Genie®
A TEREX BRAND

Service and Repair Manual

Serial Number Range

GS™-2669 DC
from GS6912-1300

GS™-3369 DC
from GS6916F-7897
to GS6916F-10499

GS™-4069 DC
from GS69F-10500
to GS69F-17999

This manual includes:
Repair procedures
Fault Codes
Electrical and
Hydraulic Schematics

For detailed maintenance procedures, refer to the appropriate Maintenance Manual for your machine.

Part No. 1272220GT
Rev B
May 2021

Introduction

Important

Read, understand and obey the safety rules and operating instructions in the appropriate Operator's Manual on your machine before attempting any procedure.

This manual provides troubleshooting and repair procedures for qualified service professionals.

Basic mechanical, hydraulic and electrical skills are required to perform most procedures. However, several procedures require specialized skills, tools, lifting equipment and a suitable workshop. In these instances, we strongly recommend that maintenance and repair be performed at an authorized Genie dealer service center.

Compliance

Machine Classification

Group A/Type 3 as defined by ISO 16368

Machine Design Life

Unrestricted with proper operation, inspection and scheduled maintenance.

Technical Publications

Genie has endeavored to deliver the highest degree of accuracy possible. However, continuous improvement of our products is a Genie policy. Therefore, product specifications are subject to change without notice.

Readers are encouraged to notify Genie of errors and send in suggestions for improvement. All communications will be carefully considered for future printings of this and all other manuals.

Contact Us:

Internet: www.genielift.com
E-mail: awp.techpub@terex.com

Find a Manual for this Model

Go to http://www.genielift.com

Use the links to locate Service Manuals, Maintenance Manuals, Service and Repair Manuals, Parts Manuals and Operator's Manuals.

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1272220GT Rev B, May 2021

First Edition, Second Printing

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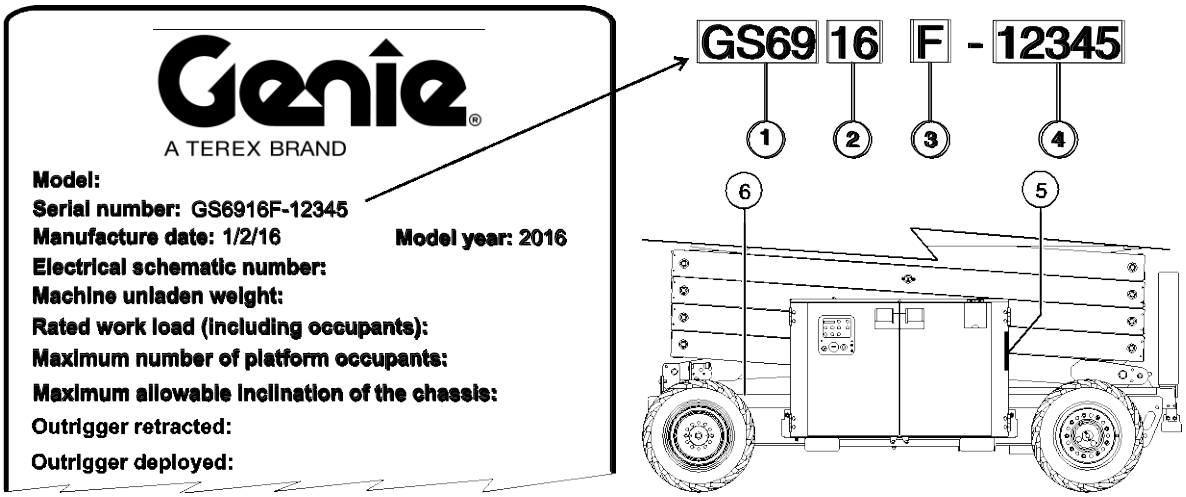
Revision History

Revision	Date	Section	Procedure / Page / Description
A	3/2016		Initial Release
A1	9/2016	Introduction	Serial Number Legend
A2	11/2016	Repair	6-1
		Schematics	Hydraulic and Electrical - add proportional relief circuit
A3	11/2018	Repair	6-2
B	5/2021		Add ending serial break
Reference Examples:			**Electronic Version** Click on any content or procedure in the Table of Contents to view the update.
Section – Repair Procedure, 4-2			
Section – Fault Codes, All charts			
Section – Schematics, Legends and schematics			

Introduction

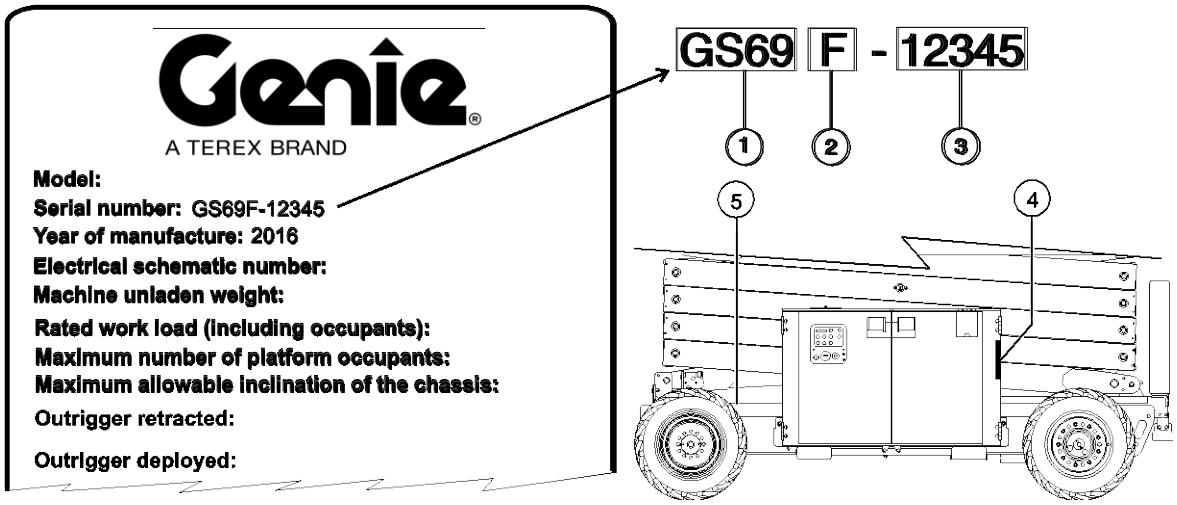
Serial Number Legend

To August 31, 2016



1 Model
2 Model year
3 Facility code
4 Sequence number
5 Serial label (located inside cover)
6 Serial number (stamped on chassis)

From September 1, 2016



1 Model
2 Facility code
3 Sequence number
4 Serial label (located inside cover)
5 Serial number (stamped on chassis)

Safety Rules



Danger

Failure to obey the instructions and safety rules in this manual and the appropriate Operator's Manual on your machine will result in death or serious injury.

Many of the hazards identified in the operator's manual are also safety hazards when maintenance and repair procedures are performed.

Do Not Perform Maintenance Unless:

☑ You are trained and qualified to perform maintenance on this machine.

☑ You read, understand and obey:

- manufacturer's instructions and safety rules
- employer's safety rules and worksite regulations
- applicable governmental regulations

☑ You have the appropriate tools, lifting equipment and a suitable workshop.

Safety Rules

Personal Safety

Any person working on or around a machine must be aware of all known safety hazards. Personal safety and the continued safe operation of the machine should be your top priority.



Read each procedure thoroughly. This manual and the decals on the machine, use signal words to identify the following:



Safety alert symbol—used to alert personnel to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER Indicates a imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION Indicates a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

NOTICE Indicates a potentially hazardous situation which, if not avoided, may result in property damage.



Be sure to wear protective eye wear and other protective clothing if the situation warrants it.



Be aware of potential crushing hazards such as moving parts, free swinging or unsecured components when lifting or placing loads. Always wear approved steel-toed shoes.

Workplace Safety

Any person working on or around a machine must be aware of all known safety hazards. Personal safety and the continued safe operation of the machine should be your top priority.



Be sure to keep sparks, flames and lighted tobacco away from flammable and combustible materials like battery gases and engine fuels. Always have an approved fire extinguisher within easy reach.



Be sure that all tools and working areas are properly maintained and ready for use. Keep work surfaces clean and free of debris that could get into machine components and cause damage.



Be sure any forklift, overhead crane or other lifting or supporting device is fully capable of supporting and stabilizing the weight to be lifted. Use only chains or straps that are in good condition and of ample capacity.



Be sure that fasteners intended for one time use (i.e., cotter pins and self-locking nuts) are not reused. These components may fail if they are used a second time.



Be sure to properly dispose of old oil or other fluids. Use an approved container. Please be environmentally safe.



Be sure that your workshop or work area is properly ventilated and well lit.

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Specifications

Machine Specifications

Fluid capacities	
Hydraulic tank (maximum fill capacity)	16.5 gallons 62.5 liters
Hydraulic system (including tank)	18 gallons 68.1 liters
Drive hub EP 90 or SAE 90 multipurpose hypoid gear oil API service classification GL5	24.5 ounces 725 cc
Tires and wheels	
Wheel lugs	9 @ 5/8-18
Lug nut torque, dry Rear	170 ft-lbs 230 Nm
Lug nut torque, lubricated Rear	130 ft-lbs 176 Nm
Lug nut torque, dry Front	90 ft-lbs 122 Nm
Lug nut torque, lubricated Front	68 ft-lbs 92 Nm
Castle nut (steer end)	
Castle nut torque	35 ft-lbs 47.5 Nm
Non-marking, foam filled, RT	
Tire size	26 x 12D380
Tire ply rating	8
Tire diameter	26 in 66 cm
Tire width	12 in 30 cm
Weight, each	177.5 lbs 80.5 kg

For operational specifications, refer to the Operator's Manual.

Performance Specifications

Drive speed, maximum	
Platform stowed Forward direction	4.5 mph 7.2 km/h 40 ft / 6.1 sec 12.2 m / 6.1 sec
Platform stowed Reverse direction	3.0 mph 4.8 km/h 40 ft / 9.1 sec 12.2 m / 9.1 sec
Platform raised	0.3 mph 0.5 km/h 40 ft / 91 sec 12.2 m / 91 sec
Braking distance, maximum	
High range on paved surface	3 ft 0.9 m
Gradeability	See Operator's Manual
Function speed, maximum from platform controls (with maximum rated load in platform)	
GS-2669 DC	
Platform up Platform down	29 to 39 seconds 26 to 36 seconds
GS-3369 DC	
Platform up Platform down	34 to 44 seconds 24 to 34 seconds
GS-4069 DC	
Platform up Platform down	56 to 66 seconds 23 to 33 seconds
Outrigger leveling, maximum	
Front Back Side to side	5.3° 4.2° 11.7°

Specifications

Hydraulic Oil Specifications

Hydraulic Fluid Specifications	
Genie specifications require hydraulic oils which are designed to give maximum protection to hydraulic systems, have the ability to perform over a wide temperature range, and the viscosity index should exceed 140. They should provide excellent antiwear, oxidation prevention, corrosion inhibition, seal conditioning, and foam and aeration suppression properties.	
Cleanliness level, minimum	ISO 15/13
Water content, maximum	250 ppm
Recommended Hydraulic Fluid	
Hydraulic oil type	Chevron Rando HD Premium
Viscosity grade	32
Viscosity index	200
Optional Hydraulic Fluids	
Mineral based	Shell Tellus S2 V 32 Shell Tellus S2 V 46 Shell Tellus S4 VX 32 Shell Shell Donax TG (Dexron III) Chevron 5606A
Biodegradable	Petro Canada Environ MV 46
Fire resistant	UCON Hydrolube HP-5046

Note: Genie specifications require additional equipment and special installation instructions for the approved optional fluids. Consult Genie Product Support before use.

NOTICE

Optional fluids may not have the same hydraulic lifespan and may result in component damage.

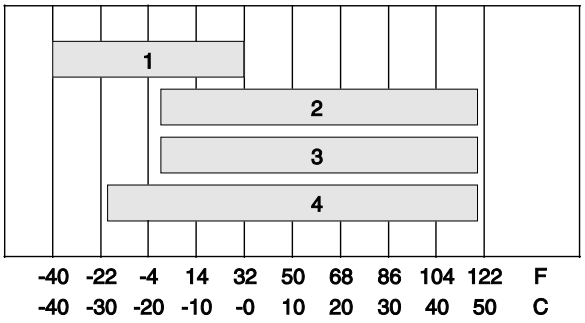
Note: Extended machine operation can cause the hydraulic fluid temperature to increase beyond it's maximum allowable range. If the hydraulic fluid temperature consistently exceeds 200°F / 90°C an optional oil cooler may be required.

NOTICE

Do not top off with incompatible hydraulic fluids. Hydraulic fluids may be incompatible due to the differences in base additive chemistry. When incompatible fluids are mixed, insoluble materials may form and deposit in the hydraulic system, plugging hydraulic lines, filters, control valves and may result in component damage.

Note: Do not operate the machine when the ambient air temperature is consistently above 120°F / 49°C.

Hydraulic Fluid Temperature Range



Ambient air temperature

1 Chevron hydraulic oil 5606A
2 Petro-Canada Environ MV 46
3 UCON Hydrolube HP-5046D
4 Chevron Rando HD premium oil MV

Chevron Rando HD Premium Oil MV Fluid Properties

ISO Grade	32
Viscosity index	200
Kinematic Viscosity cSt @ 200°F / 100°C cSt @ 104°F / 40°C	 7.5 33.5
Brookfield Viscosity cP @ -4°F / -20°C cP @ -22°F / -30°C	 1040 3310
Flash point	375°F / 190°C
Pour point	-58°F / -50°C
Maximum continuous operating temperature	171°F / 77°C

Note: A hydraulic oil heating system is recommended when the ambient temperature is consistently below 0°F / -18°C.

Note: Do not operate the machine when the ambient temperature is below -20°F / -29°C with Rando HD Premium MV.

Chevron 5606A Hydraulic Oil Fluid Properties

ISO Grade	15
Viscosity index	300
Kinematic Viscosity cSt @ 200°F / 100°C cSt @ 104°F / 40°C cSt @ -40°F / -40°C	 5.5 15.0 510
Flash point	180°F / 82°C
Pour point	-81°F / -63°C
Maximum continuous operating temperature	124°F / 51°C

Note: Use of Chevron 5606A hydraulic fluid, or equivalent, is required when ambient temperatures are consistently below 0°F / -17°C unless an oil heating system is used.

NOTICE

Continued use of Chevron 5606A hydraulic fluid, or equivalent, when ambient temperatures are consistently above 32°F / 0°C may result in component damage

Petro-Canada Environ MV 46 Fluid Properties

ISO Grade	46
Viscosity index	154
Kinematic Viscosity cSt @ 200°F / 100°C cSt @ 104°F / 40°C	 8.0 44.4
Flash point	482°F / 250°C
Pour point	-49°F / -45°C
Maximum continuous operating temperature	180°F / 82°C

Shell Tellus S4 VX Fluid Properties

ISO Grade	32
Viscosity index	300
Kinematic Viscosity cSt @ 200°F / 100°C cSt @ 104°F / 40°C	 9 33.8
Brookfield Viscosity cSt @ -4°F / -20°C cSt @ -13°F / -25°C cSt @ -40°F / -40°C	 481 702.4 2624
Flash point	>100
Pour point	-76°F / -60°C
Maximum continuous operating temperature	103°F / 75°C

UCON Hydrolube HP-5046 Fluid Properties

ISO Grade	46
Viscosity index	192
Kinematic Viscosity cSt @ 149°F / 65°C cSt @ 104°F / 40°C cSt @ 0°F / -18°C	 22 46 1300
Flash point	None
Pour point	-81°F / -63°C
Maximum continuous operating temperature	189°F / 87°C

Specifications

Hydraulic Component Specifications

Function pump	
Type	gear pump
Displacement	0.4 cu in 6 cc
Flow rate @ 3100 rpm	6 gpm 22.7 L/min
Function manifold	
System relief valve pressure, maximum	3500 ps 241 bari
Lift relief valve pressure GS-2669 DC	3100 psi 214 bar
Lift relief valve pressure GS-3369 DC	2900 psi 200 bar
Lift relief valve pressure GS-4069 DC	2850 psi 197 bar
Steer relief valve pressure	1500 psi 103 bar
Oscillate relief valve pressure	3300 psi 228 bar
Steer flow regulator	2 gpm 7.6 L/min
Oscillate flow regulator	1 gpm 4 L/min

Manifold Component Specifications

Plug torque	
SAE No. 2	36 in-lbs / 4 Nm
SAE No. 4	10 ft-lbs / 13 Nm
SAE No. 6	14 ft-lbs / 19 Nm
SAE No. 8	38 ft-lbs / 51 Nm
SAE No.10	41 ft-lbs / 55 Nm
SAE No. 12	56 ft-lbs / 76 Nm

Battery Specifications

T105	
Type	6v DC
Quantity	8
Capacity	225 AH
Reserve capacity @ 25A rate	447 minutes
Reserve capacity @ 75A rate	115 minutes
Weight, each	62 lbs / 28 kg
Weight (tray with batteries)	554 lbs / 251 kg
J305GH	
Type	6V DC
Quantity	8
Capacity	315 AH
Reserve capacity @ 25A rate	678 minutes
Reserve capacity @ 75A rate	175 minutes
Weight, each	88 lbs / 40 kg
Weight (tray with batteries)	779 lbs / 353.5kg

Hydraulic Hose and Fitting Torque Specifications

Your machine is equipped with Parker Seal-Lok™ ORFS or 37° JIC fittings and hose ends. Genie specifications require that fittings and hose ends be torqued to specification when they are removed and installed or when new hoses or fittings are installed.

Seal-Lok™ Fittings

(hose end - ORFS)

SAE Dash Size	Torque
-4	10 ft-lbs / 13.6 Nm
-6	30 ft-lbs / 40.7 Nm
-8	40 ft-lbs / 54.2 Nm
-10	60 ft-lbs / 81.3 Nm
-12	85 ft-lbs / 115 Nm
-16	110 ft-lbs / 150 Nm
-20	140 ft-lbs / 190 Nm
-24	180 ft-lbs / 245 Nm

JIC 37° Fittings

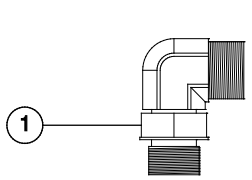
(swivel nut or hose connection)

SAE Dash Size	Thread Size	Flats
-4	7/16-20	2
-6	9/16-18	1 ¼
-8	3/4-16	1
-10	7/8-14	1
-12	1 1/16-12	1
-16	1 5/16-12	1
-20	1 5/8-12	1
-24	1 7/8-12	1

SAE O-ring Boss Port

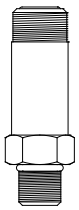
(tube fitting - installed into Aluminum)
(all types)

SAE Dash Size	Torque
-4	14 ft-lbs / 19 Nm
-6	23 ft-lbs / 31.2 Nm
-8	36 ft-lbs / 54.2 Nm
-10	62 ft-lbs / 84 Nm
-12	84 ft-lbs / 114 Nm
-16	125 ft-lbs / 169.5 Nm
-20	151 ft-lbs / 204.7 Nm
-24	184 ft-lbs / 249.5 Nm



Adjustable Fitting

1 jam nut



Non-adjustable fitting

SAE O-ring Boss Port

(tube fitting - installed into Steel)

SAE Dash Size		Torque
-4	ORFS / 37° (Adj)	15 ft-lbs / 20.3 Nm
	ORFS (Non-adj)	26 ft-lbs / 35.3 Nm
	37° (Non-adj)	22 ft-lbs / 30 Nm
-6	ORFS (Adj / Non-adj)	35 ft-lbs / 47.5 Nm
	37° (Adj / Non-adj)	29 ft-lbs / 39.3 Nm
-8	ORFS (Adj / Non-adj)	60 ft-lbs / 81.3 Nm
	37° (Adj / Non-adj)	52 ft-lbs / 70.5 Nm
-10	ORFS (Adj / Non-adj)	100 ft-lbs / 135.6 Nm
	37° (Adj / Non-adj)	85 ft-lbs / 115.3 Nm
-12	(All types)	135 ft-lbs / 183 Nm
-16	(All types)	200 ft-lbs / 271.2 Nm
-20	(All types)	250 ft-lbs / 339 Nm
-24	(All types)	305 ft-lbs / 413.5 Nm

Specifications

Torque Procedure

Seal-Lok™ fittings

1 Replace the O-ring. The O-ring must be replaced anytime the seal has been broken. The O-ring cannot be re-used if the fitting or hose end has been tightened beyond finger tight.

Note: The O-ring in Parker Seal Lok™ fittings and hose end are custom-size O-rings. They are not standard size O-rings. They are available in the O-ring field service kit (Genie part number 49612).

2 Lubricate the O-ring before installation.

3 Be sure the O-ring face seal is seated and retained properly.

4 Position the tube and nut squarely on the face seal end of the fitting, and tighten the nut finger tight.

5 Tighten the nut or fitting to the appropriate torque. Refer to the appropriate torque chart in this section.

6 Operate all machine functions and inspect the hose, fittings and related components to confirm there are no leaks.

JIC 37° fittings

1 Align the tube flare (hex nut) against the nose of the fitting body (body hex fitting) and tighten the hex nut to the body hex fitting to hand tight, approximately 30 in-lbs / 3.4 Nm.

2 Using a permanent ink marker, make a reference mark on one the flats of the hex nut and continue the mark onto the body of the hex fitting. Refer to Illustration 1.

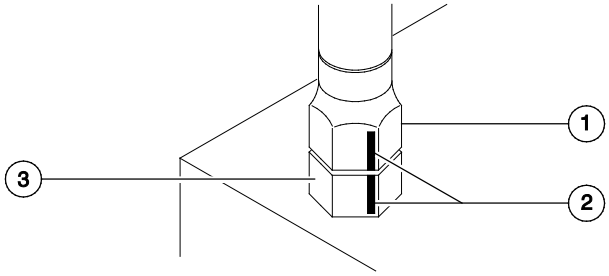


Illustration 1

1 hex nut
2 reference mark
3 body hex fitting

3 Working clockwise on the body hex fitting, make a second mark with a permanent ink marker to indicate the proper tightening position. Refer to Illustration 2.

Note: Use the JIC 37° Fitting table in this section to determine the correct number of flats, for the proper tightening position.

Note: The marks indicate the correct tightening positions have been determined. Use the second mark on the body hex fitting to properly tighten the joint after it has been loosened.

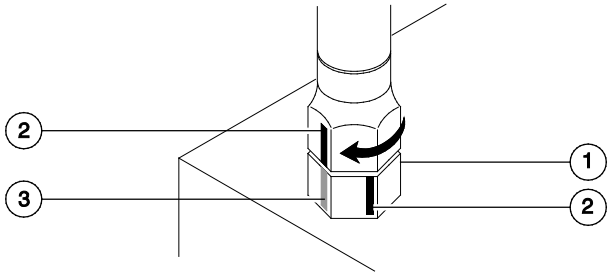


Illustration 2

1 body hex fitting
2 reference mark
3 second mark

4 Tighten the hex nut until the mark on the hex nut is aligned with the second mark on the body hex fitting.

5 Operate all machine functions and inspect the hose, fittings and related components to confirm there are no leaks.

Repair Procedures



Observe and Obey:

☑ Repair procedures shall be completed by a person trained and qualified on the repair of this machine.

☑ Immediately tag and remove from service a damaged or malfunctioning machine.

☑ Repair any machine damage or malfunction before operating the machine.

Before Repairs Start:

☑ Read, understand and obey the safety rules and operating instructions in the appropriate operator's manual on your machine.

☑ Be sure that all necessary tools and parts are available and ready for use.

☑ Use only Genie approved replacement parts.

☑ Read each procedure completely and adhere to the instructions. Attempting shortcuts may produce hazardous conditions.

Machine Configuration:

☑ Unless otherwise specified, perform each repair procedure with the machine in the following configuration:

- Machine parked on a firm, level surface
- Key switch in the off position with the key removed
- The red Emergency Stop button in the off position at both the ground and platform controls
- Wheels chocked
- All external AC power supply disconnected from the machine
- Platform in the stowed position

Repair Procedures

About This Section

Most of the procedures in this section should only be performed by trained service professional in a suitably equipped workshop. Select the appropriate repair procedure after troubleshooting the problem.

Perform disassembly procedures to the point where repairs can be completed. Then to re-assemble, perform the disassembly steps in reverse order.

Symbols Legend



Safety alert symbol—used to alert personnel to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER Indicates a imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION Indicates a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

NOTICE Indicates a potentially hazardous situation which, if not avoided, may result in property damage.

⊙ Indicates that a specific result is expected after performing a series of steps.

☒ Indicates that an incorrect result has occurred after performing a series of steps.

Platform Controls

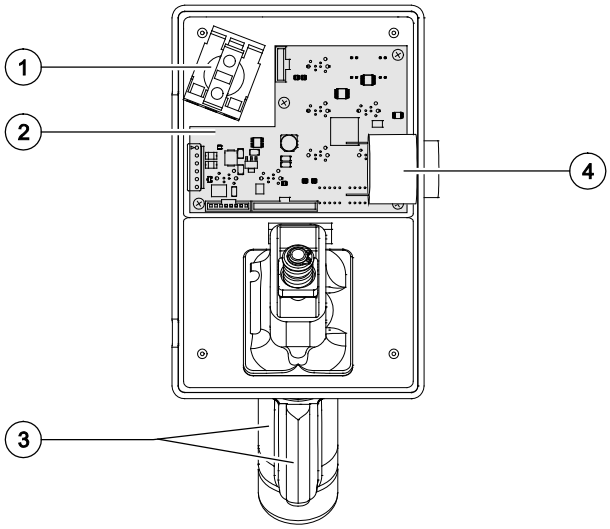
Platform controls

The platform controls are used to operate the machine from the platform.

Activating a function button sends a signal to the Electronic Control Module (ECM). When the ECM is in the function mode, the platform controls are used to operate the various machine functions.

The platform controls consist of an Emergency Stop button, electronic circuit board, proportional control handle, drive/steer enable switch, alarm, function buttons and LED display.

For further information or assistance, contact Genie Product support.

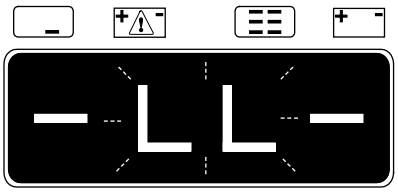


1 red Emergency Stop button P2
2 platform controls circuit board U3
3 proportional control handle and drive/steer enable switch JC9
4 alarm H1

Operational Indicator Codes (OIC)

These codes are generated by the electrical system to indicate machine operating status. During normal operation a code will appear in the platform controls LED readout if a condition such as off-level, overload cutout, chassis mode operation or pothole guards stuck occurs.These codes are not indicators of a device malfunction in the electrical system.

If the platform controls LED readout displays an operational indicator code such as LL, the fault condition must be repaired or removed before resuming machine operation. Push in and pull out the red Emergency Stop button to reset the system.



Platform Controls LED Readout

Code	Condition
LL	Off-Level
OL	Platform Overload (CE and Australia)
CH	Chassis Mode Operation
nd	No Drive (option)
F053	DCON RR Thermal Protection
F054	DCON LR Thermal Protection
Ld	Lifting Disabled (option)
St	Engine Start Delay

Note: A code and a description of a code can also be viewed at the ground controls LCD display.

1-1
Circuit Board

How to Remove the Platform Controls Circuit Board

1 Push in the red Emergency Stop button to the off position at both the ground and platform controls.

2 Disconnect the platform controls from the control cable at the platform.

3 Remove the fasteners securing the platform control box to the platform control bracket.

4 Remove the fasteners securing the bottom cover to the platform control box. Open the control box.

5 Remove the ties securing the wire harness.

6 Disconnect the red and black wires from the alarm.

7 Carefully remove the alarm from the platform control box.

8 Carefully disconnect all wire harness connectors from the platform controls circuit board.

⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

NOTICE Component damage hazard. Electrostatic discharge (ESD) can damage printed circuit board components. Maintain firm contact with a metal part of the machine that is grounded at all times when handling printed circuit boards OR use a grounded wrist strap.

9 Carefully remove the platform controls circuit board fasteners.

10 Carefully remove the platform controls circuit board from the platform control box.

11 Remove the transparent caps from the platform controls circuit board and save.

Circuit board fastener torque specifications

Hand tighten until screw seats	< 5 in-lbs < 0.6 Nm

Note: Before installing a circuit board, place the transparent caps removed in step 11, over the circuit board buttons.

Note: After installing the circuit board, check for proper button operation. Excessive torque of the circuit board fasteners will cause the buttons to bind. Moderate torque of the circuit board fasteners will not allow the buttons to engage.

Platform Controls

1-2 Joystick

How to Remove the Joystick

1 Push in the red Emergency Stop button to the off position at both the ground and platform controls.

2 Disconnect the platform controls from the control cable at the platform.

3 Remove the fasteners securing the platform control box to the platform control bracket.

4 Remove the fasteners securing the bottom cover to the platform control box. Open the control box.

5 Remove the ties securing the joystick wire harness.

6 Carefully disconnect the joystick wire harness from the platform controls circuit board.

⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

NOTICE Component damage hazard. Electrostatic discharge (ESD) can damage printed circuit board components. Maintain firm contact with a metal part of the machine that is grounded at all times when handling printed circuit boards OR use a grounded wrist strap.

7 Carefully remove the joystick fasteners.

8 Carefully remove the joystick from the platform control box.

Torque specifications	
Joystick fasteners	9 in-lbs 1 Nm

1-3 Platform Controls Alarm

How to Remove the Platform Controls Alarm

1 Push in the red Emergency Stop button to the off position at both the ground and platform controls.

2 Disconnect the platform controls from the control cable at the platform.

3 Remove the fasteners securing the platform control box to the platform control bracket.

4 Remove the fasteners securing the bottom cover to the platform control box. Open the control box.

5 Disconnect the red and black wires from the alarm.

⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

NOTICE Component damage hazard. Electrostatic discharge (ESD) can damage printed circuit board components. Maintain firm contact with a metal part of the machine that is grounded at all times when handling printed circuit boards OR use a grounded wrist strap.

6 Carefully remove the alarm from the platform control box.

1-4 Platform Emergency Stop Button

How to Remove the Platform Controls Emergency Stop Button

1 Push in the red Emergency Stop button to the off position at both the ground and platform controls.

2 Disconnect the platform controls from the control cable at the platform.

3 Remove the fasteners securing the platform control box to the platform control bracket.

4 Remove the fasteners securing the bottom cover to the platform control box. Open the control box.

5 Disconnect the white wires from the Emergency Stop base.

⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

NOTICE Component damage hazard. Electrostatic discharge (ESD) can damage printed circuit board components. Maintain firm contact with a metal part of the machine that is grounded at all times when handling printed circuit boards OR use a grounded wrist strap.

6 Carefully remove the Emergency Stop base from the Emergency Stop button.

7 Carefully remove the retaining ring from the Emergency Stop button.

8 Carefully remove the Emergency Stop button from the platform control box.

Platform Components

2-1 Platform

How to Remove the Platform

⚠WARNING Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: This procedure will require an overhead lifting device capable of supporting 1000 lbs / 454 kg.

1 Remove the cable ties that secures the power to platform wiring to the bottom of the platform.

NOTICE Component damage hazard. Be sure not to cut the power to the platform wiring.

2 Remove the clamp that secures the platform controls cable to the platform.

3 Disconnect the platform controls cable from the connector located under the platform.

4 Remove the platform controls from the platform.

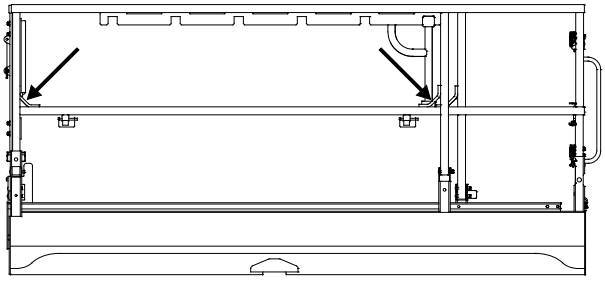
NOTICE Component damage hazard. The platform controls wiring can be damaged if it is kinked or pinched.

5 Remove the cover from the AC outlet. Tag and disconnect the wiring from the outlet.

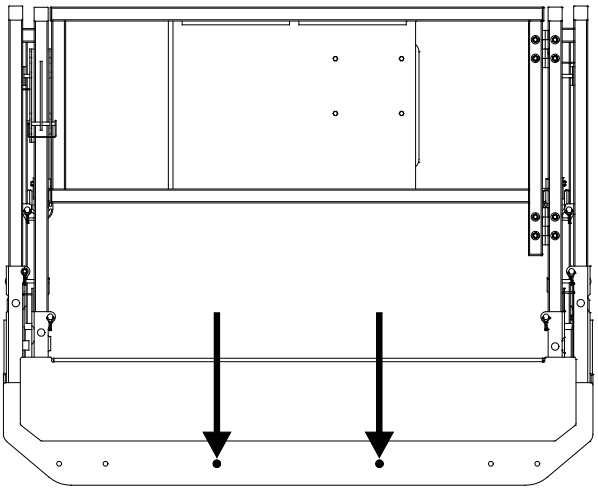
⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

6 Models with air line to platform option: Disconnect the air line from the platform. Pull the air line free of the platform.

7 Attach a sling chain from the overhead lifting device to the four lifting points on the platform.

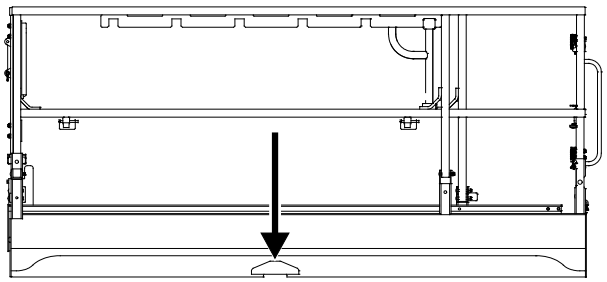


8 Remove the two carriage bolts that secure the platform to the platform pivot at the steer end of the machine.



9 Carefully lift the platform enough to clear the platform pivot.

10 Slide the platform towards the non-steer end of the machine until the slider blocks are visible underneath the slider block channel.



11 Carefully lift the platform off of the machine and place it on a structure capable of supporting it.

⚠WARNING Crushing hazard. The platform will become unbalanced and fall it not properly supported.

Note: Note the position of the slider blocks before the platform is removed so that when the platform is installed they will be in the correct position.

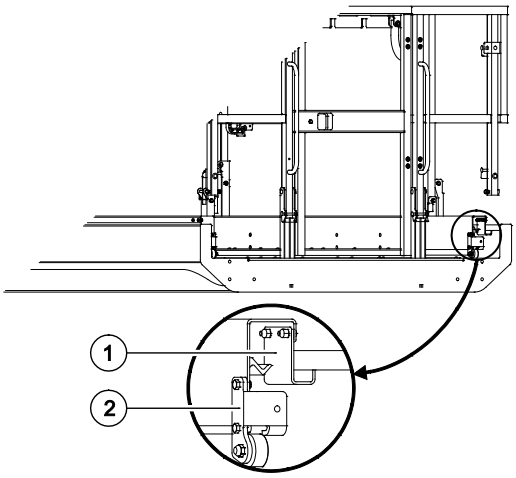
2-2 Platform Extension Deck

How to Remove the Platform Extension Deck

1 Remove the retaining fasteners from the deck catch and remove the deck catch.

2 Remove the retaining fasteners from the deck stop and remove the deck stop.

3 Repeat steps 1 and 2 for the other side of the platform.

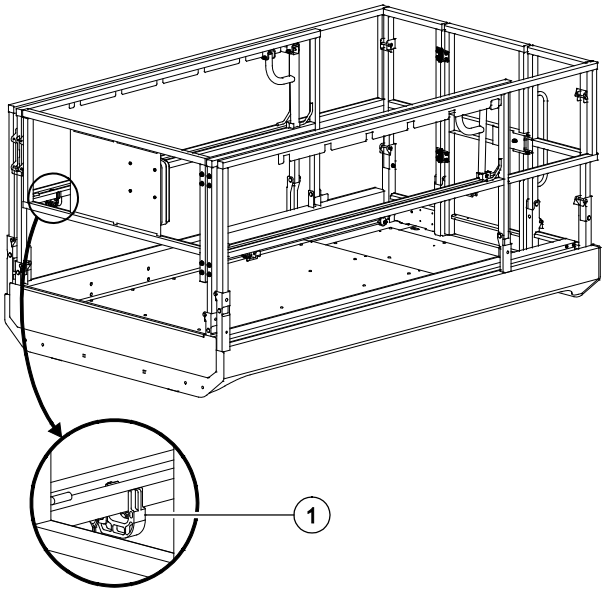


1 deck catch
2 deck stop

4 Remove the platform controls from the platform.

Platform Components

5 Release the four rail spacers by pulling the retaining pin and turn them in a downward position.



1 rail spacer

6 Position a forklift at the steer end of the machine with the forks even with the bottom of the platform extension.

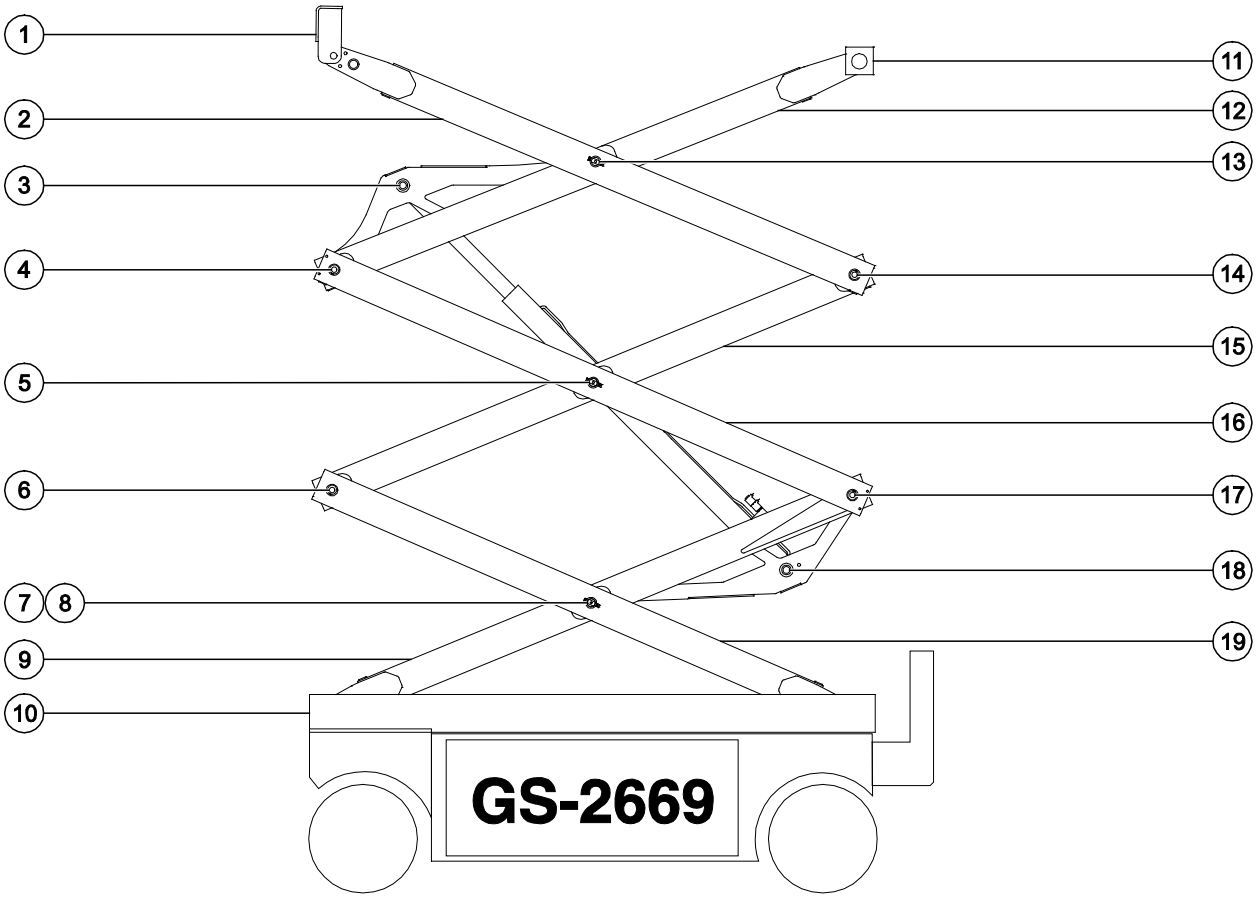
7 Carefully slide the platform extension out until the platform extension makes contact with the carriage on the forklift.

8 Secure the platform extension deck railings to the carriage of the forklift to support the platform extension deck.

9 Carefully slide the platform extension out and away from the platform and place it on a structure capable of supporting it.

⚠WARNING Crushing hazard. The platform extension will become unbalanced and fall when removed from the machine if not properly supported and secured to the forklift.

Scissor Components



Steer End

1 Platform pivot
2 Number 3 outer arm
3 Lift cylinder rod-end pivot pin
4 Number 3 pivot pin (steer end)
5 Number 2 center pivot pin (Qty. 2)
6 Number 2 pivot pin (steer end)
7 Number 1 center pivot pin (Qty. 2) (ANSI/CSA)
8 Number 1 center pivot pin (Qty. 1) (AS/CE)
9 Number 1 inner arm

Non-steer End

10 Chassis pivot
11 Slider block (Qty. 2)
12 Number 3 inner arm
13 Number 3 center pivot pin (Qty. 2)
14 Number 3 pivot pin (non-steer end)
15 Number 2 inner arm
16 Number 2 outer arm
17 Number 2 pivot pin (non-steer end)
18 Lift cylinder barrel-end pivot pin
19 Number 1 outer arm

Scissor Components

3-1
Scissor Assembly, GS-2669 DC

How to Disassemble the Scissor Assembly

⚠WARNING Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

Note: This procedure will require an overhead lifting device capable of supporting 1000 lbs / 454 kg.

1 Remove the platform. Refer to Repair Procedure, *How to Remove the Platform*.

2 Remove the retaining fasteners that attach the ladder to the drive chassis. Remove the ladder and set aside.

3 Remove the cables from the linkage assembly.

NOTICE Component damage hazard. Cables can be damaged if they are kinked or pinched.

