



OPERATION & SAFETY MANUAL

GRADALL[®] TRANSFORMER SERIES WORK PLATFORM

9150-4004

March 2003

Starting Serial No.
0190001 thru 0190457
& 0160000022 thru Current

Form #20140

Original Issue 3/03

CORPORATE OFFICE

JLG INDUSTRIES, INC.
1 JLG DRIVE
McConnellsburg, PA
17233-9533
USA
Telephone: (717) 485-5161
Fax: (717) 485-6417

GRADALL DIVISION

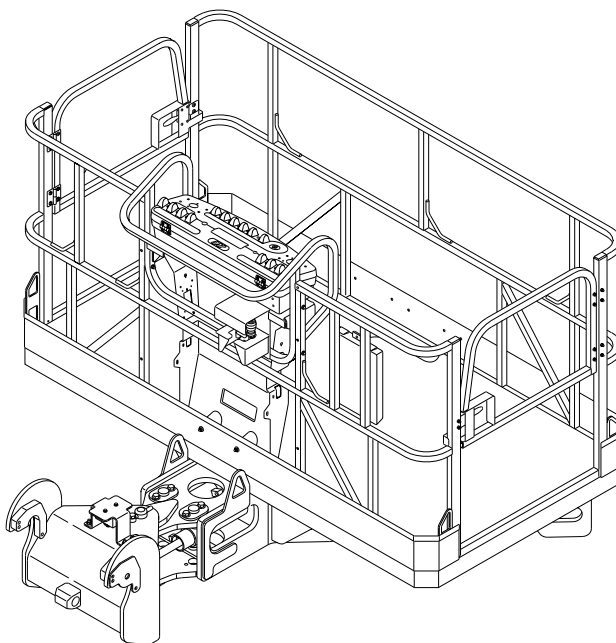
JLG INDUSTRIES, INC.
406 Mill Avenue S.W.
New Philadelphia, OH
44663
USA
Telephone: (330) 339-2211
Fax: (330) 339-8458

GRADALL®

personnel work platform

Transformer Series PERSONNEL WORK PLATFORM MANUAL

COVERING OPERATION & SAFETY



IMPORTANT!

Read and understand this Manual, the TF6-42 Owner/Operator Manual, the Gradall Material Handler Safety Manual, the ANSI A92.5 Responsibilities Manual, and the EMI Aerial Work Platform Safety Manual before starting, operating or performing maintenance procedures on this machine.

**DUPLICATE COPIES OF THIS MANUAL
(PART NUMBER 9150-4004) ARE PROVIDED**

**KEEP ONE COPY WITH WORK PLATFORM
AND ONE COPY IN CAB
WITH OPERATOR AND SAFETY MANUALS**

A **JLG** Company

Form No. 20140

**USE ONLY WITH GRADALL TRANSFORMER SERIES MATERIAL
HANDLERS STARTING SERIAL NUMBER 0192001 THRU 0192007
AND SERIAL NUMBER 0160000052 THRU CURRENT**

JLG®

Part No. 9150-4004

IMPORTANT SAFETY NOTICE

Safe operation depends on reliable equipment and proper operating procedures. The operating procedures and checks and services provided in this manual are in addition to those supplied with your JLG/Gradall Material Handler. Performing the checks and services described in this Manual and the Owner/Operator Manual furnished with your material handler will help to keep your JLG/Gradall Material Handler and personnel work platform in reliable condition. Following recommended operating procedures can help you avoid accidents. Because some procedures may be new to even the experienced operator and work platform occupants, JLG/Gradall requires that the material handler Owner/Operator Manual and this personnel work platform Manual be read, understood, and complied with by all who operate the material handler and occupy the work platform.

Strict attention to and compliance with instructions provided in this Manual, TF6-42 Owner/Operator Manual, the GRADALL Material Handler Safety Manual, the GRADALL Operator Orientation Video, the ANSI A92.5 Responsibilities Manual, the EMI Aerial Work Platform Safety Manual, as well as instructional decals and plates affixed to the machine and attachments will help prevent injuries to personnel and damage to the equipment. The information provided herein is not intended to cover all situations; it is impossible to anticipate and evaluate all possible applications and methods of operation for this equipment.

The operating procedures, checks and services provided in this manual are in addition to those supplied with your JLG/Gradall Material Handler.

Any procedure not specifically recommended by JLG/GRADALL must be thoroughly evaluated from the standpoint of safety before it is placed in practice. If you are not sure, contact your JLG/GRADALL Material Handler Distributor before operating.

Do not modify this personnel work platform or the material handler without written permission from Gradall.

Use only JLG/GRADALL authorized parts. The use of counterfeit parts may cause premature failure which could lead to injuries and/or machine damage.

**Do not modify this personnel work platform
or the material handler without written
permission from JLG/GRADALL. Use only genuine
JLG/GRADALL replacement parts.**

OTHER NOTICES

JLG/GRADALL retains all proprietary rights to the information contained in this Manual.

JLG/GRADALL reserves the right to change specifications without notice.

Gradall is a registered trademark for Hydraulic Excavators, Hydraulic Material Handlers and Attachments manufactured by The JLG/Gradall Company.

REVISIONS

This page is provided so you may determine that this Manual is complete and current with respect to Gradall Engineering Specifications.

[illegible]

TABLE OF CONTENTS

TRANSFORMER SERIES WORK PLATFORM

IMPORTANT SAFETY NOTICE	inside front cover
TABLE OF CONTENTS	
INTRODUCTION	
SAFETY	P1.0
DECAL LOCATIONS	P2.0
DECALS	P3.0
NOMENCLATURE	P4.0
WORK PLATFORM INSTALLATION	P5.0
CHECKS BEFORE USING	P6.0
WARM-UP & OPERATIONAL CHECKS	P6.1
DAILY "WALK-AROUND INSPECTION"	P6.2
DAILY REAR AXLE LOCK-OUT TEST PROCEDURE	P7.0
PLATFORM CONTROLS & INDICATORS	P8.0
PLATFORM OPERATION	P9.0
EMERGENCY PROCEDURES	P10.0

Important Notice !

This machine has been equipped with a serial number specific Transformer Series Personnel Work Platform. Do not exchange transformer platforms between machines. Doing so will require calibration changes to the controller that must be performed by a qualified service technician. This platform assembly is designed solely for use with the Transformer Model Machines only.

General

This manual provides important information regarding safe operating procedures for JLG/Gradall Transformer Series work platform. If you have any questions regarding the JLG/Gradall personnel platform contact your JLG/Gradall Material Handler Distributor.

Operator/Platform Occupant Qualifications

Material Handler operators and platform occupants must be in good physical and mental condition, have normal reflexes and reaction time, good vision and depth perception and normal hearing. They must not be using medication which could impair abilities nor be under the influence of alcohol or any other intoxicant during the work shift.

The operator must be familiar with Sections 6, 7, 8, 9, 10 of ANSI A92.5-1992. These sections contain the responsibilities of the operator concerning safety, training, inspection, maintenance, application and operation.

In addition, the operator must read/view, understand and comply with instructions contained in the following material furnished with the material handler:

- This JLG/Gradall Transformer Series Work Platform Manual
- The /Gradall TF6-42 Material Handler Owner/Operator Manual
- ANSI A92.5 Responsibilities Manual
- EMI Aerial Work Platform Safety Manual
- GRADALL Material Handler Safety Manual
- All instructional decals and plates
- Any optional equipment instructions furnished

The operator and platform occupant(s) must also read, understand and comply with all applicable Employer, Industry and Government rules, standards and regulations.

Related Manuals & Decals

Separate publications are furnished with the material handler to provide information concerning safety, replacement parts, operation & maintenance procedures and vendor components. Replacement manuals, decals and instruction placards can be ordered from your JLG/GRADALL Material Handler Distributor.

Capacity Limitations

Refer to the capacity decal on Platform and capacity indicators located on the control console. The load capacity includes personnel, materials, tools, etc. The maximum capacity of your work platform is based on specific model material handler/work platform combination.

Serial Number Location

Specify Model and Serial Number when ordering parts and when discussing specific applications and procedures with your Distributor. The Serial Number plate is located on the left side of the adapter support.

NOTE!

The terms "Gradall personnel work platform," "Transformer Series work platform," "work platform," and "platform" are used interchangeably throughout this Manual.

"Material handler" and "handler" are used interchangeably throughout this manual.

NOTE!

Though no offense or discrimination is intended, only the masculine pronouns will be used throughout the remainder of this Manual.

