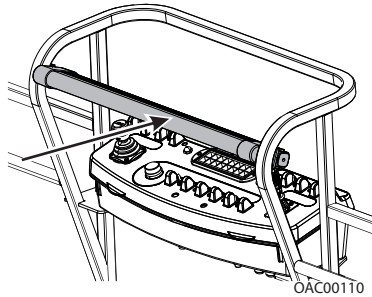
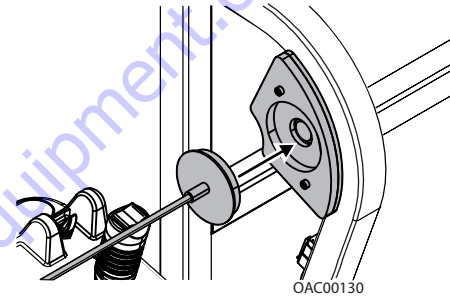


## SkyGuard

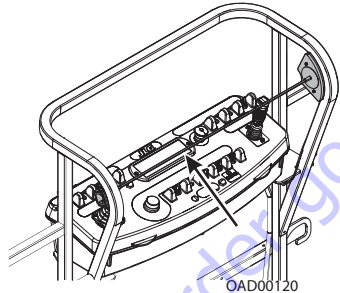


Approximately 50 lb (222 Nm) of force is applied to yellow bar.



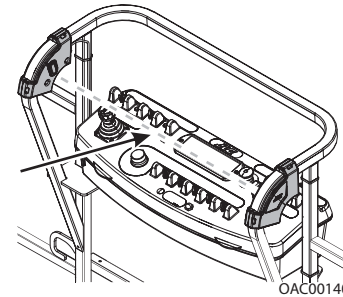
Reattach magnetic end of cable to bracket if it becomes disconnected.

## SkyGuard - SkyLine



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

## 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	Jib Swing	Jib Tele	Basket Level	Basket Rotate
R*/C**	R	C	R	R	R	R	C	C	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												
<b>Note:</b> If SkyGuard is enabled with the Soft Touch system, functions will cut out instead of reversing.												

### 4.13 EMERGENCY TOWING

#### **⚠ 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)**

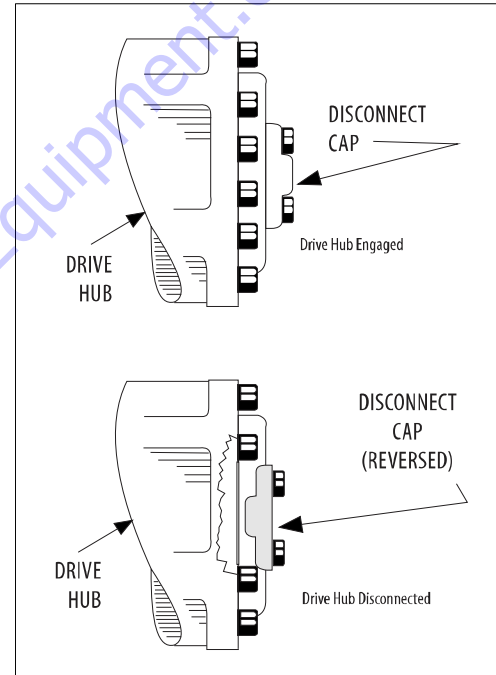
**MAXIMUM TOWING GRADE 25%.**

#### **⚠ CAUTION**

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

1. Retract, lower and position boom in travel position; lock turntable.

2. Disconnect drive hubs by inverting disconnect cap.



**Figure 4-7. Drive Disconnect Hub**

3. Reconnect the drive hubs by inverting the disconnect cap when towing is complete.

### 4.14 SHUT DOWN AND PARK

The preferred procedures to shut down and park the machine are as follows:

1. Drive machine to a reasonably well protected area.
2. Ensure boom is fully retracted and lowered over rear axle.
3. Shut down Emergency Stop at Platform Controls.
4. Shut down Emergency Stop at Ground Controls. Position Platform/Ground Select switch to center Off (center position).
5. If necessary, cover Platform Controls to protect instruction placards, warning decals, and operating controls from hostile environment.

#### **NOTICE**

**IF PARKING A MEWP WITH THE BOOM ELEVATED IN AN EFFORT TO CONSERVE SPACE, BOOMS MAY BE ELEVATED, BUT SHALL NOT BE EXTENDED. IT IS THE OPERATOR'S RESPONSIBILITY TO ENSURE ALL SAFETY PRECAUTIONS IN SECTION 1 OF THIS MANUAL ARE FOLLOWED FOR EACH UNIQUE SITUATION.**

### 4.15 LIFTING AND TIE DOWN

*See Figure 4-8.*

#### **Lifting**

1. Refer to the Serial Number Plate, refer to the Specifications section of this manual, or weigh the individual unit to find out the Gross Vehicle Weight.
2. Place the boom in the stowed position with the turntable locked.
3. Remove all loose items from the machine.
4. Attach lifting device and equipment only to the designated lifting points.
5. Properly adjust the rigging to prevent damage to the machine and so the machine remains level.

## Tie Down

### **NOTICE**

**WHEN TRANSPORTING THE MACHINE, THE BOOM MUST BE FULLY LOWERED INTO THE BOOM REST.**

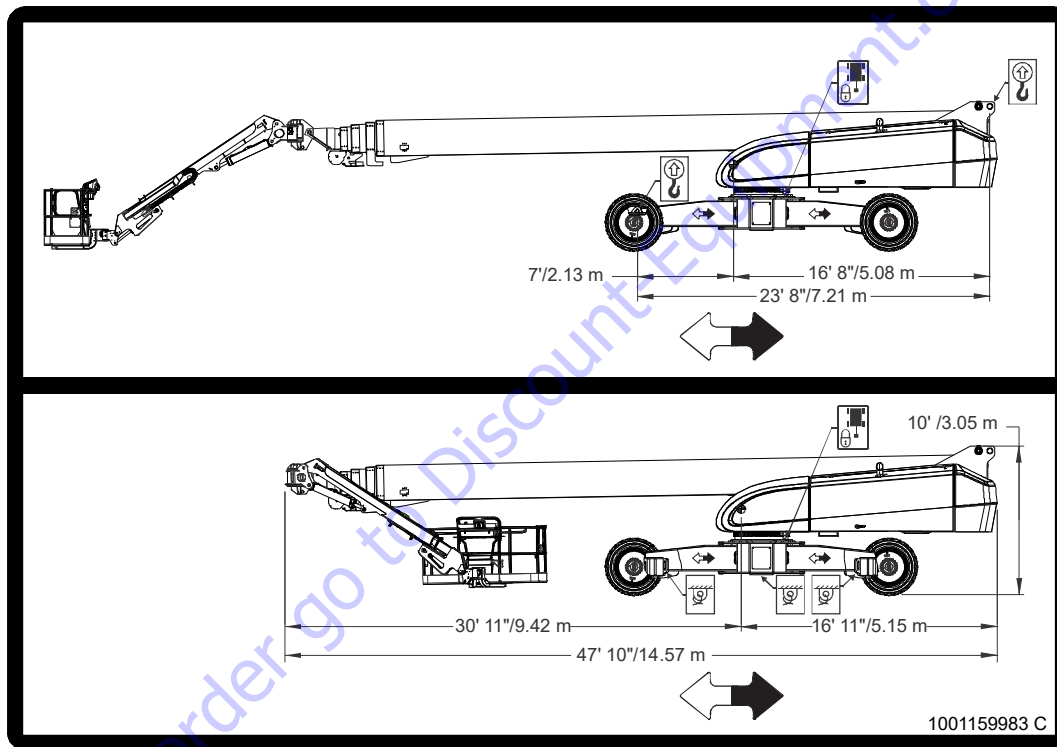
1. Place the boom in the stowed position with the turntable locked.
2. Remove all loose items from the machine.
3. Secure the chassis and the platform using straps or chains of adequate strength and attached to the designated tie down points.

## 4.16 STOWING THE JIB FOR TRANSPORT

1. Place the boom in the stowed position with the axles retracted.
2. Hold the Jib Swing control switch to the right until the platform will no longer swing.

**NOTE:** *Automatic platform leveling is disabled when stowing the jib.*

3. Push and hold the platform rotate switch until the jib and platform are in the stowed position under the boom.



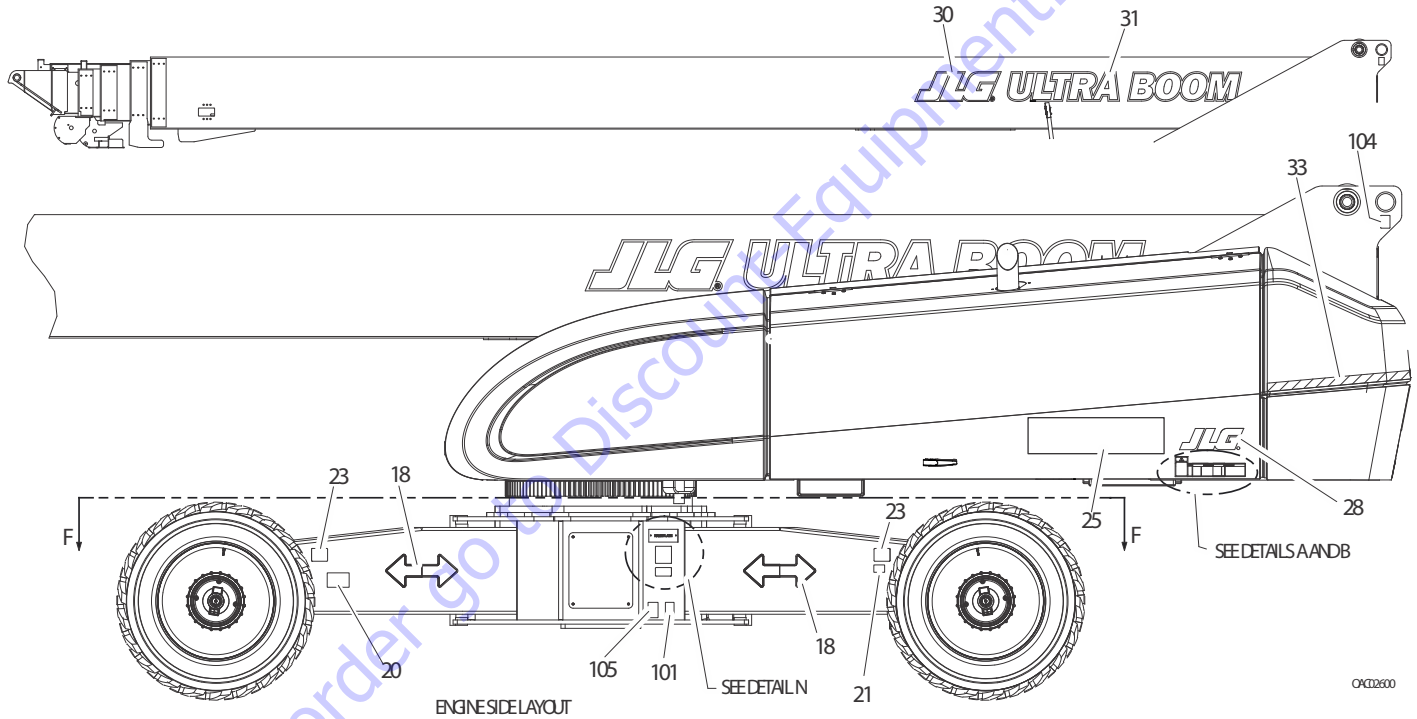
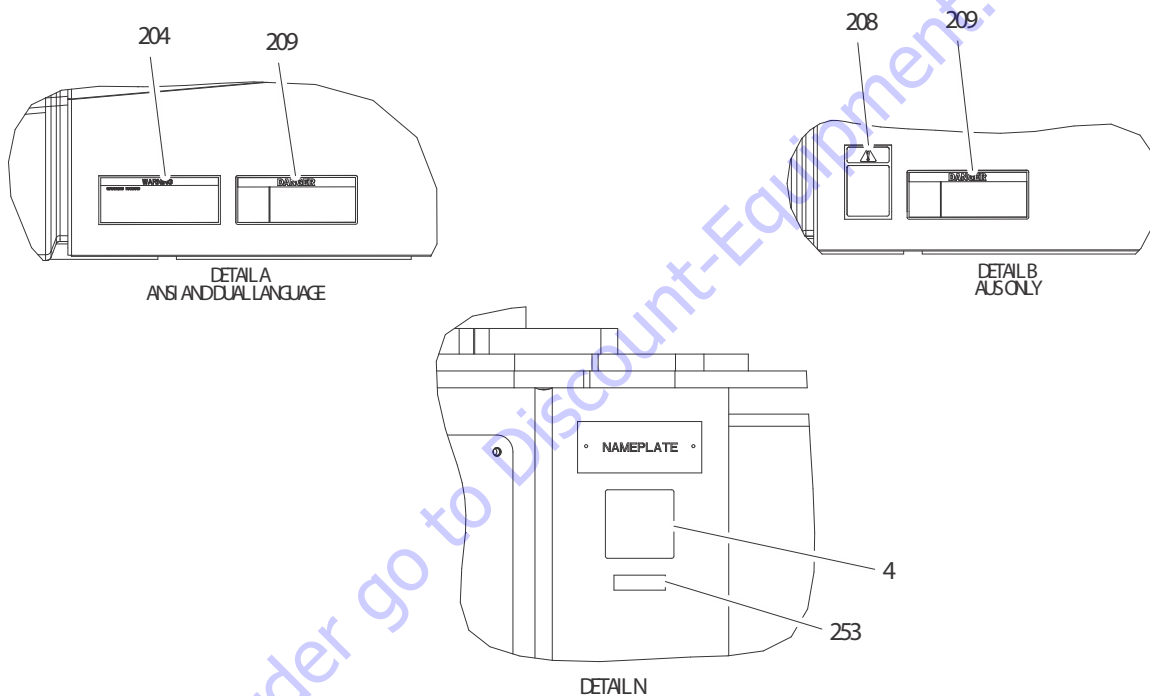


Figure 4-9. Decal Location Sheet 1 of 9

## SECTION 4 - MACHINE OPERATION



OXD2510

Figure 4-10. Decal Location Sheet 2 of 9



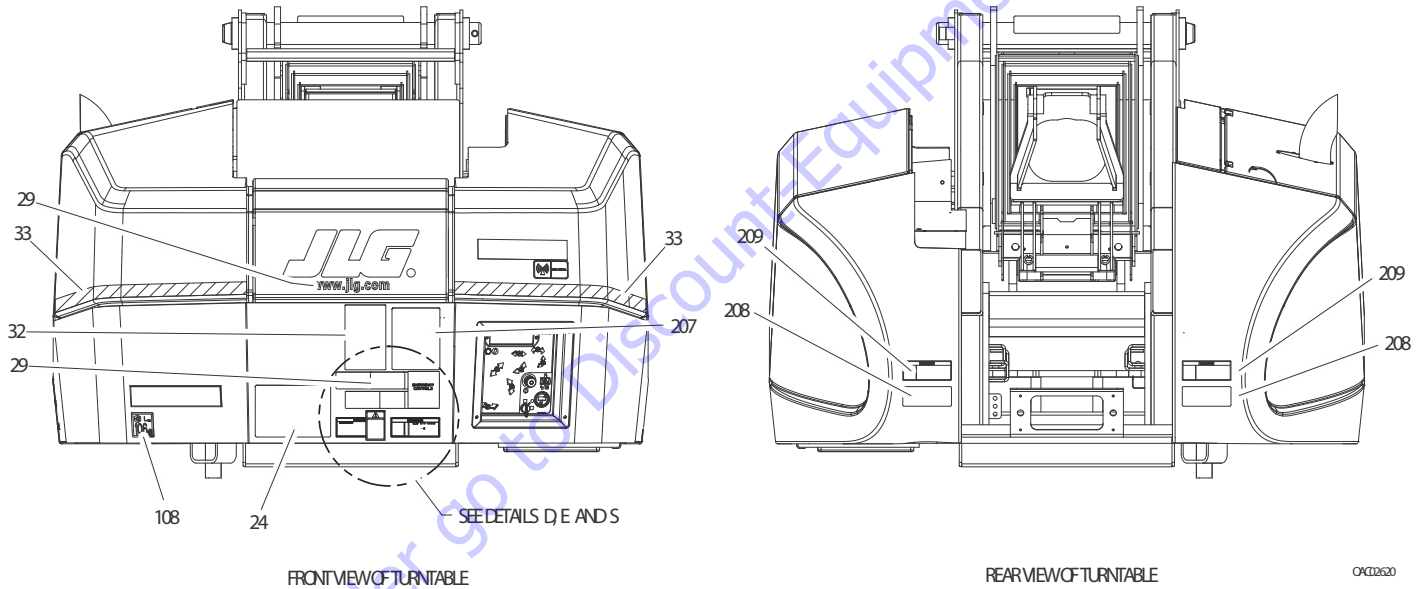
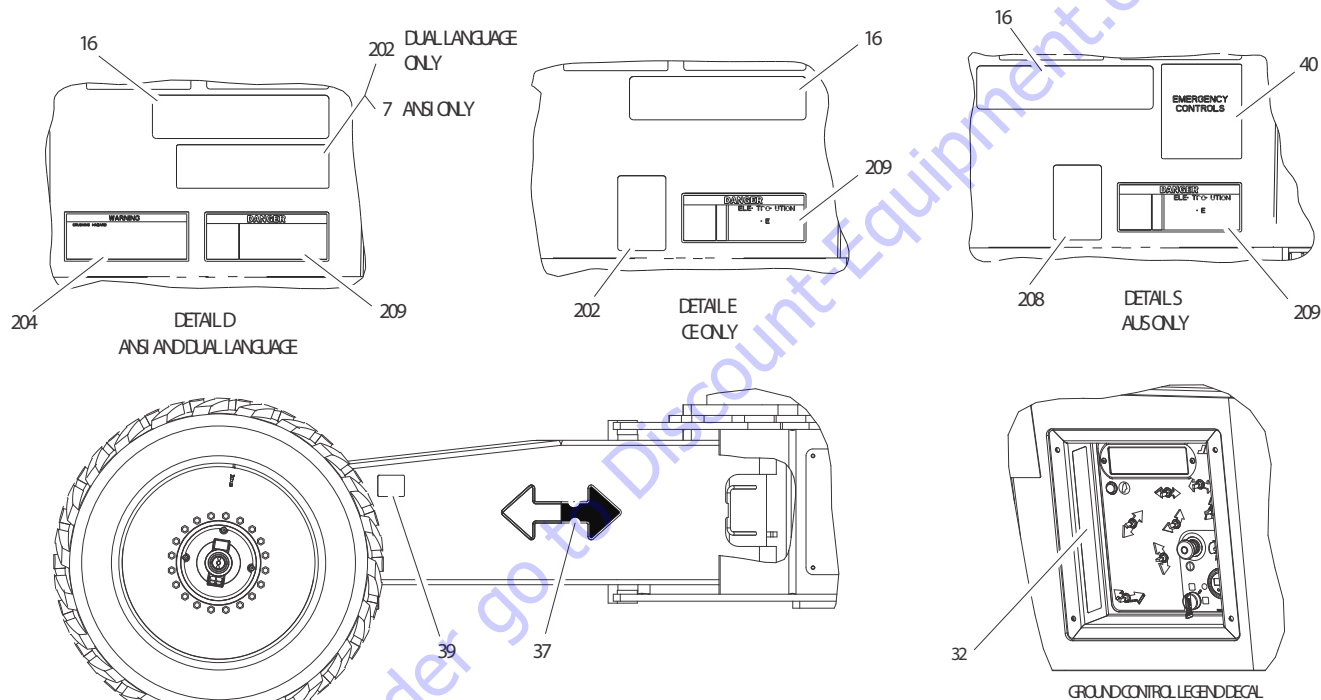


