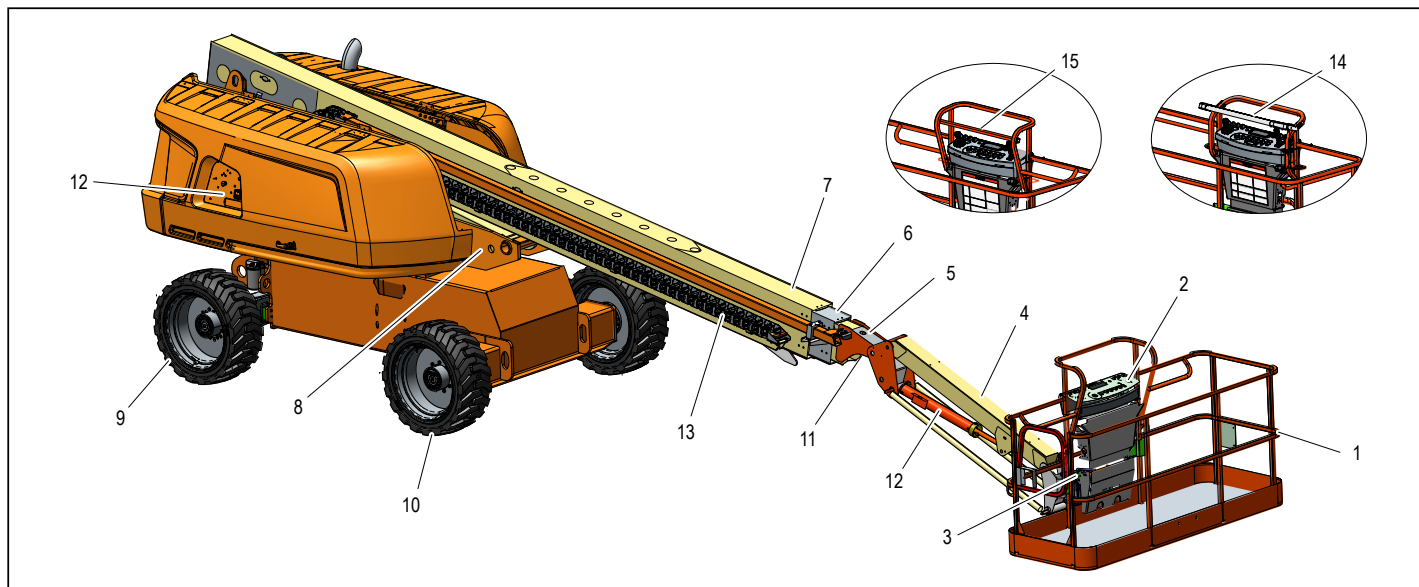
## SECTION 2 - USER RESPONSIBILITIES, MACHINE PREPARATION, AND INSPECTION



- |                         |                             |                              |
|-------------------------|-----------------------------|------------------------------|
| 1. Platform             | 5. Mid Boom                 | 10. Rear Drive Wheels        |
| 2. Platform Control Box | 6. Base Boom                | 11. Ground Control Console   |
| 3. Rotator              | 7. Turntable                | 12. Powertrack               |
| 4. Fly Boom             | 8. Front Drive/Steer Wheels | 13. SkyGuard (If Equipped)   |
|                         | 9. Level Cylinder           | 14. Cross Rail (If Equipped) |

**Figure 2-1. Basic Nomenclature - 600S**

## SECTION 2 - USER RESPONSIBILITIES, MACHINE PREPARATION, AND INSPECTION



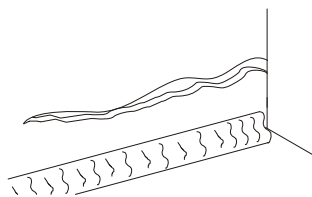
- |                         |              |                                |                              |
|-------------------------|--------------|--------------------------------|------------------------------|
| 1. Platform             | 5. Fly Boom  | 9. Front Drive/Steer Wheels    | 13. Powertrack               |
| 2. Platform Control Box | 6. Mid Boom  | 10. Rear Drive Wheels          | 14. SkyGuard (If Equipped)   |
| 3. Rotator              | 7. Base Boom | 11. Platform Leveling Cylinder | 15. Cross Rail (If Equipped) |
| 4. Jib                  | 8. Turntable | 12. Jib Lift Cylinder          |                              |

**Figure 2-2. Basic Nomenclature - 660SJ**

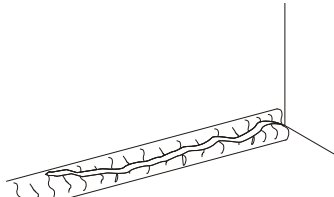
### Pre-Start Inspection

The Pre-Start Inspection should include each of the following:

1. **Cleanliness** – Check all surfaces for leakage (oil, fuel, or battery fluid) or foreign objects. Report any leakage to the proper maintenance personnel.
2. **Structure** - Inspect the machine structure for dents, damage, weld or parent metal cracks or other discrepancies.



Parent Metal Crack



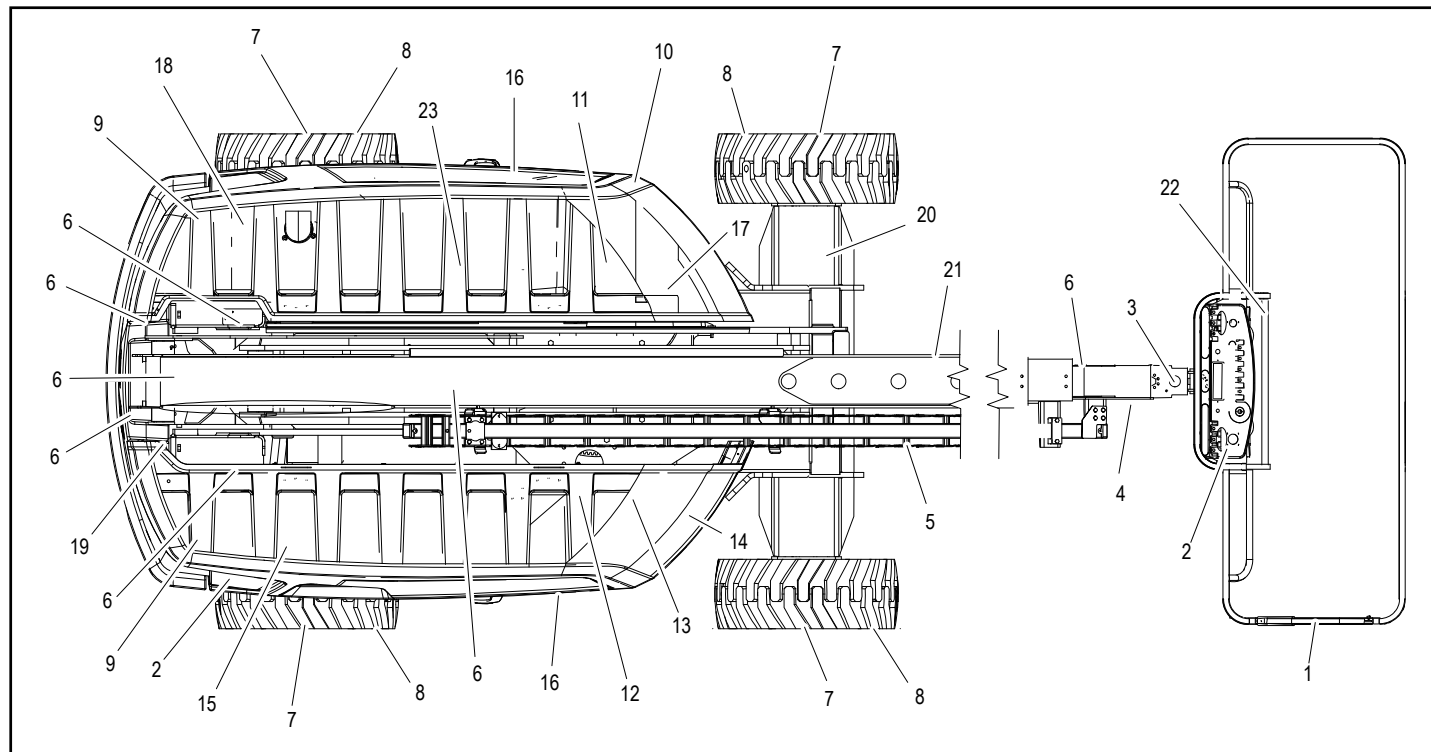
Weld Crack

3. **Decals and Placards** – Check all for cleanliness and legibility. Make sure none of the decals and placards are missing. Make sure all illegible decals and placards are cleaned or replaced.
4. **Operation and Safety Manuals** – Make sure a copy of the Operation and Safety Manual, AEM Safety Manual (ANSI markets only), and ANSI Manual of Responsibilities (ANSI markets only) is enclosed in the weather resistant storage container.

5. **“Walk-Around” Inspection** – Refer to Figure 2-3.
6. **Battery** – Charge as required.
7. **Fuel** (Combustion Engine Powered Machines) – Add the proper fuel as necessary.
8. **Engine Oil Supply** - Ensure the engine oil level is at the Full mark on the dipstick and the filler cap is secure.
9. **Hydraulic Oil** – Check the hydraulic oil level. Ensure hydraulic oil is added as required.
10. **Accessories/Attachments** - Refer to the Accessories section in this manual or accessory installed upon the machine for specific inspection, operation, and maintenance instructions.
11. **Function Check** – Once the “Walk-Around” Inspection is complete, perform a functional check of all systems in an area free of overhead and ground level obstructions. Refer to Section 4 for more specific operating instructions.

### WARNING

**IF THE MACHINE DOES NOT OPERATE PROPERLY, TURN OFF THE MACHINE IMMEDIATELY! REPORT THE PROBLEM TO THE PROPER MAINTENANCE PERSONNEL. DO NOT OPERATE THE MACHINE UNTIL IT IS DECLARED SAFE FOR OPERATION.**



**Figure 2-3. Daily Walk-Around Inspection Diagram**

### Walk-Around Inspection

Begin the "Walk-Around Inspection" at Item 1, as noted on the diagram. Continue checking each item in sequence for the conditions listed in the following checklist.

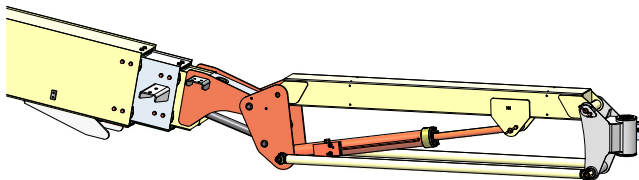
#### **WARNING**

**TO AVOID POSSIBLE INJURY BE SURE MACHINE POWER IS OFF.**

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

1. Platform Assembly and Gate - Footswitch works properly, not modified, disabled or blocked. Latch and hinges in working condition.
2. Platform & Ground Control Consoles - Switches and levers return to neutral, decals/placards secure and legible, control markings legible.
3. Rotator - See Inspection Note.

4. Jib (If Equipped) - See Inspection Note.



5. Power Track - See Inspection Note.
6. All Hydraulic Cylinders - See Inspection Note.
7. Drive Motor, Brake, and Hub - See Inspection Note.
8. Wheel/Tire Assemblies - Properly secured, no missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies. Inspect wheels for damage and corrosion.
9. Tie Rod and Steering Linkage - See Inspection Note.
10. Turntable Lock - Operable.

**Figure 2-4. Daily Walk-Around Inspection Points - Sheet 1 of 2**

## ***SECTION 2 - USER RESPONSIBILITIES, MACHINE PREPARATION, AND INSPECTION***

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- 11.** Auxiliary Power Pump - See Inspection Note.
- 12.** Swing Drive Motor and Brake - See Inspection Note.
- 13.** Main Control Valve - See Inspection Note.
- 14.** Turntable Bearing - Evidence of proper lubrication. No evidence of loose bolts or looseness between bearing and structure.
- 15.** Fuel Tank - See Inspection Note.
- 16.** Hood Assemblies - See Inspection Note.
- 17.** Battery - Proper electrolyte levels if adjustable; cables tight, no visible damage or corrosion.
- 18.** Hydraulic Pump - See Inspection Note.
- 19.** Turntable - See Inspection Note.
- 20.** Frame - See Inspection Note.
- 21.** Boom Sections - See Inspection Note.
- 22.** SkyGuard® - See Inspection Note.
- 23.** Air Shutoff Valve (ASOV) (If Equipped) - See Inspection Note.

**Figure 2-5. Daily Walk-Around Inspection Points - Sheet 2 of 2**

### Function Check

Perform the Function Check as follows:

1. From the ground control panel with no load in the platform:
  - a. Check that all guards protecting the switches or locks are in place;
  - b. Operate all functions and check all limiting and cut-out switches;
  - c. Check auxiliary power (or manual descent);
  - d. Ensure that all machine functions are disabled when the Emergency Stop Button is activated.
  - e. Raise main boom approximately horizontal, then extend and retract boom sections. All boom sections should extend/retract together at the same rate of speed. Any difference would indicate delayed movement and loose wire ropes.

#### **WARNING**

**IF DELAYED MOVEMENT IS DETECTED IN WIRE ROPE OPERATION, LOWER PLATFORM TO STOWED POSITION, SHUT DOWN MACHINE, AND HAVE WIRE ROPES INSPECTED/SERVICED BY A QUALIFIED JLG MECHANIC. LOOSE OR MISADJUSTED WIRE ROPES COULD RESULT IN SERIOUS INJURY OR DEATH.**

2. From the platform control console:

- a. Ensure that the control console is firmly secured in the proper location;
- b. Check that all guards protecting the switches or locks are in place;
- c. Operate all functions and check all limiting and cut-out switches;
- d. Ensure that all machine functions are disabled when the Emergency Stop Button is pushed in.
- e. Raise main boom approximately horizontal, then extend and retract boom sections. All boom sections should extend/retract together at the same rate of speed. Any difference would indicate delayed movement and loose wire ropes.

#### **WARNING**

**IF DELAYED MOVEMENT IS DETECTED IN WIRE ROPE OPERATION, LOWER PLATFORM TO STOWED POSITION, SHUT DOWN MACHINE, AND HAVE WIRE ROPES INSPECTED/SERVICED BY A QUALIFIED JLG MECHANIC. LOOSE OR MISADJUSTED WIRE ROPES COULD RESULT IN SERIOUS INJURY OR DEATH.**

3. With the platform in the transport (stowed) position:
  - a. Drive the machine on a grade, not to exceed the rated gradeability, and stop to ensure the brakes hold;
  - b. Check that the tilt indicator is illuminated to ensure proper operation.

### SkyGuard Function Test

**NOTE:** Refer to Section 4.10 for additional information on SkyGuard operation.

From the Platform Console in an area free from obstructions:

1. Operate the telescope out function.
2. Activate the SkyGuard sensor:
  - a. **SkyGuard** - Apply approximately 50 lb (222 Nm) of force to yellow bar.
  - b. **SkyGuard SkyLine™** - Press cable to break magnetic connection between the cable and right bracket.
  - c. **SkyGuard SkyEye™** - Put arm or hand in path of sensor beam.
3. Once the sensor has been activated, verify the following conditions:
  - a. Telescope out function stops and telescope in function operates for a short duration.
  - b. The horn sounds.
  - c. If equipped with a SkyGuard beacon, the beacon illuminates.

4. Disengage the SkyGuard sensor, release controls, then recycle the footswitch. Ensure normal operation is available.

**NOTE:** On machines equipped with SkyLine, reattach magnetic end of the cable to the bracket.

If SkyGuard remains activated after function reversal or cutout, depress and hold the SkyGuard Override Switch to allow normal use of machine functions until the sensor is disengaged.

**SECTION 2 - USER RESPONSIBILITIES, MACHINE PREPARATION, AND INSPECTION**

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## SECTION 3. MACHINE CONTROLS AND INDICATORS

### 3.1 GENERAL

#### **NOTICE**

**THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION. THE USER AND OPERATOR ARE RESPONSIBLE FOR CONFORMING WITH GOOD SAFETY PRACTICES.**

This section provides the necessary information needed to understand control functions.

### 3.2 CONTROLS AND INDICATORS

**NOTE:** All machines are equipped with control panels that use symbols to indicate control functions. On ANSI machines refer to the decals near the platform and ground controls for these symbols and the corresponding functions.

**NOTE:** The indicator panels use different shaped symbols to alert the operator to different types of operational situations that could arise. The meaning of those symbols are explained below.



Indicates a potentially hazardous situation, which if not corrected, could result in serious injury or death. This indicator will be red.



Indicates an abnormal operating condition, which if not corrected, may result in machine interruption or damage. This indicator will be yellow.



Indicates important information regarding the operating condition, i.e. procedures essential for safe operation. This indicator will be green with the exception of the capacity indicator which will be green or yellow depending upon platform position.

## SECTION 3 - MACHINE CONTROLS AND INDICATORS

### Ground Control Station

(See Figure 3-1., Figure 3-2., Figure 3-3., and Figure 3-4.)

**NOTE:** Lift, Swing, Platform Level, Telescope, Platform Rotator and Auxiliary control switches are spring-loaded and will automatically return to neutral (off) when released.

#### **WARNING**

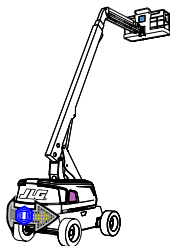
WHEN OPERATING THE BOOM ENSURE THERE ARE NO PERSONNEL AROUND OR UNDER PLATFORM.

#### **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.

#### 1. Swing Control

Provides 360 degrees continuous turnable rotation.

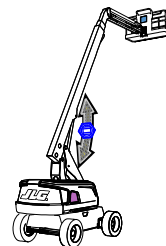


**NOTE:** The Function Enable switch must be held down in order to operate Telescope, Swing, Lift, Jib Lift, Platform Level Override, and Platform Rotate functions.



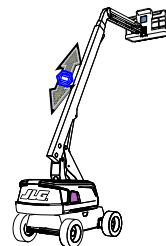
#### 2. Lift Control

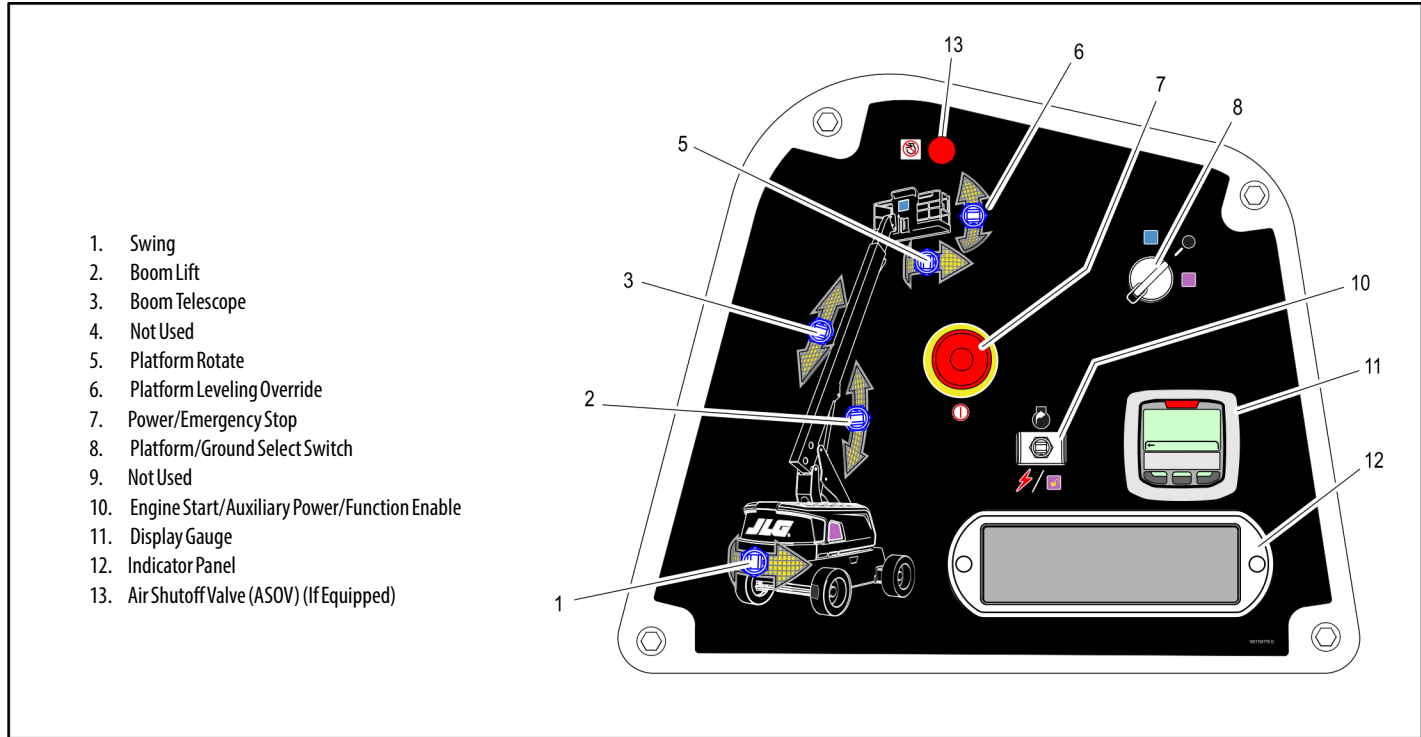
Provides raising and lowering of the boom.



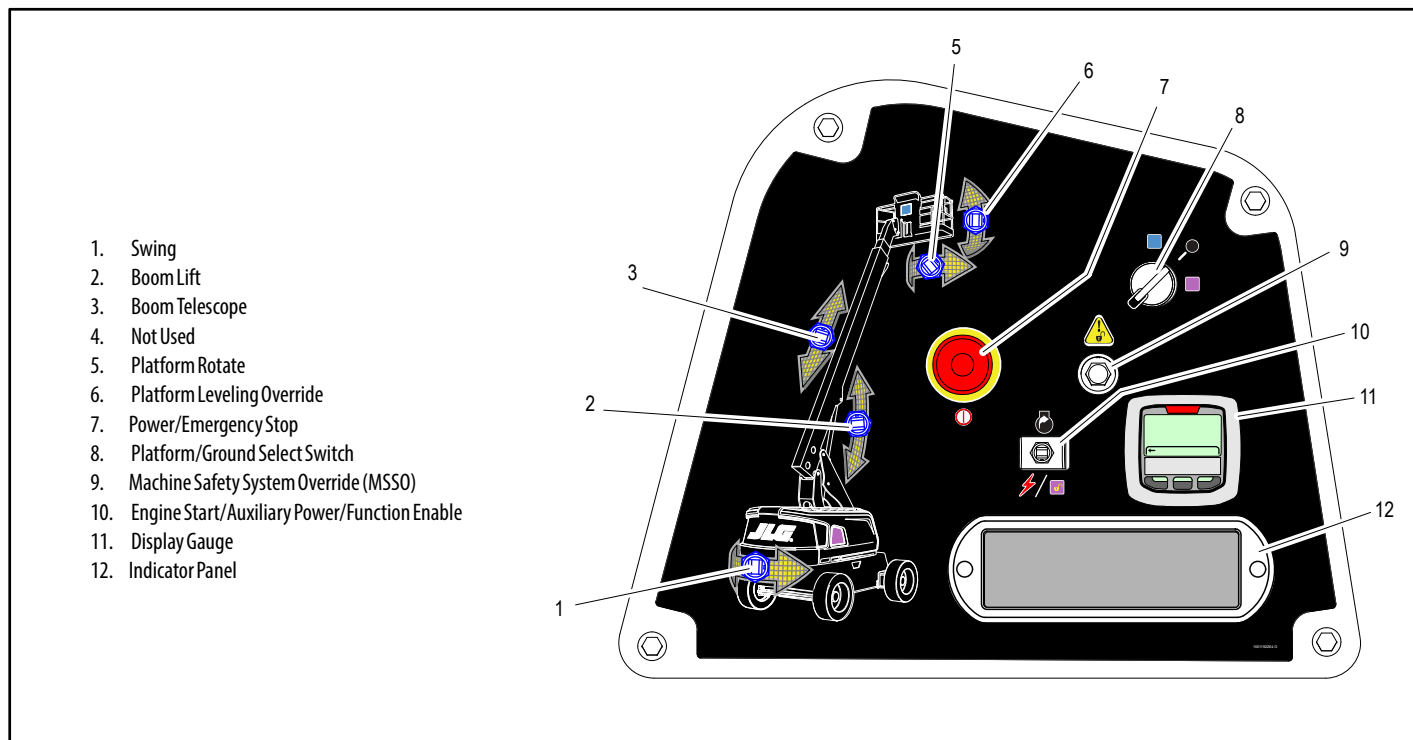
#### 3. Telescope Control

Provides extension and retraction of the boom.

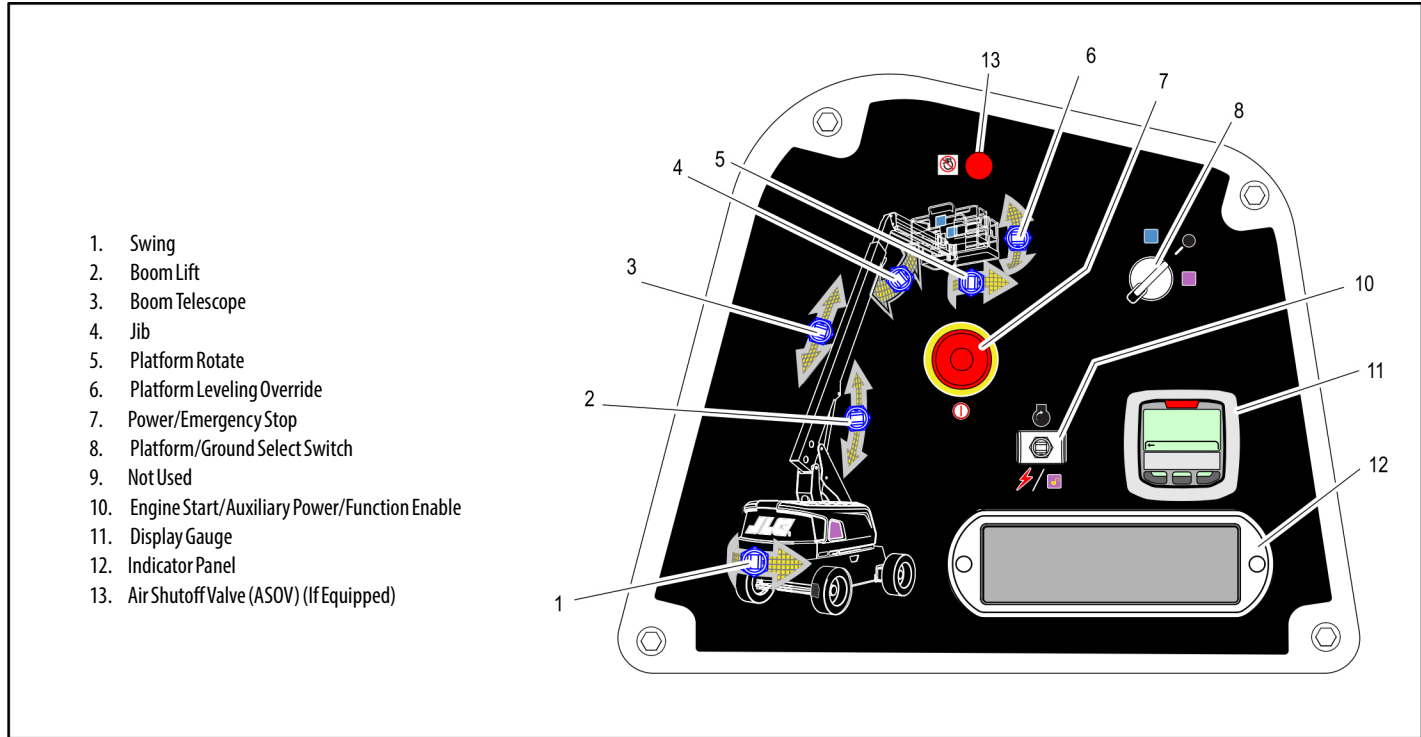




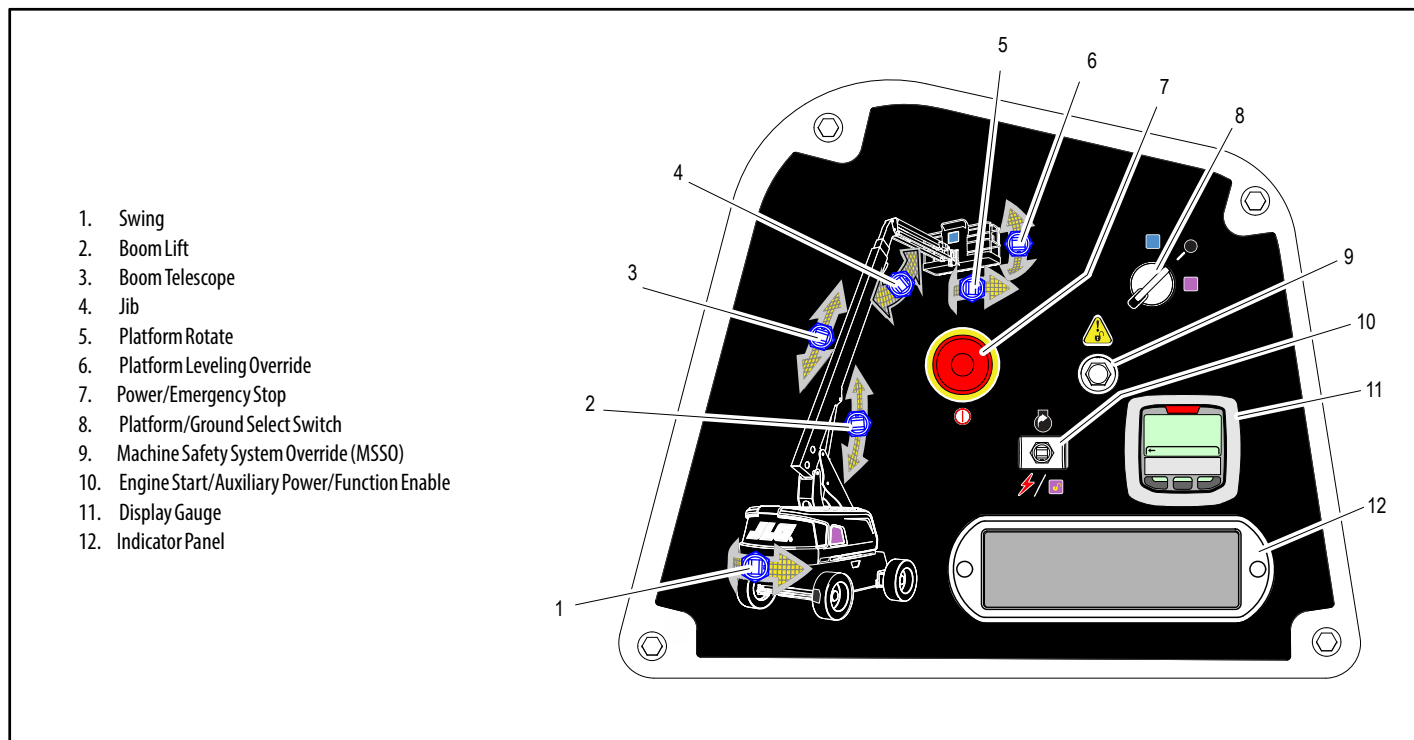
**Figure 3-1. Ground Control Station - 600S**



**Figure 3-2. Ground Control Station - 600S with Machine Safety System Override (MSSO)(CE Only)**



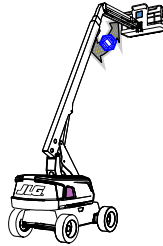
**Figure 3-3. Ground Control Station - 660SJ**



**Figure 3-4. Ground Control Station - 660SJ with Machine Safety System Override (MSSO)(CE Only)**

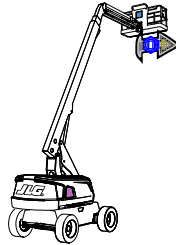
### 4. Jib (If Equipped)

This switch provides raising and lowering of the jib.



