Operation & Safety, Service & Maintenance & Illustrated Parts Manual Supplement

JLG LOAD SENSING SYSTEM

Vertical Lift Products

P/N
3124289

July 29, 2013

ANSI

CE

An Oshkosh Corporation Company

INTRODUCTION - MAINTENANCE SAFETY PRECAUTIONS

GENERAL

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

⚠ WARNING

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

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

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

⚠ WARNING

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

HYDRAULIC SYSTEM SAFETY

It should be noted that the machines hydraulic systems operate at extremely high, potentially dangerous pressures. Every effort should be made to relieve any system pressure prior to disconnecting or removing any portion of the system.

MAINTENANCE

⚠ WARNING

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

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

REVISION LOG

July 1, 2003 - Original issue of Manual
March 1, 2004 - Revised
May 17, 2005 - Revised
July 15, 2006 - Revised
March 31, 2011 - Revised
March 1, 2012 - Revised
August 11, 2012 - Revised
January 23, 2013 - Revised
July 29, 2013 - Revised

TABLE OF CONTENTS

SUBJECT - SECTION, PARAGRAPH **PAGE NO.**

LIST OF FIGURES

LIST OF TABLES

SECTION 1. OPERATION

NOTE: *This manual is intended as a supplement to the individual machine's Operators and Safety Manual, Service and Maintenance Manual and Illustrated Parts Manual.*

1.1 INTRODUCTION & OPERATION

NOTE: *It is the responsibility of the owner/user/operator/lessor/lessee to read & understand this manual and the machine Operators & Safety Manual and to prevent overloading the platform. Do not operate a machine with a disconnected or inoperative Load Sensing System.*

The JLG Load Sensing System (LSS) for Vertical Mast Products is designed to detect when actual platform load exceeds the machine's Maximum Rated Load Capacity.

Overload Indication

When the Maximum Rated Load Capacity is exceeded the following will occur:

NOTE: *There is a three (3) second delay between detection and overload indication.*

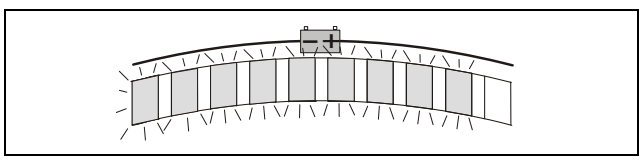
MANUALLY PROPELLED LIFTS *(See Figure 1-1.)*

1. The LSS Warning Alarm and Lamp will activate 1 second ON, and 2 seconds OFF.
2. The platform lift up/down function will be disabled to prevent movement of the overloaded platform.

DRIVABLE LIFTS *(See Figure 1-2.)*

1. The LSS Warning Alarm and Lamp will activate 5 seconds ON, and 2 seconds OFF. Also a 9 LED code will flash on the platform control console *(see below),* and the Ground Control Module LCD screen will indicate a platform overload condition.
2. The platform lift up/down and driving functions will be disabled to prevent movement of the overloaded platform.

NOTE: *Ground control functions may be disabled dependent on Ground Control Module programming.*



Platform Console LED Indicators (Drivable Vertical Lifts)

1. The platform console LED bar will flash 9 (Nine) LEDs to indicate a Platform Overload condition.

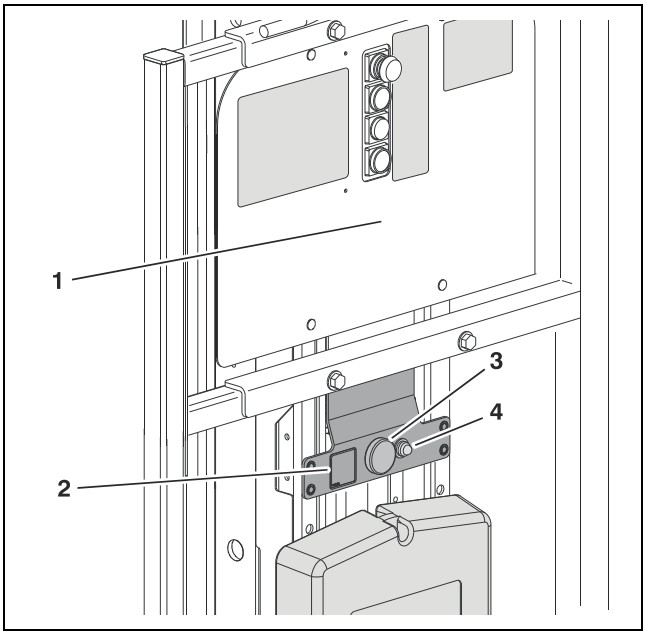


Figure 1-1. L.S.S. Indicator Panel Location - (Manually Propelled Vertical Lifts)

1. Platform Control Panel
2. L.S.S. Indicator Panel
3. LSS Warning Alarm
4. LSS Warning Lamp

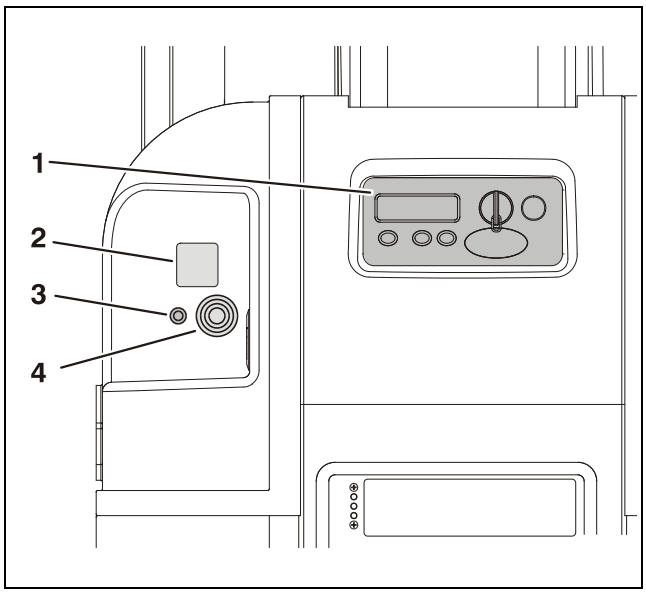


Figure 1-2. Load Sensing System - Indicators (Drivable Vertical Lifts)

1. Ground Control Module
2. LSS Warning Decal
3. LSS Warning Lamp
4. LSS Warning Alarm

Overload Recovery

Further movement of the platform is permitted by removing excess platform load until the LSS resets. This may require removing load until a load less than rated capacity is achieved.

NOTE: *There is a 5 second delay between overload reset and machine function activation.*

NOTICE

THE LOAD SENSING SYSTEM WILL REQUIRE ADJUSTMENT WHEN ONE OR MORE OF THE FOLLOWING CONDITIONS OCCUR:

- Load Sensing System initial installation
- LSS component is disassembled or replaced

NOTICE

THE LOAD SENSING SYSTEM REQUIRES PERIODIC FUNCTION VERIFICATION NOT TO EXCEED 6 MONTHS FROM PREVIOUS VERIFICATION.

SECTION 2. SERVICE PROCEDURES - LOAD SENSING SYSTEM

2.1 LOAD SENSING SYSTEM (LSS) DESCRIPTION

The LSS system for Vertical Mast model machines consists of a floating platform mount weldment *(rails)* attached to the sides of the mast header section, transferring the platform load to a load bearing crossmember. The platform mount load bearing crossmember is supported by coil springs mounted between the platform crossmember and a crossmember attached to the mast header section. Also attached to the platform mount weldment *(rails)* is an adjustable actuator. The actuator, when adjusted properly, trips the LSS limit switch mounted on the mast crossmember when the platform is overloaded.

While the mechanical portion of the LSS system operates the same for both the manually propelled and drivable vertical lifts, the limit switch circuit *(electrical)* is monitored differently as described following.

Manually Propelled Vertical Lift - Overload Detection

(See Figure 2-1.)

The limit switch circuit on the manually propelled lifts is monitored by an LSS Timing Module which disables the platform lift up/lift down function, sounds an audible warning alarm and activates a flashing warning lamp when a platform overload condition is detected. The LSS Timing Module is mounted behind the LSS Indicator Panel located behind the platform railing.