SAFETY

Read and understand all manuals and instructional material listed on cover, inside front cover and introduction page of this Manual before putting the Transformer Series personnel work platform into service.

Regardless of previous experience operating similar equipment, the operator must be given sufficient opportunity to practice with the handler in a safe, open area (not hazardous to people or property) to gain operating skills and the proper "feel" for controls and operating clearances required for safe, efficient operation.

General Safety Precautions

Prior to use, make sure all **DANGER, WARNING, CAUTION and INSTRUCTIONAL DECALS** are in place and can be read. Clean or replace decals as required. This manual contains the decals and their locations and can be used as a checklist.

Prior to handling personnel, the material handler and platform shall be thoroughly inspected to ensure controls are functioning properly and all safety features provided are operating properly.

Be aware that when rotating the platform, it can swing into tires. Be sure to allow clearance to avoid damage to tires.

Ensure the footswitch and all other safety devices are operating properly. Do not modify or remove the footswitch or any other safety devices.

Do not change steer mode while the machine is traveling. Change the steer mode only when machine is stopped.

Always look in the direction of travel. **Reduce speed and be especially careful when traveling in reverse and/or turning.** Bring the machine to a complete stop before changing the direction of travel.

It is the operators responsibility to ensure that machine capacity is not exceeded.

Special precautions shall be taken to protect personnel from electrical hazards. **Maintain adequate distances from power sources.**

Do not lift personnel during thunderstorms, strong winds or other inclement weather.

Personnel shall not sit or climb on the platform railings or use planks, ladders or other devices for attaining additional reach or height. Keep both feet firmly positioned on floor of platform.

Do not use railings for lifting loads unless approved in writing by Gradall.

Personnel in platform shall use hand rails to maintain balance while platform is in motion. Keep hands off guard rails and gate during use.

All personnel in platform must wear a full body harness with lanyard attached to a designated point (see page P2.0). Do not attach more than one lanyard to any one lanyard anchorage point.

**WATCH FOR THESE SYMBOLS ;
THEY CALL YOUR ATTENTION
TO SAFETY NOTICES.**

 **DANGER**

This symbol indicates an extreme hazard which will result in high probability of death or serious injury if proper precautions are not taken.

 **WARNING**

This symbol indicates a hazard which could result in death or serious injury if proper precautions are not taken.

 **CAUTION**

This symbol indicates a hazard which may result in injury or damage to equipment or property if proper precautions are not taken.

 **WARNING**

Platform occupants must wear a full body harness with a lanyard attached to designated anchorage point.

If a platform occupant performs welding, electrically connected electrode holders shall be protected from contact with metal components of the platform. **Do not make modifications to the platform**, by welding or any other means. Do not ground through any part of machine.

Platform occupants shall not place any portion of their body between the boom and the platform.

Keep the gate closed at all times unless entering or exiting the platform.

Do not use adapter support to lift or suspend materials or personnel.

Do not allow personnel to tamper with or operate the machine from the cab with personnel in the platform equipped with controls, except in an emergency. Do not allow others to occupy cab while platform controls are in use.

Do not operate or raise the platform from a position on trucks, trailers, railway cars, floating vessels, scaffolds or other equipment unless approved in writing by JLG/Gradall.

Do not assist a stuck or disabled machine by pushing, pulling, or by using boom functions. Assist only by pulling at the chassis tie-down lugs. If machine becomes stuck or disabled, lower and retract boom, exit platform and move unit from cab controls.

Do not replace items critical to stability with items of different weight or specification (for example: batteries, filled tires, engine, platform).

Do not modify unit in any way to affect stability.

Pre-Operation

IMPORTANT: Perform all checks and services as required in the proper Owner/Operator Manual prior to the use of the personnel work platform.

Allow only those authorized and qualified personnel to operate the machine.

Prior to use of platform, check work area for overhead hazards such as electric conductors, bridge cranes, and other potential hazards.

Ensure gate is fastened.

Identify the lanyard anchorage point(s) and securely attach lanyard of an approved fall protection device. Attach only one lanyard per anchorage point.

Avoid accumulation of debris on platform floor. Keep mud, oil, grease, and other slippery substances from footwear and platform deck.

Operation

Do not use the machine with platform attached for any purpose other than positioning personnel, their tools, and equipment.

Always ensure that power tools are properly stowed and never left hanging by their cord from the platform work area.

Do not place boom or platform against any structure to steady the platform or to support the structure.



Failure to perform the recommended lubrication and maintenance service along with daily checks as detailed in the material handler Owner/Operator manual could result in a malfunction that could cause serious injury or death.

SAFETY

Trip and Fall Hazards

Keep both feet firmly positioned on the platform floor at all times. Never position ladders, boxes, steps, planks, or similar items on unit to provide additional reach or height.

Never use the boom assembly to gain access to or leave the platform.

Use extreme caution when entering or leaving platform. Ensure that the platform is fully lowered. Always maintain "three point contact" with the platform, using two hands and one foot or two feet and one hand at all times during entry and exit.

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

Electrocution Hazards

Maintain safe clearance from electrical lines, apparatus, or any energized (exposed or insulated) parts in accordance with the Minimum Safe Approach Distance (MSAD) as specified below:

Voltage Range (phase to phase)	MSAD in feet (Meters)
0 to 50KV	10 (3)
Over 50KV to 200KV	15 (5)
Over 200KV to 350KV	20 (6)
Over 350KV to 500KV	25 (8)
Over 500KV to 750KV	35 (11)
Over 750KV to 1000KV	45 (14)

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

Tipping Hazards

Do not operate platform while on a sloping, uneven, or soft surface. Level the personnel work platform both side to side and front to back before lifting personnel.

Never exceed the maximum work load as specified on the capacity decal and capacity indicator located on the control console. Distribute load evenly on platform floor. Keep all loads within the confines of the platform unless written authorization is received from Gradall.

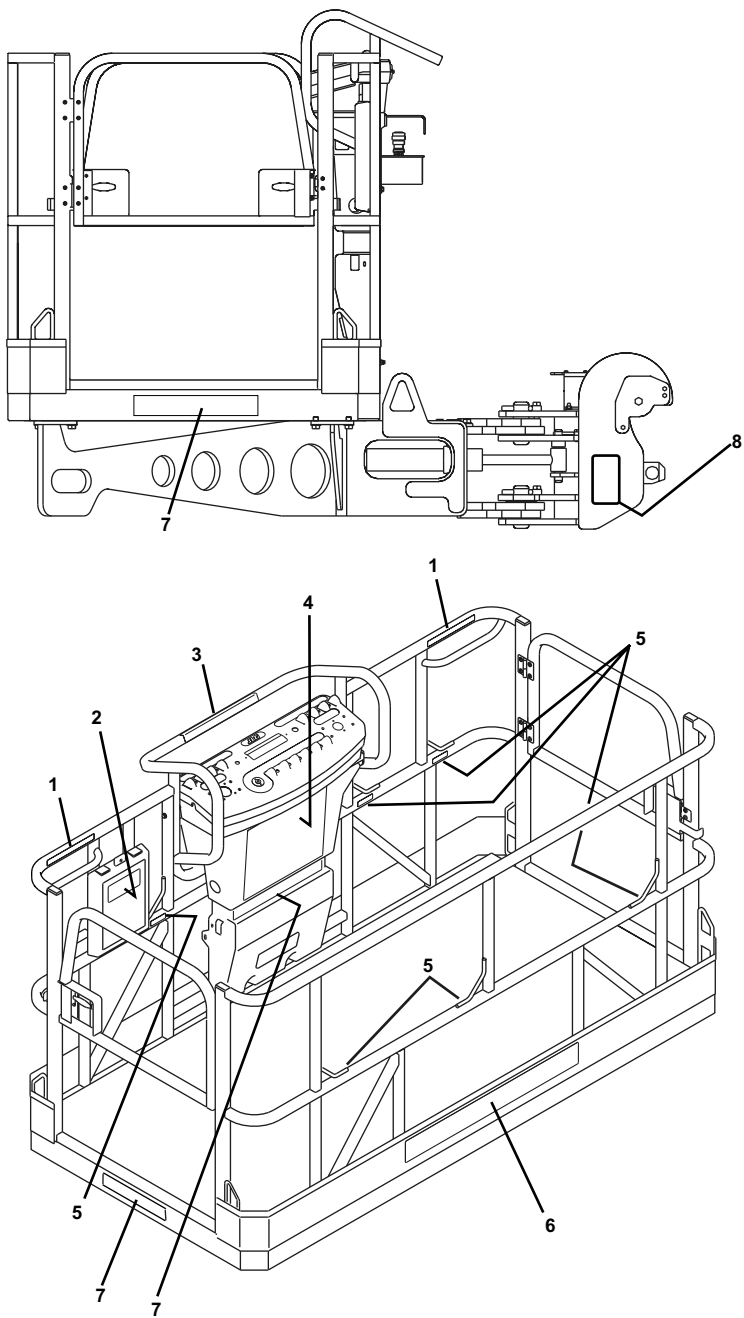
Crushing Hazards

Keep hands and limbs away from boom assembly during operation.