### 5. Platform Rotate

Provides rotation of the platform.

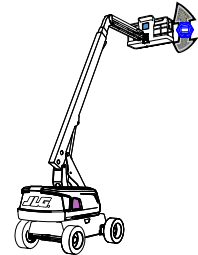


### **⚠ WARNING**

**ONLY USE THE PLATFORM LEVELING OVERRIDE FUNCTION FOR SLIGHT LEVELING OF THE PLATFORM. INCORRECT USE COULD CAUSE THE LOAD/OCCUPANT TO SHIFT OR FALL. FAILURE TO DO SO COULD RESULT IN DEATH OR SERIOUS INJURY.**

### 6. Platform Leveling Override

A three position switch allows the operator to adjust the automatic self leveling system. This switch is used to adjust platform level in situations such as ascending/descending a grade.



## SECTION 3 - MACHINE CONTROLS AND INDICATORS

**NOTE:** When Power/Emergency Stop switch is in the "On" position and engine is not running, an alarm will sound, indicating Ignition is "On".

### CAUTION

**WHEN THE MACHINE IS SHUT DOWN THE MASTER/EMERGENCY STOP SWITCH MUST BE POSITIONED TO THE "OFF" POSITION TO PREVENT DRAINING THE BATTERY.**

#### 7. Power/Emergency Stop Switch

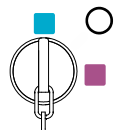
A two-position red mushroom shaped switch supplies power to Platform/Ground Select switch when pulled out (on). When pushed in (off), power is shut off to the Platform/Ground Select switch.



**NOTE:** When the Platform/Ground Select Switch is in the center position, power is shut off to the controls at both operating consoles.

#### 8. Platform/Ground Select Switch

The three position, key operated switch supplies power to the platform control console when positioned to Platform. With the switch key turned to the Ground position only ground controls are operable.



#### 9. Machine Safety System Override (MSSO) (CE Only)

Provides emergency override of function controls that are locked out in the event of Load Sense System activation.



**NOTE:** On machines with diesel engines, when Glow Plug Indicator is lighted (Yellow), wait until light goes out before cranking engine.

10. Engine Start/ Auxiliary Power Switch /Function Enable



To start the engine, the switch must be held "Up" until the engine starts.

To use auxiliary power, the switch must be held "Down" for duration of auxiliary pump use.



When the engine is running, the switch must be held "Down" to enable all boom controls.



### CAUTION

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

11. Display Gauge



Registers the amount of time the machine has been in use, with engine running. The hourmeter registers up to 16,500 hours and cannot be reset.

12. Indicator Panel

The Indicator Panel contains indicator lights that signal problem conditions or functions operating during machine operation.

13. Air Shutoff Valve (ASOV) (If Equipped)



The red LED ASOV light indicates when the valve has been actuated.

### Ground Control Indicator Panel

(See Figure 3-5., Ground Control Indicator Panel)

**1. Battery Malfunction Indicator**

Indicates a problem in the battery or charging circuit, and service is required.



**2. Engine Malfunction/Check Engine Indicator**

Indicates that engine oil pressure is below normal or engine coolant temperature is abnormally high and service is required.



**3. System Distress Indicator**

The light indicates that the JLG Control System has detected an abnormal condition and a Diagnostic Trouble Code has been set in the system memory. Refer to the Service Manual for instructions concerning the trouble codes and trouble code retrieval.

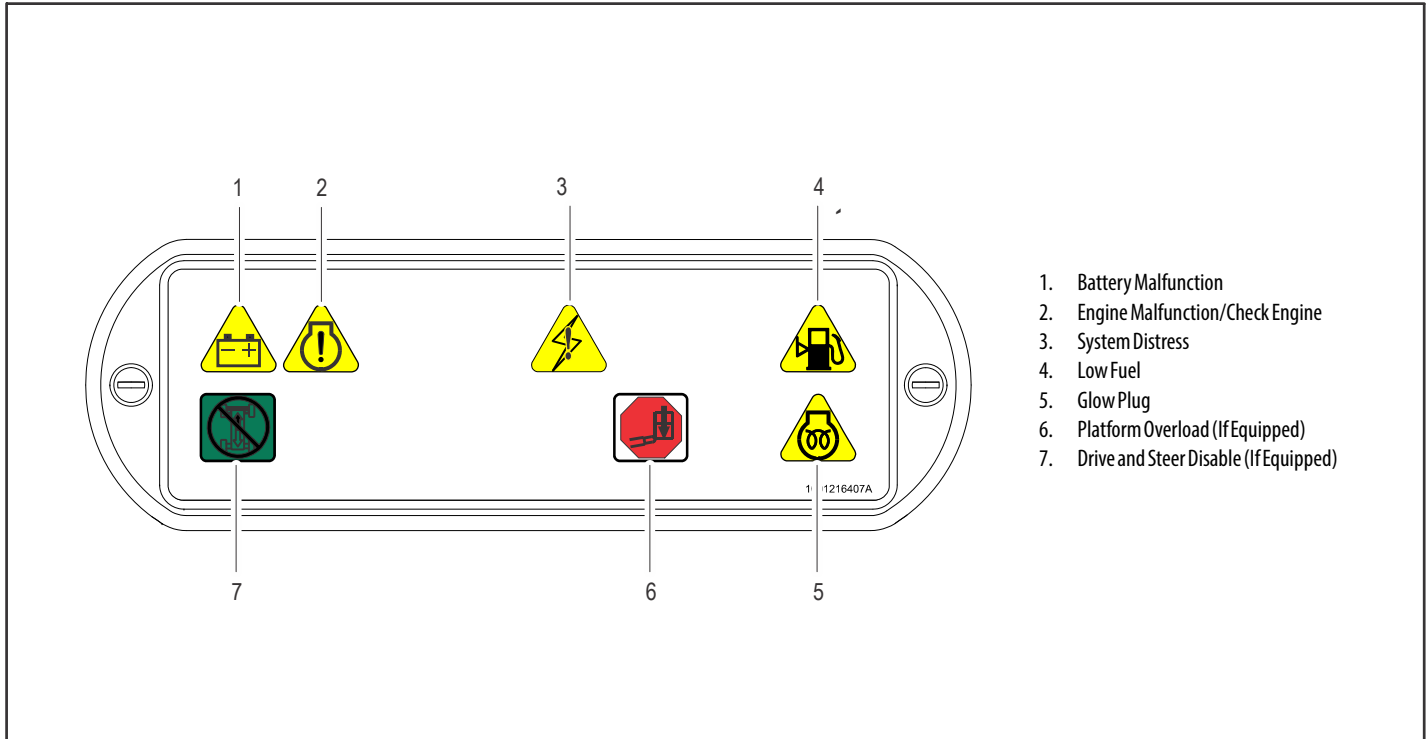


The system distress indicator light will illuminate for 2-3 seconds when the key is positioned to the on position to act as a self test.

**4. Low Fuel Level Indicator**

Indicates the fuel level is low. The Fuel Reserve/Cut-Out System will shut the engine down (or allow it start and run for an additional minute, depending upon machine setup) before the fuel tank is emptied.





**Figure 3-5. Ground Control Indicator Panel**

## SECTION 3 - MACHINE CONTROLS AND INDICATORS

---

### 5. Glow Plug Indicator

Indicates the glow plugs are operating. After turning on ignition, wait until light goes out before cranking engine.



### 6. Platform Overload Indicator (If Equipped)

Indicates the platform has been overloaded.



### 7. Drive and Steer Disable Indicator (If Equipped)

Indicates the Drive and Steer Disable function has been activated.



## **Ground Control Console Display Gauge**

*(See Figure 3-9., Ground Control Console Display Gauge)*

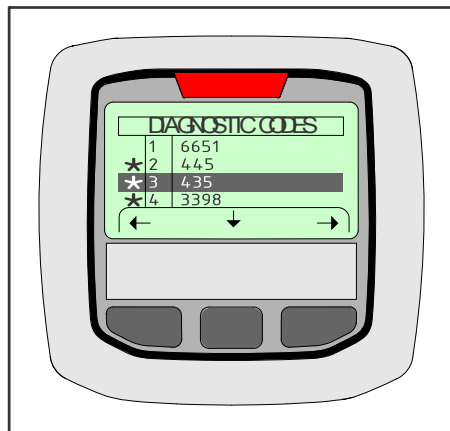
The Display Gauge shows engine hours, fuel level (if applicable), and Diagnostic Trouble Codes (DTCs) from both the JLG Control System and the engine control system. During machine start up, with no active DTCs in the control system, the splash screen will show for 3 seconds and then switch to main screen. If there is an active DTC while powering up the machine, the splash screen will show for 3 seconds, and then launch the Diagnostics Screen. The indicator lamp will light when there is an active DTC in the Fault Log.



**Figure 3-6. Splash Screen**

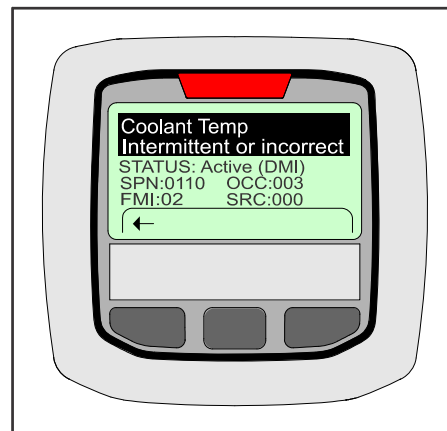
## SECTION 3 - MACHINE CONTROLS AND INDICATORS

The Diagnostic Screen will show active and inactive faults from the JLG Control System on the screen. An asterisk (\*) will be displayed to show active faults.

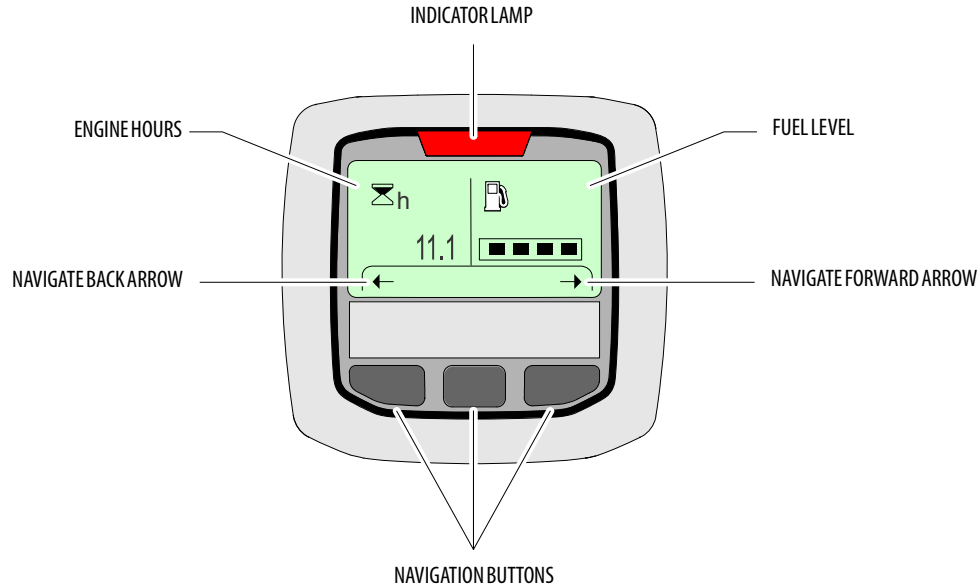


**Figure 3-7. Diagnostic Screen**

The Engine Diagnostics Screen will show SPN (Suspect Parameter Number), FMI (Failure Mode Identifier), and Occurrence count information. Engine SPN text is not scrollable. If there is more than one engine trouble code, the operator must exit from the Engine DTC Screen to see other SPN and FMI information.



**Figure 3-8. Engine Diagnostic Screen**



**Figure 3-9. Ground Control Console Display Gauge**

### Platform Console

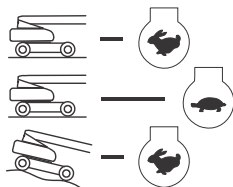
(See Figure 3-10., Platform Control Console)

#### **⚠ 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 OR NEUTRAL POSITION WHEN RELEASED.**

#### 1. Drive Speed/Torque Select Switch

The forward position gives maximum drive speed. The back position gives maximum torque for rough terrain and climbing grades. The center position allows the machine to be driven as quietly as possible.

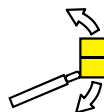


#### **⚠ WARNING**

**ONLY USE THE PLATFORM LEVELING OVERRIDE FUNCTION FOR SLIGHT LEVELING OF THE PLATFORM. INCORRECT USE COULD CAUSE THE LOAD/OCCUPANTS TO SHIFT OR FALL. FAILURE TO DO SO COULD RESULT IN DEATH OR SERIOUS INJURY.**

#### 2. Platform Leveling Override

A three position switch allows the operator to adjust the automatic self leveling system. This switch is used to adjust platform level in situations such as ascending/descending a grade.



#### 3. Fuel Select (Dual Fuel Engine Only) (If Equipped)

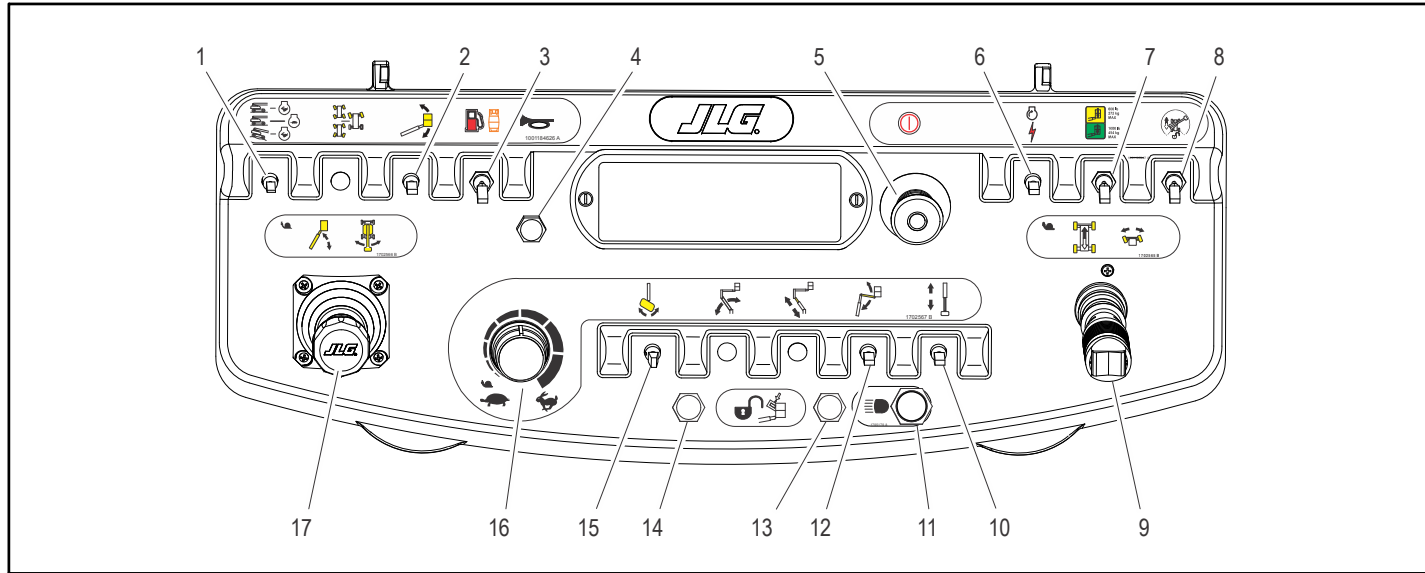
Moving the switch to the appropriate position selects gasoline or liquid propane fuel.



#### 4. Horn

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





- |                               |                               |                                                |                                                 |
|-------------------------------|-------------------------------|------------------------------------------------|-------------------------------------------------|
| 1. Drive Speed/Torque Select  | 6. Start/Auxiliary Power      | 10. Telescope                                  | 14. Soft Touch/SkyGuard Indicator (If Equipped) |
| 2. Platform Leveling Override | 7. Capacity Select            | 11. Lights (If Equipped)                       | 15. Platform Rotate                             |
| 3. Fuel Select (If Equipped)  | 8. Drive Orientation Override | 12. Jib Lift (If Equipped)                     | 16. Function Speed Control                      |
| 4. Horn                       | 9. Drive/Steer                | 13. Soft Touch/SkyGuard Override (If Equipped) | 17. Main Lift/Swing Controller                  |
| 5. Power/Emergency Stop       |                               |                                                |                                                 |

**Figure 3-10. Platform Control Console**

## SECTION 3 - MACHINE CONTROLS AND INDICATORS

### 5. Power/Emergency Stop Switch

A two-position red mushroom shaped switch furnishes power to PLATFORM Controls when pulled out (on). When pushed in (off), power is shut off to the platform functions.



### 6. Start/Auxiliary Power

When pushed forward, the switch energizes the starter motor to start the engine.



The Auxiliary Power control switch energizes the electrically operated hydraulic pump. (Switch must be held ON for duration of auxiliary pump use.)



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

### 7. Capacity Select

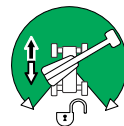
On 600S models, this switch allows the operator to select between an operating envelope with a 600 lb. (272 kg for ANSI markets and 270 kg for CE and Australia markets) capacity restriction or a 1000 lb. (454 kg for ANSI markets and 450 kg for CE and Australia markets) capacity restriction.



On 660SJ models, the operator can select between an operating envelope with a 550 lb. (250 kg) capacity restriction or a 750 lb. (340 kg) capacity restriction.

### 8. Drive Orientation Override

When the boom is swung over the rear tires or further in either direction, the Drive Orientation indicator will illuminate when the drive function is selected. Push and release the switch, and within 3 seconds move the Drive/Steer control to activate drive or steer. Before driving, locate the black/white orientation arrows on both the chassis and the platform controls. Move the drive controls in a direction matching the directional arrows for the intended direction of travel.

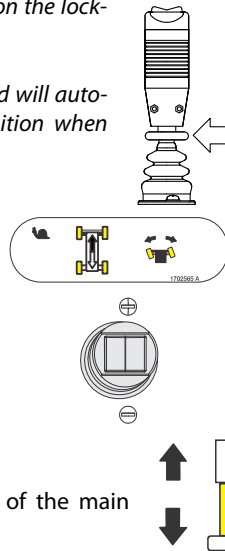


**NOTE:** To operate the Drive joystick, pull up on the locking ring below the handle.

**NOTE:** The Drive joystick is spring loaded and will automatically return to neutral (off) position when released.

### 9. Drive/Steer

Push forward to drive forward, pull back to drive in reverse. Steering is accomplished via a thumb-activated rocker switch on the end of the steer handle.



### 10. Telescope

Provides extension and retraction of the main boom.

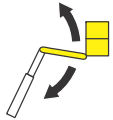
### 11. Lights (If Equipped)

This switch operates the chassis lights if the machine is so equipped.



### 12. Jib Lift (If Equipped)

Provides for raising or lowering of the jib by positioning up/down.



## SECTION 3 - MACHINE CONTROLS AND INDICATORS

### 13. Soft Touch/SkyGuard Override Switch (If equipped)

The machine can be equipped with one of three options. It may have Soft Touch, SkyGuard, or both Soft Touch and SkyGuard.

If equipped with Soft Touch, the switch enables the functions that were cut out by the Soft Touch system to operate again at creep speed, allowing the operator to move the platform away from the obstacle that caused the shutdown situation.



If equipped with SkyGuard, the switch enables functions cut out by the Skyguard system to be operated again, allowing the operator to resume use of machine functions.



If equipped with both Soft Touch and SkyGuard, the switch operates like described above and allows the operator to override the system that has experienced a cutout situation.



### 14. Soft Touch/SkyGuard Indicator (If Equipped)

Indicates the Soft Touch bumper is against an object or the SkyGuard sensor has been activated. All controls are cut out until the override button is pushed. For Soft Touch, controls are then active in the Creep Mode or for SkyGuard, controls will work normally.

When Soft Touch is active, the indicator will be on continuously and the alarm will sound. When SkyGuard is active, the indicator will flash, and the horn will sound continuously.

### 15. Platform Rotate

Provides rotation of the platform when positioned to the right or left.

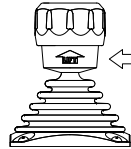


### 16. Function Speed Control

This control affects the speed of telescope and jib lift (if equipped). Turning the knob all the way counterclockwise until it clicks puts drive and swing into creep mode.



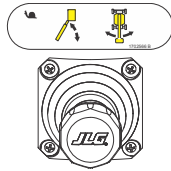
**NOTE:** To operate the Main Boom Lift/Swing joystick, pull up on the locking ring below the handle.



**NOTE:** The Main Boom Lift/Swing joystick is spring loaded and will automatically return to neutral (off) position when released.

### 17. Main Lift/Swing Controller

Provides main lift and swing. Push forward to lift up, pull backward to boom down. Move right to swing right, move left to swing left. Moving the joystick activates switches to provide the functions selected.



### Platform Control Indicator Panel

(See Figure 3-11., Platform Control Indicator Panel)

**NOTE:** The indicator lights will illuminate for approximately 1 second when the key is positioned to the on position to act as a self test.

#### 1. Level System Fault Indicator

Indicates a fault in the electronic leveling system. The fault indicator will flash and an alarm sound. All functions will default to creep if the boom is out of transport mode.

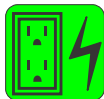


### WARNING

IF THE LEVEL SYSTEM FAULT INDICATOR IS ILLUMINATED, SHUT DOWN THE MACHINE, RESET THE EMERGENCY STOP, AND RESTART THE MACHINE. IF THE FAULT PERSISTS, RETURN THE PLATFORM TO THE STOWED POSITION, USING MANUAL LEVELING AS REQUIRED, AND HAVE LEVELING SYSTEM REPAIRED.

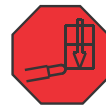
#### 2. AC Generator (If Equipped)

Indicates the generator is in operation.



#### 3. Platform Overload Indicator (If Equipped)

Indicates the platform has been overloaded.

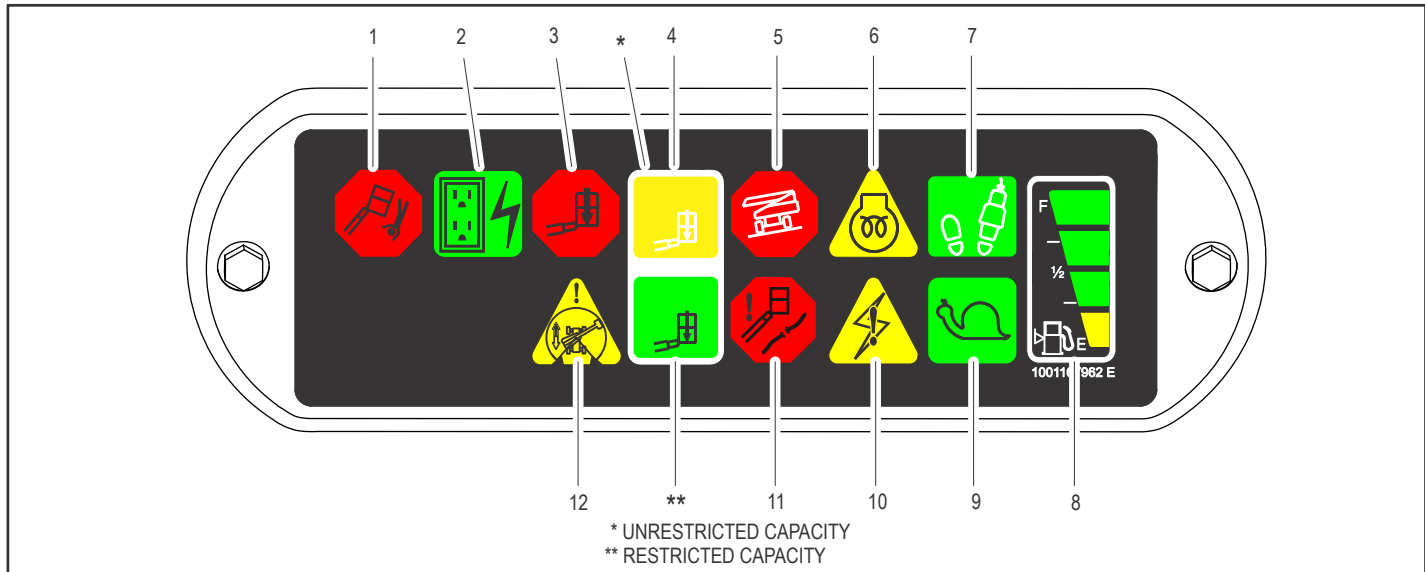


#### 4. Capacity Indicator

Indicates the maximum platform capacity for the current position of the platform. Restricted capacities are permitted at restricted platform positions (shorter boom lengths and higher boom angles).



**NOTE:** Refer to the capacity decals on the machine for restricted and unrestricted platform capacities.



- |                                    |                            |                       |
|------------------------------------|----------------------------|-----------------------|
| 1. Level System                    | 5. Tilt                    | 9. Creep              |
| 2. AC Generator (If Equipped)      | 6. Glow Plug/Wait to Start | 10. System Distress   |
| 3. Platform Overload (If Equipped) | 7. Enable/Footswitch       | 11. Wire Rope Service |
| 4. Capacity Indicator              | 8. Fuel Level              | 12. Drive Orientation |

**Figure 3-11. Platform Control Indicator Panel**

## SECTION 3 - MACHINE CONTROLS AND INDICATORS

### 5. Tilt Alarm Warning Light and Alarm



This red illuminator indicates that the chassis is on a slope. An alarm will also sound when the chassis is on an excessive slope and the boom is out of transport position. If lit when boom is out of transport position, lower to below horizontal then reposition machine so that it is level before continuing operation. If the boom is above horizontal and the machine is on a slope, the tilt alarm warning light will illuminate and an alarm will sound and CREEP is automatically activated.

| Tilt Angle | Market      |
|------------|-------------|
| 5°         | All Markets |

#### **WARNING**

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

### 6. Glow Plug/Wait to Start Indicator

Indicates the glow plugs are operating. After turning on ignition, wait until light goes out before starting engine.



### 7. Enable Indicator/Footswitch



To operate any function, the footswitch must be depressed and the function selected within seven seconds. The enable indicator shows that the controls are enabled. If a function is not selected within seven seconds, or if a seven second lapse between ending one function and beginning the next function, the enable light will go out and the footswitch must be released and depressed again to enable the controls.

Releasing the footswitch removes power from all controls and applies the drive brakes.