4 Using a suitable supporting device, attach a strap to the rod end of the lift cylinder. Do not apply pressure.

5 Remove the lift cylinder rod end pivot pin retaining fasteners.

6 Using a soft metal drift, remove the pivot pin.

7 Lower the lift cylinder and remove the strap.

8 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 3 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

9 Remove the retaining fasteners from the number 3 pivot pins.

Note: Do not remove the external snap ring.

10 Using a soft metal drift, remove the pivot pins and set aside.

11 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

12 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 2 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

13 Remove the retaining fasteners from the number 2 pivot pins.

Note: Do not remove the external snap ring.

14 Using a soft metal drift, remove the pivot pins and set aside.

15 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

16 Tag and disconnect the harness from the lift cylinder valve block.

17 Tag and disconnect the hydraulic hoses from the lift cylinder. Plug the hoses and cap the fittings.

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

18 Remove the hose clamps and hoses from the number 1 inner arm.

19 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 1 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

20 Remove the two carriage bolts that secure the inner arm and chassis pivot to the steer end of the drive chassis.

21 Move the linkage towards the non-steer end of the machine until the slider feet are clear of the slider channel.

22 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

Separate the link sets:

1 Using an overhead lifting device attach a 4 hook sling chain to the ends of the inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

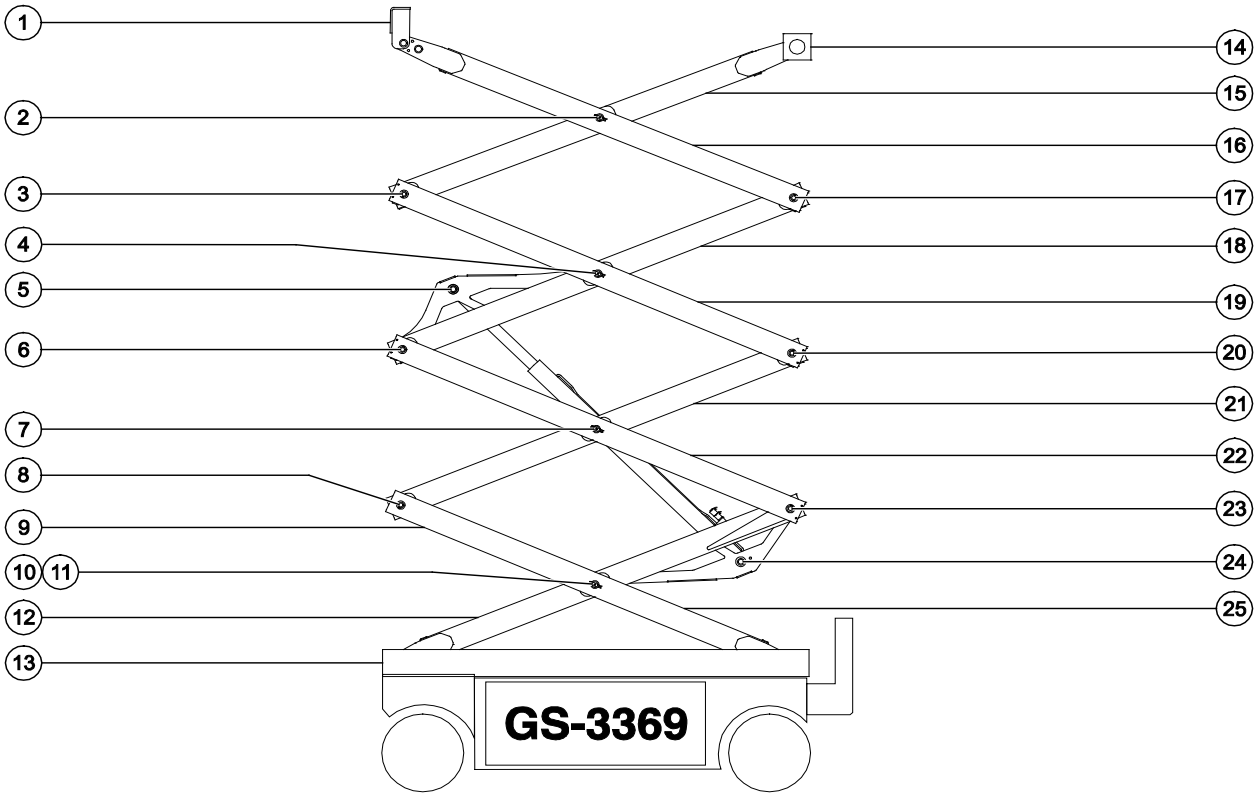
2 Remove the retaining fasteners from the center pivot pins.

Note: Do not remove the external snap ring.

3 Using a soft metal drift, remove the center pivot pins and set aside.

4 Carefully lift and separate the linkage assembly apart and place it on a structure capable of supporting it.

Scissor Components



Steer End

1 Platform pivot
2 Number 4 center pivot pin (Qty. 2)
3 Number 4 pivot pin (steer end)
4 Number 3 center pivot pin (Qty. 2)
5 Lift cylinder rod-end pivot pin
6 Number 3 pivot pin (steer end)
7 Number 2 center pivot pin (Qty. 2)
8 Number 2 pivot pin (steer end)
9 Number 1 outer arm
10 Number 1 center pivot pin (Qty. 2) (ANSI/CSA)
11 Number 1 center pivot pin (Qty. 1) (AS/CE)
12 Number 1 inner arm

Non-steer End

13 Chassis pivot
14 Slider block (Qty. 2)
15 Number 4 inner arm
16 Number 4 outer arm
17 Number 4 pivot pin (non-steer end)
18 Number 3 inner arm
19 Number 3 outer arm
20 Number 3 pivot pin (non-steer end)
21 Number 2 inner arm
22 Number 2 outer arm
23 Number 2 pivot pin (non-steer end)
24 Lift cylinder barrel-end pivot pin
25 Number 1 outer arm

3-2
Scissor Assembly, GS-3369 DC

How to Disassemble the Scissor Assembly

⚠WARNING Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

Note: This procedure will require an overhead lifting device capable of supporting 1000 lbs / 454 kg.

1 Remove the platform. Refer to Repair Procedure, *How to Remove the Platform*.

2 Remove the retaining fasteners that attach the ladder to the drive chassis. Remove the ladder and set aside.

3 Remove the cables from the linkage assembly.

NOTICE Component damage hazard. Cables and hoses can be damaged if they are kinked or pinched.

4 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 4 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

5 Remove the retaining fasteners from the number 4 pivot pins.

Note: Do not remove the external snap ring.

6 Using a soft metal drift, remove the pivot pins and set aside.

7 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

8 Using a suitable supporting device, attach a strap to the rod end of the lift cylinder. Do not apply pressure.

9 Remove the lift cylinder rod end pivot pin retaining fasteners

10 Using a soft metal drift, remove the pivot pin.

11 Lower the lift cylinder and remove the strap.

12 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 3 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

Scissor Components

13 Remove the retaining fasteners from the number 3 pivot pins.

Note: Do not remove the external snap ring.

14 Using a soft metal drift, remove the pivot pins and set aside.

15 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

16 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 2 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

17 Remove the retaining fasteners from the number 2 pivot pins.

Note: Do not remove the external snap ring.

18 Using a soft metal drift, remove the pivot pins and set aside.

19 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

20 Tag and disconnect the harness from the lift cylinder valve block.

21 Tag and disconnect the hydraulic hoses from the lift cylinder. Plug the hoses and cap the fittings.

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

22 Remove the hose clamps and hoses from the number 1 inner arm.

23 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 1 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

24 Remove the two carriage bolts that secure the inner arm and chassis pivot to the steer end of the drive chassis.

25 Move the linkage towards the non-steer end of the machine until the slider feet are clear of the slider channel.

26 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

Scissor Components

Separate the link sets:

1 Using an overhead lifting device attach a 4 hook sling chain to the ends of the inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

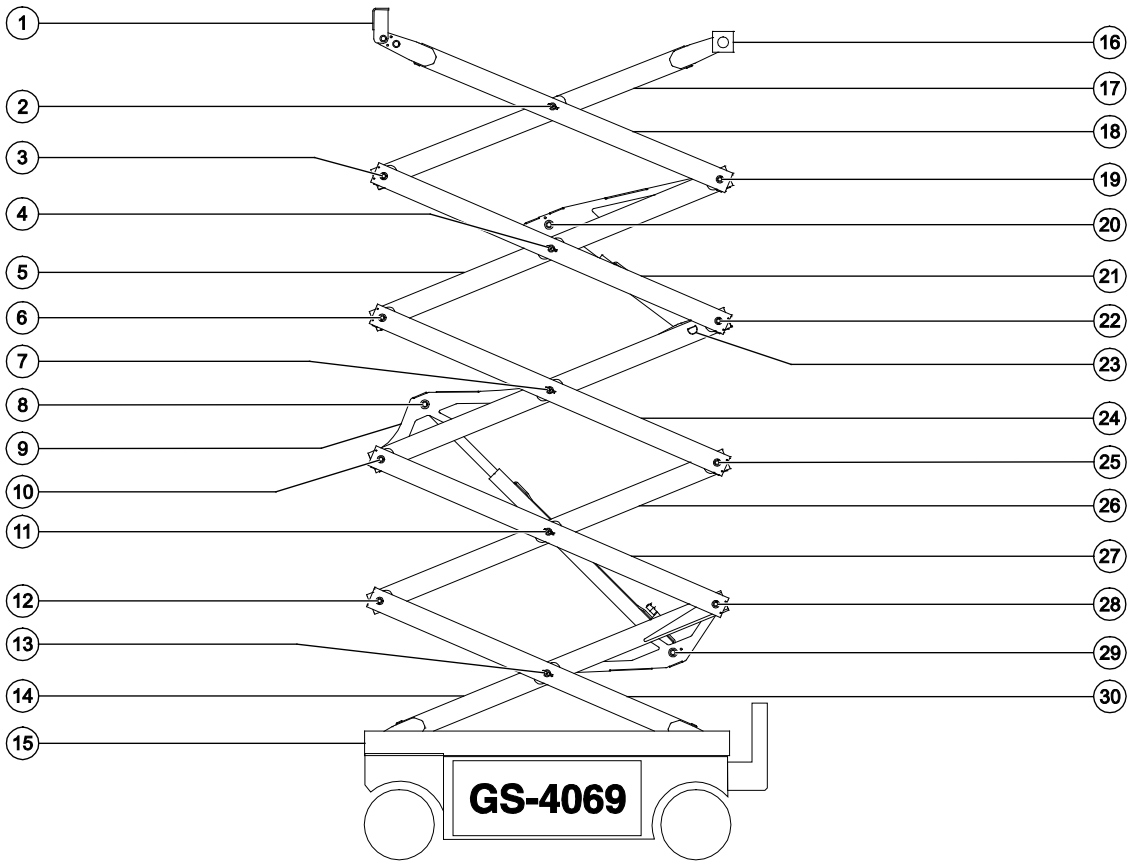
2 Remove the retaining fasteners from the center pivot pins.

Note: Do not remove the external snap ring.

3 Using a soft metal drift, remove the center pivot pins and set aside.

4 Carefully lift and separate the linkage assembly apart and place it on a structure capable of supporting it.

Scissor Components



Steer End

1 Platform pivot
2 Number 5 center pivot pin (Qty. 2)
3 Number 5 pivot pin (steer end)
4 Number 4 center pivot pin (Qty. 2)
5 Number 4 inner arm
6 Number 4 pivot pin (steer end)
7 Number 3 center pivot pin (Qty. 2)
8 Lower lift cylinder rod-end pivot pin
9 Number 3 inner arm
10 Number 3 pivot pin (steer end)
11 Number 2 center pivot pin (Qty. 2)
12 Number 2 pivot pin (steer end)
13 Number 1 center pivot pin (Qty. 2) (ANSI/CSA) OR Number 1 center pivot pin (Qty. 1) (AS/CE)
14 Number 1 inner arm
15 Chassis pivot

Non-steer End

16 Slider block (Qty. 2)
17 Number 5 inner arm
18 Number 5 outer arm
19 Number 5 pivot pin (non-steer end)
20 Upper lift cylinder rod-end pivot pin
21 Number 4 outer arm
22 Number 4 pivot pin (non-steer end)
23 Upper lift cylinder barrel-end pivot pin
24 Number 3 outer arm
25 Number 3 pivot pin (non-steer end)
26 Number 2 inner arm
27 Number 2 outer arm
28 Number 2 pivot pin (non-steer end)
29 Lower lift cylinder barrel-end pivot pin
30 Number 1 outer arm

3-3
Scissor Assembly, GS-4069 DC

How to Disassemble the Scissor Assembly

⚠WARNING Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

Note: This procedure will require an overhead lifting device capable of supporting 1000 lbs / 454 kg.

1 Remove the platform. Refer to Repair Procedure, *How to Remove the Platform*.

2 Remove the retaining fasteners that attach the ladder to the drive chassis. Remove the ladder and set aside.

3 Remove the cables from the linkage assembly.

NOTICE Component damage hazard. Cables and hoses can be damaged if they are kinked or pinched.

4 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 4 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

5 Remove the retaining fasteners from the number 5 pivot pins.

Note: Do not remove the external snap ring.

6 Using a soft metal drift, remove the pivot pins and set aside.

7 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

8 Using a suitable supporting device, attach a strap to the rod end of the upper lift cylinder. Do not apply pressure.

9 Remove the upper cylinder rod end pivot pin retaining fasteners.

10 Using a soft metal drift, remove the pivot pin.

11 Lower the lift cylinder and remove the strap.

12 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 4 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

Scissor Components

13 Remove the retaining fasteners from the number 4 pivot pins.

Note: Do not remove the external snap ring.

14 Using a soft metal drift, remove the pivot pins and set aside.

15 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

16 Tag and disconnect the harness from the upper lift cylinder valve block.

17 Tag and disconnect the hydraulic hoses from the upper lift cylinder. Plug the hoses and cap the fittings.

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

18 Remove the cables and hoses from the linkage assembly.

NOTICE Component damage hazard. Cables and hoses can be damaged if they are kinked or pinched.

19 Using a suitable lifting device remove the retaining fasteners from the upper lift cylinder. Remove the cylinder.

20 Using a suitable supporting device, attach a strap to the rod end of the lower lift cylinder. Do not apply pressure.

21 Remove the lower cylinder rod end pivot pin retaining fasteners.

22 Using a soft metal drift, remove the pivot pin.

23 Lower the lift cylinder and remove the strap.

24 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 3 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

25 Remove the retaining fasteners from the number 3 pivot pins.

Note: Do not remove the external snap ring.

26 Using a soft metal drift, remove the pivot pins and set aside.

27 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

28 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 2 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

29 Remove the retaining fasteners from the number 2 pivot pins.

Note: Do not remove the external snap ring.

30 Using a soft metal drift, remove the pivot pins and set aside.

Scissor Components

31 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

32 Tag and disconnect the harness from the lower lift cylinder valve block.

33 Tag and disconnect the hydraulic hoses from the lower lift cylinder. Plug the hoses and cap the fittings.

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

34 Remove the hose clamps and hoses from the number 1 inner arm.

35 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 1 inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

36 Remove the two carriage bolts that secure the inner arm and chassis pivot to the steer end of the drive chassis.

37 Move the linkage towards the non-steer end of the machine until the slider feet are clear of the slider channel.

38 Carefully lift the linkage assembly off of the machine and place it on a structure capable of supporting it.

Separate the link sets:

1 Using an overhead lifting device attach a 4 hook sling chain to the ends of the inner arm. Make the chains tight but do not apply lifting pressure.

⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

2 Remove the retaining fasteners from the center pivot pins.

Note: Do not remove the external snap ring.

3 Using a soft metal drift, remove the center pivot pins and set aside.

4 Carefully lift and separate the linkage assembly apart and place it on a structure capable of supporting it.

Scissor Components

3-4
Wear Pads

How to Replace the Scissor Arm Wear Pad

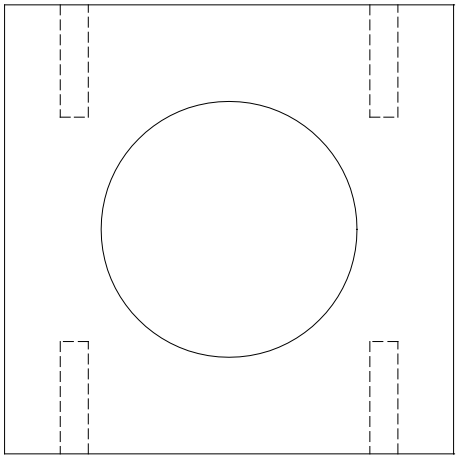
Platform Scissor Arm Slider Blocks:

1 Remove the platform. Refer to Repair Procedure, *How to Remove the Platform*.

2 Remove the slider blocks and discard.

3 Install the slider blocks.

Note: When installing the platform the drill holes in the slider blocks must be on the top and bottom.



4 Install the platform.

Chassis Scissor Arm Wear Pads:

1 Attach a lifting strap from a suitable lifting device to the ladder at the non-steer end of the machine. Support the ladder. Do not apply lifting pressure.

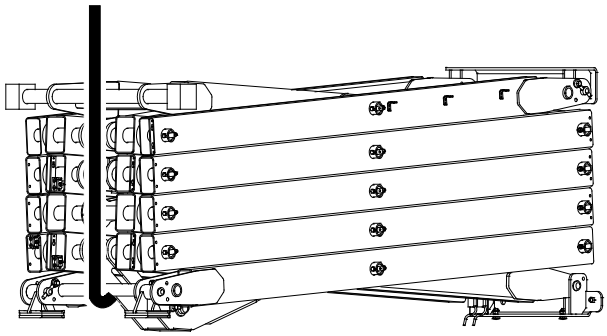
2 Remove the fasteners securing the ladder to the chassis. Remove the ladder from the machine and set aside.

⚠WARNING Crushing hazard. The ladder could fall if not properly supported when the fasteners are removed from the machine.

3 Using an overhead lifting device attach a strap to the #1 inner arm at the non-steer end of the machine.

Note: The overhead lifting device and strap must be capable of supporting 5000 lbs / 2268 kg.

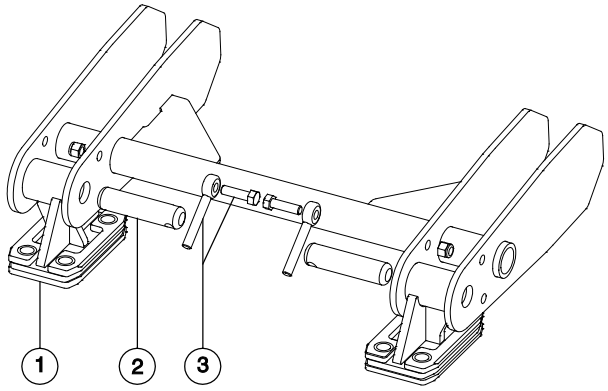
⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported.



4 Raise the linkage assembly slightly with the overhead lifting device just enough to take pressure off of the slider feet.

Scissor Components

5 Remove the retaining fasteners from the slider feet pivot pins and set aside.



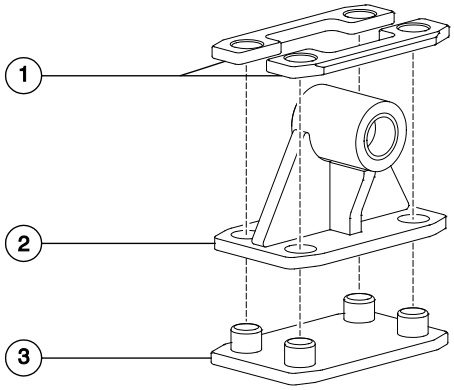
1 Slider foot assembly
2 pivot pin
3 retaining fasteners

6 Using a soft metal drift, remove the pivot pins and set aside.

7 Remove the slider feet by sliding them out of the slider channel.

8 Remove the upper and lower wear pads and discard.

9 Using a hard rubber mallet, secure the upper and lower wear pads to the slider feet.



1 upper wear pads
2 slider foot
3 lower wear pad

10 Install the slider feet into the slider channel and secure them to the linkage assembly with the pivot pins.

11 Securely tighten the pivot pin retaining fasteners.

12 Securely install the ladder onto the machine. Do not over tighten the fasteners.

Scissor Components

3-5
Lift Cylinders

The lift cylinders are single acting hydraulic cylinders. The GS-2669 and GS-3369 uses one lift cylinder; the GS-4069 uses two. Each lift cylinder is equipped with a check valve to prevent movement in the event of a hydraulic line failure.

How to Remove the Lift Cylinder

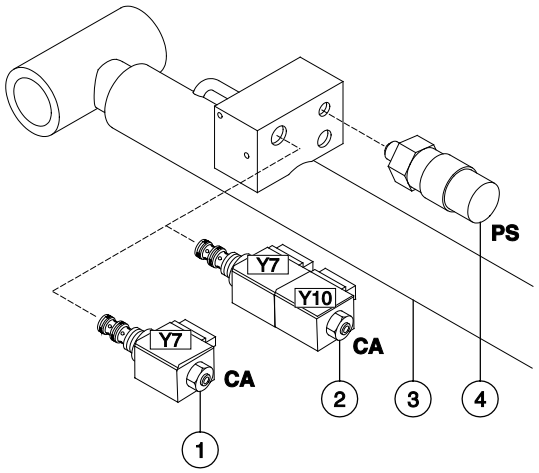
GS-2669 DC and GS-3369 DC:

⚠WARNING Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

1 Remove the platform. Refer to Repair Procedure, *How to Remove the Platform*.

2 Disassemble the scissor assembly. Refer to Repair Procedure for your model, *How to Disassemble the Scissor Assembly*.



GS-2669 DC and GS-3369 DC

1 solenoid valve (proportional lift models)
2 solenoid valve (2 speed lift models)
3 lift cylinder
4 pressure switch (AS/CE models)

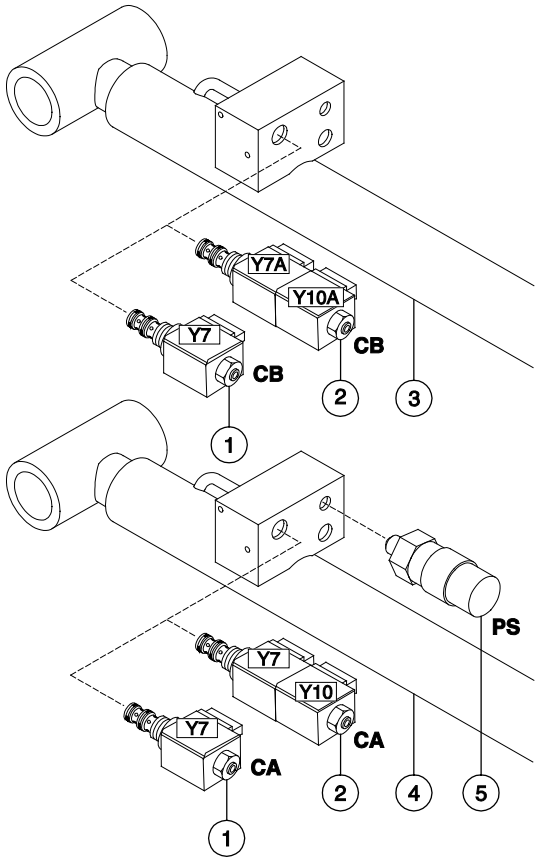
GS-4069 DC:

⚠WARNING Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

1 Remove the platform. Refer to Repair Procedure, *How to Remove the Platform*.

2 Disassemble the scissor assembly. Refer to Repair Procedure, *How to Disassemble the Scissor Assembly*.



GS-4069 DC

1 solenoid valve (proportional lift models)
2 solenoid valve (2 speed lift models)
3 upper lift cylinder
4 lower lift cylinder
5 pressure switch (AS/CE models)

Ground Controls

Ground Controls

The ground controls, used to operate the machine from the ground, can also be used to tune the performance of the machine.

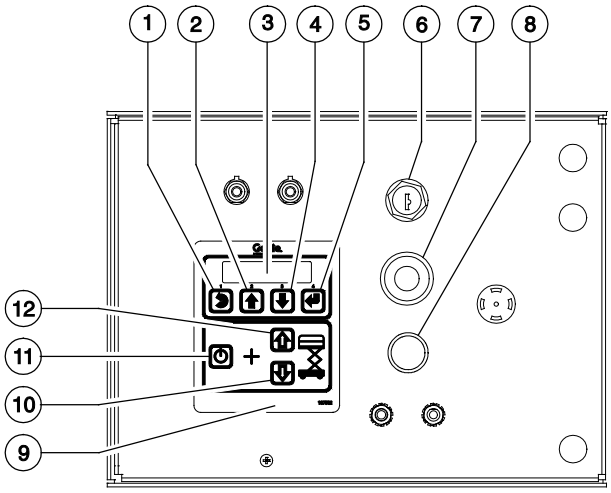
The ground controls consist of an Electronic Control Module (ECM), emergency stop button, key switch and circuit breaker.

Activating the function enable button and the up or down at the same time, sends a signal to the (ECM). This allows the platform to be raised or lowered at the ground controls.

Note: Steer and drive functions are not available at the ground controls.

When the ECM is in the set up mode, the ground controls are used to adjust the function speed parameters, machine models, or machine options.

For further information or assistance, contact Genie Product Support.



1 machine setup, escape button
2 machine setup, scroll up button
3 LCD display
4 machine setup, scroll down button
5 machine setup, enter button
6 key switch KS1
7 red Emergency Stop P1
8 engine start
9 ECM U1
10 platform down button
11 lift function enable button
12 platform up button

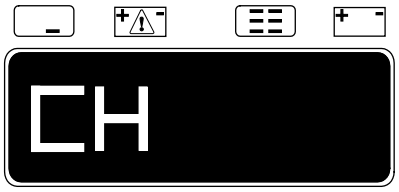
4-1
Software Revision Level

How to Determine the Software Revision Level

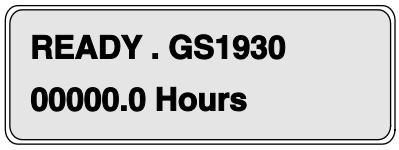
The machine software revision level is displayed at the ground controls LCD display.

1 Turn the key switch to the ground controls position. Pull out the red Emergency Stop button to the on position at both ground and platform controls.

⊙ Result: The display at the platform controls will show "CH". See example below.



⊙ Result: The display at the ground controls will show the machine model and hour meter information. See example below.



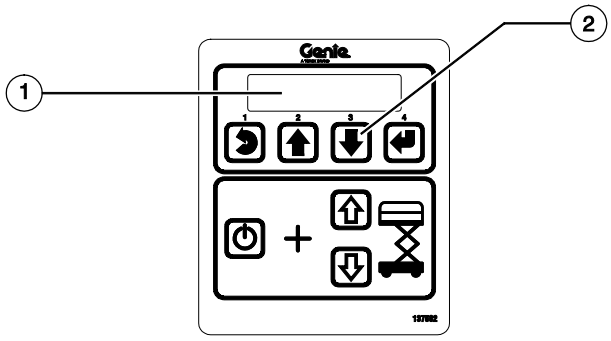
2 Press the ground control scroll down button.

⊙ Result: The ground control LCD display will indicate the software revision and hour meter information. After 5 seconds, the ground controls LCD display will display machine model and hour meter information again.

See example below.



3 Push in the red Emergency Stop button to the off position at both the ground and platform controls and turn the key switch to the off position.



1 ground control LCD display
2 ground control scroll down button

Ground Controls

4-2
Machine Setup

How to Setup the Machine from Ground Controls

The ground controls can be used to setup the machine parameters from the ground. Features that can be adjusted from the ground controls include machine Model, Options and Speed setup. This menu can only be entered from ground controls with the key switch in the ground controls position.

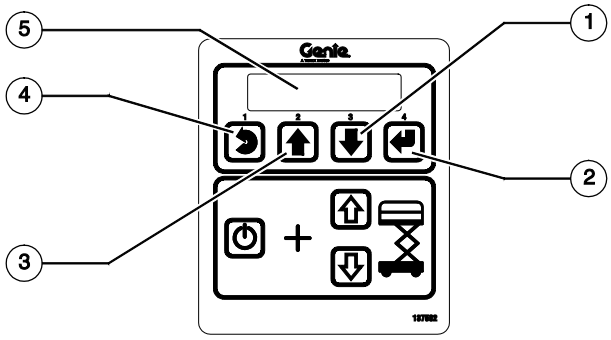
⚠ DANGER Tip-over hazard. Do not adjust function speeds higher than specified in this procedure. Setting the function speeds greater than specifications could cause the machine to tip over resulting in death or serious injury.

⚠ DANGER Tip-over hazard. This procedure must only be performed by a trained service professional. Attempting this procedure without the necessary skills could result in death or serious injury.

Note: Select a test area that is firm, level and free of obstructions.

1 Turn the key switch to the ground controls position and pull out the red Emergency Stop button to the on position at the platform controls.

2 Press and hold the ground control scroll up and scroll down buttons.

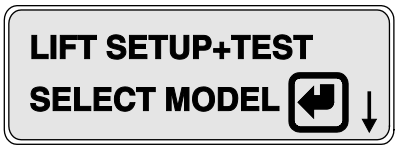


Ground Control Menu Buttons

1 scroll down button
2 enter button
3 scroll up button
4 escape button
5 LCD display

3 Pull out the red Emergency Stop button to the on position at the ground controls.

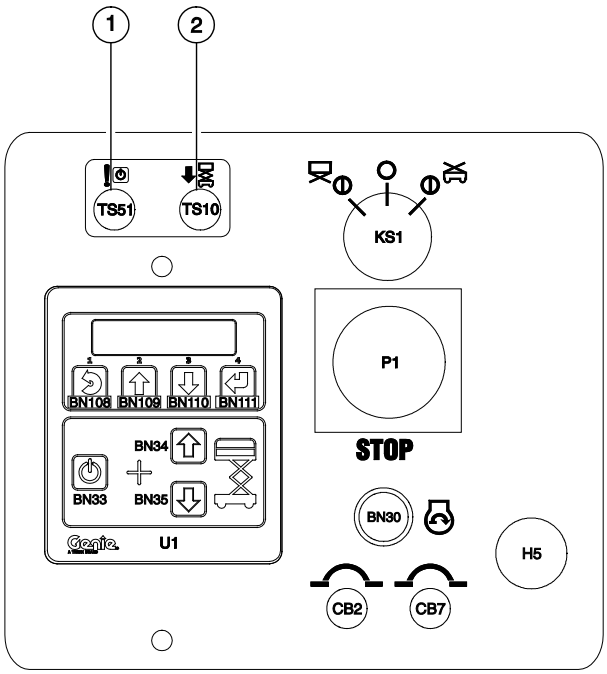
⊙ Result: The ground controls LCD display will show the following:



4 Use the ground control menu buttons to select machine Model, Options and Speed Setup parameters. Follow the menu structure indicated on the ground control LCD display.

4-3
Auxiliary Platform Lowering

In the event of a main power failure, activating the auxiliary enable and auxiliary platform lowering toggle switches at the ground controls will lower the platform. There is no adjustment required.



1 auxiliary enable toggle switch
2 auxiliary lowering toggle switch

4-4
Level Sensor - Models without Outriggers

The Electronic Control Module (ECM) is programmed to deactivate the lift and drive functions and activate an alarm when a signal is received from the level sensor.

The tilt alarm sounds when the incline of the chassis exceeds 2° to the side and 3° to the front or rear.

How to Install and Calibrate the Level Sensor

⚠ DANGER Tip-over hazard. Failure to install or calibrate the level sensor as instructed will compromise machine stability and cause the machine to tip over, resulting in death or serious injury. Do not install or calibrate the level sensor other than specified in this procedure.

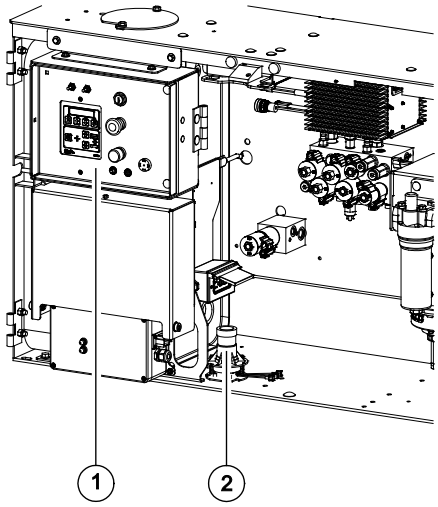
Note: Perform this procedure with the machine on a firm, level surface and the platform in the stowed position. Use a digital level to confirm.

1 Remove the platform controls from the platform.

Note: If you are not installing a new level sensor, or you have installed an outrigger level sensor, proceed to step 7.

Ground Controls

2 Locate the level sensor in the ground controls compartment.



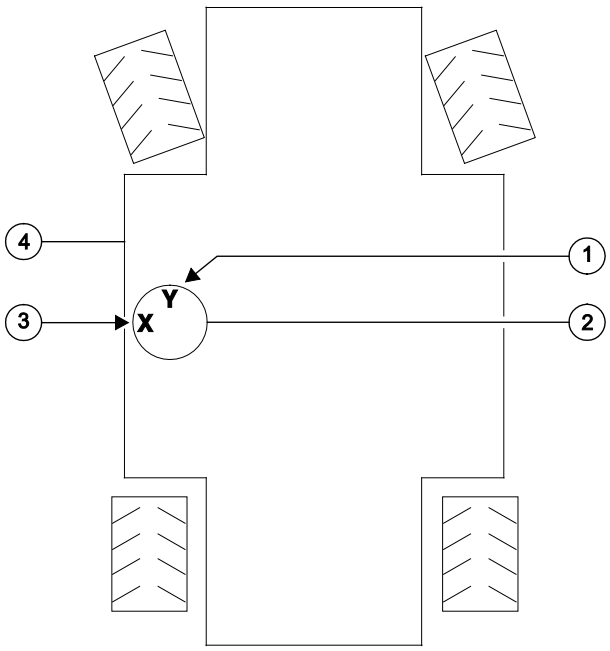
1 ground control box
2 level sensor

3 Tag and disconnect the level sensor wire harness from the chassis wire harness.

4 Remove the level sensor retaining fasteners and remove the level sensor from the machine.

5 Install the new level sensor onto the machine with the "X" on the level sensor base towards the steer end of the machine. Install and tighten the level sensor retaining fasteners.

⚠ DANGER Tip-over hazard. The tilt level sensor must be installed with the "X" on the level sensor base towards the steer end of the machine. Failure to install the tilt level sensor as instructed could result in the machine tipping over causing death or serious injury.



1 "Y" indicator
2 level sensor
3 "X" indicator
4 chassis

6 Connect the wire harness to the level sensor.

7 Adjust the level sensor retaining fasteners until the bubble in the top of the level sensor is centered in the circles.

Note: Be sure there are threads showing through the top of the adjusting fasteners.

8 Turn the key switch to ground control and pull out the red Emergency Stop button to the on position at both ground and platform controls.

⊙ Result: The tilt sensor alarm should not sound.

9 Center a lifting jack under the drive chassis at the ground controls side of the machine.

10 Raise the machine approximately 4 inches / 10 cm.

11 Place a 1.94 x 10 x 10 inch / 4.93 x 25 x 25 cm thick steel block under both wheels at the ground controls side of the machine.

12 Lower the machine onto the blocks.

13 Raise the platform approximately 12 feet / 3.6 m.

⊙ Result: The tilt alarm does not sound and all functions will operate. Proceed to step 15.

⊠ Result: The drive function and the lift function will not operate and the tilt alarm will sound at 180 beeps per minute. Proceed to step 14.

14 Turn the level sensor adjusting nuts just until the level sensor alarm does not sound.

15 Lower the platform to the stowed position.

16 Raise the machine approximately 4 inches / 10 cm.

17 Remove the blocks from under both wheels.

18 Lower the machine and remove the jack.

19 Center a lifting jack under the drive chassis at the engine side of the machine.

20 Raise the machine approximately 4 inches / 10 cm.

21 Place a 2.25 x 10 x 10 inch / 5.72 x 25 x 25 cm thick steel block under both wheels at the ground controls side of the machine.

22 Lower the machine onto the blocks.

23 Raise the platform approximately 12 feet / 3.6 m.

⊙ Result: The drive function and the lift function will not operate and the tilt alarm will sound at 180 beeps per minute.

⊠ Result: If the tilt sensor alarm does not sound, adjust the tilt level sensor until the alarm just begins to sound OR the down limit switch may need to be adjusted.

24 Lower the platform to the stowed position.

25 Push in the red Emergency Stop button to the off position at both the ground and platform controls.

26 Turn the key switch to the off position.

27 Raise the machine approximately 4 inches / 10 cm.

28 Remove the blocks from under both wheels.

29 Lower the machine and remove the jack.

Ground Controls

4-5
Level Sensor - Models with Outriggers

The Electronic Control Module (ECM) is programmed to deactivate the lift and drive functions and activate an alarm when a signal is received from the level sensor.

When the outriggers are stowed, the tilt alarm sounds when the incline of the chassis exceeds 2° to the side.

When the outriggers are deployed, functions will be disabled and and fault will be displayed when the incline of the chassis exceeds 0.8° to the side.

At all times, the tilt alarm sounds when the incline of the chassis exceeds 3° to the front or rear.

How to Install the Outrigger Level Sensor

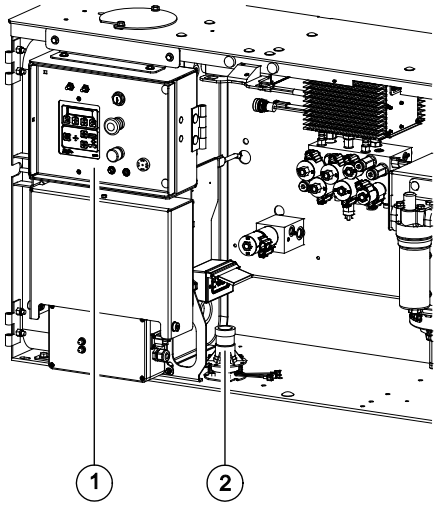
⚠ DANGER Tip-over hazard. Failure to install or calibrate the level sensor as instructed will compromise machine stability and cause the machine to tip over, resulting in death or serious injury. Do not install or calibrate the level sensor other than specified in this procedure.

Note: Perform this procedure with the machine on a firm, level surface that is free of obstructions.

1 Turn the key switch to the off position and push in the red Emergency Stop button to the off position at both the ground and platform controls.

2 Locate the level sensor in the ground controls compartment.

3 Tag and disconnect the wire harness from the level sensor.

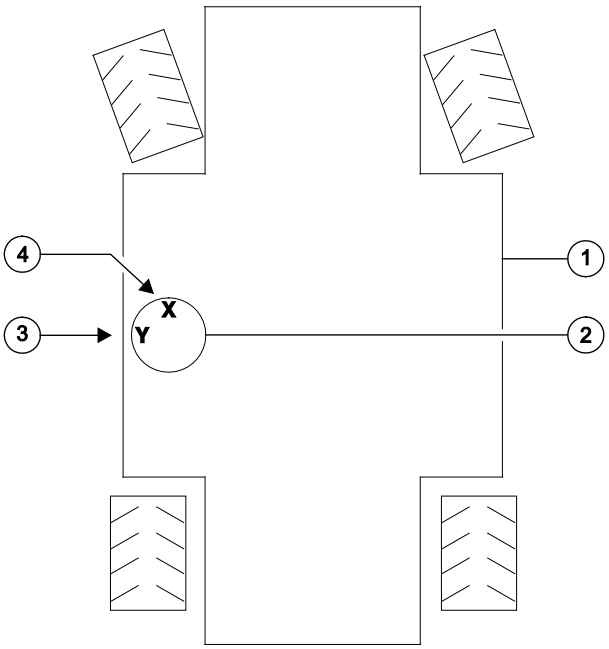


1 ground control box
2 level sensor

4 Remove the level sensor retaining fasteners and remove the level sensor from the machine.

5 Install the new level sensor onto the machine with the "X" on the level sensor base towards the steer end of the machine. Install and tighten the level sensor retaining fasteners.

⚠ DANGER Tip-over hazard. The tilt level sensor must be installed with the "X" on the level sensor base towards the steer end of the machine. Failure to install the tilt level sensor as instructed could result in the machine tipping over causing death or serious injury.



1 chassis
2 level sensor
3 "Y" indicator
4 "X" indicator

6 Connect the wire harness to the level sensor.

7 Adjust the level sensor retaining fasteners until the bubble in the top of the level sensor is centered in the circles.

Note: Be sure there are threads showing through the top of the adjusting fasteners.

8 Calibrate the new level sensor. Refer to Repair Procedure, *How to Install and Calibrate the Level Sensor*.

Ground Controls

4-6 Service Override Mode

The Electronic Control Module (ECM) is programmed with a Service Override mode. Service Override mode is only indented for certain circumstances and is not part of the normal machine operation. Service Override mode should only be accessed by trained personal to repair faults and/ or a malfunctioning machine.

Note: Service Override mode can only be entered at the ground controls and is intended to allow the platform to be raised or lowered. Once the platform has reached the maximum allowable height, the system will exit Service Override mode. Repeat this procedure to lower the platform.

Note: When in Service Override mode, an audible alarm will sound.

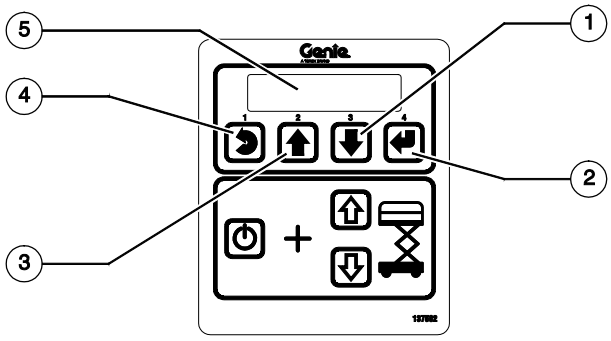
Note: Before entering Service Override mode, fault codes or the malfunction affecting the operation of the machine should be fully understood to ensure Service Override mode is required.

Note: Perform this operation on a firm, level surface and if equipped, with the outriggers auto leveled or fully retracted.

⚠ DANGER Tip-over hazard. Operating the machine on a surface that is not level while in Service Override mode will result in death or serious injury. Follow proper operating procedures and safety precautions. Do not use Service Override mode if you are not trained and familiar with the operation of the machine.

1 Turn the key switch to the ground controls position and pull out the red Emergency Stop button to the on position at the platform controls.