Check clearances above, on sides and bottom of platform when moving platform.

During operation, keep all body parts inside platform railing. Avoid operating over ground personnel. Warn personnel not to work, stand, or walk under a raised boom or platform. Position barricades as necessary.

DECAL LOCATIONS



1	9150-4060	Rail Caution Decal
2	9150-4061	Manual Decal
3	9150-4062	Function Decal
4	9150-4063	Safety Precaution Decal
5	9150-4064	Lanyard Attachment Decal
6	9150-4065	JLG/Gradall Decal
7	9150-4066	Capacity Warning Decal
8	9150-3111	Serial Number Plate
9	1705684	Wheel Load Decal (not illustrated)

DECALS

JLG/GRADALL

PART NUMBER

FOR MODEL

SERIAL NUMBER

MODEL YEAR

PSI

BAR

MAXIMUM HYDRAULIC PRESSURE

LBS

KG

ATTACHMENT WEIGHT

UNRESTRICTED RATED CAPACITY

MAXIMUM (RESTRICTED) RATED CAPACITY

Refer to capacity indicator lights located in platform for capacity.

Refer to capacity chart for maximum reach and height.

Platform to be used with same serial number Gradall material handler.

When this attachment is properly installed, this machine meets applicable requirements of ANSI A92.5-1992 as originally manufactured for intended use.

JLG Industries, Inc.
McConnellsburg, PA 17233
Made in U. S. A.

9150-3111 REV -

Located on Platform Support
Weldment
P/N 9150-3111

MAX

WITH PLATFORM
INSTALLED

12420 lbs

5640 kg

↓

●

1705684 A

Located on Platform
P/N 1705684



P/N 9150-4065

Main Lift	Function Speed Control	Platform Rotate	Sway	Main Telescope	Platform Level	Drive	Steer

1705182-A

P/N 9150-4062

←→

150 lb/667 N
MAX

500 lbs/230 kg

UNRESTRICTED CAPACITY

1000 lbs/450 kg

RESTRICTED CAPACITY

2000 lbs/900 kg

RESTRICTED CAPACITY

1000 lbs/450 kg
MAX

500 lbs/230 kg
MAX

2000 lbs/900 kg
MAX

DOM

⚠

WARNING

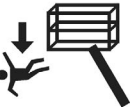
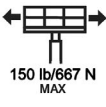
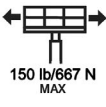
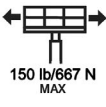
TIP OVER HAZARD

Do not exceed the platform capacity indicated on the capacity indicator located on the platform control console. On units with inoperative or defaced capacity indicators, do not exceed 500 pounds maximum platform capacity.

DEATH OR SERIOUS INJURY COULD RESULT FROM A TIP-OVER.

1705685 A

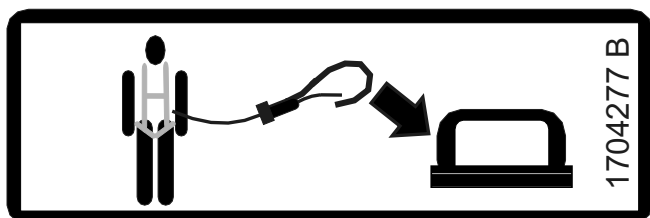
P/N 9150-4066

⚠ DANGER								
	ELECTROCUTION HAZARD ● This machine is not insulated. ● Maintain a clearance of at least 10 ft. between any part of machine or load and any electrical line or apparatus charged up to 50,000 volts. ● One foot additional clearance is required for each additional 30,000 volts or less. ● Make allowances for operator error, machine deflection and electrical line sway. Death or serious injury will occur from contact or being too close to electrical lines.							
⚠ WARNING								
	TIP-OVER HAZARD ● Machine frame must be level and on a smooth, firm and level surface before elevating and/or extending boom. ● DO NOT exceed platform or machine rated capacity. ● DO NOT drive with platform raised, or raise platform, when on uneven, sloping or soft surfaces including trucks, trailers, railway cars, floating vessels, scaffolds or similar areas. ● DO NOT raise platform during high winds or other inclement weather. ● DO NOT drive near drop offs, holes or other hazards. ● Make sure all tires are in good condition and properly inflated. ● To drive on a slope, boom must be retracted and lowered to or below horizontal. ● When "Chassis out of level" indicator light is on, retract and lower boom and move machine to a level surface. ● Driving with boom above horizontal or extended is restricted to smooth, firm and level surfaces free of obstructions. Death or serious injury could result from a tip-over.	THIS MACHINE MUST NOT BE USED UNTIL IT IS INSPECTED AND OPERATING PROPERLY. ● DO NOT operate this machine unless you have been properly trained by a qualified person and authorized to operate this machine. Training includes reading and understanding the safety, operating and maintenance instructions in manufacturer's manuals, knowing your employers work rules and applicable governmental regulations. ● Follow the instructions in the Operating Manual and applicable standards for daily, frequent and annual inspections. ● DO NOT replace items (i.e., batteries, tires, counterweight, etc.) with items of different weight or specification because this will affect the stability of the machine. ● DO NOT modify or change this machine without written approval from the manufacturer. ● Operate this machine with extreme caution. STOP all operation if a malfunction occurs. ● Test foot switch and cut out switches for proper operation. Improper use of this machine could cause death or serious injury.						
	FALLING HAZARD ● Check the condition of the approved fall protection device, lanyard and the designated attachment point to the platform. Do not use if damaged. ● Wear approved fall protection and attach to marked locations. ● Keep both feet on platform floor. ● Ensure entrance area is properly closed. ● DO NOT use planks, ladders or similar items in platform to get added reach. Falling from platform could cause death or serious injury.							
	CRUSHING HAZARD ● Always look in the direction of movement. ● Keep clear of obstructions. ● Always look at the directional arrow decals on the chassis and drive/steer control for proper direction. ● Keep all body parts inside of platform during operation. Failure to follow instructions could result in death or serious injury.	<table border="1"> <tr> <td> 1000 lb/450 kg MAX 2000 lb/910 kg MAX </td> <td> 500 lb/220 kg MAX </td> <td>  </td> </tr> <tr> <td>  </td> <td>  </td> <td> 150 lb/667 N MAX </td> </tr> </table> 1705179 A	1000 lb/450 kg MAX 2000 lb/910 kg MAX	500 lb/220 kg MAX				150 lb/667 N MAX
1000 lb/450 kg MAX 2000 lb/910 kg MAX	500 lb/220 kg MAX							
		150 lb/667 N MAX						