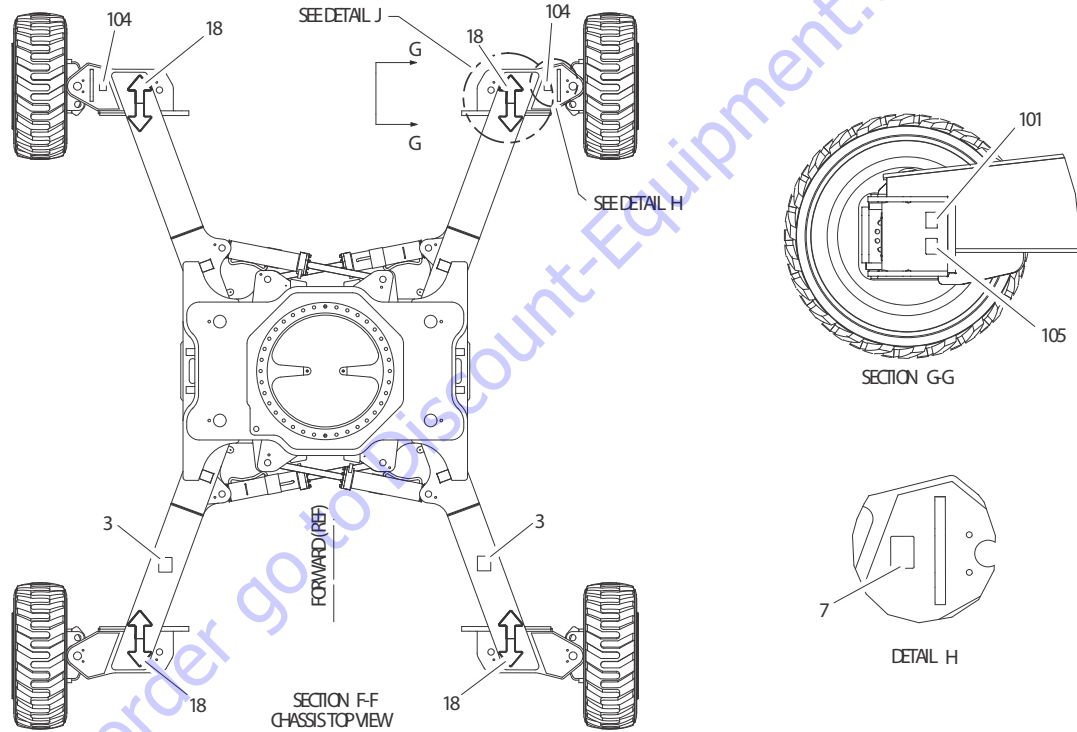
Figure 4-11. Decal Location Sheet 3 of 9

## SECTION 4 - MACHINE OPERATION



0X002630

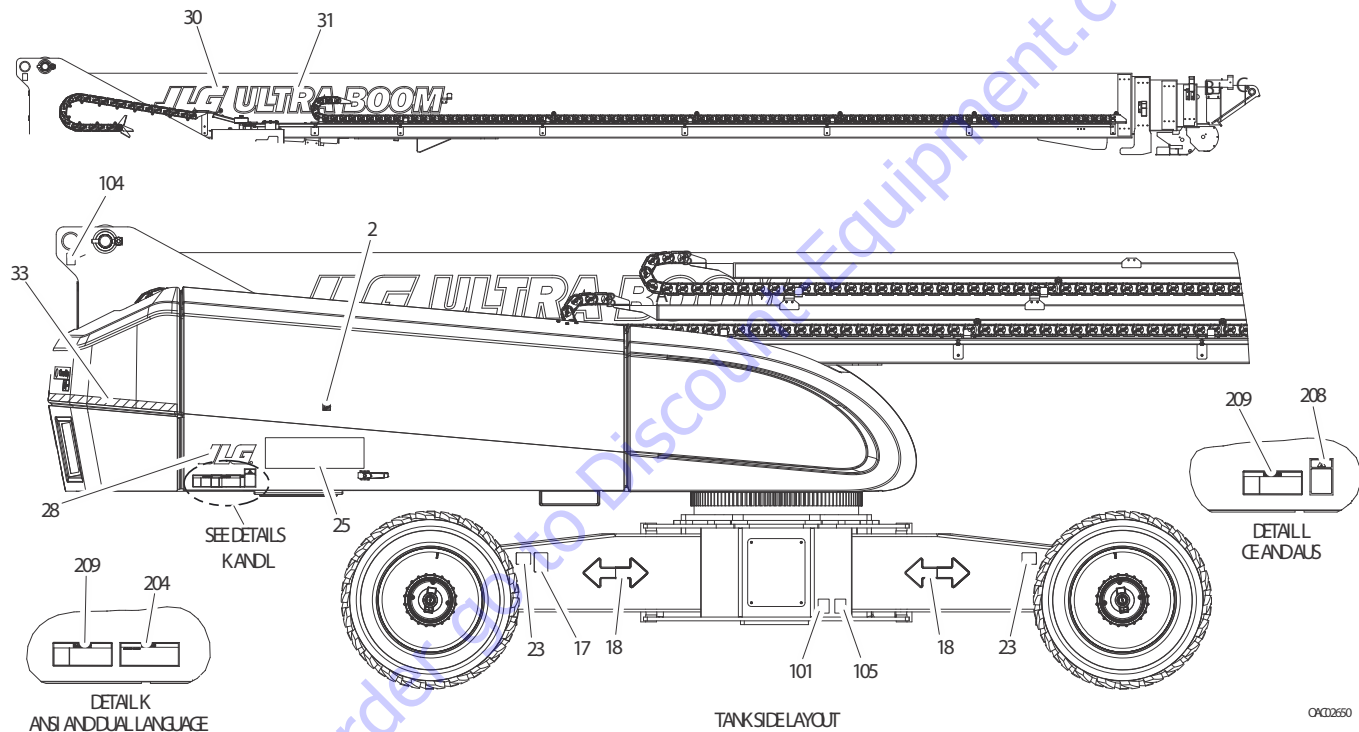
Figure 4-12. Decal Location Sheet 4 of 9



0XC02640

Figure 4-13. Decal Location Sheet 5 of 9

**SECTION 4 - MACHINE OPERATION**



**Figure 4-14. Decal Location Sheet 6 of 9**

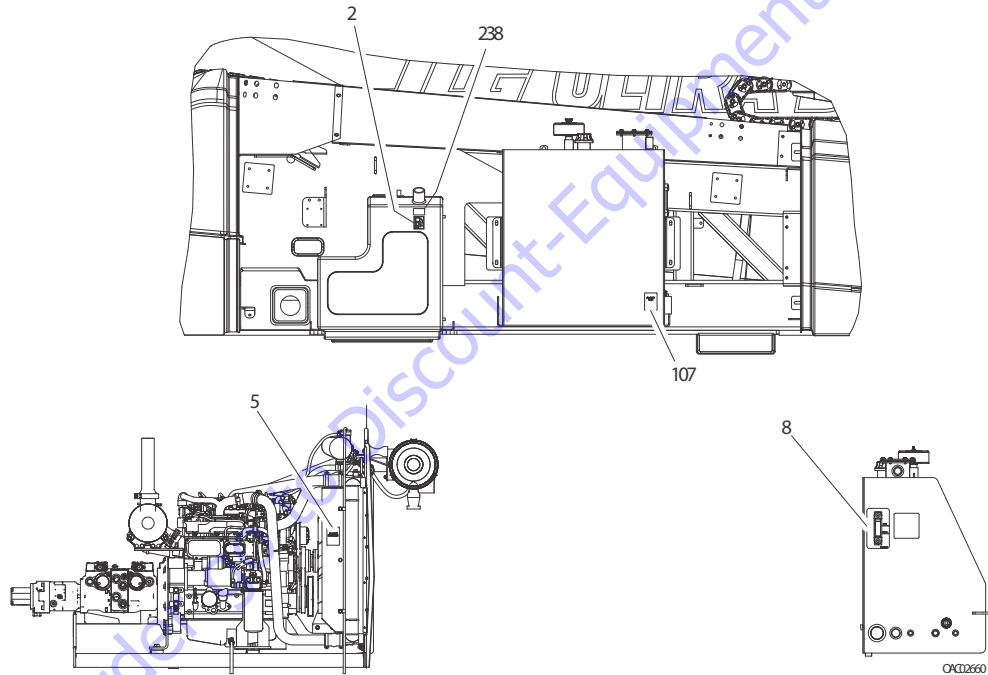


Figure 4-15. Decal Location Sheet 7 of 9

## SECTION 4 - MACHINE OPERATION

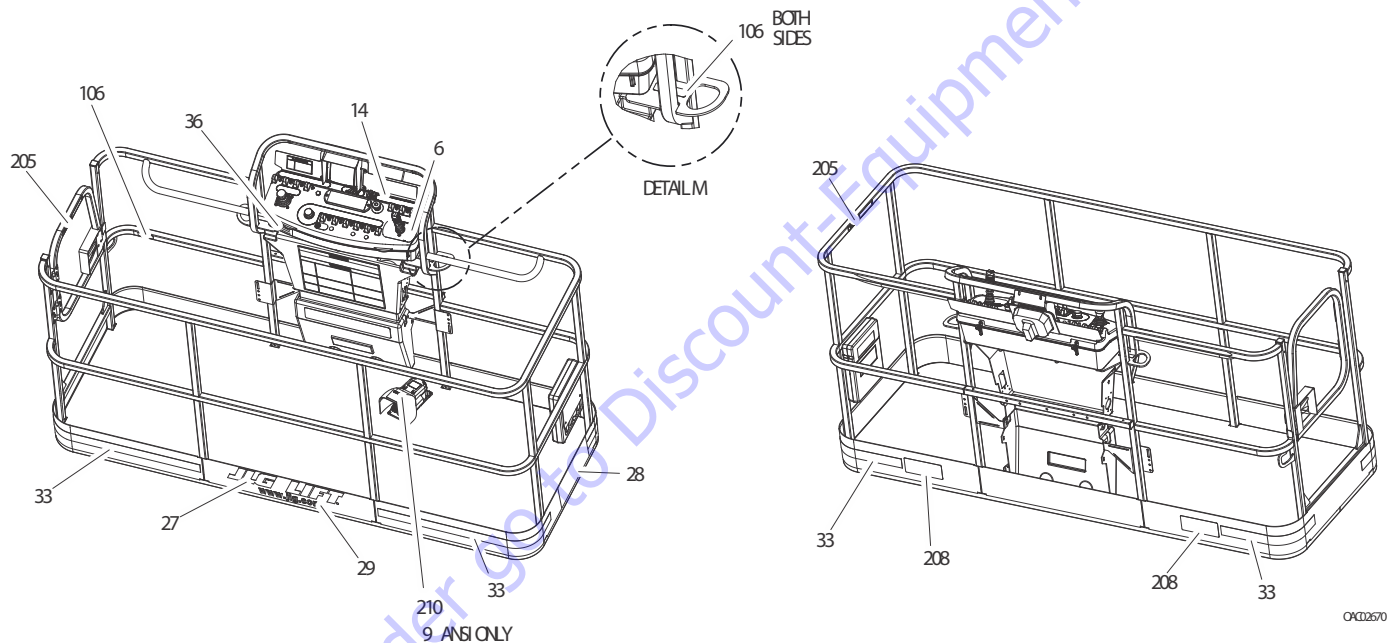


Figure 4-16. Decal Location Sheet 8 of 9

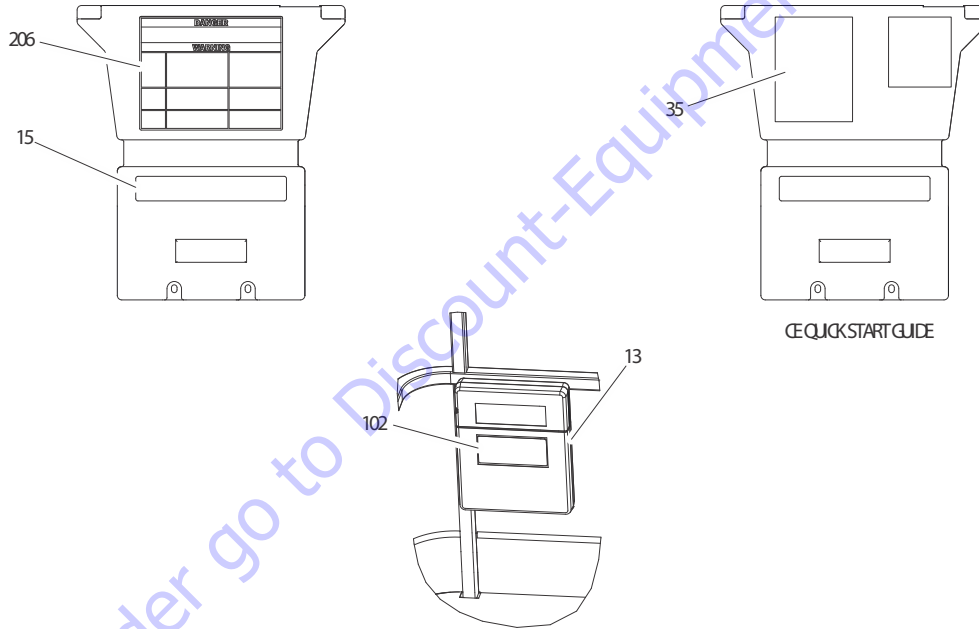


Figure 4-17. Decal Location Sheet 9 of 9

## SECTION 4 - MACHINE OPERATION

Table 4-3. Decal Legend

Item #	ANSI 1001241814-B	Korean 1001242828-B	Chinese 1001242829-B	Portuguese 1001242830-B	English/ Spanish 1001242831-B	French/English 1001241816-B	CE 1001246616-A	Japan 1001242832-B	Australia 1001246617-A
2	1701505	1701505	1701505	1701505	1701505	1701505	1701505	1701505	1701505
3	1701691	1701691	1701691	1701691	1701691	1701691	1701691	1701691	1701691
4	1702631	1702631	1702631	1702631	1702631	1702631	1702631	1702631	1702631
5	1704972	1706061	1706060	1706059	1706063	1706064	1702773	1704972	1706098
6	1705351	1705427	1705430	1705905	1705910	1705429	1705174	1705426	--
7	1705492	--	--	--	--	--	1705511	--	--
8	1705511	1705511	1705511	1705511	1705511	1705511	1705864	1705511	1705511
9	3252347	--	--	--	--	--	1706098	--	--
13	91403230	91403230	91403230	91403230	91403230	91403230	91403230	91403230	91403230
14	1001122611	1001122611	1001122611	1001122611	1001122611	1001122611	1001125177	1001122611	1705174
15	1001253543	1001253547	1001253549	1001253551	1001253553	1001253545	1001125178	1001253555	1001125177
16	1001253544	1001253548	1001253550	1001253552	1001253554	1001253546	1001160445	1001253556	1001125178
17	1001131269	--	--	--	--	1001131269	1001178165	--	--
18	1001160445	1001160445	1001160445	1001160445	1001160445	1001160445	--	1001160445	1001160445
19	1001178165	1001178165	1001178165	1001178165	1001178165	1001178165	--	1001178165	1001178165
20	1001223055	1001224048	1001224050	1001224052	1001224049	1001223971	--	1001224053	--



Table 4-3. Decal Legend

Item #	ANSI 1001241814-B	Korean 1001242828-B	Chinese 1001242829-B	Portuguese 1001242830-B	English/ Spanish 1001242831-B	French/English 1001241816-B	CE 1001246616-A	Japan 1001242832-B	Australia 1001246617-A
21	1001223453	--	--	--	--	1001223453	--	--	--
23	1001159855	1001159855	1001159855	1001159855	1001159855	1001159855	1001159855	1001159855	1001159855
24	1001159983	1001159983	1001159983	1001159983	1001159983	1001159983	1001159983	1001159983	1001159983
25	1001159880	1001159880	1001159880	1001159880	1001159880	1001159880	1001159880	1001159880	1001159880
26	1001253997	1001253997	1001253997	1001253997	1001253997	1001253997	1001253993	1001253997	1001253994
27	1702774	1702774	1702774	1702774	1702774	1702774	--	1702774	1702774
28	1702773	1702773	1702773	1702773	1702773	1702773	--	1702773	1702773
29	1704885	1704885	1704885	1704885	1704885	1704885	--	1704885	1704885
30	1705864	1705864	1705864	1705864	1705864	1705864	--	1705864	1705864
31	1705865	1705865	1705865	1705865	1705865	1705865	--	1705865	1705865
32	1001125196	1001125197	1001125198	1001125200	1001125199	100125201	1001125196	1001159880	100125196
33	4420051	4420051	4420051	4420051	4420051	4420051	4420051	4420051	4420051
34	--	--	--	--	--	--	1001197408	--	1001177562
35	--	--	--	--	--	--	1001177562	--	--
36	1001231801	--	--	--	--	--	--	--	--
37	--	--	--	--	--	--	1001125387	--	--
40	--	--	--	--	--	--	--	--	1001112551
100	1001248541	1001248541	1001248541	1001248541	1001248541	1001248541	1001248541	1001248541	1001248541

## SECTION 4 - MACHINE OPERATION

Table 4-3. Decal Legend

Item #	ANSI 1001241814-B	Korean 1001242828-B	Chinese 1001242829-B	Portuguese 1001242830-B	English/ Spanish 1001242831-B	French/English 1001241816-B	CE 1001246616-A	Japan 1001242832-B	Australia 1001246617-A
101	1701499	1701499	1701499	1701499	1701499	1701499	1701499	1701499	1701499
102	1701509	1701509	1701509	1701509	1701509	1701509	1701509	1701509	1701509
104	1703811	1703811	1703811	1703811	1703811	1703811	1703811	1703811	1703811
105	1703814	1703814	1703814	1703814	1703814	1703814	1703814	1703814	1703814
106	1704277	1704277	1704277	1704277	1704277	1704277	1704277	1704277	1704277
107	1704412	1704412	1704412	1704412	1704412	1704412	1704412	1704412	1704412
108	--	--	--	--	--	--	--	--	1001187411
200	1001248547	1001248549	1001248553	1001248551	1001248550	1001248548	1001248546	1001248552	1001248546
202	--	--	--	--	1705915	1705505	--	1705493	--
204	1703953	1705503	1703943	1705903	1703941	1703942	--	1703944	--
205	1702868	1705969	1001116846	1705967	1704001	1704000	--	--	--
206	1001231315	1001231317	1001231321	1001231319	1001231318	1001231316	1705921	1001231320	1705921
207	1705336	1705345	1001116849	1705896	1705917	1705347	1705822	1705344	1705822
208	1703804	1703951	1703949	1705898	1703947	1703948	1701518	1703950	1701518
209	1703805	1703939	1001116851	1705897	1703935	1703936	1705961	1703938	1705961
210	--	1703981	1703982	1705902	1703983	1703984	1705828	1703980	1705828

## SECTION 5. LCD DISPLAY PANEL

### 5.1 DESCRIPTION

This machine utilizes an LCD display panel to assist the operator by supplying additional information during the operation of the machine. It is NOT a substitute for the Operation and Safety Manual, nor is it a replacement for thorough operational knowledge of the machine.