#### **WARNING**

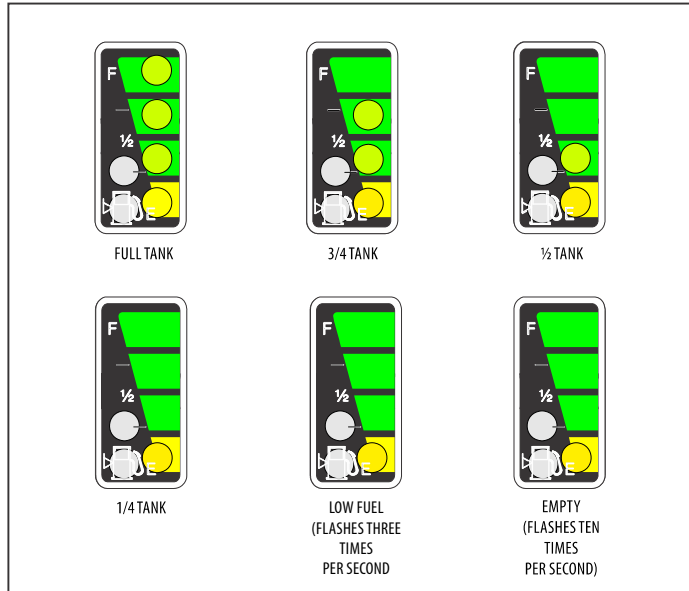
TO AVOID SERIOUS INJURY, DO NOT REMOVE, MODIFY OR DISABLE THE FOOTSWITCH BY BLOCKING OR ANY OTHER MEANS.

#### **WARNING**

FOOTSWITCH MUST BE ADJUSTED IF FUNCTIONS ACTIVATE WHEN SWITCH ONLY OPERATES WITHIN LAST 1/4" OF TRAVEL, TOP OR BOTTOM.

### 8. Fuel Level Indicator

Indicates the level of fuel in the tank.



**Figure 3-12. Fuel Level Indicator**

### 9. Creep Speed Indicator



When the Function Speed Control is turned to the creep position, the indicator acts as a reminder that all functions are set to the slowest speed. The light will be on continuously if the operator selects creep speed or if the control system puts the machine into creep speed. In addition, if the control system puts one or more individual functions in creep speed, the indicator flashes when that function is selected.

### 10. System Distress Indicator



The light indicates that the JLG Control System has detected an abnormal condition and a Diagnostic Trouble Code has been set in the system memory. Refer to the Service Manual for instructions concerning the trouble codes and trouble code retrieval.

### **SECTION 3 - MACHINE CONTROLS AND INDICATORS**

---

#### **11. Wire Rope Service Indicator**

When illuminated, the light indicates the boom wire ropes are loose or broken and must be repaired or adjusted immediately.



#### **12. Drive Orientation Indicator**

When the boom is swung beyond the rear drive tires or further in either direction, the Drive Orientation indicator will illuminate. This is a signal for the operator to verify that the drive control is being operated in the proper direction (i.e. controls reversed situations).



## **SECTION 4. MACHINE OPERATION**

### **4.1 DESCRIPTION**

This machine is a mobile elevating work platform used to position personnel, along with their necessary tools and materials at work locations.

The primary operator control station is in the platform. From this control station, the operator can drive and steer the machine in both forward and reverse directions. The operator can raise or lower the main boom or swing the boom to the left or right. Standard boom swing is 360 degree continuous left and right of the stowed position. The machine has a Ground Control Station which will override the Platform Control Station. Ground Controls operate Boom Lift and Swing, and are to be used in an emergency to lower the platform to the ground should the operator in the platform be unable to do so.

### **4.2 OPERATING CHARACTERISTICS AND LIMITATIONS**

#### **Capacities**

The boom can be raised above horizontal with or without any load in platform, if:

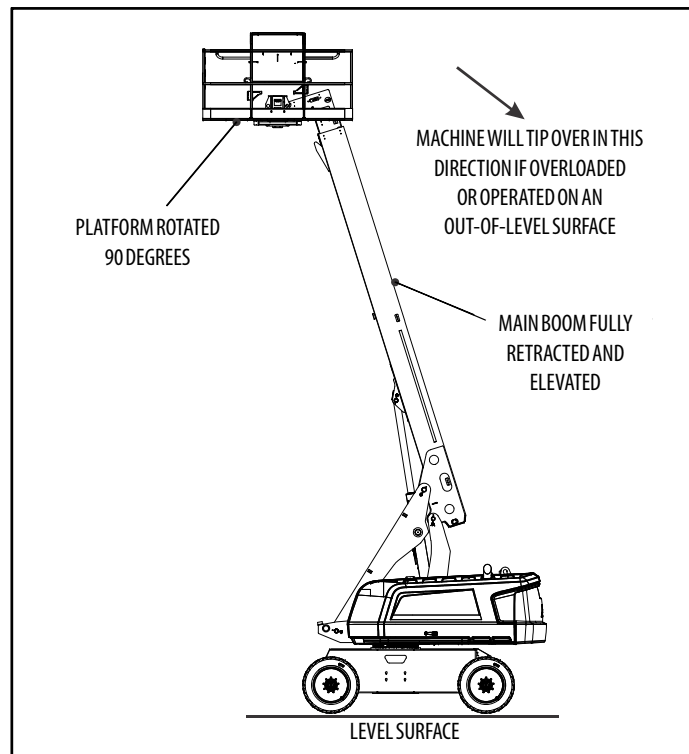
1. Machine is positioned on a smooth, firm and level surface.
2. Load is within manufacturer's rated capacity.
3. All machine systems are functioning properly.
4. Proper tire pressure.
5. Machine is as originally equipped from JLG.

### Stability

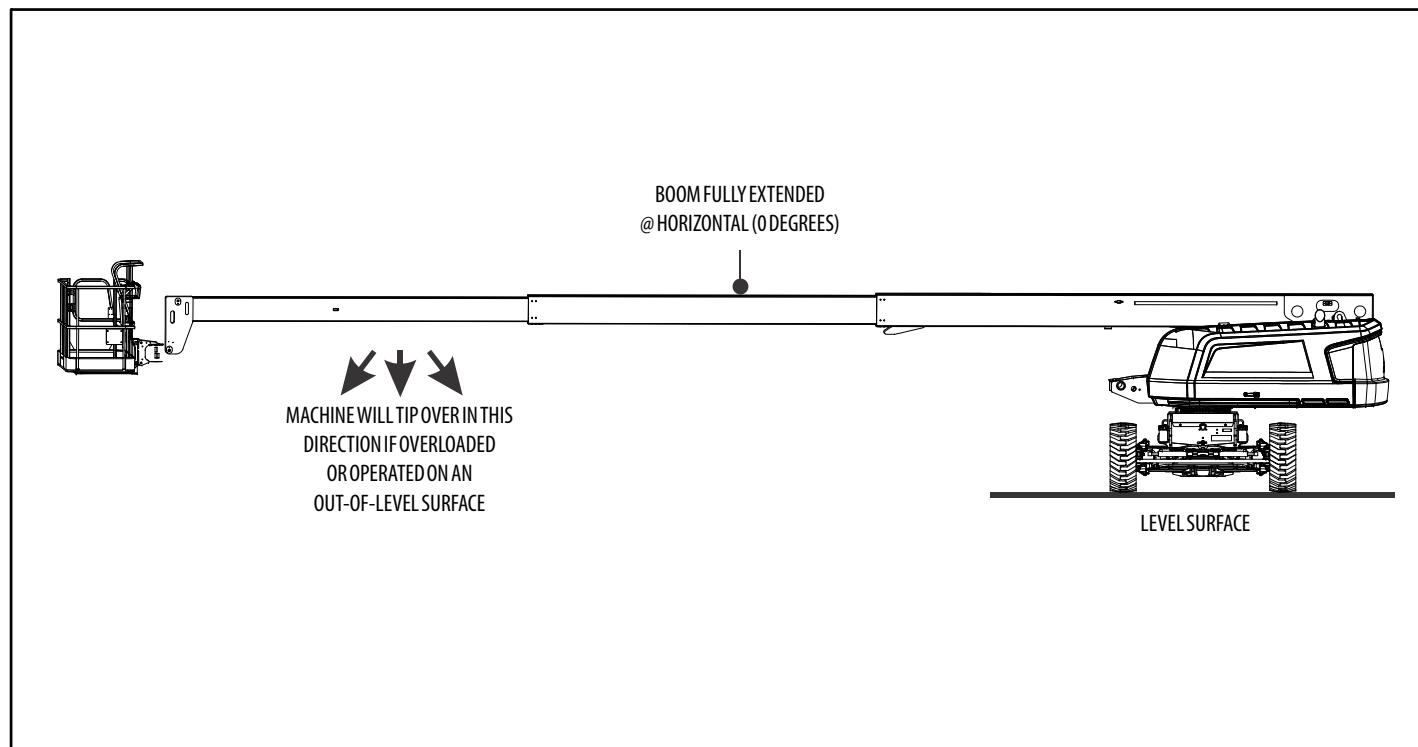
Machine stability is based on two positions which are called FORWARD and BACKWARD stability. The machines position of least FORWARD stability is shown in Figure 4-2., Position of Least Forward Stability, and its position of least BACKWARD stability is shown in Figure 4-1., Position of Least Backward Stability.

#### **⚠ WARNING**

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



**Figure 4-1. Position of Least Backward Stability**



**Figure 4-2. Position of Least Forward Stability**

## SECTION 4 - MACHINE OPERATION

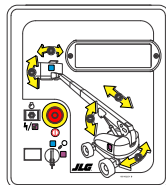
### 4.3 ENGINE OPERATION

**NOTE:** When operating a machine at high altitudes, a decrease in machine performance may occur due to a decrease in air density.

**NOTE:** When operating a machine at high ambient temperatures, a decrease in machine performance and an increase in engine coolant temperature may occur.

**NOTE:** Contact JLG Customer Service for operation under abnormal conditions.

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



**NOTE:** Diesel engines only: After turning on ignition, operator must wait until glow plug indicator light goes out before cranking engine.



1. Turn key of Platform/Ground Select switch to Ground.



2. Pull the Power/Emergency Stop switch to On.



3. Push the Engine Start switch until engine starts.



### Starting Procedure

#### **⚠ CAUTION**

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

#### **⚠ CAUTION**

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

4. After engine has had sufficient time to warm up, push in the Power/Emergency Stop switch and shut engine off.
5. Turn Platform/Ground Select switch to Platform.
6. From Platform, pull Power/Emergency Stop switch out.
7. Push the Engine Start switch until engine starts.



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

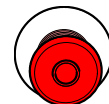
### Shutdown Procedure

#### **CAUTION**

**IF AN ENGINE MALFUNCTION CAUSES AN UNSCHEDULED SHUTDOWN, DETERMINE THE CAUSE AND CORRECT IT BEFORE RESTARTING THE ENGINE.**

1. Remove all load and allow engine to operate at low speed for 3-5 minutes; this allows further reduction of internal engine temperature.
2. Push Power/Emergency Stop switch in.
3. Turn Platform/Ground Select switch to Off.

Refer to Engine Manufacturer's manual for detailed information.



### Air Shutoff Valve (ASOV) (If Equipped)

Air Shutoff Valve (ASOV) is an overspeed protection device mounted to the engine's air intake system. When the valve is actuated, it obstructs airflow intake and stops the engine. Weekly tests are recommended to ensure the valve remains in good working condition.

1. Start the engine, running at idle.
2. Open the red switch guard on ASOV test switch, then activate toggle to test mode.

**NOTE:** Test switch is located under hood to the left of the ground control panel (look for test decal).



3. At the ground control panel, select any function and activate until valve actuates at test RPM of 1500. Once valve actuates, engine will stop.
4. Turn ignition to OFF.
5. Visually inspect valve to ensure it appears in good condition.
6. Reset valve by rotating valve handle to the Open position.

**NOTE:** The handle cannot be turned unless the machine is off. Ensure the ignition is moved to the OFF position.

### WARNING

DO NOT USE ASOV AS AN ALTERNATIVE TO SHUTTING DOWN MACHINE PROPERLY.

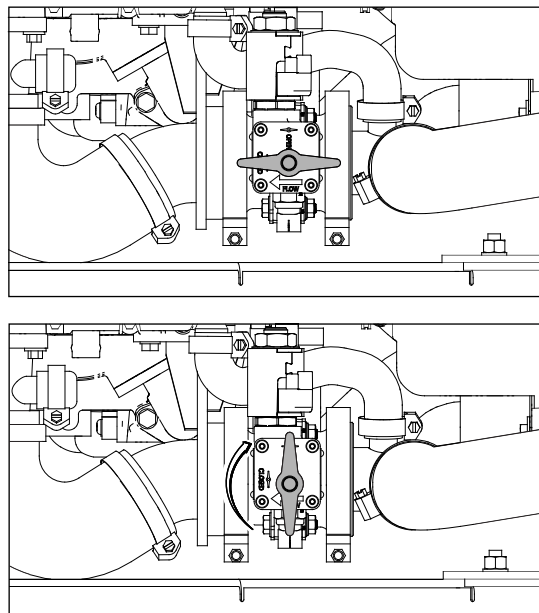


Figure 4-3. ASOV Reset (Closed to Open Position)

## Fuel Reserve / Shut-Off System

**NOTE:** *Reference the Service and Maintenance Manual along with a qualified JLG Mechanic to verify your machine setup.*

The Fuel Shutoff System monitors the fuel in the tank and senses when the fuel level is getting low. The JLG Control System automatically shuts the engine down before the fuel tank is emptied unless the machine is set up for Engine Restart.

If fuel level reaches the Empty range, the Low Fuel light will begin to flash once a second and there will be approximately 60 minutes of engine run time left. If the system is in this condition and automatically shuts down the engine or if the operator manually shuts down the engine before the 60 minute run time is complete, the Low Fuel light will flash 10 times a second and the engine will react according to machine setup. Setup options are as follows:



- Engine One Restart - When the engine shuts down, the operator will be permitted to cycle power and restart the engine once with approximately 2 minutes of run time. After the 2 minute run time is complete or if the engine is shut down by the operator prior to the completion of the 2 minute run time, it cannot be restarted until fuel is added to the tank.

- Engine Restart - When the engine shuts down, the operator will be permitted to cycle power and restart the engine for approximately 2 minutes of run time. After the 2 minutes of run time is complete, the operator may cycle power and restart the engine for an additional 2 minutes of run time. The operator can repeat this process until there is no more fuel available.

### **NOTICE**

**CONTACT A QUALIFIED JLG MECHANIC IF THE MACHINE NEEDS RESTARTED AFTER NO MORE FUEL IS AVAILABLE.**

- Engine Stop - When the engine shuts down, no restarts will be permitted until fuel is added to the tank.

## **4.4 TRAVELING (DRIVING)**

*See Figure 4-4., Grade and Sideslope*

**NOTE:** *Refer to the Operating Specifications table for Gradeability and Sideslope ratings.*

*All ratings for Gradeability and Sideslope are based upon the machine's boom being in the stowed position, fully lowered, and retracted.*

Traveling is limited by two factors:

## SECTION 4 - MACHINE OPERATION

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1. Gradeability, which is the percent of grade of the incline the machine can climb.
2. Sideslope, which is the angle of the slope the machine can be driven across.

### **WARNING**

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

**TO AVOID LOSS OF TRAVEL CONTROL OR "TIP OVER", DO NOT DRIVE MACHINE ON GRADES EXCEEDING THOSE SPECIFIED ON THE SERIAL NUMBER PLATE.**

**BE SURE THE TURNABLE LOCK IS ENGAGED BEFORE ANY EXTENDED TRAVELING.**

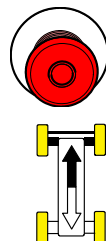
**DO NOT DRIVE ON SIDESLOPES WHICH EXCEED 5 DEGREES.**

**USE EXTREME CAUTION WHEN DRIVING IN REVERSE AND AT ALL TIMES WHEN THE PLATFORM IS ELEVATED.**

**BEFORE DRIVING, MAKE SURE BOOM IS POSITIONED OVER REAR DRIVE AXLE. IF BOOM IS OVER FRONT WHEELS, STEER AND DRIVE CONTROLS WILL BE REVERSED.**

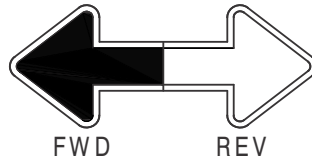
## Traveling Forward and Reverse

1. At Platform Controls, pull out Emergency Stop switch, start engine, and activate footswitch.
2. Position Drive controller to FORWARD or REVERSE as desired.



This machine is equipped with a Drive Orientation Indicator. The yellow light on the platform control console indicates that the boom is swung beyond the rear drive tires and the machine may Drive/Steer in the opposite direction from the movement of the controls. If the indicator is illuminated, operate the Drive function in the following manner:

1. Match the black and white direction arrows on both platform control panel and the chassis to determine the direction the machine will travel.



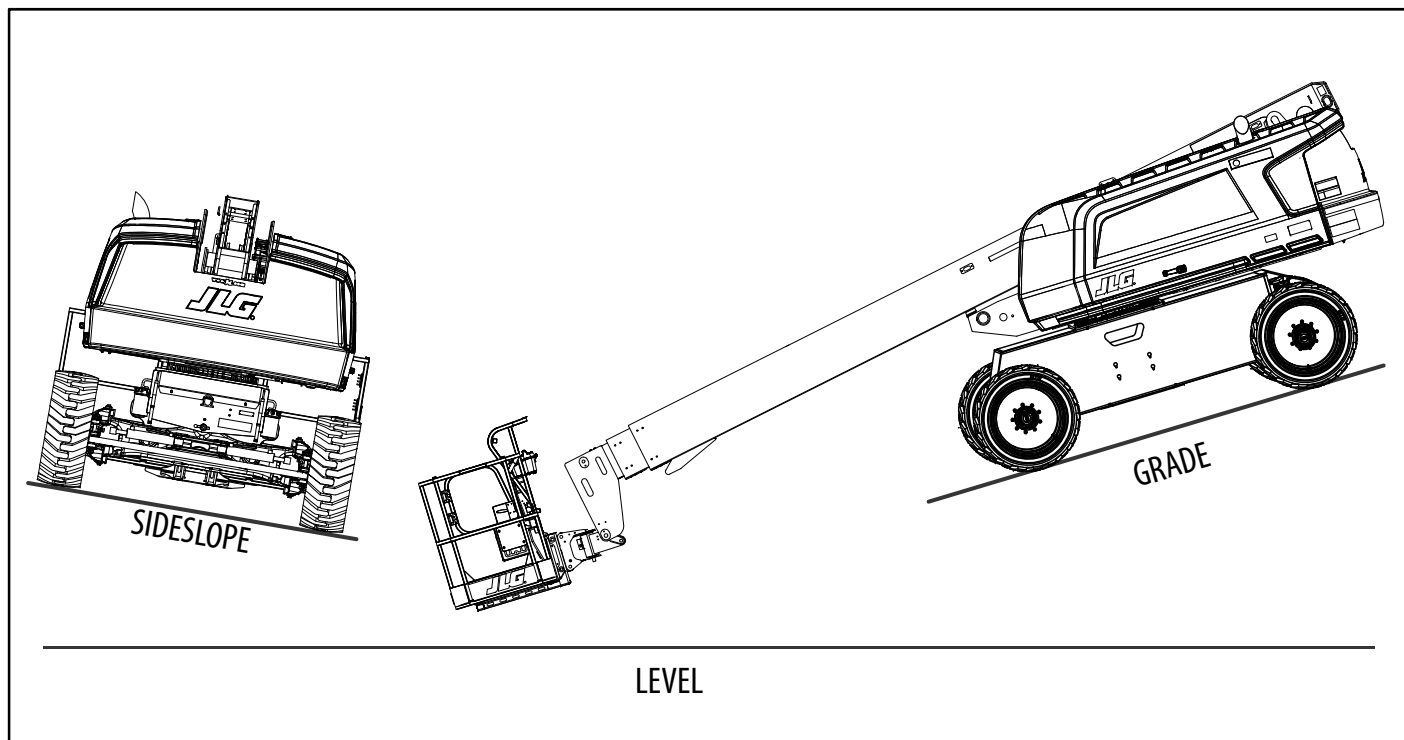
2. Push and release the Drive Orientation Override switch. Within 3 seconds, slowly move the Drive control toward the arrow matching the intended direction of machine travel. The indicator light will flash during the 3 second interval until the drive function is selected.



## **4.5 STEERING**

Position thumb switch on Drive/Steer controller to Right for steering right, or to Left for steering left.





**Figure 4-4. Grade and Sideslope**

## 4.6 PLATFORM

### Platform Level Adjustment

#### WARNING

ONLY USE THE PLATFORM LEVELING OVERRIDE FUNCTION FOR SLIGHT LEVELING OF THE PLATFORM. INCORRECT USE COULD CAUSE THE LOAD/OCCUPANTS TO SHIFT OR FALL. FAILURE TO DO SO COULD RESULT IN DEATH OR SERIOUS INJURY.

To Level Up or Down - Position the Platform/Level control switch Up or Down and hold until the platform is level.



### Platform Rotation

To rotate the platform to the left or right, use the Platform Rotate control switch to select the direction and hold until desired position is reached.



## 4.7 BOOM

#### WARNING

DO NOT SWING OR RAISE BOOM ABOVE HORIZONTAL WHEN MACHINE IS OUT OF LEVEL.

DO NOT DEPEND ON TILT ALARM AS A LEVEL INDICATOR FOR THE CHASSIS.

TO AVOID TIP OVER, LOWER PLATFORM TO GROUND LEVEL. THEN DRIVE MACHINE TO A LEVEL SURFACE BEFORE RAISING BOOM.

TO AVOID SERIOUS INJURY, DO NOT OPERATE MACHINE IF ANY CONTROL LEVER OR TOGGLE SWITCH CONTROLLING PLATFORM MOVEMENT DOES NOT RETURN TO THE 'OFF' OR NEUTRAL POSITION WHEN RELEASED.

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

### Swinging the Boom

To swing boom, use Swing control switch to select Right or Left direction.



#### NOTICE

**WHEN SWINGING THE BOOM MAKE SURE THERE IS AMPLE ROOM FOR THE BOOM TO CLEAR SURROUNDING WALLS, PARTITIONS AND EQUIPMENT.**

**NOTE:** On CE Market machines, when boom functions are being operated there is an interlock that prevents the use of Drive and Steer functions.

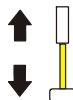
### Raising and Lowering the Main Boom

To raise or lower the Main Boom, position the Main Boom Lift switch to Up or Down until the desired height is reached.



### Telescoping the Main Boom

To extend or retract the main boom, use the Main Telescope Control Switch to select In or Out movement.



## 4.8 SHUT DOWN AND PARK

1. Drive machine to a protected area.
2. Assure boom is fully retracted and lowered over rear (Drive) axle; all access panels and doors closed and secured.
3. Remove all load and allow engine to operate 3-5 minutes at idle to permit reduction of engine internal temperatures.
4. At Ground Controls, turn Key Select switch to (center) Off Position, Power/Emergency Stop switch (down) to Off. Remove key.
5. Cover Platform Control console to protect instruction placards, warning decals and operating controls from hostile environment.

## 4.9 BATTERY QUICK-DISCONNECT (IF EQUIPPED)

Machines equipped with the battery quick-disconnect allow all machine power to be easily disconnected at the battery without removing battery cables from the battery posts. To disconnect power, locate the RED quick-disconnect switch near the battery, and turn it to the **OFF** position.



## 4.9 MACHINE SAFETY SYSTEM OVERRIDE (MSSO)(CE ONLY)

The Machine Safety System Override (MSSO) is used to override function controls for Emergency Platform Retrieval only. Refer to Section 5.5, Machine Safety System Override (MSSO)(CE Only) for operating procedures.



## 4.10 SKYGUARD OPERATION

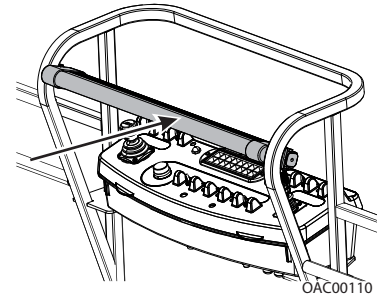
SkyGuard provides enhanced control panel protection. When the SkyGuard sensor is activated, functions in use at the time of actuation will reverse or cutout. The SkyGuard Function Table provides more details on these functions.

During activation, the horn will sound and, if equipped with a SkyGuard beacon, the beacon will illuminate until sensor and footswitch are disengaged.

If the SkyGuard sensor remains activated after function reversal or cutout, depress and hold the SkyGuard Override Switch to allow normal functions until the sensor is disengaged.

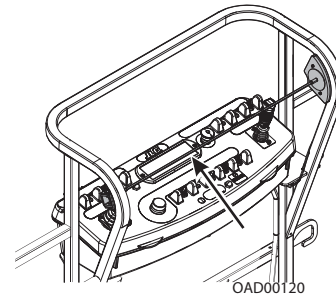
Consult the following illustrations to determine which type of SkyGuard the machine has. Regardless of type, SkyGuard function according to the SkyGuard Function Table does not change.

### SkyGuard

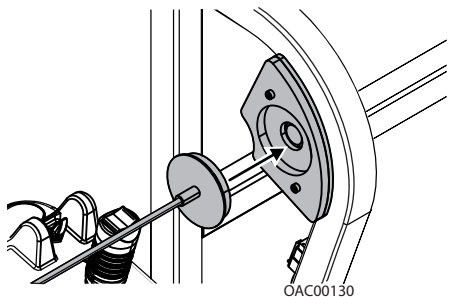


Approximately 50 lb (222 Nm) of force is applied to yellow bar.

### SkyGuard SkyLine

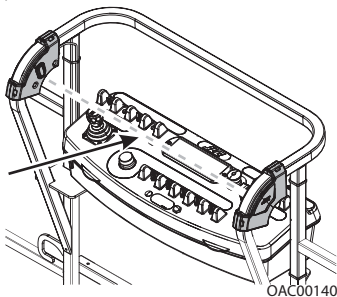


Cable is pressed, breaking the magnetic connection between the cable and right bracket.



Reattach magnetic end of cable to bracket if it becomes disconnected.

SkyGuard SkyEye



Operator passes through path of sensor beam.

SkyGuard Function Table

| Drive Forward                                                                                                | Drive Reverse | Steer | Swing | Boom Lift Up | Boom Lift Down | Boom Tele Out | Boom Tele In | Jib Lift | Basket Level | Basket Rotate |
|--------------------------------------------------------------------------------------------------------------|---------------|-------|-------|--------------|----------------|---------------|--------------|----------|--------------|---------------|
| R*/C**                                                                                                       | R             | C     | R     | R            | R              | R             | C            | C        | C            | C             |
| R= Indicates Reversal is Activated                                                                           |               |       |       |              |                |               |              |          |              |               |
| C= Indicates Cutout is Activated                                                                             |               |       |       |              |                |               |              |          |              |               |
| *DOS (Drive Orientation System) Enabled                                                                      |               |       |       |              |                |               |              |          |              |               |
| ** DOS Not Enabled, machine is driving straight without steering, and any other hydraulic function is active |               |       |       |              |                |               |              |          |              |               |

#### **4.11 OSCILLATING AXLE LOCKOUT TEST (IF EQUIPPED)**

##### **NOTICE**

**LOCKOUT SYSTEM TEST MUST BE PERFORMED QUARTERLY, ANY TIME A SYSTEM COMPONENT IS REPLACED, OR WHEN IMPROPER SYSTEM OPERATION IS SUSPECTED.**

Refer to Section 7.5, Oscillating Axle Lockout Test (If Equipped) for procedure.