2 Press and hold the ground control scroll up and scroll down buttons.

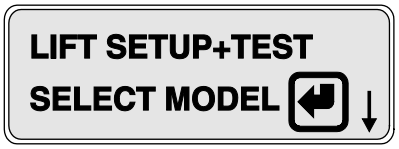


Ground Control Menu Buttons

1 scroll down button
2 enter button
3 scroll up button
4 escape button
5 LCD display

3 Pull out the red Emergency Stop button to the on position at the ground controls.

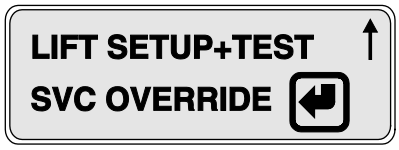
⊙ Result: The ground controls LCD display will show the following:



4 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

5 At the ground controls, use the Scroll Down button to scroll to **SVC Override**.

⊙ Result: The ground controls LCD display will show the following:



6 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



7 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



Hydraulic Pump

5-1 Hydraulic Pump

The hydraulic pump is a single section, gear-type pump.

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

How to Test the Hydraulic Pump

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.

2 Remove the platform controls from the platform and place the controls near the function manifold on the tank side of the machine.

3 Steer the machine fully to the right or left and hold. Note the pressure reading on the pressure gauge. Refer to Specifications, *Hydraulic Specifications*.

How to Remove the Hydraulic Pump

1 Tag, disconnect and plug the hydraulic hoses on the pump. Cap the fittings on the pump.

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

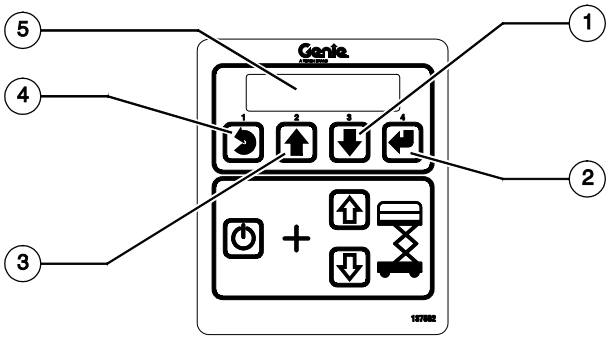
2 Remove the pump mounting bolts. Carefully remove the pump.

⚠WARNING Component damage hazard. After replacing the hydraulic pump, it is critical to return the lift and drive speed settings to original factory specifications. Refer to Specifications, *Performance Specifications*.

How to Calibrate the Hydraulic Pump

1 Turn the key switch to the ground controls position and pull out the red Emergency Stop button to the on position at the platform controls.

2 Press and hold the ground control scroll up and scroll down buttons.

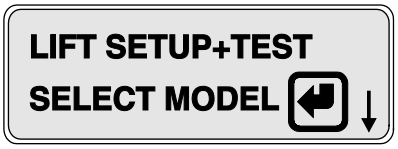


Ground Control Menu Buttons

1 scroll down button
2 enter button
3 scroll down button
4 escape button
5 LCD display

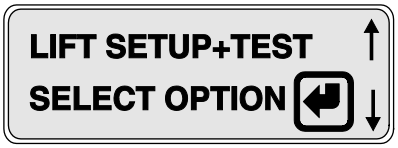
3 Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: The ground controls LCD display will show the following:



4 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

5 At the ground controls, use the Scroll Up or Scroll Down buttons to scroll to Select Option.



6 Press the Enter button.

7 Use the Scroll Up or Scroll Down buttons to scroll to Select Option Pump Efficiency.



8 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



9 Press the Scroll Down button.

⊙ Result: The ground controls LCD display will show the following:



Hydraulic Pump

10 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



11 Press and Hold the Enter button.

⊙ Result: The ground controls LCD display will scroll through the following screens.

Note: Continue to hold the Enter button until calibration is complete. If the Enter button is released, return to step 10 and repeat this procedure.











⊙ Result: The ground controls LCD displays the following screen. Calibration data is within range.



Note: The screen will return to the options screen after 2 seconds.

⊠ Result: The ground controls LCD displays the following screen. Calibration data is not within range. The pump needs to be repaired or replaced.



12 For a bad result, press the Enter button to return to the option screen

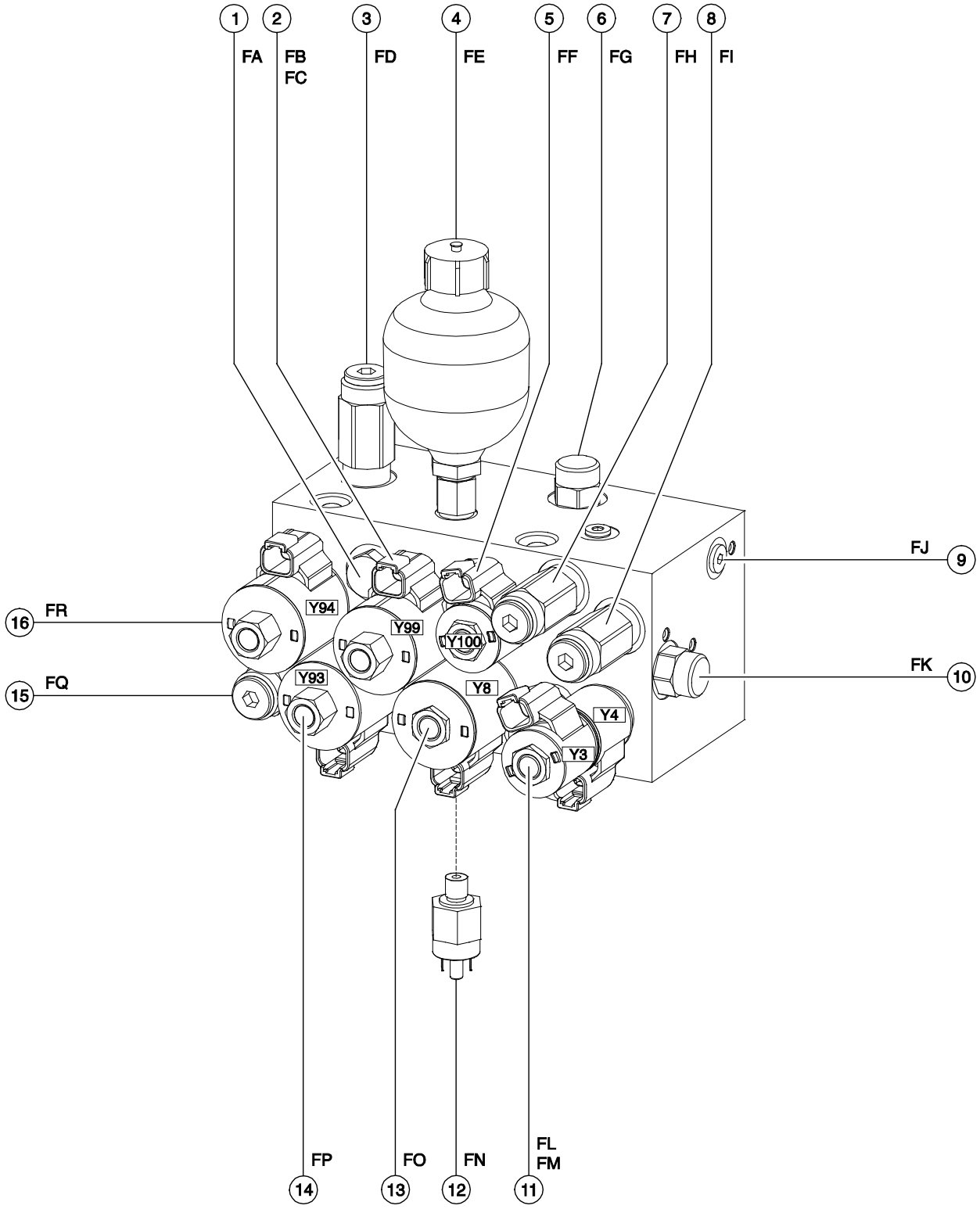
13 Push in the red Emergency Stop button to the off position.

6-1
Function Manifold Components – to serial number GS6916F-10014

The function manifold is located inside the hydraulic compartment.

Index No.	Description	Schematic Item	Function	Torque
1	Check valve	FA	Oscillate circuit	20 ft-lbs / 27 Nm
2	Solenoid Valve, 2 position 3 way	FB	Oscillate / Accumulator	20 ft-lbs / 27 Nm
	Orifice	FC		
3	Relief valve (GS 2669 - 3100 psi / 214 bar) (GS 3369 - 2900 psi / 200 bar) (GS 4069 - 2850 psi / 197 bar)	FD	Lift circuit	20 ft-lbs / 27 Nm
4	Accumulator	FE	Oscillate circuit	11 ft-lbs / 15 Nm
5	Solenoid Valve, 2 position 3 way	FF	Oscillate circuit	20 ft-lbs / 27 Nm
6	Flow control valve, 1 gpm / 3.8 L/min	FG	Controls flow to the oscillate circuit	20 ft-lbs / 27 Nm
7	Relief valve, 3500 psi / 241 bar	FH	System relief	20 ft-lbs / 27 Nm
8	Relief valve, 1500 psi / 103 bar	FI	Steer circuit	20 ft-lbs / 27 Nm
9	Check valve	FJ	Load sense	12-14 ft-lbs / 16-19 Nm
10	Flow control valve, 2 gpm / 7.6 L/min	FK	Controls flow to the steer circuit	20 ft-lbs / 27 Nm
11	Solenoid valve, 3 position 5 way	FL	Steer circuit	20 ft-lbs / 27 Nm
	Check valve	FM		
12	Pressure switch	FN	Oscillate / Accumulator	11 ft-lbs / 15 Nm
13	Solenoid Valve, 2 position 3 way	FO	Lift circuit	25 ft-lbs / 34 Nm
14	Solenoid Valve, 2 position 3 way	FP	Oscillate right	20 ft-lbs / 27 Nm
15	Relief valve, 3300 psi / 228 bar	FQ	Oscillate relief	20 ft-lbs / 27 Nm
16	Solenoid Valve, 2 position 3 way	FR	Oscillate left	20 ft-lbs / 27 Nm

Manifolds

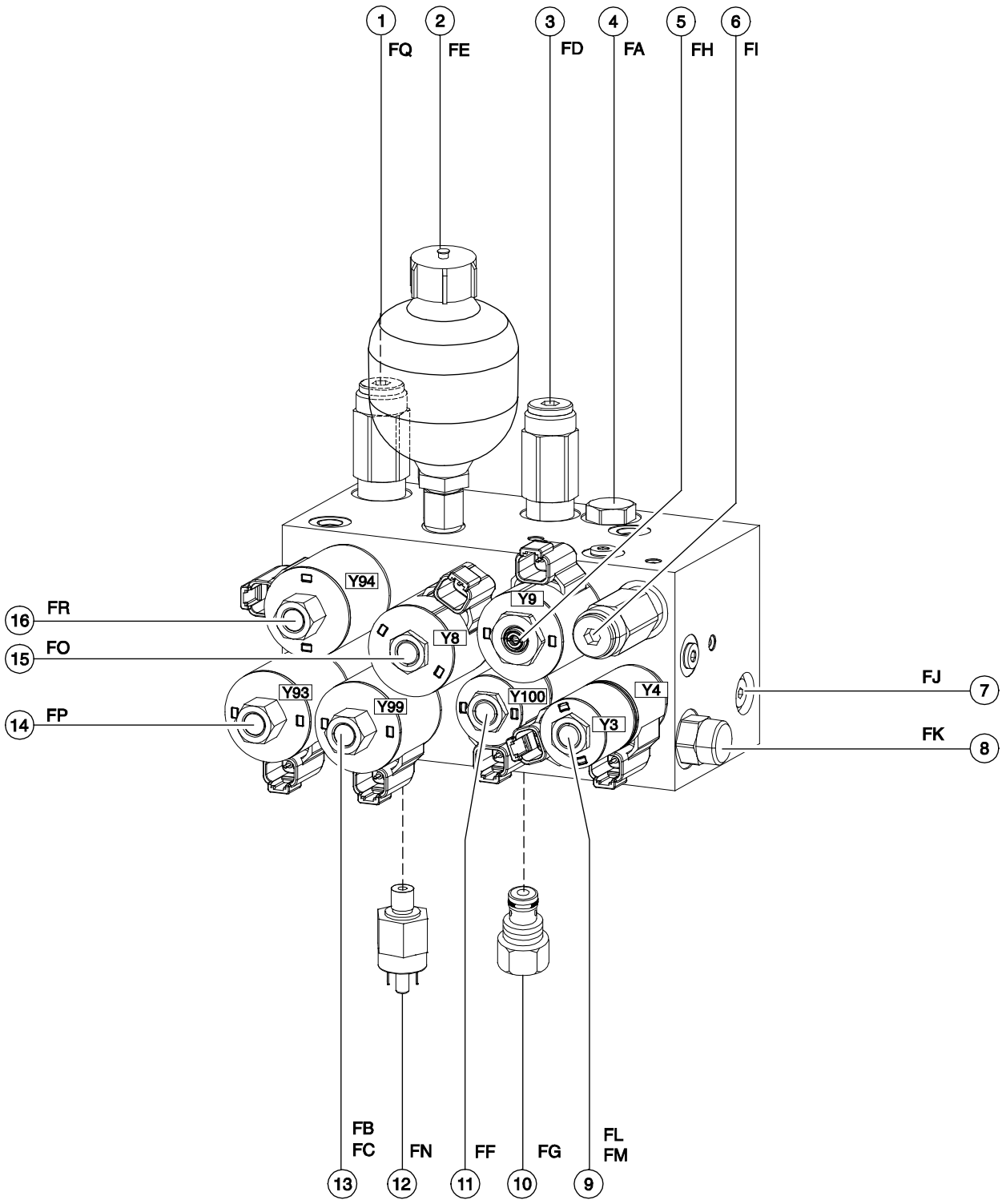

1
2
3
4
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6
7
8
FA
FB
FC
FD
FE
FF
FG
FH
FI
FJ
9
FR
16
FQ
15
FK
10
Y94
Y99
Y100
Y93
Y8
Y4
Y3
FP
14
FO
13
FN
12
FL
FM
11

Function Manifold Components - from serial number GS6916F-10015

The function manifold is located inside the hydraulic compartment.

Index No.	Description	Schematic Item	Function	Torque
1	Relief valve	FQ	Oscillate relief	20 ft-lbs / 27 Nm
2	Accumulator	FE	Oscillate circuit	11 ft-lbs / 15 Nm
3	Relief valve (GS 2669 - 3100 psi / 214 bar) (GS 3369 - 2900 psi / 200 bar) (GS 4069 - 2850 psi / 197 bar)	FD	Lift circuit	20 ft-lbs / 27 Nm
4	Check valve	FA	Oscillate circuit	20 ft-lbs / 27 Nm
5	Proportional relief valve 100 - 3500 psi / 7 - 241 bar	FH	System relief	25 ft-lbs / Nm
6	Relief valve, 1500 psi / 103 bar	FI	Steer circuit	20 ft-lbs / 27 Nm
7	Check valve	FJ	Load sense	20 ft-lbs / 27 Nm
8	Flow control valve 2 gpm / 7.6 L/min	FK	Controls flow to the steer circuit	20 ft-lbs / 27 Nm
9	Solenoid valve, 3 position 5 way Check valve	FL FM	Steer circuit	20 ft-lbs / 27 Nm
10	Flow control valve, 1 gpm / 3.8 L/min	FG	Controls flow to the oscillate circuit	20 ft-lbs / 27 Nm
11	Solenoid Valve, 2 position 3 way	FF	Oscillate circuit	20 ft-lbs / 27 Nm
12	Pressure switch	FN	Oscillate / Accumulator	11 ft-lbs / 15 Nm
13	Solenoid Valve, 2 position 3 way Orifice	FB FC	Oscillate / Accumulator Oscillate / Accumulator	20 ft-lbs / 27 Nm
14	Solenoid Valve, 2 position 3 way	FP	Oscillate right	20 ft-lbs / 27 Nm
15	Solenoid Valve, 2 position 3 way	FO	Lift circuit	20 ft-lbs / 27 Nm
16	Solenoid Valve, 2 position 3 way	FR	Oscillate left	20 ft-lbs / 27 Nm

Manifolds


1
FQ
2
FE
3
FD
4
FA
5
FH
6
FI
Y94
Y9
16
FR
Y8
15
FO
FJ
7
Y93
Y99
Y100
Y4
14
FP
Y3
FK
8
FB
FC
FN
FF
FG
FL
FM
13
12
11
10
9

6-2
Valve Adjustments - Function Manifold

How to Adjust the System Relief Valve

Note: Perform this procedure with the machine in the stowed position.

Note: Refer to Function Manifold Component list to locate the system relief valve.

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.

2 Remove the platform controls from the platform and place the controls near the function manifold on the hydraulic tank side of the machine.

3 Remove the coil from the platform up valve. Do not disconnect the harness from the coil.

4 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

5 Press and hold the enable and platform up buttons OR select the platform function button and activate platform up. Note the pressure reading on the pressure gauge. Refer to Specifications, *Hydraulic Components Specifications*.

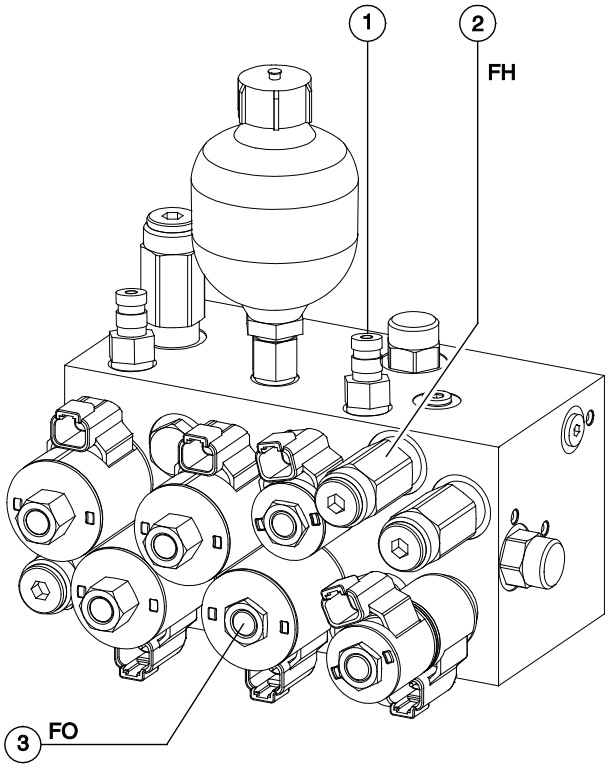
6 Use a wrench to hold the system relief valve and remove the cap.

7 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

⚠WARNING Tip-over hazard. Do not adjust the relief valve higher than specified.

8 Repeat this procedure beginning with step 4 to confirm the relief valve pressure.

9 Remove the pressure gauge.



1 test port #1
2 system relief valve
3 platform up valve

Manifolds

How to Adjust the System Relief Valve – Models with Proportional Relief

Note: Perform this procedure with the machine in the stowed position and in high torque mode.

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.

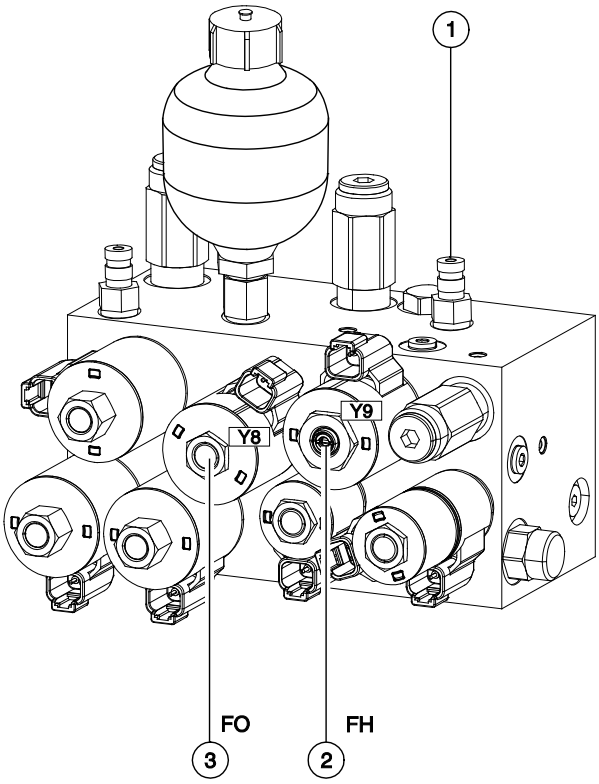
2 Remove the platform controls from the platform and place the controls near the function manifold on the hydraulic tank side of the machine.

3 Remove the coil from the platform up valve. Do not disconnect the harness from the coil.

4 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

5 Press and hold the enable and platform up buttons OR select the platform function button and activate platform up. Note the pressure reading on the pressure gauge. Refer to Specifications, *Hydraulic Components Specifications*.

☒ Result: If the pressure reading is not within range, replace the valve.



1 test port #1
2 proportional relief valve
3 platform up valve

How to Adjust the Oscillate Relief Valve

Note: Perform this procedure with the machine in the stowed position and in high torque mode.

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #2 (TP2) on the function manifold.

2 Disconnect the harness from the oscillate supply coil and the steer right coil.

3 Connect the oscillate supply harness to the steer right coil and the steer right harness to the oscillate supply coil.

4 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

5 Steer the machine to the right and hold. Note the pressure readings on the pressure gauge. Refer to Specifications, *Hydraulic Components Specifications*.

6 Use a wrench to hold the oscillate relief valve and remove the cap.

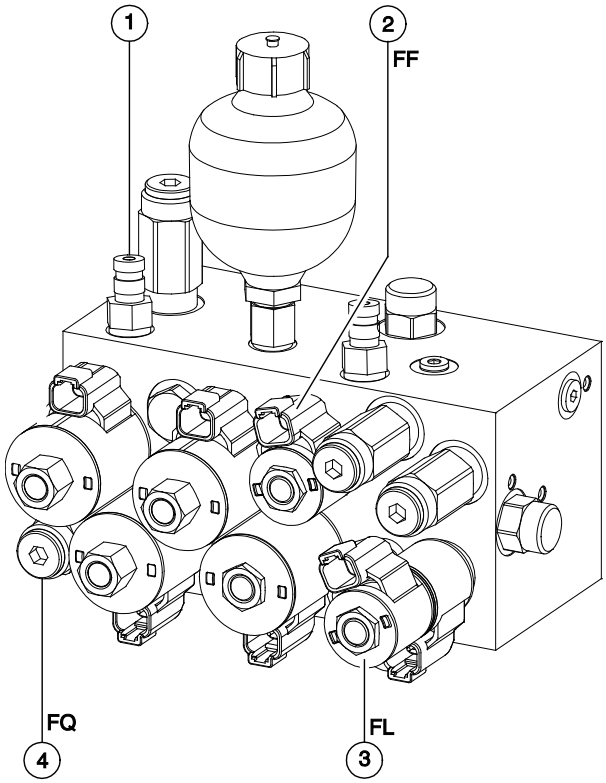
7 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

⚠WARNING Tip-over hazard. Do not adjust the relief valve higher than specified.

8 Repeat this procedure beginning with step 5 to confirm the relief valve pressure.

9 Connect the harness back to the original position.

10 Remove the pressure gauge.



1 test port #2
2 oscillate supply coil (green/white and brown wires)
3 steer right coil (blue and brown wires)
4 oscillate relief valve

Manifolds

How to Adjust the Oscillate Relief Valve – Models with Proportional Relief

Note: Perform this procedure with the machine in the stowed position and in high torque mode.

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #2 (TP2) on the function manifold.

2 Disconnect the harness from the oscillate supply coil and the steer right coil.

3 Connect the oscillate supply harness to the steer right coil and the steer right harness to the oscillate supply coil.

4 Disconnect the harness from the proportional relief valve.

5 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

6 Steer the machine to the right and hold. Note the pressure readings on the pressure gauge. Refer to Specifications, *Hydraulic Components Specifications*.

7 Use a wrench to hold the oscillate relief valve and remove the cap.

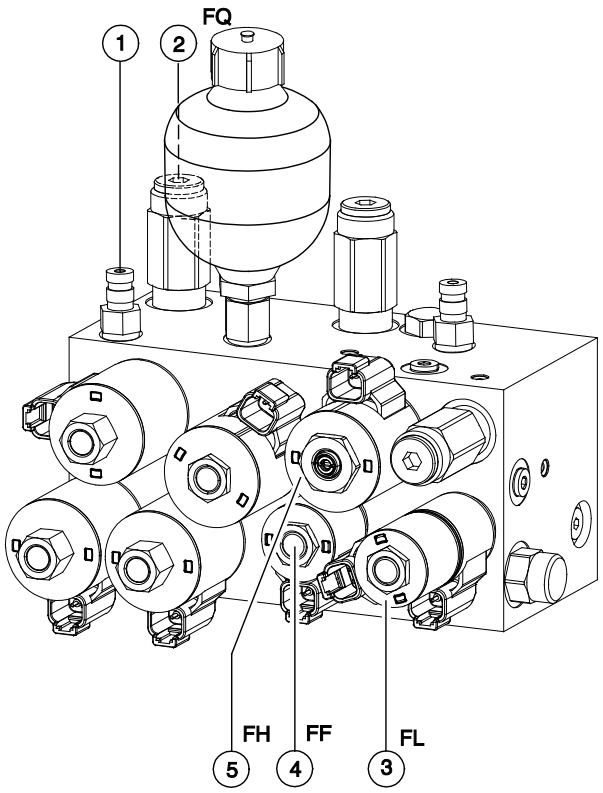
8 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

⚠WARNING Tip-over hazard. Do not adjust the relief valve higher than specified.

Repeat this procedure beginning with step 5 to confirm the relief valve pressure.

9 Connect the harness back to the original position.

10 Remove the pressure gauge.



1 test port #2
2 oscillate relief valve
3 steer right coils
4 oscillate supply coil
5 proportional relief valve

How to Adjust the Steer Relief Valve

Note: Perform this procedure with the machine in the stowed position.

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.

2 Remove the platform controls from the platform and place the controls near the function manifold on the hydraulic tank side of the machine.

3 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

4 Steer the machine fully to the right or left and hold. Note the pressure reading on the pressure gauge. Refer to Specifications, *Hydraulic Components Specifications*.

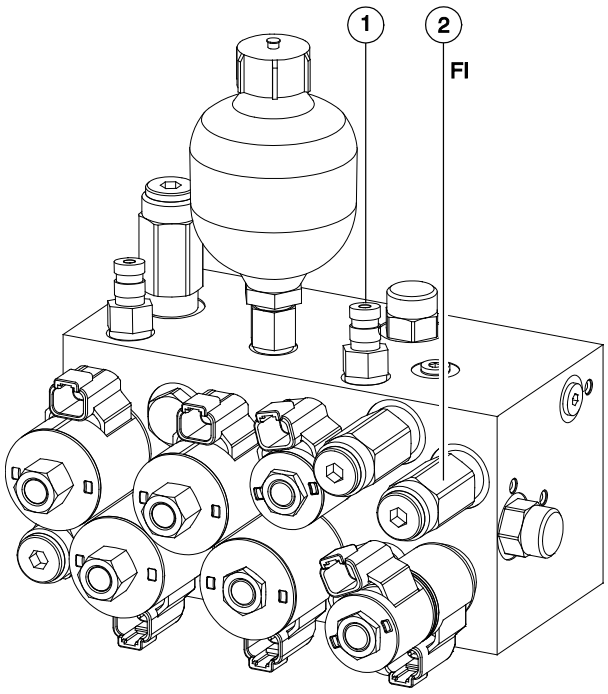
5 Use a wrench to hold the steer relief valve and remove the cap.

6 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

⚠WARNING Tip-over hazard. Do not adjust the relief valve higher than specified.

7 Repeat this procedure beginning with step 4 to confirm the relief valve pressure.

8 Remove the pressure gauge.



1 test port #1
2 steer relief valve

Manifolds

How to Adjust the Steer Relief Valve – Models with Proportional Relief

Note: Perform this procedure with the machine in the stowed position.

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.

2 Disconnect the harness from the proportional relief valve.

3 Remove the platform controls from the platform and place the controls near the function manifold on the hydraulic tank side of the machine.

4 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

5 Steer the machine fully to the right or left and hold. Note the pressure reading on the pressure gauge. Refer to Specifications, *Hydraulic Components Specifications.*

6 Use a wrench to hold the steer relief valve and remove the cap.

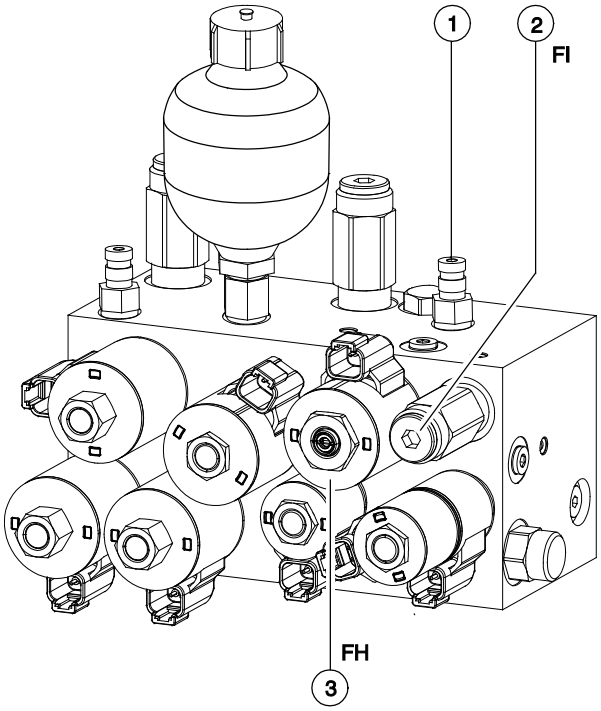
7 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

⚠WARNING Tip-over hazard. Do not adjust the relief valve higher than specified.

8 Repeat this procedure beginning with step 4 to confirm the relief valve pressure.

9 Connect the harness to the proportional relief valve.

10 Remove the pressure gauge.

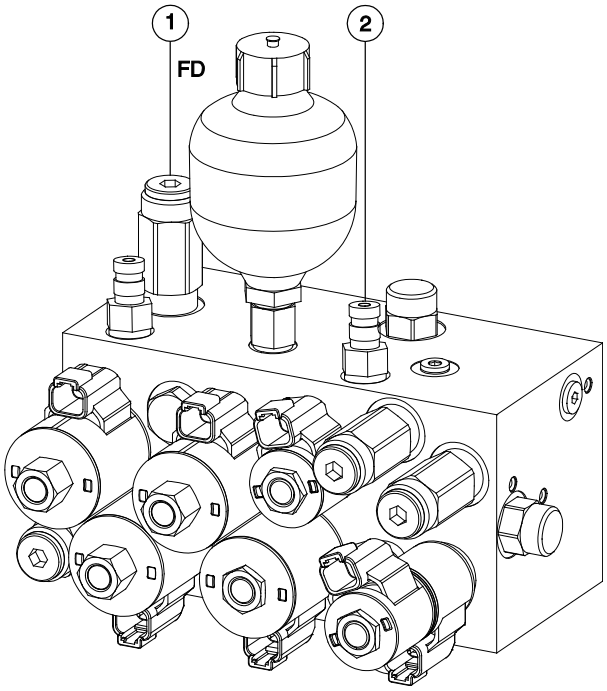


1 test port #1
2 steer relief valve
3 proportional relief valve

How to Adjust the Platform Up Relief Valve - Models with Platform Overload

Note: Verify the hydraulic oil level is within the top 2 inches / 5 cm of the sight gauge.

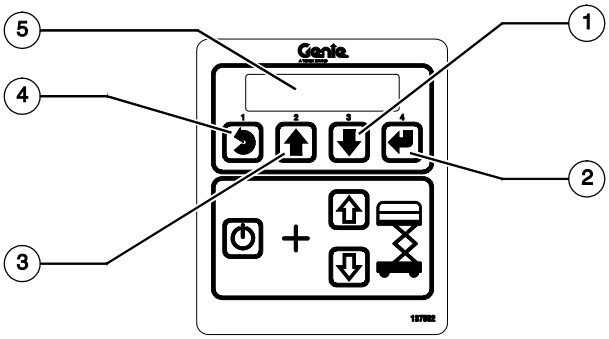
1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.



1 platform up relief valve
2 test port #1

2 Turn the key switch to the ground controls position and pull out the red Emergency Stop button to the on position at the platform controls.

3 Press and hold the ground control scroll up and scroll down buttons.

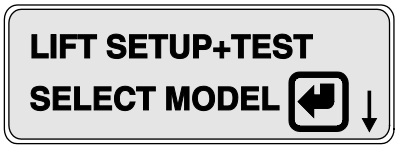


Ground Control Menu Buttons

1 scroll down button
2 enter button
3 scroll down button
4 escape button
5 LCD display

4 Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: The ground controls LCD display will show the following:

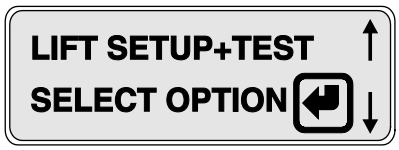


5 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

Manifolds

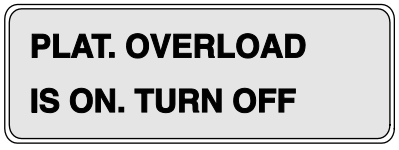
6 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.

⊙ Result: The ground controls LCD display will show the following:



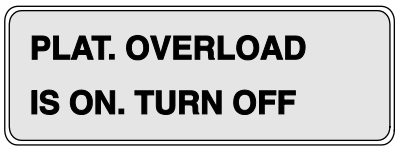
7 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



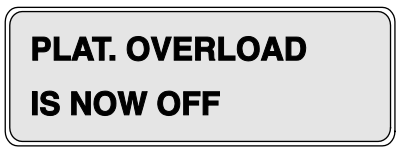
8 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:

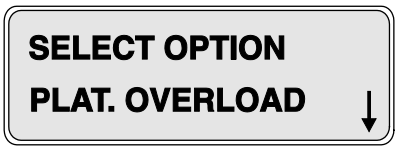


9 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



Note: After 1 second the display will return to SELECT OPTION, PLAT. OVERLOAD.



10 Press the Scroll Down button to scroll to Down Delay.

⊙ Result: The ground controls LCD display will show the following:



11 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



12 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



Note: After 1 second the display will return to SELECT OPTION, DOWN DELAY.



13 Push in the red Emergency Stop button to the off position.

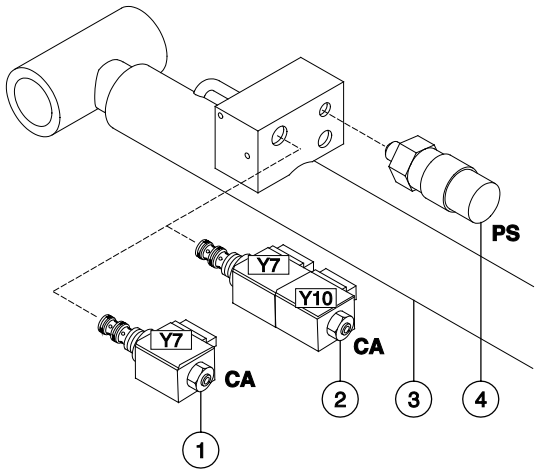
14 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.

15 Lift the safety arm, move it to the center of the scissor arm and rotate down to a vertical position.

16 Lower the platform onto the safety arm.

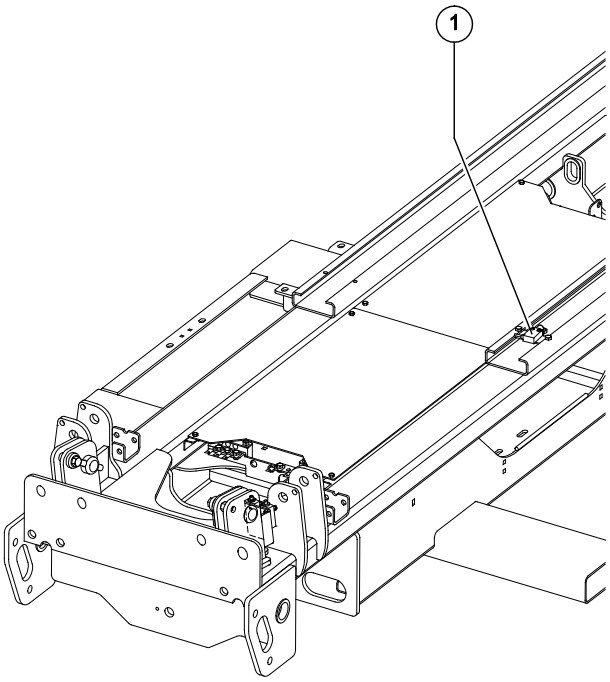
17 Push in the red Emergency Stop button to the off position.

18 Locate and disconnect the lift cylinder pressure switch harness.



1 solenoid valve (proportional lift models)
2 solenoid valve (2 speed lift models)
3 lift cylinder
4 pressure switch (AS/CE models)

19 Locate and disconnect the maximum height limit switch harness.



1 maximum height limit switch

20 Secure the maximum height limit switch roller head in the up position.

NOTICE Component damage hazard. The limit switch will be damaged if it is not properly secured.

21 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.

22 Return the safety arm to the stowed position.

23 Lower the platform to the stowed position.

Manifolds

24 Using a suitable lifting device, place and secure the maximum rated load in the center of the platform deck.

GS-2669	680 kg
GS-3369	454 kg
GS-4069	363 kg

25 Press and hold the lift function enable button and platform up button. Allow the platform to raise completely, then continue activating the lift function while observing the pressure reading on the pressure gauge. Note the pressure. Refer to Specifications, *Hydraulic Component Specifications*.

26 Hold the lift relief valve (item 1) with a wrench and remove the cap.

27 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

⚠ DANGER Tip-over hazard. Failure to adjust the relief valves to specification could result in the machine tipping over, causing death or serious injury. Do not adjust the relief valve pressures higher than specifications.

28 Repeat this procedure beginning with step 24 to confirm the relief valve pressure.

29 Lower the platform to the stowed position.

30 Remove the weight from the platform.

31 Raise the platform approximately 10 feet / 3 m.

32 Lift the safety arm, move it to the center of the scissor arm and rotate down to a vertical position.

33 Lower the platform onto the safety arm.

34 Push in the red Emergency Stop button to the off position.

35 Connect the harness to the lift cylinder pressure switch.

36 Release the maximum height limit switch roller head and connect the harness.

37 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.

38 Return the safety arm to the stowed position.

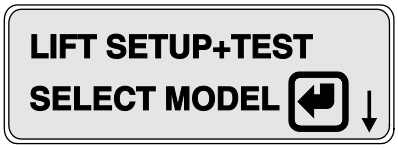
39 Lower the platform to the stowed position.

40 Push in the red Emergency Stop button to the off position.

41 Press and hold the ground control scroll up and scroll down buttons.

42 Pull out the red Emergency Stop button to the on position at the ground controls.

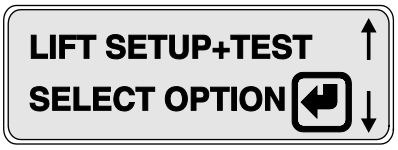
⊙ Result: The ground controls LCD display will show the following:



43 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

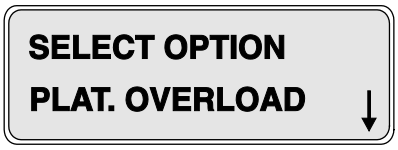
44 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.

⊙ Result: The ground controls LCD display will show the following:



45 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



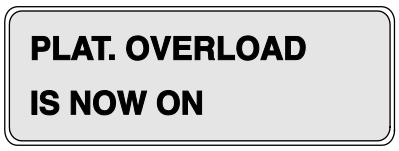
46 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:

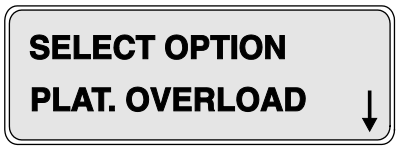


47 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



Note: After 1 second the display will return to SELECT OPTION, PLAT. OVERLOAD.



48 Press the Scroll Down button to scroll to Down Delay.

⊙ Result: The ground controls LCD display will show the following:



49 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



50 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



Note: After 1 second the display will return to SELECT OPTION, DOWN DELAY.



51 Push in the red Emergency Stop button to the off position.

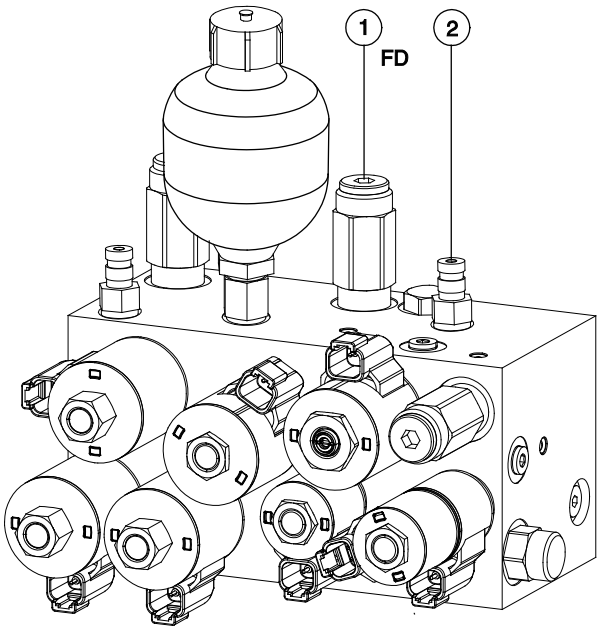
52 Perform Maintenance Procedures, *Test the Platform overload System* and *Down Limit Switch Decent delay*.

Manifolds

How to Adjust the Platform Up Relief Valve - Models with Platform Overload and Proportional Relief

Note: Verify the hydraulic oil level is within the top 2 inches / 5 cm of the sight gauge.

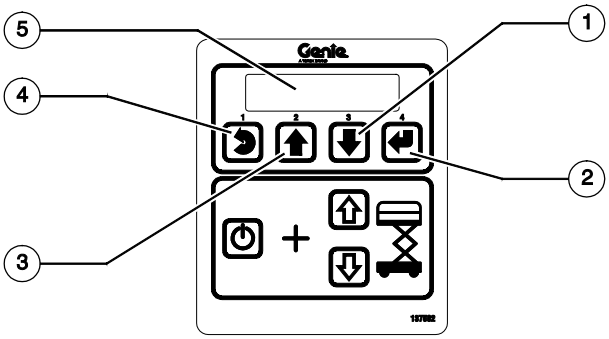
1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.



1 platform up relief valve
2 test port #1

2 Turn the key switch to the ground controls position and pull out the red Emergency Stop button to the on position at the platform controls.