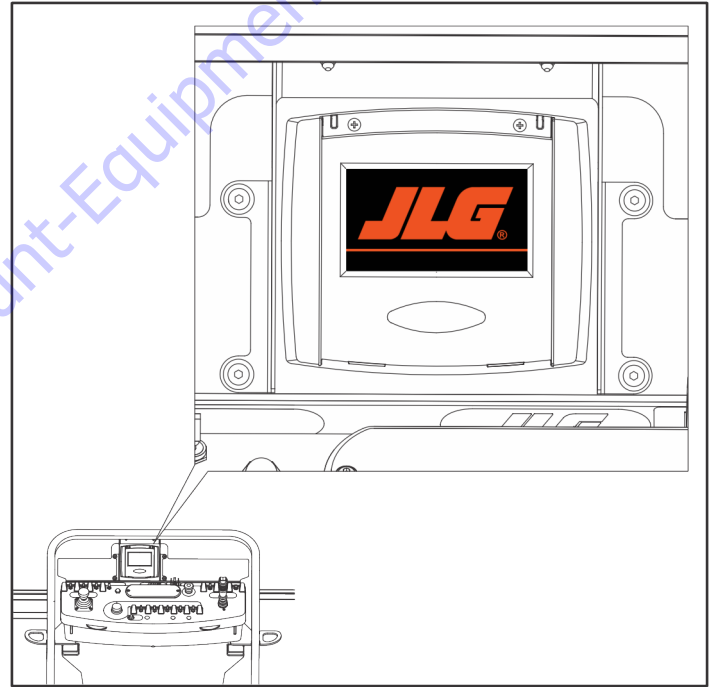


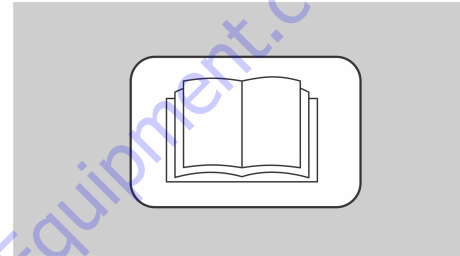
Figure 5-1. LCD Panel

**5.2 BOOT UP SPLASH SCREEN**

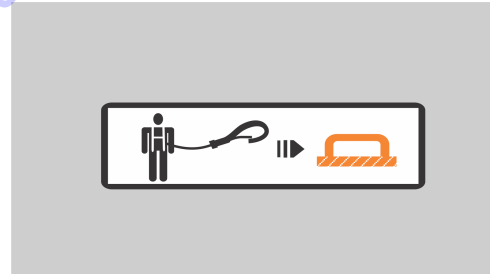
When the machine is first powered on, the JLG boot up splash screen appears followed by three reminder screens. There is a reminder for the operator to wear a full body harness with a lanyard attached to an authorized lanyard anchorage point, a reminder for the operator to read and understand the Operation and Safety Manual, and a reminder for the operator to select the desired capacity range of the machine. Each reminder screen will show for 3 seconds.



**Figure 5-2. Boot Up Splash Screen**



**Figure 5-3. Manual Screen**



**Figure 5-4. Lanyard Screen**

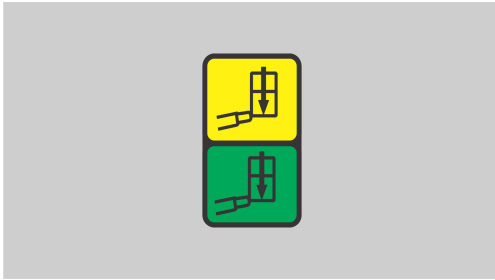


Figure 5-5. Select Capacity Zone Screen

### 5.3 MACHINE OPERATING SCREEN

After the reminder screens, the Machine Operating Screen will appear. The Machine Operating Screen consists of different

images and trays. Each tray provides different machine information.

**NOTE:** Early versions may not include the speed restriction (snail) icon.

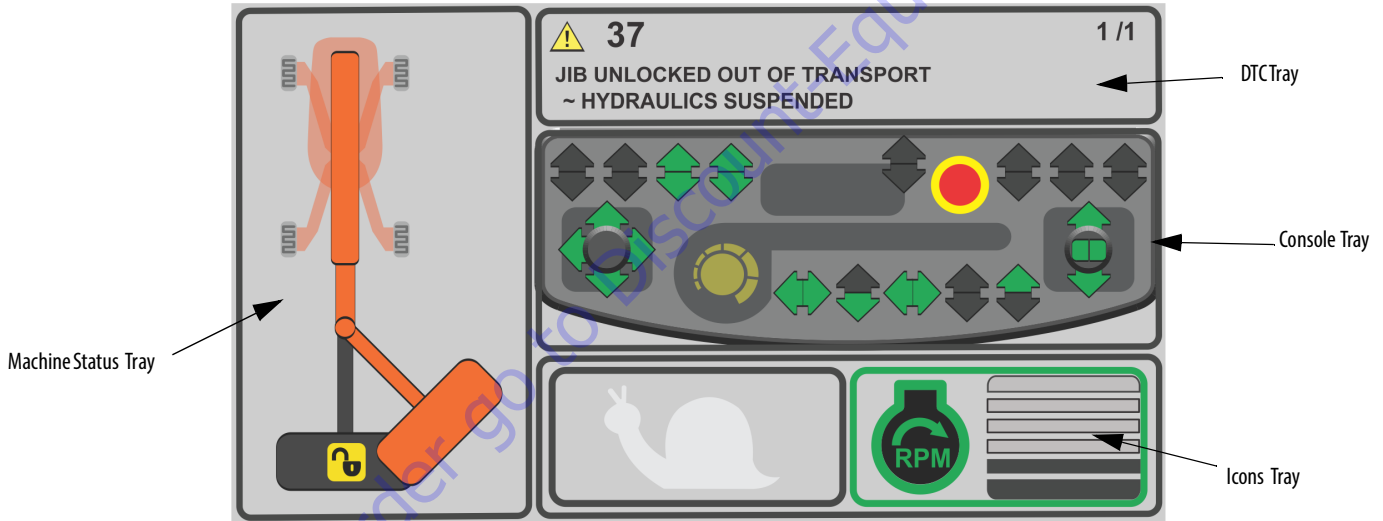


Figure 5-6. Machine Operating Screen

## Diagnostic Trouble Code (DTC) Tray

This tray shows the total number of DTC's and the DTC Text. If there are multiple DTC's, the operator can scroll through the DTC List to the end. When the tray is empty, this means there are no active DTC's.

## Console Tray

This tray represents the platform console information.

When the machine is in operation, and the footswitch is pressed, the console will show available functions with a green arrow and unavailable functions with a gray arrow.

**NOTE:** *The green and gray console arrows shown in the examples in this section may be different depending upon machine setup and specific operating conditions.*

## Icons Tray

The Icons Tray shows engine RPM plus Creep and Super Creep modes.

The RPM level is represented in bars.

## Machine Status Tray

The Machine Status Tray is used to display different images based on the machine status. These include:

- Key Switch Ground Mode
- CAN Bus Lost
- Take Foot Out
- Put Foot In
- BCS Lamp On
- Broken Cable
- System/Platform Level DTCs
- Platform Overload DTCs
- Weight Mode Error
- Swing Left DTC
- Swing Right DTC
- Jib Unlocked
- Jib Locked
- Chassis Status
- In Transport and Out of Transport
- Axles Extended, Retracted, Transient
- Machine Tilted
- Envelope Status
- Unknown Machine Model

### 5.4 KEYSWITCH IN GROUND MODE:

If the keyswitch is set to ground mode, the display shows the Key Switch in Ground Mode Image.

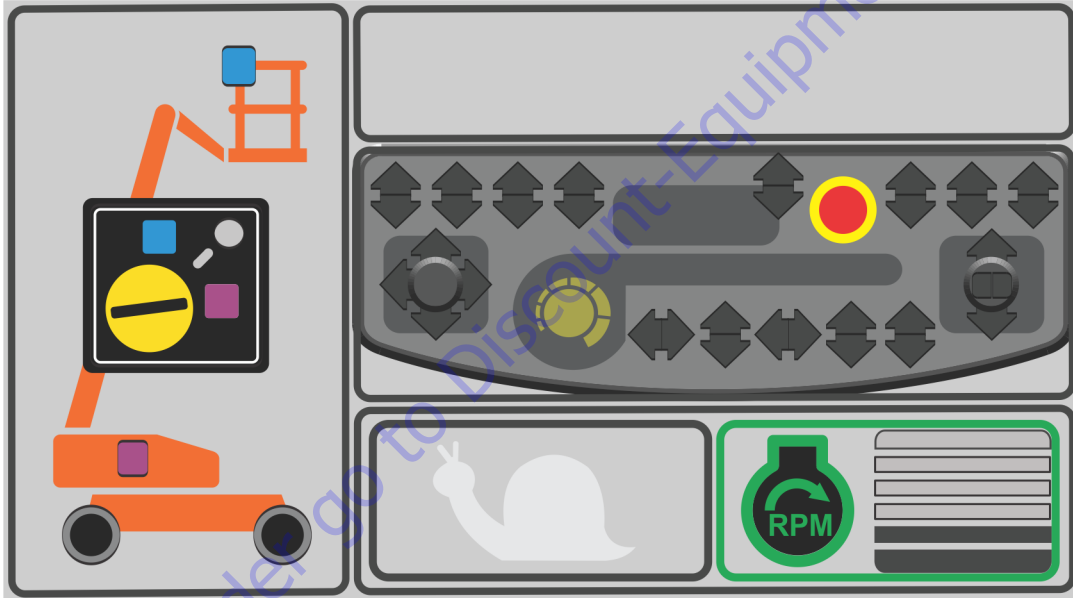


Figure 5-7. Keyswitch In Ground Mode Screen



## 5.5 FUNCTION SPEED

If there is no function speed restriction, a gray snail is shown. If the machine is in Creep Mode, a green snail icon is shown. If the machine is in Super Creep Mode, the green snail icon will flash.

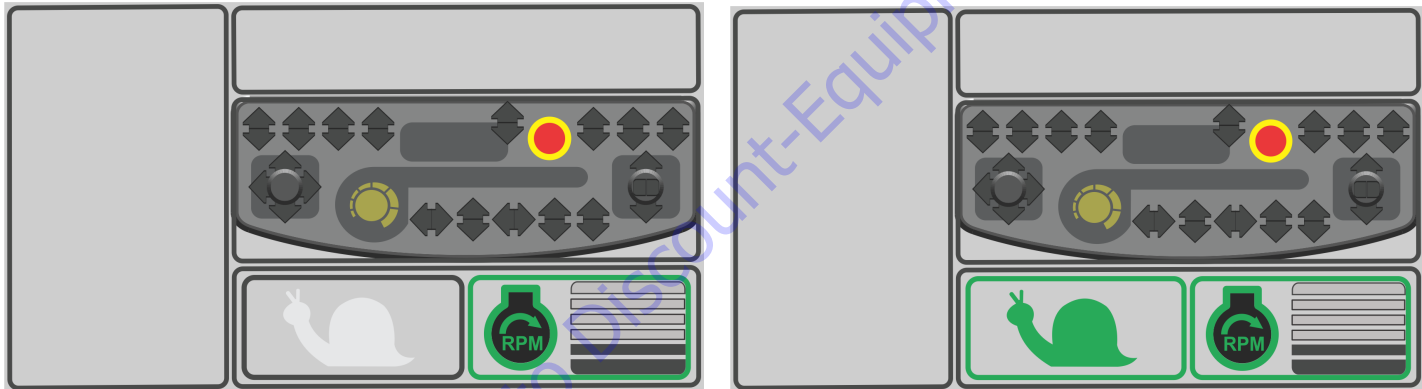


Figure 5-8. Function Speed Icons

### 5.6 CAN BUS LOST

When the control system senses a communication loss with any of the control modules (BLAM, Chassis, UGM, or Jib Control Module), the display will show a CAN Communication lost until the communications are reset.

**NOTE:** There is no way to get the active DTCs so, the previously active DTCs will be scrolling along with the CAN Bus Communication lost DTC. This DTC needs to be cleared in order for the communications to reset.

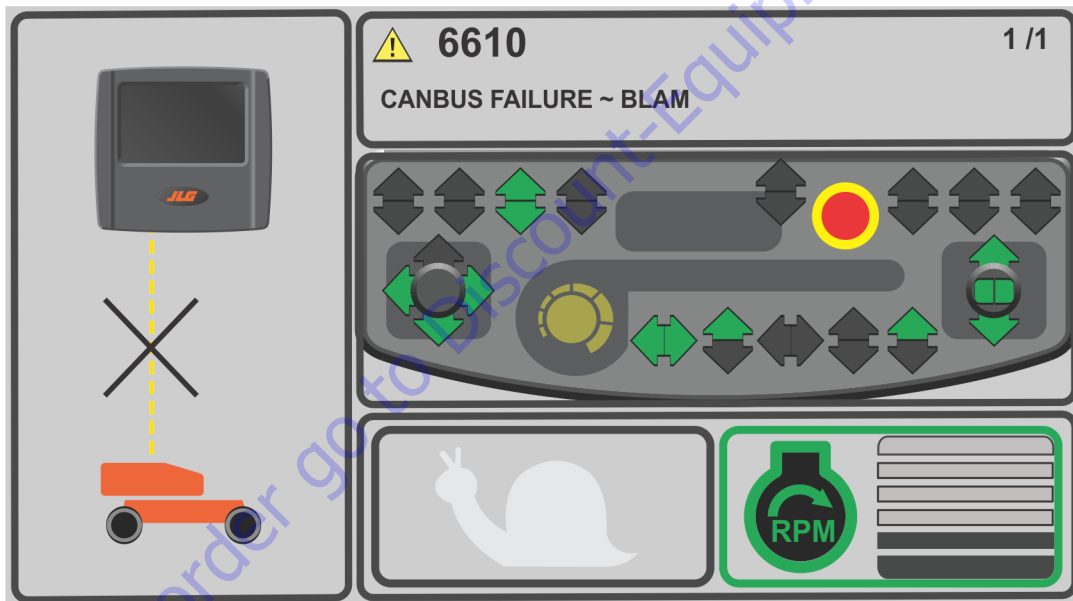


Figure 5-9. CAN Bus Lost Screen

### 5.7 TAKE FOOT OUT

When the footswitch is pressed and the control system senses a Take Foot Out DTC, the displays shows the Take Foot Out image in the machine status tray.

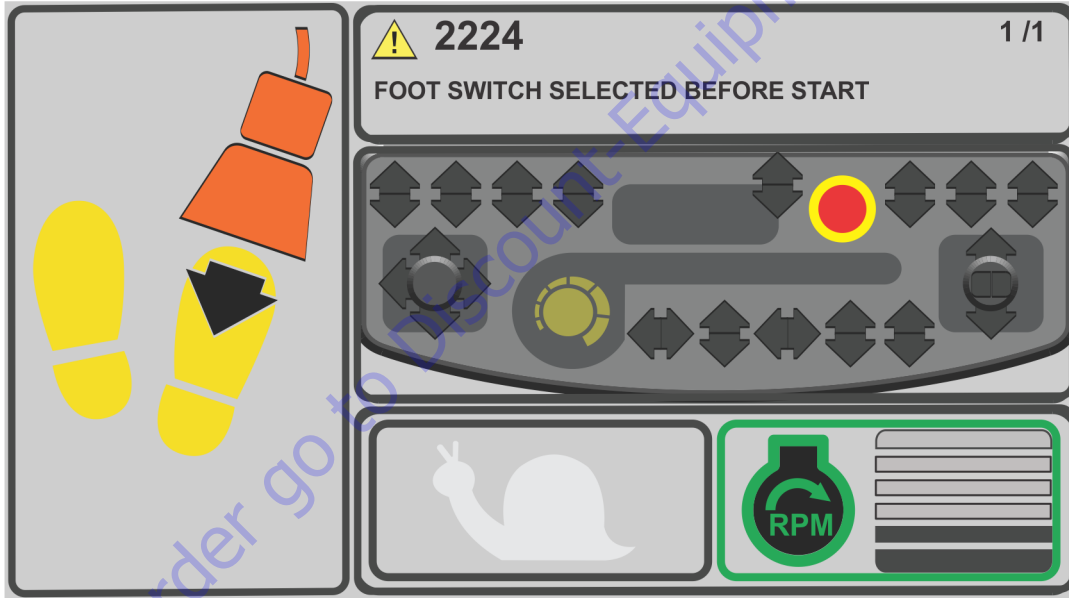


Figure 5-10. Take Foot Out Screen

## 5.8 PUT FOOT IN

When the operator operates the machine without putting his foot on switch, Put Foot In DTC becomes active after timeout.

When put foot in DTC is active, the display shows Put Foot In image in the machine status tray.

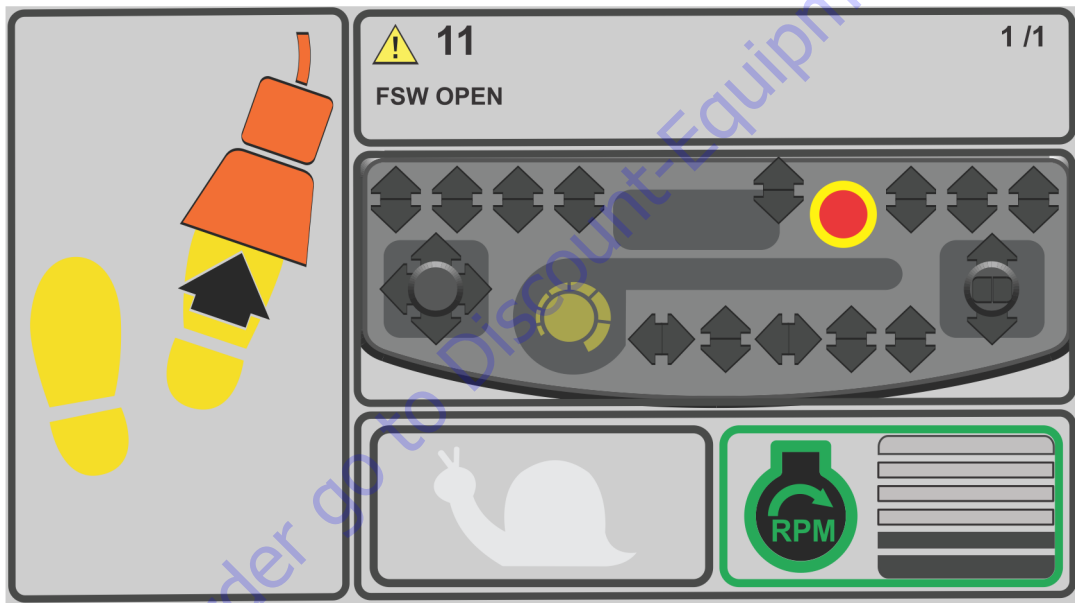


Figure 5-11. Put Foot In Screen

## 5.9 BCS LAMP ON

When the control system senses forward or backward envelope violation or moment violation conditions, the BCS Lamp will be ON. When the BCS Lamp is ON, the display shows a red octagon image in the machine status tray indicating a potentially hazardous situation.

- The DTCs that triggered this BCS Lamp will be scrolled in the DTC tray.

**NOTE:** *The available controls will be different among the different DTCs. The image below is ONLY for envelope violation.*

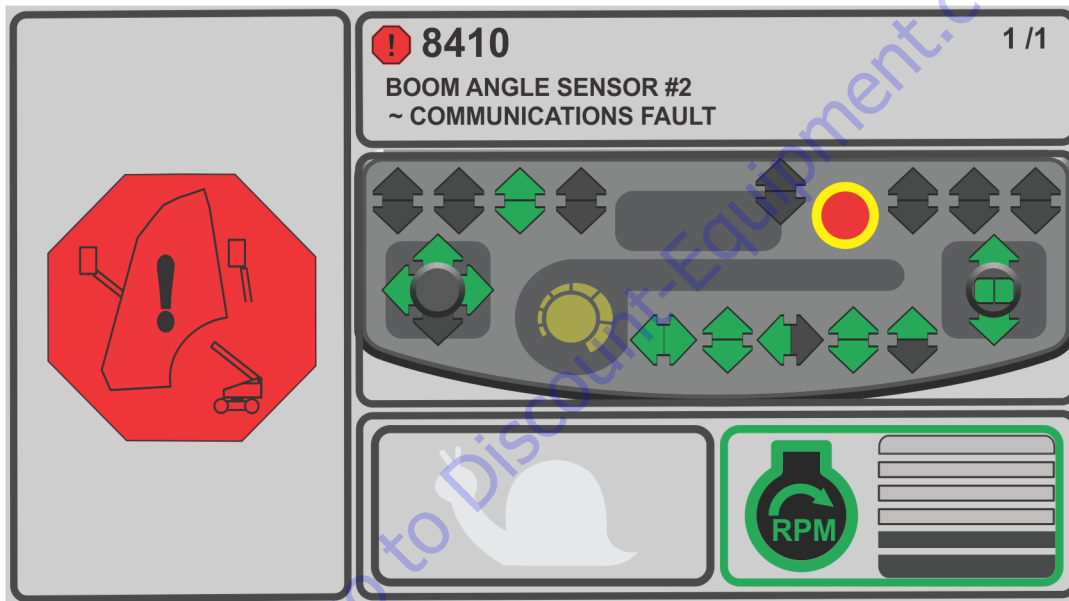


Figure 5-12. BCS Lamp Screen

### 5.10 BROKEN CABLE

When the control system senses a broken cable, the Broken Cable lamp on the platform panel is lit. When the lamp is lit, the display

shows a red octagon broken cable indicator in the machine status tray.