Drivable Vertical Lift - Overload Detection

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

The limit switch circuit on the drivable lift is monitored by the Ground Control Module (GCM) which controls all machine functions and is mounted inside the machine's rear covers. Like the LSS Timing Module on the manually propelled lifts, on overload detection the GCM on the drivable lift disables the platform lift up/lift down function, in addition the drive function is also disabled. Indicators of an overload condition are; an audible warning alarm; flashing warning lamp; 9 LEDs flash on the platform control console and GCM LCD screen will flash "Platform Overload". On the drivable lift, the audible warning alarm and flashing warning lamp are located on the machine's left rear cover. *(See Figure 2-2.)*

On initial LSS installation or GCM replacement, the GCM must be programmed to detect the LSS system in order to function properly. See Section 2.5, "Ground Control Module" in this manual for instructions on GCM - LSS detection programming.

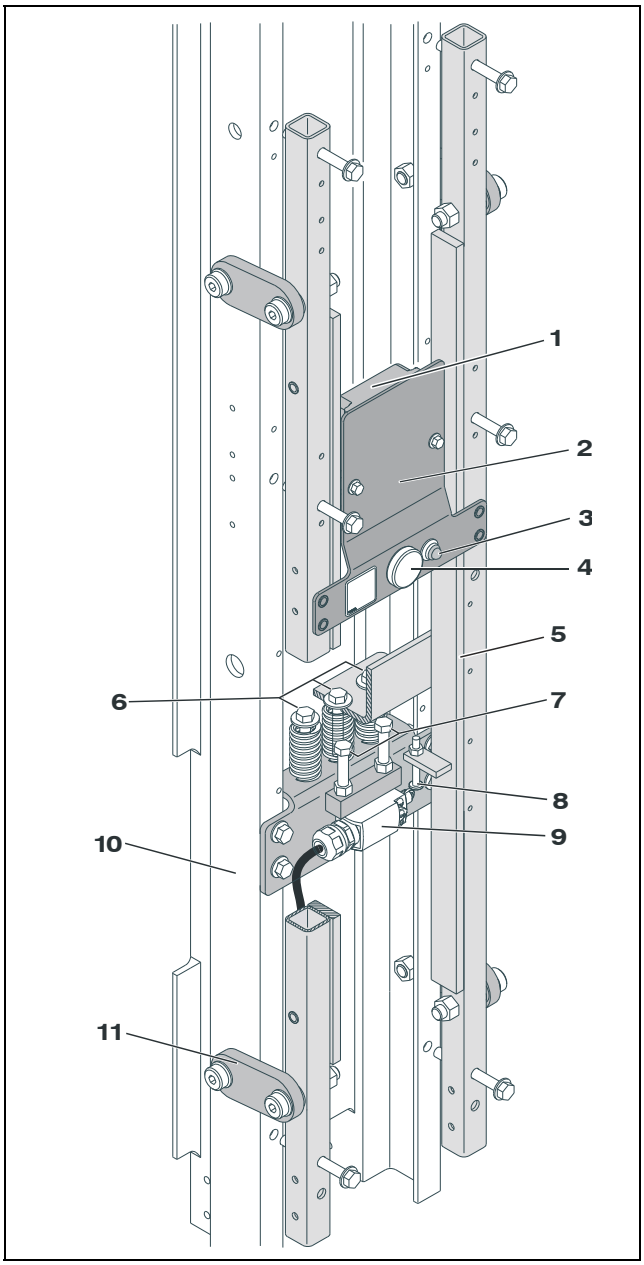


Figure 2-1. Load Sensing System - Components.

1. LSS Timing Module (a)
2. LSS Indicator Panel (a)
3. LSS Warning Lamp (b)
4. LSS Warning Alarm (b)
5. Platform Mount (c)
6. Coil Spring Assemblies
7. Crossmember Stops
8. LSS Overload Actuator
9. LSS Limit Switch
10. Mast Header
11. LSS Arm Linkage

Note: (a) Manually propelled lifts only.
(b) Relocated on drivable lifts (See Figure 2-2.)
(c) Shown cut-away for illustrative purposes only.

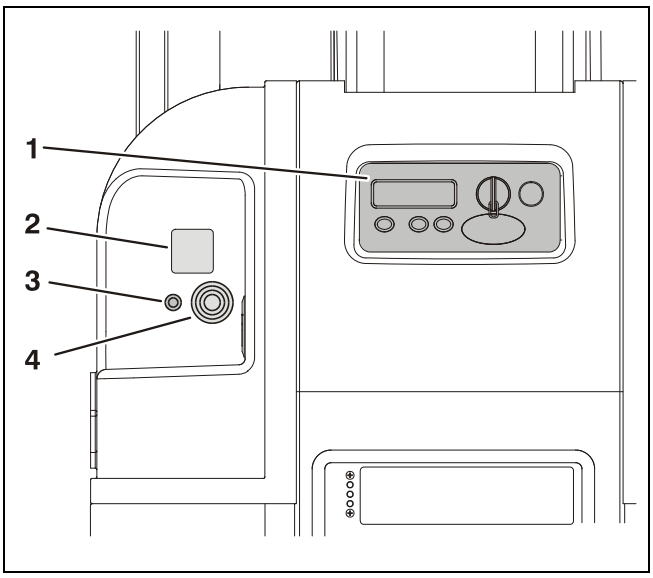


Figure 2-2. Load Sensing System - Indicators (Drivable Vertical Lifts)

1. Ground Control Module
2. LSS Warning Decal
3. LSS Warning Lamp
4. LSS Warning Alarm

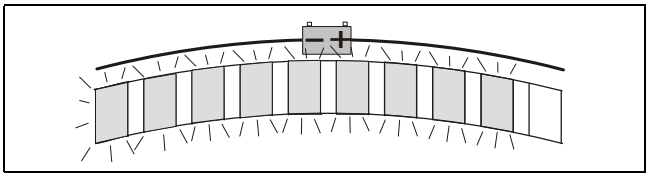


Figure 2-3. Platform Console LED Indicators (Drivable Vertical Lifts)

1. The platform console LED bar will flash 9 (Nine) LEDs to indicate a Platform Overload condition.

2.2 LSS - SETUP AND ADJUSTMENT

Procedure Overview (All Vertical Lifts)

The mechanical portion of the LSS system requires three (3) adjustments to operate properly.

- **Platform Crossmember/Coil Spring Pre-load Height Adjustment;** sets the coil spring pre-load between the platform and mast crossmember with no load in the platform.
- **Mast Header Crossmember Positive Stop Adjustment;** sets the maximum amount of downward travel of the platform, if the platform is overloaded.
- **LSS Overload Actuator Adjustment;** sets the actuator to trip the LSS limit switch, signaling an overload situation, when the platform is overloaded. There is a three (3) second delay between switch opening and warning activation.

NOTICE

THESE SETUP PROCEDURES WILL REQUIRE ACCURATELY MEASURED WEIGHT UP TO AND OF A PERCENTAGE OVER THE PLATFORM'S MAXIMUM CAPACITY. SEE TABLE 2-1 IN THE FOLLOWING SUB-SECTION.

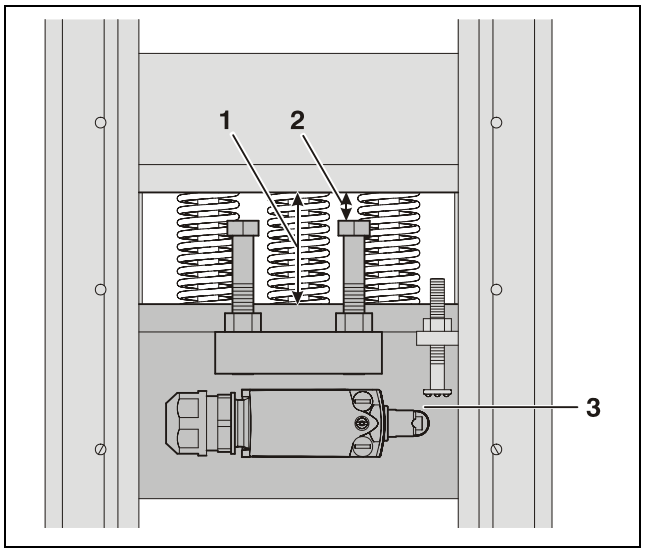


Figure 2-4. LSS Component Adjustments

1. Coil Spring Pre-Load Height Adjustment
2. Crossmember Positive Stop Adjustment
3. Overload Actuator Adjustment

Notes: Shown with manual storage box removed and with little or no load in the platform.

Adjustment Preparation

Before performing the LSS adjustments:

- Move machine to a smooth, firm, level surface.
- Remove the platform manual storage box from main mast header. The storage box fasteners are located inside the manual storage box.
- Have applicable test weight to maximum platform weight capacity, plus percentage of overload amount available with equipment capable of hoisting the weight into the platform.
- Set-up machine for normal operation.