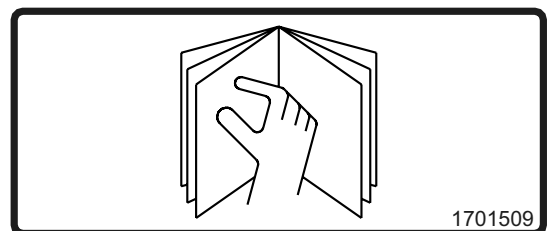
P/N 9150-4063

⚠ CAUTION	NO HANDS OR LANYARD PLACING HAND HERE MAY RESULT IN MINOR OR MODERATE INJURY.
--	--

P/N 9150-4060

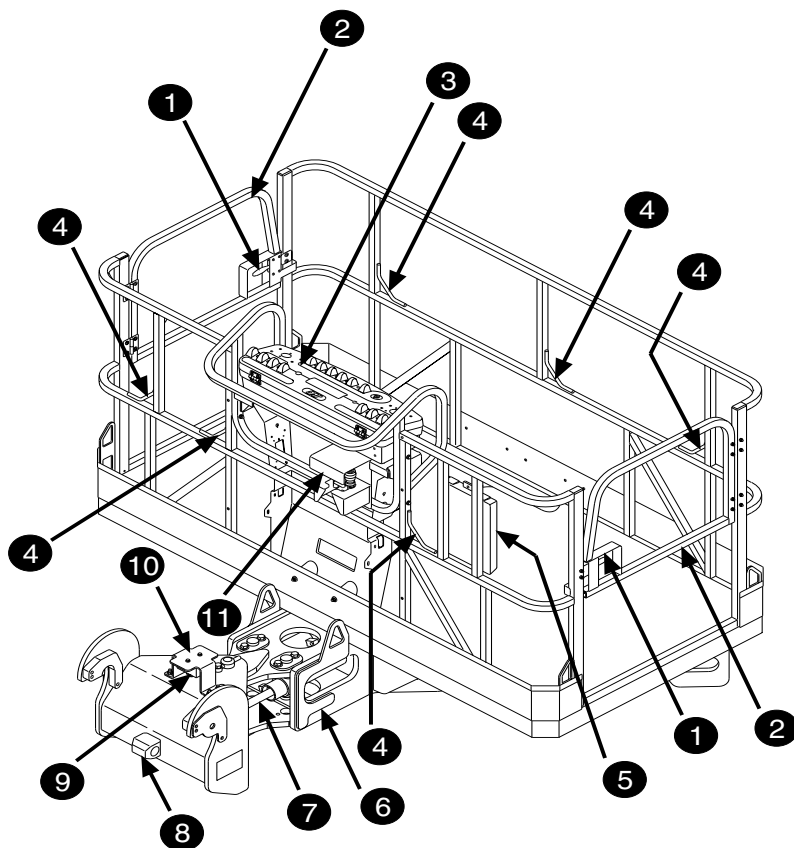


P/N 9150-4064
(6) Locations



P/N 9150-4061

NOMENCLATURE



1.	LATCH
2.	ENTRY/EXIT GATE
3.	ELECTRONIC CONTROL PANEL
4.	LANYARD ANCHORAGE POINT
5.	MANUAL STORAGE BOX
6.	PLATFORM SUPPORT WELDMENT
7.	ROTATING CYLINDER
8.	QUICKSWITCH WELDMENT
9.	DOUBLE PILOT CHECK VALVE
10.	VALVE MOUNTING PLATE
11.	CABLE CONNECTOR STORAGE

WORK PLATFORM INSTALLATION

Approved Attachments

The Transformer Series Work Platform With Controls has been approved for use with JLG/Gradall Transformer Series Material Handlers. Several other JLG/GRADALL-approved attachments are available for use with your material handler. Contact your JLG/GRADALL Material Handler Distributor for information on approved attachments designed for special material handling situations.

The machine serial number plate lists attachments approved for use with your handler. However, there may be additional approved attachments available. Contact your JLG/GRADALL Material Handler Distributor for further information.

Non-Approved Attachments

Do not use slip-on fork mounted personnel work platforms. Only JLG/Gradall manufactured personnel work platforms are approved for use with the JLG/Gradall Material Handler.

Do not attach any type of work platform that is not manufactured by JLG/Gradall to the Quick Switch™ adapter support.

Do not use non-approved attachments for the following reasons:

- JLG/GRADALL cannot establish range and capacity limitations for “will fit”, homemade, altered, or other non-approved attachments.
- An overextended or overloaded handler can tip over with little or no warning and cause serious injury or death to the operator, platform occupants, and/or those working near the handler.
- JLG/GRADALL cannot assure the ability of a non-approved attachment to perform its intended function safely.
- Non-approved attachments may cause structural or other damage to the handler. Such damage could cause dangerous operating conditions resulting in serious injury or death.

Attachment Operation

Operate a handler equipped with the personnel work platform as a partially-loaded handler. Pay special attention to capacity and range limits for the handler/platform combination in use.

Practice operation of handler and personnel work platform in a safe, open area, not hazardous to yourself, platform occupant(s), equipment or property. Become thoroughly familiar with response of handler and attachment to controls before operating in a work situation.

Perform all “Checks Before Operating Platform” as identified on page P6.0.

WARNING

Attachments which have not been approved for use with your material handler could cause machine damage or an accident resulting in injury or death.

WARNING

Fork mounted personnel work platforms are not approved for use on any JLG/Gradall Material Handlers.

WARNING

Never use an attachment without the appropriate, JLG/GRADALL supplied capacity chart for that particular attachment installed on the handler.

WORK PLATFORM INSTALLATION



1. Retract Quick Switch™ (attachment tilt lever forward) to provide clearance. Check to be sure lock pin is secured in out position with retainer pin.



2. Align boom head pivot with recess in attachment. Raise boom slightly to engage boom head pivot in recess.



3. Engage Quick Switch™ (attachment tilt lever backward).



4. Remove retainer pin and slide lock pin in fully.



5. Secure lock pin in locked position using retainer pin.



6. Swing saddles down and pin in place.

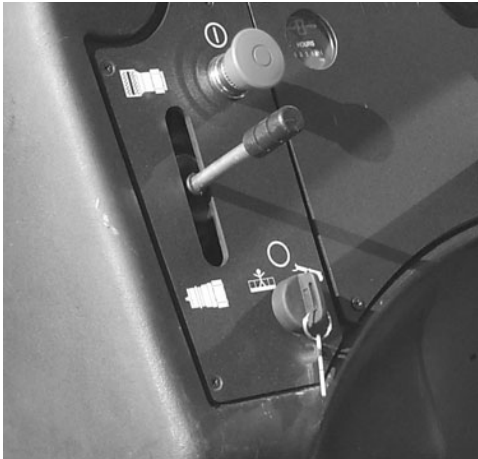
WARNING

This installation procedure is designed for one-man operation. If a helper is involved, shut off the engine before proceeding to steps 4, 5, and 6.

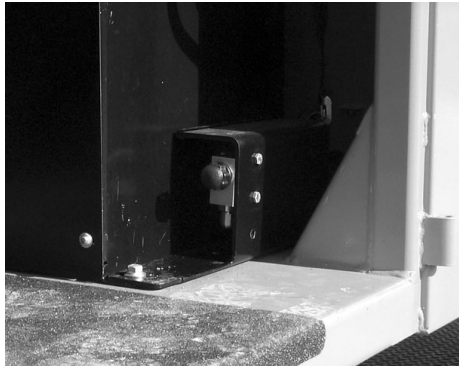
WARNING

Always be certain that work platform is properly positioned on boom head and is secured by lock pin and retainer pin. Failure to ensure proper installation could permit attachment to disengage and cause serious injury or death.

WORK PLATFORM INSTALLATION



7. Always turn off the machine before performing the next several steps.



8. Press the decompression valve located in cab, this takes the pressure out of the auxiliary hydraulic lines located on boom head.



9. Attach the electric harness lines as shown to the front of boom.



10. Attach the hydraulic lines to the side of boom as shown.

NOTE!

When hooking up the Transformer Series platform, the hydraulic hoses are run through the Quick Switch™. Pull these hoses and electrical cables back to prevent pinching when attaching and hooking up hydraulic hoses to the front of the boom.

Important Notice !

This machine has been equipped with a serial number specific Transformer Series Personnel Work Platform. Do not exchange transformer platforms between machines. Doing so will require calibration changes to the controller that must be performed by a qualified service technician. This platform assembly is designed solely for use with the Transformer Model Machines only.

CHECKS BEFORE OPERATING

Be sure to service the Material Handler in accordance with the "Lubrication and Routine Maintenance" schedule, located in the TF6-42 Owner/Operator Manual.

These checks and services are to be performed in addition to those specified in the Owner/Operator Manual for the material handler. Prior to using the material handler with the JLG/Gradall personnel work platform attached, perform the following checks:

- Do not use the platform until it is properly secured to the Quick Switch™. See attachment installation procedures on page P5.1 & P5.2.
- Inspect all platform and handler structural members for signs of damage. Do not use the platform or handler if damage is found.
- Inspect all warning and instructional decals to ensure they are legible and clean. Replace as necessary.
- Inspect access gate hinges and latch for proper operation, damage and security. Do not use the platform if damaged or if latch is inoperable.
- Check the condition of the boom extend cables/chains, boom hoses, and their anchor points. If they are found to be out of adjustment, badly worn, damaged, or not anchored properly, perform necessary boom maintenance before using machine.
- Check to ensure the tires are properly inflated and surface can support the machine.
- Check jobsite and weather conditions. Do not lift personnel during thunderstorms, strong winds or other inclement weather.
- Check work area for overhead hazards such as electric conductors, bridge cranes, and other potential hazards.
- Identify the lanyard anchorage point(s) and securely attach lanyard of an approved fall protection device. Attach only one lanyard per anchorage point.
- Check platform and control console for damage, loose or missing parts, and security.
- Check control switches, levers and electrical connections for tightness and evidence of corrosion, and wiring for defects and chafing damage. Assure that switches function properly.
- Check footswitch for damage, loose or missing parts and security. Assure that footswitch functions properly, is not modified, disabled or blocked.
- Make sure the material handler is equipped with the proper capacity chart.