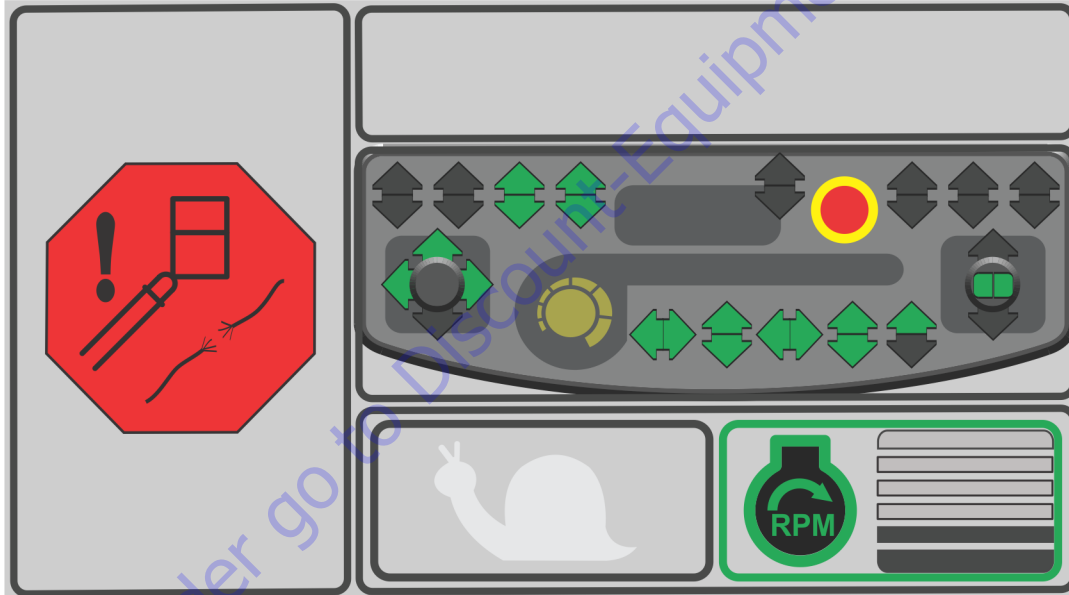


Figure 5-13. Broken Cable Screen

### 5.11 PLATFORM LEVEL

Whenever the control system senses a DTC with the platform level, the platform level lamp is lit on the platform console. When

this lamp is lit, the display shows a red octagon platform level DTC indicator in the machine status tray.

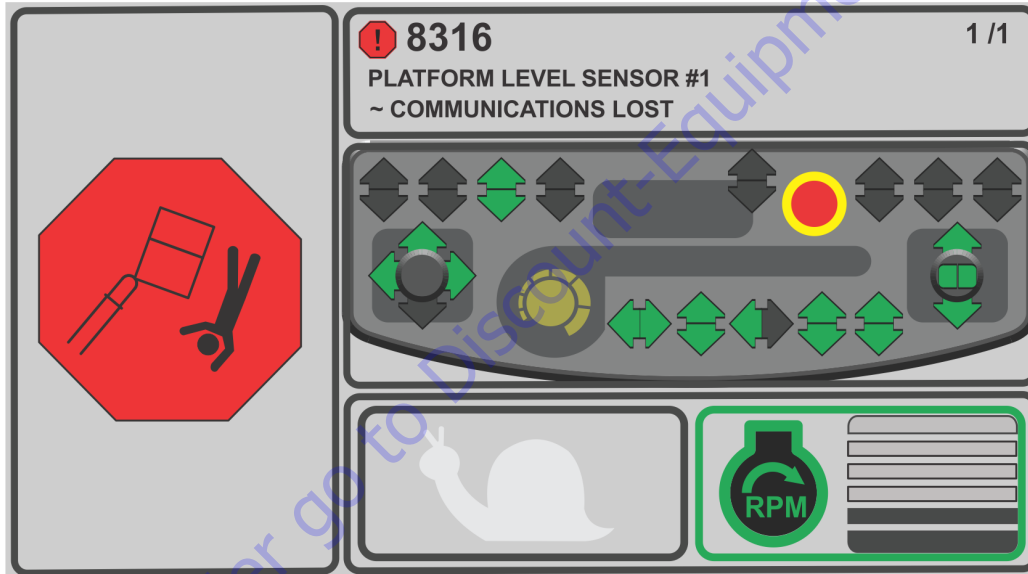


Figure 5-14. Level System DTC Screen



## 5.12 PLATFORM OVERLOAD

When the boom control system senses that the platform is overloaded, the Platform Overload indicator on the platform console will be lit.

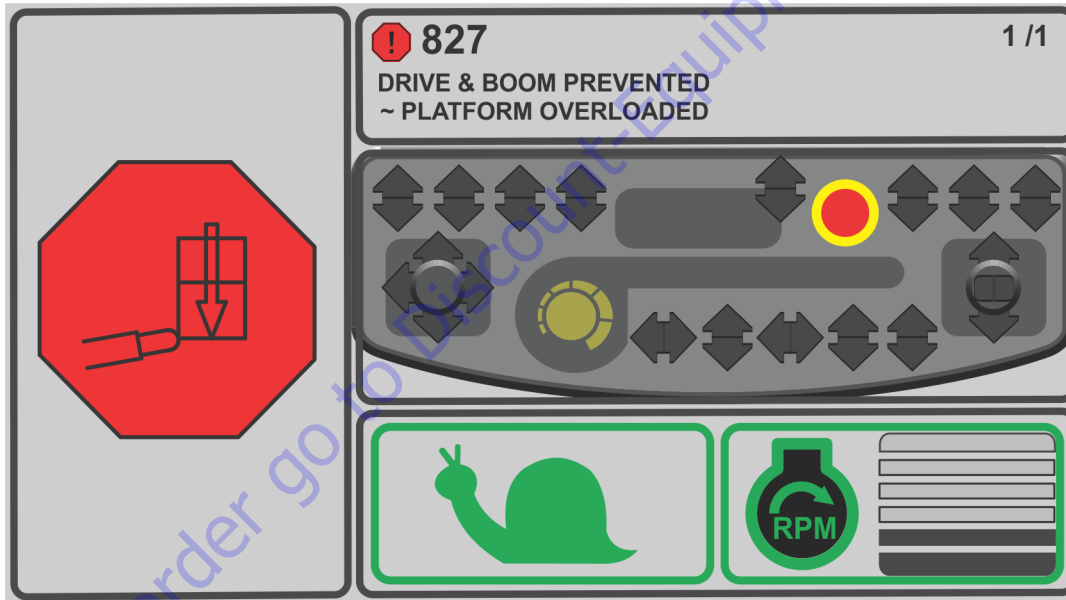


Figure 5-15. Overload DTC Screen

### 5.13 CAPACITY MODE ERROR

If the operator selects the incorrect capacity mode for the jib configuration (i.e., if the operator is in Unrestricted mode with the jib

completely telescoped out, and changes the capacity to Restricted mode), the capacity mode indicator icon will flash in the Machine Status tray every second.

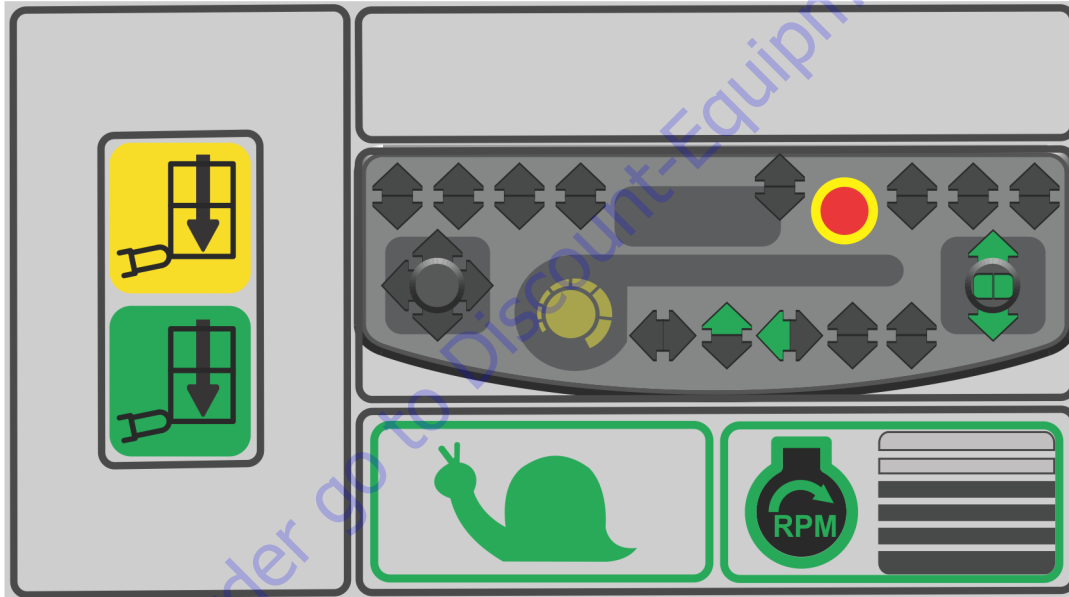


Figure 5-16. Capacity Mode Error Screen

## 5.14 SWING DTCS

When the machine is swung more than what it is allowed for in either left or right direction, the control system senses a swing fault. When this DTC is active, the display shows a machine image with green arc which indicates the allowed angle and the portion other than the green arc indicates the restricted area to show the swing DTC. Displays shows operator to extend the axles by flashing the axles.

- Swing DTC will be displayed on the DTC tray with the number and system distress icon.
- Available functions on the machine are shown with green arrows. Functions that are not available are grayed out.
- RPM and speed restriction icon will be displayed in the Icons tray.

**NOTE:** *Image below shows a left swing DTC. For right swing DTC, the boom will be shown swung to the right.*

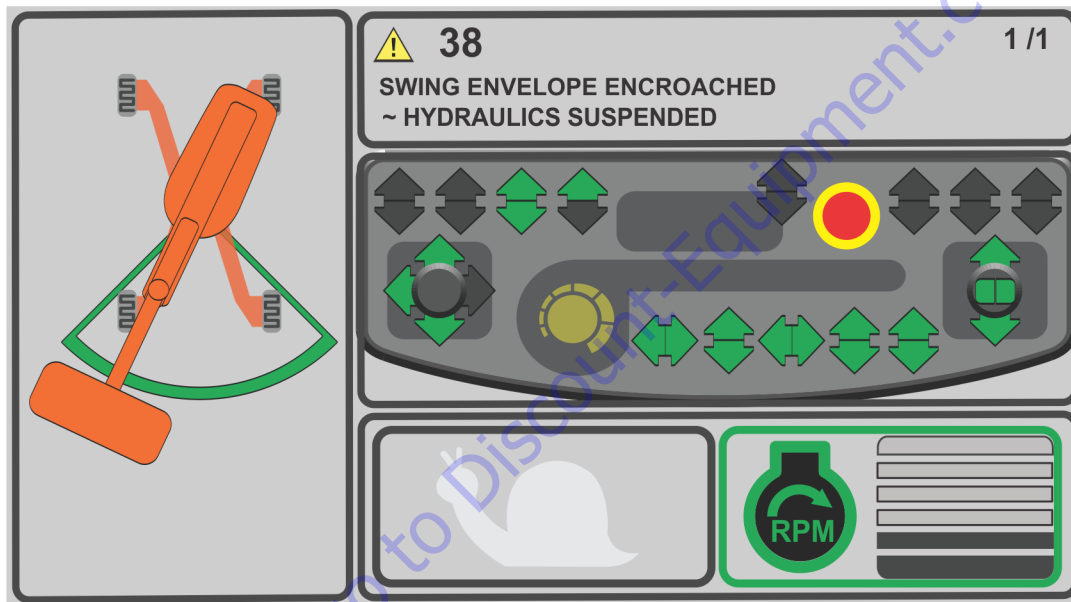


Figure 5-17. Swing DTC Screen

## 5.15 JIB UNLOCKED

When the control system senses that jib pin is unlocked, the display will show the Jib Unlocked image.

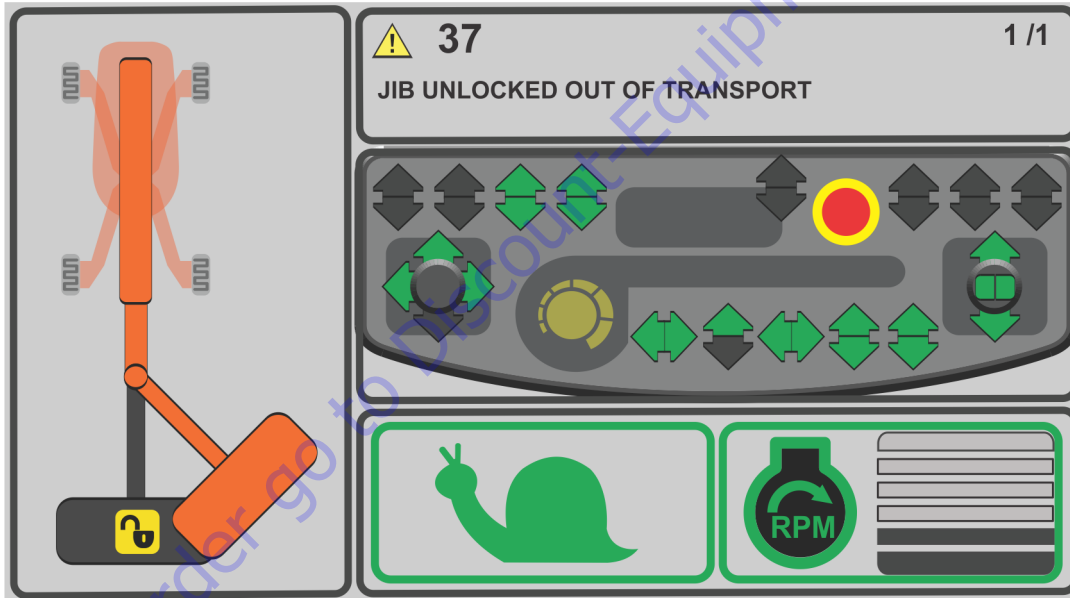


Figure 5-18. Jib Unlocked Screen

### 5.16 JIB LOCKED

When the boom control system senses jib is locked **ONLY** for the first time, the display will show the Jib Locked image on the machine status tray for 3 seconds.

The display will show a different image on the machine status tray after 3 seconds have elapsed.

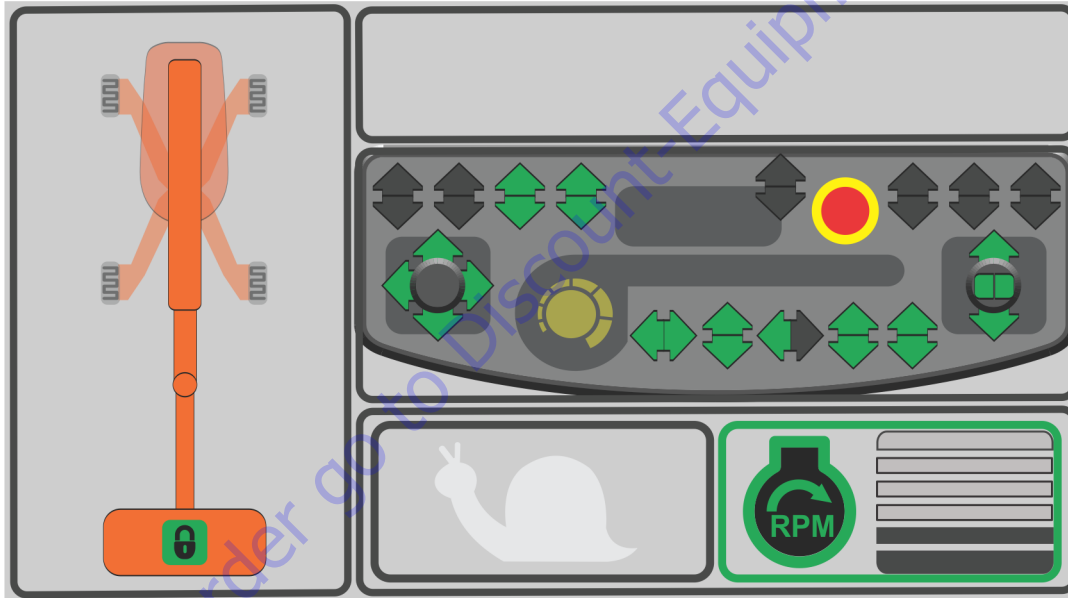


Figure 5-19. Jib Locked Screen

## 5.17 CHASSIS STATUS

shown on the left side of the display or machine status tray. This image will be shown until the axles are extended.

### Axles Retracted In Transport Position

When the axles are retracted regardless of engine state, the display shows the following screen. The Axles Retracted image is

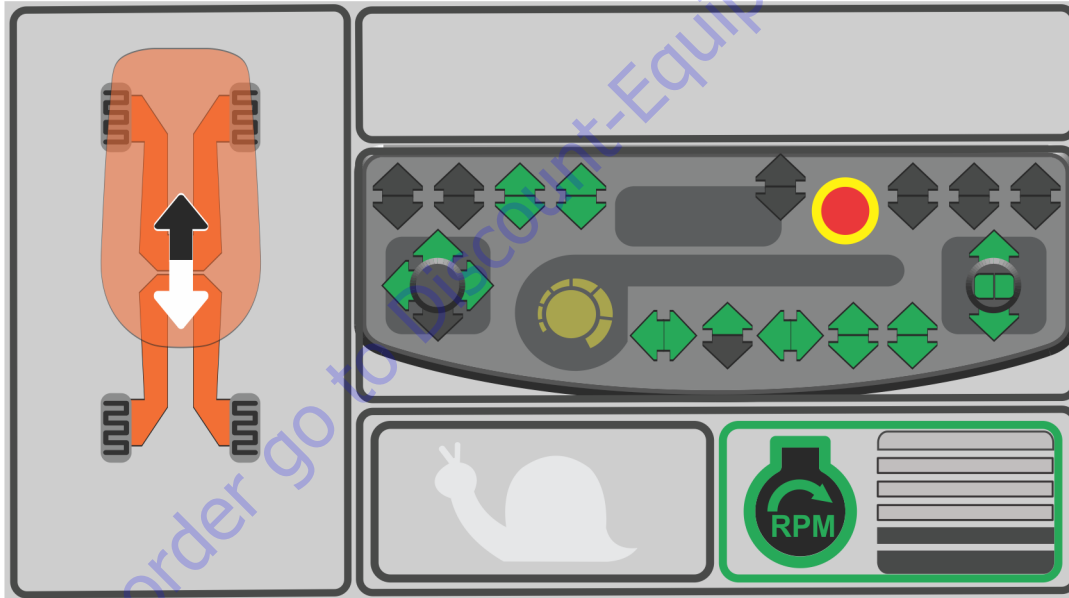
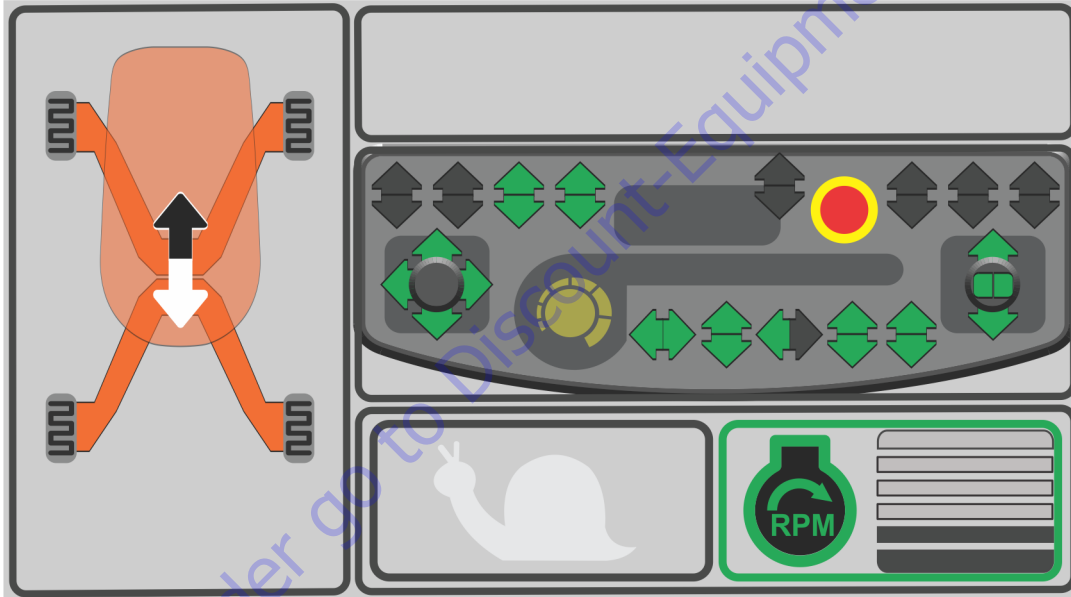


Figure 5-20. Axles Retracted Screen

**Axles Extended**

When the axles are extended for the first time (meaning previous state is retracted and current state is extended), regardless of the

Engine state, the Axles Extended image will show up on the machine status tray for first 3 seconds.