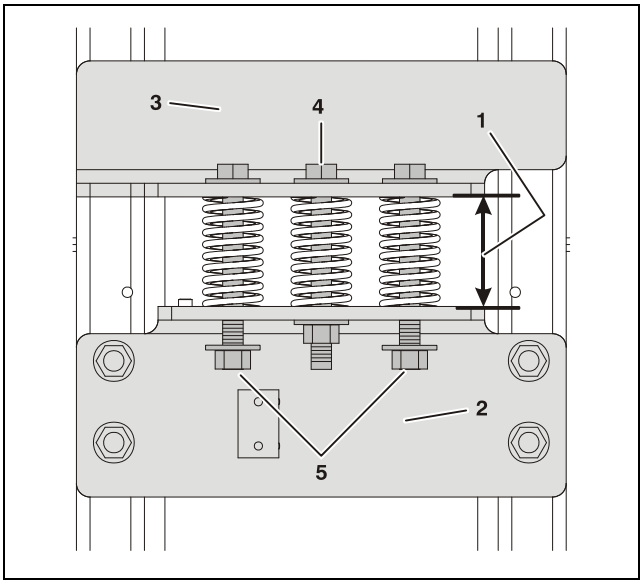
Table 2-1. Test Weight Requirement Per Machine Model. (Percent of Maximum Platform Capacity)

MODEL	OVERLOAD ADJUSTMENT TEST WEIGHT	POSITIVE STOP TEST WEIGHT
All Vertical Lifts	110%	120%
Example: 110% Overload Test Weight = Max. Platform Capacity + 10% 120% Positive Stop Test Weight = Max. Platform Capacity + 20%		
Capacity	**110%**	**120%**
300 lb. (136kg)	330 lb. (150kg)	360 lb. (163kg)
350 lb. (159kg)	385 lb. (175kg)	420 lb. (191kg)
500 lb. (227kg)	550 lb. (250kg)	600 lb. (272kg)

NOTICE

WHEN PERFORMING THE FOLLOWING ADJUSTMENTS - DO NOT ADD TO THE WEIGHT IN THE PLATFORM BY ALLOWING ANY PART OF YOUR BODY TO REST ON THE PLATFORM.

Adjustment Procedures



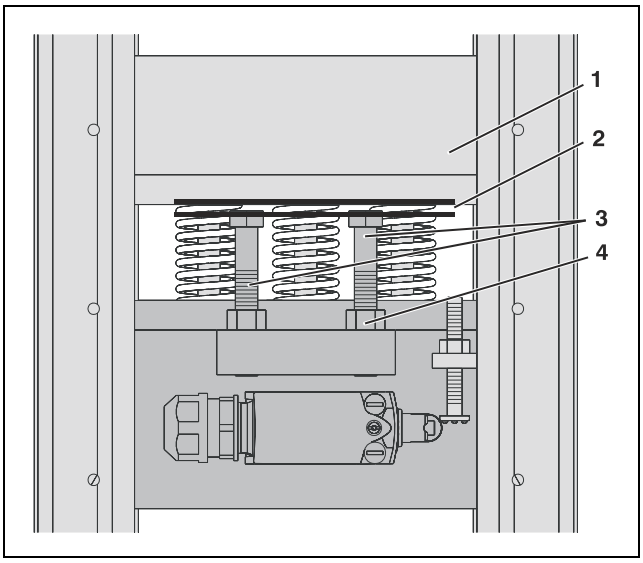
Coil Spring Pre-Load Adjustment Procedure (As viewed from rear with mast hidden)

1. Perform the spring pre-load adjustment with NO LOAD IN THE PLATFORM.
2. Adjust the coil spring height *(item 1)* between the mast crossmember *(item 2)* and the platform crossmember *(item 3)* to two (2) inches (51mm) by loosening or tightening the locknut on the bottom of the center bolt *(item 4) (see note below)*.
3. Adjust outside spring bolts *(items 5)* until the locknuts on the bottom of the bolts are flush with the end of each bolt. The outside bolts will be loose.

NOTE: *Machines with capacities up to 300 lb. (136kg) only require two coils springs installed on the outside bolt positions. Machines with capacities over 300 lb. (136kg) require coil springs installed in all three bolt positions.*

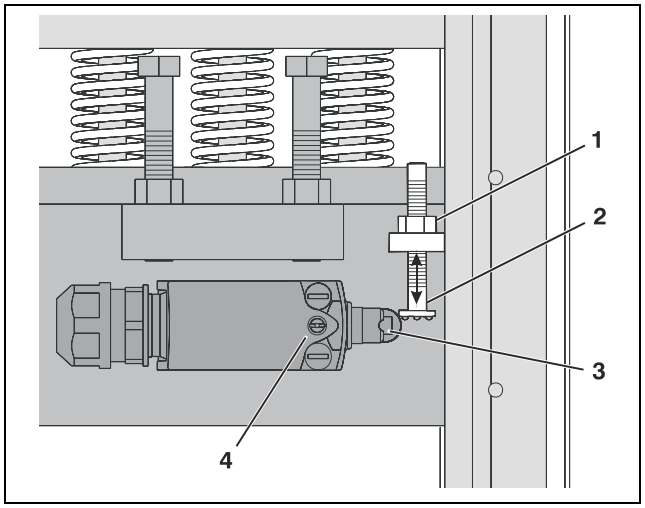
NOTICE

WHEN PERFORMING THE FOLLOWING ADJUSTMENTS - DO NOT ADD TO THE WEIGHT IN THE PLATFORM BY ALLOWING ANY PART OF YOUR BODY TO REST ON THE PLATFORM.



Crossmember Positive Stop Adjustment

1. Perform the crossmember positive stop adjustment with 120% OF MAXIMUM CAPACITY load in the platform.
2. Adjust the height between the top of the positive stop bolts *(item 3)* and the platform crossmember *(item 1)* to 1/16 - 1/8 inch (2 to 3mm) *(item 2)* by loosening the nuts *(item 4)* at the bottom of the bolts *(item 1)*. Adjust both stop bolts until the proper height is achieved.
3. Tighten both nuts *(item 4)* when proper adjustment is achieved.



Limit Switch Overload Actuator Adjustment

1. Perform the limit switch overload actuator adjustment with 110% OF MAXIMUM CAPACITY load in the platform.
2. Setup and power machine on.
3. With weight in platform, loosen the actuator lock nut *(item 1)* and turn the actuator *(item 2)* and align with the end of plunger on the switch *(item 3)*.
4. Remove the limit switch cover *(item 4)* and use a volt/ohm meter to watch for switch open circuit. Adjust the actuator down until the switch contact opens. *(See Notes (a) and (b).*
5. Once circuit is open, re-tighten the actuator lock nut and replace the cover on the limit switch when complete.

NOTE: *(a) There is a three (3) second delay programmed into the LSS Timing Module (Manually Propelled Lifts) and Ground Control Module (Driveable Vertical Lifts) between switch opening and module activation of the LSS warning indicators.*

NOTE: *(b) There is a 5 second RESET delay once the limit switch circuit is closed and before the module resumes normal machine operation.*

LSS Operation Function Check

After performing the adjustments outlined previously check the following:

- Machine operates properly when loaded to 100% rated platform capacity.
- Machine cuts out applicable functions and indicates an overload condition when loaded to 110% rated platform capacity.

2.3 COMPONENT REMOVAL

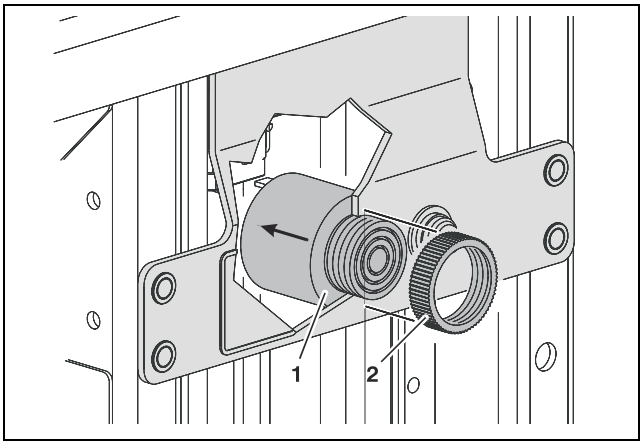
General

Before disconnecting any electrical component always turn off the machine power supply.

Refer to wiring schematic in the Troubleshooting section for wiring connection information.