WARNING

If structural damage is found or the Quick Switch™ is not properly engaging, do not use the material handler or platform until the proper repairs have been made.

WARNING

Before use of the boom/platform, the operator shall check for overhead obstructions and electrical conductors. Serious injury or death could result.

WARNING

Use extreme caution when checking items beyond your normal reach. Use an approved safety ladder.

WARNING

Before operating handler, complete all required maintenance. Replace or repair all damaged, worn or missing components before starting or operating handler. Failure to properly maintain handler could cause serious injury or death.

PRE-START & FUNCTION CHECKS

To be performed at beginning of each work shift or at each change of operator.

The safety, efficiency and service life of your handler will be increased by performing the operational checks listed below.

Before entering the platform, be sure to complete all necessary warm-up and operational checks outlined in the Operators Manual supplied with the TF6-42.

Also, complete the following pre-start inspection and function checks before use or each time the operator changes.

PRE-START INSPECTION

1. **Cleanliness** - Check all surfaces for leakage (oil, fuel, or battery fluid) or foreign objects. Report any leakage to the proper maintenance personnel.
2. **Decals & Placards** - Check all decals and placards for cleanliness and legibility. Make sure none of the decals and placards are missing. Make sure all illegible decals and placards are cleaned or replaced.
3. **Operators and Safety Manuals** - Make sure a copy of the Transformer Series Work Platform Operator Manual, the EMI Aerial Platform Safety Manual, and ANSI Manual of Responsibilities is enclosed in the manual storage box.
4. **"Walk-Around" Inspection** - See pages P6.2 and P6.3 for the walk-around inspection procedure. Report any differences to the proper maintenance personnel.
5. **Fuel** - Ensure that fuel reservoir level is adequate. Add proper fuel as necessary.
6. **Hydraulic Oil** - Check the hydraulic oil level. Report low levels to the proper maintenance personnel. Add hydraulic oil as required.
7. **Function Check** - Once the "Walk-Around" Inspection is complete, perform a functional check of all systems in an area free of overhead and ground level obstructions.

FUNCTION CHECK

1. **From the cab with no load in platform:**
 - a. Operate all functions and observe for proper operation.
 - b. Check for proper operation of auxiliary power (manual descent) shown on page 3.2 in the TF6-42 Operator Manual.
 - c. Ensure that all machine functions are disabled when the Emergency Stop Button is activated.
 - d. Perform axle locking test shown on pages P7.0 & P7.1.
2. **From the platform control console:**
 - a. Operate all functions and observe for proper operation.
 - b. Check all variable speed control switches for proper operation.
 - c. Check for proper operation of auxiliary power (manual descent).
 - d. Perform axle locking test shown on pages P7.0 & P7.1.

WARNING

If any function or system does not operate properly, cease operation immediately! Report the problem to proper maintenance personnel. Do not operate machine until it is in a safe and proper operating condition.

WARNING

Check all tires and rims periodically for damage due to impact. Replace before use if damage is detected.

WALK-AROUND INSPECTION

To be performed at beginning of each work shift or at each change of operator.

Begin your walk-around inspection at item 1, as noted below. Continue to your right (counterclockwise when viewed from top) checking each item in sequence for the conditions listed in the following checklist.

1. **Work Platform Assembly** - No loose or missing parts; no visible damage. Platform is properly positioned on boom head and is secured by lock pin and retainer pin. Saddles are swung down and pinned in place. Footswitch in good working order; not modified, disabled or blocked.
2. **Platform Control Console** - No loose or missing parts; no visible damage; placards and decals secure and legible. Control lever and switches return to neutral, control lever lock functions properly; emergency stop switch functions properly.
3. **Rotating Cylinders** - No visible damage; cylinder pins secure; hydraulic hoses undamaged, not leaking.
4. **Boom Sections/Lift, Tilt, Crowd, Compensating Cylinders** - Check front, top, side, & rear slider pads for adequate grease. No visible damage; pivot pins secure; hydraulic hoses undamaged, not leaking. Check extend/retract chains and adjustment blocks for adequate tension.
5. **Front Axle** - No loose or missing parts; steer cylinders undamaged, not leaking; pivot pins secure; hydraulic hoses undamaged, not leaking.
6. **Wheel/Tire Assembly** - Left Front; no loose or missing wheel bolts; no visible damage; proper inflation.
7. **Remote Brake Valve** - Check for leaks, loose wires, etc.
8. **Cab & Electrical** - Check window glass is in place and clean; gauges, switches, joysticks, foot controls & horn operational; no visible damage. General appearance; no visible damage; load charts and applicable Operators & Safety manuals located in manual holder. Check decompression valve; operational and functioning properly.
9. **Fuel Tank** - Check fluid level, refill as required; no visible damage or leakage; filler cap is securely fastened.
10. **Air Cleaner** - Air cleaner element condition indicator, check for clogged condition. Replace element as required.
11. **Main Control Valve** - Check for loose connections; no visible damage or leakage.
12. **Wheel/Tire Assembly** - Left Rear; no loose or missing wheel bolts; no visible damage; proper inflation.
13. **Pilot Control Valve** - Check for loose connections; no visible damage or leakage.
14. **Back-up Alarm** - No loose connections; properly secured.
15. **Stabilizer Cylinder** - No visible damage; cylinder pins secure; hydraulic hoses undamaged, not leaking.
16. **Rear Axle** - No loose or missing parts; steer cylinders undamaged, not leaking; pivot pins secure; hydraulic hoses undamaged, not leaking.
17. **Wheel/Tire Assembly** - Right Rear; no loose or missing wheel bolts; no visible damage; proper inflation.
18. **Engine Compartment** - Engine Crankcase, check level & refill as required; radiator fill cap, check level & refill as required; Drive belts, check condition & replace as required; Hydraulic pump & reservoir, recommended fluid level on sight gauges (lubricant must be cool), breather cap secure and working; Battery, check electrolyte level, cables tight, no visible damage or corrosion; Engine cover properly secured and latched.
19. **Wheel/Tire Assembly** - Right Front; no loose or missing wheel bolts; no visible damage; proper inflation.
20. **Double Pilot Check Valve** - Check for loose connections; no visible damage or leakage.
21. **Work Platform Gate** - Latch and hinges in working condition; properly secured; no loose or missing parts.

WARNING

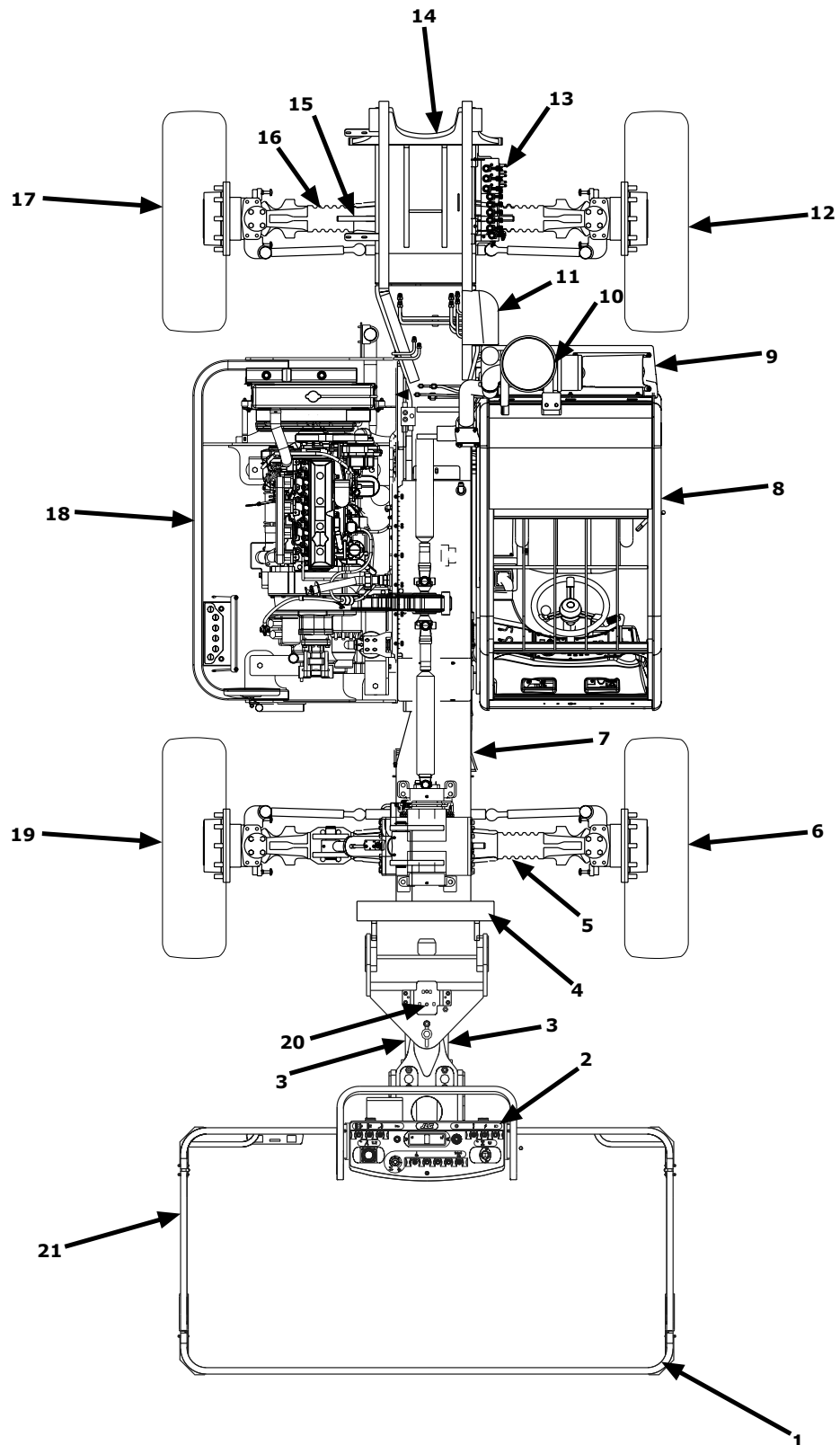
To avoid injury, do not operate machine until all malfunctions have been corrected. Use of a malfunctioning machine is a safety violation.