#### **4.12 STEER/TOW SELECTOR (IF EQUIPPED)**

##### **WARNING**

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

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

#### **4.13 TOWING (IF EQUIPPED)**

##### **WARNING**

**RUNAWAY VEHICLE/MACHINE HAZARD. MACHINE HAS NO TOWING BRAKES. TOWING VEHICLE MUST BE ABLE TO CONTROL MACHINE AT ALL TIMES. ON-HIGHWAY TOWING NOT PERMITTED. FAILURE TO FOLLOW INSTRUCTIONS COULD CAUSE SERIOUS INJURY OR DEATH.**

**MAXIMUM TOWING SPEED 5 MPH (8 KM/H).**

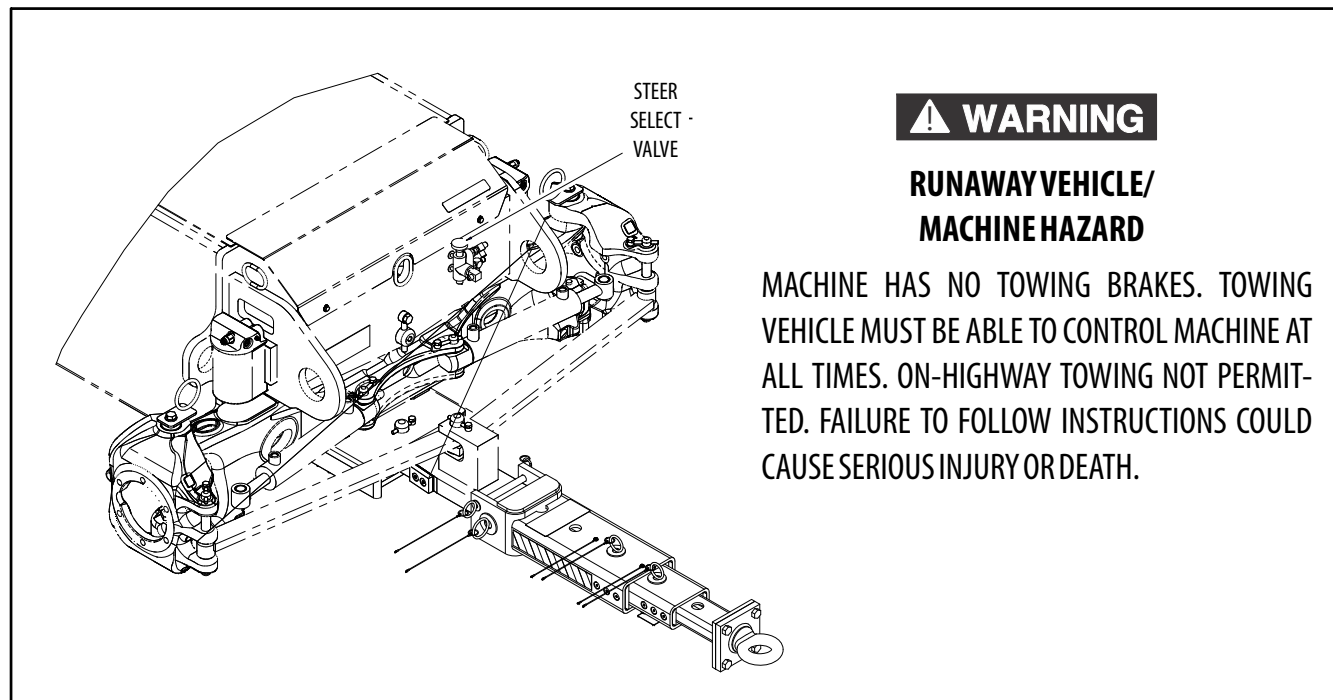
**MAXIMUM TOWING GRADE 25%.**

**Prior to towing the machine, complete the following:**

##### **CAUTION**

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

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



**⚠ WARNING**

**RUNAWAY VEHICLE/  
MACHINE HAZARD**

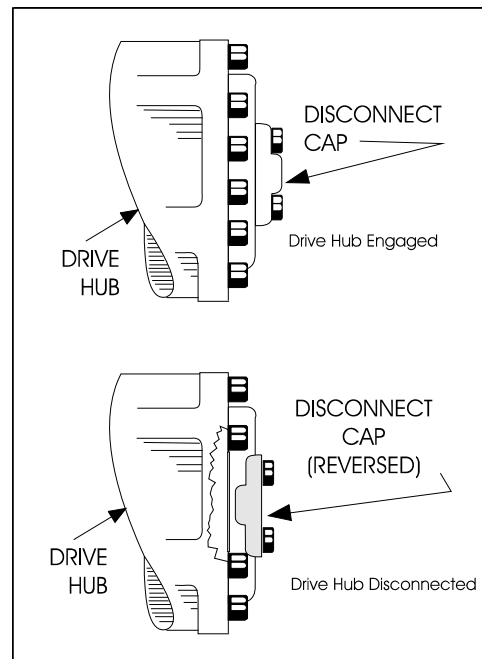
MACHINE HAS NO TOWING BRAKES. TOWING VEHICLE MUST BE ABLE TO CONTROL MACHINE AT ALL TIMES. ON-HIGHWAY TOWING NOT PERMITTED. FAILURE TO FOLLOW INSTRUCTIONS COULD CAUSE SERIOUS INJURY OR DEATH.

**Figure 4-5. Towbar**

2. Connect tow bar to front of frame with attach pins, and tow bar to towing vehicle.
3. Disconnect drive hubs by inverting disconnect cap. Refer to Figure 4-6., Drive Disconnect Hub.
4. Actuate steer/tow selector valve for towing; pull valve knob OUT to float position. (This opens the steer circuit to reservoir, allowing the steer cylinder rod free travel.) The machine is now in the towing mode.

**After towing the machine, complete the following:**

1. Actuate steer/tow selector valve for steering; push valve knob IN to the actuated position.
2. Reconnect drive hubs by inverting disconnect cap.
3. Disconnect tow bar from steering hitch and from towing vehicle. The machine is now in the driving mode.



**Figure 4-6. Drive Disconnect Hub**

### 4.14 AUXILIARY POWER

#### CAUTION

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

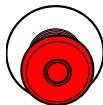
A toggle type auxiliary power control switch is located on the platform control station and another is located on the ground control station. Operation of either switch turns on the electrically driven auxiliary hydraulic pump. This should be used in case of failure of the main power plant. The auxiliary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

#### Activating from the Platform Control Station

1. Position Platform/Ground Select Key Switch to Platform.



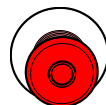
2. Position Power/Emergency Stop switch to On.



3. Depress and hold footswitch.
4. Position Auxiliary Power switch to On and hold.



5. Operate appropriate control switch, lever or controller for desired function and hold.
6. Release Auxiliary Power switch, selected control switch, lever or controller, and footswitch.
7. Position Power/Emergency Stop switch to Off.

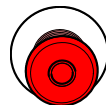


#### Activating from the Ground Control Station

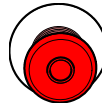
1. Position Platform/Ground Select Key Switch to Ground.



2. Position Power/Emergency Stop switch to On.



3. Position Auxiliary Power switch to On and hold.
4. Operate appropriate control switch or controller for desired function and hold.
5. Release Auxiliary Power switch, and appropriate control switch or controller.
6. Position Power/Emergency Stop switch to Off.



### 4.15 DUAL FUEL SYSTEM (GAS ENGINE ONLY)

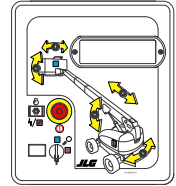
The dual fuel system enables the standard gasoline engine to run on either gasoline or LP gas.

#### 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 engine from Ground Control Station.



2. Open hand valve on LP gas supply tank by turning counter-clockwise.
3. While engine is operating on Gasoline under a no-load condition, place Fuel Select switch at Platform Control to LP position.



### Changing From LP Gas to Gasoline

1. With engine operating on LP under a no-load condition, position Fuel Select switch at Platform Control Station to Gasoline position.
2. Close hand valve on LP gas supply tank by turning clockwise.



### 4.16 TIE DOWN AND LIFTING

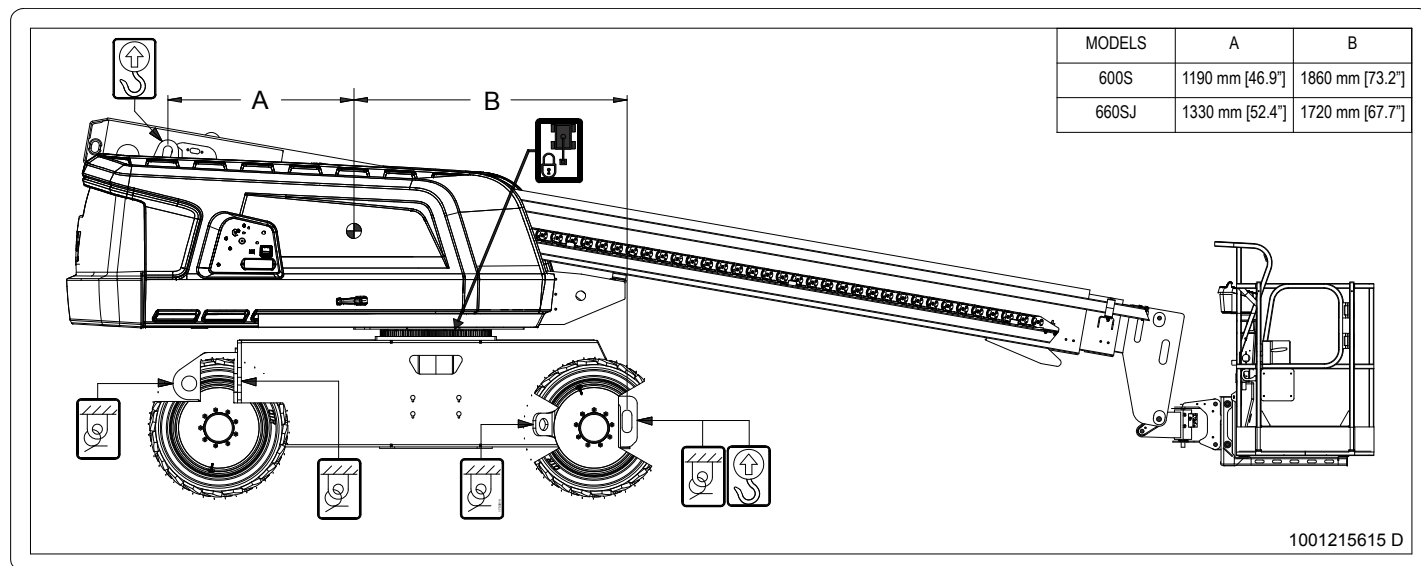
When transporting machine, boom must be in the stowed mode with turntable lock pin engaged and machine securely tied down to truck or trailer deck. Four tie down eyes are provided in the frame slab, one at each corner of the machine.

If it becomes necessary to lift the machine using an overhead or mobile crane, it is very important that the lifting devices are attached only to the designated lifting eyes, and that the turntable lock pin is engaged. (See Figure 4-7., Lifting Chart)

**NOTE:** *Lifting eyes are provided at the rear in the frame slab and at the top of the turntable near the boom pivot. Each of the four or slings used for lifting machine must be adjusted individually so machine remains level when elevated.*

#### **NOTICE**

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



**Figure 4-7. Lifting Chart**

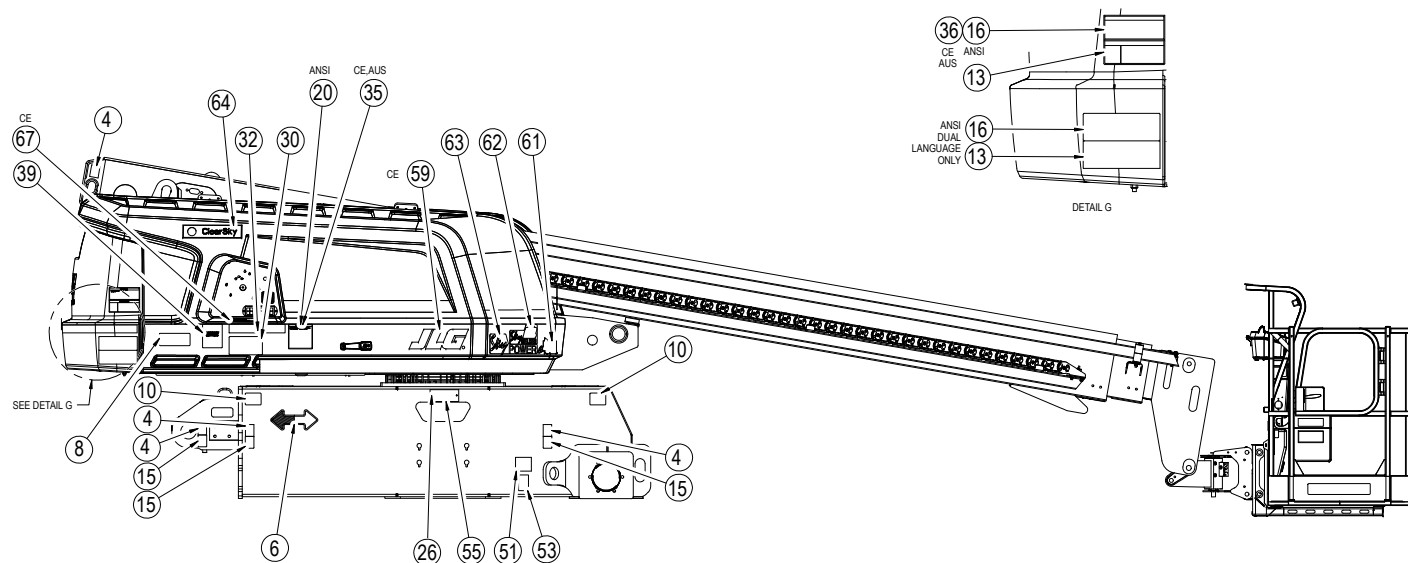
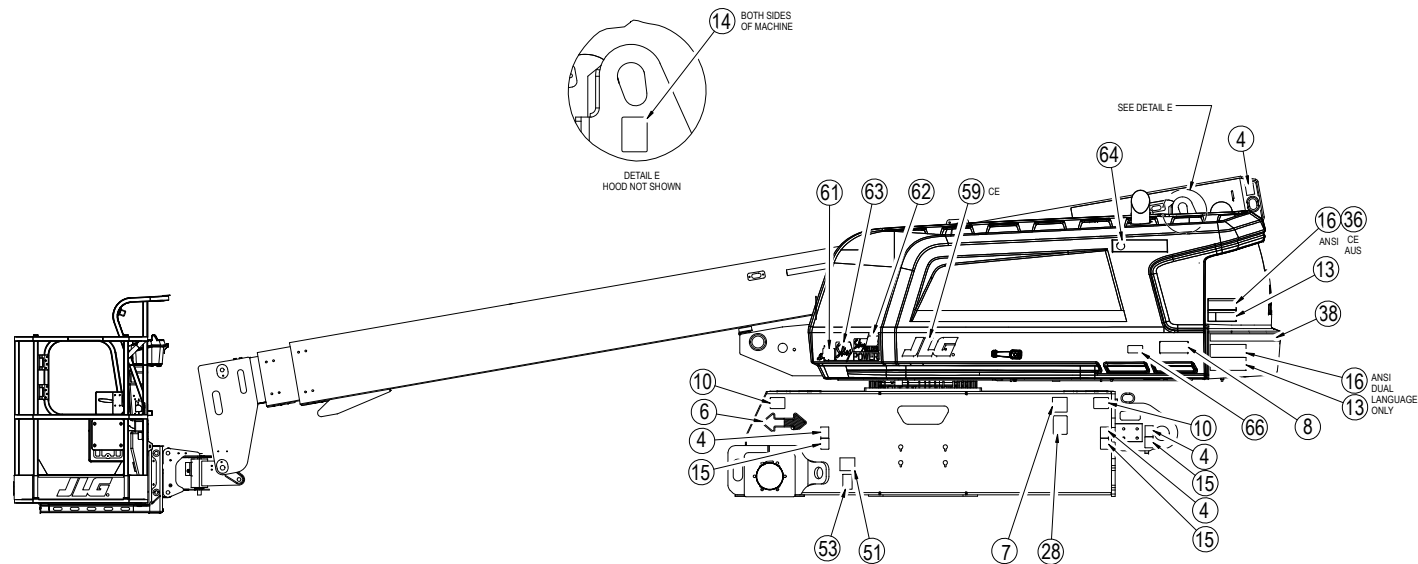


Figure 4-8. Decal Installation - Sheet 1 of 6



**Figure 4-9. Decal Installation - Sheet 2 of 6**

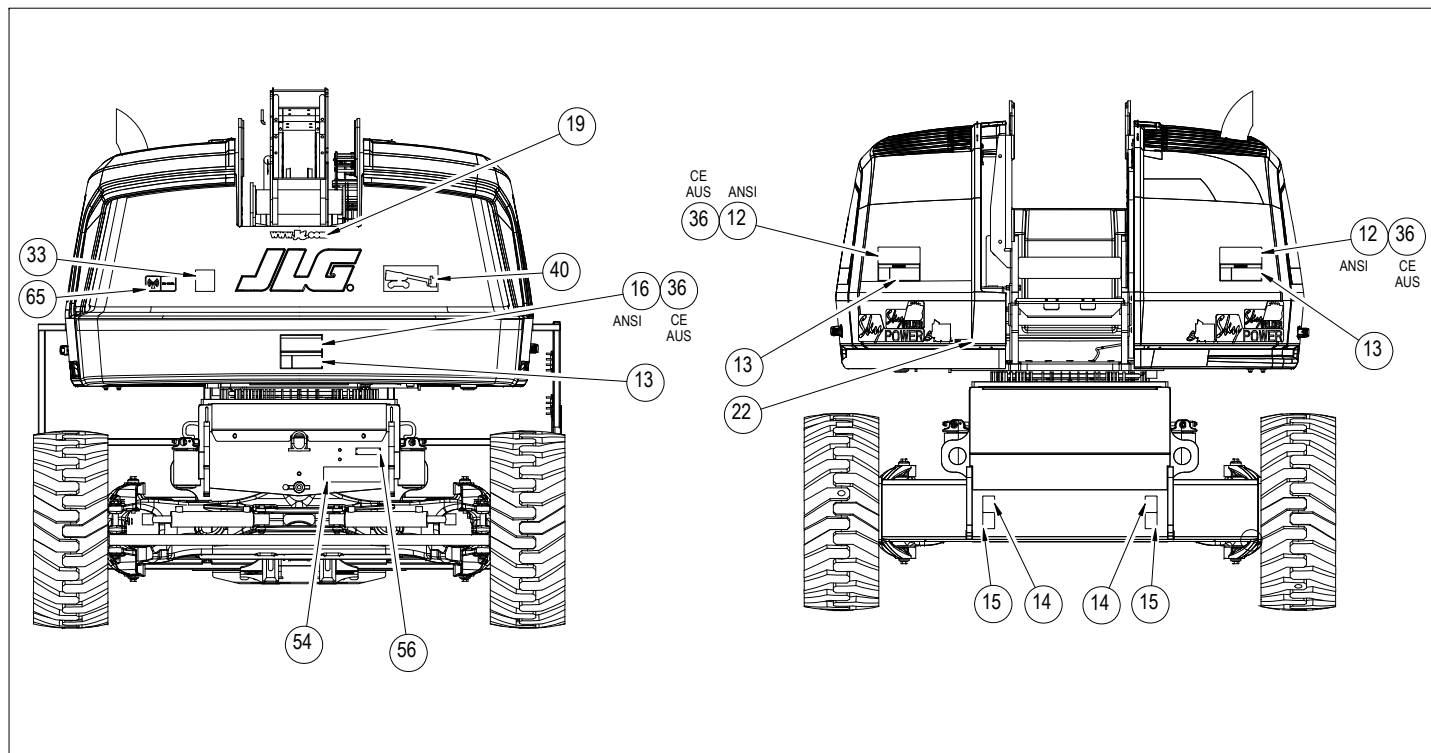
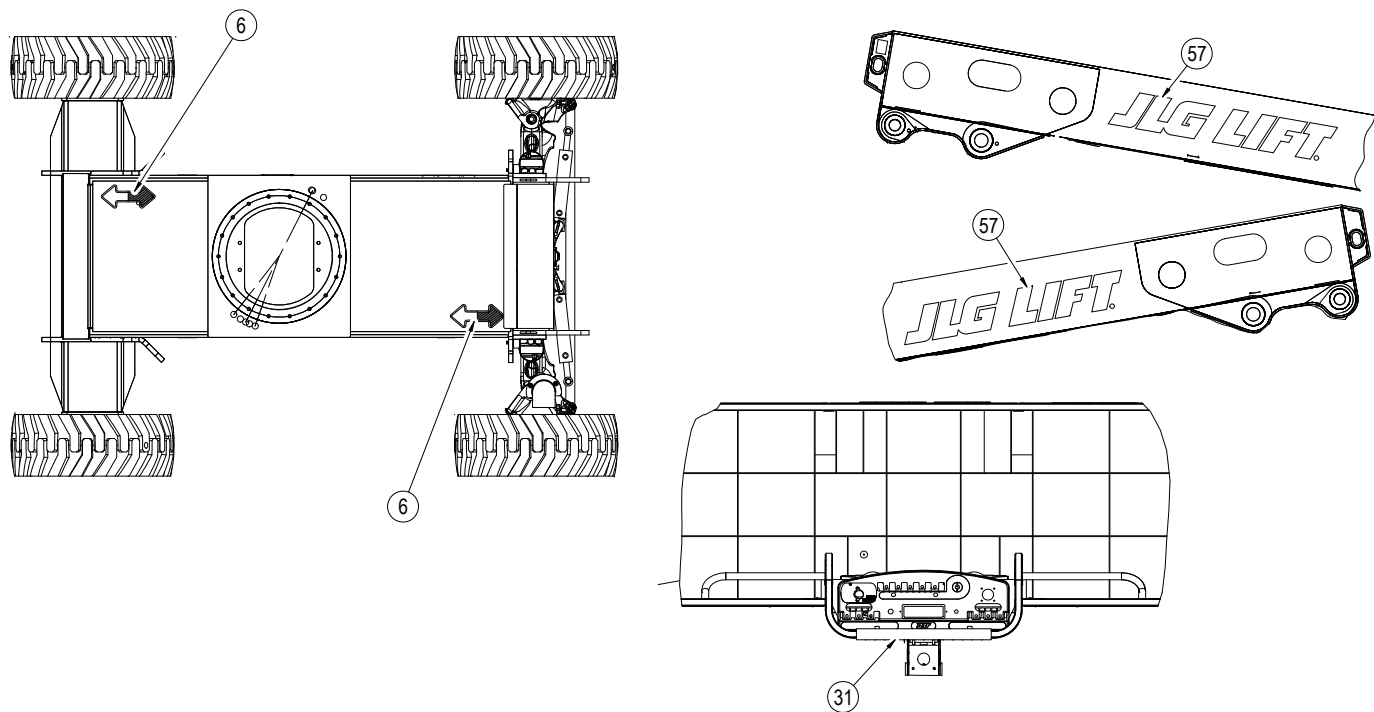


Figure 4-10. Decal Installation - Sheet 3 of 6



**Figure 4-11. Decal Installation - Sheet 4 of 6**

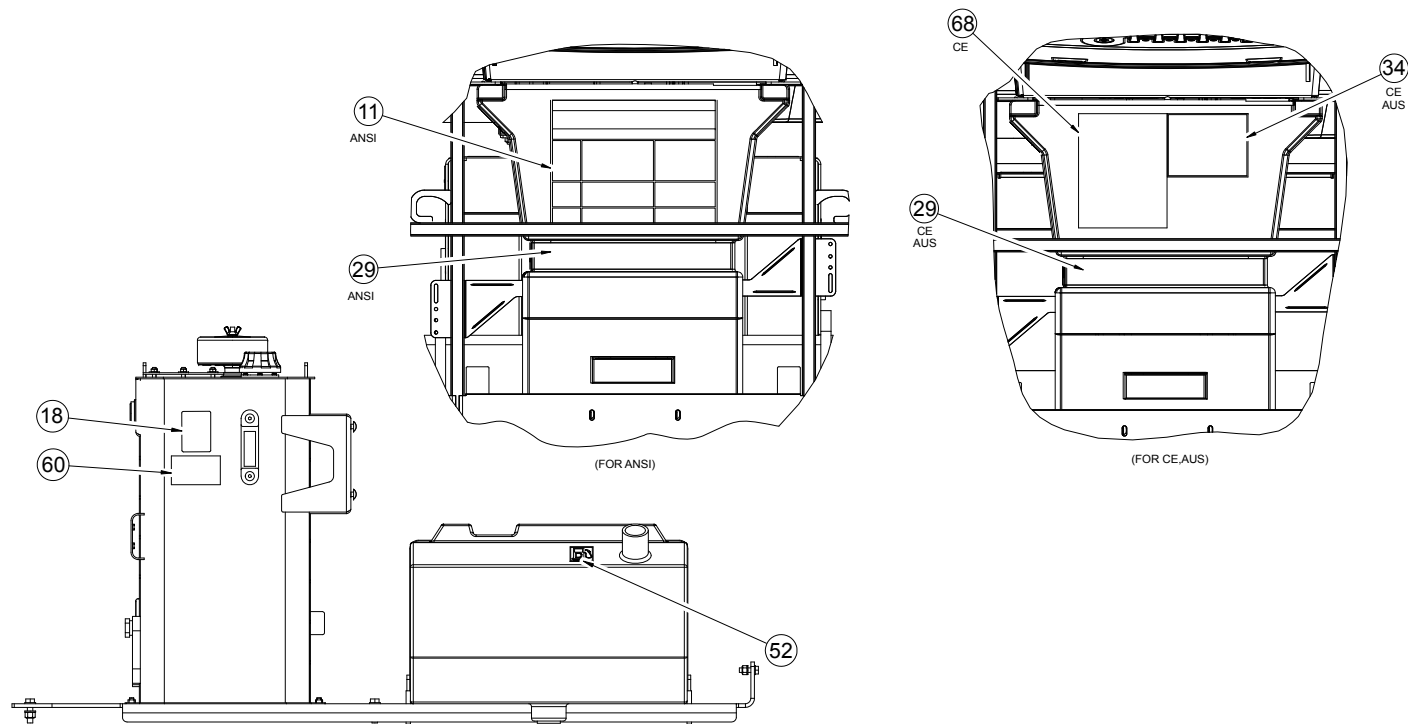
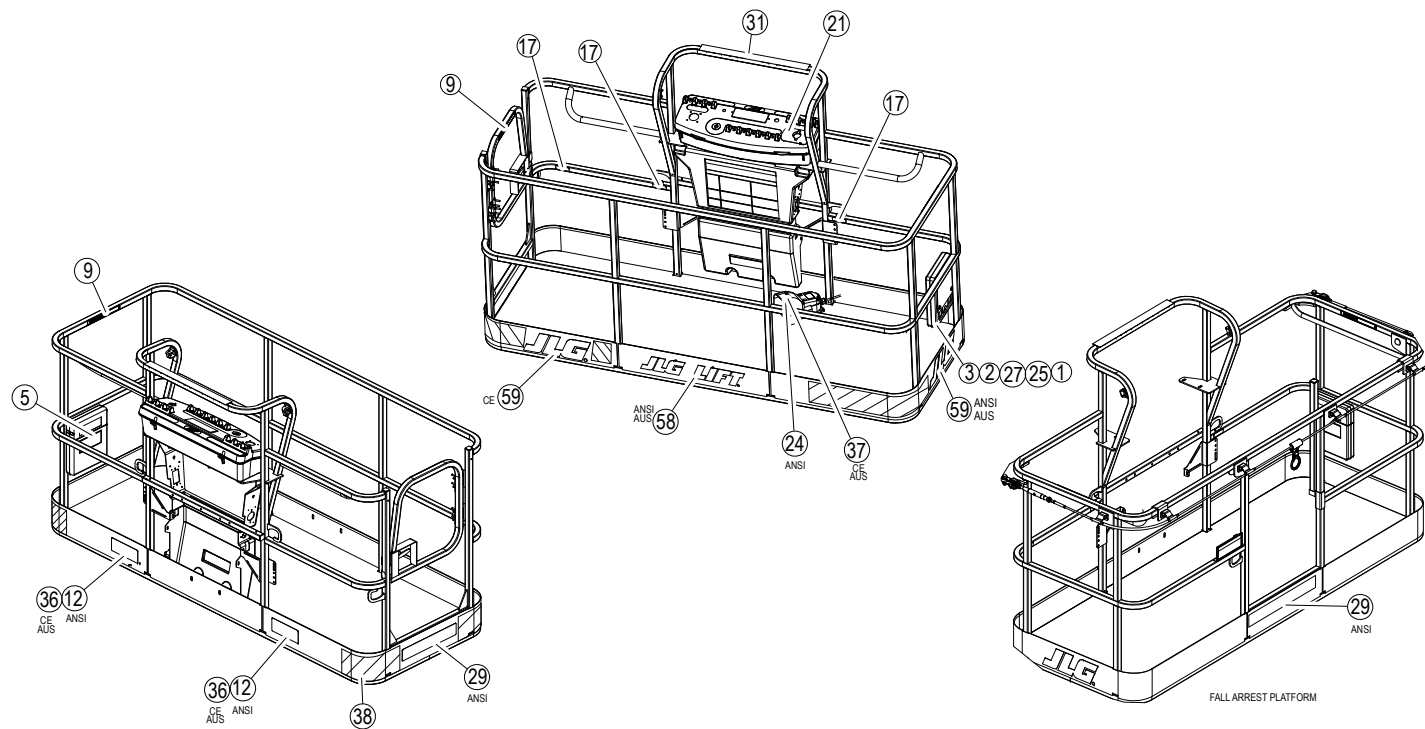


Figure 4-12. Decal Installation - Sheet 5 of 6



**Figure 4-13. Decal Installation - Sheet 6 of 6**

## SECTION 4 - MACHINE OPERATION

Table 4-1. 600S Decal Legend

| Item # | ANSI<br>1001194213-E | Korean<br>1001194215-C | Traditional<br>Chinese<br>1001194217-C | Simplified<br>Chinese<br>1001194219-C | Portuguese<br>1001194221-C | Spanish<br>1001194223-C | French<br>1001194225-C | CE<br>1001194227-F | Japanese<br>1001194229-C | Australian<br>1001194231-E |
|--------|----------------------|------------------------|----------------------------------------|---------------------------------------|----------------------------|-------------------------|------------------------|--------------------|--------------------------|----------------------------|
| 1      | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 2      | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 3      | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 4      | 1701499              | 1701499                | 1701499                                | 1701499                               | 1701499                    | 1701499                 | 1701499                | 1701499            | 1701499                  | 1701499                    |
| 5      | 1701509              | 1701509                | 1701509                                | 1701509                               | 1701509                    | 1701509                 | 1701509                | 1701509            | 1701509                  | 1701509                    |
| 6      | 1701529              | 1701529                | 1701529                                | 1701529                               | 1701529                    | 1701529                 | 1701529                | 1701529            | 1701529                  | 1701529                    |
| 7      | 1702631              | 1702631                | 1702631                                | 1702631                               | 1702631                    | 1702631                 | 1702631                | 1702631            | 1702631                  | 1702631                    |
| 8      | 1702815              | 1702815                | 1702815                                | 1702815                               | 1702815                    | 1702815                 | 1702815                | 1702815            | 1702815                  | 1702815                    |
| 9      | 1702868              | 1705969                | 1001116846                             | 1705968                               | 1704002                    | 1704001                 | 1704000                | --                 | --                       | --                         |
| 10     | 1001216059           | 1001216059             | 1001216059                             | 1001216059                            | 1001216059                 | 1001216059              | 1001216059             | 1001216059         | 1001216059               | 1001216059                 |
| 11     | 1703797              | 1703927                | 1703925                                | 1001116847                            | 1703928                    | 1703923                 | 1703924                | --                 | 1703926                  | --                         |
| 12     | 1703804              | 1703951                | 1703949                                | 1001116850                            | 1703952                    | 1703947                 | 1703948                | --                 | 1703950                  | --                         |
| 13     | 1703805              | 1703939                | 1001116851                             | 1703937                               | 1703940                    | 1703935                 | 1703936                | 1705961            | 1703938                  | 1705961                    |
| 14     | 1703811              | 1703811                | 1703811                                | 1703811                               | 1703811                    | 1703811                 | 1703811                | 1703811            | 1703811                  | 1703811                    |
| 15     | 1703814              | 1703814                | 1703814                                | 1703814                               | 1703814                    | 1703814                 | 1703814                | 1703814            | 1703814                  | 1703814                    |
| 16     | 1703953              | 1703945                | 1703943                                | 1001116845                            | 1703946                    | 1703941                 | 1703942                | --                 | 1703944                  | --                         |
| 17     | 1704277              | 1704277                | 1704277                                | 1704277                               | 1704277                    | 1704277                 | 1704277                | 1704277            | 1704277                  | 1704277                    |