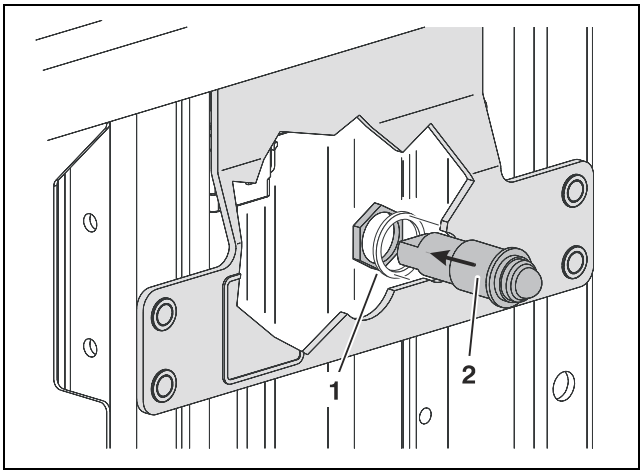
Platform removal will depend on machine model, consult the machine's Service/Maintenance Manual.

LSS Panel Component Installation - (Manually Propelled Lifts Only)



LSS Warning Alarm Installation

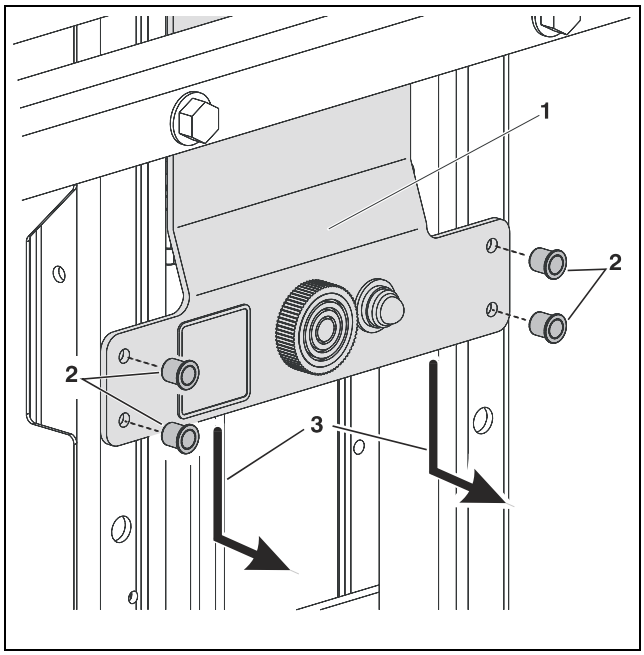
1. Alarm Body **2.** Alarm Attach Nut



LSS Warning Lamp Installation

1. Lamp Attach Nut and Washer
2. Lamp Assembly

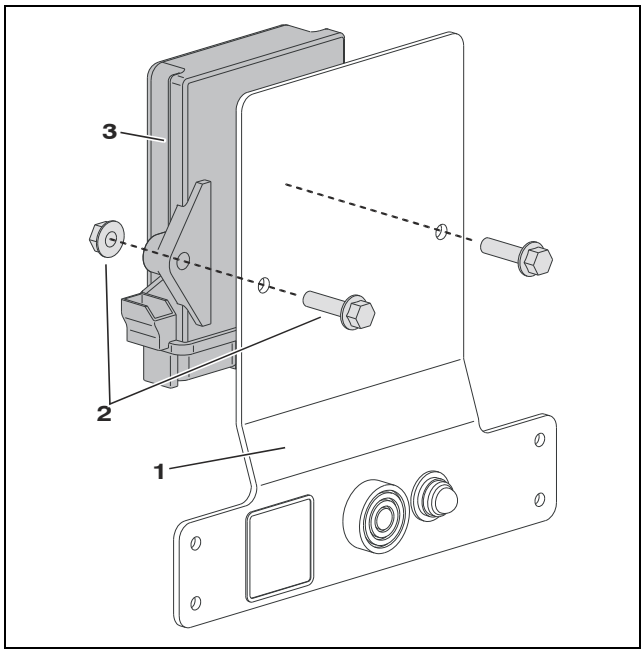
Note: Shown with alarm removed for illustrative purposes only.



LSS Panel Installation

1. LSS Panel **3.** Drop panel down and lift out
2. Panel Fasteners

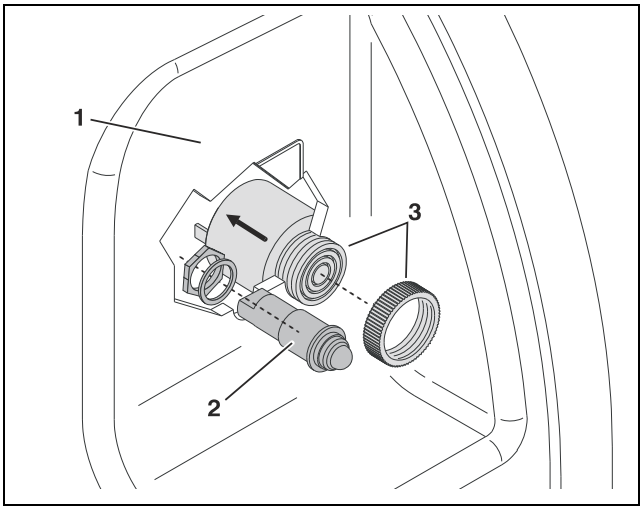
Note: Wiring harness connectors to module, alarm and lamp may need to be disconnected when removing panel.



LSS Timing Module Installation

1. LSS Indicator Panel **3.** LSS Timing Module
2. Module Fasteners

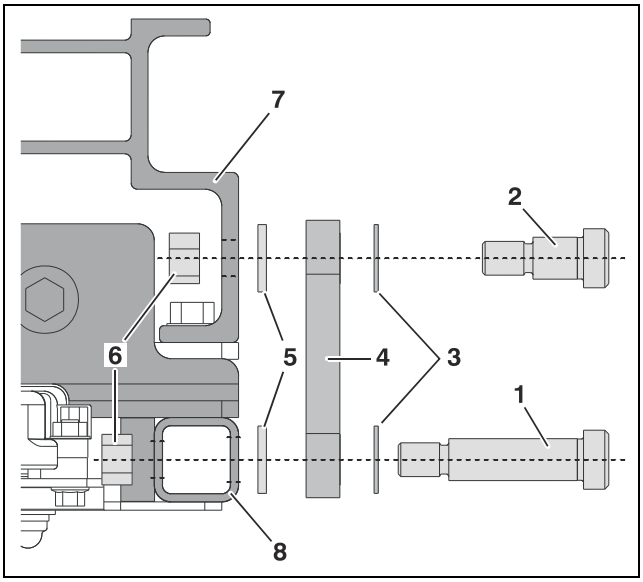
LSS Indicators (Drivable Vertical Lifts Only)



LSS Indicator Installation (Drivable Lifts Only)

1. Open/unbolt Left Rear Cover **3.** LSS Warning Alarm
2. LSS Warning Lamp

LSS Platform Mount Attach Arms to Mast Header Installation (All Lifts)

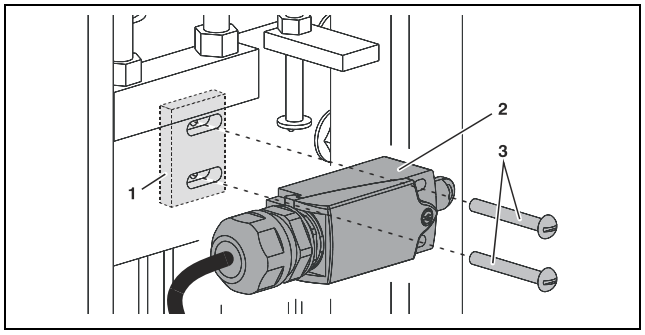


Platform Mount to Mast Header Attach Arm Installation (Top Side Arm Shown - Installation Same Both Sides)

1. Shoulder Bolt (2.75 in.)
2. Shoulder Bolt (1.5 in.)
3. Bronze Washer (.0625 in.)
4. Attach Arm Assy.
5. Bronze Washer (.125 in.)
6. Hex Nuts (a)
7. Mast Header
8. Platform Mount Assy.

Note: (a) Apply Loctite #271 to threads on final assembly and torque to 45 ft. lb. (61 N, m).