**Figure 5-21. Axles Extended Screen**



## Axles Retracted In Out of Transport Position

When the axles are retracted and the machine is in out of transport position, the display will switch between axles extended and retracted every 0.5 seconds to tell the operator to extend the axles so the boom can be raised.

## Axles In Transient State

When the operator is extending or retracting the axles, the Axles In Transient State screen will show and the arrows showing axle travel direction will flash. When the axles are not fully extended or retracted and no axle functions are selected, the green arrows will show steadily.

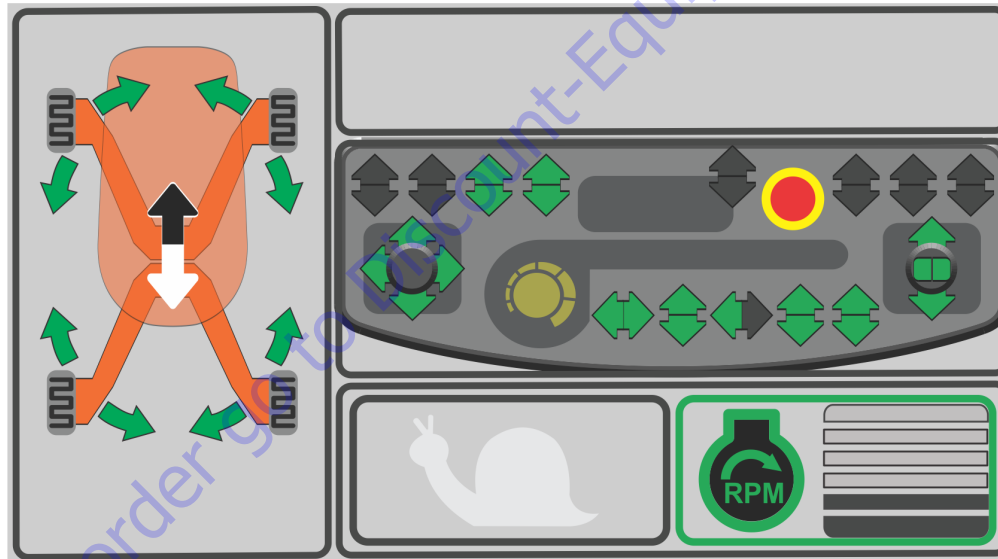


Figure 5-22. Axles In Transient State Screen

### 5.18 MACHINE TILTED MODE

When the control system senses the chassis is on an excessive slope, the display will show the Machine Tilted image in the machine status tray.

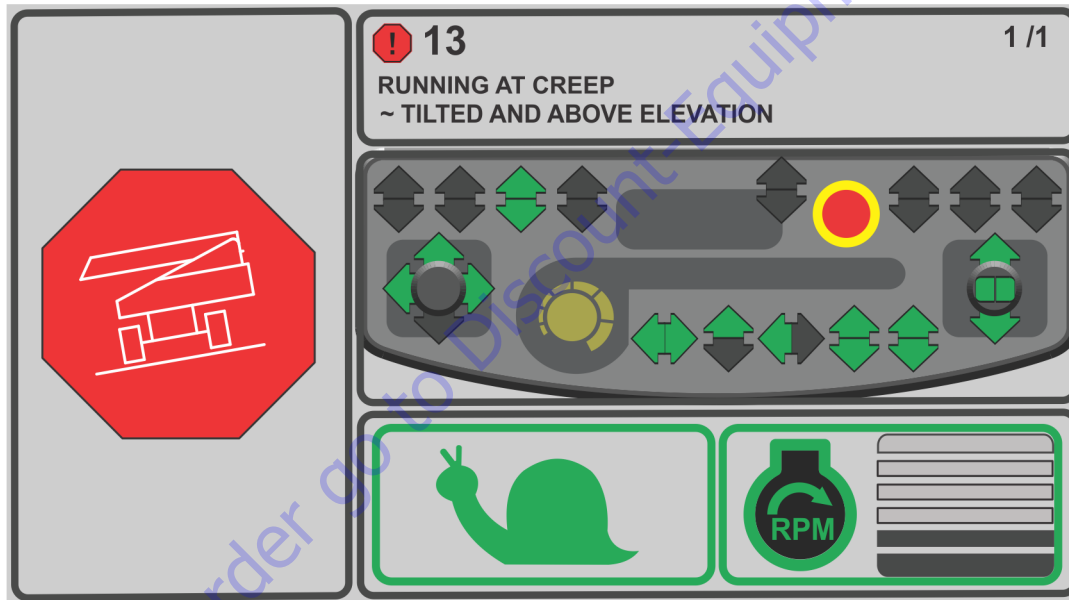


Figure 5-23. Machine Tilted Mode Screen

## 5.19 ENVELOPE STATUS

**Example 1:** Platform is not at the edge of the envelope

- When Unrestricted or Restricted mode is selected, the display shows envelope image in the machine status tray.
- The color code for the envelope matches the capacity select decals on the machine.
- When the control system senses that the axles are fully extended, the selected envelope shows up on the machine status tray.
- The display shows animated boom length and boom angle information along with the envelope.
- Boom movement is proportional to the envelope boundaries.
- Platform location is always shown at the end of the boom.

Mode	Boom	Platform	Envelope Color
Unrestricted	Orange	Black	Yellow
Restricted	Orange	Black	Green

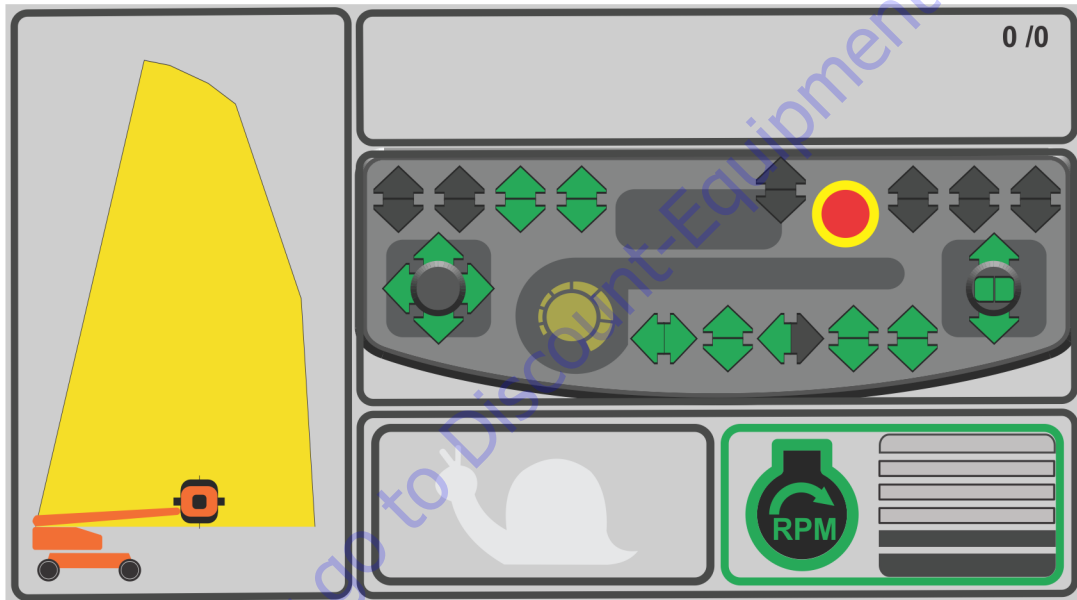


Figure 5-24. Unrestricted Mode Screen

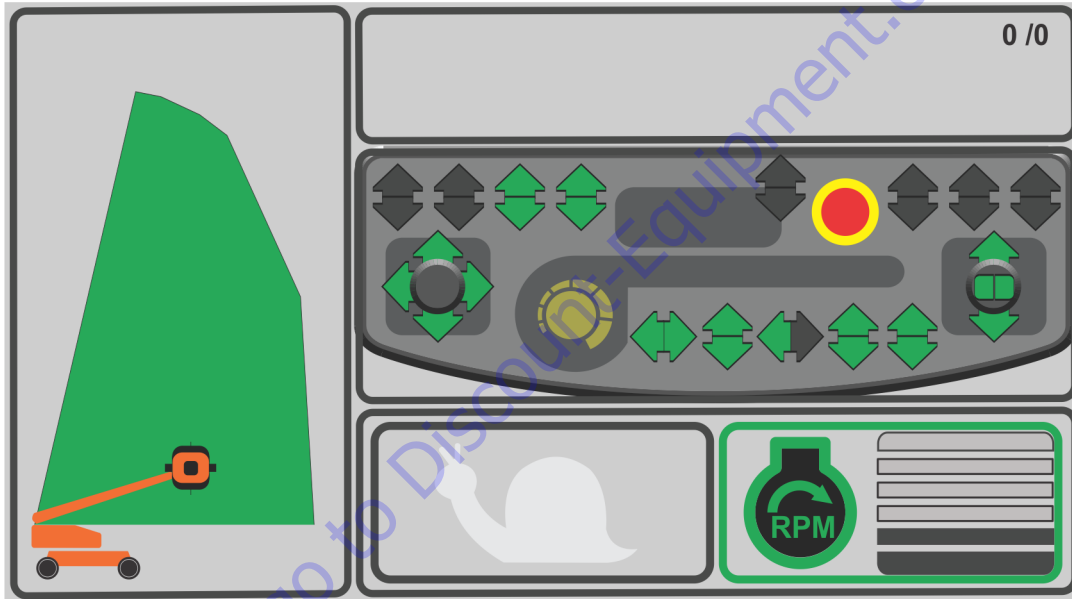


Figure 5-25. Restricted Mode Screen

## SECTION 5 - LCD DISPLAY PANEL

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- When operator switches from Unrestricted to Restricted mode, the envelope shrinks to indicate reduced operating envelope.

### **Example 2:** Platform is edge of the envelope

- When Unrestricted or Restricted mode is selected, the display flashes snail image at a rate of 0.5 seconds in the machine status tray.
- The envelope color will match the weight mode selected.

### **Example 3:** Unrestricted mode with envelope tilt condition

- When on the Unrestricted envelope screen, if the operator experiences a tilt condition where tilt is less than what the machine is configured for, then the envelope will shrink further to show that the new envelope.
- Display shows animated boom length and boom angle information along with the new envelope.
- Boom movement is proportional to envelope boundaries.
- Platform location is always at the end of the boom.

### **Example 4:** Restricted mode with envelope tilt condition

- When on the Restricted envelope screen, if the operator experiences a tilt condition where tilt is less than what the machine is configured for, then the envelope will shrink further to show that the new envelope.

- Display shows animated boom length and boom angle information along with the new envelope.
- Boom movement is proportional to envelope boundaries.
- Platform location is always at the end of the boom.

## 5.20 MACHINE MODEL UNKNOWN

As soon as the machine is powered up, the control system checks the model of the machine and if the model is neither 1500SJ nor

1850SJ the display will show the Machine Model Unknown image on the machine status tray.

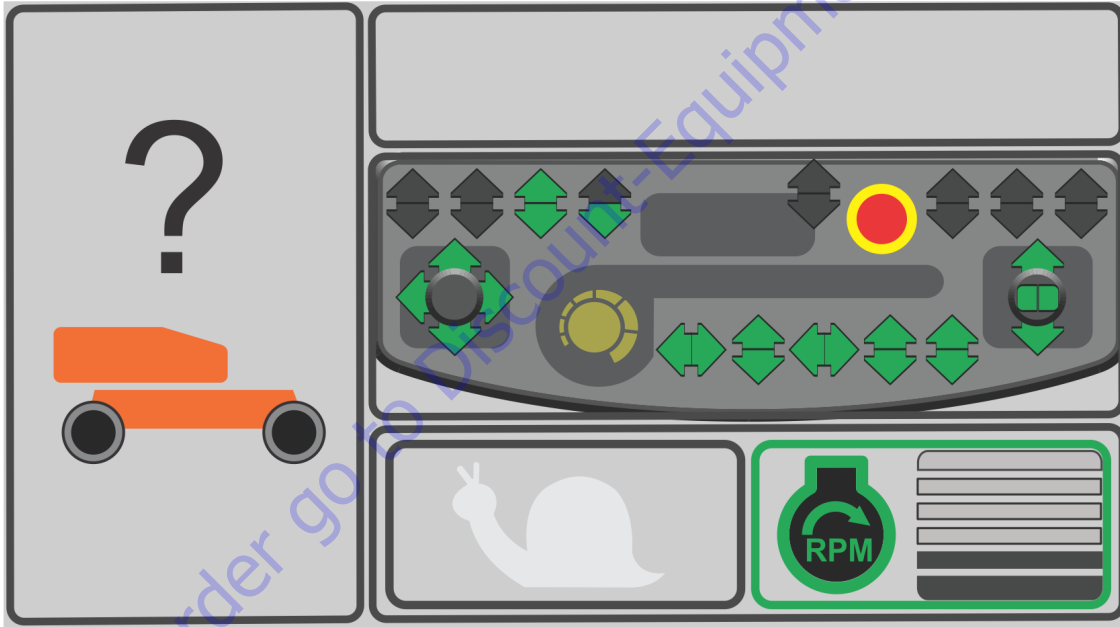


Figure 5-26. Machine Model Unknown Screen

### **5.21 SELECTIVE CATALYTIC REDUCTION (SCR) CLEANING**

SCR icons will display in the icons tray when there is an cleaning event or warning active. The SCR Warning Icon will display when cleaning is required. Refer to Section 4 for more information. The SCR Cleaning Icon will display when:

- JLG Control System requests cleaning
- Crystallization is detected
- The machine is in cleaning mode
- Cleaning process has failed

The High Exhaust System Temperature (HEST) will show in the icons tray when exhaust temperature reaches 1022° F (550° C) degrees. The Diesel Exhaust Fluid (DEF) icon displays the level of fluid in the DEF tank in 1% increments.



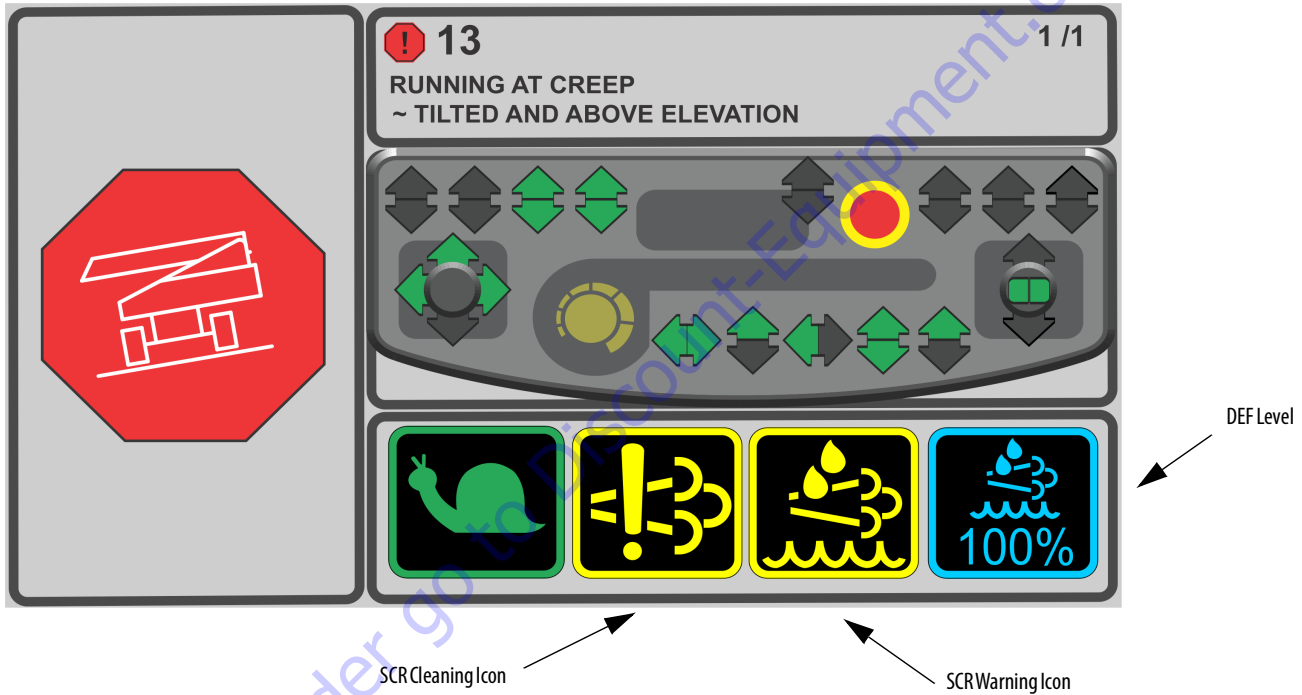


Figure 5-27. SCR Cleaning Screen - Sheet 1 of 2

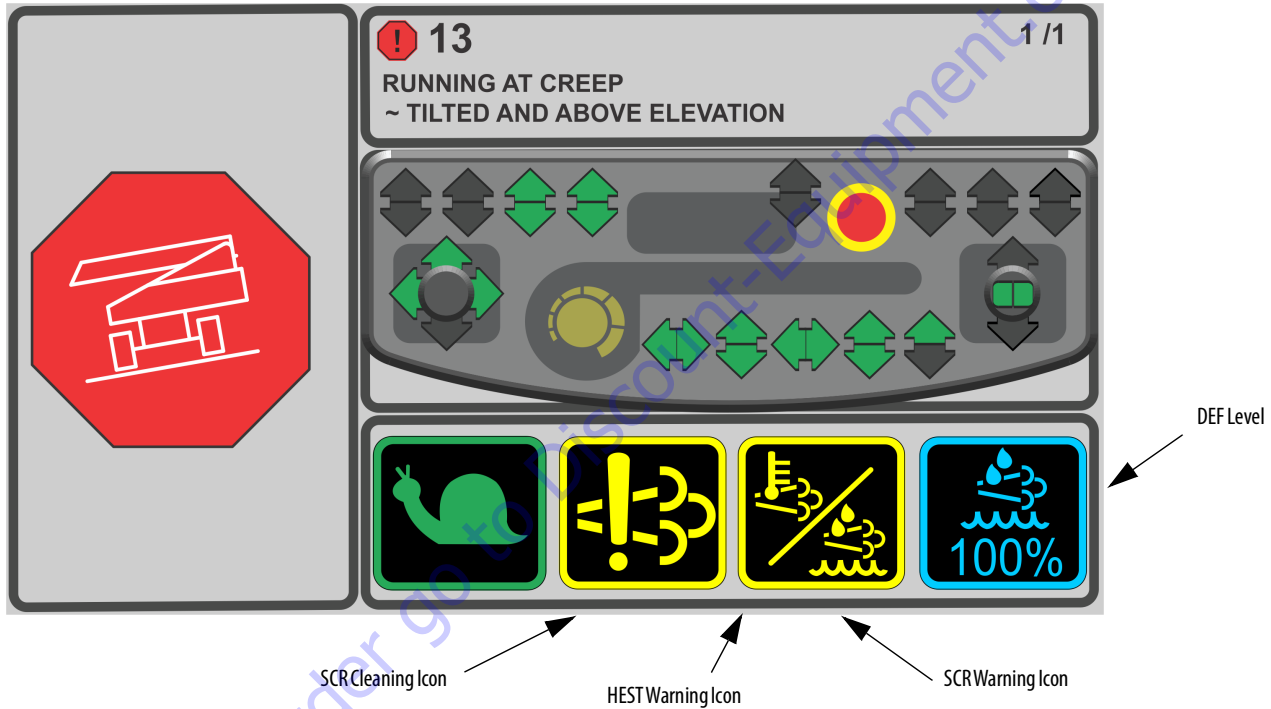


Figure 5-28. SCR Cleaning Screen - Sheet 2 of 2

## SECTION 6. EMERGENCY PROCEDURES

### 6.1 GENERAL

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

### 6.2 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.**

### 6.3 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 or Boom Movement Prevented by Boom Control System**

Lowering the boom onto an object or structure may cause the boom control system to prevent movement of the machine. This can include movement necessary to lift the boom off the object. Additionally, if the platform or boom becomes jammed or snagged in overhead structures, movement of the boom can be regained by doing 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 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.