To avoid possible injury, be sure machine power is off during "walk-around" inspection.

NOTE!

Do not overlook visual inspection of chassis underside. Checking this area may result in discovery of conditions which could prevent extensive machine damage.

WALK-AROUND INSPECTION



DAILY REAR AXLE LOCK-OUT TEST PROCEDURE

TESTING REAR AXLE LOCKING SYSTEM (perform daily test)

The TF6-42 is equipped with a rear axle locking system for use while in work platform mode. In this mode, when the boom is raised above 50 degrees, a cylinder at the rear will lock, preventing oscillation of the rear axle. With the boom below this angle the cylinder will allow the rear axle to oscillate freely.

When the machine is in material handler mode, the rear axle cannot be locked, the rear axle will always oscillate freely.

After attaching the work platform and connecting the electrical cables, the work platform mode should be checked to ensure proper operation of the rear axle stabilization locking system.

Checking the rear axle locking system in work platform mode

Perform the following check from the work platform. No material, equipment, or personnel other than the operator should be on the platform during the performance of this test. This test will require the use of an assistant on the ground.

- 1.) Position Control Station Selector Key switch to Platform.
- 2.) Start the machine from the platform. Raise the boom to approximately zero degrees (horizontal) boom angle.
- 3.) Locate an eight inch curb, and drive the machine's left front wheel up on the curb, leaving all other wheels off the curb.
- 4.) Level the machine by operating the Sway function. No wheel should leave the ground.
- 5.) Back the left front wheel off the curb. Again, no wheel should leave the ground.
- 6.) Drive the left front wheel back up on the curb, and release the drive controller. Use the sway function to level the machine.
- 7.) While keeping clear of the rear wheels, have an assistant check that the red LED on the proximity switch at the right rear of the machine is "glowing". Have the assistant disconnect the proximity switch from the wire harness. The red LED should be "OFF" (see figure 7-1).
- 8.) Back the left front wheel off the curb. The rear axle should be locked and one wheel should be off the ground. Set the park brake.
- 9.) Again, staying clear of wheels, have the assistant reconnect the proximity switch to the wire harness. The raised wheel should immediately return to the ground.
- 10.) If the machine has passed all of these checks, place the machine on level ground, set the park brake and raise the boom above 50 degrees.
- 11.) Have the assistant check that the red LED on the proximity switch at the right rear of the machine is "OFF".

WARNING

Should the machine fail any part of this check, immediately discontinue the checking process. Do not use the machine. Place a "DO NOT OPERATE" tag on the machine, and have it repaired.

WARNING

Do not raise boom above 5 degrees for steps 1 through 9 of this check.

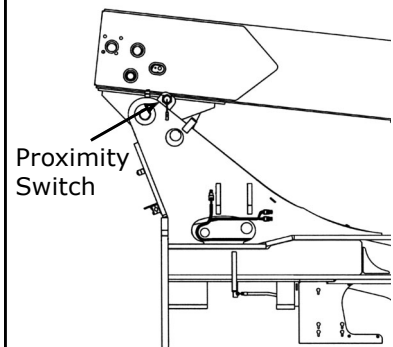


Figure 7-1

DAILY REAR AXLE LOCK-OUT TEST PROCEDURE

Checking the rear axle locking system in material handler mode

Perform the following check from the cab. Disconnect the electrical cables and remove the work platform. **Do not engage a load before performing this check.** This test will require the use of an assistant.

- 1.) Position Control Station selector Key switch to Cab (see page 3.0 in the TF6-42 Operator Manual).
- 2.) Start the machine from the cab. Raise the boom to approximately zero degrees (horizontal) boom angle.
- 3.) Locate an eight inch curb, and drive the machine's left front wheel up on the curb, leaving all other wheels off the curb.
- 4.) Level the machine by operating the Sway function. No wheel should leave the ground.
- 5.) Back the left front wheel off the curb. Again, no wheel should leave the ground.
- 6.) Drive the left front wheel back up on the curb, and use the sway function to level the machine. Set the park brake (shown on page 3.0 in the TF6-42 Operator Manual).
- 7.) Have an assistant check that the red LED on the proximity switch at the right rear of the machine is "OFF". Have the assistant disconnect the proximity switch from the wire harness (keeping clear of the rear wheels). The red LED should remain "OFF".
- 8.) Back the left front wheel off the curb. Again, no wheel should leave the ground.
- 9.) Again, staying clear of wheels, have the assistant reconnect the proximity switch to the wire harness. No movement of the machine should be noticed.



Do not perform this check without attachment properly attached to the material handler.

PLATFORM CONTROLS AND INDICATORS

Controls and Indicators

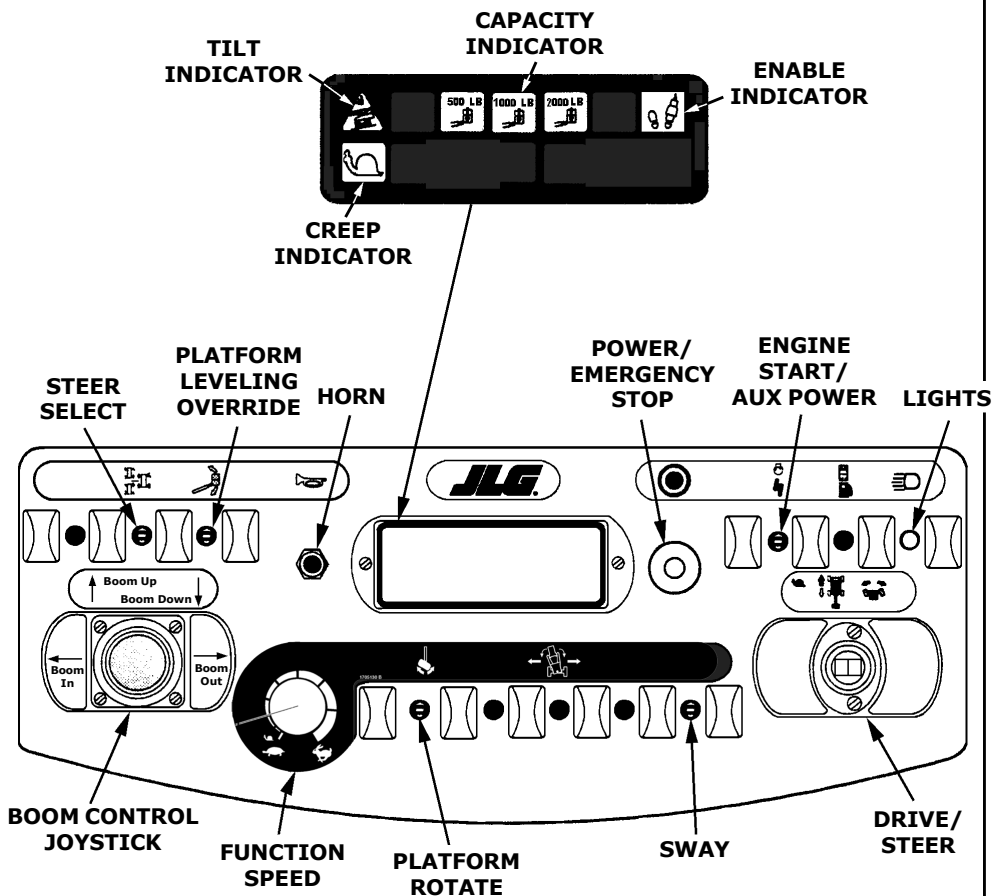
This machine is equipped with a work platform. The intended purpose is to position personnel with their tools and supplies at positions above ground level, and can be used to reach work areas located above machinery or equipment.