LSS Limit Switch Installation (All Lifts)

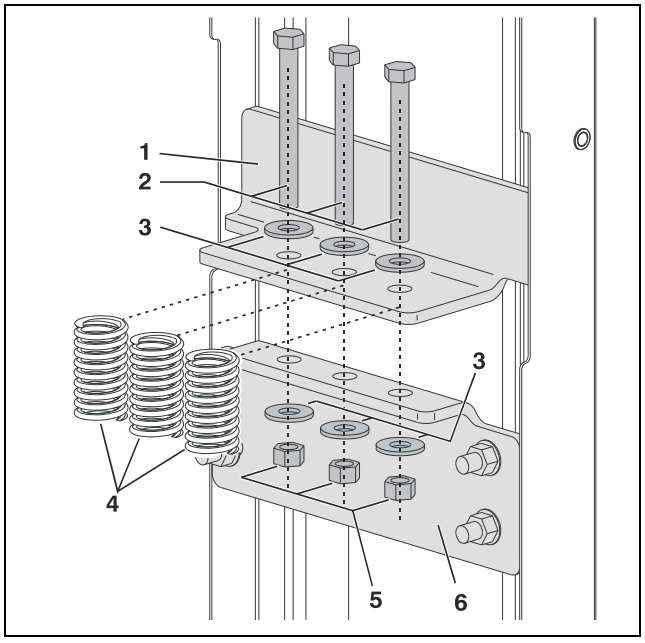


LSS Limit Switch Installation

1. Switch Mounting Nut (a) **3.** Switch Fasteners
2. Limit Switch

Note: (a) Located behind mast crossmember.

LSS Platform Mount, Coil Spring to Mast Crossmember Installation (All Lifts)



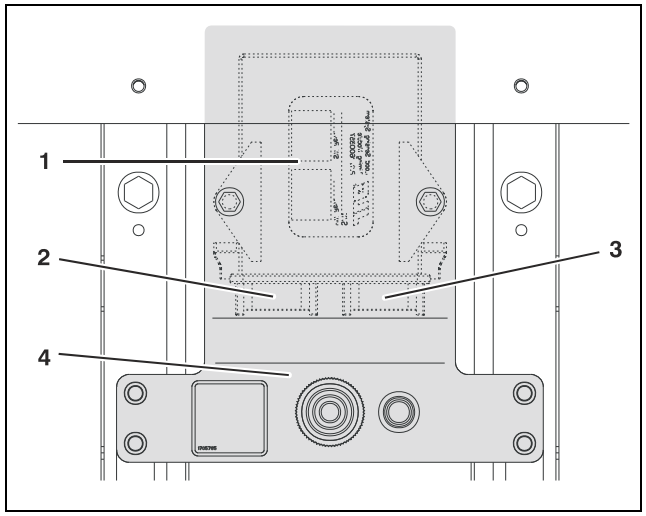
View From Rear Of Crossmembers (View From Rear - Mast Header Hidden)

1. Platform Mount Crossmember **4.** Coil Springs (a)
2. Spring Preload Adjust Bolts **5.** Lock Nuts
3. Flat Washers **6.** Mast Header Crossmember

NOTE: *(a) Machines with capacities up to 300 lb. (136kg) only require two coils springs installed on the outside bolt positions. Machines with capacities over 300 lb. (136kg) require coil springs installed in all three bolt positions.*

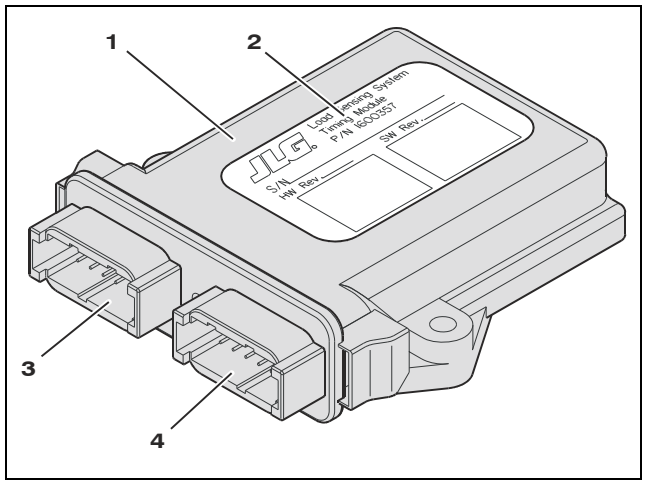
2.4 LSS TIMING MODULE - (MANUALLY PROPELLED LIFTS ONLY)

The LSS Timing Module is fastened to the back of the LSS Indicator Panel at the back of the platform on the mast header. *(See Section 2.3, Component Removal for instructions on removing the module).*



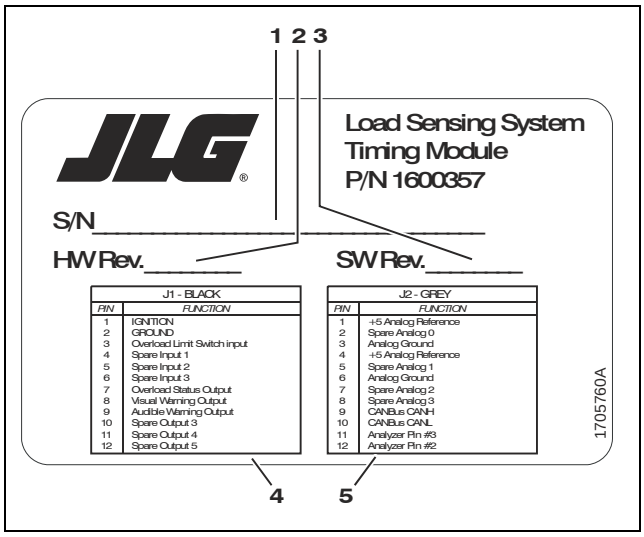
LSS Module Location

1. Timing Module
2. J1 Black Connector
3. J2 Grey Connector
4. LSS Indicator Panel



LSS Timing Module

1. Timing Module
2. Identification Decal
3. J2 Grey Connector *(unused)*
4. J1 Black Connector *(used)*



LSS Timing Module Identification Decal with Connector Pin Assignments

1. Module Serial Number
2. Hardware Revision Level
3. Software Revision Level
4. J1 Black - Pin Assignments *(used)*
5. J2 Grey - Pin Assignments *(unused)*

Table 2-2. LSS Timing Module (J1 - Black Connector) Pin Assignments

Pin	Signal	Description
1	12V +	Ignition
2	Neg. (–)	Ground
3	12V +	Overload Limit Switch Input
4	—	Spare Input 1
5	—	Spare Input 2
6	—	Spare Input 3
7	12V +	Overload Status Output
8	12V +	Visual Warning Output
9	12V +	Audible Warning Output
10	—	Spare Input 4
11	—	Spare Input 5
12	—	Spare Input 6
Note: Also refer to wiring diagram Figure 2-5.		

2.5 GROUND CONTROL MODULE (DRIVABLE VERTICAL LIFTS ONLY)

The following instructions are supplemental to the DVL/DVSP Operators and Service manuals and show additional features on the ground control module for machines equipped with the Load Sensing System.

Programming

The Ground Control Module must be programmed to detect the Load Sensing System before the LSS will function properly.

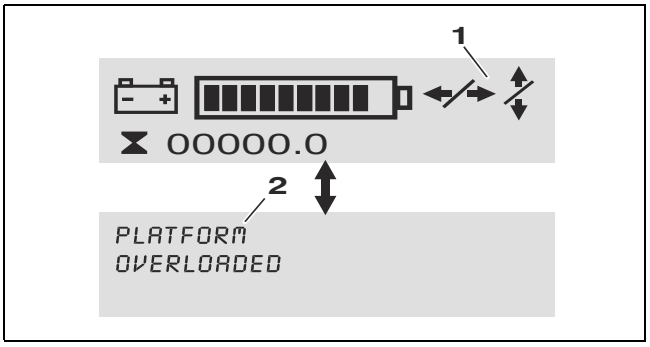
1. Enter the Service Programming Mode *(Level 2 - Password)* at the Ground Control Module *(Refer to the machine's Service Manual for instructions)*.
2. Enter the Program menu and scroll through the item list to find and set the LSS programming item range as shown following:

Table 2-3. Ground Control Module Programming - Drivable Lifts ONLY.

PROGRAMMABLE ITEM	FACTORY PRESET	SETTING RANGE
Enable Detection of LSS	**2**	**0** - Detection Disabled **1** - Enabled - Warning Disables Platform Functions Only **2** - Enabled - Warning Disables Platform and Ground Control Functions

LCD Display

When an overload warning is detected the following alternating screens are displayed on the Ground Control Module LCD screen:

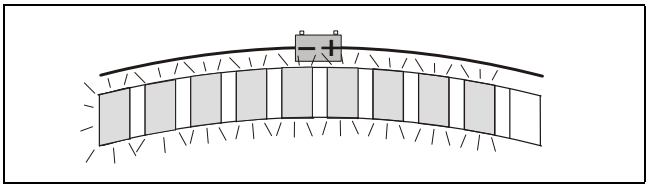


LCD Display Symbols

1. Drive and Lift Up/Down Functions - Disable Indicators
2. Description of Warning - Platform Overloaded

Note: When the Overload condition is indicated the LCD screen will alternate between the text and symbol display modes.