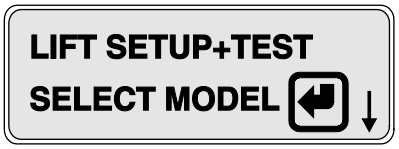
3 Press and hold the ground control scroll up and scroll down buttons.



1 scroll down button
2 enter button
3 scroll down button
4 escape button
5 LCD display

4 Pull out the red Emergency Stop button to the on position at the ground controls.

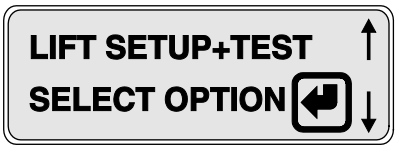
⊙ Result: The ground controls LCD display will show the following:



5 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

6 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.

⊙ Result: The ground controls LCD display will show the following:



7 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:

PLAT. OVERLOAD
IS ON. TURN OFF

8 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:

PLAT. OVERLOAD
IS ON. TURN OFF

9 Press the Enter button.

Result: The ground controls LCD display will show the following:

PLAT. OVERLOAD
IS NOW OFF

Note: After 1 second the display will return to SELECT OPTION, PLAT. OVERLOAD.

SELECT OPTION
PLAT. OVERLOAD ↓

10 Press the Scroll Down button to scroll to Down Delay.

Result: The ground controls LCD display will show the following:

SELECT OPTION ↑
DOWN DELAY ↓

11 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:

12 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:

DOWN DELAY
IS ON. TURN OFF

13 Push in the red Emergency Stop button to the off position.

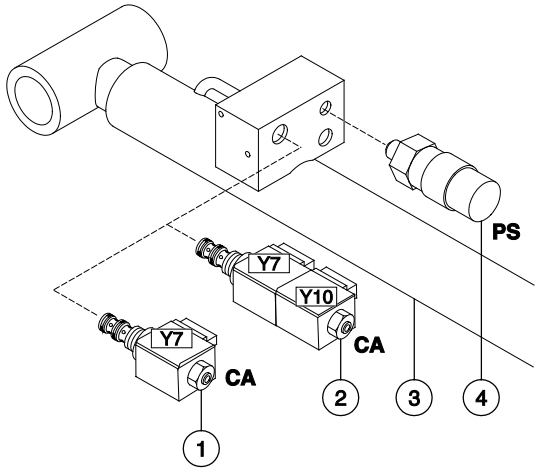
14 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.

15 Lift the safety arm, move it to the center of the scissor arm and rotate down to a vertical position.

16 Lower the platform onto the safety arm.

17 Push in the red Emergency Stop button to the off position.

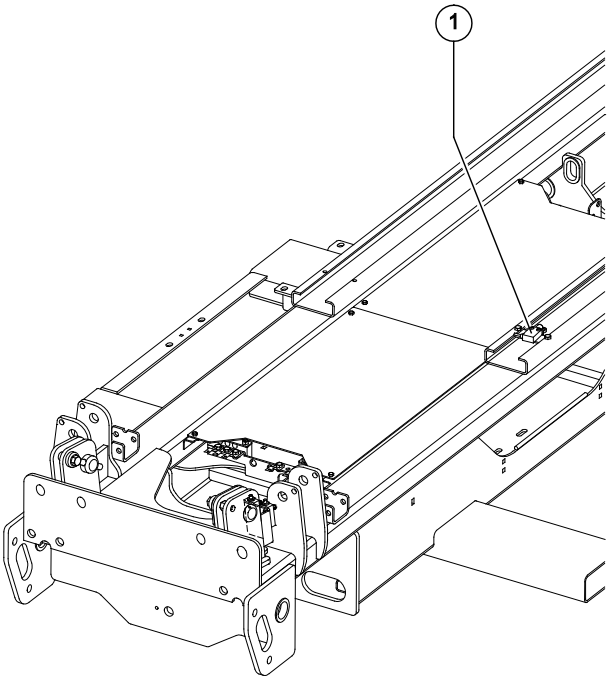
18 Locate and disconnect the lift cylinder pressure switch harness.



1 solenoid valve (proportional lift models)
2 solenoid valve (2 speed lift models)
3 lift cylinder
4 pressure switch (AS/CE models)

Manifolds

19 Locate and disconnect the maximum height limit switch harness.



1 maximum height limit switch

20 Secure the maximum height limit switch roller head in the up position.

NOTICE Component damage hazard. The limit switch will be damaged if it is not properly secured.

21 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.

22 Return the safety arm to the stowed position.

23 Lower the platform to the stowed position.

24 Using a suitable lifting device, place and secure the maximum rated load in the center of the platform deck.

GS-2669	680 kg
GS-3369	454 kg
GS-4069	363 kg

25 Press and hold the lift function enable button and platform up button. Allow the platform to raise completely, then continue activating the lift function while observing the pressure reading on the pressure gauge. Note the pressure. Refer to Specifications, *Hydraulic Component Specifications*.

26 Hold the lift relief valve (item 1) with a wrench and remove the cap.

27 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

⚠ DANGER Tip-over hazard. Failure to adjust the relief valves to specification could result in the machine tipping over, causing death or serious injury. Do not adjust the relief valve pressures higher than specifications.

Repeat this procedure beginning with step 24 to confirm the relief valve pressure.

28 Lower the platform to the stowed position.

29 Remove the weight from the platform.

30 Raise the platform approximately 10 feet / 3 m.

31 Lift the safety arm, move it to the center of the scissor arm and rotate down to a vertical position.

32 Lower the platform onto the safety arm.

33 Push in the red Emergency Stop button to the off position.

34 Connect the harness to the lift cylinder pressure switch.

35 Release the maximum height limit switch roller head and connect the harness.

36 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.

37 Return the safety arm to the stowed position.

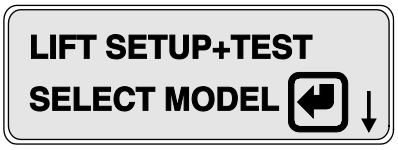
38 Lower the platform to the stowed position.

39 Push in the red Emergency Stop button to the off position.

40 Press and hold the ground control scroll up and scroll down buttons.

41 Pull out the red Emergency Stop button to the on position at the ground controls.

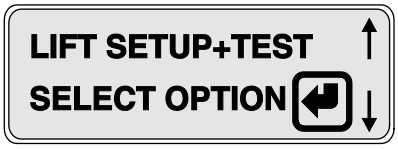
⊙ Result: The ground controls LCD display will show the following:



42 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

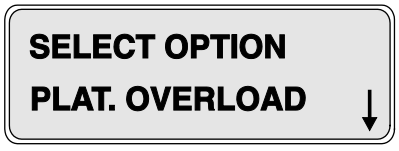
43 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.

⊙ Result: The ground controls LCD display will show the following:



44 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



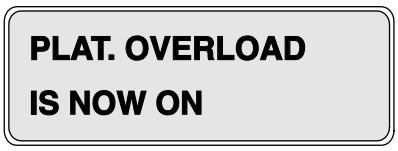
45 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:

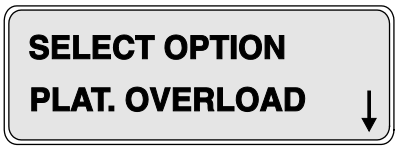


46 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



Note: After 1 second the display will return to SELECT OPTION, PLAT. OVERLOAD.



47 Press the Scroll Down button to scroll to Down Delay.

⊙ Result: The ground controls LCD display will show the following:



Manifolds

48 Press the Enter button.

Result: The ground controls LCD display will show the following:

49 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



Note: After 1 second the display will return to SELECT OPTION, DOWN DELAY.



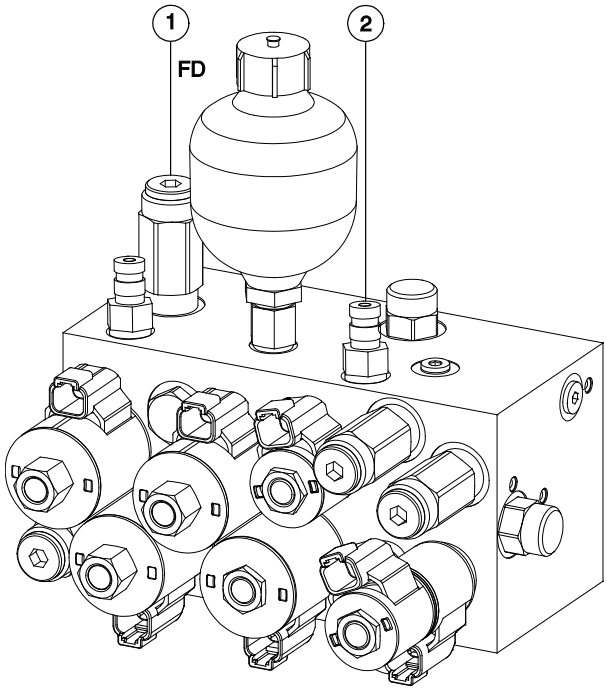
50 Push in the red Emergency Stop button to the off position.

51 Perform Maintenance Procedures, *Test the Platform overload System* and *Down Limit Switch Decent delay*.

How to Adjust the Platform Up Relief Valve - Models without Platform Overload

Note: Verify the hydraulic oil level is within the top 2 inches / 5 cm of the sight gauge.

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.



1 platform up relief valve
2 test port #1

2 Using a suitable lifting device, place and secure the maximum rated load in the center of the platform deck.

GS-2669	1500 lbs / 680 kg
GS-3369	1000 lbs / 454 kg
GS-4069	800 lbs / 363 kg

3 Press and hold the lift function enable button and platform up button. Allow the platform to raise completely, then continue activating the lift function while observing the pressure reading on the pressure gauge. Note the pressure. Refer to Specifications, *Hydraulic Component Specifications*.

4 Hold the lift relief valve with a wrench and remove the cap.

5 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

⚠ DANGER Tip-over hazard. Failure to adjust the relief valves to specification could result in the machine tipping over, causing death or serious injury. Do not adjust the relief valve pressures higher than specifications.

6 Repeat this procedure beginning with step 3 to confirm the relief valve pressure.

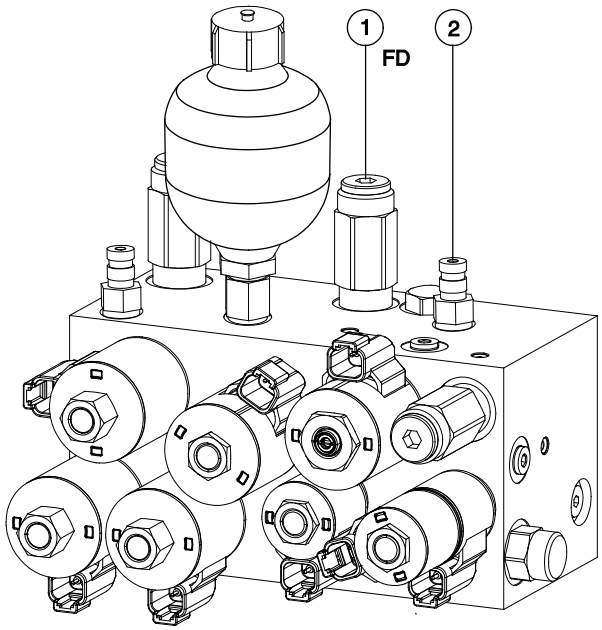
7 Lower the platform to the stowed position.

8 Using a suitable lifting device, remove the weight from the platform.

How to Adjust the Platform Up Relief Valve - Models with Proportional Relief, without Platform Overload

Note: Verify the hydraulic oil level is within the top 2 inches / 5 cm of the sight gauge.

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.



1 platform up relief valve
2 test port #1

2 Using a suitable lifting device, place and secure the maximum rated load in the center of the platform deck.

GS-2669	1500 lbs / 680 kg
GS-3369	1000 lbs / 454 kg
GS-4069	800 lbs / 363 kg

3 Press and hold the lift function enable button and platform up button. Allow the platform to raise completely, then continue activating the lift function while observing the pressure reading on the pressure gauge. Note the pressure. Refer to Specifications, *Hydraulic Component Specifications*.

Manifolds

4 Hold the lift relief valve with a wrench and remove the cap.

5 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

⚠ DANGER Tip-over hazard. Failure to adjust the relief valves to specification could result in the machine tipping over, causing death or serious injury. Do not adjust the relief valve pressures higher than specifications.

Repeat this procedure beginning with step 3 to confirm the relief valve pressure.

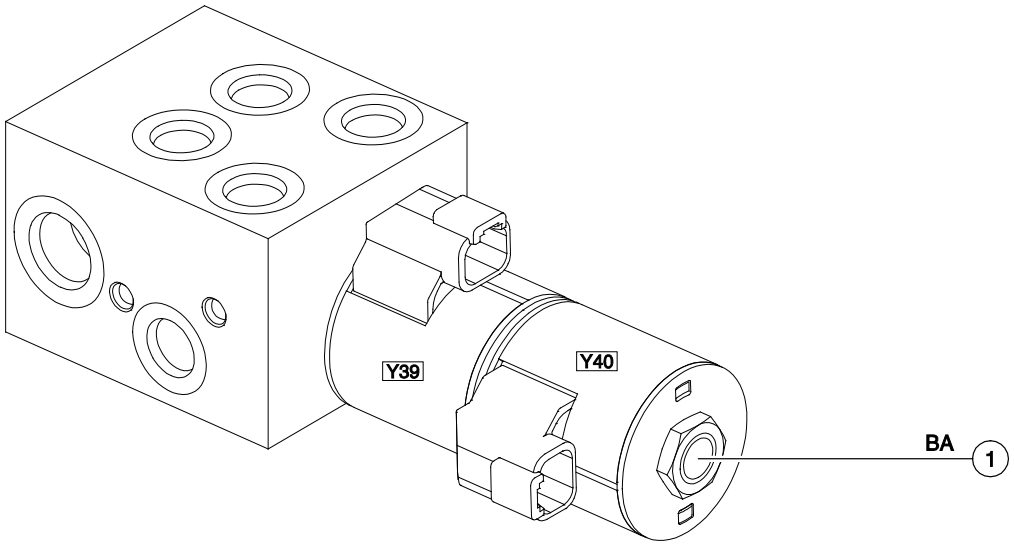
6 Lower the platform to the stowed position.

7 Using a suitable lifting device, remove the weight from the platform.

6-3
Outrigger Manifold Components

The outrigger manifold is located inside the hydraulic compartment.

Index No.	Description	Schematic Item	Function	Torque
1	Solenoid valve, 3 position 4 way	BA	Outriggers extend / retract	40 ft-lbs / 54 Nm



Manifolds

6-4 Valve Coils

How to Test a Coil

A properly functioning coil provides an electromagnetic force which operates the solenoid valve. Critical to normal operation is continuity within the coil. Zero resistance or infinite resistance indicates the coil has failed.

Since coil resistance is sensitive to temperature, resistance values outside specification can produce erratic operation. When coil resistance decreases below specification, amperage increases. As resistance rises above specification, voltage increases.

While valves may operate when coil resistance is outside specification, maintaining coils within specification will help ensure proper valve function over a wide range of operating temperatures.

⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

Note: If the machine has been in operation, allow the coil to cool at least 3 hours before performing this test.

1 Tag and disconnect the wiring from the coil to be tested.

2 Test the coil resistance using a multimeter set to resistance (Ω). Refer to the Valve Coil Resistance Specification table.

⊙ Result: If the resistance is not within the adjusted specification, plus or minus 10%, replace the coil.

Valve Coil Resistance Specification

Note: The following coil resistance specifications are at an ambient temperature of 68°F / 20°C. As valve coil resistance is sensitive to changes in air temperature, the coil resistance will typically increase or decrease by 4% for each 18°F / 20°C that your air temperature increases or decreases from 68°F / 20°C.

Description	Specification
Solenoid valve, 2 position 2 way 24V DC with diode (schematic items CA, CB, CC, CD, CE, CF)	25Ω
Solenoid valve, 2 position 3 way 24V DC with diode (schematic items BA, FB, FF, FO, FP, FR,)	35Ω
Solenoid valve, 3 position 5 way 24V DC with diode (schematic item FL)	35Ω

How to Test a Coil Diode

Properly functioning coil diodes protect the electrical circuit by suppressing voltage spikes. Voltage spikes naturally occur within a function circuit following the interruption of electrical current to a coil. Faulty diodes can fail to protect the electrical system, resulting in a tripped circuit breaker or component damage.

⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

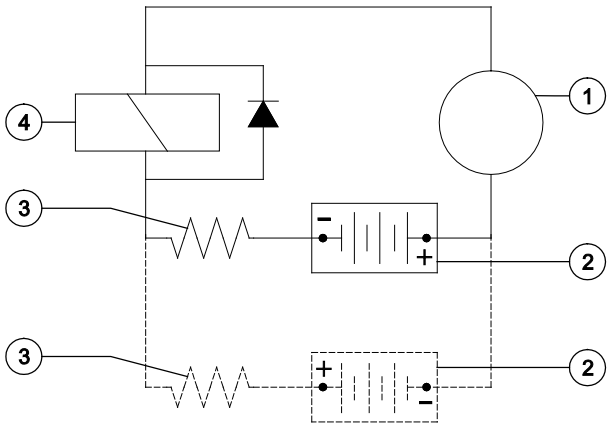
1 Test the coil for resistance. Refer to Repair Procedure, *How to Test a Coil*.

2 Connect a 10W resistor to the negative terminal of a known good 9V DC battery. Connect the other end of the resistor to a terminal on the coil.

Resistor 10Ω

Genie part number 27287

Note: The battery should read 9V DC or more when measured across the terminals.



1 multimeter
2 9v DC battery
3 10Ω resistor
4 coil

Note: Dotted lines in illustration indicate a reversed connection as specified in step 6.

3 Set a multimeter to read DC current.

Note: The multimeter, when set to read DC current, should be capable of reading up to 800 mA.

4 Connect the negative lead to the other terminal on the coil.

5 Momentarily connect the positive lead from the multimeter to the positive terminal on the 9V DC battery. Note and record the current reading.

6 At the battery or coil terminals, reverse the connections. Note and record the current reading.

⊙ Result: Both current readings are greater than 0 mA and are different by a minimum of 20%. The coil is good.

⊠ Result: If one or both of the current readings are 0 mA, or if the two current readings do not differ by a minimum of 20%, the coil and/or its internal diode are faulty and the coil should be replaced.

Hydraulic Tank

7-1 Hydraulic Tank

The primary functions of the hydraulic tank is to cool, clean and deaerate the hydraulic fluid during operation. It utilizes internal suction strainer for the pump supply line.

How to Remove the Hydraulic Tank

NOTICE Component damage hazard. The work area and surfaces where this procedure will be performed must be clean and free of debris that could get into the hydraulic system and cause severe component damage. Dealer service is recommended.

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

1 Remove the hydraulic tank cap.

2 Remove the drain plug from the hydraulic tank and completely drain the tank into a container of suitable capacity. Refer to Specifications, *Machine Specifications*.

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

3 Tag and disconnect the harnesses from the ground control box.

4 Remove the ground control box from the machine and set aside.

5 Tag, disconnect and plug the hydraulic hoses from the hydraulic tank. Cap the fittings on the tank.

6 Loosen the hydraulic tank mounting strap fastener. Pull the tank strap to the side.

Note: Do not remove the tank strap.

7 Remove the hydraulic tank from the machine.

NOTICE Component damage hazard. During installation, do not overtighten the hydraulic tank strap mounting fastener.

Note: Clean the hydraulic tank and inspect for cracks or other damage before installing.

8-1
Yoke Assembly

How to Remove the Yoke

1 Chock both sides of the wheels at the non-steer end of the machine.

2 Center a lifting jack under the drive chassis at the steer end of the machine.

3 Loosen the wheel lug bolts. Do not remove them.

4 Raise the machine approximately 2 inches / 5 cm. Place blocks under the chassis for support.

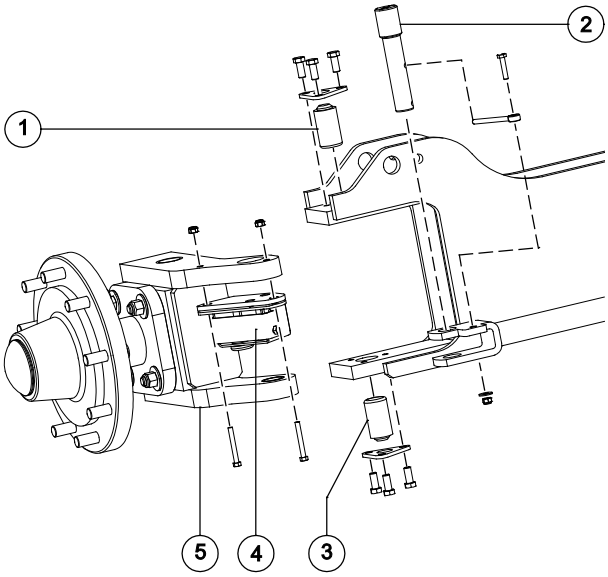
⚠WARNING Crushing hazard. The chassis will fall if not properly supported.

5 Remove the wheel lug bolts. Remove the tire and wheel assembly.

6 Support and secure the yoke and assembly with a lifting device.

Left side yoke:

7 Remove the retaining fasteners from the tie rod pivot pin.



1 upper king pin
2 tie rod pivot pin
3 lower king pin
4 steer sensor assembly
5 yoke assembly

8 Use a small pry bar to move the pivot pin down enough to clear the steer sensor assembly.

9 Remove the steer sensor actuator and spring from the tie rod pivot pin and set aside.

10 Remove the steer sensor assembly and set it aside.

11 Using a soft metal drift pin and a mallet, drive the pivot pin up to remove it.

Steer Axle Components

12 Remove the retaining fastener from the lower yoke king pin.

13 Use a small pry bar to remove the king pin.

14 Remove the retaining fastener from the upper yoke king pin.

15 Use a small pry bar to remove the king pin.

16 Remove the yoke assembly from the machine.

⚠ CAUTION Crushing hazard. The assembly may become unbalanced and fall if not properly supported and secured with a suitable lifting device when it is removed from the machine.

Right side yoke:

17 Remove the steer cylinder rue ring and clevis pin from the yoke and set aside.

18 Remove the tie rod rue ring and clevis pin from the yoke and set aside.

19 Remove the retaining fastener from the lower yoke king pin.

20 Use a small pry bar to remove the king pin.

21 Remove the retaining fastener from the upper yoke king pin.

22 Use a small pry bar to remove the king pin.

23 Remove the yoke assembly from the machine.

⚠ CAUTION Crushing hazard. The assembly may become unbalanced and fall if not properly supported and secured with a suitable lifting device when it is removed from the machine.

How to Remove a Drive Motor

NOTICE Component damage hazard. Repairs to the motor should only be performed by an authorized dealer.

NOTICE Component damage hazard. The work area and surfaces where this procedure will be performed must be clean and free of debris that could get into the hydraulic system and cause severe component damage. Dealer service is recommended.

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

1 Refer to Repair Procedure, *How to Remove the Yoke*.

2 Remove the drive motor mounting fasteners. Remove the drive motor from the yoke.

8-2
Steer Cylinder

How to Remove the Steer Cylinder

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

1 Tag, disconnect and plug the hydraulic hoses from the steer cylinder. Cap the fittings on the cylinder.

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

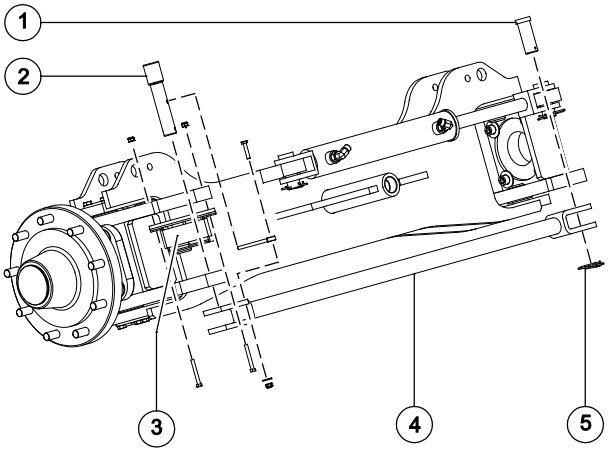
2 Remove the rue ring from each cylinder clevis pin. Remove the clevis pins.

3 Remove the steer cylinder from the machine.

8-3
Tie Rod

How to Remove the Tie Rod

1 Remove the rue ring from the clevis pin connecting the tie rod to the right side yoke assembly. Remove the clevis pin.



1 clevis pin
2 pivot pin
3 steer sensor assembly
4 tie rod
5 rue ring

2 Remove the retaining fasteners from the pivot pin connecting the tie rod to the left side yoke assembly.

3 Use a small pry bar to move the pivot pin down enough to clear the steer sensor assembly.

4 Remove the steer sensor actuator and spring from the tie rod pivot pin and set aside.

5 Remove the steer sensor assembly and set it aside.

6 Using a soft metal drift pin and a mallet, drive the pivot pin up to remove it.

7 Remove the tie rod.

Steer Axle Components

8-4 Oscillate Cylinder

How to Remove the Oscillate Cylinder

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

1 Tag, disconnect and plug the hydraulic hoses from the oscillate cylinder. Cap the fittings on the cylinder.

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

2 Chock both sides of the wheels at the non-steer end of the machine.

3 Center a lifting jack under the drive chassis just behind the front axle on the side of the machine the cylinder is being removed from.

4 Remove the pivot pin retaining fasteners.

5 Using a soft metal drift, remove the pivot pin.

Note: Adjust the lifting jack to reduce the load on the pivot pins. Do not lift the machine off of the ground.

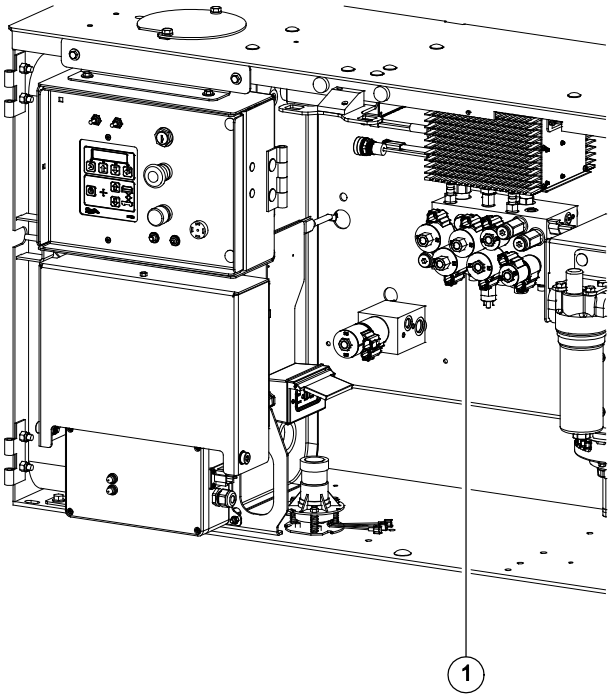
6 Remove the oscillate cylinder from the machine.

8-5 Oscillate Hoses

Test the Oscillate Axle Hose Routing

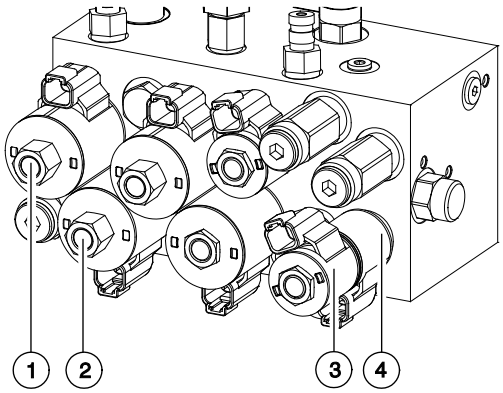
Note: Perform this procedure if the oscillate hoses have been removed or replaced.

1 Open the ground controls compartment and locate the function manifold.



1 function manifold

2 Disconnect the connector with the green/black wire from the oscillate right coil (item 2) and swap it with the connector with the blue wire from the steer right coil (item 3).



1 Green
2 Green/Black
3 Blue
4 Blue/Black

3 Disconnect the connector with the green wire from the oscillate left coil (item 1) and swap it with the connector with the blue/black wire from the steer left coil (item 4).

4 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

5 Slowly drive the machine in a safe direction and activate steer right.

⊙ Result: The right oscillate cylinder will extend and the left oscillate cylinder will retract.

6 Slowly drive the machine in a safe direction and activate steer left.

7 Turn the key switch to the off position.

8 Swap the connectors back to the correct coils using steps 2 an 3 as a reference. Continue to Check the Steering.

Check the Steering

1 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

2 Activate steer right and verify the machine steers to the right.

3 Activate steer left and verify the machine steers to the left.

4 Test the axle oscillate. Refer to Maintenance Section, *Test the Oscillate Axle*.

Steer Axle Components

8-6
Steer Angle Sensor

How to Replace the Steer Angle Sensor

The steer angle sensor, installed on the steer yoke, is monitored by the control system to determine steer angle. The control system uses the steer angle input, along with pre-programmed parameters, to vary the speed of each drive motor while steering to minimize tire scrub and to help minimize turning radius. Drive speed is also reduced proportionately depending on the steer angle to minimize lateral platform acceleration.

1 Adjust the steer tires so they are in a straight driving position.

2 Turn the key switch to the off position.

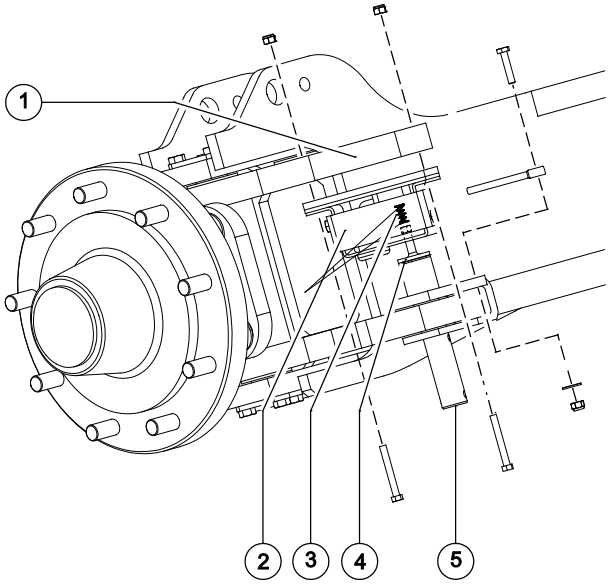
3 Push in the red Emergency Stop button to the off position at both the ground and platform controls and turn the key switch to the off position.

4 Remove the cable clamp securing the steer sensor cable to the chassis.

5 Tag and disconnect the steer sensor harness from the main harness.

6 Remove the steer sensor cover.

7 Remove the tie rod pivot pin retaining fasteners.



1 left yoke assembly
2 steer sensor cover
3 compression spring
4 steer sensor actuator
5 tie rod pivot pin

8 Use a small pry bar to move the pivot pin down enough to clear the steer sensor assembly.

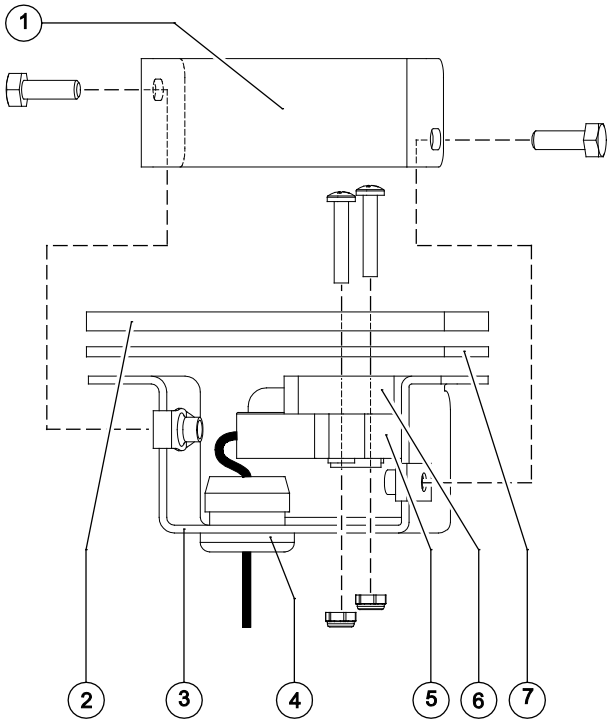
9 Remove the steer sensor actuator and spring from the tie rod pivot pin and set aside.

Note: Inspect the steer sensor actuator to make sure it is not broken or twisted.

Steer Axle Components

10 Remove the steer sensor assembly retaining fasteners. Remove the steer sensor assembly from the yoke.

11 Set the spacer plate aside.



1 steer sensor cover
2 spacer plate
3 steer sensor bracket
4 cable restraint
5 steer sensor
6 steer sensor spacer
7 steer sensor mounting plate

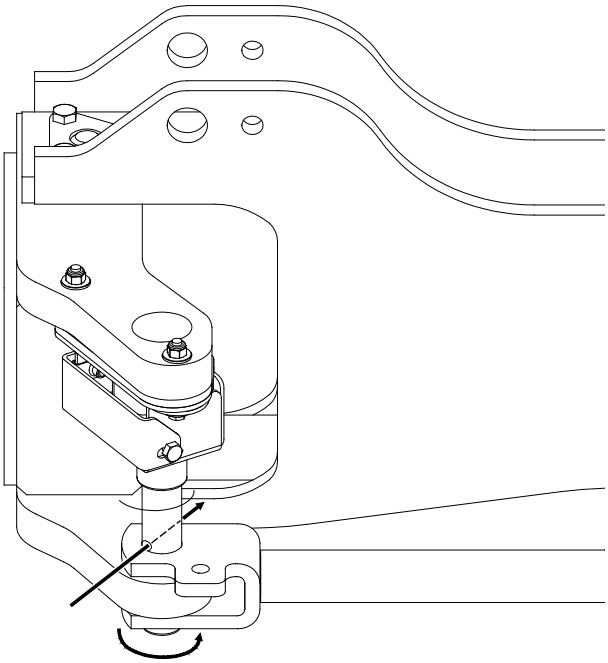
12 Pull the sensor harness through the cable restraint and sensor bracket.

13 Remove the retaining fasteners that secure the steer sensor and the sensor spacer to the mounting plate. Remove the steer sensor.

14 Install the new steer sensor.

15 Install the steer sensor assembly to the yoke.

16 Rotate the tie rod pivot pin until it is approximately 90° from the mounting tab on the tie rod.



17 Install the steer sensor actuator onto the tie rod pivot pin.

18 Insert the compression spring into the steer sensor and push the tie rod pivot pin up until the actuator hex pin is engaged into the steer sensor.

Note: Be sure the sensor actuator hex pin is engaged into the sensor.

19 Rotate the tie rod pivot pin counterclockwise approximately 90° and secure it to the tie rod.

20 Install the steer sensor cover.

21 Connect the steer sensor harness to the main harness and secure with the cable clamp.

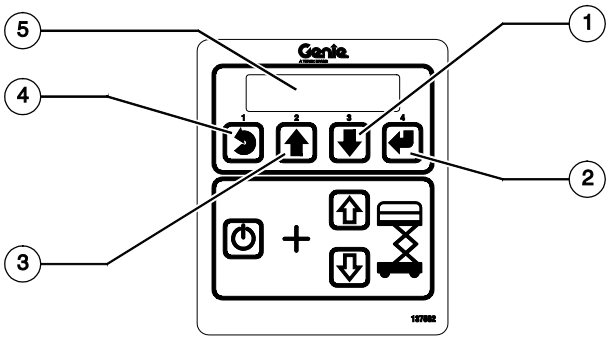
22 Calibrate the steer sensor. Refer to Repair Procedure, *How to Calibrate the Steer Angle Sensor*.

Steer Axle Components

How to Calibrate the Steer Angle Sensor

1 Turn the key switch to the ground controls position and pull out the red Emergency Stop button to the on position at the platform controls.

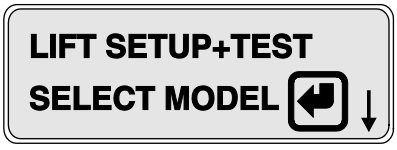
2 Press and hold the ground control scroll up and scroll down buttons.



1 scroll down button
2 enter button
3 scroll up button
4 escape button
5 LCD display

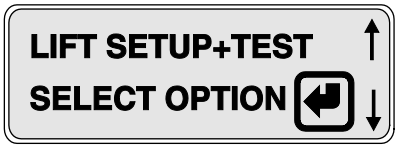
3 Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: The ground controls LCD display will show the following:



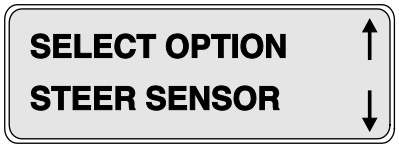
4 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

5 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.



6 Press the Enter button.

7 Use the Scroll Up or Scroll Down buttons to scroll to Select Option Steer Sensor.



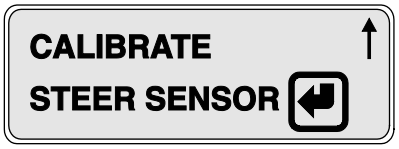
8 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



Note: Do not press the Enter button. Pressing the Enter button will disable the steer sensor.

9 Use the Scroll Up or Scroll Down buttons to scroll to Calibrate Steer Sensor.



10 Press the Enter button.

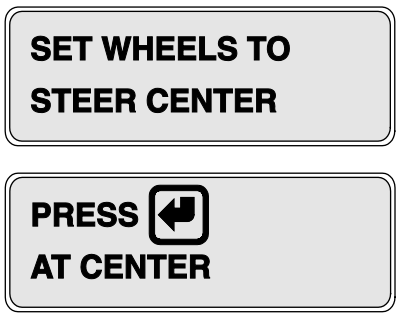
⊙ Result: The ground controls LCD display will show the following:

Note: The platform controls do not have to be connected at the chassis ground controls.



11 Press the Enter button.

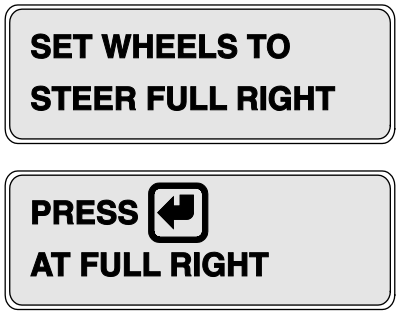
⊙ Result: The ground controls LCD display will show the following:



12 Use the platform drive controller steer function to align the steer tires with the drive chassis.

13 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



14 Use the platform drive controller steer function to turn the steer tires fully to the right.

15 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



16 Use the platform drive controller steer function to turn the steer tires fully to the left.

17 Press the Enter button.

⊙ Result: The ground controls LCD display will show the following:



Note: If any screens other than the one shown is displayed, repeat this procedure. If the problem persist, contact your local Genie Product Support.

18 Push in the red Emergency Stop button to the off position.

Non-steer Axle Components

9-1
Drive Motors

How to Remove a Drive Motor

The drive motors are AC powered and are a brushless design requiring very little maintenance. They have built-in speed and temperature sensors which is monitored by the ground controls (GCON). The speed sensor is a Hall-effect type and is part of the rear motor shaft bearing. The temperature switch will shut down the drive motor if it becomes excessively hot.

1 Disconnect the battery pack from the machine.

⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

2 Chock both sides of the wheels at the steer end of the machine.

3 Center a lifting jack under the drive chassis at the non-steer end of the machine.

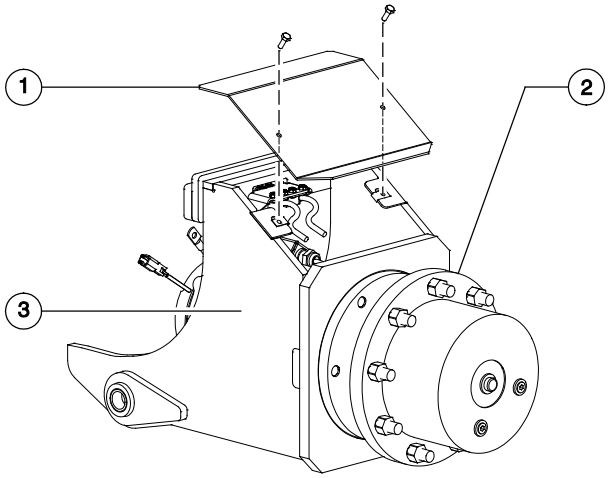
4 Loosen the wheel lug nuts. Do not remove them.

5 Raise the machine approximately 2 inches / 5 cm. Place blocks under the chassis for support.

⚠WARNING Crushing hazard. The chassis will fall if not properly supported.

6 Remove the wheel lug bolts. Remove the tire and wheel assembly.

7 Remove the axle cover.



1 axle cover
2 drive hub
3 axle assembly

8 Tag and disconnect the electrical connectors for the brake, speed and temperature sensors at the drive motor.

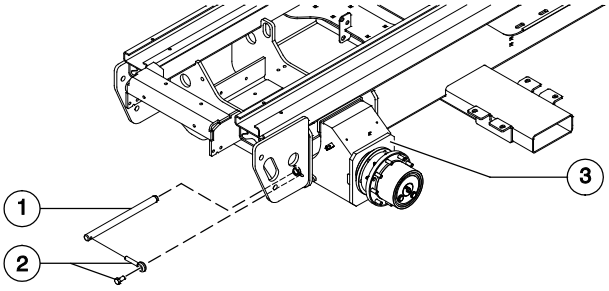
9 Tag and disconnect the electrical connectors for the oscillate limit switches.

10 Tag and disconnect the drive motor power cables from the motor controller in the ground controls compartment.

Note: The power cables will have to be pulled through the drive chassis when the axle assembly is removed.

Non-steer Axle Components

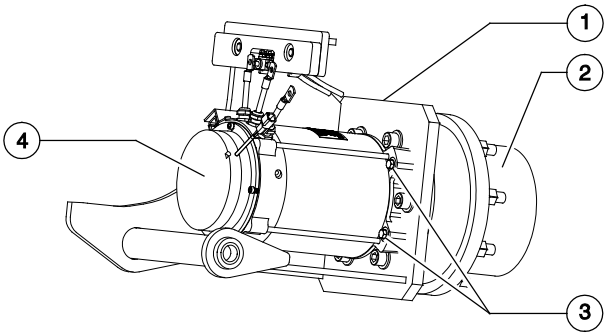
11 Using a suitable supporting device, secure the rear axle assembly. Do not apply pressure.