### **6.4 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.

## 6.5 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 is set with a fault code 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 7. ACCESSORIES

Table 7-1. Available Accessories

Accessory	Market						
	ANSI (USA Only)	ANSI	CSA	CE	AUS	Japan	China
Fall Arrest Platform (36" x 96")	√				√		
Pipe Racks	√		√		√		
SkyCutter™	√	√	√			√	√
SkyGlazier™	√	√	√	√	√		√
SkyPower™	√	√	√	√	√	√	√
SkyWelder™	√	√	√	√		√	√
Soft Touch	√	√	√	√	√	√	√
Bolt-On External Fall Arrest (36" x 96")	√	√	√			√	√
Bolt-On External Fall Arrest (36" x 72")	√	√	√			√	√

**SECTION 7 - ACCESSORIES**

**Table 7-2. Options/Accessories Relationship Table**

ACCESSORY	REQUIRED ITEM	COMPATIBLE WITH (Note 1)	INCOMPATIBLE WITH	INTERCHANGABLE WITH (Note 2)
Pipe Racks		SkyPower™	Platform Mesh to Mid Rail, Platform Mesh to Top Rail, Soft Touch	SkyCutter™, SkyGlazier™, SkyWelder™
SkyCutter™	SkyPower™	SkyWelder™	4' Platform, Pipe Racks, Platform Mesh to Top Rail, Soft Touch	SkyGlazier™
SkyGlazier™		SkyPower™	4' Platform, Pipe Racks, Platform Mesh to Top Rail, Soft Touch	SkyCutter™, SkyWelder™
SkyPower™		SkyCutter™, SkyGlazier™, SkyWelder™		
SkyWelder™	SkyPower™	SkyCutter™	4' Platform, Pipe Racks, Platform Mesh to Top Rail, Soft Touch	SkyGlazier™
Soft Touch		SkyPower™	Pipe Racks, SkyCutter™, SkyGlazier™, SkyWelder™	

4150459 M

**Note 1:** Any non-"Sky" accessory not listed under "INCOMPATIBLEWITH" is assumed to be compatible.

**Note 2:** Can be used on same unit but not simultaneously.

**⚠ WARNING**

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

**7.1 FALL ARREST PLATFORM**

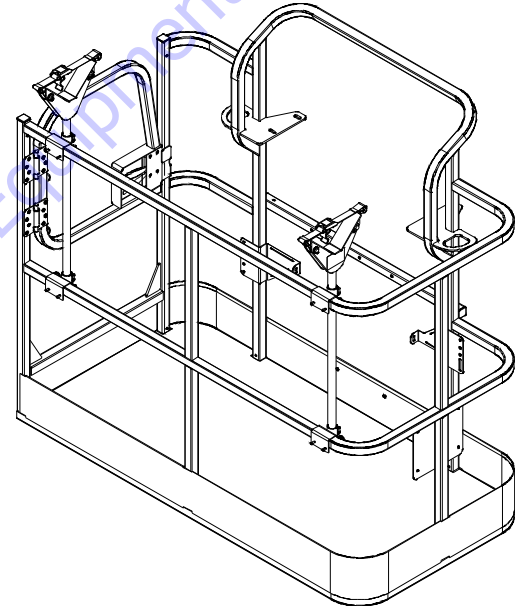
**NOTE:** See the JLG External Fall Arrest System manual (PN 3128935) for more detailed information.

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 lb (408 kg) for the trans-fastener type and 1350 lb (612 kg) for the shuttle type fall arrest system.

**Safety Precautions****⚠ WARNING**

DO NOT OPERATE ANY MACHINE FUNCTIONS WHILE OUTSIDE THE PLATFORM. USE CAUTION WHEN ENTERING/EXITING THE PLATFORM AT ELEVATION.

**7.2 PIPE RACKS**

Pipe Racks provide a way to store pipe or conduit inside the platform in order to prevent rail damage and optimize platform utility. This accessory consists of two racks with adjustable straps to secure the load in place.



### Capacity Specifications (Australia Only)

Max. Capacity in Racks	Max. Platform Capacity (With Max. Weight in Racks)
80 kg	184 kg
Max. Length of Material in Racks: 6.0 m Min. Length of Material in Racks: 2.4 m	

### Safety Precautions

#### **WARNING**

REDUCE PLATFORM CAPACITY BY 100 LB (45.5 KG) WHEN INSTALLED.

#### **WARNING**

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

#### **NOTICE**

THE MAXIMUM LOAD IN THE RACKS IS 180 LB (80 KG) EVENLY DISTRIBUTED BETWEEN THE TWO RACKS.

#### **NOTICE**

THE MAXIMUM LENGTH OF MATERIAL IN RACKS IS 20 FT (6.1 M).

- Ensure no personnel are beneath the platform.
- Do not exit platform over rails or stand on rails.
- Do not drive machine without material secured
- Return racks to the stowed position when not in use.
- Use this option only on approved models.

### Preparation and Inspection

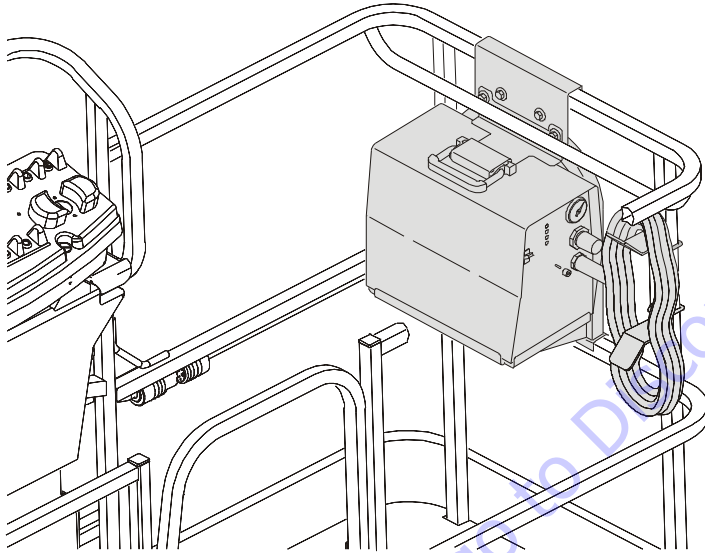
- Ensure racks are secured to the platform rails.
- Replace torn or frayed tie-down straps.

### Operation

1. To prepare racks for loading, remove locking pins, rotate each rack 90 degrees from stowed to working position, then secure with locking pins.
2. Loosen and remove tie-down straps. Place material on racks with weight evenly distributed between both racks.
3. Route the tie-down straps at each end across loaded material and tighten.
4. To remove material, loosen and remove tie-down straps, then carefully remove material from racks.

**NOTE:** *Reinstall tie-down straps across any remaining material before continuing machine operations.*

### 7.3 SKYCUTTER™



SkyCutter™ is capable of cutting up to a thickness of 3/8" metal. It can produce 27 A at 92 VDC at 35% duty cycle or 14 A at 92 VDC at 60% duty cycle. This accessory receives power from the SkyPower™ system.

### Safety Precautions

#### **⚠ WARNING**

**REDUCE PLATFORM CAPACITY BY 70 LB (32 KG) WHEN INSTALLED. DO NOT OVERLOAD THE PLATFORM.**

- Ensure proper ground connect is made.
- Wear proper cutting apparel.
- Use correct cutting settings.
- Do not use electrical cords without ground.
- Do not use electrical tools in water.
- Do not ground through the platform.
- Do not cut into the platform.
- Ensure the fire extinguisher is charged and operational.
- Do not drive machine while connected to external air/gas sources.

**Accessory Ratings**

Spec.	Rated Output	Amperes Input @ Rated Output, 60 Hz, 1-Phase	kVa/kW	Plasma Gas	Plasma Gas Flow/ Pressure	Rated Cutting Capacity @ 10 IPM	Max. OCV
120Volts ±10% (20 A)	27 A @ 91VDC @ 20% Duty Cycle	28.8 max; 0.30*	3.4 kVa 3.2 kW	Air or Nitrogen Only @ 90 - 120 psi (621 - 827 kPa)	4.5 cfm (129 L/Min) @ 60 psi (414 kPa)	3/8 in (10 mm)	400VDC
120Volts ±10% (15 A)	20 A @ 88VDC @ 35% Duty Cycle	20.6 max; 0.30*	2.5 kVa 2.3 kW				
240Volts ±10% (27 A)	27 A @ 91VDC @ 35% Duty Cycle	13.9 max; 0.13*	3.3 kVa 3.0 kW				
*While idling.							

**Generator Output**

Engine Speed of 1800 rpm +/- 10%.

**ANSI Specifications:**

- 3-phase: 240 V, 60 Hz, 7.5 kW
- 1-phase: 240 V/120 V, 60 Hz, 6 kW

**Preparation and Inspection**

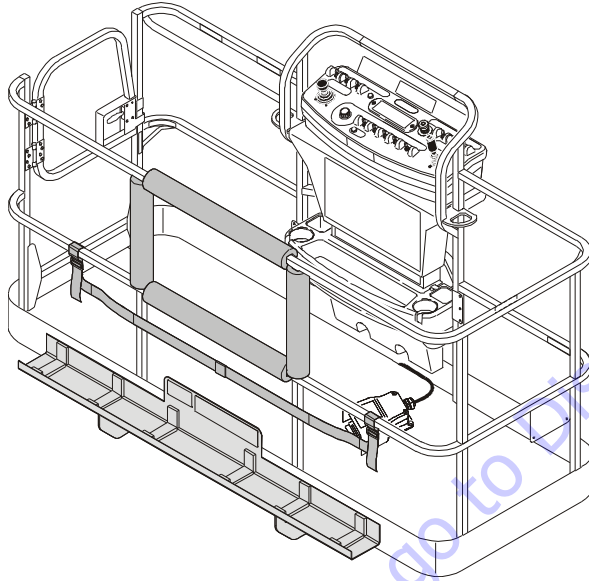
- Connect ground clamp to metal being cut.
- Ensure there is a good ground connection.

**Operation**

Start the engine, turn on the generator, then turn on the plasma cutter.

See the Miller Plasma Cutter Owner's Manual (PN 3128420) for more information.

## 7.4 SKYGLAZIER™



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

## Capacity Specifications

Capacity Zone *	Max. Tray Capacity	Max. Platform Capacity (With Max. Weight in Tray)
500 lb (227 kg)	150 lb (68 kg)	250 lb (113 kg)
550 lb (250 kg)	150 lb (68 kg)	250 lb (113 kg)
600 lb (272 kg)	150 lb (68 kg)	250 lb (113 kg)
750 lb (340 kg)	150 lb (68 kg)	440 lb (200 kg)
1000 lb (454 kg)	250 lb (113 kg)	500 lb (227 kg)

\* Refer to the capacity decals installed on the machine for capacity zone information.

**Required Platform Type:** Side-Entry

**Max. Dimensions of Panel:** 32 sq ft (3 sq m)

**⚠ WARNING**

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

### Safety Precautions

#### **WARNING**

ENSURE PANEL IS SECURED WITH STRAP.

#### **WARNING**

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

#### **WARNING**

WITH SKYGLAZIER™ INSTALLED, THE ORIGINAL PLATFORM CAPACITY RATINGS ARE REDUCED AS SPECIFIED IN THE CAPACITY SPECIFICATIONS TABLE. DO NOT EXCEED NEW PLATFORM CAPACITY RATINGS. 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).

- Ensure no personnel are beneath platform.
- Do not exit platform over rails or stand on rails.
- Remove tray when not in use.
- Use this option only on approved models.

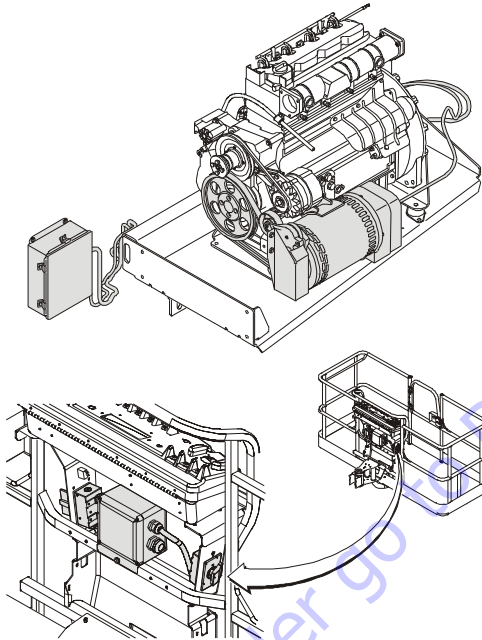
### Preparation and Inspection

- Check for cracked welds and damage to tray.
- Ensure tray is properly secured to platform.
- Ensure strap is not torn or frayed.

### Operation

1. Load SkyGlazier™ tray with panel.
2. Route the adjustable strap around the panel and tighten until secure.
3. Position panel to its desired location.

## 7.5 SKYPOWER™



The SkyPower™ system supplies AC power to the platform through an AC receptacle to run tools, lights, 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 Specifications:

- 3-phase: 240 V, 60 Hz, 7.5 kW
- 1-phase: 240 V/120 V, 60 Hz, 6 kW

#### CE Specifications:

- 3-phase: 240 V, 7.5 kW, 18.3 A, 1.0-pf
- 1-phase: 240 V, 6.0 kW, 26 A, 1.0-pf
- 1-phase: 120 V, 6.0 kW, 50 A, 1.0-pf

#### Peak:

- 3-phase: 8.5 kW
- 1-phase: 6.0 kW

### Accessory Ratings

- 3000 rpm (50 Hz)
- 3600 rpm (60 Hz)

### Safety Precautions

#### **⚠ WARNING**

**DO NOT OVERLOAD PLATFORM.**

- Ensure no personnel are beneath platform.
- This factory-installed option is available only on specified models.
- Keep lanyard attached at all times.
- Do not use electrical tools in water.
- Use correct voltage for tool being used.
- Do not overload circuit.

### Preparation and Inspection

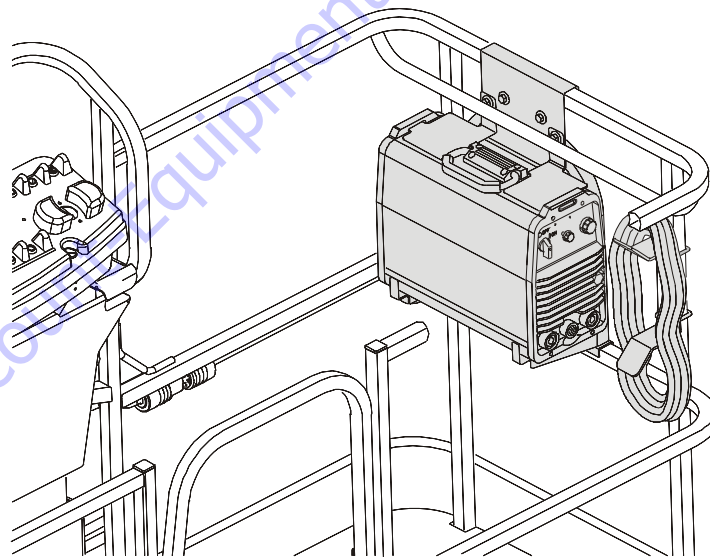
- Ensure generator is secure.
- Check condition of belt and wiring.

### Operation

Start the engine, then turn on the generator.

See the Miller Generator Technical Manual (PN 3121677) for more information.

### 7.6 SKYWELDER™



SkyWelder™ is capable of TIG and Stick welding, producing 200 Amps at 100% duty cycle or 250 Amps at 50% duty cycle. This accessory receives power from the SkyPower™ system.

## Accessory Ratings

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) TIG (GTAW)	3-phase	280 Amp at 31.2V, 35% Duty Cycle	5-250 A	79VDC	32	17	13	15.7	10
		200 Amp at 28V, 100% Duty Cycle			20	11	8	10.3	6.4
	1-phase	200 Amp at 28V, 50% Duty Cycle	5-200 A	79VDC	35	-----	-----	9.8	6.5
		150 Amp at 28V, 100% Duty Cycle			34	-----	-----	6.9	4.4

## Generator Output

Engine Speed of 1800 rpm +/- 10%.

### ANSI Specifications:

- 3-phase: 240 V, 60 Hz, 7.5 kW
- 1-phase: 240 V/120 V, 60Hz, 6kW

### CE Specifications:

- 3-phase: 400 V, 50 Hz, 7.5 kW
- 1-phase: 220 V, 50 Hz, 6 kW

## Welding Accessories

- 12 ft welding leads with clamp and stinger (stored in the platform)
- Fire extinguisher



### Safety Precautions

#### **WARNING**

**DE-RATE THE PLATFORM BY 70 LB (32 KG) WHEN WELDER IS IN THE PLATFORM. DO NOT OVERLOAD THE PLATFORM.**

- Check for cracked welds and damage to welder supports.
- Check for proper and secure installation of welder and bracket.
- Ensure no personnel are beneath platform.
- Do not exit platform over rails or stand on rails.
- Use this option only on approved models.
- Keep lanyard attached at all times.
- Ensure correct polarity of leads.
- Wear 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 the 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.
- Ensure there is a good ground connection and observe proper polarity.