The platform has an operator Control Station. From this control station, the operator can drive and steer the machine in both forward and reverse directions. The operator can raise or lower the boom or rotate the platform left or right.

The lift is not intended to be used to lift material other than supplies which personnel in the platform require to do their job. Supplies or tools which extend outside the platform are prohibited unless written approval has been obtained through JLG/Gradall. It must not be used as a forklift, crane, support for overhead structure, or to push or pull another object.

The speeds of boom functions are variable from zero to maximum speed depending upon the position of the function speed control. Functions controlled by toggle switches are either on or off. A foot operated switch in the platform must be depressed before any controls will function and provides a means of emergency stop when the operators foot is removed from the footswitch.

The unrestricted capacity of the lift is 500 lbs. (230 kg). This means that with a platform load of 500 lbs. (230 kg) or less, the platform may be positioned anywhere the boom will reach, with the machine level and on a smooth, firm, and level surface and tires properly inflated.



PLATFORM CONTROLS AND INDICATORS

Boom Control Joystick:

An infinitely proportional dual axis joystick is provided for lifting, lowering, boom extend, and boom retract. Lift detent ring up and push forward to lift, lift detent ring up and pull backward to lower. Lift detent ring up and move joystick left to extend boom, lift detent ring up and move joystick right to retract boom.

Capacity Indicator:

Three lights are used to indicate the maximum platform capacity for the position of the platform. The range decal located below the control console indicates the capacities and approximate ranges.

Creep Speed Indicator:

Illuminated (green) when the Function Speed Control is turned to the creep position, the indicator acts as a reminder that all functions are set to the slowest speed. This indicator also illuminates when the boom angle exceeds 11°.

Drive/Steer:

Controls drive and steering. Lift detent ring up and push forward to drive forward (rear of chassis), lift detent ring up and pull back to drive in reverse. Steering is accomplished via a thumb-activated rocker switch on the end of the handle. Push on the left side of the switch to steer left, on right side to steer right.

Enable Indicator:

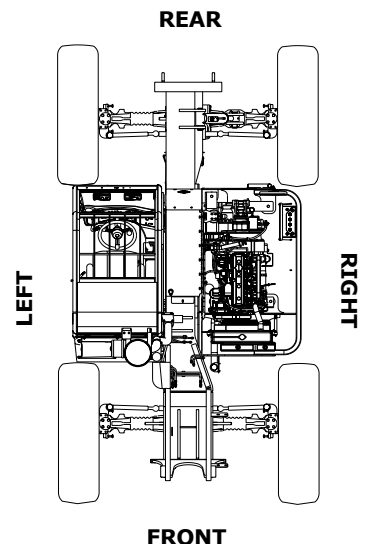
This green illuminator indicates that the footswitch is depressed and the platform controls are ready for use. To enable the controls, depress the footswitch and select any function within seven seconds. The controls will then remain active as long as there is not a delay of seven seconds between stopping one function and starting the next one. If the seven second interval is exceeded, the enable light will go out and the controls will not operate. To enable the controls again, return controls to neutral, remove your foot from the footswitch and depress the footswitch.

Engine Distress Indicator Light (Yellow):

The light turns on and an alarm sounds when machine's power system requires immediate service. Any of the following conditions will turn on light and alarm: low engine oil pressure, high engine coolant temperature, clogged engine air filter, low alternator output, clogged hydraulic oil return filter, or clogged charge pump filter.

NOTE!

When operating from the work platform, the boom pivot and counterweight are considered the front of the machine.



PLATFORM CONTROLS AND INDICATORS

Engine Start/Auxiliary Power:

Engine Start

Push "UP" on Engine Start/Auxiliary Power switch to start engine. If engine fails to start within 20 seconds, release Engine Start/Auxiliary Power switch and allow starting motor to cool for a few minutes before trying again. For engine starting, the footswitch must be in the released (up) position.

Auxiliary Power

A toggle-type Engine Start/Auxiliary Power control switch energizes the electrically operated hydraulic pump, when actuated. (Switch must be held "DOWN" for duration of auxiliary pump use.) The auxiliary pump functions to provide sufficient oil flow to operate the basic machine functions should the main pump or engine fail. The auxiliary pump will operate boom lift, telescope and rotate. It should be noted that the functions will operate at a slower than normal rate.

Auxiliary power is primarily intended for platform lowering in the event of primary power failure. However, auxiliary power may be used for platform positioning when operating in close quarters in the following sequence:

1. Position CONTROL STATION SELECT switch to PLATFORM.
2. Position POWER/EMERGENCY STOP switch to ON.
3. Depress and hold footswitch.
4. Position AUXILIARY POWER switch to ON and hold.
5. Operate appropriate control switch or lever for desired function and hold.
6. Release AUXILIARY POWER switch, selected control switch or lever, and footswitch.
7. Position POWER/EMERGENCY STOP switch to OFF.

Footswitch:

This feature makes it necessary to depress the footswitch to allow operation of the platform controls.

Function Speed:

The knob provides variable speed control of all boom functions grouped together to the right of the knob. For smoothest operation of these functions, use two hands: rotate the knob counterclockwise to the slowest position, select the function switch, and while holding the switch on, rotate the knob to the desired speed. To achieve a smooth stop, rotate the knob counterclockwise to a slow speed prior to letting go of the function switch. Rotating the knob fully counterclockwise until a click is heard puts all controls, including drive, main lift, and swing into "creep" speed. This slow speed is used for fine positioning of the platform when close to obstacles. A snail symbol is used to indicate "creep" speed and is shown at the Function Speed knob as well as near the proportional controllers to act as a reminder.

Horn:

A push-type HORN switch activates an audible warning device when pressed.

Lights Indicator:

Illuminated when lights are turned on.

WARNING

To avoid serious injury, do not remove, modify or disable the footswitch by blocking or any other means.

NOTE!

The main function of auxiliary power is to lower the platform in the event of primary power failure.

NOTE!

Footswitch must be depressed prior to activating any function control, otherwise the function will not operate.

CAUTION

Footswitch must be adjusted so that functions will operate when pedal is approximately at its center of travel. If switch operates within last 1/4" of travel, top or bottom, it should be adjusted.

NOTE!

When the boom is raised approximately 7 degrees above horizontal, the high drive function will automatically switch to low drive. This also occurs when Function Speed Control is set to creep.

WARNING

To avoid serious injury, do not operate machine if any control levers or toggle switches controlling platform movement do not return to the off position when released.

PLATFORM CONTROLS AND INDICATORS

Low Fuel Indicator:

When illuminated the fuel tank is 1/8 full or less. When the light first turns on, there are approximately four usable gallons of fuel remaining.

Platform Leveling Override:

The PLATFORM LEVEL control switch allows the operator to adjust the level of the platform by positioning the switch to UP or DOWN.

Platform Rotate:

The PLATFORM ROTATE control switch allows the operator to rotate the basket to the left or right when positioned to the desired direction.

Power/Emergency Stop Switch:

An ON-OFF POWER/EMERGENCY STOP switch and a separate ENGINE START/AUXILIARY POWER toggle switch on the platform console supply electrical power to the starter solenoid, when the power/emergency stop switch is pulled out to the "ON" position and the ENGINE START switch is pushed forward. Push in to shut off engine and remove power from the controls. The power/emergency stop switch must be pulled out in the cab to operate either from the cab or platform control. This allows the machine to be shut down in emergency situations.

Steer Select:

The center switch position gives conventional front wheel steering with the rear wheels unaffected. This is the best position for driving at maximum speeds. The forward position is for "crab" steering. When in this mode both front and rear axles steer in the same direction, which allows the chassis to move sideways. This can be used for positioning the machine in aisle ways or against buildings. The back switch position is for "coordinated" steering. In this mode the front and rear axles steer in the opposite directions to produce the tightest turning circle for maneuvering in confined areas. If the steer select switch located in the cab is not set to front wheel steer, the platform steer select switch will not change the steering mode.