1 axle pivot pin
2 retaining fasteners
3 axle assembly

12 Remove the axle pivot pin retaining fasteners.

13 Using a soft metal drift, remove the axle pivot pin. Remove the axle assembly from the machine.



1 axle assembly
2 drive hub
3 retaining fasteners (x4)
4 drive motor

14 Remove the retaining fasteners that secure the drive motor to the drive hub.

15 Support and slide the drive motor shaft out of the drive hub. Remove the drive motor from the machine.

Non-steer Axle Components

9-2
Drive Hub

How to Remove a Drive Hub

NOTICE Component damage hazard. Repairs to the drive hub should only be performed by an authorized dealer.

1 Remove the drive motor. Refer to Repair Procedure, *How to Remove a Drive Motor*.

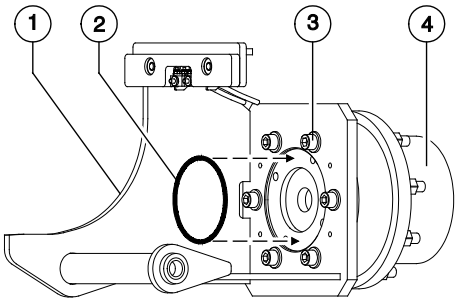
2 Using a suitable supporting device, secure the drive hub. Do not apply pressure.

3 Remove the drive hub retaining fasteners. Remove the drive hub.

⚠ CAUTION Crushing hazard. The drive hub may become unbalanced and fall if not properly supported and secured with a suitable lifting device when removed from the machine.

Note: There is an O-ring between the drive motor and drive hub. Be sure that it is in place when installing the drive motor to the drive hub.

Note: Refer to Specifications, *Fastener Torque Chart Specifications*.



1 axle assembly
2 o-ring
3 retaining fasteners
4 drive hub

10-1 Outrigger Cylinder

How to Remove an Outrigger Cylinder (if equipped)

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

1 Remove the mounting fasteners from the inside outrigger cylinder cover. Remove the cover.

2 Remove the outrigger hose cover.

3 Disconnect the outrigger limit switch and cylinder valve connectors.

4 Remove the mounting fasteners from the outside outrigger cover. Remove the cover.

5 Tag, disconnect and plug the hydraulic hoses from the outrigger cylinder. Cap the fittings on the cylinder.

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

6 Attach a lifting strap from an overhead crane to the barrel end of the outrigger cylinder for support. Do not apply any lifting pressure.

7 Remove the outrigger mounting fasteners. Slide the outrigger cylinder down and away from the machine.

⚠CAUTION Crushing hazard. The outrigger cylinder may become unbalanced and fall if not properly supported when removed from the machine.

Note: If the outrigger cylinder is being replaced, remove the foot pad assembly and install it on the replacement cylinder.

Note: After an outrigger cylinder has been installed, the machine must be re-calibrated. Refer to Repair Procedure, *Outrigger Calibration*.

Outrigger Components

10-2 Outrigger Calibration

The Electronic Control Module (ECM) is programmed to deactivate the drive and steer functions while the outriggers are deployed and activate an alarm when a signal is received from the outrigger level sensor, indicating the outriggers are not deployed or the machine is out of level.

The ECM is also used to calibrate the outrigger level sensor to achieve a levelness of 0° +/- 0.5° front to back and side to side, while the outriggers are deployed.

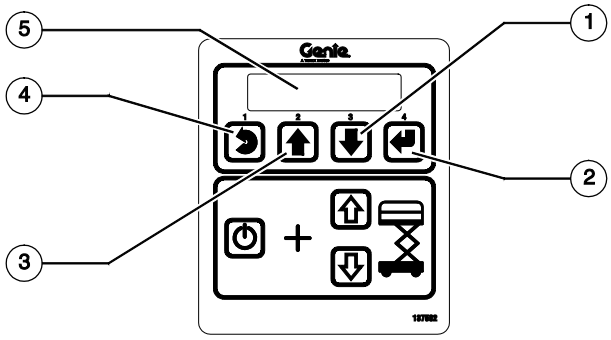
For further information or assistance, contact Genie Product Support.

How to Calibrate the Outrigger System

1 Move the machine to an area that has a firm, level surface and is free of obstructions.

2 Turn the key switch to the ground controls position and pull out the red Emergency Stop button to the on position at the platform controls.

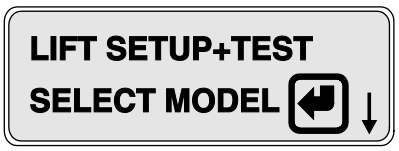
3 Press and hold the ground control scroll up and scroll down buttons.



1 scroll down button
2 enter button
3 scroll up button
4 escape button
5 LCD display

4 Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: The ground controls LCD display will show the following:



5 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

6 Use the Scroll Up or Scroll Down buttons to scroll to Machine Options.

7 Press the Enter button to select Machine Options.

8 Use the Scroll Up or Scroll Down buttons to scroll to Outriggers.

9 Press the Enter button to select Outriggers.

10 Use the Scroll Up or Scroll Down buttons to scroll to Calibrate Outriggers.

11 Press the Enter button to select Calibrate Outriggers.

12 Press and hold the Enter button while the system gathers data to calibrate the outrigger level sensor.

⚠WARNING Crushing hazard. Keep body parts away from outriggers during outrigger movement.

13 Continue holding the Enter button after the outrigger level sensor is calibrated. The outriggers will retract while the outrigger system gathers and saves data.

14 Continue holding the Enter button after the outriggers retract. The outriggers will now extend and the system will gather and save data to calibrate the outriggers.

15 Continue holding the Enter button after the outriggers extend. The outriggers will now retract while the outrigger system gathers and saves data.

⊙ Result: The alarms at the ground and platform controls should sound for 1 second. The outrigger system is calibrated.

Note: After installing a new outrigger level sensor, the new outrigger level sensor must be calibrated following this procedure.

Platform Overload Components

11-1
Platform Overload System (if equipped)

How to Calibrate the Platform Overload System (if equipped)



Machines with platform overload systems, proper calibration is essential to safe machine operation. An improperly calibrated platform overload system could result in the system failing to sense an overloaded platform. The stability of the machine is compromised and it could tip over.

Note: For troubleshooting information refer to Repair Procedure, *Troubleshooting the Platform Overload System*.

1 **Models with outriggers:** Deploy the outriggers and level the machine.

2 Apply a thin layer of dry film lubricant to the area of the chassis where the scissor arm wear pads make contact.

3 Using a suitable lifting device, place and secure the maximum rated load in the center of the platform deck.

GS-2669	1500 lb 680 kg
GS-3369	1000 lb 454 kg
GS-4069	800 lb 363 kg

4 Turn the key switch to ground controls and pull out the red Emergency Stop button to the on position at both ground and platform controls.

5 Raise the platform approximately 10 feet / 3 m.

6 Lower the platform until the down limit switch activates and the platform stops lowering.

7 Locate a supporting device under the platform. Do not apply any lifting pressure.

8 Loosen the retaining ring and remove the switch adjustment cover from the pressure switch.

Note: The pressure switch is located on the lower lift cylinder.

9 Using a small slotted screwdriver, turn the adjustment screw of the platform overload pressure switch one-quarter turn into the hydraulic line.

10 Push in the red Emergency Stop button to the off position at the ground controls.

11 Pull out the red Emergency Stop button to the on position at the ground controls. Wait 3 seconds.

⊙ Result: The alarm doesn't sound. Proceed to step 12.

⊠ Result: An alarm is sounding. Repeat this procedure beginning with step 9.

Note: The red Emergency Stop button must be cycled after each quarter turn of the nut to allow the platform overload system to reset.

Note: Wait a minimum of 3 seconds between each quarter turn of the nut to allow the platform overload system to reset.

Platform Overload Components

12 Remove the supporting device from under the platform.

13 Raise the platform to 13 ft / 4 m.

14 Lift the safety arm, move it to the center of the scissor arm and rotate down to a vertical position.

15 Lower the platform onto the safety arm.

16 Install the cover onto the platform overload pressure switch or switch box and securely tighten the cover retaining fasteners. Do not over tighten.

17 Apply Sentry Seal to one of the cover retaining fasteners where it contacts the platform overload pressure switch box.

18 Raise the platform and rotate the safety arm to the stowed position.

19 Lower the platform to the stowed position.

Check the Maximum Height Limit Switch

1 Using a suitable lifting device, place a test weight in the center of the platform floor. Secure the weight to the platform. Refer to the chart below.

GS-2669	1500 lb 680 kg
GS-3369	1000 lb 454 kg
GS-4069	800 lb 363 kg

2 Raise the platform to approximately 13 ft / 4 m.

3 Rotate the safety arm away from the machine and let it hang down.

4 Raise the platform until it activates the maximum height limit switch.

⊙ Result: The platform should stop raising and the alarm does not sound. Proceed to step 7.

⊠ Result: The platform continues to raise OR the alarm sounds. Proceed to step 5.

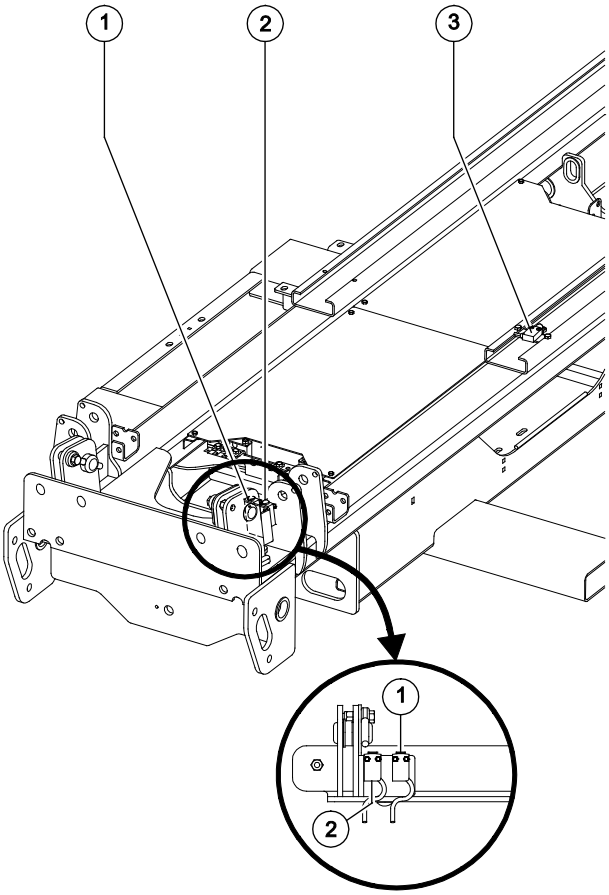
5 Lower the scissor assembly until the safety arm rest on the cross tube.

6 Adjust the maximum height limit switch by moving it towards the non-steer end of the machine. Repeat this procedure beginning with step 2.

7 Lower the platform enough to return the safety arm to the stowed position.

Platform Overload Components

8 Lower the platform to the stowed position. Remove the test weight.



Limit switch legend

1 down limit switch
2 load sense interrupt limit switch
3 maximum height limit switch

Platform Overload Components

Platform Overload System Troubleshooting

Condition	Possible Cause	Solution
Cannot lift rated load	Relief valve set too low	Increase relief valve pressure
At max. Height with rated load in platform, pressure switch alarm continues to sound	System needs to be reset	Turn off red emergency stop button, wait three seconds and turn machine back on
	Max. Height limit switch out of adjustment or faulty	Lower the up limit switch slightly or replace contacts
	Too much weight in platform	Put correct rated load in platform
	Pressure switch out of adjustment	Turn the pressure switch nut 1/4 turn into the hydraulic line
	Batteries are not fully charged	Charge batteries
	Overload system not adjusted properly	Repeat calibration procedure
	Slider channel not lubricated	Lubricate the slider channel
At down limit with rated load in platform, the pressure switch alarm continues to sound	System needs to be reset	Turn off red emergency stop button, wait three seconds and turn machine back on
	Down limit switch out of adjustment	Raise the down limit switch
	Too much weight in platform	Put correct rated load in platform
	Overload system not adjusted properly	Turn the pressure switch nut 1/4 turn into the hydraulic line or repeat calibration procedure

Platform Overload Components

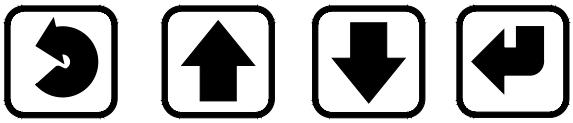
11-2 Platform Overload Recovery Message

If the ground controls LCD screen displays **OL: PLATFORM OVERLOADED**, the emergency lowering system has been used while the platform was overloaded.

How to Clear the Platform Overload Recovery Message

Note: This message shall be cleared by a person trained and qualified on the troubleshooting and repair of this machine.

Note: Use the following chart to identify the description of each LCD screen control button used in this procedure.



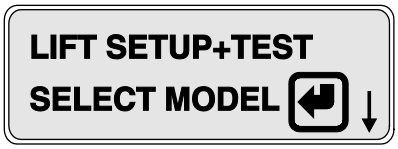
Escape Scroll up Scroll down Enter

1 Turn the key switch to the ground controls position and pull out the red Emergency Stop button to the on position at the platform controls.

2 Press and hold the ground control **scroll up** and **scroll down** buttons.

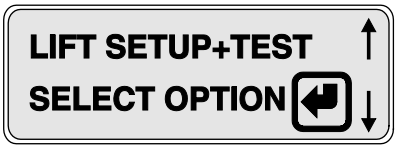
3 Pull out the red Emergency Stop button at the ground controls.

⊙ Result: The ground control LCD display will show the following.



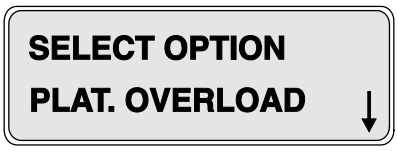
4 Press the **scroll down** button.

⊙ Result: The ground control LCD display will show the following.



5 Press the **enter** button.

⊙ Result: The ground control LCD display will show the following.



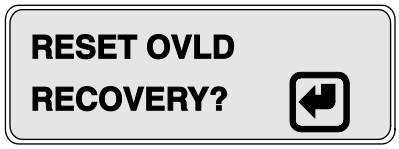
6 Press the **enter** button.

⊙ Result: The ground control LCD display will show the following.



7 Press and hold the **scroll down** button for 5 seconds.

⊙ Result: The ground control LCD display will show the following.



8 Press the **enter** button.

⊙ Result: The ground control LCD display will show the following.



9 Press the buttons in the following sequence: **(down)(down)(up)(enter)**.

Note: After each key press an asterisk (*) will appear on the second line of the LCD display.

⊙ Result: The ground control LCD display will show the following.



Note: After 3 seconds the LCD display will return to **SELECT OPTION PLAT. OVERLOAD**.

10 Push in the red Emergency stop button.

Fault Codes



Observe and Obey:

☑ Troubleshooting and repair procedures shall be completed by a person trained and qualified on the repair of this machine

☑ Immediately tag and remove from service a damaged or malfunctioning machine.

☑ Repair any machine damage or malfunction before operating the machine.

☑ Unless otherwise specified, perform each procedure with the machine in the following configuration:

- Machine parked on a firm, level surface
- Key switch in the off position with the key removed
- The red Emergency Stop button in the off position at both the ground and platform controls
- Wheels chocked
- All external AC power supply disconnected from the machine
- Platform in the stowed position

Before Troubleshooting:

☑ Read, understand and obey the safety rules and operating instructions in the appropriate operator's manual on your machine.

☑ Be sure that all necessary tools and test equipment are available and ready for use.

☑ Read each appropriate fault code thoroughly. Attempting short cuts may produce hazardous conditions.

☑ Be aware of the following hazards and follow generally accepted safe workshop practices.

⚠ DANGER Crushing hazard. When testing or replacing any hydraulic component, always support the structure and secure it from movement

⚠ WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

⚠ WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

⊙ Indicates that a specific result is expected after performing a series of steps.

☒ Indicates that an incorrect result has occurred after performing a series of steps.

Fault Codes

About This Section

When a malfunction is discovered, the fault code charts in this section will help a service professional pinpoint the cause of the problem. To use this section, basic hand tools and certain pieces of test equipment are required — voltmeter, ohmmeter, pressure gauges.

Definitions

GSDS – Genie SmartLink™ Diagnostic System

ECM – Electronic Control Module

DCON - Drive Controller

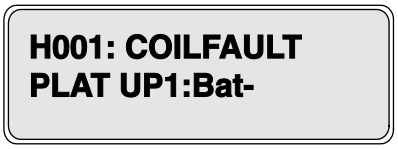
GCON – Ground Controls

PCON – Platform Controls

OIC – Operational Indicator Codes

DTC – Diagnostic Trouble Codes

GCON LCD Diagnostic Readout



The diagnostic readout displays alpha numeric codes that provide information about the machine operating status and about malfunctions.

The codes listed in the Diagnostic Trouble Code Charts describe malfunctions and can aid in troubleshooting the machine by pinpointing the area or component affected.

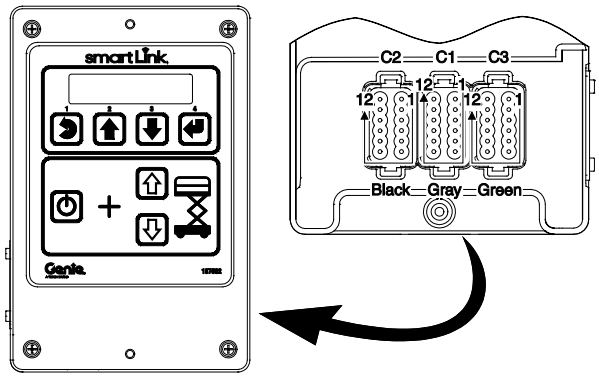
Models are listed below each code to assist in the troubleshooting codes for a specific model.

Fault Codes

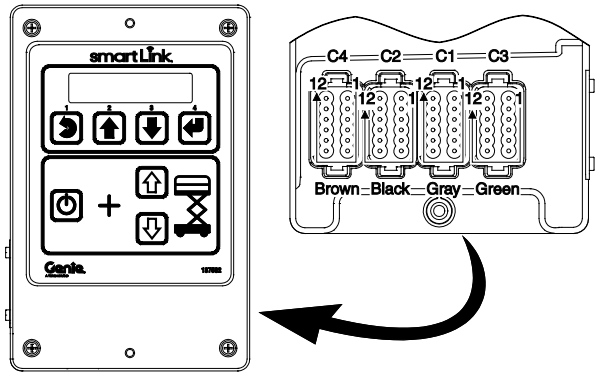
Genie SmartLink Diagnostic System

This machine is equipped with the Genie SmartLink™ Diagnostic System (GSDS). The GSDS indicates a machine malfunction has happened by displaying Operational Indicator Codes (OIC) and Diagnostic Trouble Codes (DTC). These codes are displayed at the Platform Controls and the Ground Controls. The Ground Controls will display a brief description of the code at the LCD display as well. Refer to the GCON I/O Maps, Operational Indicator Codes (OIC) and Diagnostic Trouble Codes (DTC) in this section, to assist in troubleshooting faults.

GCON ECM Connector Layout



Rear of Ground Controls ECM (models without outriggers)



Rear of Ground Controls ECM (models with outriggers)

GCON I/O MAP

Ground Controls Pin Number	Circuit Function	I/O Type	Wire Color
	C1 Connector - Gray		
C1-01	ECM / Logic Power	Power Input	RD
C1-02	PCON - E-Stop Power	Power Output	WH
C1-03	PCON - E-Stop Return	Power Input	BK
C1-04	Link to PCON - CAN HI	Data Bus	YL
C1-05	Link to PCON - CAN LOW	Data Bus	GR
C1-06	PCON - Ground	Ground Output	BR
C1-07	GCON - Ground	Ground Output	BR
C1-08	Key Switch - PCON Mode	Digital Input	BK
C1-09	Key Switch - GCON Mode	Digital Input	WH
C1-10	GCON - Emergency Stop	Digital Input	RD
C1-11	Accumulator Pressure Switch	Digital Input	OR/RD
C1-12	ECM Driver Power	Power Input	RD
	C2 Connector - Black		
C2-01	Platform Up Coil	Digital Output	OR
C2-02	Platform Down Coil	Digital Output	OR/BK
C2-03	Steer Left Coil	Digital Output	BL/BK
C2-04	Steer Right Coil	Digital Output	BL
C2-05	Oscillate Supply Coil	Digital Output	GR/WH
C2-06	Oscillate Right Coil	Digital Output	GR/BK
C2-07	Not Used		
C2-08	Brake Relay CR60	Digital Output	WH/RD
C2-09	Oscillate Left	Digital Output	GR
C2-10	Accumulator Coil	Digital Output	OR/RD
C2-11	Not Used		
C2-12	Not Used		

Fault Codes

GCON I/O MAP

Ground Controls Pin Number	Circuit Function	I/O Type	Wire Color
	C3 Connector - Green		
C3-01	Not Used		
C3-02	GCON - Alarm	Digital Output	WH/RD
C3-03	Sensor Power	Digital Output	RD
C3-04	Automotive Horn	Digital Output	WH
C3-05	Left Oscillate Limit Switch	Digital Input	GR/BK
C3-06	Right Oscillate Limit Switch	Digital Input	GR
C3-07	Down Limit Switch - LS6	Digital Input	OR
C3-08	Digital Level Sensor (if equipped)	Digital Input	RD/BK
C3-09	Platform Overload Pressure Switch (platform overload option)	Digital Input	BL
C3-10	Platform Overload Pressure Switch (platform overload option)	Digital Input	WH/BK
C3-11	Pump Speed Hz	Digital Input	OR/BK
C3-12	Sensor Ground	Digital Input	BK
	C4 Connector - Brown (Outrigger Option)		
C4-01	Left Front Outrigger Limit Switch	Digital Input	BK
C4-02	Right Front Outrigger Limit Switch	Digital Input	OR
C4-03	Left Rear Outrigger Limit Switch	Digital Input	BL
C4-04	Right Rear Outrigger Limit Switch	Digital Input	GR
C4-05	Level Sensor X Axis	Analog Input	GR/WH
C4-06	Level Sensor Y Axis	Analog Input	GR/BK
C4-07	Left Front Outrigger Coil	Digital Output	BK/WH
C4-08	Right Front Outrigger Coil	Digital Output	OR/WH
C4-09	Left Rear Outrigger Coil	Digital Output	BL/WH
C4-10	Right Rear Outrigger Coil	Digital Output	GR/WH
C4-11	Outrigger Extend Coil	Digital Output	WH/RD
C4-12	Outrigger Retract Coil	Digital Output	WH/BK

Fault Codes

Operation Indicator Codes (OIC)

These codes are generated by the electrical system to indicate machine operating status such as Off-level, Overload Cutout, Chassis Mode Operation during normal operation. These codes are not indicators of a device malfunction in the electrical system.

Code	Condition
LL	Off-Level
OL	Platform Overload (CE and Australia)
CH	Chassis Mode Operation
nd	No Drive (option)
Ld	Lifting Disabled (option)

Diagnostic Trouble Codes (DTC)

These codes are generated by the system to indicate that a device or circuit malfunction has been detected in the electrical system.
The types of Diagnostic Trouble Codes that may occur are explained below.

Type "HXXX" – Indicate a malfunction associated with devices that control hydraulic functions in the electrical system. The "HXXX" faults are divided into short circuit battery negative, short circuit to battery positive, open circuit and generic shorts. Examples of these devices are solenoid controlled hydraulic valves and motor controller.

Type "PXXX" – Indicate a malfunction associated with power type devices in the electrical system. The "PXXX" faults are divided into short circuit to battery negative, short circuit to battery positive, open circuit and generic shorts. Examples of these devices are horns, sensor power and alarms.

Type "UXXX" – Indicate a malfunction associated with user interface devices in the electrical system. The "UXXX" faults are divided into short circuit to battery negative, short circuit to battery positive, open circuit and generic shorts. Examples of these devices are GCON up and down switches and PCON drive joystick.

Type "FXXX" – Indicate a malfunction associated with machine feedback devices in the electrical system. The "FXXX" faults are divided into short circuit to battery negative, short circuit to battery positive, open circuit and generic shorts. Examples of these devices are limit switches, height sensors and pressure transducers.

Type "CXXX" – Indicate a malfunction associated with controls devices in the electrical system. Examples of these devices are platform controls and ground controls ECM.

Fault Codes

Troubleshooting "HXXX" and "PXXX" Faults

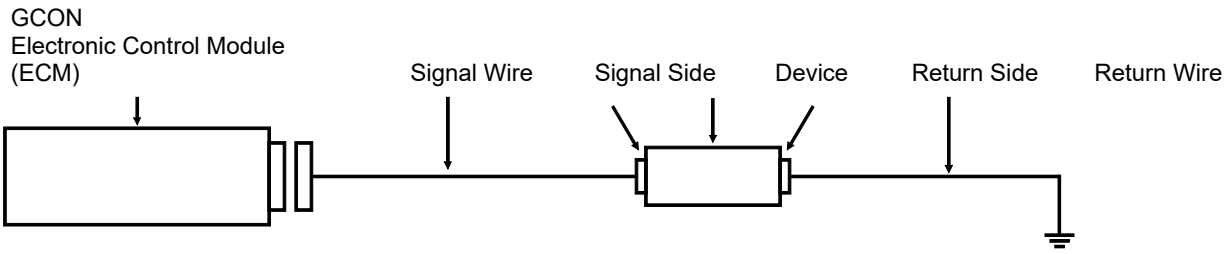
The procedure below illustrates typical steps for diagnosing and fixing faults of type "HXXX" and "PXXX".

Diagnostic Chart

1	Check the faulted device for a short or open circuit.	**No Good ➔**	Replace faulted device.
Good ↓			
2	Check short or open circuit of the harness or connector between Ground Controls and faulted device.	**No Good ➔**	Repair or replace harness an/or connector.
Good ↓		**No Good**	
3	Check GCON Electronic Control Module (ECM).	➔	Replace ECM.

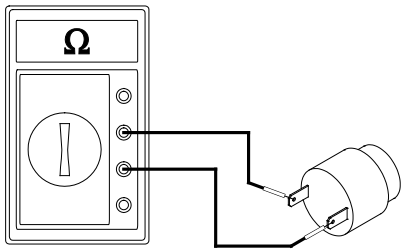
Wiring Diagram

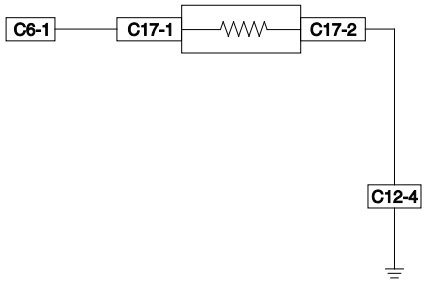
The wiring diagram shown below illustrates how fault type "HXXX" and "PXXX" devices are typically wired. The signal of these types of devices originates at the Ground Controls and terminates at system ground.



In order to successfully troubleshoot "HXXX" or "PXXX" type faults, the entire faulted out circuit must be investigated.

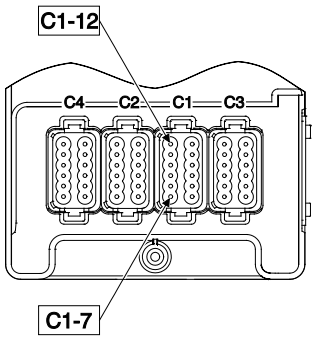
Fault Inspection Procedure

1	Check the device associated with the faulted circuit		
	1 Disconnect the faulted device connector. 2 Using a multi-meter, measure resistance between the two terminals of the faulted device. 3 Resistance should be as follows. **Device** — **Typical Resistance** Solenoid Valve, Drive — 27.2 Ω Solenoid Valve, Steer — 19 Ω Solenoid Valve, Platform Up — 25 Ω Solenoid Valve, Platform Down — 6.25 Ω GCON and PCON Alarm — >1M Ω Automotive Horn — 1.0 Ω Contactor Coil — 47 Ω		
OK	**Go to step 2**	No Good	**Replace faulted device**

2	Check the harness between the ground controls and the faulted device		
	1 Disconnect the GCON ECM connectors, C1, C2 and C3. (or C4 if equipped with outriggers). 2 Disconnect the faulted device connector. 3 Check the continuity between the GCON ECM connector and the signal side of the faulted device. ⊙ Result: Resistance should be close to 0 Ω. 4 Check the continuity between the return side of faulted device and system ground. ⊙ Result: Resistance should be close to 0 Ω. 5 Check resistance between return side and signal side of the harness plug of faulted device. ⊙ Result: Resistance should be 1M Ω or higher.		
OK	**Go to step 3**	No Good	**Replace or repair harness**

3	Check the GCON ECM

Fault Codes



1 Disconnect the GCON ECM connectors, C1, C2 and C3. (or C4 if equipped with outriggers).

2 For short to B- type faults, measure resistance between pins C1-7 (ground) and the GCON pin associated with the fault code. Refer to the GCON I/O Map in this section to identify the faulted out circuit pin.

3 Short to ground resistance should be greater than 5k Ω.

4 For short to B+ type faults, measure resistance between pins C1-12 (driver power) and the GCON pin associated with the fault code. Refer to the GCON I/O Map in this section to identify the faulted out circuit pin.

5 Short to power resistance should be greater than 50k Ω.

No Good	**Replace GCON ECM**

Type "HXXX" Faults

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
H001	H001:COILFAULT PLAT UP1:Bat-	Short circuit of the platform up #1 circuit to battery negative.	• Short circuit in platform up #1 harness. • Platform up #1 coil short circuit. • GCON ECM.	Platform up function inhibited.
H002	H002:COILFAULT PLAT UP1:Open	Open circuit in the platform up #1 circuit.	• Short circuit in platform up #1 harness. • Platform up #1 coil short circuit. • GCON ECM.	Platform up function inhibited.
H003	H003:COILFAULT PLAT UP1:Bat+	Short circuit of the platform up #1 circuit to battery positive.	• Short circuit in platform up #1 harness. • Platform up #1 coil short circuit. • GCON ECM.	All functions inhibited except platform down.
H009	H009:COILFAULT PLAT DOWN1:Bat+	Short circuit of the platform down #1 circuit to battery positive.	• Short circuit in platform down #1 harness. • Platform down #1 coil short circuit. • GCON ECM.	All functions inhibited.
H027	H027:COILFAULT STEER RT:Bat+	Short circuit of the steer right circuit to battery positive.	• Short circuit in steer right harness. • Steer right coil short circuit. • GCON ECM.	All functions inhibited except platform down.
H030	H030:COILFAULT STEER LT:Bat+	Short circuit of the steer left circuit to battery positive.	• Short circuit in steer left harness. • Steer left coil short circuit. • GCON ECM.	All functions inhibited except platform down.
H043	H043:COIL FAULT BRAKE REL:Bat-	Short circuit of the brake circuit to battery negative.	• Short circuit in brake release enable harness. • Brake release relay short circuit. • GCON ECM.	All functions inhibited except platform down.
H045	H045:COILFAULT BRAKE REL:Bat+	Short circuit of the brake circuit to battery positive.	• Short circuit in brake release enable harness. • Brake release relay short circuit. • GCON ECM.	All functions inhibited except platform down.
H049	H049:COILFAULT O/R EXTEND:Bat-	Short circuit of the outrigger extend coil to battery negative.	• Short circuit in outrigger extend coil harness. • Outrigger extend coil short circuit. • GCON ECM.	Outrigger extend function disabled.
H050	H050:COIL FAULT O/R EXTEND:Open	Open circuit in the outrigger extend coil circuit.	• Open circuit in outrigger extend coil harness. • Outrigger extend coil open circuit. • GCON ECM.	Outrigger extend function disabled.
H051	H051:COILFAULT O/R EXTEND:Bat+	Short circuit of the outrigger extend coil to battery positive.	• Short circuit in outrigger extend coil harness. • Outrigger extend coil short circuit. • GCON ECM.	All functions inhibited except platform down.
H052	H052:COILFAULT O/R RETRACT:Bat-	Short circuit of the outrigger retract coil to battery negative.	• Short circuit in outrigger retract coil harness. • Outrigger retract coil short circuit. • GCON ECM.	Outrigger retract function disabled.
H053	H053:COILFAULT O/R RET:Open	Open circuit in the outrigger retract coil circuit.	• Open circuit in outrigger retract coil harness. • Outrigger retract coil open circuit. • GCON ECM.	Outrigger retract function disabled.
H054	H054:COILFAULT O/R RETRACT:Bat+	Short circuit of the outrigger retract coil to battery positive.	• Short circuit in outrigger retract coil harness. • Outrigger retract coil short circuit. • GCON ECM.	All functions inhibited except platform down.
H057	H057:COILFAULT LF RIGGER:Bat+	Short circuit of the left front outrigger coil to battery positive.	• Short circuit in left front outrigger coil harness. • Left front outrigger coil short circuit. • GCON ECM.	All functions inhibited except platform down.
H060	H060:COILFAULT LR RIGGER:Bat+	Short circuit of the left rear outrigger coil to battery positive.	• Short circuit in left rear outrigger coil harness. • Left rear outrigger coil short circuit. • GCON ECM.	All functions inhibited except platform down.
H063	H063:COILFAULT RF RIGGER:Bat+	Short circuit of the right front outrigger coil to battery positive.	• Short circuit in right front outrigger coil harness. • Right front outrigger coil short circuit. • GCON ECM.	All functions inhibited except platform down.

Fault Codes

Type "HXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
H066	H066:COILFAULT RR RIGGER:Bat+	Short circuit of the right rear outrigger coil to battery positive.	• Short circuit in right rear outrigger coil harness. • Right rear outrigger coil short circuit. • GCON ECM.	All functions inhibited except platform down.
H074	H074:COILFAULT LF RIGGER	Short circuit of the left front outrigger circuit to battery positive/negative or open circuit.	• Short or open circuit in left front outrigger harness. • Left front outrigger coil short or open circuit. • GCON ECM.	Left front outrigger function inhibited.
H075	H075:COILFAULT LR RIGGER	Short circuit of the left rear outrigger circuit to battery positive/negative or open circuit.	• Short or open circuit in left rear outrigger harness. • Left rear outrigger coil short or open circuit. • GCON ECM.	Left rear outrigger function inhibited.
H076	H076:COILFAULT RF RIGGER	Short circuit of the right front outrigger circuit to battery positive/negative or open circuit.	• Short or open circuit in right front outrigger harness. • Right front outrigger coil short or open circuit. • GCON ECM.	Right front outrigger function inhibited.
H077	H077:COILFAULT RR RIGGER	Short circuit of the right rear outrigger circuit to battery positive/negative or open circuit.	• Short or open circuit in right rear outrigger harness. • Right rear outrigger coil short or open circuit. • GCON ECM.	Right rear outrigger function inhibited.
H078	H078:COILFAULT PLAT DOWN 1	Short circuit of the platform down #1 circuit to battery positive/negative or open circuit.	• Short or open circuit in platform down #1 harness. • Platform down #1 coil short or open circuit. • GCON ECM.	Platform down function inhibited.
H080	H080:COILFAULT STEER LEFT	Short circuit of the steer left circuit to battery negative or open circuit.	• Short or open circuit in steer left harness. • Steer left coil short or open circuit. • GCON ECM.	Steer left function inhibited.
H081	H081:COILFAULT STEER RIGHT	Short circuit of the steer right circuit to battery negative or open circuit.	• Short or open circuit in steer right harness. • Steer right coil short or open circuit. • GCON ECM.	Steer right function inhibited.
H084	H084:COILFAULT OSC SUPPLY:Bat+	Short circuit of the oscillate supply circuit to battery positive.	• Short circuit in oscillate supply harness. • Oscillate supply coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H085	H085:COILFAULT OSC RIGHT:Bat-	Short circuit of the oscillate right circuit to battery negative.	• Short circuit in oscillate right harness. • Oscillate right coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H086	H086:COILFAULT OSC RIGHT:Open	Open circuit of the oscillate right circuit.	• Open circuit in oscillate right harness. • Oscillate right coil open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H087	H087:COILFAULT OSC RIGHT:Bat+	Short circuit of the oscillate right circuit to battery positive.	• Short circuit in oscillate right harness. • Oscillate right coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H088	H088:COILFAULT OSC LEFT:Bat-	Short circuit of the oscillate left circuit to battery negative.	• Short circuit in oscillate left harness. • Oscillate left coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.

Type "HXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
H089	H089:COILFAULT OSC LEFT:Open	Open circuit of the oscillate left circuit.	• Open circuit in oscillate left harness. • Oscillate left coil open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H090	H090:COILFAULT OSC LEFT:Bat+	Short circuit of the oscillate left circuit to battery positive.	• Short circuit in oscillate left harness. • Oscillate left coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H091	H091:COILFAULT ACCUM:Bat-	Short circuit of the accumulator circuit to battery negative.	• Short circuit in accumulator harness. • Accumulator coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H092	H092:COILFAULT ACCUM:Open	Open circuit of the accumulator circuit.	• Open circuit in accumulator harness. • Accumulator coil open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H093	H093:COILFAULT ACCUM:Bat+	Short circuit of the accumulator circuit to battery positive.	• Short circuit in accumulator harness. • Accumulator coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H105	H105:COILFAULT OSC SUPPLY	Short circuit of the oscillate supply circuit to battery positive/negative or open circuit.	• Short or open circuit in oscillate supply harness. • Oscillate supply coil short or open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H116	H116:COILFAULT EXTEND/RETRACT	Short circuit of the outrigger supply circuit to battery positive/negative or open circuit.	• Short or open circuit in outrigger harness. • Outrigger supply coil short or open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.

Fault Codes

Type "PXXX" Faults

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
P001	P001:PWRFAULT SW PWR:Bat-	Short circuit of the switched power #1 circuit to battery negative.	• Short circuit in switched power #1, down limit switch or digital tilt switch harness. • GCON ECM.	All functions inhibited.
P003	P003:PWRFAULT SW PWR1:Bat+	Short circuit of the switched power #1 circuit to battery positive.	• Short circuit in switched power #1, down limit switch or digital tilt switch harness. • GCON ECM.	All functions inhibited.
P004	P004:DEVICEFAULT HORN:Bat-	Short circuit of the automotive horn circuit to battery negative.	• Short circuit in automotive horn harness. • Automotive horn short circuit. • GCON ECM.	Automotive horn inhibited.
P005	P005:DEVICEFAULT HORN:Open	Open circuit of the automotive horn circuit.	• Open circuit in automotive horn harness. • Automotive horn open circuit. • GCON ECM.	Automotive horn inhibited.
P006	P006:DEVICEFAULT HORN:Bat+	Short circuit of the automotive horn circuit to battery positive.	• Short circuit in automotive horn harness. • Automotive horn short circuit. • GCON ECM.	Automotive horn inhibited.
P007	P007:DEVICEFAULT GCON ALARM:Bat-	Short circuit of the GCON alarm circuit to battery negative.	• Short circuit in GCON alarm harness. • GCON alarm short circuit. • GCON ECM.	GCON alram inhibited.
P009	P009:DEVICEFAULT GCON ALARM:Bat+	Short circuit of the GCON alarm circuit to battery positive.	• Short circuit in GCON alarm harness. • GCON alarm short circuit. • GCON ECM.	GCON alram inhibited.
P013	P013:PWRFAULT PCON PWRET:Bat-	Short circuit of the PCON power return circuit to battery negative.	• Short circuit in PCON power return harness. • GCON ECM.	All functions inhibited.
P015	P015:PWRFAULT PCON PWRET:Bat+	Short circuit of the PCON power return circuit to battery positive.	• Short circuit in PCON power return harness. • GCON ECM.	All functions inhibited.
P018	P018:PWRFAULT PCON POWER:Bat-	Short circuit of the PCON power circuit to battery negative.	• Short circuit in PCON power harness. • GCON ECM.	All functions inhibited.
P019	P019:PWRFAULT PCON POWER:Bat+	Short circuit of the PCON power circuit to battery positive.	• Short circuit in PCON power harness. • GCON ECM.	All functions inhibited.
P023	P023:PUMPMOTOR VOLTAGE NOT OK	Pump motor voltage out of range.	• Pump voltage to low. • Pump voltage to high. • Right rear DCON ECM.	All functions inhibited.
P025	P025:PUMPMOTOR CURRENT FEEDBK	Open or short circuit of the P- circuit from the right rear drive controller to the pump motor.	• Open or short circuit in pump motor P- cable. • Faulty pump. • Right rear DCON ECM.	All functions inhibited.
P026	P026:MOTOR RR VOLTAGE NOT OK	Open or short circuit of the U or W circuit from the right rear drive controller to the right rear drive motor.	• Open circuit in right rear drive motor U or W cable. • Right rear drive motor. • Right rear DCON ECM.	All functions inhibited.
P027	P027:MOTOR LR VOLTAGE NOT OK	Open or short circuit of the U or W circuit from the left rear drive controller to the left rear drive motor.	• Open circuit in left rear drive motor U or W cable. • Left rear drive motor. • GCON ECM.	All functions inhibited.
P028	P028:CONTACTOR STUCK CLOSED	Main contactor (PR1) stuck in the closed position.	• Short circuit in main contactor harness. • Faulty contactor. • Right rear DCON ECM.	All functions inhibited.
P029	P029:CONTACTOR DOES NOT CLOSE	Main contactor (PR1) stuck in the open position.	• Open circuit in main contactor harness. • Faulty contactor. • Right rear DCON ECM.	All functions inhibited.
P030	P030:COILFAULT LC RR:Open	Short circuit of the main contactor (PR1) coil to battery negative or open circuit.	• Short or open circuit in main contactor harness. • Faulty contactor. • Right rear DCON ECM.	All functions inhibited.
P031	P031:COILFAULT BRAKE/LC RR:Bat+	Short or open circuit of the right rear brake coil circuit.	• Short or open circuit in right rear brake harness. • Short or open circuit in right rear brake coil • Right rear DCON ECM.	All functions inhibited.