2.6 PLATFORM CONTROL CONSOLE (DRIVABLE VERTICAL LIFTS ONLY)



Platform Console LED Indicators

1. The platform console LED bar will flash 9 (Nine) LEDs to indicate a Platform Overload condition.

2.7 TROUBLESHOOTING

The following tables are furnished to provide possible resolutions for common Load Sensing System difficulties. The wiring connectors and pins referenced in these troubleshooting tables can be located on the electrical wiring diagrams on the pages following these tables.

Table 2-4. Troubleshooting - Machine Indicates (Possible False) Platform Overload Condition - (Manually Propelled Vertical Lifts)

Check For These Obvious Conditions First:
- Is the LSS platform mounting system secure and undamaged and all mounting arm joints working smoothly.
- Damaged or loose connectors or wires to LSS components.

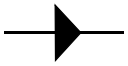
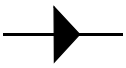
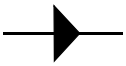
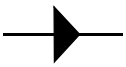
STEP	ACTION	SPEC	YES	NO
1.	Is platform load at or below the maximum rated platform capacity?	See Capacity Decal on Machine	Go to Step 2	Reduce Platform Load
2.	Perform adjustment procedures (Section 2.2, LSS - Setup And Adjustment). Reload platform to rated capacity, is system still indicating an overload condition?	—	Go to Step 3	Done
3.	Set up and power machine on. Check voltage at Timing Module - J1 connector - Pin 3. Is voltage up to spec?	12V	Replace Timing Module	Go to Step 4
4.	Check continuity between Timing Module J1 - Pin 3 and Pin 22 on the Limit Switch. Is there continuity?		Go to Step 5	Repair or Replace Wiring
5.	At the Limit Switch check voltage on Pin 21. Is voltage up to spec?	12V	Replace Limit Switch	Go to Step 6
6.	At the Limit Switch, check Pin 21 connector for loose or damaged condition. Is connector loose or damaged?	—	Repair or Replace Connector	Replace Limit Switch

Table 2-5. Troubleshooting - Machine Indicates (Possible False) Platform Overload Condition - (Drivable Vertical Lifts)

Check For These Obvious Conditions First:
- Is the LSS platform mounting system secure and undamaged and all mounting arm joints working smoothly.
- Damaged or loose connectors or wires to LSS components.

STEP	ACTION	SPEC	YES	NO
1.	Is platform load at or below the maximum rated platform capacity?	See Capacity Decal on Machine	Go to Step 2	Reduce Platform Load

Table 2-5. Troubleshooting - Machine Indicates (Possible False) Platform Overload Condition - (Drivable Vertical Lifts)

STEP	ACTION	SPEC	YES	NO
2.	Perform adjustment procedures (Section 2.2, LSS - Setup And Adjustment). Reload platform to rated capacity, is system still indicating an overload condition?	—	Go to Step 3	Done
3.	Check continuity between Ground Control Module - P2 connector - Pins 4 and 13. Is there continuity?		Replace Ground Control Module	Go to Step 4
4.	Check continuity from Limit Switch Terminal 22 to the Ground Control Module - P2 Connector - Pin 4. Is there continuity?		Go to Step 5	Repair or Replace Wiring
5.	Check continuity from Limit Switch Terminal 21 to the Ground Control Module - P2 connector - Pin 13. Is there continuity?		Readjust or Replace Limit Switch	Repair or Replace Wiring

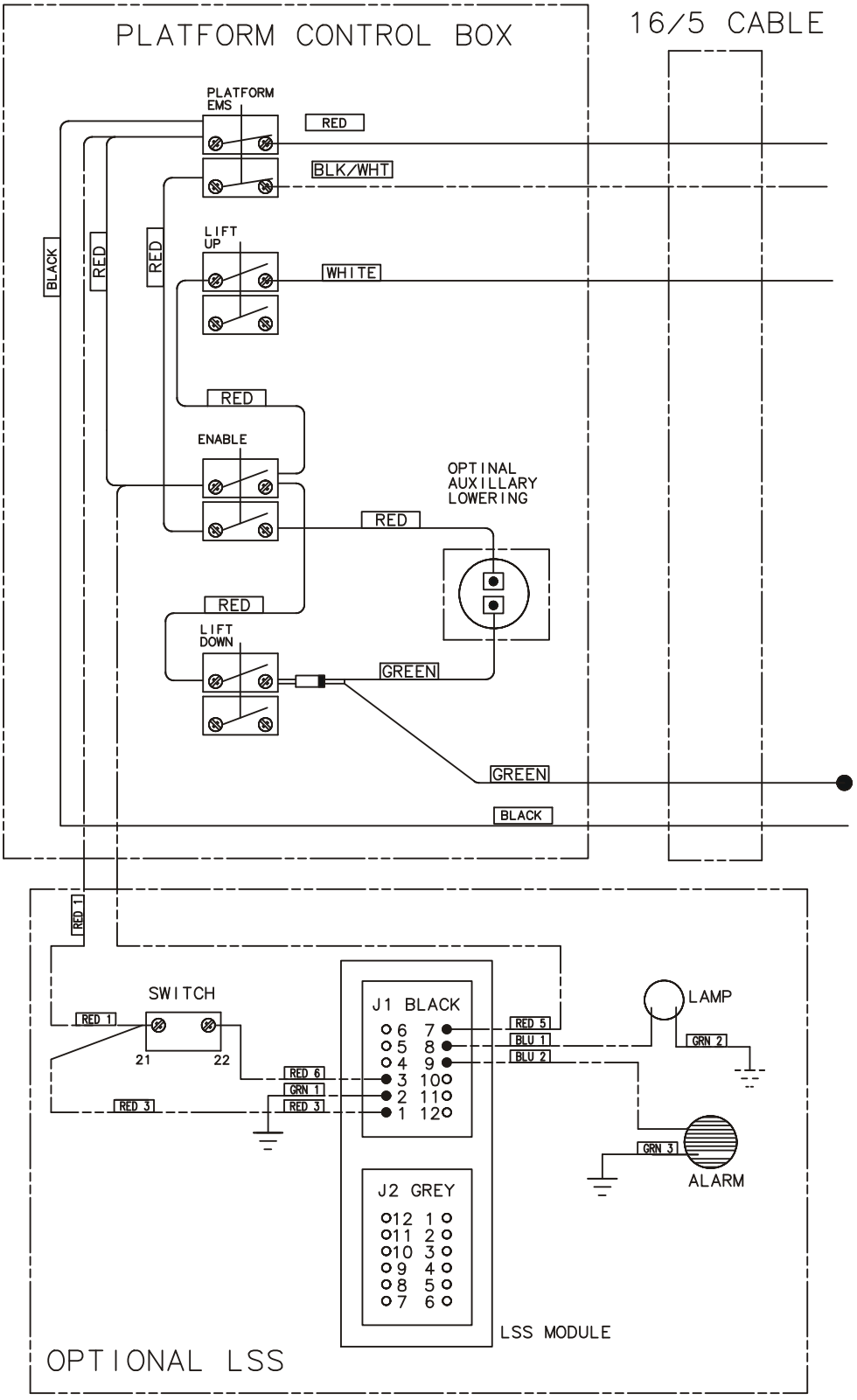


Figure 2-5. LSS Wiring Diagram - (For Manually Propelled Vertical Lifts).