**Table 4-1. 600S Decal Legend**

| Item # | ANSI<br>1001194213-E | Korean<br>1001194215-C | Traditional<br>Chinese<br>1001194217-C | Simplified<br>Chinese<br>1001194219-C | Portuguese<br>1001194221-C | Spanish<br>1001194223-C | French<br>1001194225-C | CE<br>1001194227-F | Japanese<br>1001194229-C | Australian<br>1001194231-E |
|--------|----------------------|------------------------|----------------------------------------|---------------------------------------|----------------------------|-------------------------|------------------------|--------------------|--------------------------|----------------------------|
| 18     | 1704412              | 1704412                | 1704412                                | 1704412                               | 1704412                    | 1704412                 | 1704412                | 1704412            | 1704412                  | 1704412                    |
| 19     | 1704885              | 1704885                | 1704885                                | 1704885                               | 1704885                    | 1704885                 | 1704885                | --                 | 1704885                  | 1704885                    |
| 20     | 1705336              | 1705345                | 1001116849                             | 1001116848                            | 1705349                    | 1705917                 | 1705347                | --                 | 1705344                  | --                         |
| 21     | 1705351              | 1705427                | 1001116863                             | 1705430                               | 1001113680                 | 1705910                 | 1705429                | --                 | 1705426                  | --                         |
| 22     | 3251243              | --                     | 3251243                                | 3251243                               | 3251243                    | 3251243                 | 3251243                | --                 | 3251243                  | --                         |
| 23     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 24     | --                   | 1703981                | 1703982                                | 1001116852                            | 1703985                    | 1703983                 | 1703984                | --                 | 1703980                  | --                         |
| 25     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 26     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 27     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 28     | 1001131269           | --                     | --                                     | --                                    | --                         | --                      | 1001131269             | --                 | --                       | --                         |
| 29     | 1001171335           | 1001171345             | 1001171355                             | 1001216739                            | 1001171359                 | 1001171349              | 1001171351             | 1001185237         | 1001171341               | 1001185237                 |
| 30     | 1001171336           | 1001171346             | 1001171356                             | 1001216740                            | 1001171360                 | 1001171350              | 1001171352             | 1001185237         | 1001171342               | 1001185237                 |
| 31     | 1001173262           | 1001173262             | 1001173262                             | 1001173262                            | 1001173262                 | 1001173262              | 1001173262             | --                 | 1001173262               | --                         |
| 32     | 1001174313           | 1001174313             | 1001174313                             | 1001174313                            | 1001174313                 | 1001174313              | 1001174313             | --                 | 1001174313               | --                         |
| 33     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1705084            | --                       | 1705084                    |
| 34     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1705921            | --                       | 1705921                    |
| 35     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1705822            | --                       | 1705822                    |

## SECTION 4 - MACHINE OPERATION

Table 4-1. 600S Decal Legend

| Item # | ANSI<br>1001194213-E | Korean<br>1001194215-C | Traditional<br>Chinese<br>1001194217-C | Simplified<br>Chinese<br>1001194219-C | Portuguese<br>1001194221-C | Spanish<br>1001194223-C | French<br>1001194225-C | CE<br>1001194227-F | Japanese<br>1001194229-C | Australian<br>1001194231-E |
|--------|----------------------|------------------------|----------------------------------------|---------------------------------------|----------------------------|-------------------------|------------------------|--------------------|--------------------------|----------------------------|
| 36     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1701518            | --                       | 1701518                    |
| 37     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1705828            | --                       | 1705828                    |
| 38     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 39     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | 1001112551                 |
| 40     | 1001215615           | 1001215615             | 1001215615                             | 1001215615                            | 1001215615                 | 1001215615              | 1001215615             | 1001215615         | 1001215615               | 1001215615                 |
| 41     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 42     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 43     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 44     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 45     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 46     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 47     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 48     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 49     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 50     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 51     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 52     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 53     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |

**Table 4-1. 600S Decal Legend**

| <b>Item #</b> | <b>ANSI<br/>1001194213-E</b> | <b>Korean<br/>1001194215-C</b> | <b>Traditional<br/>Chinese<br/>1001194217-C</b> | <b>Simplified<br/>Chinese<br/>1001194219-C</b> | <b>Portuguese<br/>1001194221-C</b> | <b>Spanish<br/>1001194223-C</b> | <b>French<br/>1001194225-C</b> | <b>CE<br/>1001194227-F</b> | <b>Japanese<br/>1001194229-C</b> | <b>Australian<br/>1001194231-E</b> |
|---------------|------------------------------|--------------------------------|-------------------------------------------------|------------------------------------------------|------------------------------------|---------------------------------|--------------------------------|----------------------------|----------------------------------|------------------------------------|
| 54            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | --                         | --                               | --                                 |
| 55            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | --                         | --                               | --                                 |
| 56            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | --                         | --                               | --                                 |
| 57            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | 1001159323                 | --                               | --                                 |
| 58            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | --                         | --                               | --                                 |
| 59            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | 1702773                    | --                               | --                                 |

## SECTION 4 - MACHINE OPERATION

**Table 4-2. 660SJ Decal Legend**

| Item # | ANSI<br>1001194214-E | Korean<br>1001194216-C | Traditional<br>Chinese<br>1001194218-C | Simplified<br>Chinese<br>1001194220-C | Portuguese<br>1001194222-C | Spanish<br>1001194224-C | French<br>1001194226-C | CE<br>1001194228-F | Japanese<br>1001194230-C | Australian<br>1001194232-E |
|--------|----------------------|------------------------|----------------------------------------|---------------------------------------|----------------------------|-------------------------|------------------------|--------------------|--------------------------|----------------------------|
| 1      | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 2      | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 3      | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 4      | 1701499              | 1701499                | 1701499                                | 1701499                               | 1701499                    | 1701499                 | 1701499                | 1701499            | 1701499                  | 1701499                    |
| 5      | 1701509              | 1701509                | 1701509                                | 1701509                               | 1701509                    | 1701509                 | 1701509                | 1701509            | 1701509                  | 1701509                    |
| 6      | 1701529              | 1701529                | 1701529                                | 1701529                               | 1701529                    | 1701529                 | 1701529                | 1701529            | 1701529                  | 1701529                    |
| 7      | 1702631              | 1702631                | 1702631                                | 1702631                               | 1702631                    | 1702631                 | 1702631                | 1702631            | 1702631                  | 1702631                    |
| 8      | 1702817              | 1702817                | 1702817                                | 1702815                               | 1702815                    | 1702817                 | 1702817                | 1702817            | 1702817                  | 1702817                    |
| 9      | 1702868              | 1705969                | 1001116846                             | 1705968                               | 1704002                    | 1704001                 | 1704000                | --                 | --                       | --                         |
| 10     | 1001216060           | 1001216060             | 1001216060                             | 1001216060                            | 1001216060                 | 1001216060              | 1001216060             | 1001216060         | 1001216060               | 1001216060                 |
| 11     | 1703797              | 1703927                | 1703925                                | 1001116847                            | 1703928                    | 1703923                 | 1703924                | --                 | 1703926                  | --                         |
| 12     | 1703804              | 1703951                | 1703949                                | 1001116850                            | 1703952                    | 1703947                 | 1703948                | --                 | 1703950                  | --                         |
| 13     | 1703805              | 1703939                | 1001116851                             | 1703937                               | 1703940                    | 1703935                 | 1703936                | 1705961            | 1703938                  | 1705961                    |
| 14     | 1703811              | 1703811                | 1703811                                | 1703811                               | 1703811                    | 1703811                 | 1703811                | 1703811            | 1703811                  | 1703811                    |
| 15     | 1703814              | 1703814                | 1703814                                | 1703814                               | 1703814                    | 1703814                 | 1703814                | 1703814            | 1703814                  | 1703814                    |
| 16     | 1703953              | 1703945                | 1703943                                | 1001116845                            | 1703946                    | 1703941                 | 1703942                | --                 | 1703944                  | --                         |
| 17     | 1704277              | 1704277                | 1704277                                | 1704277                               | 1704277                    | 1704277                 | 1704277                | 1704277            | 1704277                  | 1704277                    |

**Table 4-2. 660SJ Decal Legend**

| Item # | ANSI<br>1001194214-E | Korean<br>1001194216-C | Traditional<br>Chinese<br>1001194218-C | Simplified<br>Chinese<br>1001194220-C | Portuguese<br>1001194222-C | Spanish<br>1001194224-C | French<br>1001194226-C | CE<br>1001194228-F | Japanese<br>1001194230-C | Australian<br>1001194232-E |
|--------|----------------------|------------------------|----------------------------------------|---------------------------------------|----------------------------|-------------------------|------------------------|--------------------|--------------------------|----------------------------|
| 18     | 1704412              | 1704412                | 1704412                                | 1704412                               | 1704412                    | 1704412                 | 1704412                | 1704412            | 1704412                  | 1704412                    |
| 19     | 1704885              | 1704885                | 1704885                                | 1704885                               | 1704885                    | 1704885                 | 1704885                | --                 | 1704885                  | 1704885                    |
| 20     | 1705336              | 1705345                | 1001116849                             | 1001116848                            | 1705349                    | 1705917                 | 1705347                | --                 | 1705344                  | --                         |
| 21     | 1705351              | 1705427                | 1001116863                             | 1705430                               | 1001113680                 | 1705910                 | 1705429                | --                 | 1705426                  | --                         |
| 22     | 3251243              | --                     | 3251243                                | 3251243                               | 3251243                    | 3251243                 | 3251243                | --                 | 3251243                  | --                         |
| 23     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 24     | --                   | 1703981                | 1703982                                | 1001116852                            | 1703985                    | 1703983                 | 1703984                | --                 | 1703980                  | --                         |
| 25     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 26     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 27     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 28     | 1001131269           | --                     | --                                     | --                                    | --                         | --                      | 1001131269             | --                 | --                       | --                         |
| 29     | 1001194234           | 1001216734             | 1001216736                             | 1001216741                            | 1001216745                 | 1001216747              | 1001216749             | 1001194236         | 1001216751               | 1001194236                 |
| 30     | 1001194235           | 1001216735             | 1001216737                             | 1001216742                            | 1001216746                 | 1001216748              | 1001216750             | 1001194236         | 1001216752               | 1001194236                 |
| 31     | 1001173262           | 1001173262             | 1001173262                             | 1001173262                            | 1001173262                 | 1001173262              | 1001173262             | --                 | 1001173262               | --                         |
| 32     | 1001174313           | 1001174313             | 1001174313                             | 1001174313                            | 1001174313                 | 1001174313              | 1001174313             | --                 | 1001174313               | --                         |
| 33     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1705084            | --                       | 1705084                    |
| 34     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1705921            | --                       | 1705921                    |
| 35     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1705822            | --                       | 1705822                    |

## SECTION 4 - MACHINE OPERATION

Table 4-2. 660SJ Decal Legend

| Item # | ANSI<br>1001194214-E | Korean<br>1001194216-C | Traditional<br>Chinese<br>1001194218-C | Simplified<br>Chinese<br>1001194220-C | Portuguese<br>1001194222-C | Spanish<br>1001194224-C | French<br>1001194226-C | CE<br>1001194228-F | Japanese<br>1001194230-C | Australian<br>1001194232-E |
|--------|----------------------|------------------------|----------------------------------------|---------------------------------------|----------------------------|-------------------------|------------------------|--------------------|--------------------------|----------------------------|
| 36     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1701518            | --                       | 1701518                    |
| 37     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | 1705828            | --                       | 1705828                    |
| 38     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 39     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | 1001112551                 |
| 40     | 1001215615           | 1001215615             | 1001215615                             | 1001215615                            | 1001215615                 | 1001215615              | 1001215615             | 1001215615         | 1001215615               | 1001215615                 |
| 41     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 42     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 43     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 44     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 45     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 46     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 47     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 48     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 49     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 50     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 51     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 52     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |
| 53     | --                   | --                     | --                                     | --                                    | --                         | --                      | --                     | --                 | --                       | --                         |

**Table 4-2. 660SJ Decal Legend**

| <b>Item #</b> | <b>ANSI<br/>1001194214-E</b> | <b>Korean<br/>1001194216-C</b> | <b>Traditional<br/>Chinese<br/>1001194218-C</b> | <b>Simplified<br/>Chinese<br/>1001194220-C</b> | <b>Portuguese<br/>1001194222-C</b> | <b>Spanish<br/>1001194224-C</b> | <b>French<br/>1001194226-C</b> | <b>CE<br/>1001194228-F</b> | <b>Japanese<br/>1001194230-C</b> | <b>Australian<br/>1001194232-E</b> |
|---------------|------------------------------|--------------------------------|-------------------------------------------------|------------------------------------------------|------------------------------------|---------------------------------|--------------------------------|----------------------------|----------------------------------|------------------------------------|
| 54            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | --                         | --                               | --                                 |
| 55            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | --                         | --                               | --                                 |
| 56            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | --                         | --                               | --                                 |
| 57            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | 1001159323                 | --                               | --                                 |
| 58            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | --                         | --                               | --                                 |
| 59            | --                           | --                             | --                                              | --                                             | --                                 | --                              | --                             | 1702773                    | --                               | --                                 |

**SECTION 4 - MACHINE OPERATION**

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**NOTES:**

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## **SECTION 5. EMERGENCY PROCEDURES**

### **5.1 GENERAL**

This section explains the steps to be taken in case of an emergency situation while operating.

### **5.2 INCIDENT NOTIFICATION**

JLG Industries, Inc. must 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.

- USA: 877-JLG-SAFE (554-7233)
- EUROPE: (32) 0 89 84 82 20
- AUSTRALIA: (61) 2 65 811111
- E-mail: ProductSafety@JLG.com

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.

### **NOTICE**

**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 SURE THAT ALL DAMAGE HAS BEEN REPAIRED, IF REQUIRED, AND THAT ALL CONTROLS ARE OPERATING CORRECTLY.**

### **5.3 EMERGENCY OPERATION**

#### **Operator Unable to Control Machine**

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

1. Other personnel should operate the machine from ground controls only as required.
2. Other qualified personnel on the platform may use the platform controls. DO NOT CONTINUE OPERATION IF CONTROLS DO NOT FUNCTION PROPERLY.
3. Cranes, forklift trucks or other equipment can be used to remove platform occupants and stabilize motion of the machine.

### **Platform or Boom Caught Overhead**

If the platform or boom becomes jammed or snagged in overhead structures or equipment, do the following:

1. Shut off the machine.
2. Rescue all people in the platform before freeing the machine. Personnel must be out of the platform before operating any controls on the machine.
3. Use cranes, forklifts, or other equipment to stabilize motion of the machine to prevent a tip over as required.
4. From the ground controls, use the Auxiliary Power System (if equipped) to carefully free the platform or boom from the object.
5. Once clear, restart the machine and return the platform to a safe position.
6. Inspect the machine for damage. If the machine is damaged or does not operate properly, turn off the machine immediately. Report the problem to the proper maintenance personnel. Do not operate the machine until it is declared safe for operation.

### **5.4 EMERGENCY TOWING PROCEDURES**

Towing this machine is prohibited, unless properly equipped. However, provisions for moving the machine have been incorporated. For specific procedures, refer to Section 4.

## **5.5 MACHINE SAFETY SYSTEM OVERRIDE (MSSO)(CE ONLY)**

The Machine Safety System Override (MSSO) is only to be used to retrieve an operator that is pinned, trapped, or unable to operate the machine and function controls are locked out from the platform due to a platform overload situation.



**NOTE:** *If the MSSO functionality is used, the fault indicator will flash and a fault code is set in the JLG Control System which must be reset by a qualified JLG Service Technician.*

**NOTE:** *No functional checks of the MSSO system are necessary. The JLG Control system will set a Diagnostic Trouble Code if the control switch is faulty.*

To operate the MSSO:

1. From the ground control console, place the Platform/ Ground Select switch in the Ground position.
2. Pull out the Power/Emergency Stop control.
3. Start the engine.
4. Press and hold the MSSO switch and the control switch for the desired function.

**SECTION 5 - EMERGENCY PROCEDURES**

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**NOTES:**

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## SECTION 6. ACCESSORIES

Table 6-1. Available Accessories

| Accessory                            | Market             |      |     |    |     |       |       |
|--------------------------------------|--------------------|------|-----|----|-----|-------|-------|
|                                      | ANSI<br>(USA Only) | ANSI | CSA | CE | AUS | Japan | China |
| SkyPower™ (7500W)                    | √                  | √    | √   | √  | √   | √     | √     |
| SkyPower™ (4000W)                    | √                  | √    | √   | √  | √   | √     | √     |
| SkyWelder™                           | √                  | √    | √   | √  | √   | √     | √     |
| Pipe Rack                            | √                  |      | √   |    | √   |       |       |
| Soft Touch                           | √                  | √    | √   | √  | √   | √     | √     |
| SkyGlazier™                          | √                  | √    | √   | √  | √   |       |       |
| SkyCutter                            | √                  | √    | √   |    |     | √     |       |
| Fall Arrest Platform (36x96)         | √                  | √    | √   |    |     |       | √     |
| Fall Arrest Platform (36x72)         | √                  | √    | √   |    |     |       | √     |
| Bolt-On External Fall Arrest (36x96) | √                  | √    | √   |    |     | √     | √     |
| Bolt-On External Fall Arrest (36x72) | √                  | √    | √   |    |     | √     | √     |

## SECTION 6 - ACCESSORIES

**Table 6-2. Options/Accessories Relationship Table**

| ACCESSORY                                                                             | REQUIRED ITEM | COMPATIBLE WITH<br>( note 1)     | INCOMPATIBLE WITH                                                | INTERCHANGABLE<br>WITH (note 2)   |
|---------------------------------------------------------------------------------------|---------------|----------------------------------|------------------------------------------------------------------|-----------------------------------|
| SkyPower (7500 watt generator and Air line to platform)                               |               | SkyGlazier, SkyWelder, SkyCutter |                                                                  |                                   |
| SkyWelder ( Stick welder)                                                             | SkyPower      | SkyCutter                        | Soft Touch, Pipe Jacks/Racks, Platfm MTR, 4' Platfm              | SkyGlazier                        |
| SkyGlazier (Glass panel tray)                                                         |               | SkyPower                         | Pipe Jacks/Racks, Soft Touch, Platfm Mesh to Top Rail, 4' Platfm | SkyWelder , SkyCutter             |
| SkyCutter (Plasma cutter)                                                             | SkyPower      | SkyWelder                        | Soft Touch, Platfm MTR, Pipe Jacks/Racks, 4' Platfm              | SkyGlazier                        |
| Pipe Jacks / Racks                                                                    |               | SkyPower                         | Platfm MMR, Platfm MTR, Soft Touch                               | SkyWelder , SkyCutter, SkyGlazier |
| Note 1: Any non "Sky" accessory, not listed under "INCOMPATIBLE WITH", are compatible |               |                                  |                                                                  |                                   |
| Note 2: Can be used on same unit but not simultaneously.                              |               |                                  |                                                                  |                                   |

415D459L

**⚠ WARNING**

**INSTALLING OR REMOVING APPROVED ACCESSORIES OR CHANGING PLATFORM SIZE REQUIRES RECALIBRATION OF THE BOOM CONTROL SYSTEM (SEE SERVICE AND MAINTENANCE MANUAL).**

## 6.6 SKYPOWER™

The generator supplies AC power through an AC receptacle in the platform to run tools, lights, and cutting and welding equipment . All power regulation components are located in a watertight box connected by cable to the generator. The generator supplies power when running at the specified speed with the power switch on (switch is located on platform). A three-pole, 30 Amp circuit breaker protects the generator from overload.

### Generator Output

#### ANSI Specs:

240V;60Hz; 3-Phase; 7.5kW and 240V/120V:60Hz; Single Phase:6kW.

#### CE Specs:

3-phase, 240-volt, 7.5kw, 18.3-amps, 1.0-pf

1-phase, 240 volt, 6.0kw, 26-amps, 1.0-pf

1-phase, 120 volt, 6.0kw, 50-amps, 1.0-pf

#### Peak:

3-phase 8.5kw

1-phase 6.0kw

### Accessory Ratings

| Drive-Type        | Generator Speed  |
|-------------------|------------------|
| Belt-Drive/Pulley | 3000rpm (50 Hz)  |
|                   | 3600 rpm (60 Hz) |

### **Safety Precautions**

- Do not over load platform.
- Make sure no personnel are beneath platform.
- Keep lanyard attached at all times.
- Do not use electrical tools in extremely wet conditions.
- Use correct voltage for tool being used.
- Do not over load circuit.

### **Preparation and Inspection**

- Ensure generator is secure, check condition of belt and wiring.

### **Operation**

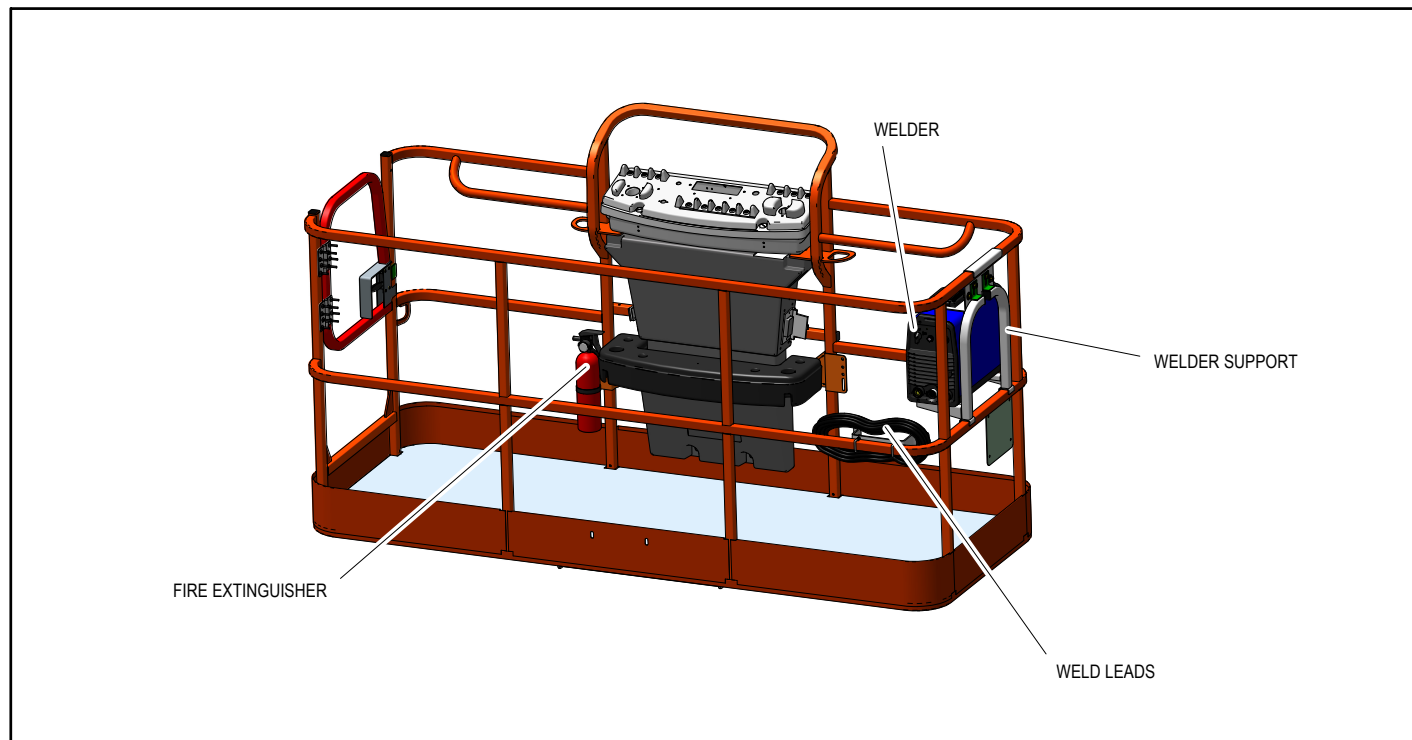
Start engine, turn on generator, begin using.

### **6.7 SKYWELDER™**

The welder is capable of TIG and Stick welding and is capable at producing 200 Amps at 100% duty cycle or 250 Amps at 50% duty cycle.

### **Welding Accessories**

The platform will provide provisions for storing 12 ft. welding leads consisting of a clamp and a stinger. A fire extinguisher will also be provided.



**Figure 6-1. SkyWelder™ - Sheet 1 of 2**

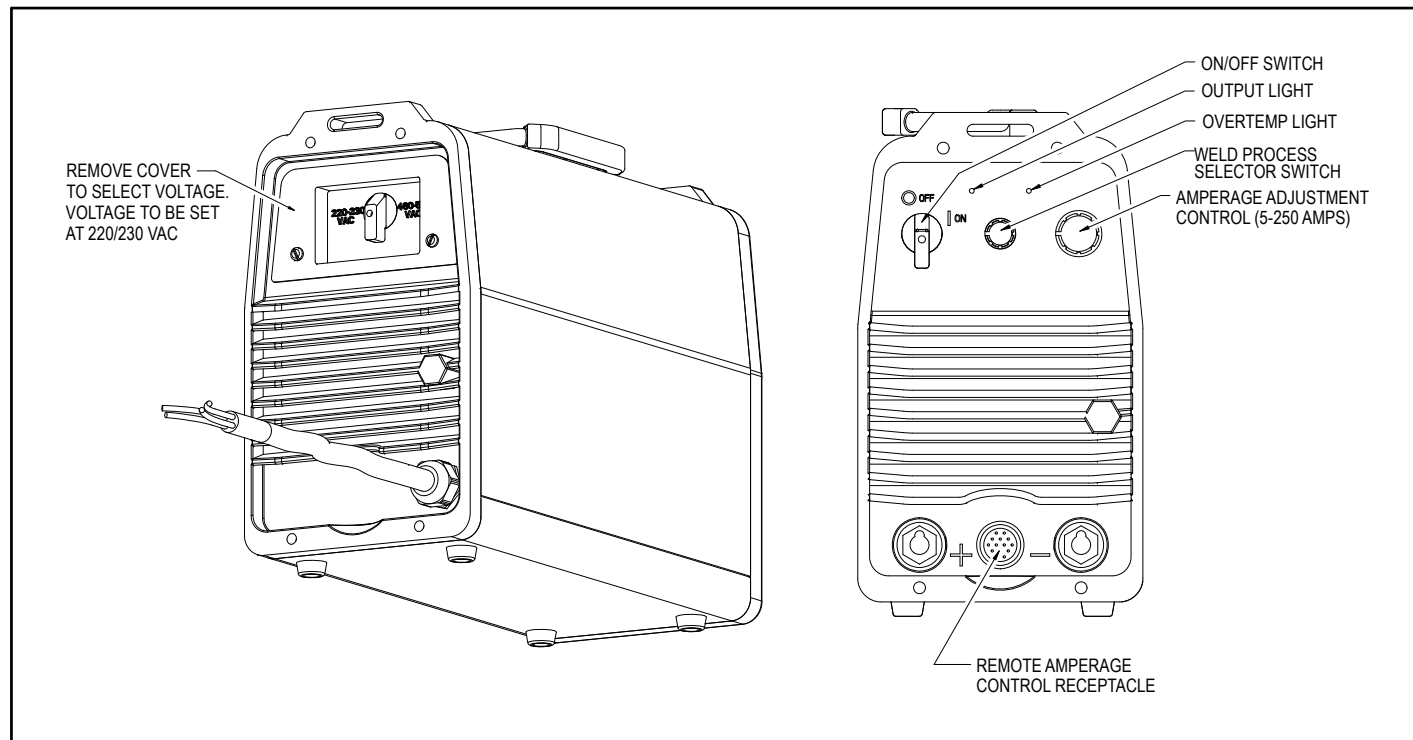


Figure 6-2. SkyWelder™ - Sheet 2 of 2

## Accessory Ratings

**Table 6-3. Welding Characteristics**

| Welding Mode               | Input Power | Rated Output                        | Welding Amperage Range | Maximum Open Circuit Voltage | Amps Input At Rated Load Output. 50/60 Hz |       |       |      |     |
|----------------------------|-------------|-------------------------------------|------------------------|------------------------------|-------------------------------------------|-------|-------|------|-----|
|                            |             |                                     |                        |                              | 230 V                                     | 460 V | 575 V | KVA  | KW  |
| Stick (SMAW)<br>TIG (GTAW) | 3-Phase     | 280 Amp at 31.2V.<br>35% Duty Cycle | 5-250A                 | 79VDC                        | 30.5                                      | 17    | 13    | 15.7 | 10  |
|                            |             | 200 Amp at 28V.<br>100% Duty Cycle  |                        |                              | 20                                        | 11    | 8     | 10.3 | 6.4 |
|                            | 1-Phase     | 200 Amp at 28V.<br>50% Duty Cycle   | 5-200 A                | 70VDC                        | 35                                        | ----- | ----- | 9.8  | 6.5 |
|                            |             | 150 Amp at 28V.<br>100% Duty Cycle  |                        |                              | 34                                        | ----- | ----- | 6.9  | 4.4 |

## Safety Precautions

- Do not over load platform.
- De-rate the platform by 70lbs/32kg when welder is installed IN the platform.
- Check for cracked welds and damage to welder supports.
- Check for proper and secure installation of welder and bracket.
- Be certain no personnel are beneath platform.
- Do not exit platform over rails or stand on rails.
- Keep lanyard attached at all times.
- Ensure correct polarity of leads.
- Use proper welding apparel.
- Use correct rod size and current settings.
- Do not use electrical cords without ground.
- Do not use electrical tools in water.