Type "PXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
P032	P032:COILFAULT BRAKE/LC LR:Bat+	Short or open circuit of the left rear brake coil circuit.	• Short or open circuit in left rear brake harness. • Short or open circuit in left rear brake coil. • Left rear DCON ECM.	All functions inhibited.
P035	P035:COILFAULT BRAKE RR:Bat-	Short circuit of the right rear coil circuit (B5) to battery negative. Brake circuit miswired.	• Short circuit in right rear brake harness. • Short circuit in right rear brake coil. • Right rear brake harness miswired. • Right rear DCON ECM.	All functions inhibited.
P036	P036:COILFAULT BRAKE LR:Bat-	Short circuit of the left rear brake coil circuit (B5) to battery negative. Brake circuit miswired.	• Short circuit in left rear brake harness. • Short circuit in left rear brake coil. • Left rear brake harness miswired. • Left rear DCON ECM.	All functions inhibited.
P037	P037:BATTERY OUT OF RANGE	Battery voltage is out of range at startup.	• Short or open circuit in voltage sensor circuits. • Low batteries. • Faulty battery. • Battery charger connected to AC power source. • Left or right DCON ECM.	All functions inhibited.
P038	P038:DEVICEFAULT BAT BALANCER	Battery pack out of balance.	• Short or open circuit in voltage sensor circuits. • Faulty battery balancer. • Faulty battery. • Battery terminal corrosion. • Loose battery terminal. • GCON ECM.	All functions operate.
P039	P039:DEVICEFAULT BRAKE PWR RELAY	Short or open circuit of the brake relay contact or coil.	• Short or open circuit in brake relay harness. • Brake relay contact stuck closed. • Faulty brake relay. • GCON ECM.	All functions inhibited.
P040	P040:COILFAULT BRAKE PWR OPEN	Short or open circuit of the brake relay contact or coil to battery negative.	• Short or open circuit in brake relay harness. • Faulty brake relay. • Left or right DCON ECM. • GCON ECM.	All functions inhibited.

Fault Codes

Type "UXXX" Faults

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
U001	U001:SWITCHFAULT GCON MAIN FTN EN	Short circuit of the GCON main function enable switch at system startup.	• Short circuit of the GCON main function enable switch. • GCON ECM.	All GCON functions inhibited.
U002	U002:SWITCHFAULT GCON PLAT UP	Short circuit of the GCON up directional switch at system startup.	• Short circuit of the GCON up directional switch. • GCON ECM.	All GCON functions inhibited except platform up.
U003	U003:SWITCHFAULT GCON PLAT DOWN	Short circuit of the GCON down directional switch at system startup.	• Short circuit of the GCON down directional switch. • GCON ECM.	All GCON functions inhibited except platform down.
U004	U004:SWITCHFAULT GCON LCD UP	Short circuit of the GCON LCD scroll up switch at system startup.	• Short circuit of the GCON LCD scroll up switch. • GCON ECM.	All GCON LCD menu functions inhibited.
U005	U005:SWITCHFAULT GCON LCD DOWN	Short circuit of the GCON LCD scroll down switch at system startup.	• Short circuit of the GCON LCD scroll down switch. • GCON ECM.	All GCON LCD menu functions inhibited.
U006	U006:SWITCHFAULT GCON LCD ENTER	Short circuit of the GCON LCD enter switch at system startup.	• Short circuit of the GCON LCD enter switch. • GCON ECM.	All GCON LCD menu functions inhibited.
U007	U007:SWITCHFAULT GCON LCD ESCAPE	Short circuit of the GCON LCD escape switch at system startup.	• Short circuit of the GCON LCD escape switch. • GCON ECM.	All GCON LCD menu functions inhibited.
U015	U015:SWITCHFAULT PCON STEER LEFT	Short circuit of the PCON steer left switch at system startup.	• Short circuit of the PCON steer left switch. • GCON ECM.	All PCON drive and steer functions inhibited.
U016	U016:SWITCHFAULT PCON STEER RIGHT	Short circuit of the PCON steer right switch at system startup.	• Short circuit of the PCON steer right switch. • GCON ECM.	All PCON drive and steer functions inhibited.
U017	U017:SWITCHFAULT PCON HORN	Short circuit of the PCON horn switch at system startup.	• Short circuit of the PCON horn switch. • GCON ECM.	PCON horn switch function inhibited.

Type "UXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
U033	U033:JSTICKFAULT OUT OF CAL RANGE	PCON drive joystick signal is outside acceptable calibration.	• PCON drive joystick is not in neutral position range at system startup. • PCON joystick. • GCON ECM.	All drive and steer functions inhibited.
U034	U034:JSTICKFAULT OUT OF RANGE:HI	Short circuit of the PCON drive joystick signal to battery positive at system startup.	• Short circuit of the PCON drive joystick signal circuit. • PCON joystick. • GCON ECM.	All drive and steer functions inhibited.
U035	U035:JSTICKFAULT OUT OF RANGE:LO	Short circuit of the PCON drive joystick signal to battery negative at system startup.	• Short circuit of the PCON drive joystick signal circuit. • PCON joystick. • GCON ECM.	All drive and steer functions inhibited.
U036	U036:SWITCHFAULT GCON + PCON:ON	Mis-wiring or short circuit of GCON key switch.	• Short circuit of the GCON key switch harness. • GCON key switch. • GCON ECM.	All functions inhibited.
U037	U037:SWITCHFAULT FOOTSW PRESSED	Foot switch or Enable switch depressed at startup.	• Enable switch activated at startup. • Enable switch contact stuck closed. • PCON ECM.	All drive and steer functions inhibited.
U038	U038:SWITCHFAULT FOOTSWITCH:Bat+	Short circuit of the PCON power circuit to enable switch to battery positive.	• Short circuit in PCON power harness. • Enable switch shorted battery positive. • PCON ECM.	All drive and steer functions inhibited.
U039	U039:SWITCHFAULT FOOTSW:Open/Bat-	Open or short circuit of the PCON power circuit to enable switch to battery negative.	• Open or short circuit in PCON power harness. • Enable switch short or open to battery negative. • PCON ECM.	All drive and steer functions inhibited.
U042	U042:SWITCHFAULT PCON DRIVE MODE	PCON drive mode switch stuck closed, or depressed prior to startup.	• Drive mode switch stuck closed. • Drive mode switch is depressed at system startup. • PCON ECM.	Drive functions inhibited.
U043	U043:SWITCHFAULT PCON OR MODE	PCON outrigger mode switch stuck closed, or depressed prior to startup.	• Outrigger mode switch stuck closed. • Outrigger mode switch is depressed at system startup. • PCON ECM.	Outrigger extend / retract function inhibited.
U045	U045:SWITCHFAULT PCON DRIVE EN	Short circuit of the PCON drive enable switch at system startup.	• Short circuit of the PCON drive enable switch. • PCON ECM. • GCON ECM.	All drive and steer functions inhibited.
U046	U046:SWITCHFAULT PCON LIFT MODE	PCON lift mode fault	• PCON lift mode switch is depressed at system startup. • PCON ECM.	All functions operate except platform up or down.

Fault Codes

Type "FXXX" Faults

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
F003	F003:SWITCHFAULT DOWN LIMIT1:Bat+	Short circuit of the down limit #1 switch at system startup.	• Short circuit of the down limit switch circuit. • Down limit #1 switch short circuit. • GCON ECM.	All functions inhibited except platform down.
F007	F007:SWITCHFAULT CHASSISTILT:Bat+	Short circuit of the Chassis Tilt Sensor circuit to battery positive.	• Short circuit in the chassis tilt sensor • Faulty tilt sensor • GCON ECM.	All functions inhibited except platform down.
F012	F012:SENSORFAULT LEVEL PITCH:Bat+	Short circuit of the Level Pitch Sensor circuit to battery positive.	• Short circuit in the level pitch sensor circuit. • Faulty level sensor. • GCON ECM.	All functions inhibited.
F013	F013:SENSORFAULT LEVEL PITCH:Bat-	Short circuit of the Level Pitch Sensor circuit to battery negative.	• Short circuit in the level pitch sensor circuit. • Faulty level sensor. • GCON ECM.	All functions inhibited.
F014	F014:SENSORFAULT LEVEL ROLL:Bat+	Short circuit of the Level Roll Sensor circuit to battery positive.	• Short circuit in the level roll sensor circuit. • Faulty level sensor. • GCON ECM.	All functions inhibited.
F015	F015:SWITCHFAULT LEVEL ROLL:Bat-	Short circuit of the Level Roll Sensor circuit to battery negative.	• Short circuit in the level roll sensor circuit. • Faulty level sensor. • GCON ECM.	All functions inhibited.
F032	F032:SWITCHFAULT OVLD SWITCH:Bat+	Short circuit of pressure switch to battery positive.	• Short circuit in the limit switch harness. • GCON ECM.	All functions inhibited.
F033	F033:SWITCHFAULT OVLD:Open/Bat-	Open or short circuit of pressure switch.	• Open or short circuit in the limit switch harness. • GCON ECM.	All functions inhibited.
F037	F037:SWITCHFAULT LF RIGGER:Bat+	Short circuit of the left front outrigger limit switch to battery positive.	• Short circuit of the left front outrigger limit switch. • Short circuit in outrigger harness. • GCON ECM.	Left front outrigger inhibited if outrigger extend is activated. Outrigger can still be retracted.
F039	F039:SWITCHFAULT RF RIGGER:Bat+	Short circuit of the right front outrigger limit switch to battery positive.	• Short circuit of the right front outrigger limit switch. • Short circuit in outrigger harness. • GCON ECM.	Right front outrigger inhibited if outrigger extend is activated. Outrigger can still be retracted.
F041	F041:SWITCHFAULT LR RIGGER:Bat+	Short circuit of the left rear outrigger limit switch to battery positive.	• Short circuit of the left rear outrigger limit switch. • Short circuit in outrigger harness. • GCON ECM.	Left rear outrigger inhibited if outrigger extend is activated. Outrigger can still be retracted.
F043	F043:SWITCHFAULT RR RIGGER:Bat+	Short circuit of the right rear outrigger limit switch to battery positive.	• Short circuit of the right rear outrigger limit switch. • Short circuit in outrigger harness. • GCON ECM.	Right rear outrigger inhibited if outrigger extend is activated. Outrigger can still be retracted.
F045	F045:SWITCHFAULT LEFT AXLE:Bat+	Short circuit of the left axle operational limit switch to battery positive.	• Short circuit of the left axle operational limit switch. • Short circuit in axle limit switch harness. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F047	F047:SWITCHFAULT RIGHT AXLE:Bat+	Short circuit of the right axle operational limit switch to battery positive.	• Short circuit of the right axle operational limit switch. • Short circuit in axle limit switch harness. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.

Type "FXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
F049	F049:SENSORFAULT PUMP SPEED:Bat+	Short circuit of the pump speed sensor to battery positive.	• Short circuit of the pump speed sensor. • Short circuit in pump speed sensor harness. • GCON ECM.	All functions operate.
F050	F050:SENSORFAULT PUMP:Open/Bat-	Short circuit of the pump speed sensor to battery negative or open circuit.	• Short or open circuit of the pump speed sensor. • Short or open circuit in pump speed sensor harness. • GCON ECM.	All functions operate.
F051	F051:SWITCHFAULT ACC PRESS:Bat+	Short circuit of the accumulator pressure switch to battery positive.	• Short circuit of the accumulator pressure switch. • Short circuit in function manifold harness. • GCON ECM. • Faulty hydraulic pump	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F052	F052:SWITCHFAULT ACC PRESS:Bat-	Short circuit of the accumulator pressure switch to battery negative.	• Short circuit of the accumulator pressure switch. • Short circuit in function manifold harness. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F053	F053:DCON RR ECM THERM PROTECTION	Right rear drive controller, thermal protection senses that temperature has exceeded 185° F / 85° C.	• Excessive heat. • Faulty thermal sensor in right rear drive controller. • Right rear DCON ECM.	Drive speed reduces from 185° F / 85° C to 221° F / 105° C. Drive inhibited at 221° F / 105° C.
F054	F054:DCON LR ECM THERM PROTECTION	Left rear drive controller, thermal protection senses that temperature has exceeded 185° F / 85° C.	• Excessive heat. • Faulty thermal sensor in left rear drive controller. • Right rear DCON ECM.	Drive speed reduces from 185° F / 85° C to 221° F / 105° C. Drive inhibited at 221° F / 105° C.
F057	F057:MOTOR RR ENCODER FAULT	Return signal from the right rear drive motor encoder to the right rear drive controller is 40 Hz or higher.	• Short or open circuit of the drive motor encoder. • Faulty encoder in right rear drive motor. • Faulty right rear drive motor. • Right rear DCON ECM.	All functions inhibited.
F058	F058:MOTOR LR ENCODER FAULT	Return signal from the left rear drive motor encoder to the left rear drive controller is 40 Hz or higher.	• Short or open circuit of the drive motor encoder. • Faulty encoder in left rear drive motor. • Faulty left rear drive motor. • Left rear DCON ECM.	All functions inhibited.
F059	F059:MOTOR RR STALL/ENCODER	Right rear drive motors rotor is stuck or the return signal from the encoder is incorrect.	• Right rear drive motor not turning. • Short or open of the drive motor encoder. • Faulty encoder in right rear drive motor. • Faulty right rear drive motor. • Right rear DCON ECM.	Drive functions inhibited.
F060	F060:MOTOR LR STALL/ENCODER	Left rear drive motors rotor is stuck or the return signal from the encoder is incorrect.	• Left rear drive motor not turning. • Short or open of the drive motor encoder. • Faulty encoder in left rear drive motor. • Faulty left rear drive motor. • Left rear DCON ECM.	Drive functions inhibited.
F061	F061:MOTOR RR THERMAL SENSOR	Open circuit of the right rear drive motor thermal sensor to right rear drive controller (D3) or faulty thermal sensor.	• Open circuit in right rear drive motor harness. • Faulty thermal sensor in right rear drive motor. • Right rear DCON ECM.	Drive performance reduced.
F062	F062:MOTOR LR THERMAL SENSOR	Open circuit of the left rear drive motor thermal sensor to left rear drive controller (D3) or faulty thermal sensor.	• Open circuit in left rear drive motor harness. • Faulty thermal sensor in left rear drive motor. • Left rear DCON ECM.	Drive performance reduced.
F063	F063:SENSORFAULT STEER ANG:RANGE	Steer angle sensor out of range.	• Short or open circuit of the steer angle sensor. • Short or open circuit of the steer angle sensor harness. • Steer angle sensor needs to be calibrated. • Faulty steer angle sensor. • Right rear DCON ECM.	Drive performance reduced.

Fault Codes

Type "FXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
F064	F064:SWITCHFAULT LEFT AXLE:MISM	Left axle safety limit switch state not matching the left axle operational limit switch state.	• Short or open circuit of the left axle safety and/or operational limit switches. • Short or open circuit of the left axle safety and/or operational limit switch harness. • Faulty left axle safety and/or operational limit switch. • Right rear DCON or GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F065	F065:SWITCHFAULT RIGHT AXLE:MISM	Right axle safety limit switch state not matching the right axle operational limit switch state.	• Short or open circuit of the right axle safety and/or operational limit switches. • Short or open circuit of the right axle safety and/or operational limit switch harness. • Faulty right axle safety and/or operational limit switch. • Right rear DCON or GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F068	F068:OSCILLATE TIMEOUT	Oscillate axle safety or operational limit switches failed to close within 4 seconds after opening.	• Open circuit of a safety or operational limit switch. • Open circuit in safety or operational limit switch. • Right rear DCON or GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F069	F069:SWITCHFAULT OSC LIM SWITCHES	Right and left axle safety or operational limit switches are in an open state.	• Open circuit of the right and/or left axle safety or operational limit switches. • Open circuit of the right and/or left axle safety or operational limit switch harness. • Right rear DCON or GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F070	F070:SWITCHFAULT DOWN LIMIT:MISM	Platform down safety and operational limit switches are not in the same state.	• Open or short circuit of the platform down safety and/or operational limit switches. • Open or short circuit of the platform down safety and/or operational limit switch harness. • Faulty safety and/or operational limit switch. • Right rear DCON or GCON ECM.	All functions inhibited.
F071	F071:MOTOR THERM PROTECTION	Drive motor(s) thermal sensor has exceeded 185° F / 85° C.	• One or both drive motors over heated. • Faulty thermal sensor in rear drive motor. • Faulty rear drive motor. • Left or right rear DCON or GCON ECM.	All drive and steer functions inhibited.
F074	F074:ENGINE START FAULT	Engine fails to start.	• Faulty fuel valve. • Faulty starter solenoid. • CR1 Relay stuck open. • Left rear DCON ECM. • No fuel. • Engine start battery.	Engine restart function disabled.
F075	F075:UNEXPECTED ENGINE STOP	Engine stops running unexpectedly.	• Fuel. • Faulty CR2 relay. • Faulty CR62 relay. • GCON ECM.	Engine restart function disabled.

Type "CXXX" Faults

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
C001	C001:GCON ECM FAULT TYPE 1	GCON ECM CRC check error.	• Incorrect software file. • GCON ECM internal failure.	All functions inhibited.
C004	C004:GCON ECM FAULT TYPE 4	GCON ECM master switch error.	• Short circuit in the master switch circuit. • GCON ECM.	All functions inhibited.
C005	C005:GCON ECM FAULT TYPE 5	GCON ECM safety switch error.	• Short circuit in the safety switch circuit. • GCON ECM.	All functions inhibited.
C006	C006:GCON ECM FAULT TYPE 6	GCON input redundancy error.	• Input conditioning circuit failure. • GCON ECM.	All functions inhibited.
C007	C007:GCON ECM FAULT TYPE 7	GCON ECM inter-processor communication error.	• Incorrectly programmed device. • Error in loading software on device. • GCON ECM.	All functions inhibited.
C008	C008:GCON ECM FAULT TYPE 8	GCON ECM temperature sensor error.	• GCON ECM internal failure. • GCON ECM.	All functions operate.
C009	C009:GCON ECM FAULT TYPE 9	GCON fault type 9.	• Contact Genie support.	
C010	C010:SECONDARY NOT PROGRAMMED	Secondary not programmed.	• Reinstall software • Contact Genie support.	All functions inhibited.
C021	C021:PCON NOT DETECTED	Communication failure between GCON and PCON.	• CAN communication failure. • CAN communication harness. • PCON disconnected. • GCON or PCON ECM.	All functions inhibited.
C023	C023:MACHINE MODEL FAULT	Discrepancy between model detected and model programmed.	• Incorrect machine model programmed. • GCON or PCON ECM.	All functions inhibited.
C025	C025:SYSTEMFAULT PLAT OVLD:NOCAL	Platform overload system not calibrated.	• Platform overload system not calibrated. • GCON or PCON ECM.	All functions inhibited.
C028	C028:SERVICE OVERRIDE MODE ON	Machine is in service override mode.	• Machine programmed for use in service override mode.	All functions inhibited except for down function and up function. Platform can be elevated only once with the maximum elevate time of XX seconds. Elevate time XX depends on machine model.
C029	C029:SYSTEMFAULT OUTRIGGER:NoCal	Outrigger fault, not calibrated.	• Calibrate outriggers • Contact Genie support.	All functions operate. Will not lift above the down limit switches.
C030	C030:DCON RR ECM FAULT TYPE 01	Hardware failure of the right rear drive controller.	• Right rear DCON ECM.	Performance reduced or all functions inhibited.
C031	C031:DCON LR ECM FAULT TYPE 01	Hardware failure of the left rear drive controller.	• Left rear DCON ECM.	Performance reduced or all functions inhibited.
C032	C032:DCON RR ECM FAULT TYPE 02	Setup initialization failure of the right rear drive controller at system startup.	• Drive input active at system startup. • Faulty drive joystick. • Incorrect software.D14 • Right rear DCON ECM.	Performance reduced or drive inhibited or all functions inhibited.
C033	C033:DCON LR ECM FAULT TYPE 02	Setup initialization failure of the left rear drive controller at system startup.	• Drive input active at system startup. • Faulty drive joystick. • Incorrect software.D14 • Left rear DCON ECM.	Performance reduced or drive inhibited or all functions inhibited.

Fault Codes

Type "CXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
C034	C034:DCON RR ECM FAULT TYPE 03	Valve driver failure of the right rear drive controller.	• Right rear DCON ECM.	Drive functions inhibited.
C035	C034:DCON LR ECM FAULT TYPE 03	Valve driver failure of the left rear drive controller.	• Left rear DCON ECM.	Drive functions inhibited.
C036	C036:DCON RR ECM FAULT TYPE 04	Right rear drive controller voltage out of range.	• Battery charger connected. • Batteries to low. • Right rear DCON ECM.	All functions inhibited.
C037	C037:DCON LR ECM FAULT TYPE 04	Left rear drive controller voltage out of range.	• Battery charger connected. • Batteries to low. • Left rear DCON ECM.	All functions inhibited.
C038	C038:DCON RR ECM FAULT TYPE 05	Capacitor charge failure of the right rear drive controller.	• Open on B+ or B- to the right rear drive controller. • Right rear DCON ECM.	All functions inhibited.
C039	C039:DCON LR ECM FAULT TYPE 05	Capacitior charge failure of the left rear drive controller.	• Open on B+ or B- to the left rear drive controller. • Left rear DCON ECM.	All functions inhibited.
C040	C040:DCON RR ECM FAULT TYPE 06	Open circuit to the PEV (B2) circuit of the right rear drive controller.	• Open circuit of the right rear motor controller harness. • Key switch relay CR61 not closed. • Right rear DCON or GCON ECM.	All functions inhibited.
C041	C041:DCON LR ECM FAULT TYPE 06	Open circuit to the PEV (B2) circuit of the LEFT rear drive controller.	• Open circuit of the left rear motor controller harness. • Key switch relay CR61 not closed. • Left rear DCON or GCON ECM.	All functions inhibited.
C042	C042:DCON RR ECM FAULT TYPE 07	Open circuit of the key switch circuit or battery positive/negative of the right rear drive controller.	• Open circuit of the right rear motor controller harness. • Open circuit to B+ and/or B-. • Key switch relay CR61 not closed. • Right rear DCON or GCON ECM.	All functions inhibited.
C043	C043:DCON LR ECM FAULT TYPE 07	Open circuit of the key switch circuit or battery positive/negative of the left rear drive controller.	• Open circuit of the left rear motor controller harness. • Open circuit to B+ and/or B-. • Key switch relay CR61 not closed. • Left rear DCON or GCON ECM.	All functions inhibited.
C044	C044:DCON RR ECM FUALT TYPE 08	Communication error of the CAN circuit between the GCON and the right rear motor controller.	• Open circuit of the right rear motor controller harness. • Right rear DCON or GCON ECM.	All functions inhibited.
C045	C045:DCON LR ECM FAULT TYPE 08	Communication error of the CAN circuit between the GCON and the left rear motor controller.	• Open circuit of the left rear motor controller harness. • Left rear DCON or GCON ECM.	All functions inhibited.
C046	C046:DCON RR ECM FAULT TYPE 09	Communication error of the CAN circuit between the GCON and the right rear motor controller.	• Open or short circuit of the right rear motor controller harness. • Right rear DCON or GCON ECM.	All functions inhibited.
C047	C045:DCON LR ECM FAULT TYPE 09	Communication error of the CAN circuit between the GCON and the left rear motor controller.	• Open or short circuit of the left rear motor controller harness. • Left rear DCON or GCON ECM.	All functions inhibited.
C048	C048:DCON RR ECM FAULT TYPE 10	Output error of the thermal sensor circuit of the right rear motor controller.	• Right rear DCON ECM.	Performance reduced.
C049	C049:DCON LR ECM FAULT TYPE 10	Output error of the thermal sensor circuit of the left rear motor controller.	• Left rear DCON ECM.	Performance reduced.
C050	C050:SOC MONITOR NOT DETECTED	State of charge monitor not detected.	• SOC monitor • SOC monitor harness • Incorrect baud rate setting on acuity • GCON ECM.	Performance reduced.
C053	C053:PCON-GCON SOFTWARE MISMATCH	Software revisions do not match between the PCON and GCON.	• C053 displayed at GCON, PCON with older software revision connected to GCON with newer software revision. • C053 displayed at PCON, PCON with newer software revision connected to GCON with older software revision.	All functions inhibited.

Schematics



Observe and Obey:

- ☑ Troubleshooting and repair procedures shall be completed by a person trained and qualified on the repair of this machine
- ☑ Immediately tag and remove from service a damaged or malfunctioning machine.
- ☑ Repair any machine damage or malfunction before operating the machine.

Before Troubleshooting:

- ☑ Read, understand and obey the safety rules and operating instructions in the appropriate operator's manual on your machine.
- ☑ Be sure that all necessary tools and test equipment are available and ready for use.

About This Section

There are two groups of schematics in this section.

Electrical Schematics

⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

Hydraulic Schematics

⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

Electrical Schematic Abbreviations and Wire Color Legends

Electrical Component Legend	
Item	**Description**
B	**Battery**
B7	48V DC Battery pack
BN	**Button**
BN1	High speed function enable (platform)
BN2	Platform up / Outrigger retract (platform)
BN3	Low speed function enable (platform)
BN4	Platform down / Outrigger extend (platform)
BN5	Horn (platform)
BN6	Outrigger enable (option) (platform)
CB	**Circuit breaker**
CB2	7 amp (controls)
CB7	15 amp (power)
CR	**Control relay**
CR60	Brake release
CR61	Key switch
CT	**Contact type (limit switch)**
N.O.	**Normally open**
N.C.	**Normally closed**
N.O.H.C.	**Normally open, held closed**
N.C.H.O.	**Normally closed, held open**
F	**Fuse**
F9	50 amp (800W inverter option)
F27	30 amp (48V DC battery charger)
F28	5 amp (24V DC battery balancer)
F29	5 amp (48V DC battery balancer)
FB	Flashing beacon
FB1	Option

H	**Horn or alarm**
H2	Horn
H5	Multi-function alarm (ground)
H8	Alarm (platform)
JC	**Hall effect controller**
JC3	Drive / Steer
KS	**Key switch**
KS1	Key switch
L	**LED or Light**
L12	Left front outrigger (option) (platform)
L13	Right front outrigger (option (platform)
L14	Left rear outrigger (option) (platform)
L15	Right rear outrigger (option) (platform)
LS	**Limit switch**
LS6	Platform down operational
LS6B	Platform down safety
LS12	Left front outrigger (option)
LS13	Right front outrigger (option)
LS14	Left rear outrigger (option)
LS15	Right rear outrigger (option)
LS20	Platform full height (CE models)
LSA1OS	Left axle oscillate (operational)
LSA2OS	Right axle oscillate (operational)
LSA1OSS	Left axle oscillate (safety)
LSA2OSS	Right axle oscillate (safety)
M	**Motor or Pump**
M5	Lift pump
P	**Red emergency stop button**
P1	Ground controls
P2	Platform controls
PS	**Pressure switch**
PS5	Accumulator
PR	**Solenoid relay**
PR1	Primary contactor

Electrical Schematic Abbreviations and Wire Color Legends

Electrical Component Legend (cont.)	
Item	**Description**
R	**Resistor**
R1	2k ohm
S	**Sensor**
S7	Digital level sensor (w/o outriggers)
S8	Analog level sensor (w/ outrigger option)
S13	Steer angle sensor
S14	Height angle sensor (Plat. overload option)
S25	Pressure switch (Plat. overload option)
S26	Lift pump speed sensor
TB	**Terminal base (Ground controls terminal strip)**
TS	**Toggle switch**
TS10	Auxiliary down (ground)
TS51	Auxiliary down enable (ground)
U	**Electronic Component**
U1	GCON ground)
U2	PCON (platform)
U3A	Right DCON
U3B	Left DCON
U4	Battery charger
U6	800W inverter (option)

Y	**Valve coil**
Y3	Steer right / CW
Y4	Steer left / CCW
Y5	Drive reverse
Y7	Platform down
Y7A	Platform down (GS-4069 models)
Y8	Platform up
Y10	Auxiliary platform down
Y10A	Auxiliary platform down (GS-4069 models)
Y33	Left rear outrigger (option)
Y34	Right rear outrigger (option)
Y35	Left front outrigger (option)
Y36	Right front outrigger (option)
Y39	Outrigger retract (option)
Y40	Outrigger extend (option)
Y93	Oscillate left
Y94	Oscillate right
Y99	Accumulator

Electrical Schematic Abbreviations and Wire Color Legends

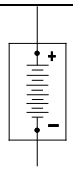
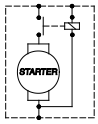
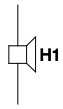
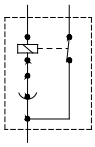
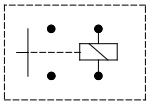
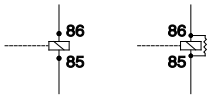
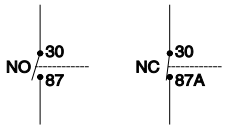
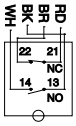
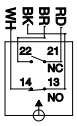
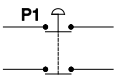
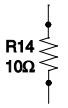
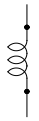
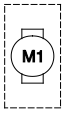
Wire Color Legend	
Color	**Description**
BL	Blue
BK	Black
BR	Brown
GR	Green
OR	Orange
PP	Purple
RD	Red
WH	White
YL	Yellow
BL/RD	Blue/Red
BL/WH	Blue/White
BK/RD	Black/Red
OR/WH	Orange/White
RD/BK	Red/Black
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WH/RD	White/Red
WH/YL	White/Yellow
YL/BK	Yellow/Black

Hydraulic Component Legend

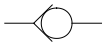
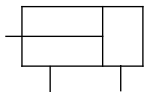
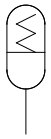
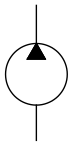
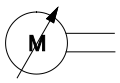
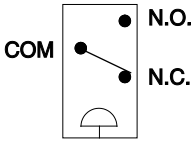
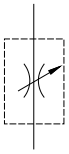
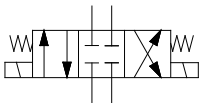
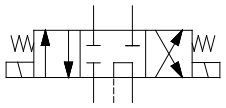
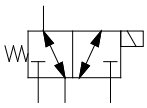
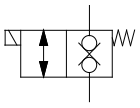
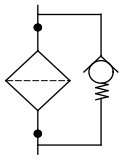
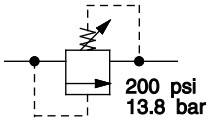
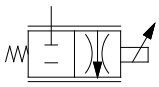
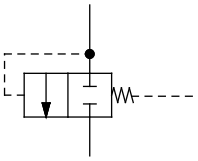
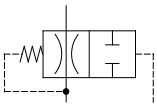
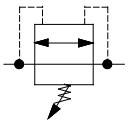
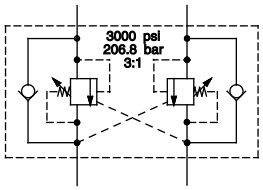
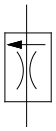
Item	Function
BA	3 position, 4 way directional valve - outrigger cylinders extend/retract (option)
CA	2 position, 2 way valve - platform down (all models)
CB	2 position, 2 way valve - platform down (GS-4069)
CC	2 position, 2 way valve - LR outrigger (option)
CD	2 position, 2 way valve - RR outrigger (option)
CE	2 position, 2 way valve - LF outrigger (option)
CF	2 position, 2 way valve - RF outrigger (option)
FA	Check valve - blocks flow to tank - oscillate circuit
FB	Relief valve - Platform up circuit accumulator supply
FC	Orifice - accumulator circuit
FD	Relief valve - Platform up circuit
FE	Accumulator
FF	2 position, 2 way valve - oscillate supply
FG	Flow regulator valve - controls flow to the oscillate

Item	Function
FH	Relief valve - main system
FI	Relief valve - steer circuit
FJ	Check valve - load sense circuit
FK	Flow regulator valve - controls flow to the steer circuit
FL	3 position, 5 way valve - steer right / left
FM	Check valve - load sense circuit
FN	Pressure switch
FO	2 position, 3 way valve - platform up
FP	2 position, 3 way valve - oscillate left
FQ	Relief valve - oscillate circuit
FR	2 position, 3 way valve - oscillate right

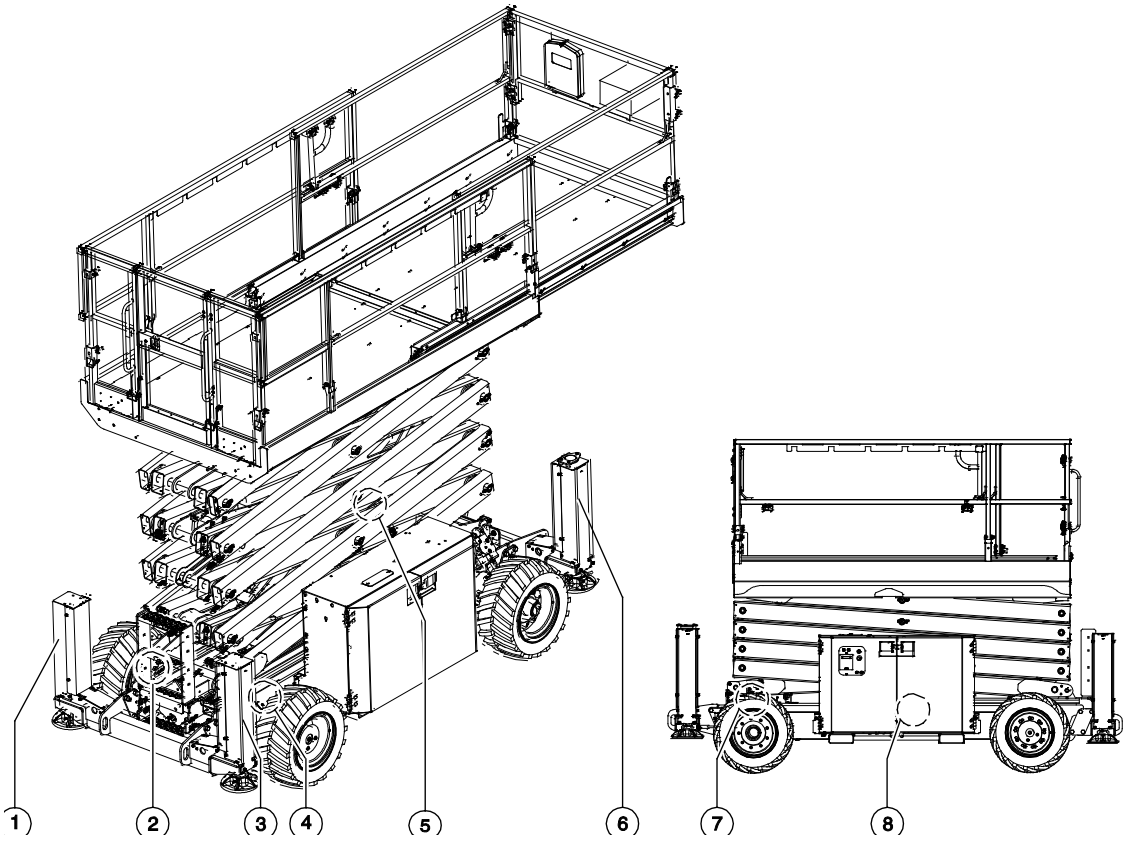
Electrical Symbols Legend

 Battery	 Motor	 Horn or alarm	 Flashing beacon	 Gauge
 Diode	 Coil with suppression	 LED	 Fuse with amperage	 Circuit breaker with amperage
 Connection - no terminal	 Circuits crossing no connection	 Quick disconnect terminal	 Level sensor without outriggers	 Power relay
 Coil solenoid or relay	 Contact solenoid or relay	 Button normally open	 Limit Switch not held	 Limit Switch held
 Red emergency stop button normally closed	 Resistor with ohm value	 Starting aid or glow plug	 Electric motor	

Hydraulic Symbols Legend

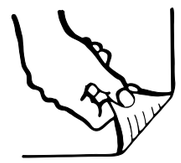
 Orifice with size	 Check valve	 Cylinder, double acting	 Accumulator
 Pump, fixed displacement	 Pump, prime mover (engine or motor)	 Pressure switch	 Needle valve
 Solenoid operated 3 position 4 way directional valve	 Solenoid operated 3 position 5 way directional valve	 Solenoid operated 2 position, 3 way directional valve	 Solenoid operated 2 position 2 way directional valve
 Filter with bypass relief valve	 Relief valve with pressure setting	 Solenoid operated proportional valve	 Differential sensing valve
 Pilot operated flow regulator valve	 Dual piloted relief valve	 Counterbalance valve with pressure and pilot ratio	 Priority flow regulator

Limit Switch Legend

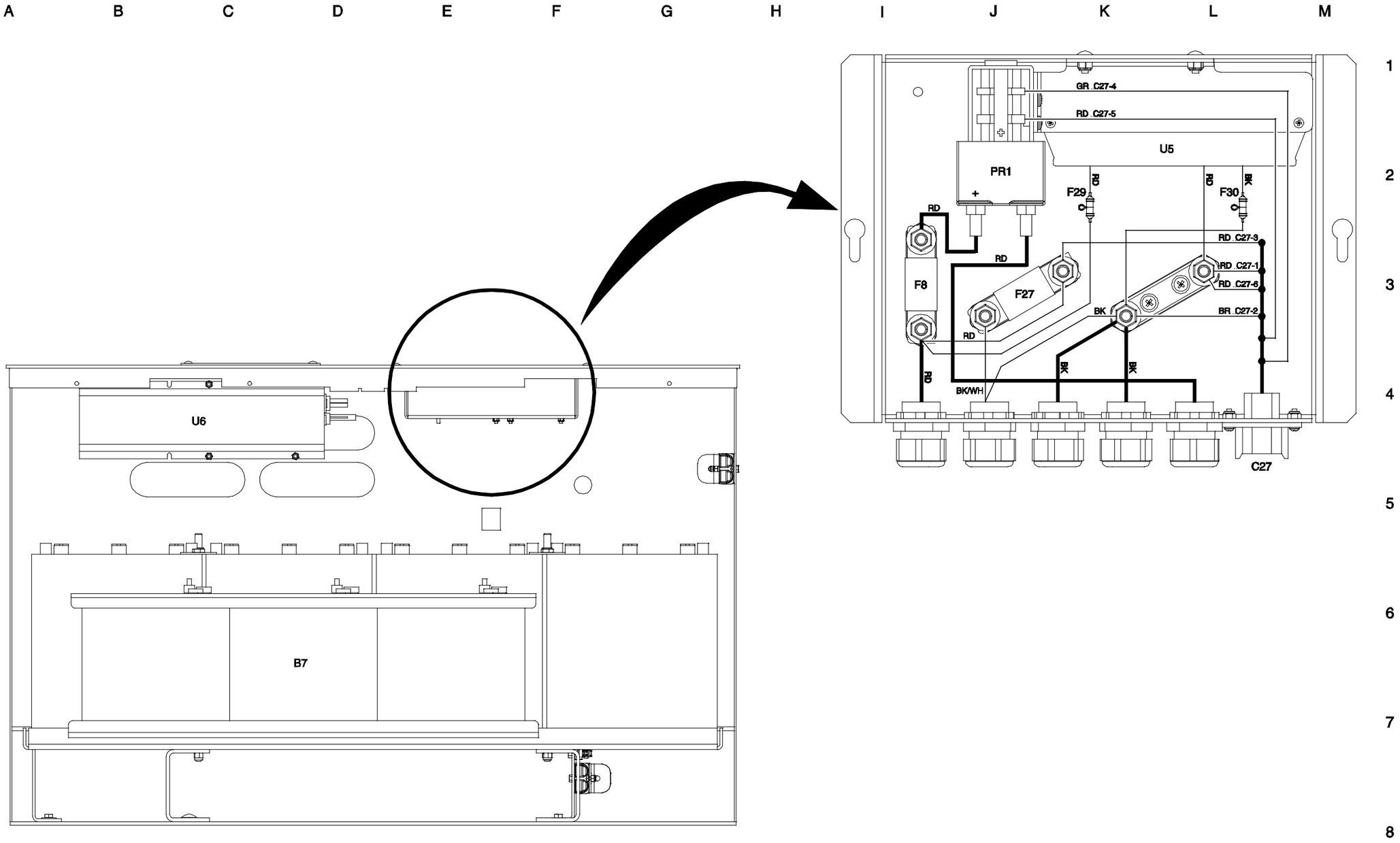


1 left rear outrigger limit switch, LS14
2 left axle oscillate limit switches, LSA10S and LSA10SS
3 right rear outrigger limit switch, LS15
4 right axle oscillate limit switches, LSA20S and LSA20SS
5 platform overload pressure switch, S25
6 right front outrigger limit switch, LS13
left front outrigger limit switch, LS12 (not shown)
7 platform down limit switches, LS6 and LS6B
8 platform up limit switch, LS16