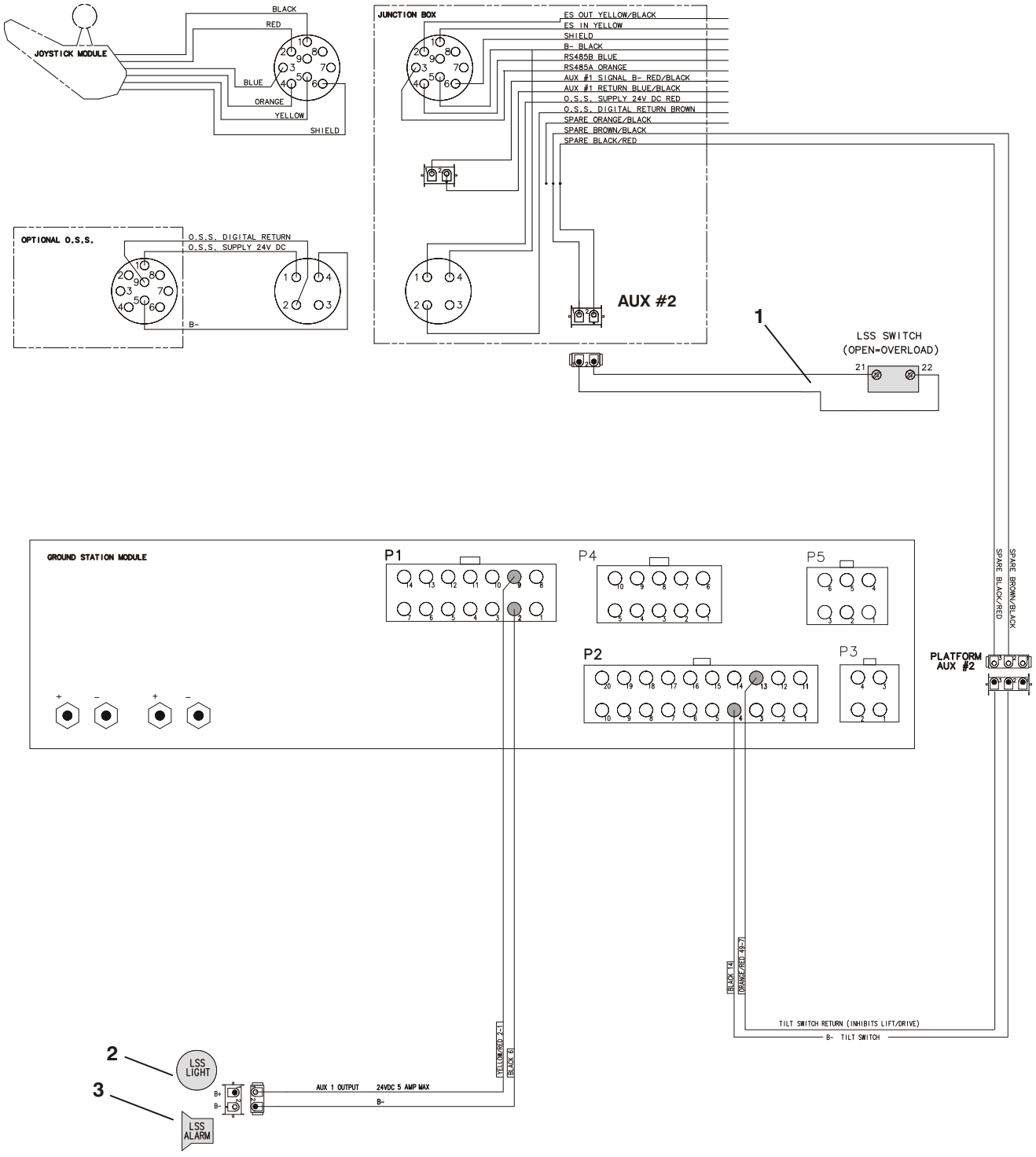


Figure 2-6. LSS Wiring Diagram - (For Drivable Vertical Lifts).