- Do not weld to platform.
- Do not ground through the platform.
- Do not use a high frequency arc starter with TIG welder.

### Preparation and Inspection

Connect ground clamp to metal being welded, make sure there is a good ground connection and observe proper polarity, begin welding.

### Operation

Start engine turn on generator then turn on welder.

Wear proper welding apparel. Set welder to proper amperage and voltage settings for thickness and type of metal being welded. Begin welding.

Refer to Miller Welder Operators Manual.

Generator will not start under an electrical load.

## 6.8 PIPE RACK

Pipe Racks provide a means of storage of pipe or conduit inside the platform to help prevent rail damage and optimize platform utility. Pipe Racks reduce clutter and optimize available platform capacity.

### **NOTICE**

**REDUCE PLATFORM CAPACITY BY 100 LBS. (45.5 KG).**

### **NOTICE**

**MAXIMUM LOAD IN THE RACKS IS 180 LBS. (82 KG), EVENLY DISTRIBUTED BETWEEN THE TWO RACKS.**

### **NOTICE**

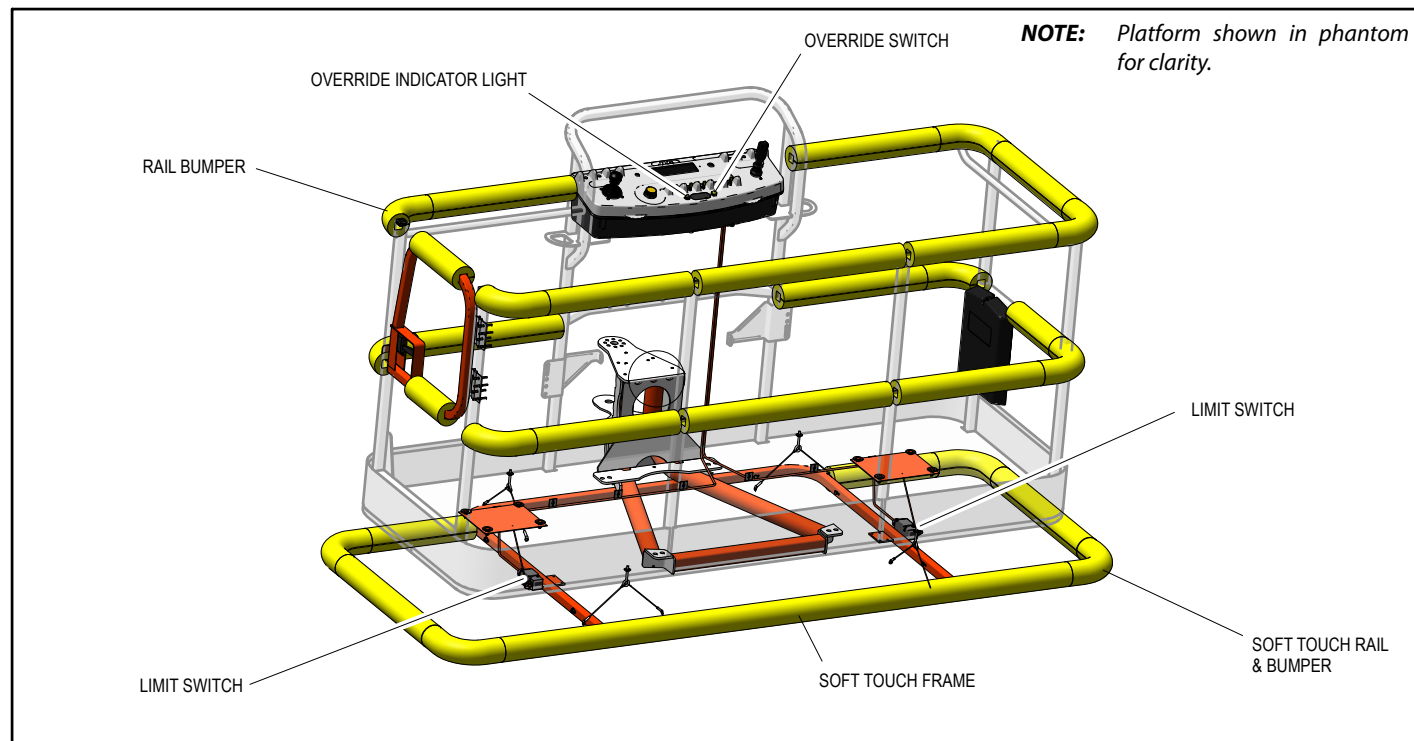
**WEIGHT IN RACKS PLUS WEIGHT IN PLATFORM MUST NOT EXCEED RATED CAPACITY.**

## 6.9 SOFT TOUCH

A padding kit is mounted to the platform rails and to a frame suspended below the platform. Limit switches deactivate platform functions when the padded framework contacts an adjacent structure. A button on the platform console allows override of the system.

**Table 6-4. Maximum Work Load Capacity with Soft Touch**

|                                                                          |                                    |
|--------------------------------------------------------------------------|------------------------------------|
| Maximum Work Load (Capacity) -600S ANSI<br>Unrestricted:<br>Restricted:  | 500 lb (227 kg)<br>900 lb (408 kg) |
| Maximum Work Load (Capacity) -600S CE<br>Unrestricted:<br>Restricted:    | 496 lb (225 kg)<br>893 lb (405 kg) |
| Maximum Work Load (Capacity) -660SJ ANSI<br>Unrestricted:<br>Restricted: | 500 lb (227 kg)<br>700 lb (310 kg) |
| Maximum Work Load (Capacity) -660SJ CE<br>Unrestricted:<br>Restricted:   | 496 lb (225 kg)<br>694 lb (315 kg) |



**Figure 6-3. Soft Touch**

## 6.10 SKYGLAZIER™

The SkyGlazier™ allows glaziers to efficiently position panels. The glazier package consists of a tray that extends from the bottom of the platform. The panel rests on the tray and against top-rail of the platform, which is padded to prevent damage to the panel. The SkyGlazier™ includes a strap to secure the panel to the platform rail.

### Safety Precautions

#### WARNING

ENSURE LOAD IS SECURED WITH LOAD STRAP.

#### WARNING

DO NOT OVERLOAD TRAY OR PLATFORM. TOTAL MACHINE CAPACITY IS REDUCED WHEN TRAY IS INSTALLED.

#### WARNING

WITH THE SKYGLAZIER INSTALLED, THE ORIGINAL PLATFORM CAPACITY RATINGS ARE REDUCED AS SHOWN IN TABLE 6-5, SPECIFICATIONS FOR SKYGLAZIER™. DO NOT EXCEED THE NEW PLATFORM CAPACITY RATING. REFER TO CAPACITY DECAL LOCATED ON TRAY.

#### WARNING

AN INCREASE OF THE AREA EXPOSED TO THE WIND WILL DECREASE STABILITY. LIMIT PANEL AREA TO 32 SQ.FT. (3 SQ.M)

1. Ensure no personnel are beneath platform.
2. Do not exit platform over rails or stand on rails.
3. Remove tray when not in use.

### Specifications

Table 6-5. Specifications for SkyGlazier™

| Capacity Zone  | Rated Capacity Platform | Rated Capacity SkyGlazier™ | Manual Force   | Wind Rating     |
|----------------|-------------------------|----------------------------|----------------|-----------------|
| 1000 lb/454 kg | 500 lb<br>227 kg        | 250 lb<br>113 kg           | 90 lb<br>400 N | 20 mph<br>9 m/s |
| 750 lb/340 kg  | 440 lb<br>200 kg        | 150 lb<br>68 kg            | 90 lb<br>400 N | 20 mph<br>9 m/s |
| 600 lb/272 kg  | 250 lb<br>113 kg        | 150 lb<br>68 kg            | 45 lb<br>200 N | 20 mph<br>9 m/s |
| 550 lb/250     | 250 lb<br>113 kg        | 150 lb<br>68 kg            | 45 lb<br>200 N | 20 mph<br>9 m/s |
| 500 lb/230     | 250 lb<br>113 kg        | 150 lb<br>68 kg            | 45 lb<br>200 N | 20 mph<br>9 m/s |

Table 6-5. Specifications for SkyGlazier™

| Capacity Zone                                                                                                                                                                                                                                                                                   | Rated Capacity Platform     | Rated Capacity SkyGlazier™ | Manual Force | Wind Rating |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------|--------------|-------------|
| Max. Dimensions of panel                                                                                                                                                                                                                                                                        | 3 m <sup>2</sup> / 32 sq ft |                            |              |             |
| *Total Platform Capacity is defined as platform capacity + tray capacity.                                                                                                                                                                                                                       |                             |                            |              |             |
| <div> <b>WARNING</b></div> <p><b>INSTALLING OR REMOVING APPROVED ACCESSORIES OR CHANGING PLATFORM SIZE REQUIRES RECALIBRATION OF THE BOOM CONTROL SYSTEM. (REFER TO SERVICE AND MAINTENANCE MANUAL).</b></p> |                             |                            |              |             |

## **Preparation and Inspection**

Check for cracked welds and damage to tray. Make sure tray is properly secured to platform.

Check to ensure strap is not torn or frayed.

## **Operation**

Load SkyGlazier™ with panel and secure with strap. Position panel to its desired location.

### 6.11 SKYCUTTER

duty cycle or 14A at 92 VDC @ 60% duty cycle.

The Plasma Cutter will be capable of cutting up to a thickness of 3/8 in. metal and is capable of producing 27A at 92 VDC @ 35%

### Accessory Ratings

**Table 6-6. Plasma Cutter Characteristics**

| Spec.                   | Rated Output                      | Amperes Input @<br>Rated Output, 60<br>Hz, Single-Phase | KVA/KW            | Plasma Gas                                                | Plasma Gas Flow/<br>Pressure                    | Rated Cutting<br>Capacity<br>@ 10 IPM | Max. OCV |
|-------------------------|-----------------------------------|---------------------------------------------------------|-------------------|-----------------------------------------------------------|-------------------------------------------------|---------------------------------------|----------|
| 120 Volts<br>±10% (20A) | 27 A @ 91 VDC @ 20%<br>Duty Cycle | 28.8 max;<br>0.30*                                      | 3.4 KVA<br>3.2 KW | Air or Nitrogen Only @ 90 -<br>120 PSI<br>(621 - 827 kPa) | 4.5 CFM<br>(129 L/Min)<br>@ 60 PSI<br>(414 kPa) | 3/8 in.<br>(10 mm)                    | 400 VDC  |
| 120 Volts<br>±10% (15A) | 20 A @ 88 VDC @ 35%<br>Duty Cycle | 20.6 max;<br>0.30*                                      | 2.5 KVA<br>2.3 KW |                                                           |                                                 |                                       |          |
| 240 Volts<br>±10% (27A) | 27 A @ 91 VDC @ 35%<br>Duty Cycle | 13.9 max;<br>0.13*                                      | 3.3 KVA<br>3.0 KW |                                                           |                                                 |                                       |          |
| * While idling.         |                                   |                                                         |                   |                                                           |                                                 |                                       |          |

## Safety Precautions



**DO NOT OVER LOAD PLATFORM.**



**DE RATE THE PLATFORM BY 70LBS/32KG WHEN PLASMA CUTTER IS IN THE PLATFORM**

- Check for cracked welds and damage to plasma supports.
- Check for proper and secure installation of welder and bracket.
- Make sure no personnel are beneath platform.
- Do not exit platform over rails or stand on rails.
- Only use this option on models specified.
- Keep lanyard attached at all times.
- Ground connect is made.
- Use proper cutting apparel.
- Use correct cutting settings.
- Do not use electrical cords without ground.
- Do not use electrical tools in water.

- Do not cut platform.
- Do not ground through the platform.
- Wear proper cutting apparel.
- Do not drive machine while connecting external air/gas sources.
- Preparation and Inspection
- Connect ground clamp to metal being cut, make sure there is a good ground connection, begin cutting.

## Operation

Use output control to set cutting output.

Place control in gas/air set position to safely adjust gas/air pressure. Only gas/air circuit is activated.

If 22-27 amperes of cutting output is used with 115 VAC input power, and overload protection on the input power circuit frequently opens, either reduce the cutting output and/or the cut time or find more adequate power.

### 6.12 FALL ARREST PLATFORM

**NOTE:** Refer to JLG External Fall Arrest System manual (P/N-3128935) for more detailed information.

The external fall arrest system is designed to provide a lanyard attach point while allowing the operator to access areas outside the platform. Exit/Enter the platform through the gate area only. The system is designed for use by one person.

Personnel must use fall protection at all times. A full body harness is required with lanyard not to exceed 6 ft. (1.8 M) in length, that limits the maximum arrest force to 900 lbs. (408 kg) for the trans-fastener type and 1350 lbs. (612 kg) for the shuttle type fall arrest system.

#### **WARNING**

**DO NOT OPERATE ANY MACHINE FUNCTIONS WHILE OUTSIDE OF PLATFORM. BE CAREFUL WHEN ENTERING/EXITING THE PLATFORM AT ELEVATION.**

### 6.13 BOLT-ON EXTERNAL FALL ARREST

The bolt-on external fall arrest system is designed to provide a lanyard attach point while allowing the operator to access areas outside the platform. Exit/Enter the platform through the gate area only. The system is designed for use by one person.

Personnel must use fall protection at all times. A full body harness is required with lanyard not to exceed 6 ft. (1.8 M) in length, that limits the maximum arrest force to 900 lbs. (408 kg).

External Fall Arrest System capacity is 310 lb (140 kg) - one (1) person maximum.

Do not move platform during use of the external fall arrest system.

#### **WARNING**

**DO NOT OPERATE ANY MACHINE FUNCTIONS WHILE OUTSIDE OF PLATFORM. BE CAREFUL WHEN ENTERING/EXITING THE PLATFORM AT ELEVATION.**

### **WARNING**

IF THE EXTERNAL FALL ARREST SYSTEM IS USED TO ARREST A FALL OR IS OTHERWISE DAMAGED, THE ENTIRE SYSTEM MUST BE REPLACED AND THE PLATFORM FULLY INSPECTED BEFORE RETURNING TO SERVICE. REFER TO THE SERVICE MANUAL FOR REMOVAL AND INSTALLATION PROCEDURES.

### **NOTICE**

THE EXTERNAL FALL ARREST SYSTEM REQUIRES AN ANNUAL INSPECTION AND CERTIFICATION. THE ANNUAL INSPECTION AND CERTIFICATION MUST BE PERFORMED BY A QUALIFIED PERSON OTHER THAN THE USER.

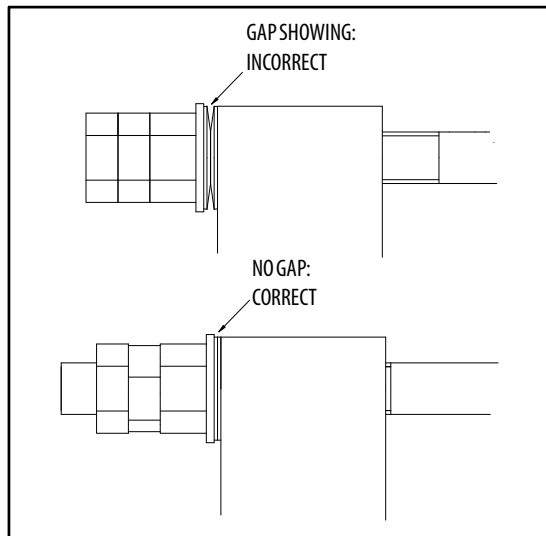
## **Inspection Before Use**

The external fall arrest system must be inspected before each use of the aerial work platform. Replace components if there are any signs of wear or damage.

Before each use, perform a visual inspection of the following components:

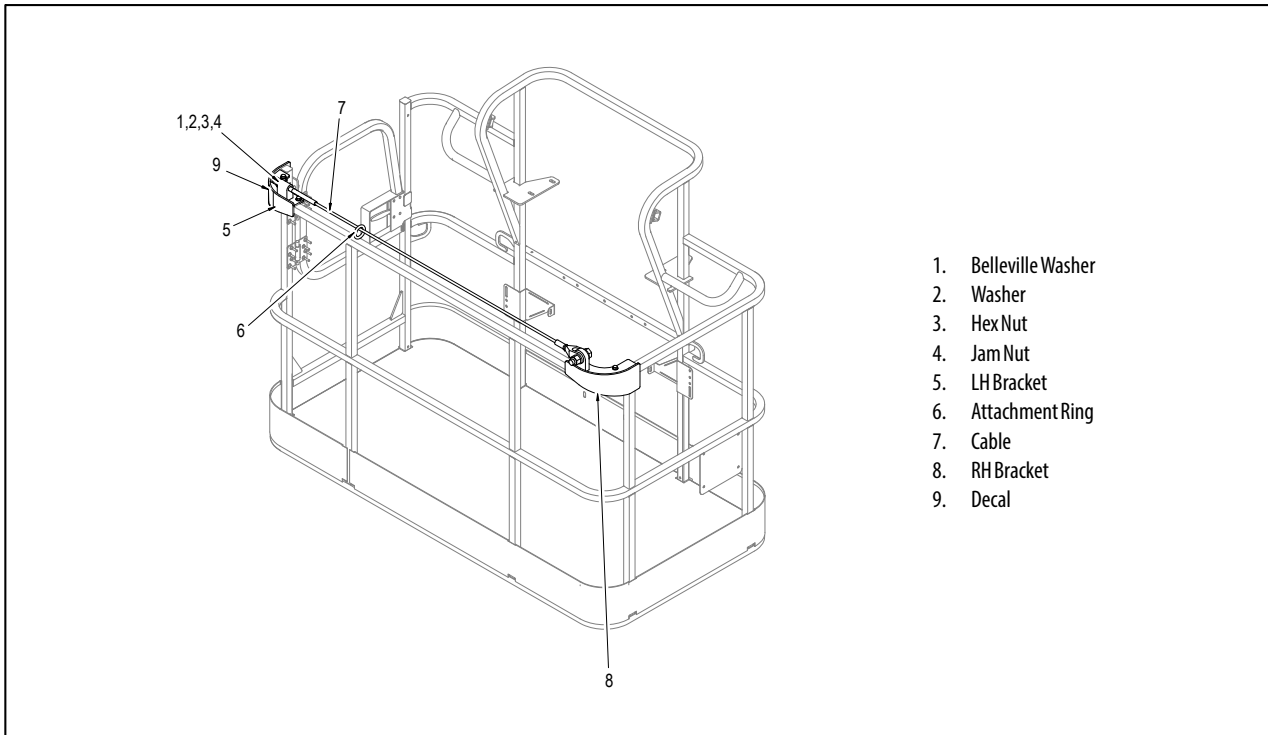
## SECTION 6 - ACCESSORIES

- Cable: Inspect cable for proper tension, broken strands, kinks, or any signs of corrosion.



**Figure 6-4. Bolt-On External Fall Arrest Cable Tension**

- Attachment Ring: No cracks or signs of wear are acceptable. Any signs of corrosion requires replacement.
  - Attaching Hardware: Inspect all attaching hardware to ensure there are no missing components and hardware is properly tightened.
  - Platform Rails: No visible damage is acceptable.
- Fittings & Brackets: Ensure all fittings are tight and there are no signs of fractures. Inspect brackets for any damage.



1. Belleville Washer
2. Washer
3. Hex Nut
4. Jam Nut
5. LH Bracket
6. Attachment Ring
7. Cable
8. RH Bracket
9. Decal

**Figure 6-5. Bolt-On External Fall Arrest System**

## **SECTION 6 - ACCESSORIES**



**NOTES:**

## **SECTION 7. GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE**

### **7.1 INTRODUCTION**

This section of the manual provides additional necessary information to the operator for proper operation and maintenance of this machine.

The maintenance portion of this section is intended as information to assist the machine operator to perform daily maintenance tasks only, and does not replace the more thorough Preventive Maintenance and Inspection Schedule included in the Service and Maintenance Manual.

#### **Other Publications Available:**

Service and Maintenance Manual - Global Spec  
(S/N 0300235168 to Present) .....3121728

Illustrated Parts Manual - Global Spec  
(S/N 0300235168 to Present) .....3121729

### **7.2 OPERATING SPECIFICATIONS**

**Table 7-1. Operating Specifications**

|                                           |                                     |
|-------------------------------------------|-------------------------------------|
| Maximum Work Load (Capacity) -600S*       |                                     |
| Unrestricted:                             | 600 lb (272 kg)                     |
| Restricted:                               | 1000 lb (454 kg)                    |
| Maximum Work Load (Capacity) -660SJ*      |                                     |
| Unrestricted:                             | 550 lb (250 kg)                     |
| Restricted:                               | 750 lb (340 kg)                     |
| Maximum Travel Grade (Gradeability) - 4WD | 45%                                 |
| Maximum Travel Grade (Side Slope)         | 5°                                  |
| Maximum Manual Force (600S)               | 90 lbs. (400 N)                     |
| Maximum Manual Force (660SJ)              | 100 lbs. (445 N)                    |
| Maximum Wind Speed                        | 28 mph (12.5 m/s)                   |
| Maximum Tire Load:                        |                                     |
| 600S                                      | 12760 lbs. (5788 kg)                |
| 660SJ                                     | 14720 lbs. (6677 kg)                |
| Ground Bearing Pressure - 600S            |                                     |
| Foam-Filled                               | 83.1 psi (5.84 kg/cm <sup>2</sup> ) |
| Pneumatic                                 | 77.7 psi (5.46 kg/cm <sup>2</sup> ) |

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

**Table 7-1. Operating Specifications**

|                                                                                                                                                                                          |                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Ground Bearing Pressure                                                                                                                                                                  |                                     |
| Foam-Filled                                                                                                                                                                              | 86.4 psi (6.07 kg/cm <sup>2</sup> ) |
| Pneumatic                                                                                                                                                                                | 85.1 psi (5.98 kg/cm <sup>2</sup> ) |
| Maximum Drive Speed (4WD)                                                                                                                                                                | 3.8 MPH (6.3 Km/hr.)                |
| Electrical System                                                                                                                                                                        | 12VDC                               |
| Gross Machine Weight (Approximate)                                                                                                                                                       |                                     |
| 600S - 2WS                                                                                                                                                                               | 21,884 lbs. (9947 kg)               |
| 600S - 4WS                                                                                                                                                                               | 22,070 lbs. (10032 kg)              |
| 660SJ - 2WD                                                                                                                                                                              | 26,707 lbs. (12140 kg)              |
| 660SJ - 4WS                                                                                                                                                                              | 26,947 lbs. (12249 kg)              |
| * Maximum Work Load (Capacity) can be affected by the addition of the Soft Touch option. If equipped with Soft Touch, refer to Section 6 and the decal on your machine for these values. |                                     |

## Dimensional Data

**Table 7-2. Dimensional Data**

|                          |                          |
|--------------------------|--------------------------|
| Machine Height (Stowed)  | 8 ft. 2.4 in. (2.5 m)    |
| Machine Length (Stowed)  |                          |
| 600S                     | 28 ft. 7 in. (8.71 m)    |
| 660SJ                    | 35 ft. 4.7 in. (10.79 m) |
| Machine Width            | 8 ft. 2 in. (2.48 m)     |
| Turning Radius (outside) |                          |
| - 2WS                    | 19 ft. 4 in. (5.89 m)    |
| - 4WS                    | 12 ft. 4 in. (3.76 m)    |
| Turning Radius (inside)  |                          |
| - 2WS                    | 9 ft. 2 in. (2.8 m)      |
| - 4WS                    | 4 ft. 2 in. (1.27 m)     |
| Wheelbase                | 8 ft. 2.7 in. (2.51 m)   |
| Total Axle Oscillation   | 8 in. (0.2 m)            |
| Ground Clearance         | 12 in. (0.3 m)           |
| Platform Height          |                          |
| 600S                     | 59 ft. 8 in. (18.18 m)   |
| 660SJ                    | 65 ft. 8 in. (20.02 m)   |

**Table 7-2. Dimensional Data**

|                                             |                        |
|---------------------------------------------|------------------------|
| Horizontal Reach 600lb (272 kg) Zone 600S   | 50 ft. 2 in. (15.29 m) |
| Horizontal Reach 1000 lb (454 kg) Zone 600S | 50 ft. 2 in. (15.29 m) |
| Horizontal Reach 550lb (250 kg) Zone 660SJ  | 57 ft. 1 in. (17.40 m) |
| Horizontal Reach 750 lb (340 kg) Zone 660SJ | 47 ft. 1 in. (14.61 m) |
| Tail Swing                                  | 4 ft. 0 in. (1.22 m)   |

**Table 7-3. Capacities**

|                                                                     |                                                             |
|---------------------------------------------------------------------|-------------------------------------------------------------|
| Torque Hub, Drive                                                   | 24 ounces (0.7 L)                                           |
| Engine Crankcase<br>Deutz D2011L04<br>Deutz 2.9 L<br>Ford MSG425-DF | 10 quarts (9.4 L)<br>9.6 quarts (9.1 L)<br>7 quarts (6.6 L) |
| Coolant System (Deutz 2.9)                                          | 13.2 quarts (12.5 L)                                        |
| Coolant System (Ford MSG425-DF)                                     | 2 gal. (7.5 L)                                              |

## Capacities

**Table 7-3. Capacities**

|                                                        |                                                        |
|--------------------------------------------------------|--------------------------------------------------------|
| Fuel Tank<br>Diesel<br>Diesel (Steel Tank)<br>Gasoline | 31 Gallons (117 L)<br>52 (200 L)<br>31 Gallons (117 L) |
| Hydraulic Oil Tank                                     | 34 Gallons (129 L)                                     |
| Hydraulic System (Including Tank)                      | 40 Gallons (151.4 L)                                   |

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

### Engine Data

**Table 7-4. Deutz D2011L04 Specifications**

|                  |                                                                 |
|------------------|-----------------------------------------------------------------|
| Fuel             | Diesel                                                          |
| Oil Capacity     | 5 Quarts (4.5 L)                                                |
| Cooling System   | 11 Quarts (10.5 L) w/Filter                                     |
| Crankcase        | 16 Quarts (15 L)                                                |
| Total Capacity   |                                                                 |
| Idle RPM         | 1000                                                            |
| Low RPM          | 1800                                                            |
| High RPM         | 2500                                                            |
| Alternator       | 60 Amp, belt drive                                              |
| Battery          | 950 Cold Cranking Amps, 205 Minutes<br>Reserve Capacity, 12 VDC |
| Fuel Consumption | 0.79 gph (2.99 Lph)                                             |
| Horsepower       | 49                                                              |

**Table 7-5. Deutz D2.9L4**

|                           |                                    |
|---------------------------|------------------------------------|
| Type                      | Liquid Cooled                      |
| Number of Cylinders       | 4                                  |
| Bore                      | 3.6 in (92 mm)                     |
| Stroke                    | 4.3 in (110 mm)                    |
| Total Displacement        | 178 cu. in (2925 cm <sup>3</sup> ) |
| Firing Order              | 1-3-4-2                            |
| Output                    | 49 hp (36.5 kW)                    |
| Oil Capacity              | 2.4 gal (9.0 L)                    |
| Coolant Capacity (System) | 3.2 gal (12.1 L)                   |
| Average Fuel Consumption  | 0.85 gph (3.22 Lph)                |
| Min. Low Engine RPM       | 1200                               |
| Mid Engine RPM            | 1800                               |
| Max. High Engine RPM      | 2600                               |

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

**Table 7-6. Deutz TD2.9L4 (option)**

|                          |                                 |
|--------------------------|---------------------------------|
| Fuel                     | Ultra Low Sulfur Diesel (15ppm) |
| Output                   | 67 hp (50kW)                    |
| Torque                   | 173 ft. lbs. (234Nm) @ 1800rpm  |
| Oil Capacity (Crankcase) | 2.4 gal (9.0L)                  |
| Cooling System           | 3.3 Gallon (12.5L)              |
| Low RPM                  | 1200±50rpm                      |
| High RPM                 | 26000±50rpm                     |
| Alternator               | 95Amp                           |
| Average Fuel Consumption | 0.85 gph (3.22Lph)              |

**Table 7-7. Ford MSG425-DF**

|                                   |                     |
|-----------------------------------|---------------------|
| Type                              | Liquid Cooled       |
| Number of Cylinders               | 4                   |
| Displacement                      | 2.5L                |
| Max Rated Output (Gas)            | 84 hp (62 kW)       |
| Max Rated Output (LP)             | 80 hp (59 kW)       |
| Oil Capacity (engine only)        | 7 qt. (6.6 L)       |
| Coolant Capacity (engine only)    | 0.63 gal (2.4 L)    |
| Coolant Capacity (system)         | 2 gal (7.5 L)       |
| Min. Low Engine RPM               | 1000                |
| Max. High Engine RPM              | 3200                |
| Fuel Consumption                  |                     |
| Gas                               | 1.05 gph (3.98 Lph) |
| LP                                | 1.37 gph (5.19 Lph) |
| <b>Acceptable Fuel Grades</b>     |                     |
| Unleaded 87 or 89 Octane Gasoline |                     |
| Ethanol/Gasoline Mix: 10%         |                     |
| HD-5 LPG                          |                     |

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

### Tires

**Table 7-8. Tire Specifications**

| Size          | 355/55D625  | 355/55D625          | 41/18LLx22.5 | 41/18LLx22.5      |
|---------------|-------------|---------------------|--------------|-------------------|
| Load Range    | G           | G                   | G            | G                 |
| Ply Rating    | 14          | 14                  | 14           | 14                |
| Tire Pressure | Foam-Filled | 100PSI<br>(6.9 Bar) | Foam-Filled  | 70 PSI<br>(5 Bar) |

**NOTE:** When temperatures remain below 20° F (-7 degrees C), JLG Industries recommends the use of Mobil DTE 10.

**NOTE:** Aside from JLG recommendations, it is not advisable to mix oils of different brands or types, as they may not contain the same required additives or be of comparable viscosities.