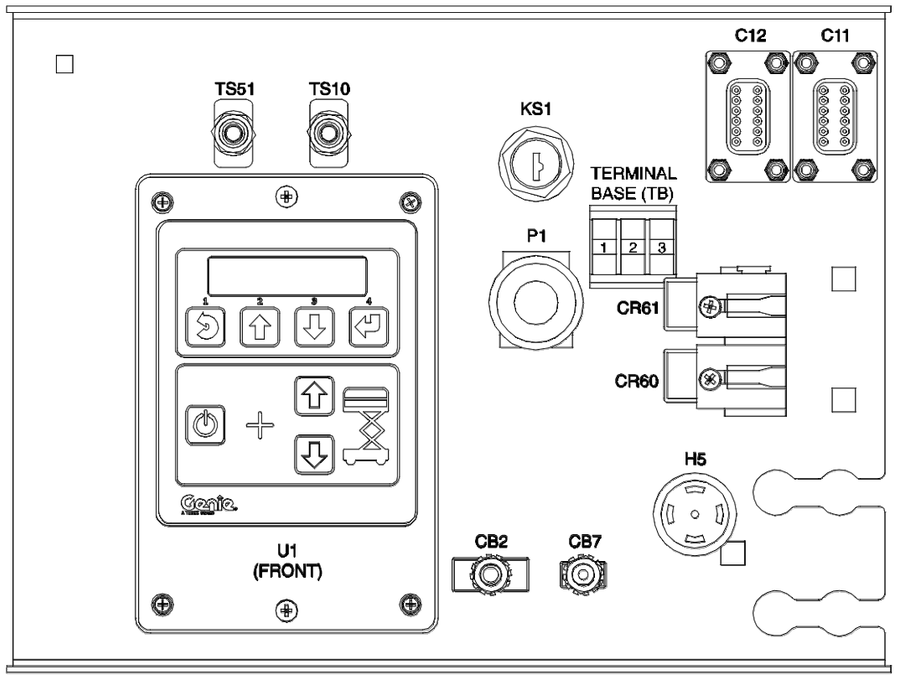
Fuse Box Layout, All Models

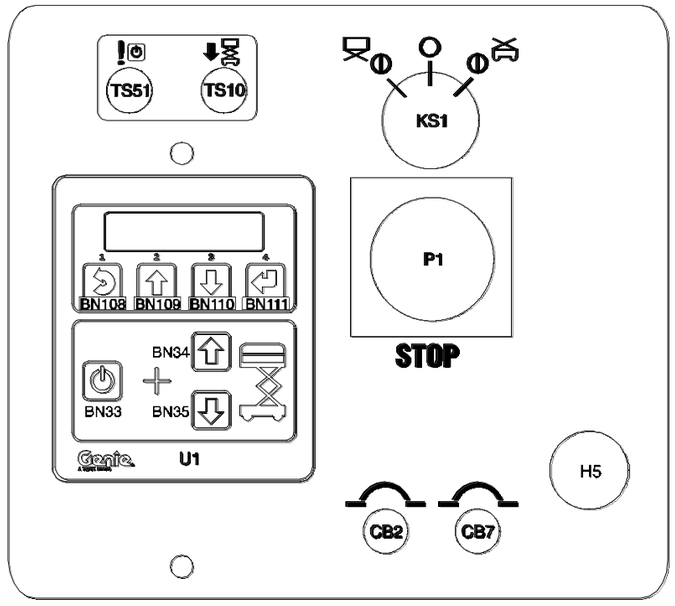


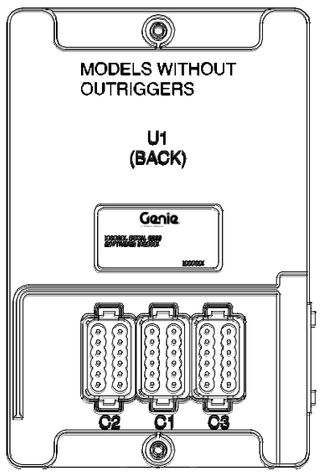
Fuse Box Layout, All Models

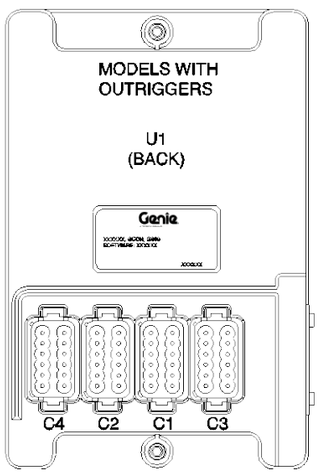


Ground Control Box Layout, All Models

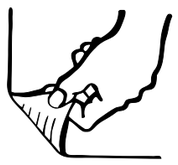




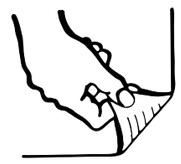




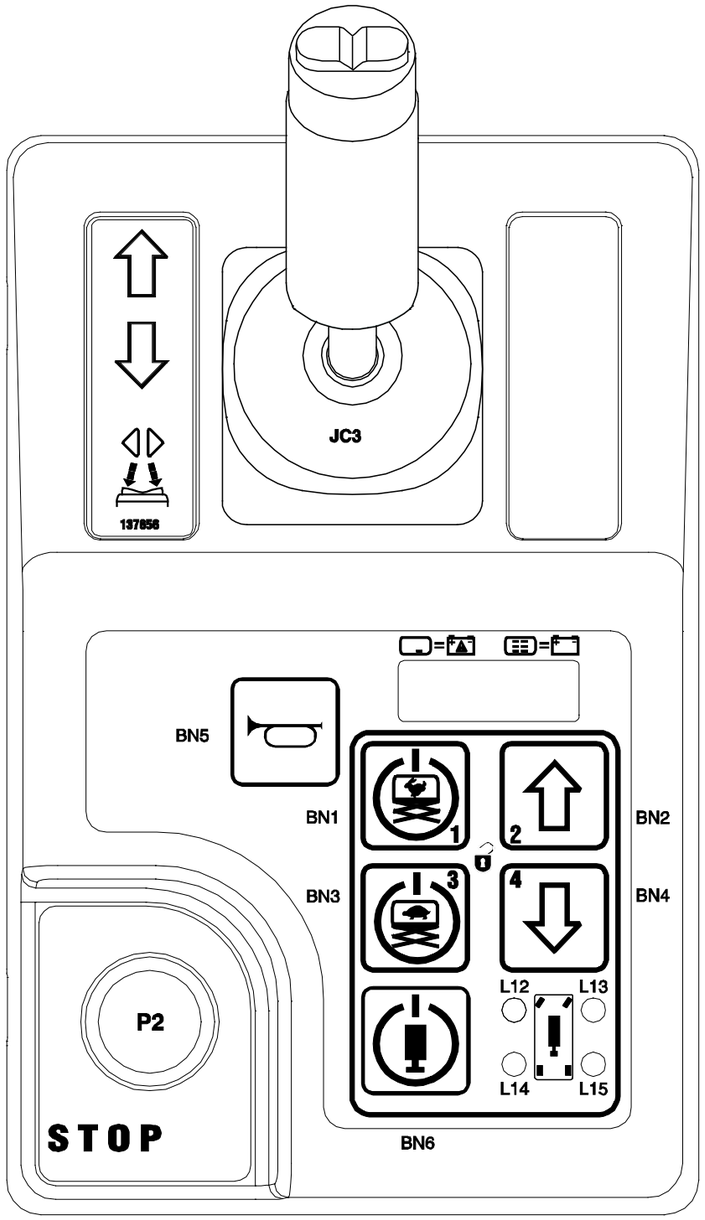
Ground Control Box Layout, All Models

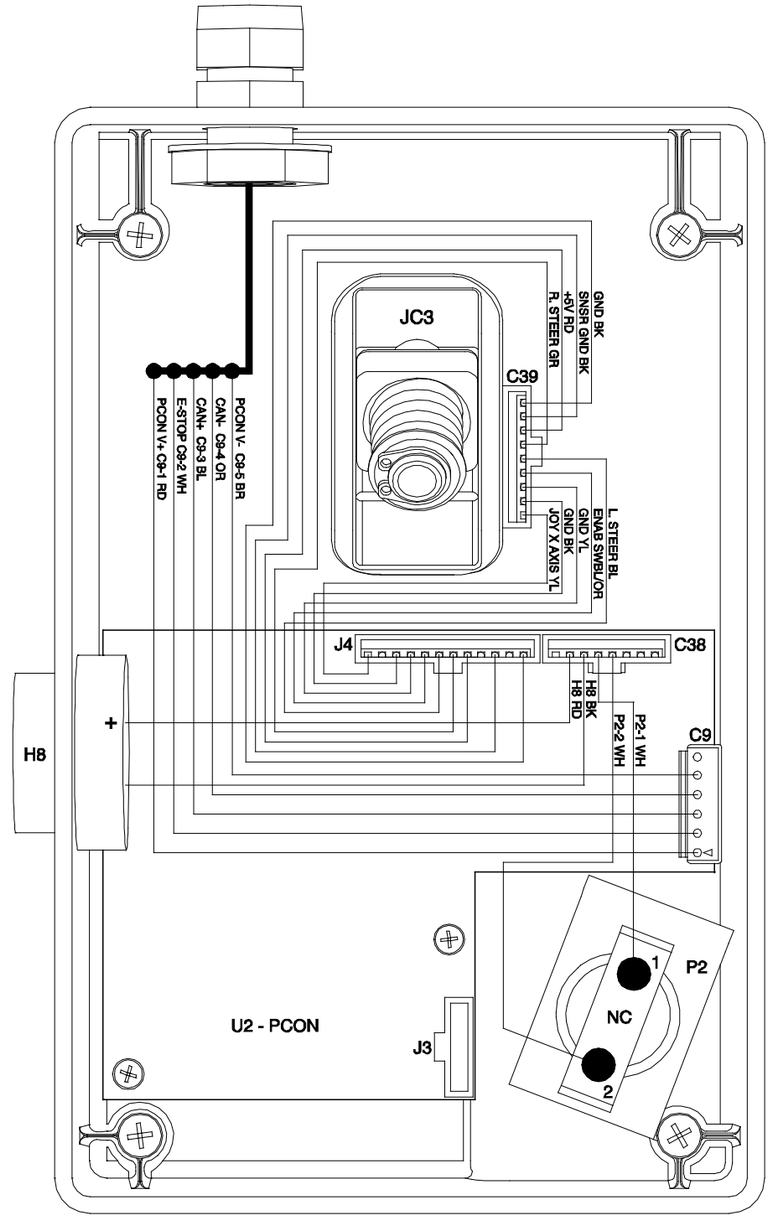


Platform Control Box Layout, Models with 2 Speed Lift

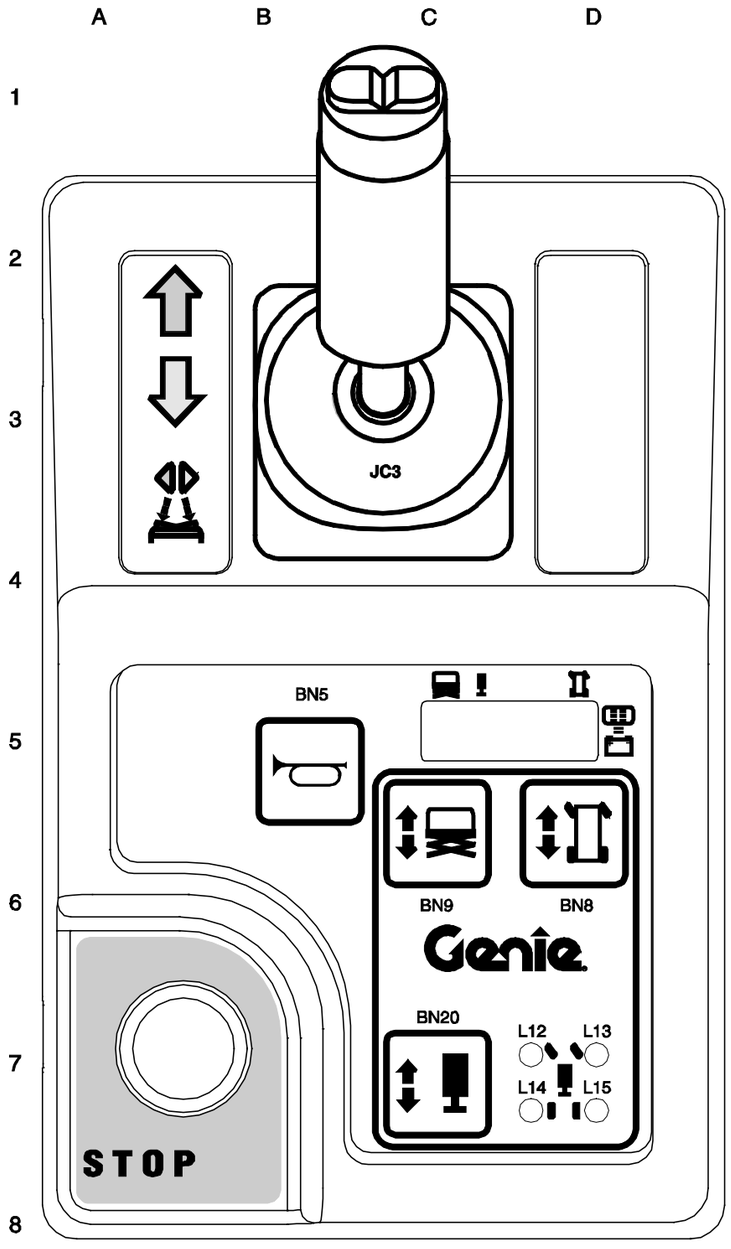


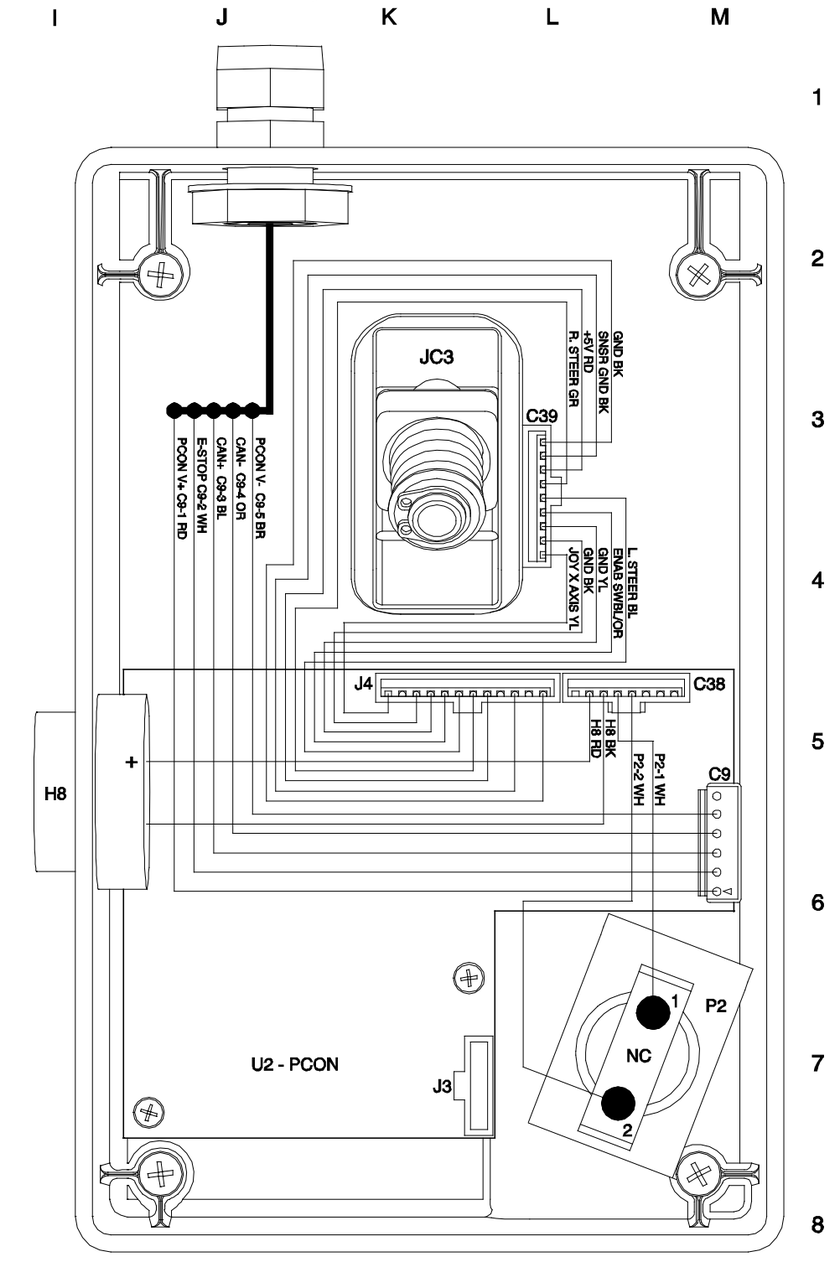
Platform Control Box Layout, Models with 2 Speed Lift



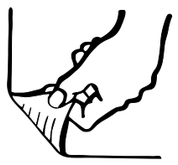


Platform Control Box Layout, Models with Proportional Lift

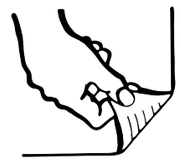




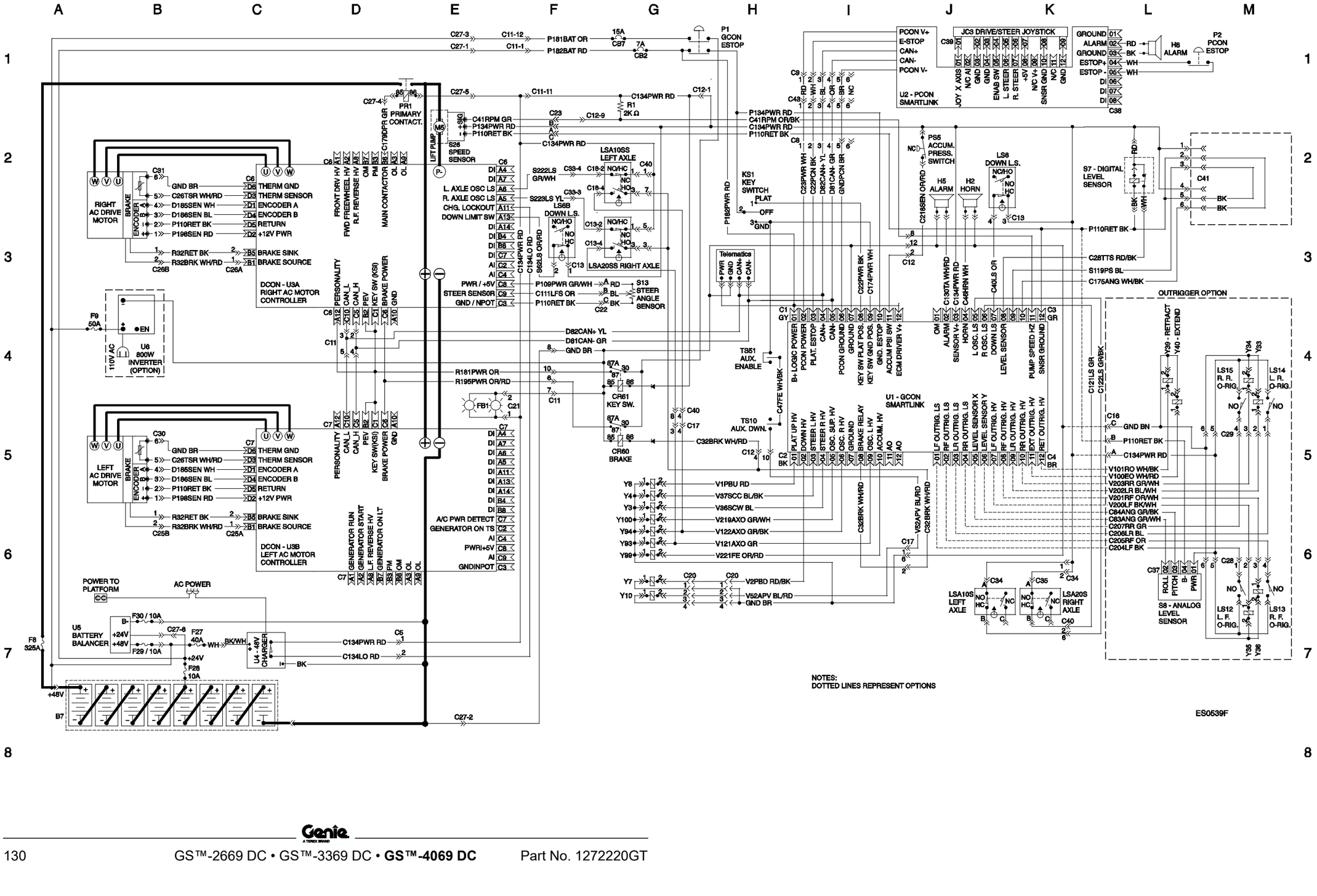
Platform Control Box Layout, Models with Proportional Lift



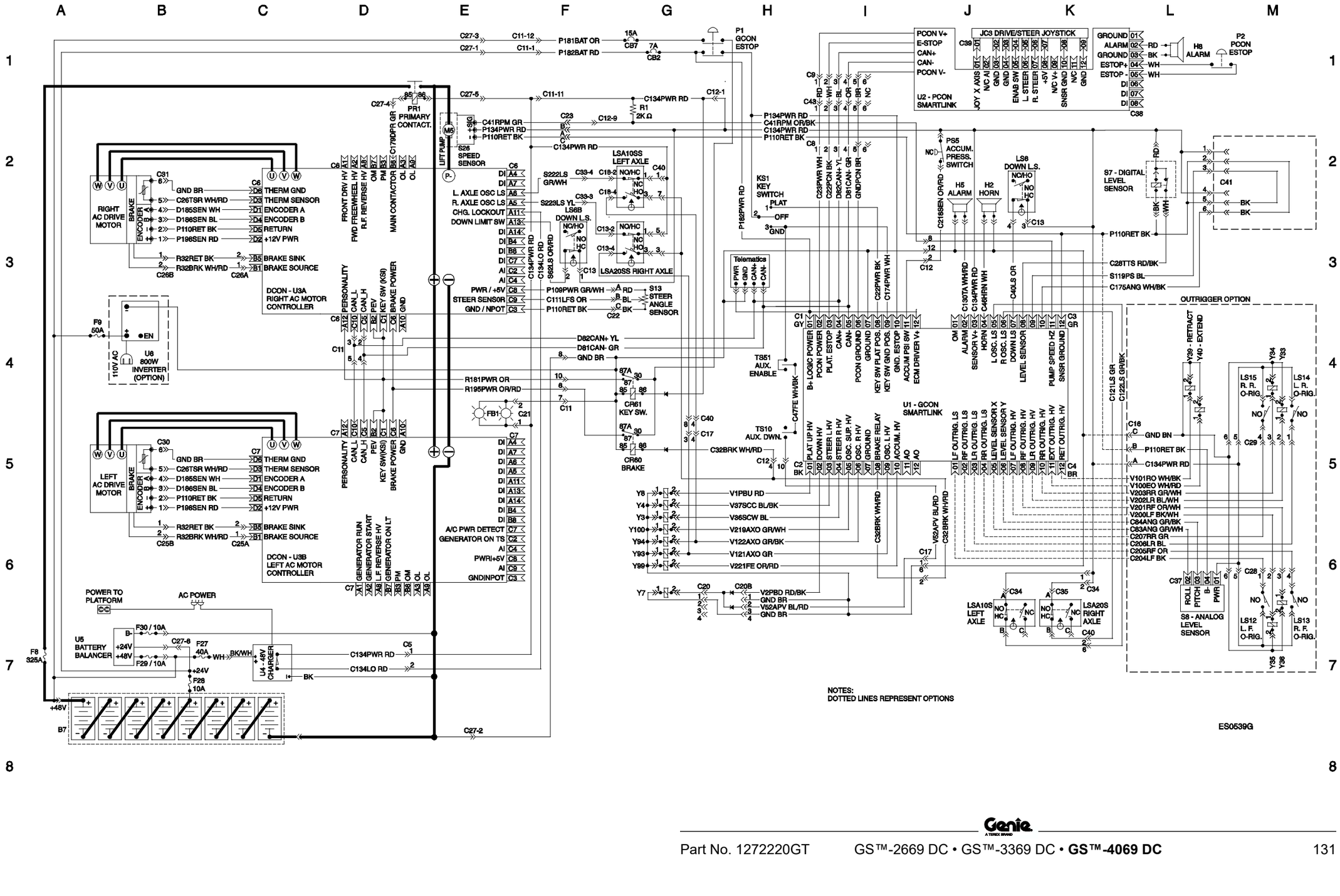
Electrical Schematic, GS-2669 DC and GS-3369 DC with 2 Speed Lift, (ANSI / CSA) (to serial number GS6915-6388)



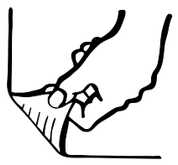
Electrical Schematic, GS-2669 DC and GS-3369 DC with 2 Speed Lift, (ANSI / CSA) (to serial number GS6915-6388)



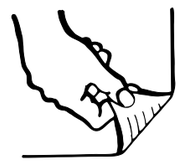
Electrical Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift, (ANSI / CSA) (from serial number GS6915-6389 to GS6915-7719)



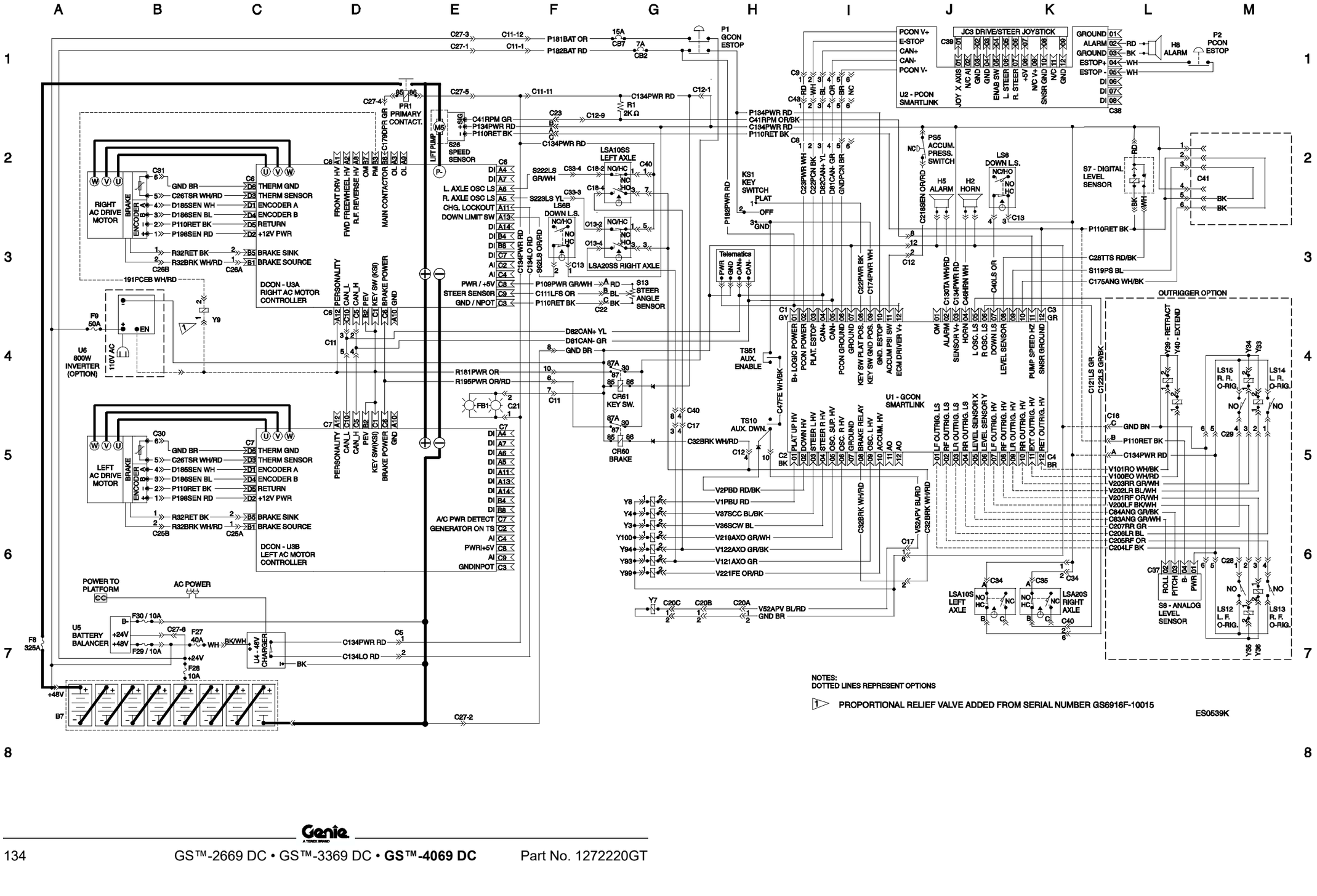
Electrical Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift, (ANSI / CSA) (from serial number GS6915-6389 to GS6915-7719)



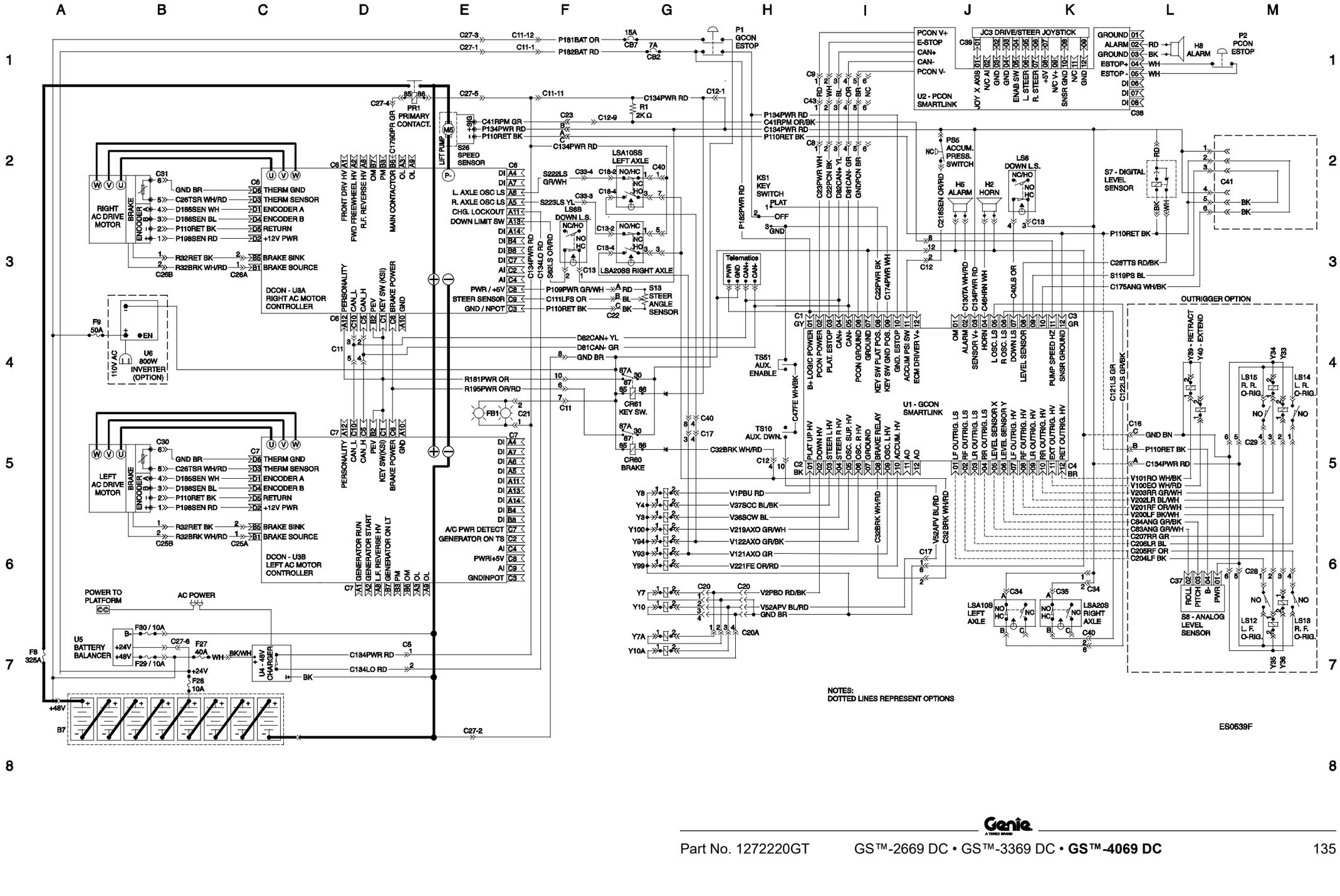
Electrical Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift, (ANSI / CSA) (from serial number GS6915-7720)



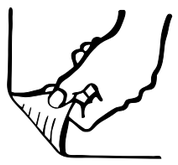
Electrical Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift, (ANSI / CSA) (from serial number GS6915-7720)



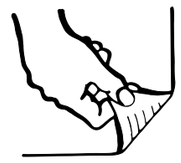
Electrical Schematic, GS-4069 DC with 2 Speed Lift, (ANSI / CSA) (to serial number GS6915-6388)



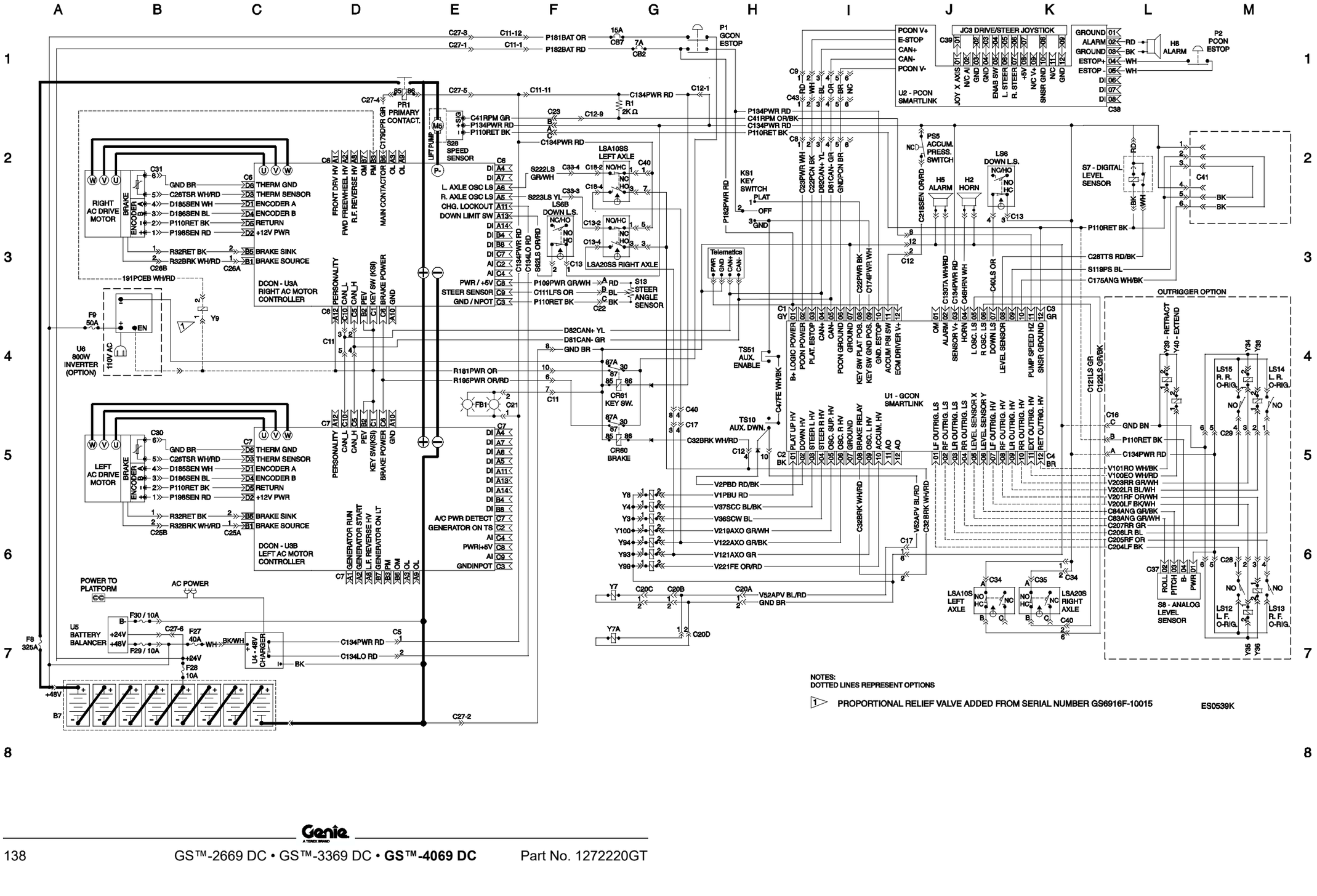
Electrical Schematic, GS-4069 DC with 2 Speed Lift, (ANSI / CSA) (to serial number GS6915-6388)



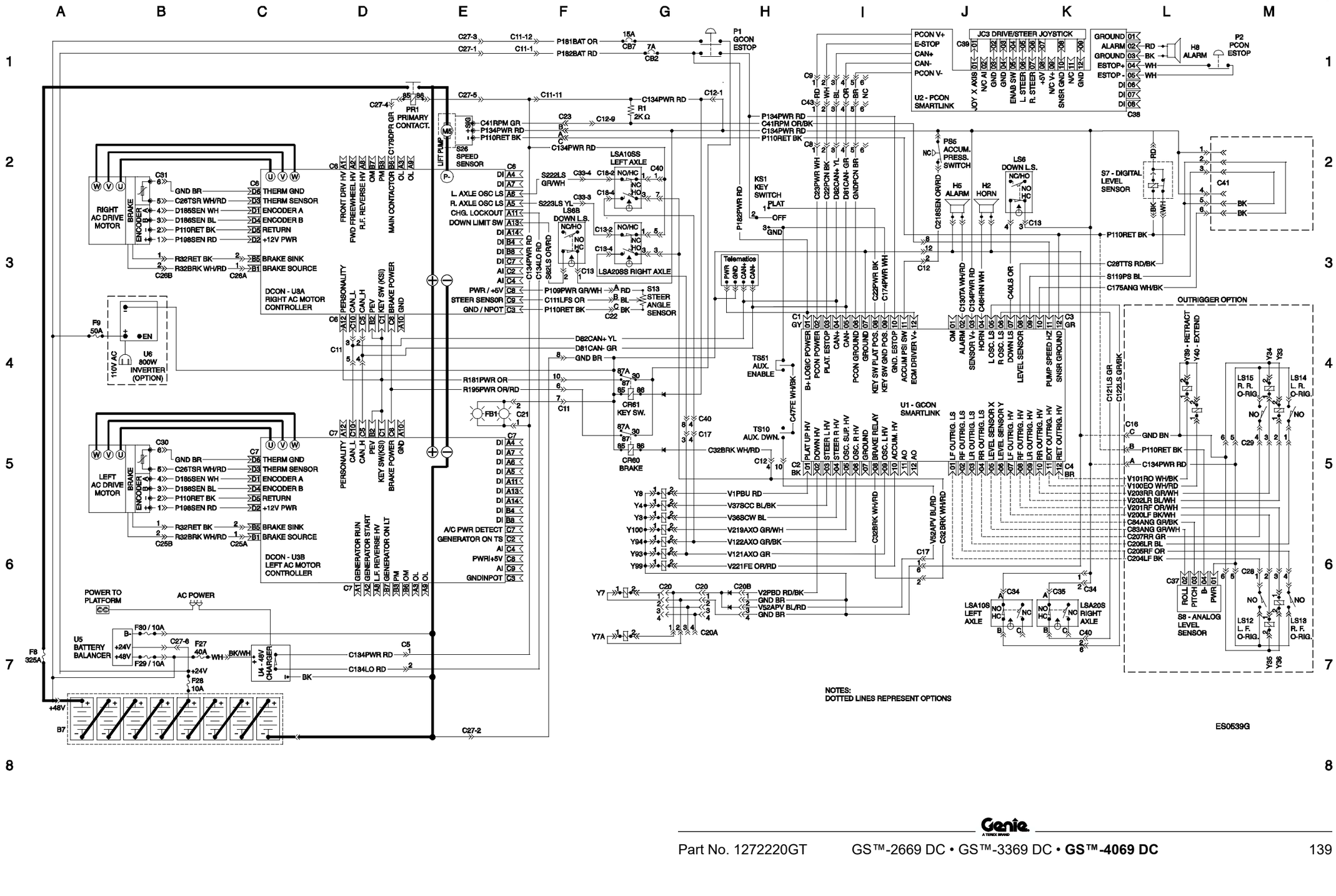
Electrical Schematic, GS-4069 DC with Proportional Lift, (ANSI / CSA) (from serial number GS6915-6389 to GS6915-7719)



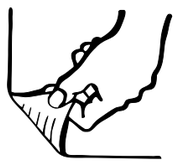
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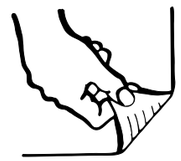
Electrical Schematic, GS-4069 DC with Proportional Lift, (ANSI / CSA) (from serial number GS6915-6386 to GS9615-7719)



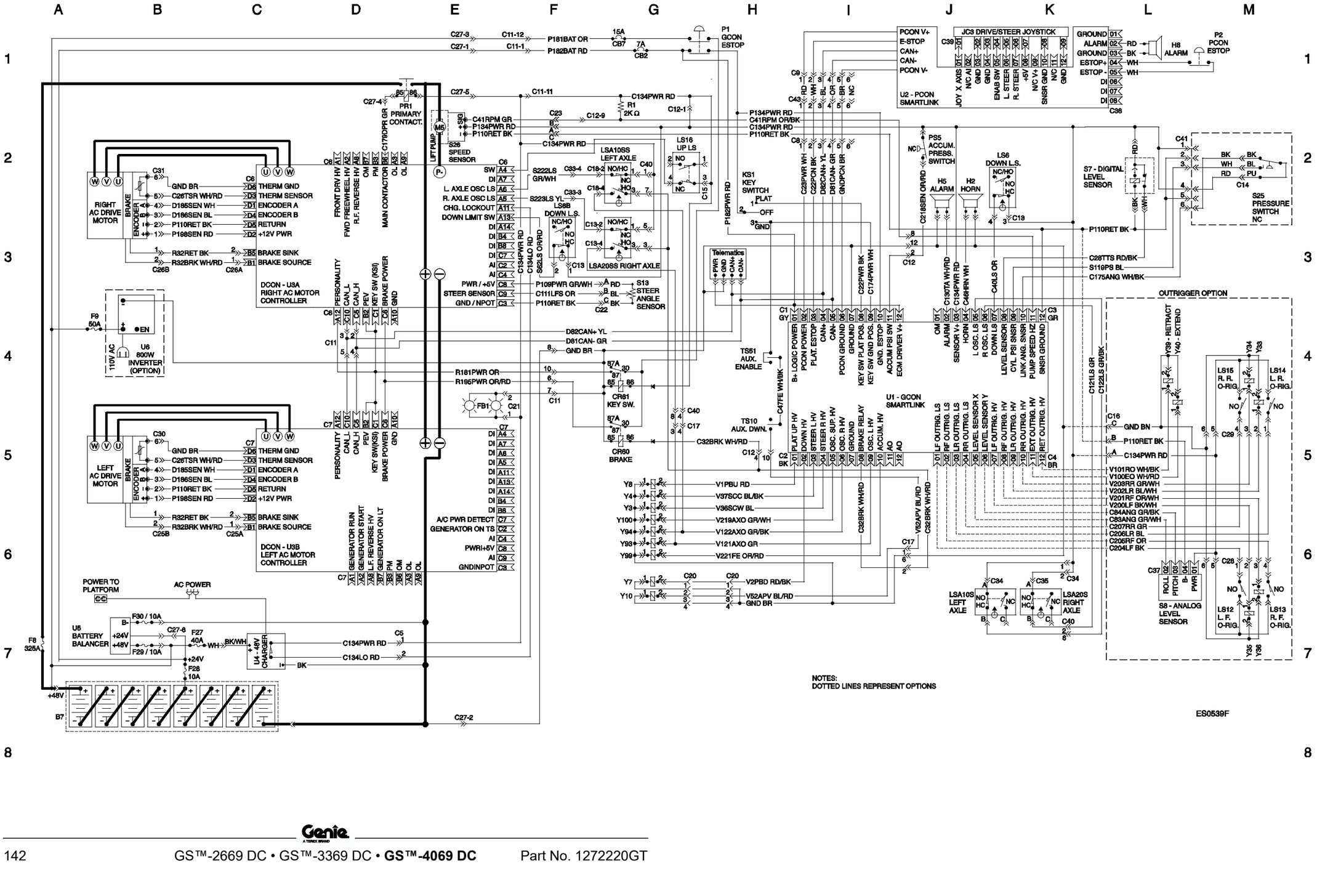
Electrical Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift, (ANSI / CSA) (from serial number GS6915-7720)