Sway Control Switch:

The sway control switch allows the operator to level the machine. Operator must position machine and level prior to raising work platform.

Tilt Alarm Warning Light:

This orange illuminator indicates that the chassis is on a slope (over 5 degrees). If illuminated when boom is raised or extended, retract and lower to below horizontal then reposition machine so that it is level before extending boom or raising boom above horizontal. If the boom is above horizontal and the machine is on a 5 degree slope, an alarm will sound and CREEP mode is automatically activated.

PLATFORM OPERATION

Control Station Selector Switch

The Control Station Selector switch functions to direct power to the desired control station when the POWER/EMERGENCY STOP switch is pulled out (on). With the switch rotated to the CAB position power is supplied to the cab control station. When the switch is rotated to the PLATFORM position, power is supplied to the platform control station.

Loading Platform from Ground Level

1. Position chassis on a smooth, firm and level surface.
2. If total load (personnel, tools and supplies) is 500 lbs. (230 kg) or less, distribute load uniformly on platform floor and proceed to work position.

Loading from Positions Above Ground Level

1. Determine what the total weight will be after additional weight is loaded (personnel, tools and supplies).
2. If total weight in platform will be 500 lbs. (230 kg) or less, proceed with adding weight.

Machine Function Speeds

The Function Speed Control affects the speed of boom functions Lift, Telescope, and Rotate. Turn the control clockwise to increase function speed or counterclockwise to decrease function speed. When in counterclockwise maximum position, Drive is placed in creep speed.

Platform Level Adjustment

To level up, depress footswitch, position PLATFORM/LEVEL control switch up and hold until platform is level.

To level down, depress footswitch, position PLATFORM/LEVEL control switch to down and hold until platform is level.

Platform Rotation

To rotate platform to the left, depress footswitch. PLATFORM ROTATE control switch is positioned to the left and held until desired position is reached.

To rotate platform to the right, depress footswitch. PLATFORM ROTATE control switch is positioned to the right and held until desired position is reached.

Power/Emergency Stop

This red, mushroom-shaped switch provides battery power to the CONTROL STATION SELECTOR switch, when pulled out (on), for all machine functions. The switch should be pushed in (off) when parking the machine overnight.

Raising and Lowering the Boom

Depress footswitch lift detent ring and position boom control joystick forward to lift boom up or rearward to lower boom until desired height is reached.

NOTE!

Footswitch must be depressed prior to activating any function, otherwise function will not operate.

NOTE!

Always position Emergency Stop switch to the "off" position (pushed in) when machine is not in use.



Do not drive with boom above horizontal except on a smooth, firm and level surface.

Do not drive on sideslopes which exceed 5 degrees.

Use extreme caution when driving in reverse and at all times when driving with platform elevated and when driving with any part of machine within 6 feet of any obstruction.

Steering

Depress footswitch, position thumb switch on Drive/Steer controller to right for steering right, or to left for steering left.

Traveling (driving)

1. If machine is shut down, pull out Emergency Stop at Cab Controls and place Control Station Selector switch to Platform.
2. At Platform Controls, pull out Emergency Stop switch and start engine.
3. Position Drive controller to Forward or Reverse as desired. Angle of controller will determine travel speed.

In AWP Mode:

Maximum travel speed is 3.5 MPH with boom retracted and lowered (travel position).

When boom is extended approximately 3.5 ft. and/or raised above 7°, the machine will slow to Creep Mode (.5 MPH).

When in Creep Mode and returning boom to travel position, the travel control must be returned to neutral and re-activated to increase speed above .5 MPH.

EMERGENCY PROCEDURES

DO NOT ALLOW PERSONNEL TO TAMPER WITH OR OPERATE THE MACHINE FROM THE CAB WITH PERSONNEL IN THE PLATFORM EQUIPPED WITH CONTROLS, EXCEPT IN AN EMERGENCY.

Auxiliary Power

A toggle type auxiliary power control switch is located on the platform control station and another is located in the operators cab. Operation of either switch turns on the electrically driven auxiliary hydraulic pump. This should be used in case of failure of the main power plant. The auxiliary pump will operate any boom function.

To activate auxiliary power from platform:

1. Depress and hold footswitch.
2. Position AUXILIARY POWER switch to ON and hold.
3. Operate appropriate control switch, lever or controller for desired function and hold.
4. Release AUXILIARY POWER switch, select control switch, lever or controller, and footswitch.
5. Position POWER/EMERGENCY STOP switch to OFF.

To activate auxiliary power from the cab control station:

1. Position CONTROL STATION SELECTOR switch to CAB.
2. Position POWER/EMERGENCY STOP switch to ON.
3. Position AUXILIARY POWER switch to ON and hold.
4. Operate appropriate control switch or controller for desired function and hold.
5. Release AUXILIARY POWER switch, and appropriate control switch or controller.
6. Position POWER/EMERGENCY STOP switch to OFF.

Operator Unable to Control Machine

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

1. Operate the machine from cab controls ONLY with the assistance of other personnel and equipment (cranes, overhead hoists, etc.) as may be required to safely remove the danger or emergency condition.
2. Other qualified personnel on the platform may use the platform controls with regular or auxiliary power. **DO NOT CONTINUE OPERATION IF CONTROLS DO NOT FUNCTION NORMALLY.**
3. Cranes, forklift trucks or other equipment which may be available are to be used to remove platform occupants and stabilize motion of the machine in case machine controls are inadequate or malfunction when used.

Platform or Boom Caught Overhead

If the platform or boom becomes jammed or snagged in overhead structures or equipment, do not continue operation of the machine from either the platform or the ground until the operator and all personnel are safely moved to a secure location. Only then should an attempt be made to free the platform using any necessary equipment and personnel. Do not operate controls to cause one or more wheels to leave the ground.

Post Incident Inspection and Repair

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

WARNING

The platform must be completely empty. Never allow personnel in platform while towing, lifting, or hauling.

WARNING

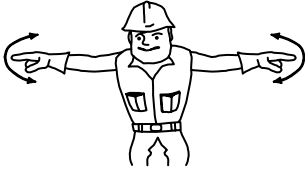
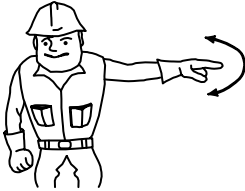
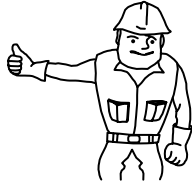
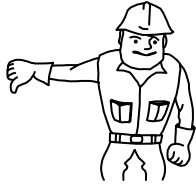
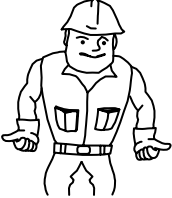
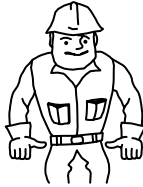
In emergency situations, operator must retract boom before lowering. Failure to retract boom could cause machine to tip over resulting in injury or death.

HAND SIGNALS

Standard Signals - When handler work conditions require hand signals, they shall be provided or posted conspicuously for the use of both signalman and operator. No handler motions shall be made unless signals are clearly understood by both signalman and operator.

Special Signals - When signals for auxiliary equipment functions or conditions not covered are required, they shall be agreed upon in advance by the operator and signalman.

Instructions - When it is desired to give instructions to the operator other than provided by the established signal system, all handler motions shall first be stopped.

 EMERGENCY STOP - With both arms extended laterally, hands open downward, move arms back and forth.	 STOP - With either arm extended laterally, hand open downward, move arm back and forth.	 RAISE BOOM - With either arm extended horizontally, fingers closed, point thumb upward.	 LOWER BOOM - With either arm extended horizontally, fingers closed, point thumb downward.
 EXTEND TELESCOPIC BOOM - With both hands clenched, point thumbs outward.	 RETRACT TELESCOPIC BOOM - With both hands clenched, point thumbs inward.	 MOVE SLOWLY - Place one hand motionless in front of hand giving motion signal. (Raise load slowly is shown)	 THIS FAR TO GO - With hands raised and open inward, move hands laterally, indicating distance to go.
 STOP ENGINE - Draw thumb or forefinger across throat.			

GRADALL[®]

*406 Mill Ave. SW, New Philadelphia, Ohio USA 44663
Phone (330) 339-2211 Fax (330) 339-8468
<http://www.gradall.com>*