**Table 7-10. Mobilfluid 424 Specs**

|                         |               |
|-------------------------|---------------|
| SAE Grade               | 10W30         |
| ISO                     | 55            |
| Gravity, API            | 29.0          |
| Density, Lb/Gal. 60°F   | 7.35          |
| Pour Point, Max         | -46°F (-43°C) |
| Flash Point, Min.       | 442°F (228°C) |
| Viscosity               |               |
| Brookfield, cP at -18°C | 2700          |
| at 40°C                 | 55 cSt        |
| at 100°C                | 9.3 cSt       |
| Viscosity Index         | 152           |

### Hydraulic Oil

**Table 7-9. Hydraulic Oil**

| HYDRAULIC SYSTEM OPERATING TEMPERATURE RANGE | SAE VISCOSITY GRADE |
|----------------------------------------------|---------------------|
| +0° to +180°F (-18°C to +83°C)               | 10W                 |
| +0°F to +210°F (-18°C to +99°C)              | 10W-20, 10W-30      |
| +50°F to +210°F (+10°C to +210°C)            | 20W-20              |

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

**Table 7-11. Mobil DTE 10 Excel 32 Specs**

|                     |               |
|---------------------|---------------|
| ISO Viscosity Grade | #32           |
| Specific Gravity    | 0.877         |
| Pour Point, Max     | -40°F (-40°C) |
| Flash Point, Min.   | 330°F (166°C) |
| Viscosity           |               |
| at 40°C             | 33cSt         |
| at 100°C            | 6.6 cSt       |
| at 100°F            | 169 SUS       |
| at 210°F            | 48 SUS        |
| cp at -20°F         | 6,200         |
| Viscosity Index     | 140           |

**Table 7-12. Quintolubric 888-46**

|                          |                        |
|--------------------------|------------------------|
| Density                  | 0.92 g/cm <sup>3</sup> |
| Pour Point               | <-30°C (<-22°F)        |
| Flash Point              | 300°C (572°F)          |
| Fire Point               | 360°C (680°F)          |
| Autoignition Temperature | >450°C (842°F)         |
| Viscosity                |                        |
| at 0°C (32°F)            | 320 cSt                |
| at 20°C (68°F)           | 109 cSt                |
| at 40°C (104°F)          | 47.5 cSt               |
| at 100°C (212°F)         | 9.5 cSt                |
| Viscosity Index          | 190                    |

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

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**Table 7-13. Mobil EAL 224H Specs**

| Type                                          | Synthetic Biodegradable                 |
|-----------------------------------------------|-----------------------------------------|
| ISO Viscosity Grade                           | 32/46                                   |
| Specific Gravity                              | .922                                    |
| Pour Point, Max                               | -25°F (-32°C)                           |
| Flash Point, Min.                             | 428°F (220°C)                           |
| Operating Temp.                               | 0 to 180°F (-17 to 162°C)               |
| Weight                                        | 7.64 lb. per gal.<br>(0.9 kg per liter) |
| <b>Viscosity</b>                              |                                         |
| at 40°C                                       | 37 cSt                                  |
| at 100°C                                      | 8.4 cSt                                 |
| Viscosity Index                               | 213                                     |
| <b>NOTE:</b> Must be stored above 32°F (14°C) |                                         |

**Table 7-14. Mobil EAL H 46 Specs**

| Type                | Synthetic Biodegradable   |
|---------------------|---------------------------|
| ISO Viscosity Grade | 46                        |
| Specific Gravity    | .910                      |
| Pour Point          | -44°F (-42°C)             |
| Flash Point         | 500°F (260°C)             |
| Operating Temp.     | 0 to 180°F (-17 to 162°C) |
| Weight              | 7.64 lb/gal<br>(0.9 kg/L) |
| <b>Viscosity</b>    |                           |
| at 40°C             | 45 cSt                    |
| at 100°C            | 8.0 cSt                   |
| Viscosity Index     | 153                       |

**Table 7-15. Exxon Univis HVI 26 Specs**

|                                                                                               |               |
|-----------------------------------------------------------------------------------------------|---------------|
| Specific Gravity                                                                              | 32.1          |
| Pour Point                                                                                    | -76°F (-60°C) |
| Flash Point                                                                                   | 217°F (103°C) |
| Viscosity                                                                                     |               |
| at 40°C                                                                                       | 25.8cSt       |
| at 100°C                                                                                      | 9.3cSt        |
| Viscosity Index                                                                               | 376           |
| <b>NOTE:</b> Mobil/Exxon recommends that this oil be checked on a yearly basis for viscosity. |               |

## Critical Stability Weights



### WARNING

**DO NOT REPLACE ITEMS CRITICAL TO STABILITY WITH ITEMS OF DIFFERENT WEIGHT OR SPECIFICATION (FOR EXAMPLE: BATTERIES, FILLED TIRES, COUNTERWEIGHT, ENGINE & PLATFORM) DO NOT MODIFY UNIT IN ANY WAY TO AFFECT STABILITY.**

**Table 7-16. Critical Stability Weights**

|                        |                                    | LB.   | KG. |
|------------------------|------------------------------------|-------|-----|
| Tire and Wheel         | 355/55D625(FF)                     | 440   | 200 |
|                        | 41/18LLx22.5 (FF)                  | 700   | 318 |
|                        | 355/55D625 (Pneumatic)             | 225   | 102 |
|                        | 355/55D625 (Pneumatic-Non Marking) | 242.5 | 110 |
|                        | 41/18LLx22.5 (Pneumatic)           | 265   | 120 |
|                        | 355/55D625 (Pneumatic w/Sealant)   | 233   | 106 |
| Engine (complete tray) | Deutz TD 2.9L                      | 1433  | 650 |
|                        | D2011 L04                          | 983   | 445 |

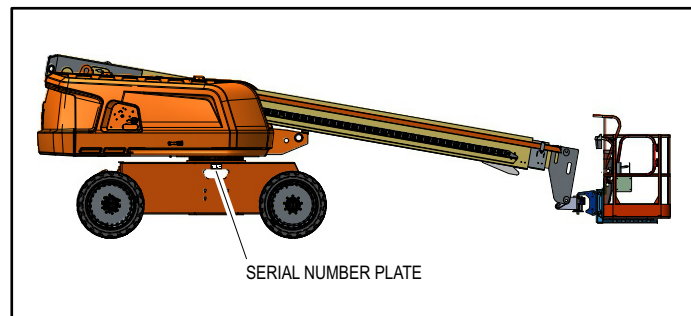
## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

**Table 7-16. Critical Stability Weights**

|                                                    |                           |       |       |
|----------------------------------------------------|---------------------------|-------|-------|
| Counterweight                                      | Chassis                   | 453   | 205.5 |
|                                                    | Turntable (600S)          | 4922  | 2233  |
|                                                    | Turntable (660SJ)         | 5844  | 2653  |
| Platform Only<br>(No Control Box or<br>Footswitch) | 4 ft. (M) Swing Gate      | 132   | 60    |
|                                                    | 5 ft. (M) Swing Gate      | 145.5 | 66    |
|                                                    | 6 ft. (M) Swing Gate      | 159   | 72    |
|                                                    | 8 ft. (2.44 M) Swing Gate | 230   | 84    |
|                                                    | 6 ft. (M) Shipyard Option | 247   | 112   |

### Serial Number Locations

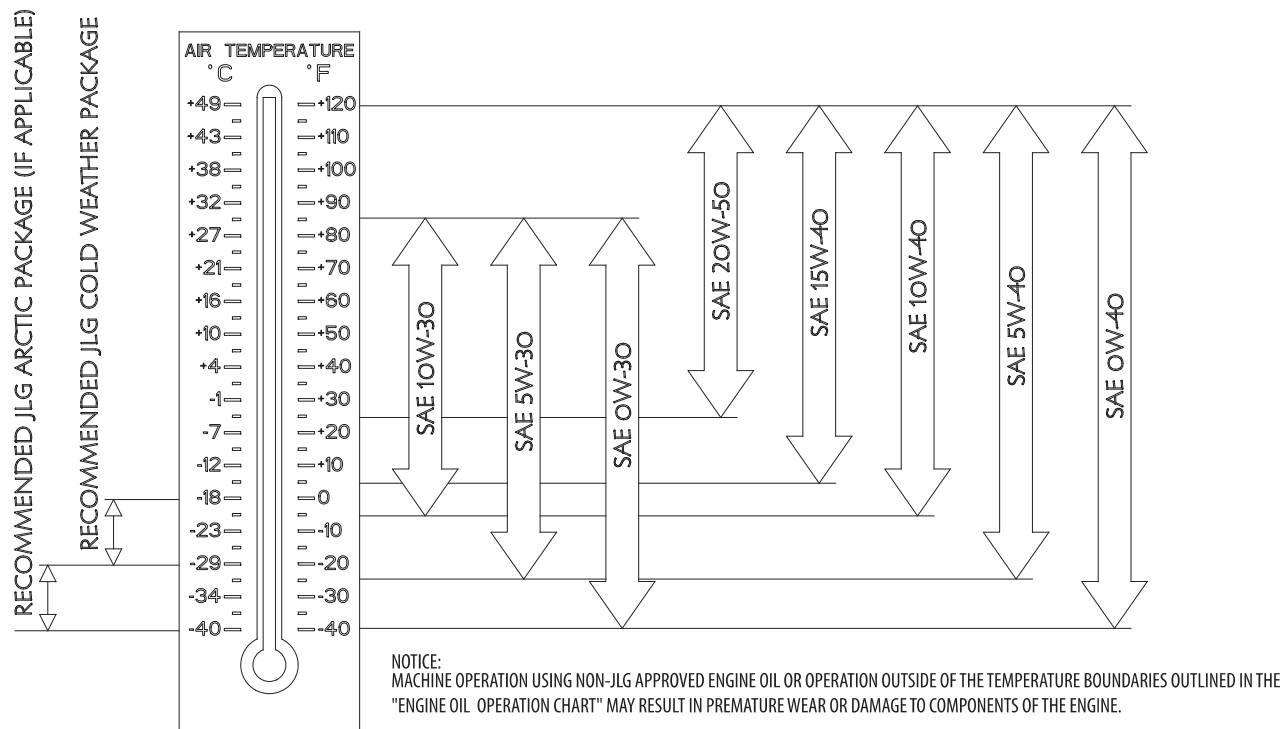
A serial number plate is affixed to the left side of the frame. If the serial number plate is damaged or missing, the machine serial number is stamped on the left side of the frame.



**Figure 7-1. Serial Number Locations**

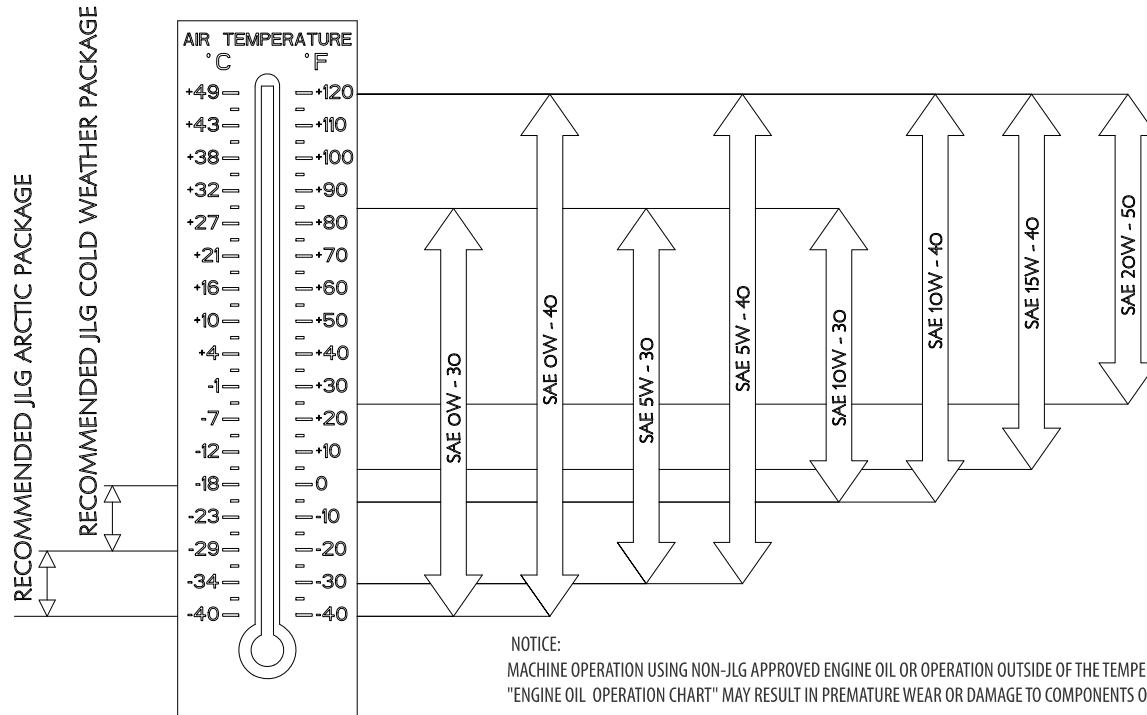
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## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE



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**Figure 7-2. Engine Operating Temperature Specifications - Deutz 2.9L**



**Figure 7-3. Engine Operating Temperature Specifications - Deutz 2011**

1001151190-B

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

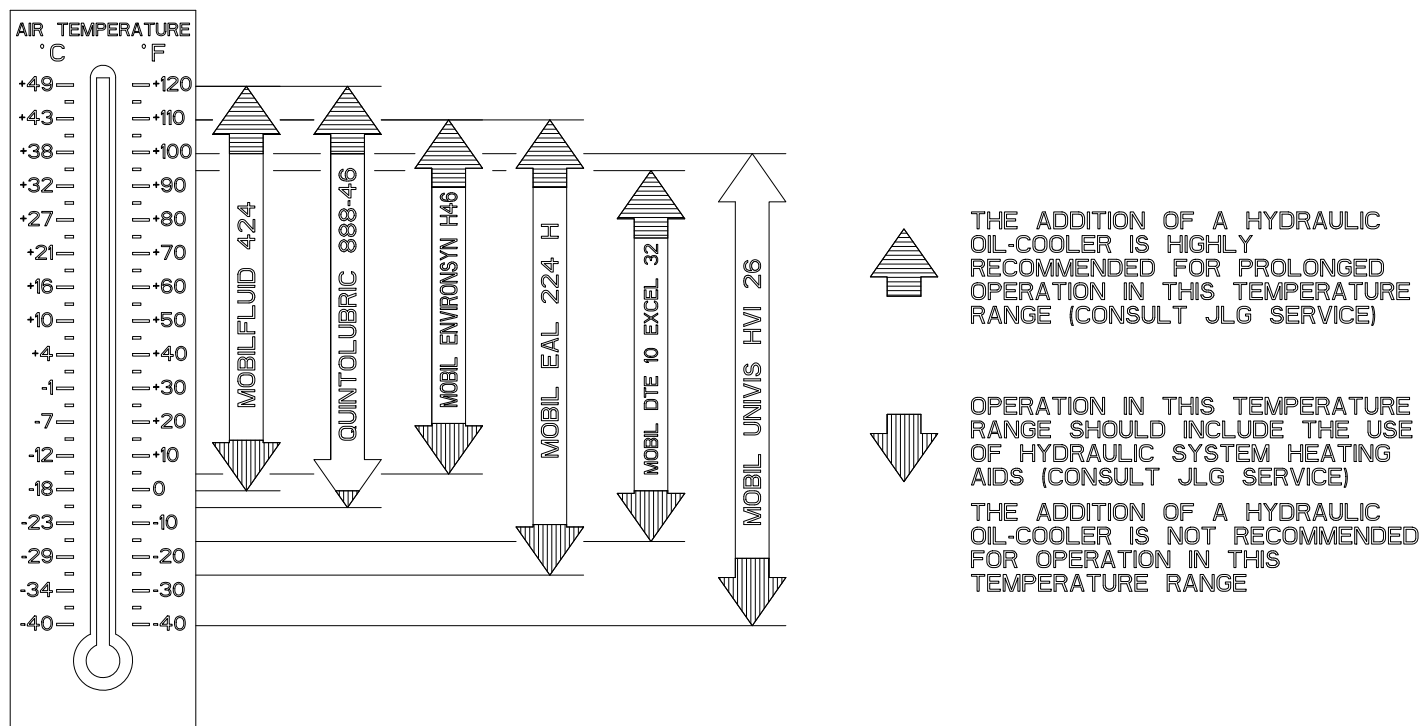


Figure 7-4. Hydraulic Oil Operation Chart - Sheet 1 of 2

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## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

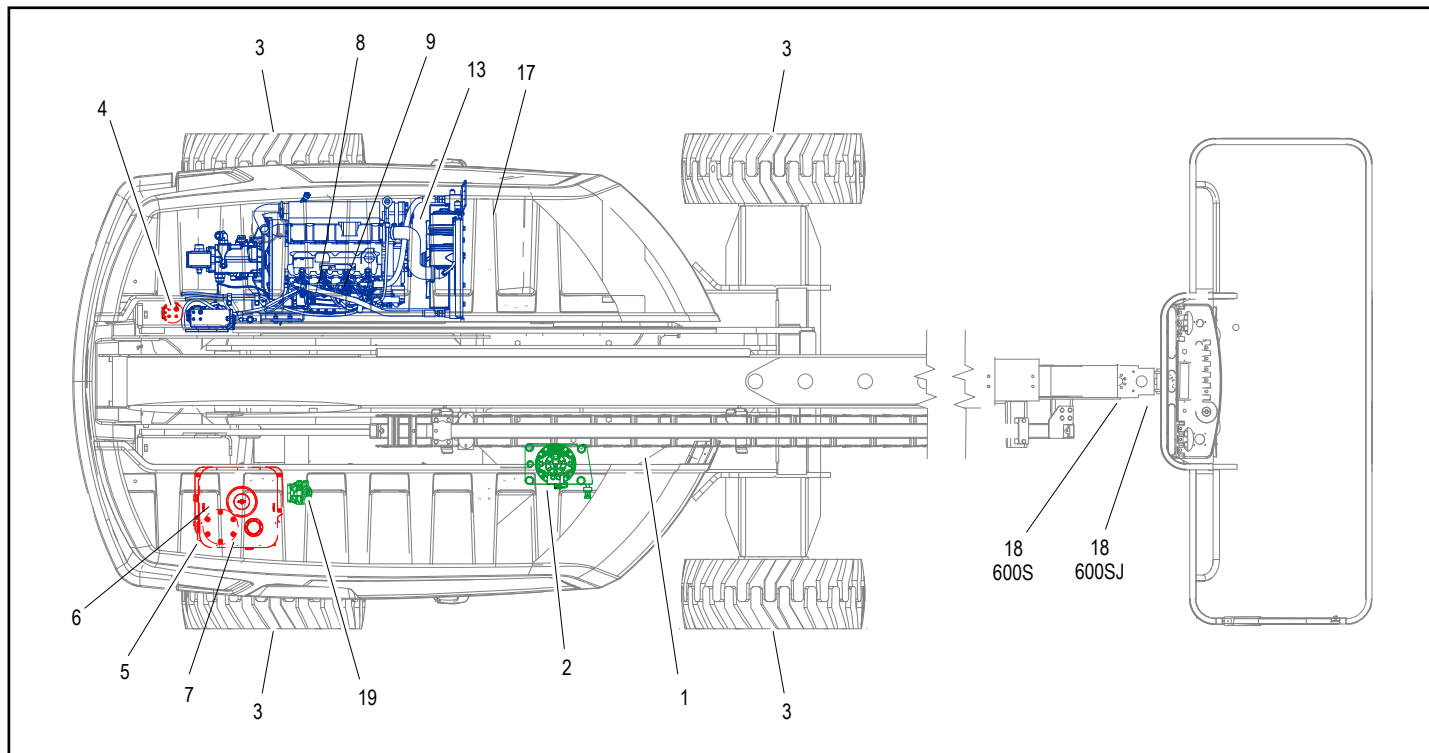
| Fluid                 | Properties                          |            | Base         |                |           |                            | Classification            |                          |                   |
|-----------------------|-------------------------------------|------------|--------------|----------------|-----------|----------------------------|---------------------------|--------------------------|-------------------|
| Description           | Viscosity @ 40° C<br>(Cst, Typical) | Visc Index | Mineral Oils | Vegetable Oils | Synthetic | Synthetic<br>Polyol Esters | Readily<br>Biodegradable* | Virtually<br>Non-toxic** | Fire Resistant*** |
| Mobilfluid 424        | 55                                  | 145        | X            |                |           |                            |                           |                          |                   |
| Mobil DTE 10 Excel 32 | 32                                  | 141        | X            |                |           |                            |                           |                          |                   |
| UNIVIS HVI 26         | 26                                  | 376        | X            |                |           |                            |                           |                          |                   |
| Mobil EAL 224 H       | 36                                  | 212        |              | X              |           |                            | X                         | X                        |                   |
| Mobil EnviroSyn H 46  | 49                                  | 145        |              |                | X         |                            | X                         | X                        |                   |
| Quintolubric 888-46   | 50                                  | 185        |              |                |           | X                          | X                         | X                        | X                 |

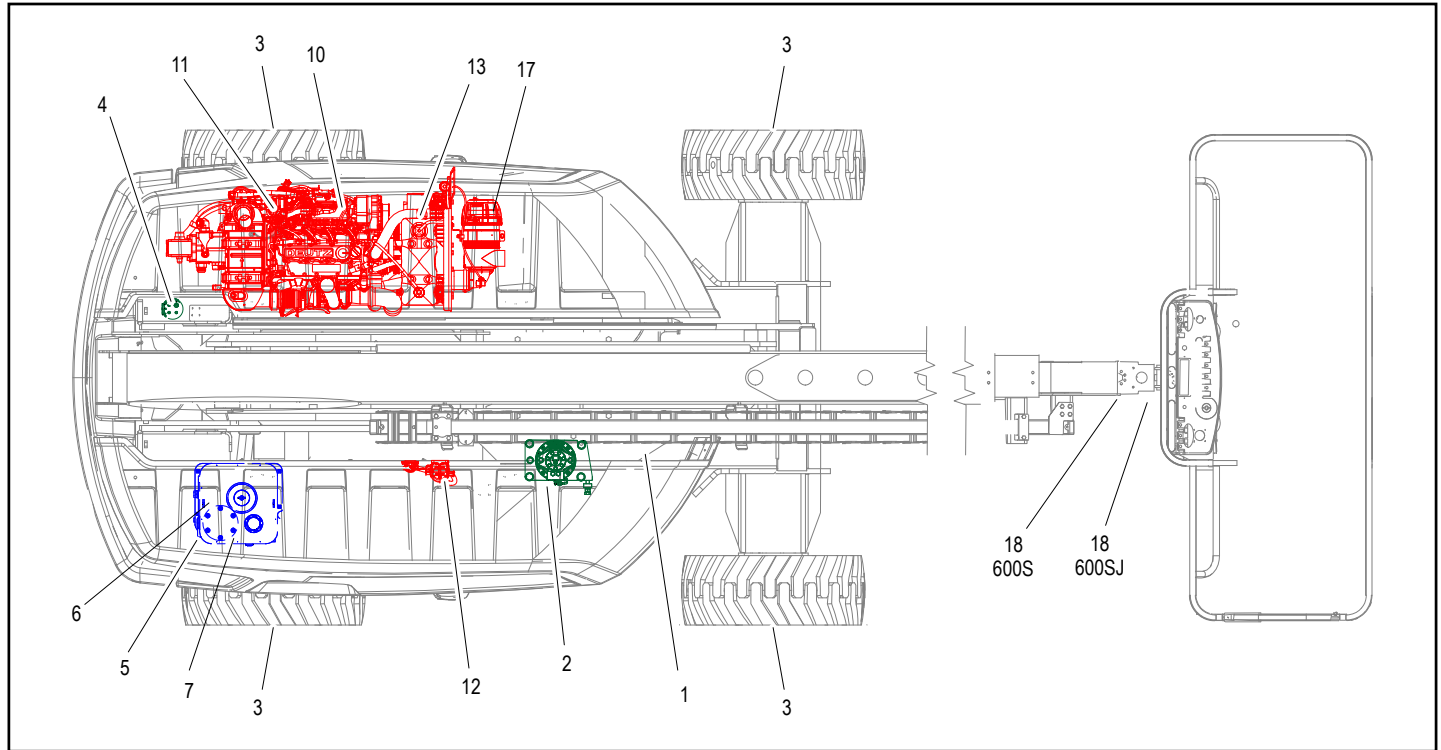
- \* Readily biodegradable classification indicates one of the following:  
CO2 Conversion>60% per EPA 560/6-82-003  
CO2 Conversion>80% per CEC-L-33-A-93
- \*\* Virtually Non-toxic classification indicates an LC50>5000 ppm per OECD 203
- \*\*\* Fire Resistant classification indicates Factory Mutual Research Corp. (FMRC) Approval

NOTICE:  
MACHINE OPERATION USING NON-JLG APPROVED HYDRAULIC FLUIDS OR OPERATION OUTSIDE OF THE TEMPERATURE BOUNDARIES OUTLINED IN THE "HYDRAULIC FLUID OPERATION CHART" MAY RESULT IN PREMATURE WEAR OR DAMAGE TO COMPONENTS OF THE HYDRAULIC SYSTEM.

**Figure 7-5. Hydraulic Oil Operation Chart - Sheet 2 of 2**

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**Figure 7-7. Operator Maintenance & Lubrication Diagram - Deutz 2.9L Engine**

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

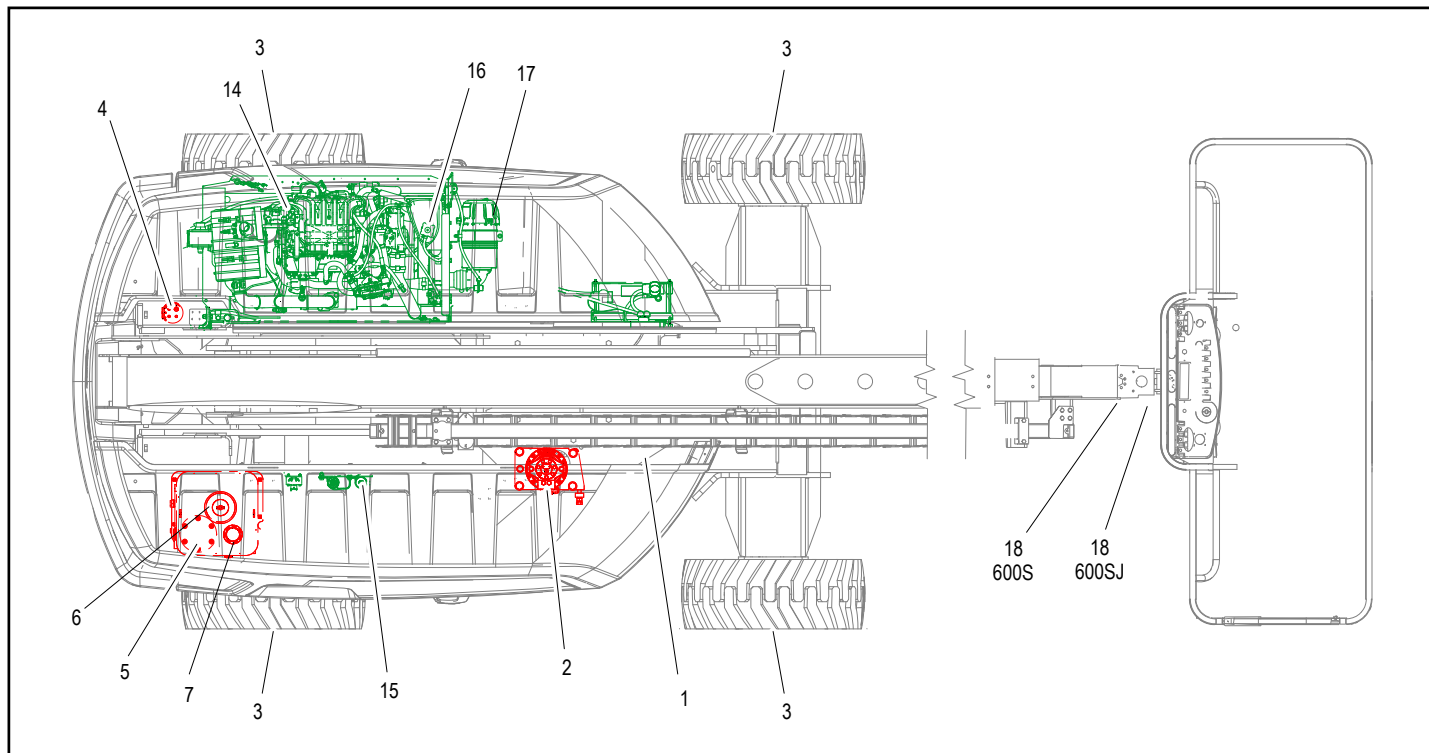


Figure 7-8. Operator Maintenance & Lubrication Diagram - Ford Engine

### 7.3 OPERATOR MAINTENANCE

**NOTE:** The following numbers correspond to those in Figure 7-6., Operator Maintenance & Lubrication Diagram - Deutz 2011 Engine.