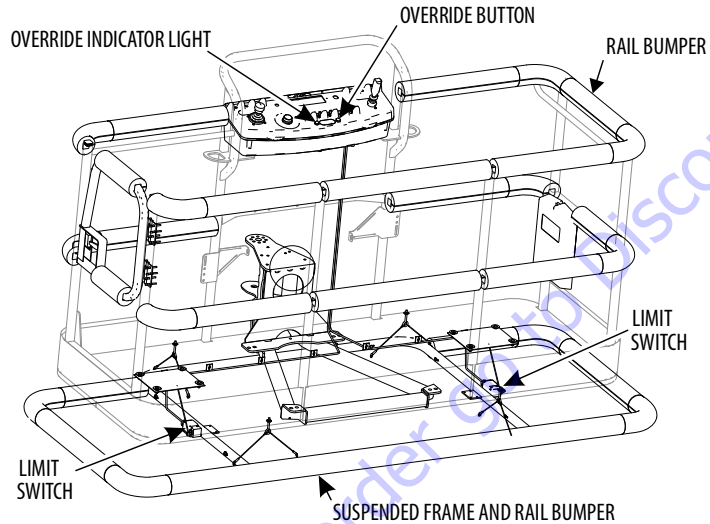
### Operation

Start the engine, turn on the generator, then turn on the welder.

See the Miller Welder Owner's Manual (PN 3128957) for more information.

## 7.7 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.



### 7.8 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 lb (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**

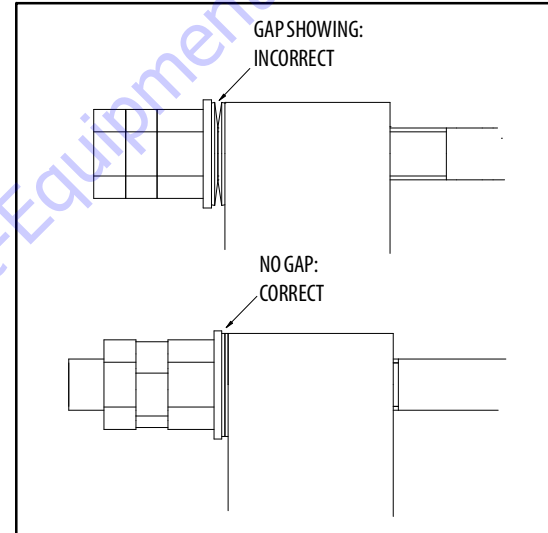
**THE EXTERNAL FALL ARREST SYSTEM REQUIRES AN ANNUAL INSPECTION AND CERTIFICATION. THE ANNUAL INSPECTION AND CERTIFICATION MUST BE PERFORMED BY A QUALIFIED PERSON OTHER THAN THE USER.**

## 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:

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



**Figure 7-1. Bolt-On External Fall Arrest Cable Tension**

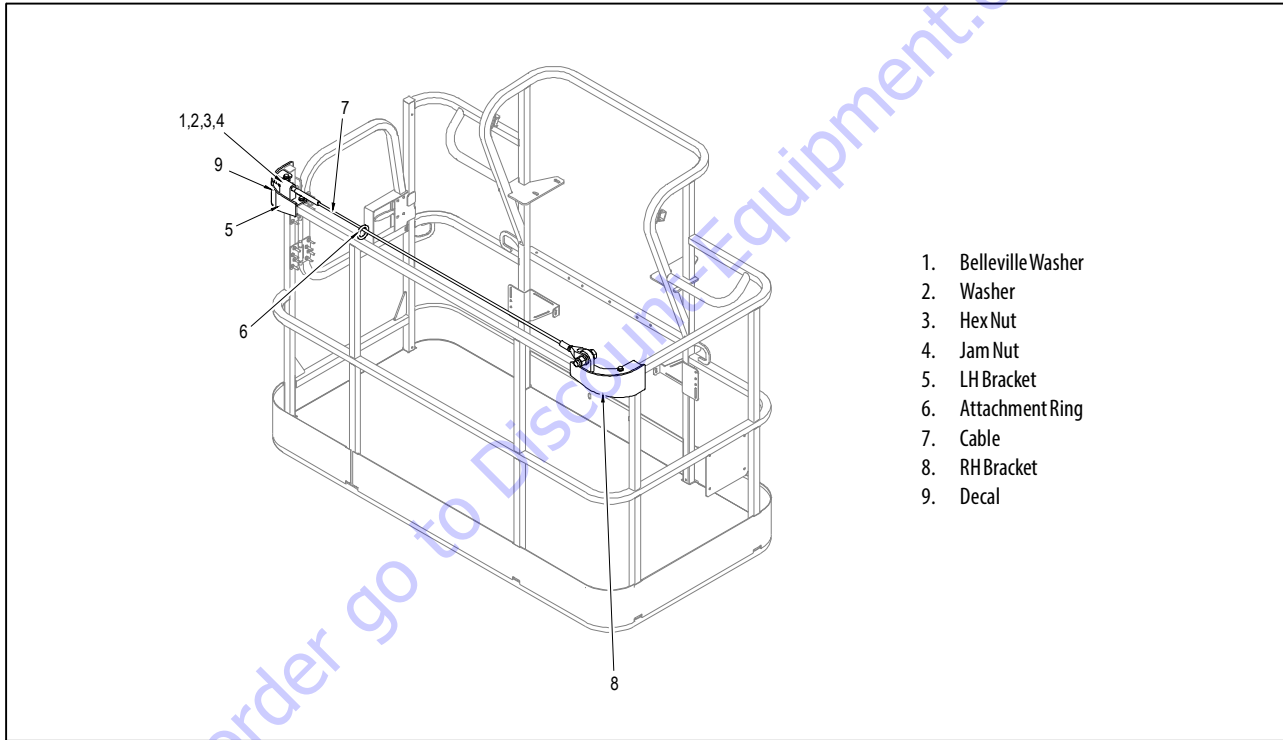
- Fittings & Brackets: Ensure all fittings are tight and there are no signs of fractures. Inspect brackets for any damage.

## **SECTION 7 - ACCESSORIES**

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- 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.

To order go to [Discount-Equipment.com](http://Discount-Equipment.com)



**Figure 7-2. Bolt-On External Fall Arrest System**

## SECTION 8. GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

### 8.1 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 ..... 31215067  
 Illustrated Parts Manual ..... 31215068

### 8.2 OPERATING SPECIFICATIONS AND PERFORMANCE DATA

#### Operating Specifications

Table 8-1. Operating Specifications

Capacity - ANSI Unrestricted Restricted	500 lb (227kg) 1000 lb (454kg)
Capacity - CE & Australia Unrestricted Restricted	500 lb (230kg) 1000 lb (450kg)
Maximum Operating Slope	5°
Maximum Travel Grade, stowed Position (Gradeability) see Figure 4-4.	40%
Maximum Travel Grade, stowed Position (Side Slope) see Figure 4-5.	5°
Drive Speed	2.8 mph (4.5 km/h)
Drive Speed at Elevation	0.3 mph (0.48 km/h)

## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

**Table 8-1. Operating Specifications**

Gross Machine Weight - Approximate	59,900 lb (27170 kg.)
Ground Bearing Pressure - Maximum	119.6 psi (8.41 kg/cm <sup>2</sup> )
Maximum Wind Speed	28 mph (12.5 m/s)
Maximum Manual Force	90 lb (400N)
Maximum System Voltage	12 volts
Maximum Main Relief Hyd. Pressure	5000 psi (345 Bar)

### Dimensional Data

**Table 8-2. Dimensional Data**

Turning Radius (Axles Retracted)	
Outside	31 ft. 2.75 in. (9.52 m)
Inside	23 ft. 4.25 in. (7.12 m)
Turning Radius (Axles Extended)	
Inside	7 ft. 6.75 in. (2.3 m)
Outside	21 ft. 7.75 in. (6.6 m)
Machine Height (stowed)	10 ft. 0.5 in. (3.06 m)
Machine Length (stowed)	47 ft. 9.5 in. (14.57 m)

**Table 8-2. Dimensional Data**

Machine Length (Transport Position)	63'9.5" (19.44 m)
Platform Height (500 lb./230 kg. capacity)	185 ft. 7 in. (56.56 m)
Platform Height (1000 lb./450 kg. capacity)	165 ft. 2 in. (50.34 m)
Horizontal Reach from centerline of rotation	
Unrestricted Capacity	80 ft. 0 in. (24.38 m)
Restricted Capacity	68 ft. 11 in. (21.01 m)
Horizontal Reach over end	
Unrestricted Capacity	70 ft. 6 in. (21.59 m)
Restricted Capacity	59 ft. 6 in. (18.13 m)
Horizontal Reach over side	
Unrestricted Capacity	71 ft. 9 in. (21.86 m)
Restricted Capacity	60 ft. 8 in. (18.49 m)
Overall Width	
Axles Retracted	8 ft. 2 in. (2.48 m)
Axles Extended	16 ft. 6.5 in. (5.04 m)
Wheelbase	
Axles Retracted	17 ft. 1.5 in. (5.22 m)
Axles Extended	15 ft. 0.5 in. (4.59 m)
Tailswing	7 ft. 7.5 in. (2.32 m)



**Table 8-2. Dimensional Data**

Ground Clearance (Axle)	9.75 in. (0.25 m)
Ground Clearance (Chassis)	1 ft. 4.25 in. (0.41 m)

**Capacities**

**Table 8-3. Capacities**

Hydraulic Oil Tank	75.1 Gal. (284.2 L)
Fuel Tank	52.8 Gal. (200 L)
Drive Hub	2.6 quarts (2.5 liters)
Swing Gearbox	3 qt. (2.8 L)

**Tires**

**Table 8-4. Tire Specifications**

Size	445/50D710
Load Range	N
Ply Rating	24
Foam Fill	Polyurethane HD (55 Durometer) Foam
Diameter	46.45 in. (117.9 cm)
Width	16.81 in. (427 mm)
Rim Size	15x28
Tire & Wheel Weight	1025 lb (465 kg)
Max Tire Load	36000 lb (16,329 kg)

**Engine Data**

**Table 8-5. Engine Data - Deutz TD 3.6L**

Type	Turbo-charged Diesel
Number of Cylinders	4
Bore	3.9 in. (98 mm)
Stroke	4.7 in. (120 mm)
Total Displacement	221 cu.in. (3.6 L)
Firing Order	1-3-4-2
Output	99.8 hp (74.4 kW)
Low Idle Engine RPM	1000 ± 50
High Engine RPM	2300 ± 50
Average Fuel Consumption	2.73 gph (10.3 lph)
Acceptable Fuel Grades	Ultra Low Sulfur (15 ppm) Up to 5% BioDiesel

**Major Component Weights**



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

**Table 8-6. Critical Stability Weights**

Components	LB	KG
Tire & Wheel	1025	465
Drive Hub & Motor	337	153
Swing Drive	223	101.2
Engine Assembly	822	373
Complete Boom (including jib & platform)	23,600	10705
Main Boom Assembly	21,600	9798
Jib Assembly	1493	677

**Hydraulic Oil**

**Table 8-7. Hydraulic Oil**

Hydraulic System Operating Temperature Range	S.A.E. Viscosity Grade
+0° to +180°F (-18° to +83°C)	10W
+0° to +210°F (-18° to +99°C)	10W-20, 10W30
+50° to +210°F (+10° to +99°C)	20W-20

**NOTE:** Hydraulic oils require anti-wear qualities at least API Service Classification GL-3, and sufficient chemical stability for mobile hydraulic system service.

**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.

**OIL SAMPLING**

This machine is equipped with an oil sampling valve to allow for verification of hydraulic oil condition. Refer to the Service Manual for Oil Sampling procedures.

**Table 8-8. Mobilfluid 424 Specs**

SAE Grade	10W30
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

## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

**Table 8-9. 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)
<b>Viscosity</b>	
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 8-10. 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)
<b>Viscosity</b>	
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 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

**Table 8-11. UCon Hydrolube HP-5046**

Type	Synthetic Biodegradable
Specific Gravity	1.082
Pour Point, Max	-58°F (-50°C)
pH	9.1
Viscosity	
at 0°C (32°F)	340 cSt (1600SUS)
at 40°C (104°F)	46 cSt (215SUS)
at 65°C (150°F)	22 cSt (106SUS)
Viscosity Index	170

**Table 8-12. 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. per gal. (0.9 kg per liter)
Viscosity	
at 40°C	45 cSt
at 100°C	8.0 cSt
Viscosity Index	153

## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

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**Table 8-13. Exxon Unavis HVI 26 Specs**

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

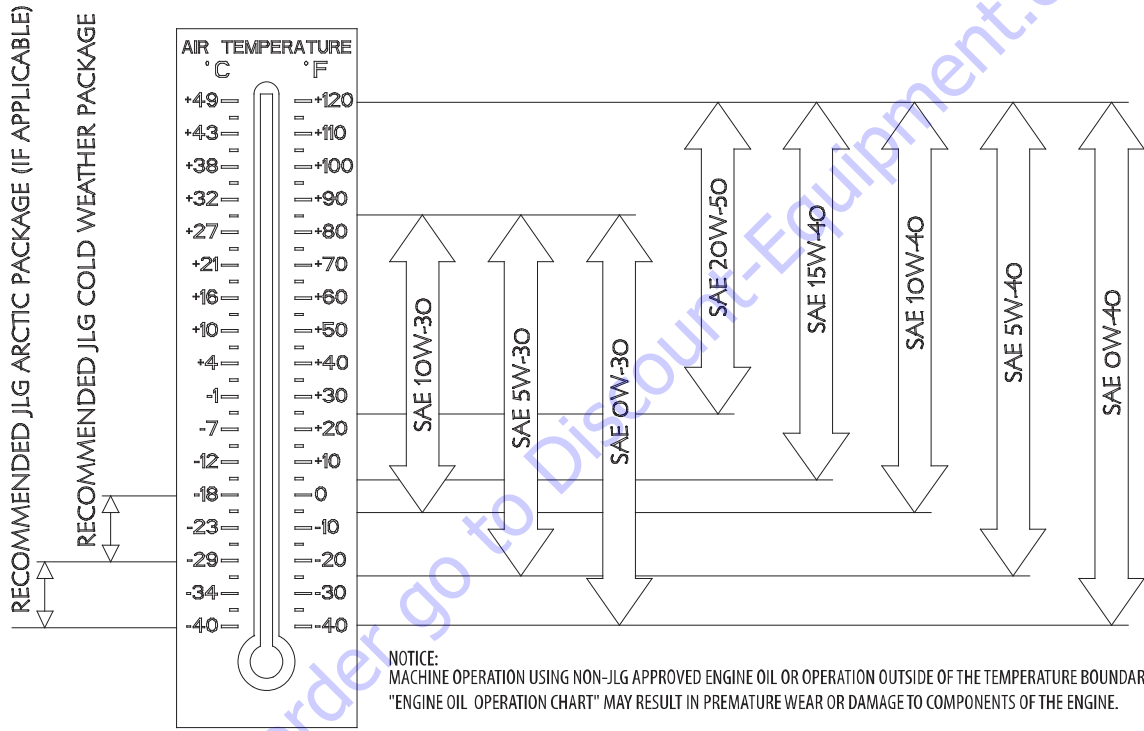
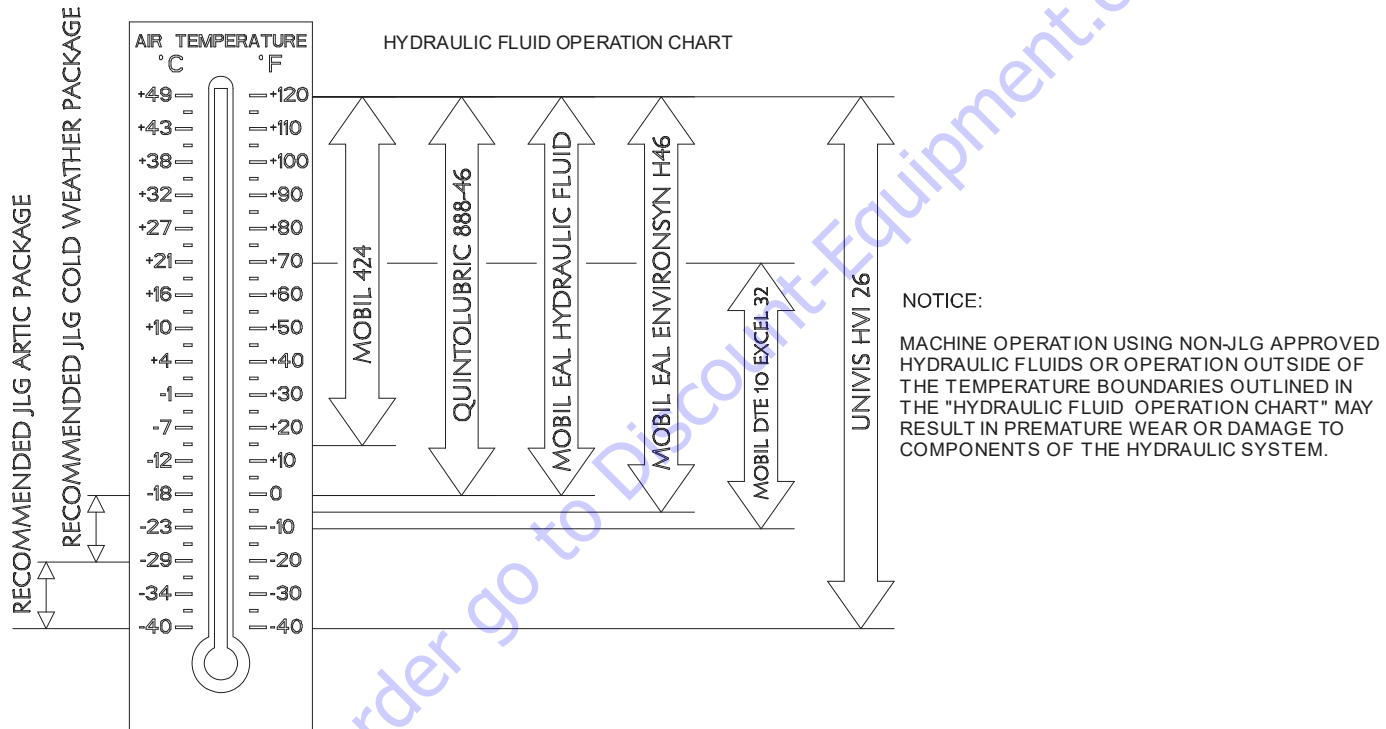


Figure 8-1. Engine Operating Temperature Specifications

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**SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE**



**Figure 8-2. Hydraulic Oil Operation Chart - Sheet 1 of 2**



## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

Fluid	Properties		Base				Classifications		
	Viscosity at 40° C (cSt, Typical)	Viscosity Index	Mineral Oils	Vegetable Oils	Synthetic	Synthetic-Polyol Esters	Readily Biodegradable*	Virtually Non-toxic**	Fire Resistant***
Mobilfluid 424	55	145	X						
Mobil DTE 10 Excel 32	32	164	X					X	
Univis HVI 26	26	376	X						
Mobil EAL Hydraulic Oil	47	176		X			X	X	
Mobil EAL EnviroSyn H46	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

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**Figure 8-3. Hydraulic Oil Operation Chart - Sheet 2 of 2**

## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

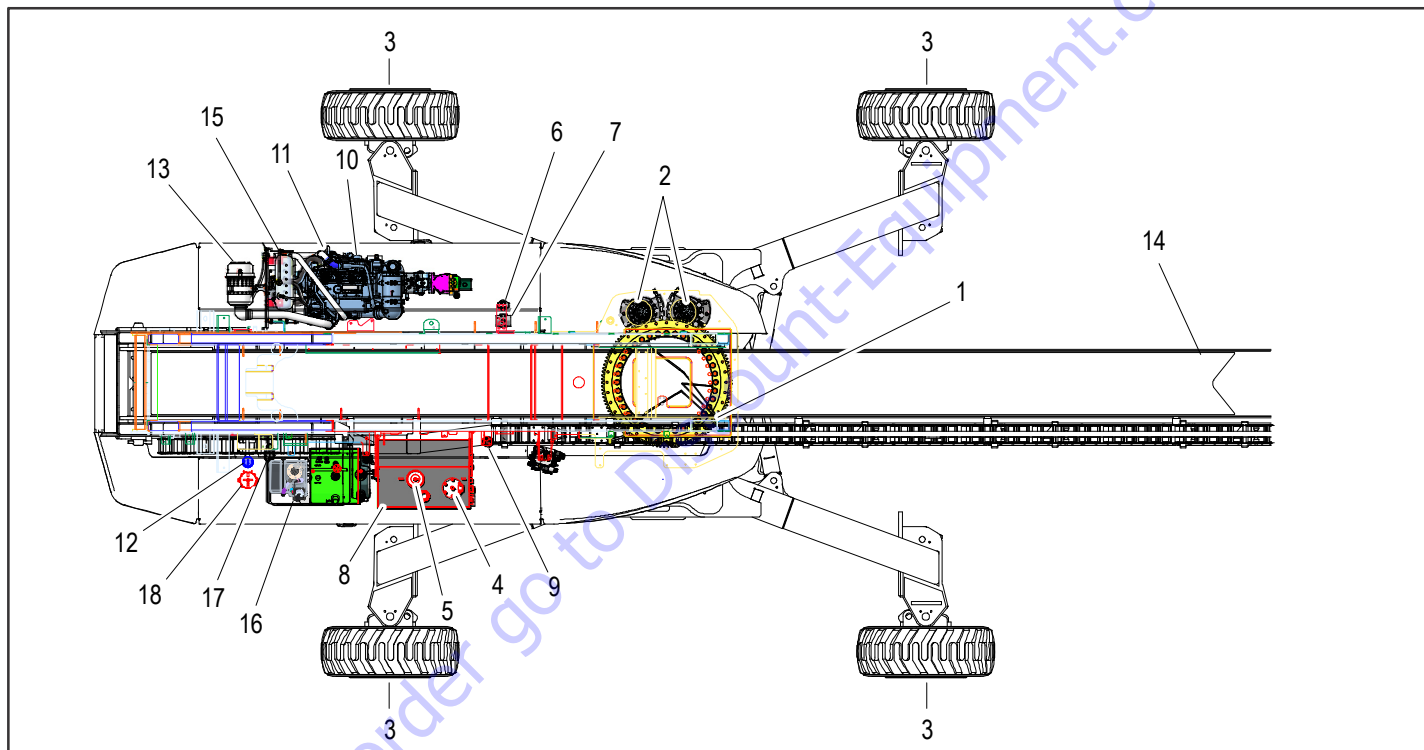


Figure 8-4. Maintenance and Lubrication Diagram

8.3 MAINTENANCE AND LUBRICATION

**NOTE:** The following numbers correspond to those in Figure 8-4., Maintenance and Lubrication Diagram.

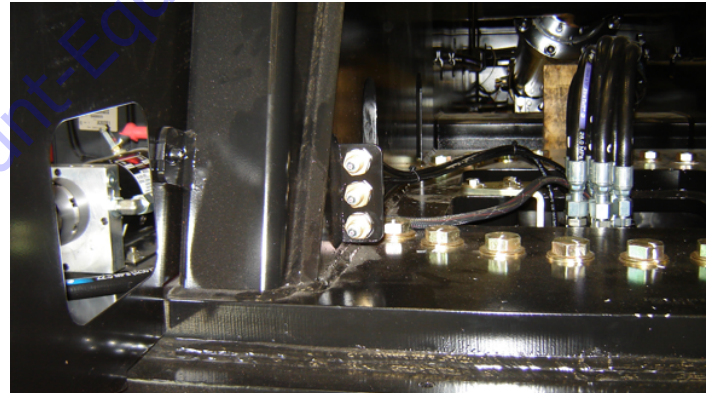
**Table 8-14. Lubrication Specifications**

KEY	SPECIFICATIONS
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.)
EPGL	Extreme Pressure Gear Lube (oil) meeting API service classification GL-5 or MIL-Spec MIL-L-2105
HO	Hydraulic Oil. API service classification GL-3, e.g. Mobilfluid 424
EO	Engine (crankcase) API CJ-4
Super Lube®	Synthetic-Based Oil, Non-Flammable. Withstands temperatures within -45° to 450°F (-43° to 232°C). JLG P/N 3020042.

**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 - Remote Lube



Lube Point(s) - 3 Grease Fitting

Capacity - A/R

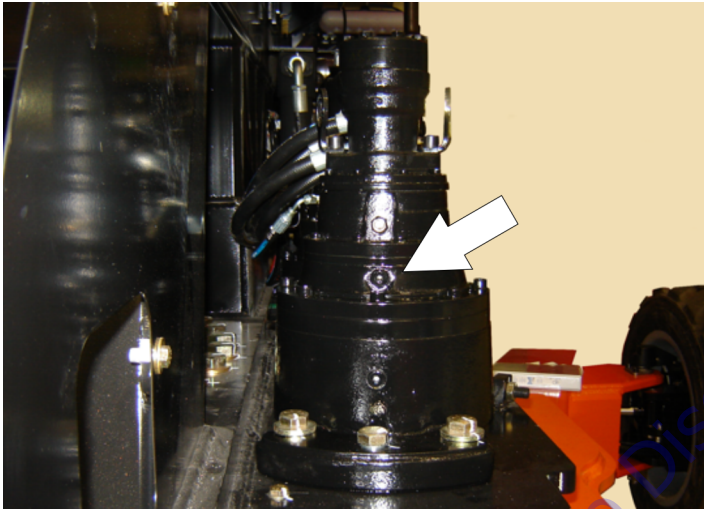
Lube - MPG

Interval - Every 3 months or 150 hours of operation

Comments - Apply grease and rotate in 45 degree intervals until bearing is completely lubricated.

## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

### 2. Swing Gearbox



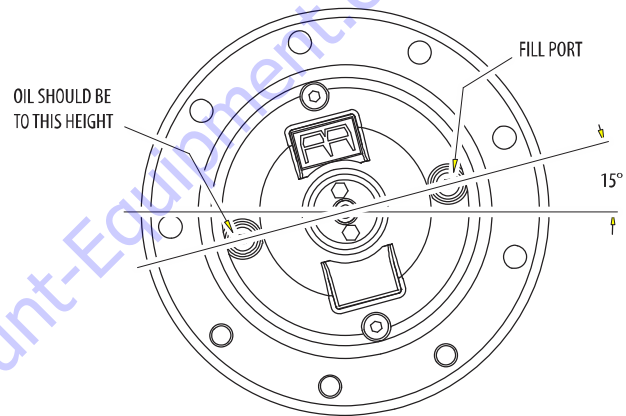
Lube Point(s) - Fill Plug

Capacity - 3 qt. (2.8 L)

Lube - GL-5

Interval - Check level every 150 hrs/Change every 1200 hours of operation. Fill to cover ring gear.

### 3. Wheel Drive Hub



Lube Point(s) - Level/Fill Plug

Capacity - 2.6 quarts (2.5 liters)  $\pm$  10%

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

**4. Hydraulic Return Filter**



Lube Point(s) - Replaceable Element

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

**5. Hydraulic Tank Breather**

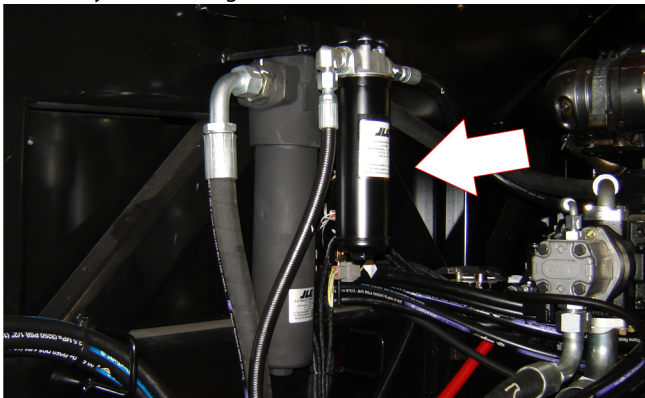


Interval - Change after first 50 hrs. and every 6 months or 300 hrs. thereafter.

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

## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

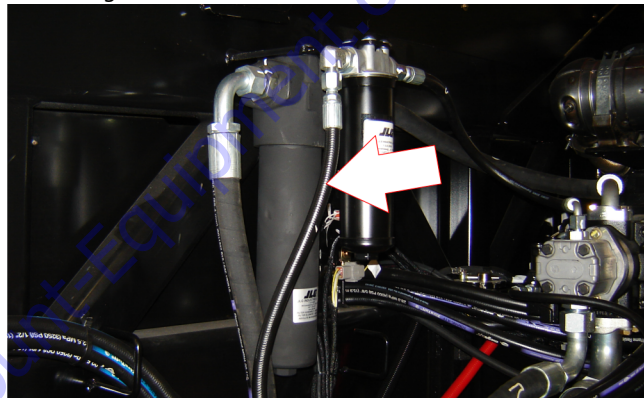
### 6. Hydraulic Charge Filter



Lube Point(s) - Replaceable Element

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

### 7. High Pressure Filter



Lube Point(s) - Replaceable Element

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

## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

### 8. Hydraulic Oil



Lube Point(s) - Fill Cap

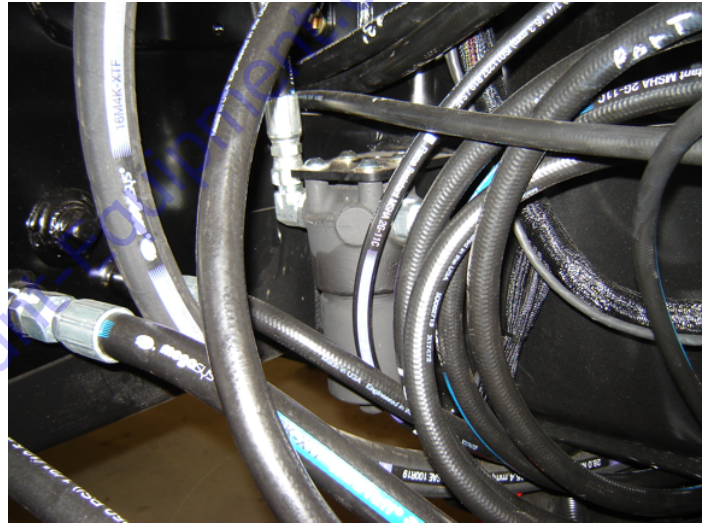
Capacity - 75 Gallons (208 liters) Tank to Full Mark

82 Gallons (310.4 L) System

Lube - HO

Interval - Check level daily. Change every 2 years or 1200 hours of operation.

### 9. Main Valve Filter

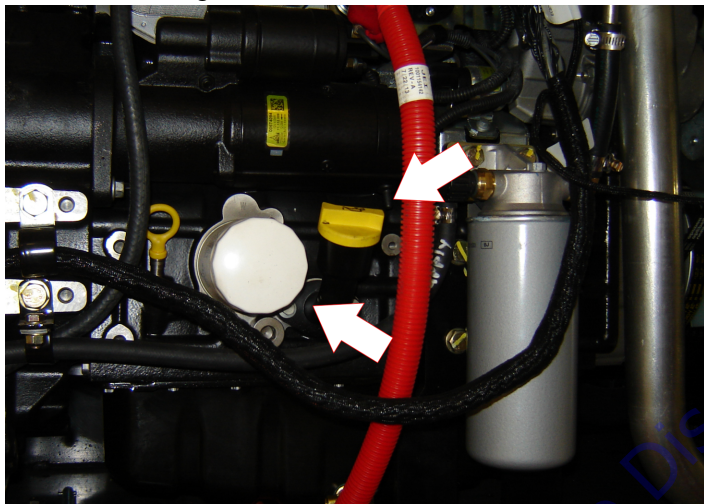


Lube Point(s) - Replaceable Element

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

## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

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



Lube Point(s) - Fill Cap/Spin-on Element  
Capacity - 9.6 Quarts (9.1 L)  
Lube - EO  
Interval - Check level daily; change every 500 hours or yearly, whichever comes first. Adjust final oil level by mark on dipstick.

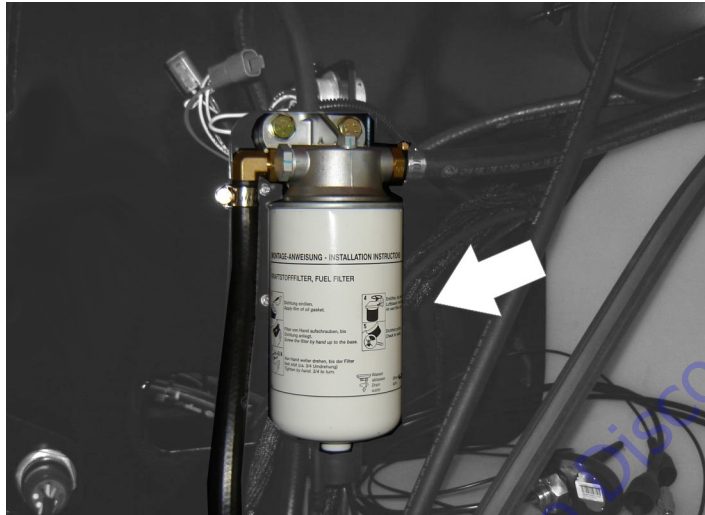
### 11. Fuel Filter - Deutz



Lube Point(s) - Replaceable Element  
Interval - Every year or 500 hours of operation

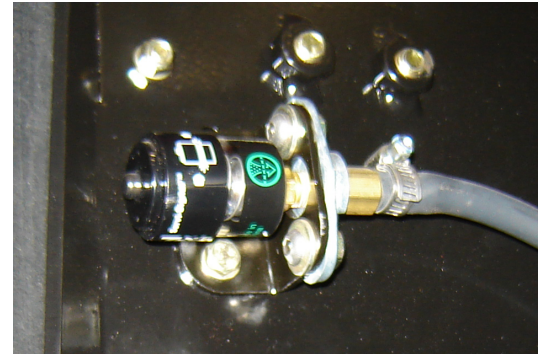
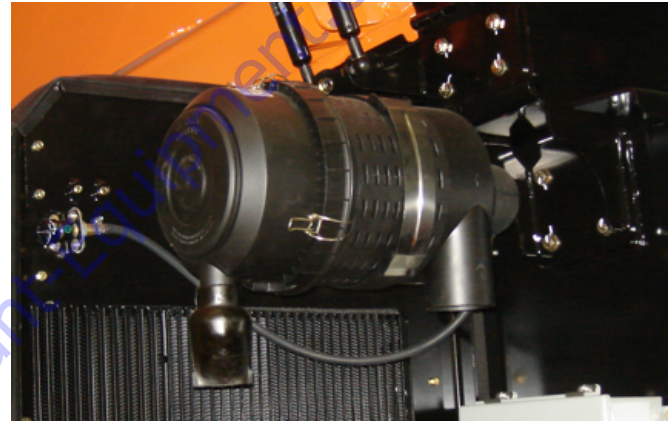


12. Fuel Pre-Filter



Lube Point(s) - Replaceable Element  
Interval - Every year or 500 hours of operation

13. Air Filter



## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

Lube Point(s) - Replaceable Element

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

Comments - Check dust valve for dirt daily

### 14. Boom

Lube Point(s) - Apply to wear pad contact paths

Lube - Super Lube®

Interval - Every year or 600 hours of operation. Refer to the Service Manual for detailed procedures

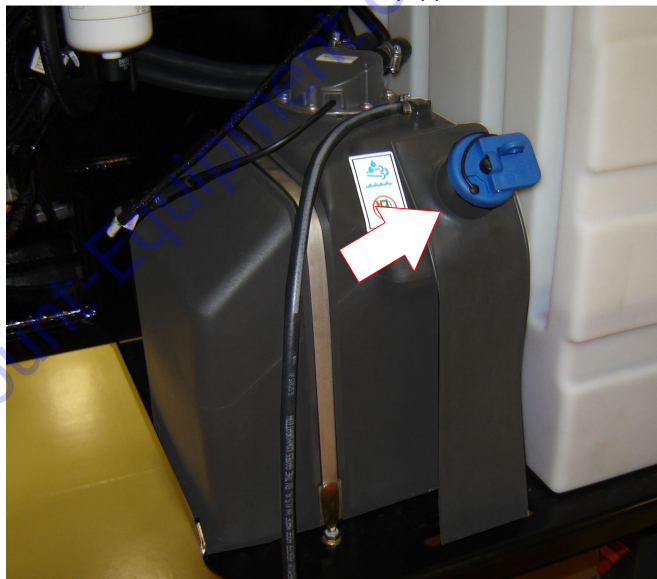
### 15. Radiator

Lube Point(s) - Fill Cap

Lube - Anti-Freeze Coolant (Refer to Engine Manual for compatible coolants)

Capacity - 13.2 qt. (12.5 L)

### 16. Diesel Exhaust Fluid (DEF) (If Equipped)

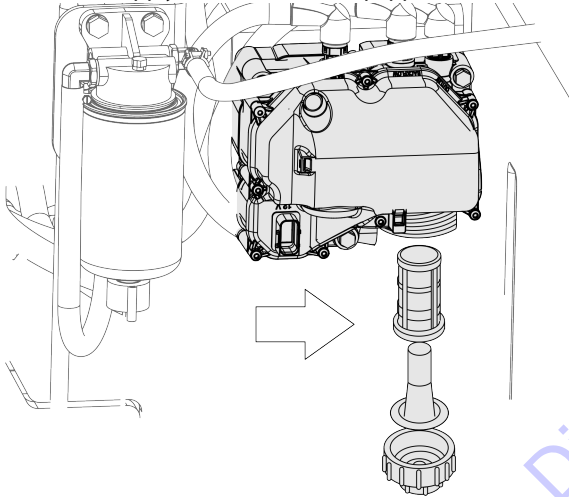


Lube Point - Fill Cap

Lube - DEF

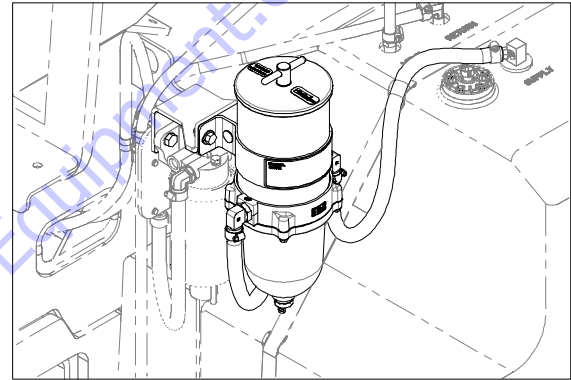
Capacity - 5.7 gal. (21.5 L)

**17. DEF Supply Module Filter (If Equipped)**



Interval - 500 hours or 2 years, whichever comes first

**18. Optional Fuel Filter/Water Separator**



Lube Point(s) - Replaceable Element

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

### 8.4 TIRES & WHEELS

#### Tire Damage

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.

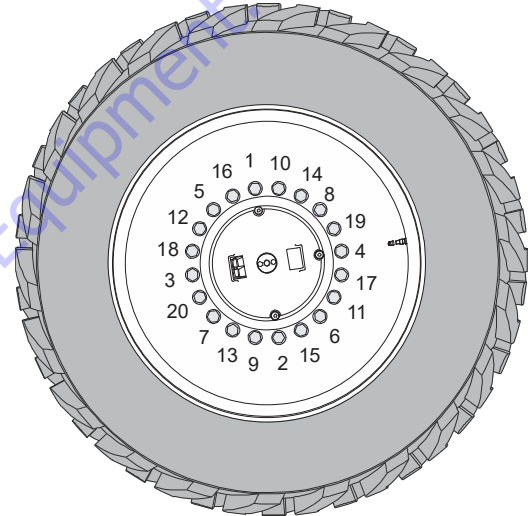
### **⚠ WARNING**

**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.

## SECTION 8 - GENERAL SPECIFICATIONS & OPERATOR MAINTENANCE

**Table 8-15. Wheel Torque Chart**

TORQUE SEQUENCE		
1st Stage	2nd Stage	3rd Stage
35 ft. lbs. (45 Nm)	80 ft. lbs. (100 Nm)	140 ft. lbs. (185 Nm)

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

### 8.4 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 111 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  $0,5 \text{ m/s}^2$ .

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