1. Wires from Platform Junction Box - Auxiliary Connector to LSS Limit Switch
2. LSS Warning Lamp
3. LSS Warning Alarm

SECTION 3. PARTS

TABLE OF CONTENTS

Figure 3-1. PLATFORM SUPPORT & LOAD SENSING INSTALLATION

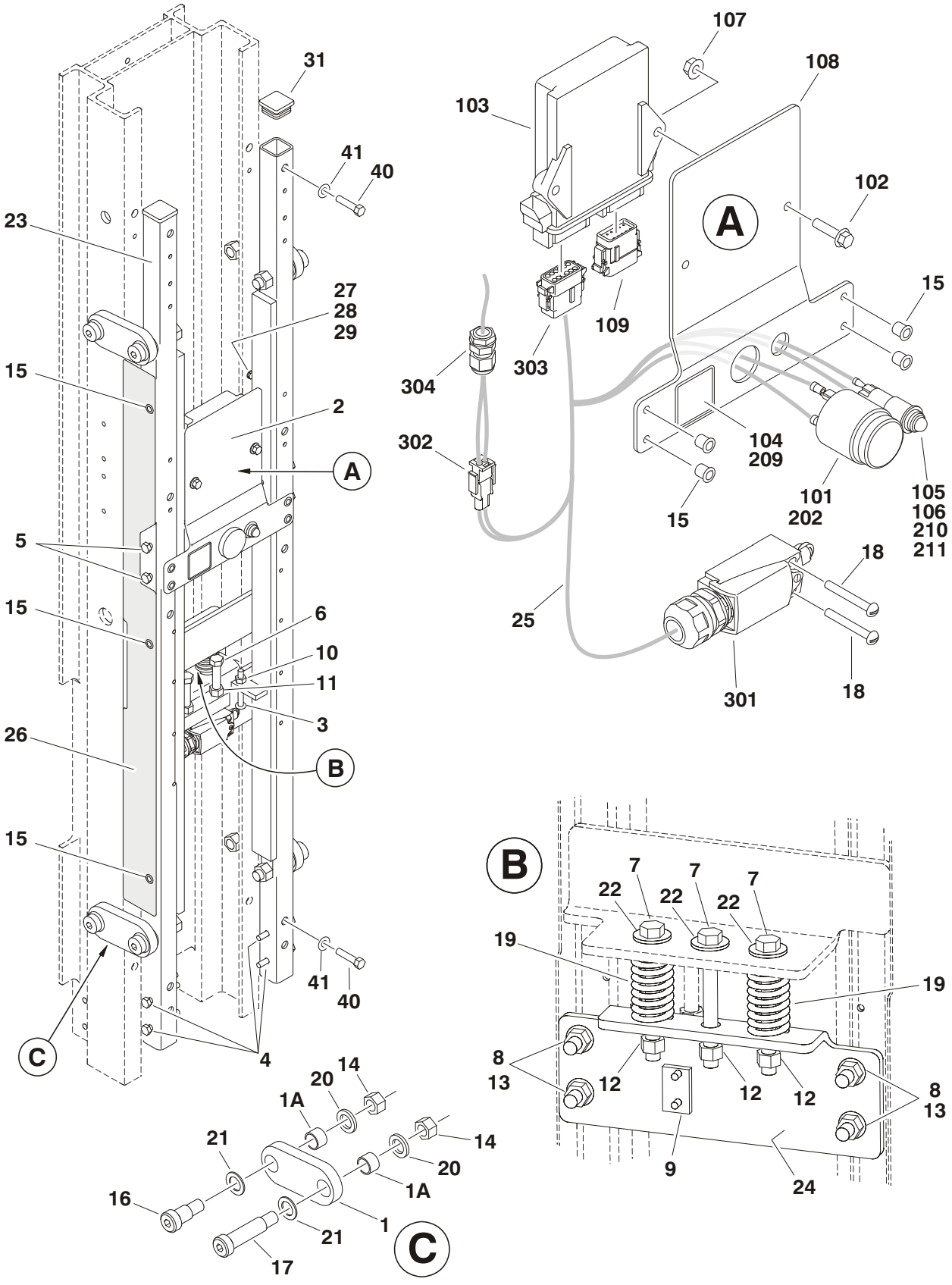


FIGURE 3-1 PLATFORM SUPPORT & LOAD SENSING INSTALLATION

FIG & ITEM #	PART NUMBER	DESCRIPTION	QTY.	REV.
		LOAD SENSING SYSTEM INSTALLATION (CE SPEC)	Ref.	
	0273264	**20AM/25AM Models**	Ref.	C
	0273265	**30AM/36AM/41AM Models**	Ref.	C
	0273264	**AMI Models**	Ref.	C
	0273266	**DVL/DVSP/MVL/MSP Models with Bolt-on Platforms**	Ref.	D
	0273267	**DVL/DVSP/MVL/MSP Models with Quick Change Platforms**	Ref.	D
	0273047	**MP Models**	Ref.	D
1	0273144	Arm Assembly	4	
	0440268	Bushing (2 Per Arm)	8	
2	0273162	Load Sensor Controller Assembly (See Items 101-109) (Note: Machine must be recalibrated when replaced) **Note: Used on all Machines except DVL/DVSP/MVL/MSP Models.**	1	
3	0630570	Bolt, Special	1	
4		Bolt 1/4-20NC x 2” Options:	A/R	
	0641416	AM/AMI Models	4	
	Not Required	DVL/DVSP/MVL/MSP Models with Bolt-on Platforms	0	
	0641416	DVL/DVSP/MVL/MSP Models with Quick Change Platforms	4	
	Not Required	MP Models	0	
5		Bolt 1/4-20NC x 2 1/4” Options:	A/R	
	0641418	AM/AMI Models	4	
	Not Required	DVL/DVSP/MVL/MSP Models with Bolt-on Platforms	0	
	0641418	DVL/DVSP/MVL/MSP Models with Quick Change Platforms	4	
	Not Required	MP Models	0	
6	0641620	Bolt 3/8”-16NC x 2 1/2”	2	
7	0641628	Bolt 3/8”-16NC x 3 1/2”	3	
8	0791610	Screw 3/8”-16NC x 1 1/4”	4	
9	3300475	Nut	1	
10	3311401	Nut 1/4”-20NC	1	
11	3311601	Nut 3/8”-16NC	2	
12	3311605	Locknut 3/8”-16NC	3	
13	3311608	Nut, Flanged 3/8”-16NC	4	
14	3311801	Nut 1/2”-13NC	8	
15	3820032	Rivet	10	
16	3900346	Bolt, Shoulder 3/8” x 3/4”	4	
17	3900347	Bolt, Shoulder 3/8” x 2”	4	
18	3911024	Screw #10-24NC x 1 1/2”	2	
19	4160205	Spring Options:	A/R	
		20AM/25AM Models	2	
		30AM/36AM/41AM Models	3	
		AMI Models	2	
		DVL/DVSP/MVL/MSP Models	3	
		MP Models	3	
20	4740529	Thrustwasher, Bronze	8	
21	4740530	Thrustwasher, Bronze	8	
22	4751600	Flatwasher 3/8” Wide	6	

FIGURE 3-1 PLATFORM SUPPORT & LOAD SENSING INSTALLATION

FIG & ITEM #	PART NUMBER	DESCRIPTION	QTY.	REV.
23	4846859	Load Sensor Weldment	1	
24	4846877	Support, Spring & Switch	1	
25		Load Sensing Harness Assembly Options:	1	
	4922923	AM/AMI/MP Models (See Items 301-304 for Breakdown)		
	4922924	DVL/DVSP/MVL/MSP Models (See Items 401-404 for Breakdown)		
26	4061060	Shield	2	
27	0721006	Screw, Machine #10-24NC x 3/4”	1	
28	3311001	Nut #10-24NC	1	
29	4771000	Starwasher #10	2	
30	0100019	Loctite #271 (Not Shown)	A/R	
31	3520072	Cap-Plug	2	
32 to 39	Not Used			
40		Bolt 3/8”-16NC x 3 1/4” Options:	A/R	
	Not Required	AM/AMI Models	0	
	0641626	DVL/DVSP/MVL/MSP Models with Bolt-on Platforms	6	
	Not Required	DVL/DVSP/MVL/MSP Models with Quick Change Platforms	0	
	0641626	MP Models	6	
41	4711600	Flatwasher 3/8” Narrow (MP Models Only)	3	
	0273162	**LOAD SENSOR CONTROLLER ASSEMBLY** **Note: Used on all Machines except DVL/DVSP/MVL/MSP Models.**	Ref.	B
101	0140011	Alarm, Warning	1	
102	0791408	Screw 1/4”-20NC x 1”	2	
103	1600357	Module, Control	1	
104	1705756	Decal - Warning	1	
105	2920026	Lamp, Indicator	1	
106	2920029	Bulb, Light	1	
107	3311408	Nut, Flanged 1/4”-20NC	2	
108	3574518	Plate, Mounting	1	
109	4460908	Connector, Female 12 Position	1	
		LOAD SENSING SYSTEM INSTALLATION (CE SPEC) **Note: Components Located on Hood.**	Ref.	
	0273266	**DVL/DVSP/MVL/MSP Models with Bolt-on Platforms**	Ref.	D
	0273267	**DVL/DVSP/MVL/MSP Models with Quick Change Platforms**	Ref.	D
201	Not Used			
202	0140011	Alarm, Warning	1	
203 to 208	Not Used			
209	1705756	Decal - Warning	1	
210	2920026	Lamp, Indicator	1	
211	2920029	Bulb, Light	1	

FIGURE 3-1 PLATFORM SUPPORT & LOAD SENSING INSTALLATION

FIG & ITEM #	PART NUMBER	DESCRIPTION	QTY.	REV.
	4922923	**LOAD SENSING HARNESS ASSEMBLY (AM/AMI/MP MODELS)**	Ref.	C
301	4360546	Switch, Limit	1	
302	4460320	Plug, Male - 2 Position	1	
	4460226	Socket, Female	2	
	4460424	Connector, Female - 2 Position	1	
	4460227	Pin, Male	2	
303	4460909	Connector, Female - 12 Position	1	
	4460517	Socket, Female	8	
	4460466	Seal, Plug	6	
	4460915	Lock, Wedge	1	
304	4461000	Connector, Strain Relief	1	
	4922924	**LOAD SENSING HARNESS ASSEMBLIES (DVL/DVSP/MVL/MSP MODELS) (NOT SHOWN)**	Ref.	D
401	Not Available	Cable Assembly - Light/Alarm Harness (Plugs into Item 402) (Purchase p/n 4922924)	1	
	4460424	Connector, Female - 2 Position	1	
	4460267	Pin, Male	2	
402	Not Available	Cable Assembly - Aux Output 1 to Light/Alarm Harness (Plugs into Item 401) (Purchase p/n 4922924)	1	
	4460424	Connector, Female - 2 Position (To Aux Output 1)	1	
	4460226	Socket, Female	1	
	4460267	Pin, Male	1	
	4460320	Plug, Male - 2 Position (To Light/Alarm Harness)	1	
	4460226	Socket, Female	2	
403	Not Available	Cable Assembly - Tilt Plug to Platform Harness (Purchase p/n 4922924)	1	
	4460326	Plug, Male - 3 Position (To Tilt Plug)	1	
	4460226	Socket, Female	3	
	4460445	Connector, Female - 3 Position (To Platform Harness)	1	
	4460267	Pin, Male	3	
404	Not Available	Cable Assembly - Limit Switch Harness (Purchase p/n 4922924)	1	
	4460320	Plug, Male - 2 Position	1	
	4460226	Socket, Female	2	
	4360546	Switch, Limit	1	

FIGURE 3-1 PLATFORM SUPPORT & LOAD SENSING INSTALLATION

FIG & ITEM #	PART NUMBER	DESCRIPTION	QTY.	REV.

3124289

An Oshkosh Corporation Company

Corporate Office
JLG Industries, Inc.
1 JLG Drive
McConnellsburg PA. 17233-9533
USA
(717) 485-5161
(717) 485-6417

JLG Worldwide Locations

JLG Industries (Australia)
P.O. Box 5119
11 Bolwarra Road
Port Macquarie
N.S.W. 2444
Australia
+61 2 65 811111
+61 2 65 813058

JLG Latino Americana Ltda.
Rua Eng. Carlos Stevenson,
80-Suite 71
13092-310 Campinas-SP
Brazil
+55 19 3295 0407
+55 19 3295 1025

JLG Industries (UK) Ltd
Bentley House
Bentley Avenue
Middleton
Greater Manchester
M24 2GP - England
+44 (0)161 654 1000
+44 (0)161 654 1001

JLG France SAS
Z.I. de Baulieu
47400 Fauillet
France
+33 (0)5 53 88 31 70
+33 (0)5 53 88 31 79

JLG Deutschland GmbH
Max-Planck-Str. 21
D - 27721 Ritterhude - Ihlpohl
Germany
+49 (0)421 69 350 20
+49 (0)421 69 350 45

JLG Equipment Services Ltd.
Rm 1107 Landmark North
39 Lung Sum Avenue
Sheung Shui N. T.
Hong Kong
(852) 2639 5783
(852) 2639 5797

JLG Industries (Italia) s.r.l.
Via Po. 22
20010 Pregnana Milanese - MI
Italy
+39 029 359 5210
+39 029 359 5845

Oshkosh-JLG Singapore
Technology Equipment Pte
Ltd
29 Tuas Ave 4,
Jurong Industrial Estate
Singapore, 639379
+65-6591 9030
+65-6591 9031

Plataformas Elevadoras
JLG Iberica, S.L.
Trapadella, 2
P.I. Castellbisbal Sur
08755 Castellbisbal, Barcelona
Spain
+34 93 772 4700
+34 93 771 1762

JLG Sverige AB
Enkopingsvagen 150
Box 704
SE - 176 27 Jarfalla
Sweden
+46 (0)850 659 500
+46 (0)850 659 534

www.jlg.com