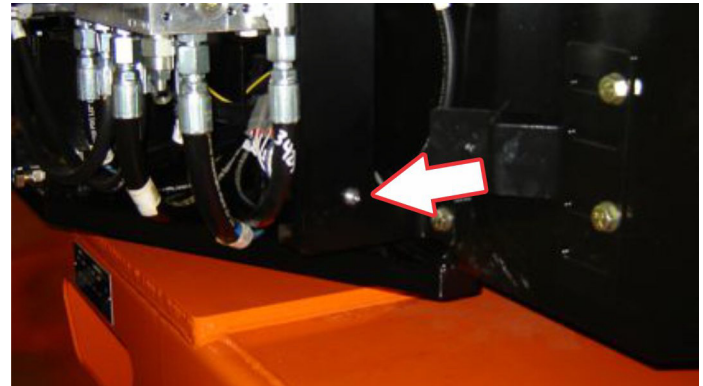
**Table 7-17. Lubrication Specifications.**

| KEY                                                                                                | SPECIFICATIONS                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BG*                                                                                                | Bearing Grease (JLG Part No. 3020029) Mobilith SHC 460.                                                                                                                                     |
| HO                                                                                                 | Hydraulic Oil. API service classification GL-4, e.g. Mobilfluid 424.                                                                                                                        |
| EPGL                                                                                               | Extreme Pressure Gear Lube (oil) meeting API Service Classification GL-5 or Mil-Spec Mil-L-2105.                                                                                            |
| MPG                                                                                                | Multipurpose Grease having a minimum dripping point of 350°F (177°C). Excellent water resistance and adhesive qualities, and being of extreme pressure type. (Timken OK 40 pounds minimum.) |
| EO                                                                                                 | Engine (crankcase). Gas (5W30) - API SN, -Arctic ACEA A1/B1, A5/B5 - API SM, SL, SJ, EC, CF, CD - ILSAC GF-4. Diesel (15W40, 5W30 Arctic) - API CJ-4.                                       |
| *MPG may be substituted for these lubricants, if necessary, but service intervals will be reduced. |                                                                                                                                                                                             |

#### NOTICE

**LUBRICATION INTERVALS ARE BASED ON MACHINE OPERATION UNDER NORMAL CONDITIONS. FOR MACHINES USED IN MULTI-SHIFT OPERATIONS AND/OR EXPOSED TO HOSTILE ENVIRONMENTS OR CONDITIONS, LUBRICATION FREQUENCIES MUST BE INCREASED ACCORDINGLY.**

#### 1. Swing Bearing



Lube Point(s) - 1 Grease Fittings

Capacity - A/R

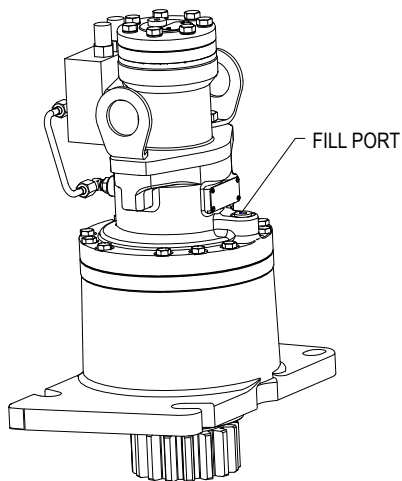
Lube - MPG

Interval - Every 3 months or 150 hrs of operation

Comments - Remote Access. Apply grease and rotate in 90 degree intervals until bearing is completely lubricated.

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

### 2. Swing Drive Hub



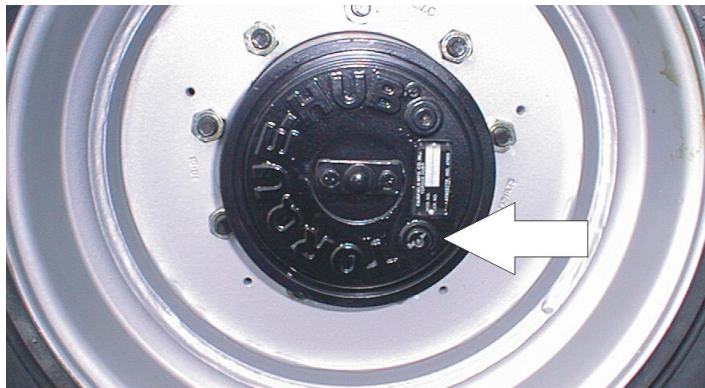
Lube Point(s) - Level/Fill Plug

Capacity - 32 oz. (0.95 L)

Lube - 80w90 Gear Oil

Interval - Check level every 3 months or 150 hrs of operation;  
change every 2 years or 1200 hours of operation

### 3. Wheel Drive Hub



Lube Point(s) - Level/Fill Plug

Capacity - 24 oz. (0.7 L)

Lube - 80w90 Gear Oil

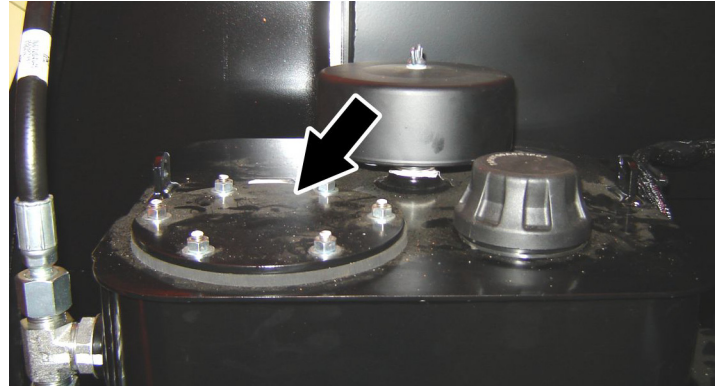
Interval - Check level every 3 months or 150 hrs of operation;  
change every 2 years or 1200 hours of operation

### 4. Hydraulic Charge Filter



Interval - Change after first 50 hrs. and every 6 months or 300 hrs. thereafter or as indicated by Condition Indicator.

### 5. Hydraulic Return Filter

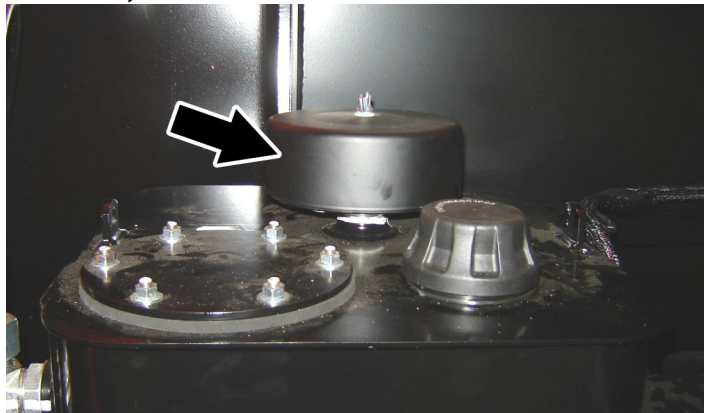


Interval - Change after first 50 hours and every 6 months or 300 hours thereafter or whenever Charge Filter is replaced

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

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### 6. Hydraulic Tank Breather



Interval - Change after first 50 hrs. and every 6 months or 300 hrs. thereafter.

Comments - Remove wing nut and cover to replace. Under certain conditions, it may be necessary to replace on a more frequent basis.

### 7. Hydraulic Tank



Lube Point(s) - Fill Cap

Capacity - 34 gal tank (129 L) 40.0 gal system (151 L)

Lube - HO

Interval - Check Level daily; Change every 2 years or 1200 hours of operation

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

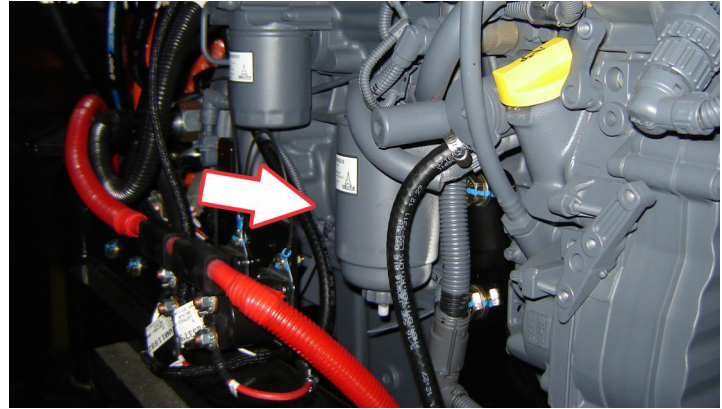
## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

### 8. Oil Change w/Filter - Deutz 2011



Lube Point(s) - Fill Cap/Spin-on Element  
Capacity - 10 Quarts (9.4 L) Crankcase; 5 Quarts (4.8L)  
Cooler  
Lube - EO  
Interval - Every Year or 1200 hours of operation  
Comments - Check level daily/Change in accordance with engine manual.

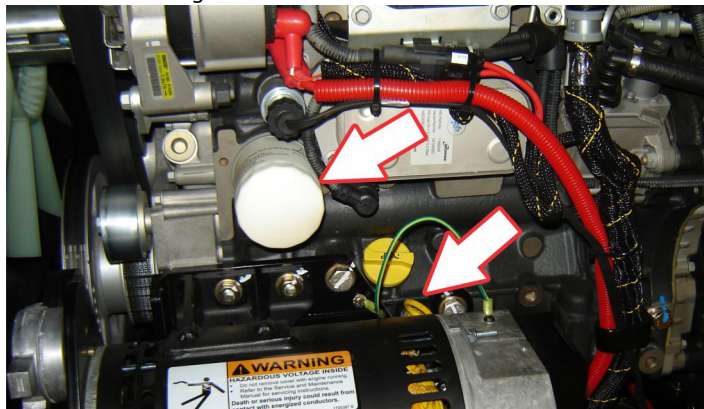
### 9. Fuel Filter - Deutz 2011



Lube Point(s) - Replaceable Element  
Interval - Every Year or 600 hours of operation

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

### 10. Oil Change w/Filter - Deutz 2.9



Lube Point(s) - Fill Cap/Spin-on Element

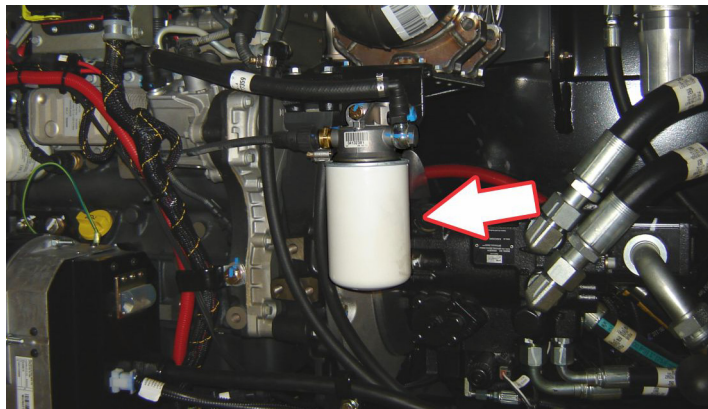
Capacity - 9.5 Quarts (9.0 L) Crankcase

Lube - EO

Interval - Every Year or 1200 hours of operation (whichever comes first).

Comments - Check level daily/Change in accordance with engine manual.

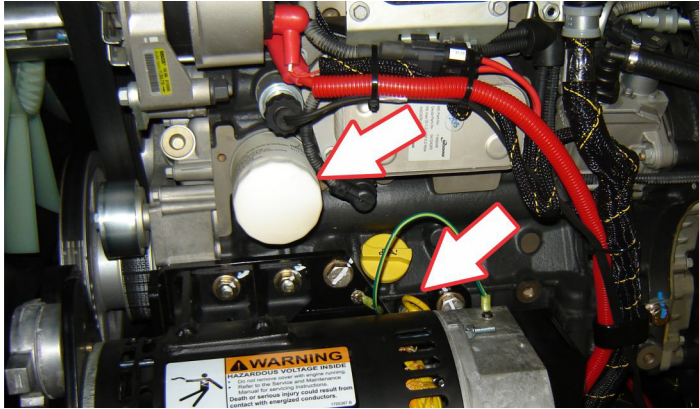
### 11. Fuel Filter - Deutz 2.9



Lube Point(s) - Replaceable Element

Interval - 600 hours of operation

### 12. Oil Change w/Filter - Deutz TD2.9



Lube Point(s) - Fill Cap/Spin-on Element

Capacity - 9.5 Quarts (9.0 L) Crankcase

Lube - EO

Interval - Every Year or 600 hours of operation (whichever comes first).

Comments - Check level daily/Change in accordance with engine manual.

### 13. Fuel Pre-Filter - Deutz D2.9/TD2.9



Lube Point(s) - Replaceable Element

Interval - Drain water daily; Every year or 600 hours of operation

## **SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE**

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### **14. Engine Coolant - Deutz D2.9**

Lube Point(s) - Fill Cap

Capacity (Deutz 2.9L)- 13.2 quart (12.5 L)

Lube - Anti-Freeze

Interval - Check level daily; change every 1000 hours or two years, whichever comes first.

## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

### 15. Oil Change w/Filter - Ford MSG425-DF

Lube Point(s) - Fill Cap/Spin-on Element

Capacity - 7 Quarts (6.6 L)

Lube - EO

Interval - Change in accordance with engine manual

Comments - Check level daily

### 16. Fuel Filter - Ford MSG425-DF

Lube Point(s) - Replaceable Element

Interval - Every Year or 600 hours of operation

### 17. Engine Coolant - Ford MSG425-DF

Lube Point(s) - Fill Cap

Capacity (Deutz 2.9L)- 2 gal. quart (7.5 L)

Lube - Anti-Freeze

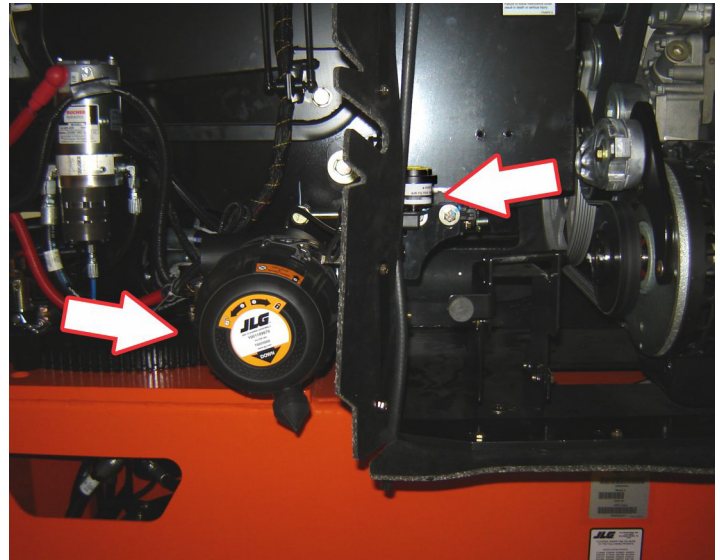
Interval - Check level daily; change every 1000 hours or two years, whichever comes first.

### 18. Air Filter Locations

Lube Point(s) - Replaceable Element

Interval - Every 6 months or 300 hours of operation or as indicated by the condition indicator.

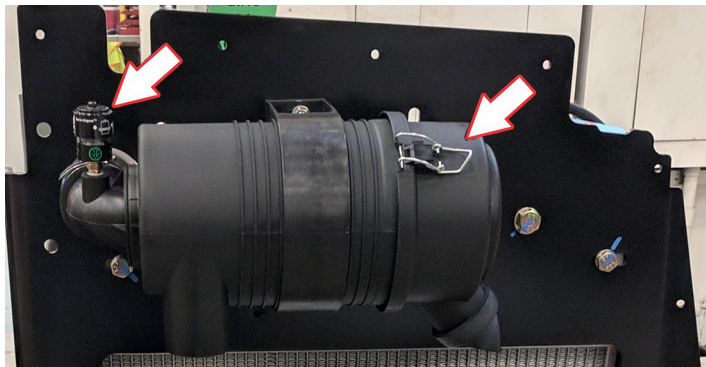
Deutz 2.9L: Prior to SN 0300254985



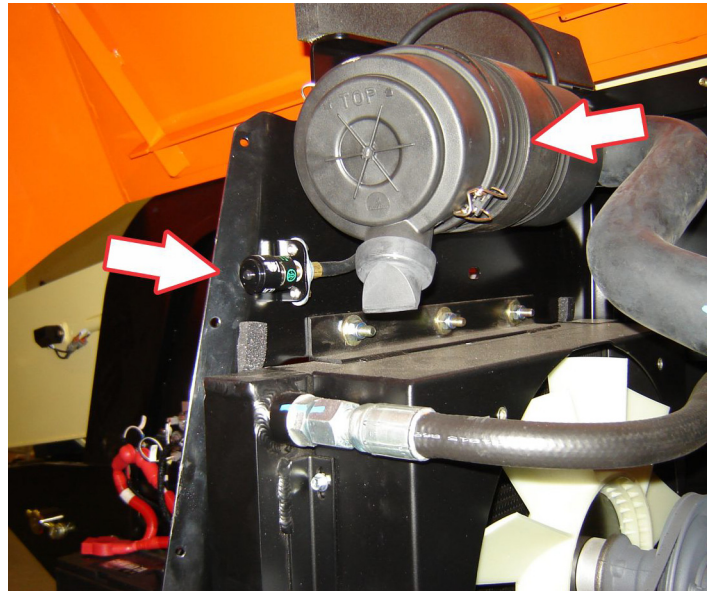
## SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

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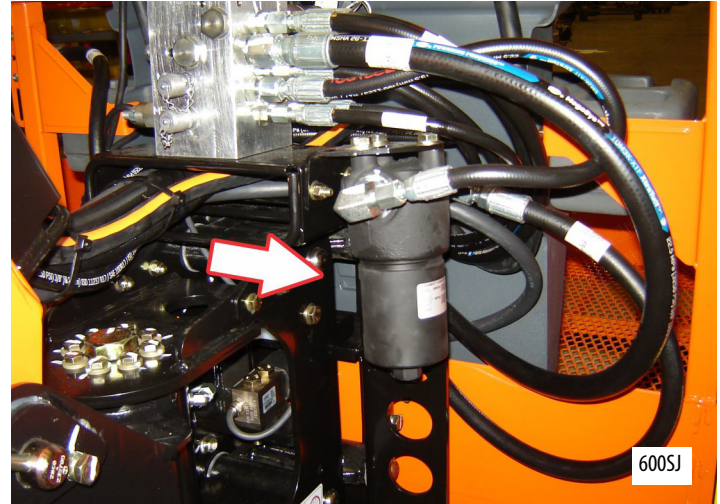
Deutz D2.9L/TD2.9L: SN 0300254985 to Present



Deutz 2011



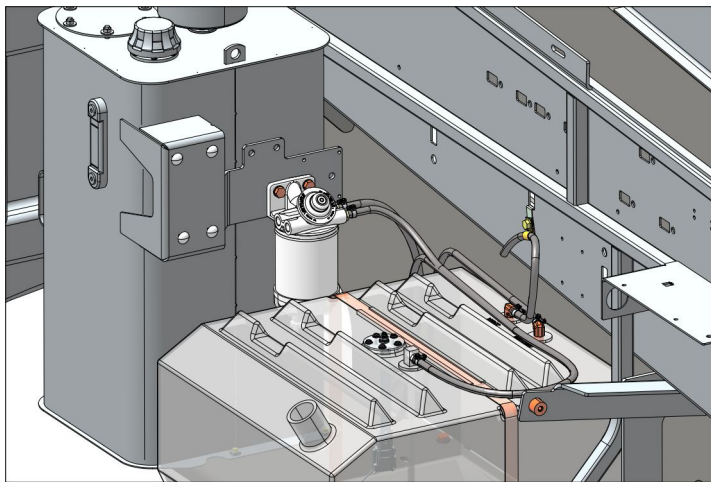
### 18. Platform Filter



Lube Point - Replaceable Element

Interval - Change after first 50 hours and then every year or 600 hours of operation, whichever comes first

### 19. Optional Fuel Filter - Deutz 2011 - China Market



Lube Point(s) - Replaceable Element

Interval - Drain water daily; Every year or 600 hours of operation

## 7.4 TIRES & WHEELS

### Tire Inflation

The air pressure for pneumatic tires must be equal to the air pressure that is stenciled on the side of the JLG product or rim decal for safe and proper operational characteristics.

### Tire Damage

For pneumatic tires, JLG Industries, Inc. recommends that when any cut, rip, or tear is discovered that exposes sidewall or tread area cords in the tire, measures must be taken to remove the JLG product from service immediately. Arrangements must be made for replacement of the tire or tire assembly.

For polyurethane foam filled tires, JLG Industries, Inc. recommends that when any of the following are discovered, measures must be taken to remove the JLG product from service immediately and arrangements must be made for replacement of the tire or tire assembly.

- a smooth, even cut through the cord plies which exceeds 3 inches (7.5 cm) in total length
- any tears or rips (ragged edges) in the cord plies which exceeds 1 inch (2.5 cm) in any direction
- any punctures which exceed 1 inch in diameter

- any damage to the bead area cords of the tire

If a tire is damaged but is within the above noted criteria, the tire must be inspected on a daily basis to insure the damage has not propagated beyond the allowable criteria.

### **Tire Replacement**

JLG recommends a replacement tire be the same size, ply and brand as originally installed on the machine. Please refer to the JLG Parts Manual for the part number of the approved tires for a particular machine model. If not using a JLG approved replacement tire, we recommend that replacement tires have the following characteristics:

- Equal or greater ply/load rating and size of original
- Tire tread contact width equal or greater than original
- Wheel diameter, width, and offset dimensions equal to the original
- Approved for the application by the tire manufacturer (including inflation pressure and maximum tire load)

Unless specifically approved by JLG Industries Inc. do not replace a foam filled or ballast filled tire assembly with a pneumatic tire. When selecting and installing a replacement tire, ensure that all tires are inflated to the pressure recommended by JLG. Due to size variations between tire brands, both tires on the same axle should be the same.

### **Wheel Replacement**

The rims installed on each product model have been designed for stability requirements which consist of track width, tire pressure, and load capacity. Size changes such as rim width, center piece location, larger or smaller diameter, etc., without written factory recommendations, may result in an unsafe condition regarding stability.

### Wheel Installation

It is extremely important to apply and maintain proper wheel mounting torque.

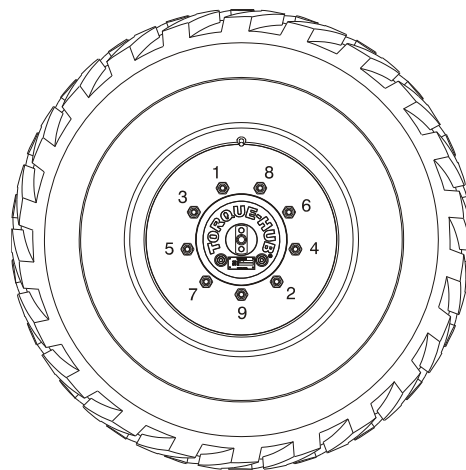
#### **⚠ WARNING**

**WHEEL NUTS MUST BE INSTALLED AND MAINTAINED AT THE PROPER TORQUE TO PREVENT LOOSE WHEELS, BROKEN STUDS, AND POSSIBLE DANGEROUS SEPARATION OF WHEEL FROM THE AXLE. BE SURE TO USE ONLY THE NUTS MATCHED TO THE CONE ANGLE OF THE WHEEL.**

Tighten the lug nuts to the proper torque to prevent wheels from coming loose. Use a torque wrench to tighten the fasteners. If you do not have a torque wrench, tighten the fasteners with a lug wrench, then immediately have a service garage or dealer tighten the lug nuts to the proper torque. Over-tightening will result in breaking the studs or permanently deforming the mounting stud holes in the wheels. The proper procedure for attaching wheels is as follows:

1. Start all nuts by hand to prevent cross threading. DO NOT use a lubricant on threads or nuts.

2. Tighten nuts in the following sequence:



3. The tightening of the nuts should be done in stages. Following the recommended sequence, tighten nuts per wheel torque chart.

**Table 7-18. Wheel Torque Chart**

| TORQUE SEQUENCE        |                         |                          |
|------------------------|-------------------------|--------------------------|
| 1st Stage              | 2nd Stage               | 3rd Stage                |
| 40 ft. lbs.<br>(55 Nm) | 95 ft. lbs.<br>(130 Nm) | 170 ft. lbs.<br>(230 Nm) |

4. Wheel nuts should be torqued after first 50 hours of operation and after each wheel removal. Check torque every 3 months or 150 hours of operation.

### 7.5 OSCILLATING AXLE LOCKOUT TEST (IF EQUIPPED)

#### **NOTICE**

**LOCKOUT SYSTEM TEST MUST BE PERFORMED QUARTERLY, ANY TIME A SYSTEM COMPONENT IS REPLACED, OR WHEN IMPROPER SYSTEM OPERATION IS SUSPECTED.**

**NOTE:** *Ensure boom is fully retracted, lowered, and centered between drive wheels prior to beginning lockout cylinder test.*

1. Place a 6 inch (15.2 cm) high block with ascension ramp in front of left front wheel.
2. From platform control station, start engine
3. Place the Drive control lever to the forward position and carefully drive machine up ascension ramp until left front wheel is on top of block.
4. Carefully activate telescope and extend the boom at least 2 ft. (0.6 m).
5. Place Drive control lever to Reverse and drive machine off of block and ramp.
6. Have an assistant check to see that left front wheel remains locked in position off of ground.
7. Carefully activate telescope and return boom to stowed position. The lockout cylinders should release and allow wheel to rest on ground, it may be necessary to activate Drive to release cylinders.
8. Repeat the procedure for the right front wheel.
9. If lockout cylinders do not function properly, have qualified personnel correct the malfunction prior to any further operation.

### 7.6 PROPANE FUEL SYSTEM PRESSURE RELIEF

#### CAUTION

**THE PROPANE FUEL SYSTEM OPERATES AT PRESSURES UP TO 312 PSI (21.5 BAR). TO MINIMIZE THE RISK OF FIRE AND PERSONAL INJURY, RELIEVE THE PROPANE FUEL SYSTEM PRESSURE (WHERE APPLICABLE) BEFORE SERVICING THE PROPANE FUEL SYSTEM COMPONENTS.**

To relieve propane fuel system pressure:

1. Close the manual shut-off valve on the propane fuel tank.
2. Start and run the vehicle until the engine stalls.
3. Turn the ignition switch OFF.

#### CAUTION

**RESIDUAL VAPOR PRESSURE WILL BE PRESENT IN THE FUEL SYSTEM. ENSURE THE WORK AREA IS WELL VENTILATED BEFORE DISCONNECTING ANY FUEL LINE.**

### 7.7 SUPPLEMENTAL INFORMATION

The following information is provided in accordance with the requirements of the European Machinery Directive 2006/42/EC and is only applicable to CE machines.

For electric powered machines, the equivalent continuous A-Weighted sound pressure level at the work platform is less than 70dB(A)

For combustion engine powered machines, guaranteed Sound Power Level (LWA) per European Directive 2000/14/EC (Noise Emission in the Environment by Equipment for Use Outdoors) based on test methods in accordance with Annex III, Part B, Method 1 and 0 of the directive, is 104 dB.

The vibration total value to which the hand-arm system is subjected does not exceed  $2,5 \text{ m/s}^2$ . The highest root mean square value of weighted acceleration to which the whole body is subjected does not exceed  $0,5 \text{ m/s}^2$ .

**SECTION 7 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE**

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 **NOTES:**

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**SECTION 8. INSPECTION AND REPAIR LOG**

Machine Serial Number \_\_\_\_\_

**Table 8-1. Inspection and Repair Log**

| Date | Comments |
|------|----------|
|      |          |
|      |          |
|      |          |
|      |          |
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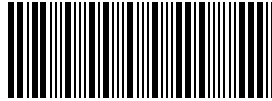
**SECTION 8 - INSPECTION AND REPAIR LOG**

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**Table 8-1. Inspection and Repair Log**

| Date | Comments |
|------|----------|
|      |          |
|      |          |
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