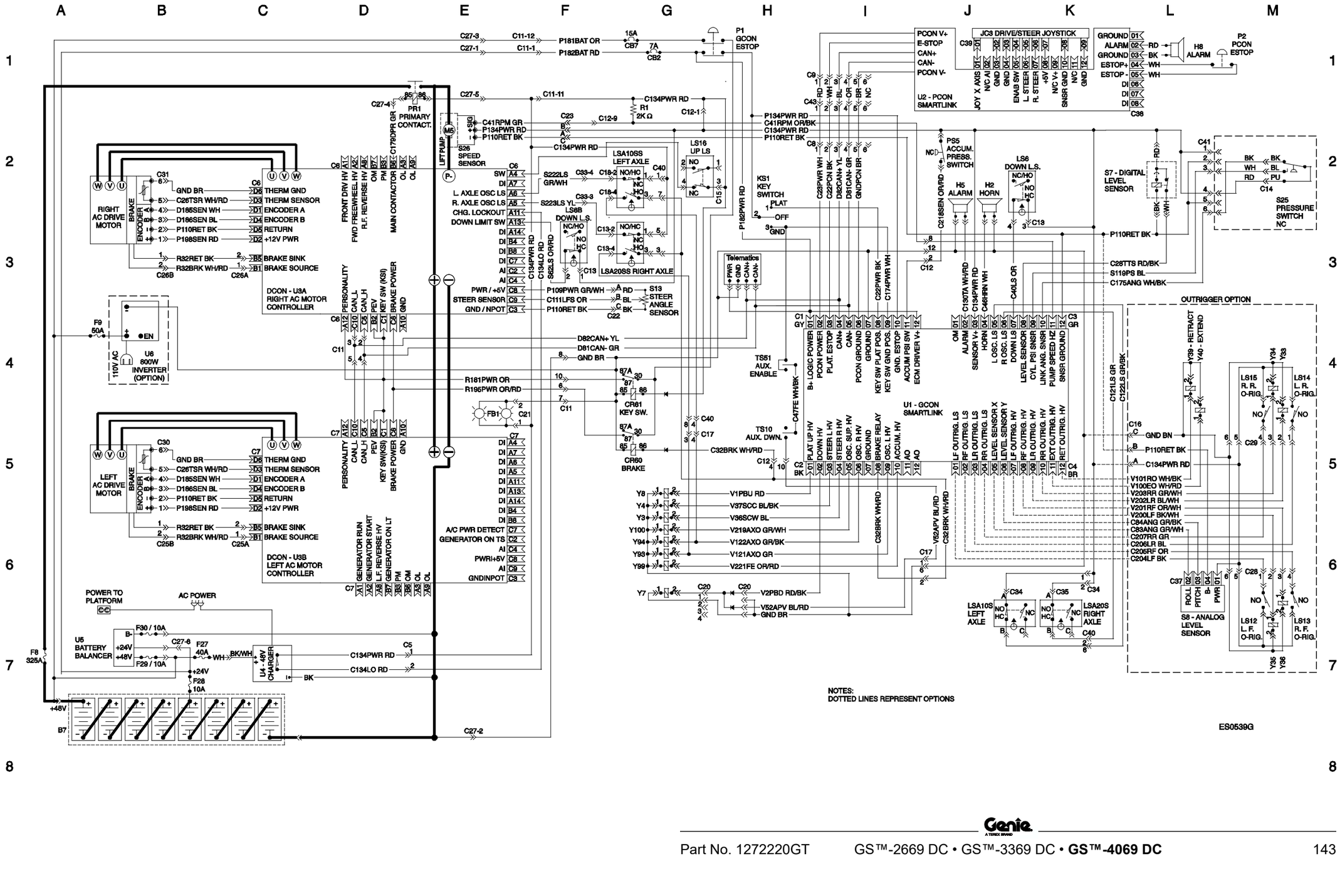
Electrical Schematic, GS-2669 DC and GS-3369 DC with 2 Speed Lift, (AS / CE) (to serial number GS6915-6388)



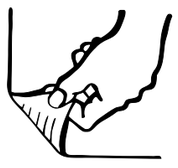
Electrical Schematic, GS-2669 DC and GS-3369 DC with 2 Speed Lift, (AS / CE) (to serial number GS6915-6388)



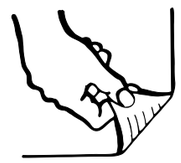
Electrical Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift, (AS / CE) (from serial number GS6915-6389 to GS6915-7719)



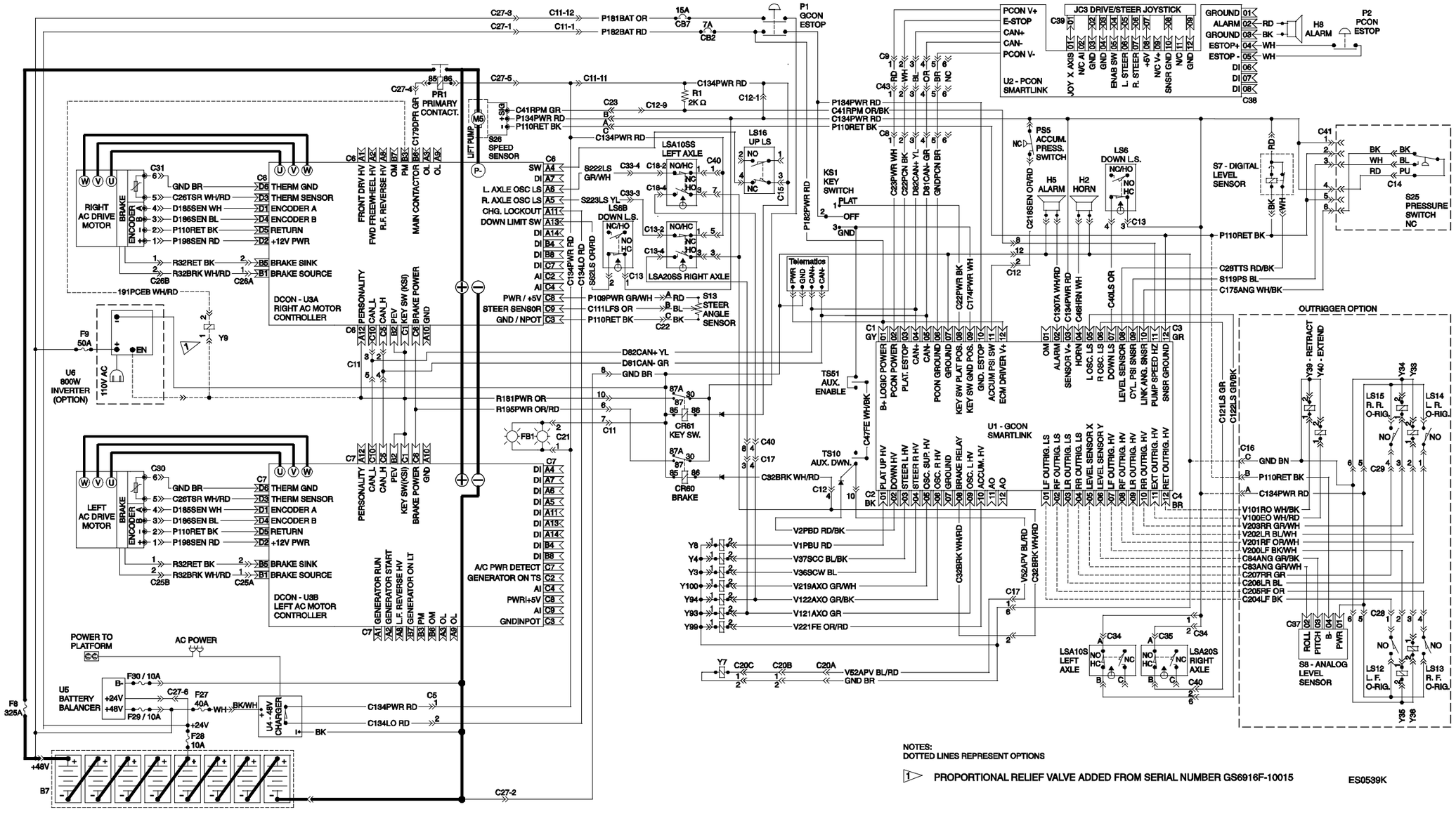
Electrical Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift, (AS / CE) (from serial number GS6915-6389 to GS6915-7719)



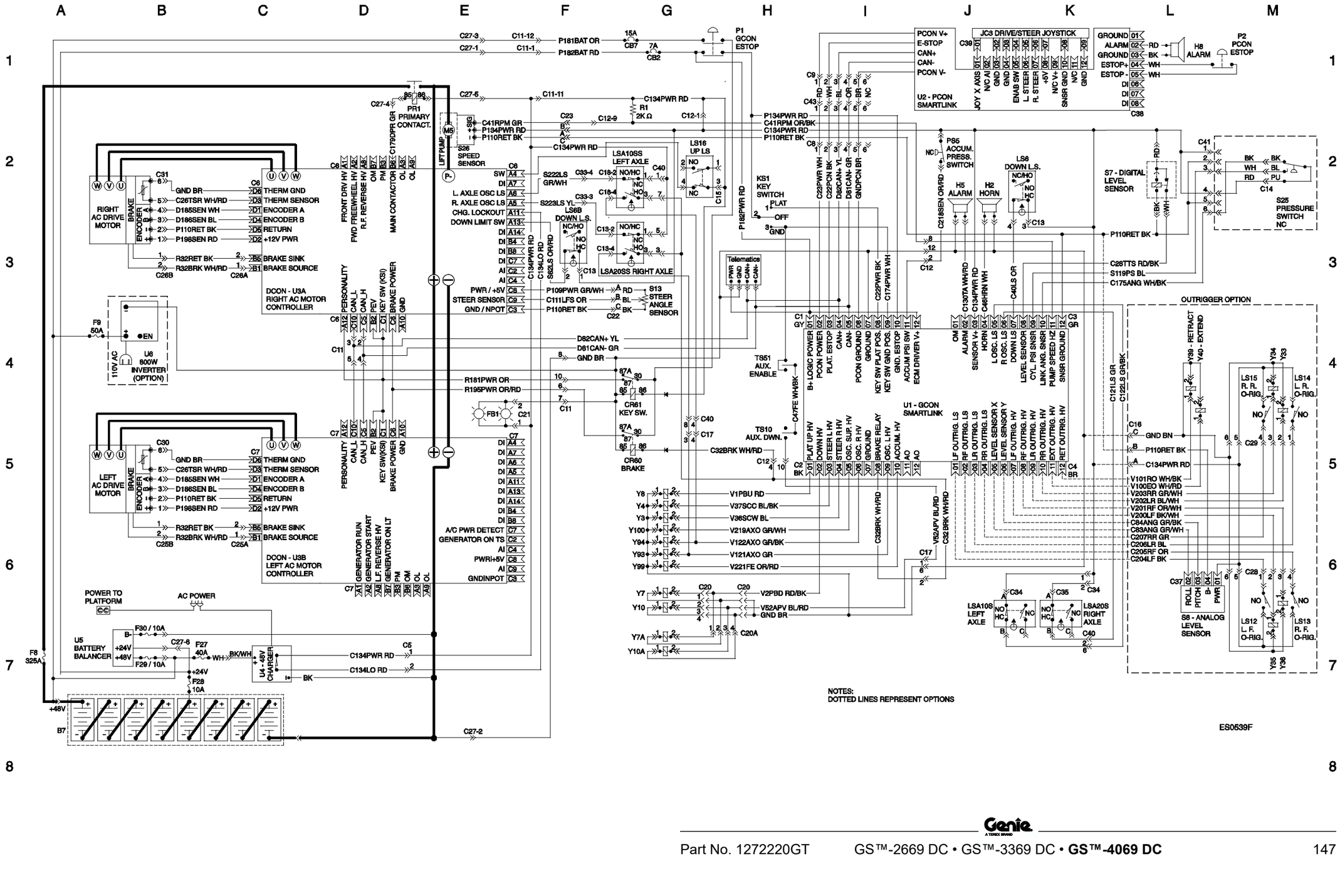
Electrical Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift, (AS / CE) (from serial number GS6915-7720)



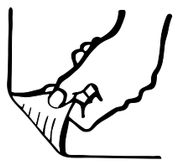
Electrical Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift, (AS / CE) (from serial number GS6915-7720)



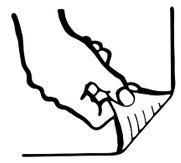
Electrical Schematic, GS-4069 DC with 2 Speed Lift, (AS / CE) (to serial number GS6915-6388)



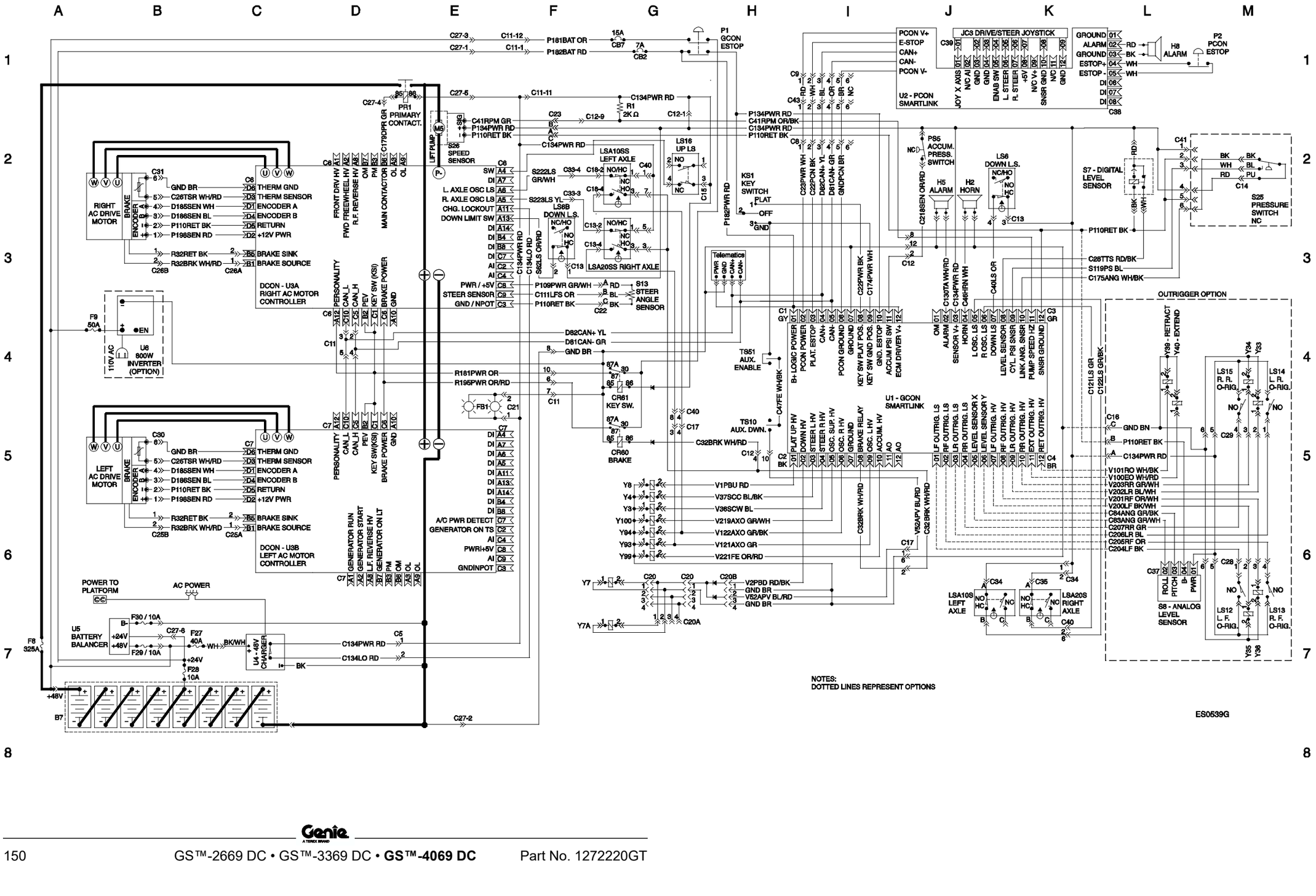
Electrical Schematic, GS-4069 DC with 2 Speed Lift, (AS / CE) (to serial number GS6915-6388)



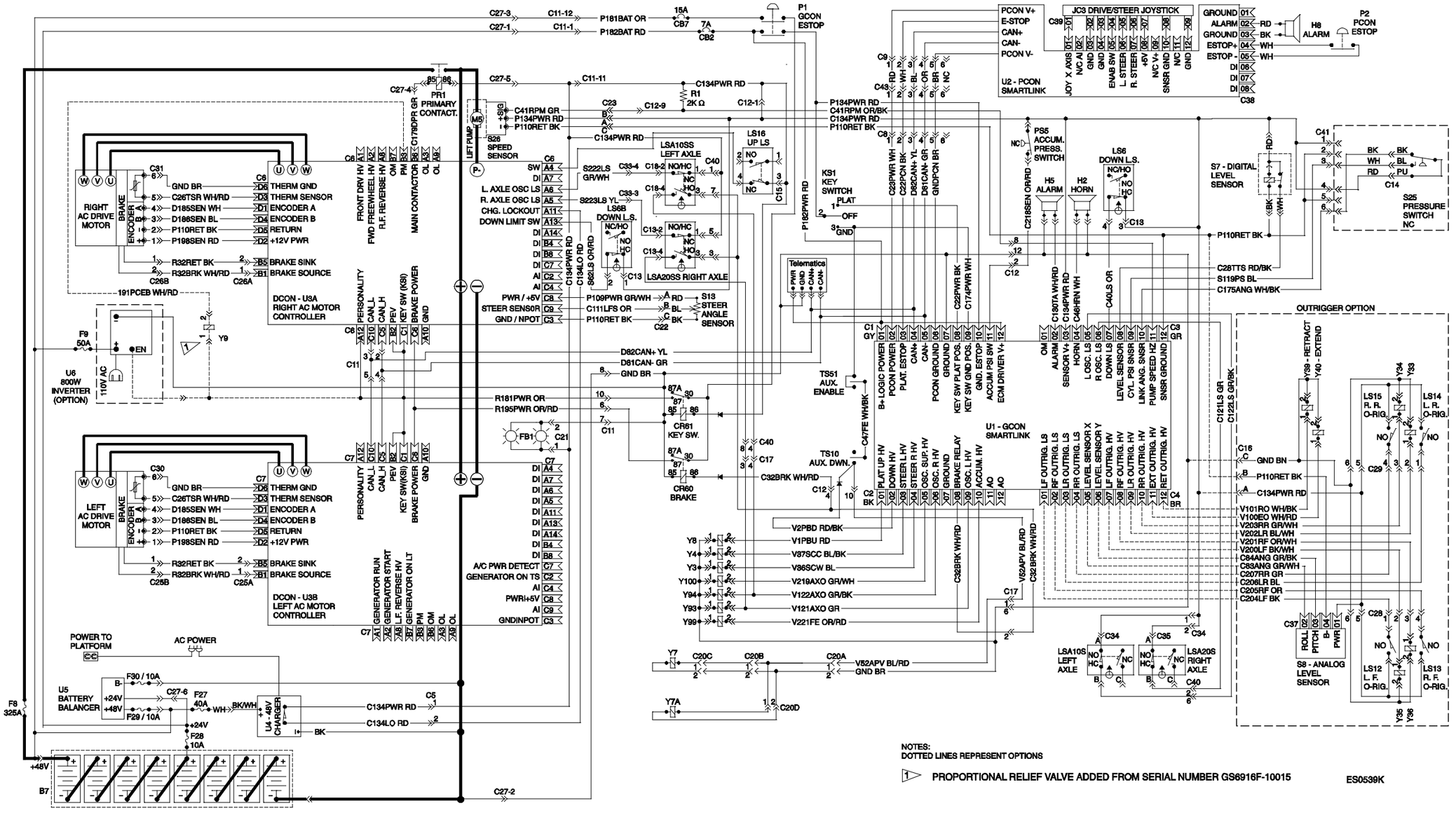
Electrical Schematic, GS-4069 DC with Proportional Lift, (AS / CE) (from serial number GS6915-6389 to GS6915-7719)



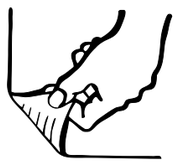
Electrical Schematic, GS-4069 DC with Proportional Lift, (AS / CE) (from serial number GS6915-6389 to GS6915-7719)



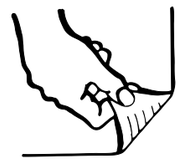
Electrical Schematic, GS-4069 DC with Proportional Lift, (AS / CE) (from serial number GS6915-7720)



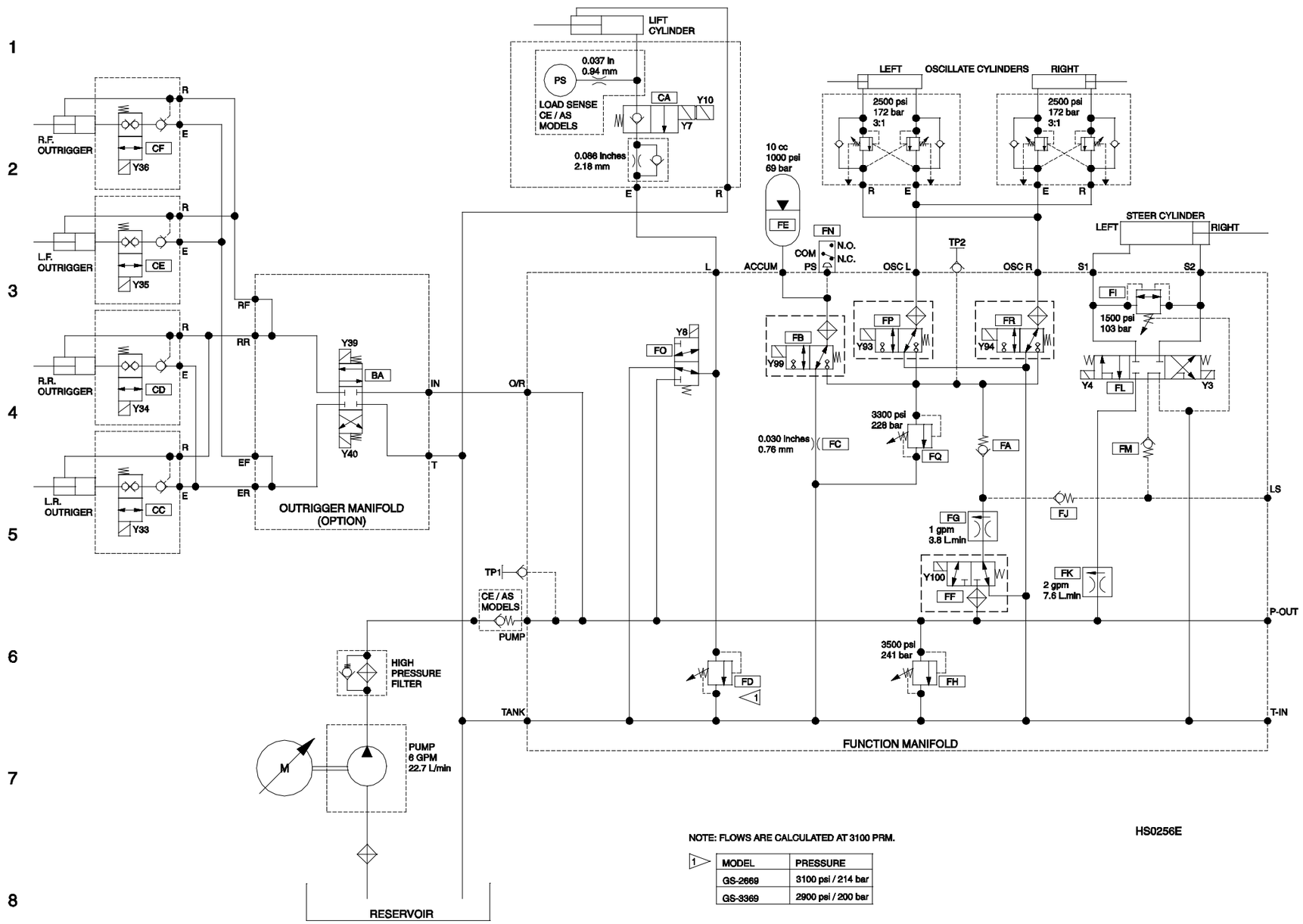
Electrical Schematic, GS-4069 DC with Proportional Lift, (AS / CE) (from serial number GS6915-7720)



Hydraulic Schematic, GS-2669 DC and GS-3369 DC with 2 Speed Lift (to serial number GS6915-6388)



Hydraulic Schematic, GS-2669 DC and GS-3369 DC with 2 Speed Lift (to serial number GS6915-6388)

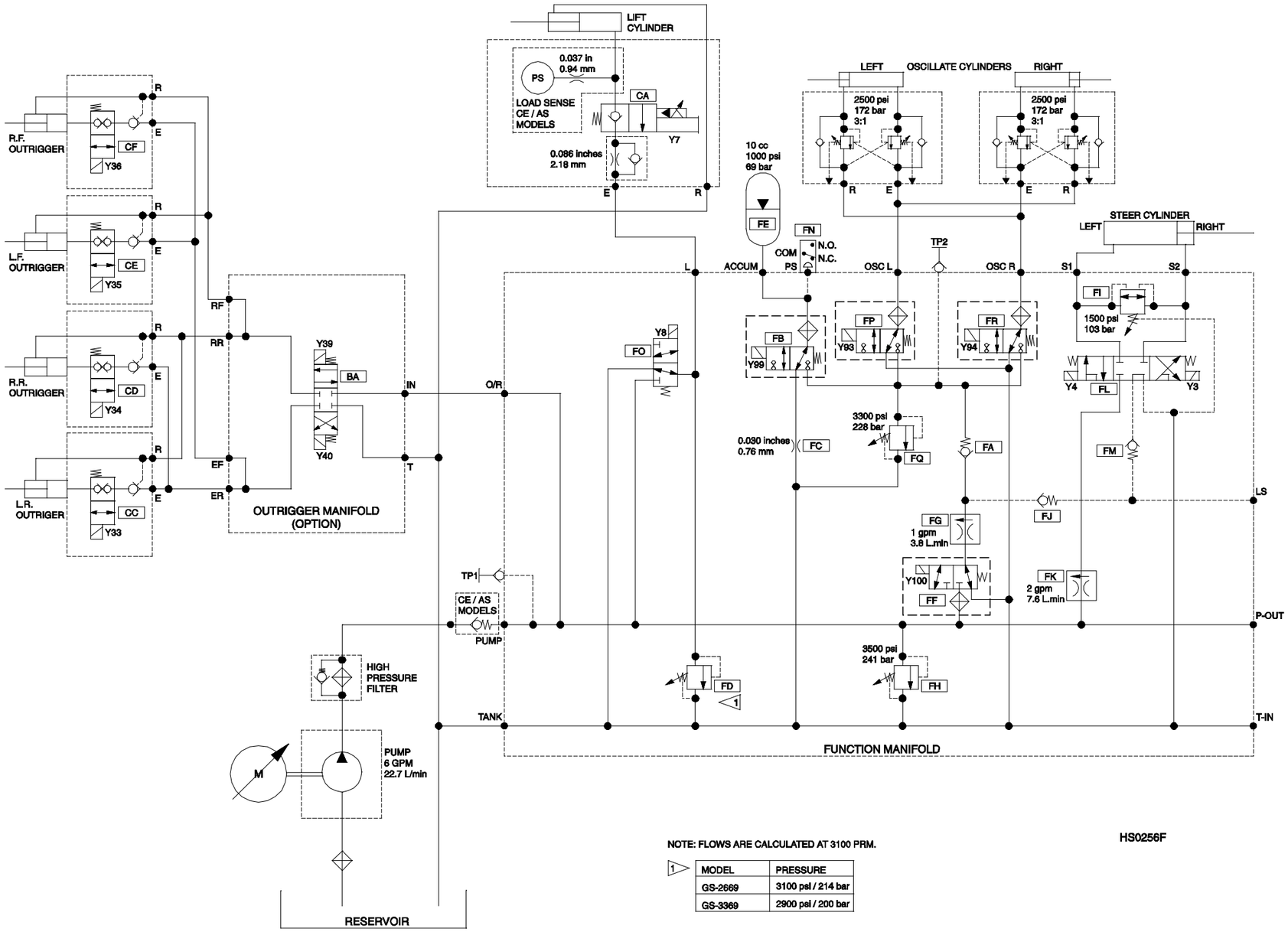


NOTE: FLOWS ARE CALCULATED AT 3100 PRM.

1	MODEL	PRESSURE
	GS-2669	3100 psi / 214 bar
	GS-3369	2900 psi / 200 bar

HS0256E

Hydraulic Schematic, GS-2669 DC and GS-3369 DC with Proportional Lift (from serial number GS6915-6389)

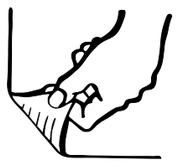


NOTE: FLOWS ARE CALCULATED AT 3100 PRM.

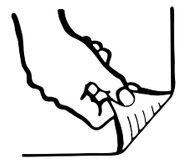
1	MODEL	PRESSURE
	GS-2669	3100 psi / 214 bar
	GS-3369	2900 psi / 200 bar

HS0256F

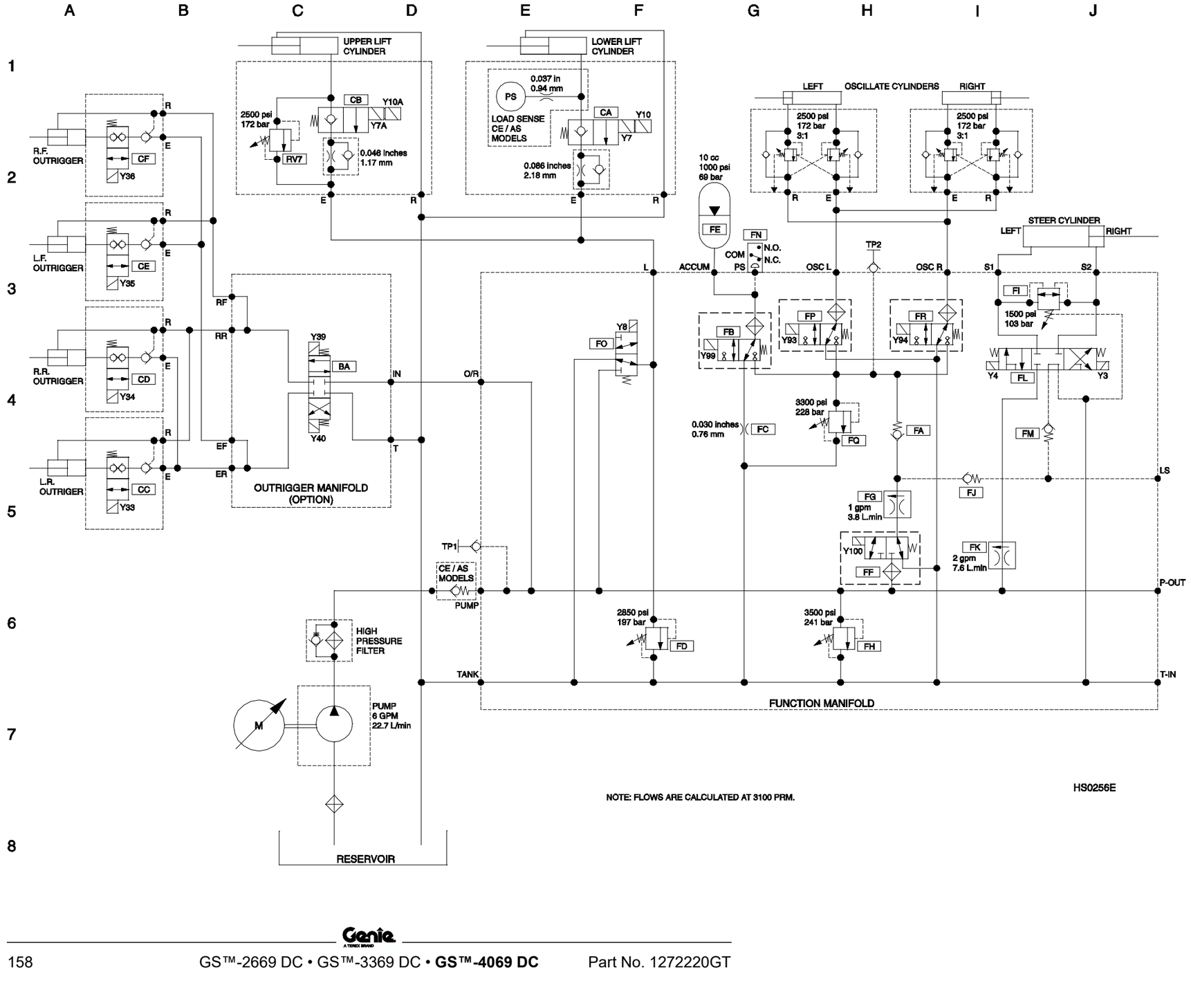
Hydraulic Schematic, GS-2669 DC and GS-3369 with Proportional Lift (from serial number GS6915-6389)



Hydraulic Schematic, GS-4069 DC with 2 Speed Lift (to serial number GS6915-6388)



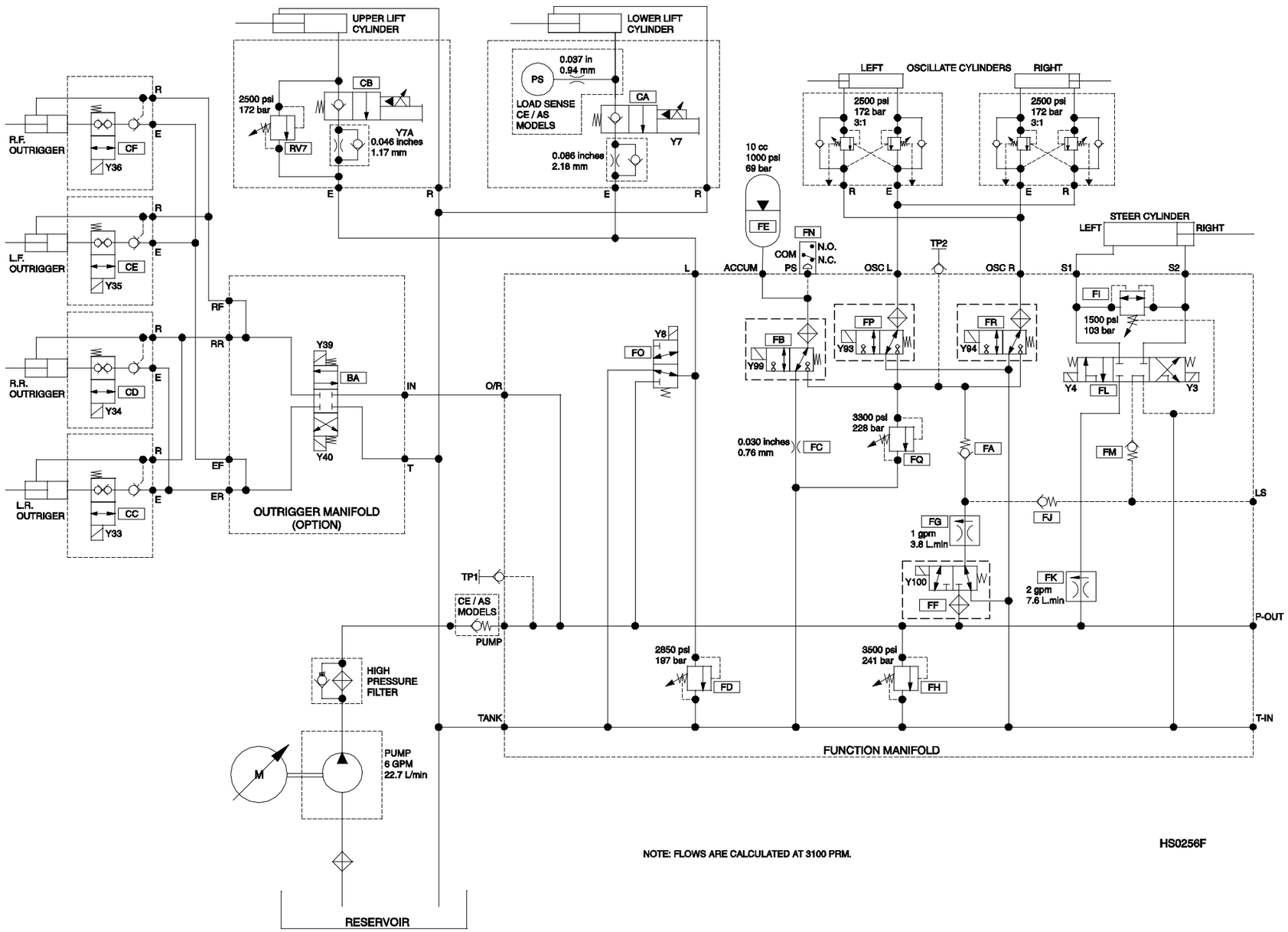
Hydraulic Schematic, GS-4069 DC with 2 Speed Lift (to serial number GS6915-6388)



NOTE: FLOWS ARE CALCULATED AT 3100 PRM.

HS0256E

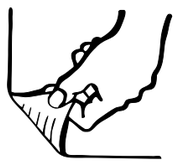
Hydraulic Schematic, GS-4069 DC with Proportional Lift (from serial number GS6915-6389)



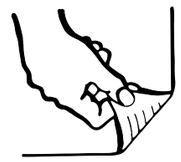
NOTE: FLOWS ARE CALCULATED AT 3100 PRM.

HS0256F

Hydraulic Schematic, GS-4069 DC with Proportional Lift (from serial number GS6915-6389)

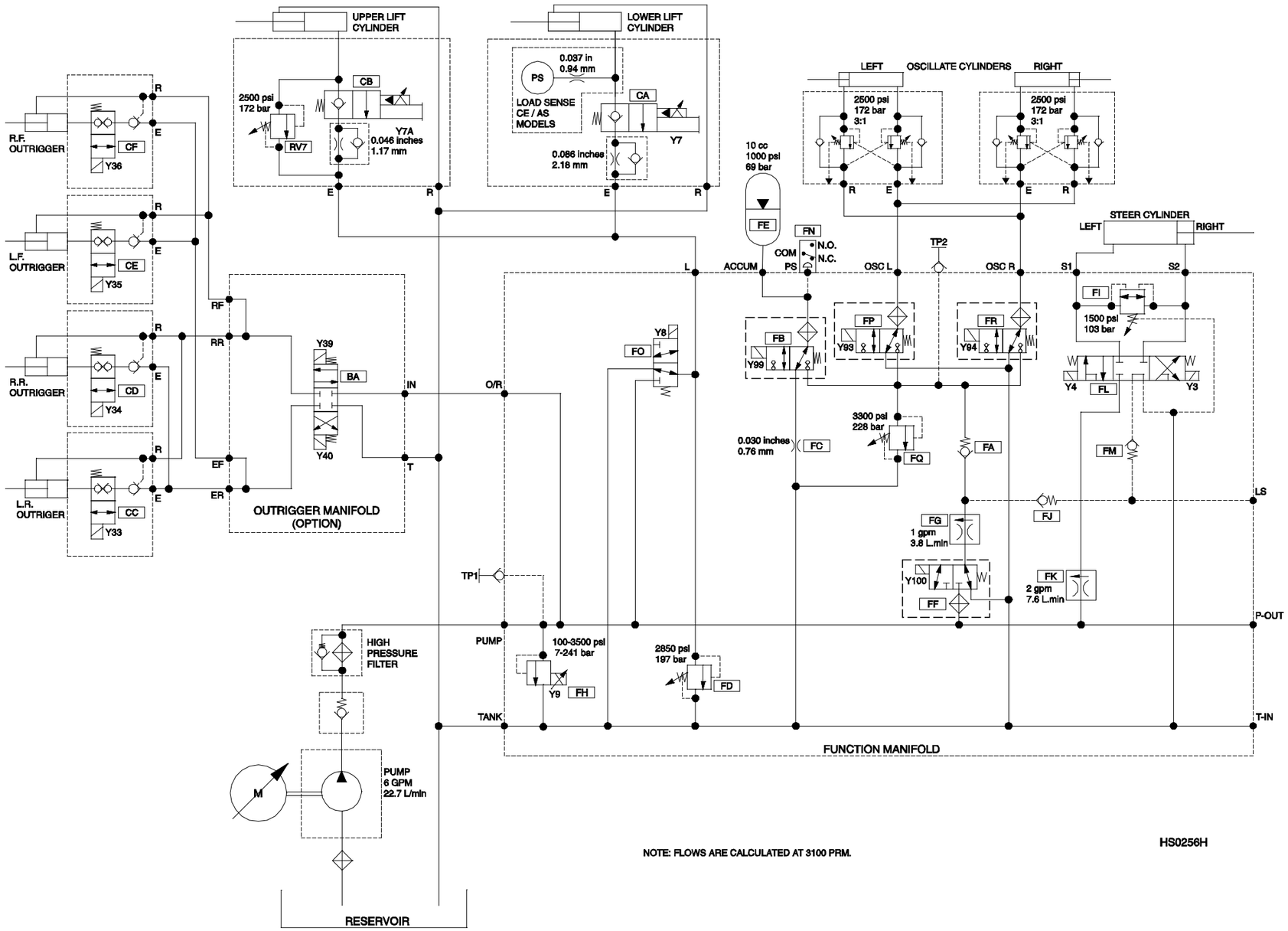


Hydraulic Schematic, GS-2669 DC and GS-3369 DC with Proportional Relief (from serial number GS6916F-10015)

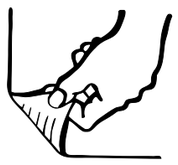


Hydraulic Schematic, GS-2669 DC and GS-3369 DC with Proportional Relief (from serial number GS6916F-10015)

Hydraulic Schematic, GS-4069 DC with Proportional Relief (from serial number GS6915-6389)



Hydraulic Schematic, GS-2669 DC and GS-3369 with Proportional Lift (from serial number GS6915-6389)



California Proposition 65

WARNING

Operating, servicing and maintaining this equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. These chemicals can be emitted from or contained in other various parts and systems, fluids and some component wear by-products. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your equipment and vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your equipment or vehicle and after operation. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

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