Genie®
A TEREX BRAND

# Service and Repair Manual

Serial Number Range

## GS™-2669 BE
from GS6914-5000

## GS™-3369 BE
from GS6916F-7897
to GS6916F-10499

## GS™-4069 BE
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. 1272221GT
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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First Edition, Second Printing

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## Revision History

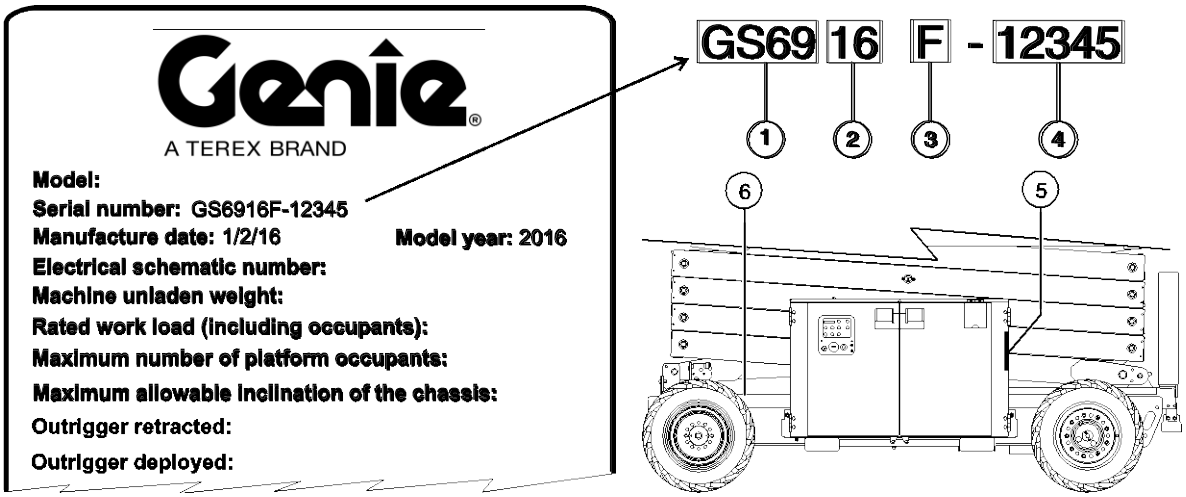
| Revision | Date | Section | Procedure / Page / Description |
|---|---|---|---|
| A | 3/2016 | | Initial Release |
| A1 | 9/2016 | Introduction | Serial Number Legend |
| A2 | 11/2016 | Repair | 7-1 |
| | | Schematics | Hydraulic and Electrical / Models with proportional relief added |
| A3 | 11/2018 | Repair | 7-2 |
| B | 5/2021 | Front cover | Add ending serial break |
| | | | |

| **Reference Examples:** | **Electronic Version**<br>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

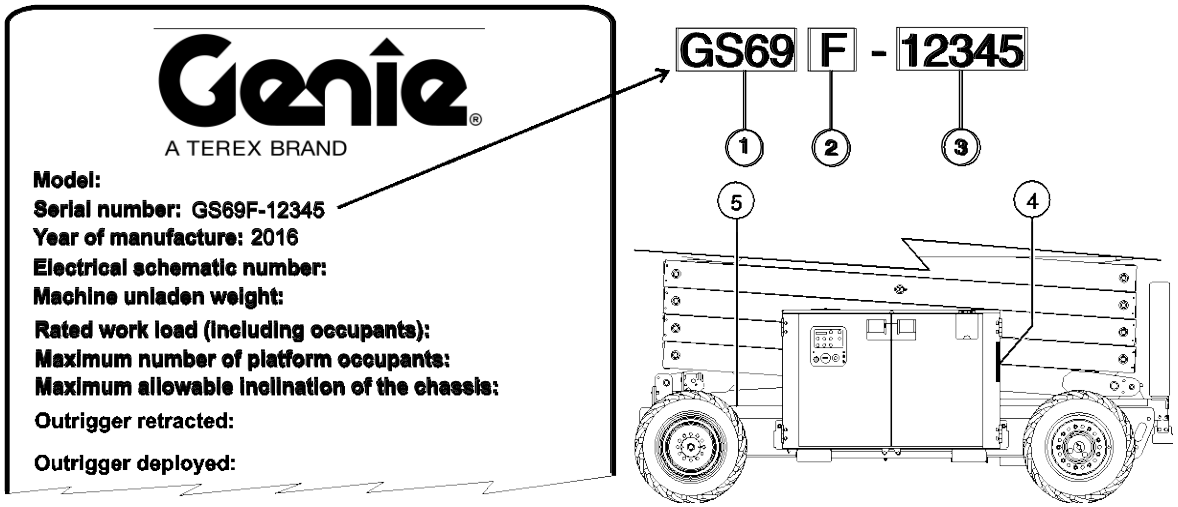
## Serial Number Legend

**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<br>62.5 liters |
| Hydraulic system (including tank) | 18 gallons<br>68.1 liters |
| Drive hub<br>EP 90 or SAE 90 multipurpose hypoid gear oil API service classification GL5 | 24.5 ounces<br>725 cc |
| Fuel tank | 3.3 gallons<br>12.5 liters |

| Tires and wheels | |
|---|---|
| Wheel lugs (steer end) | 9 @ 5/8-18 |
| Lug nut torque, dry | 90 ft-lbs<br>122 Nm |
| Lug nut torque, lubricated | 68 ft-lbs<br>92 Nm |
| Wheel lugs (non-steer end) | 9 @ 5/8-18 |
| Lug nut torque, dry | 170 ft-lbs<br>230 Nm |
| Lug nut torque, lubricated | 130 ft-lbs<br>176 Nm |
| Castle nut (steer end) | |
| Castle nut torque | 35 ft-lbs<br>47.5 Nm |

| Non-marking, foam filled, RT | |
|---|---|
| Tire size | 26 x 12D380 |
| Tire ply rating | 8 |
| Tire diameter | 26 in<br>66 cm |
| Tire width | 12 in<br>30 cm |
| Weight, each | 177.5 lbs<br>80.5 kg |

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

# Specifications

## Performance Specifications

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

## 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<br>Shell Tellus S2 V 46<br>Shell Tellus S4 VX 32 Shell<br>Shell Donax TG (Dexron III)<br>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.

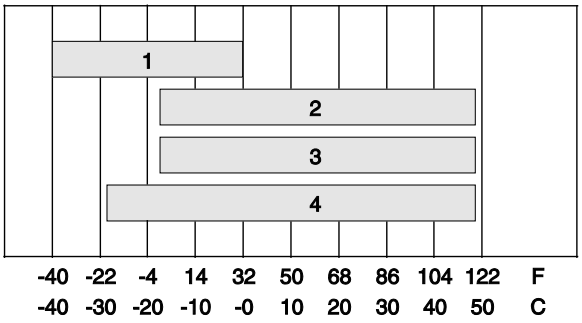
Note: Extended machine operation can cause the hydraulic fluid temperature to increase beyond it's maximum allowable range. If the hydraulic fluid temperature consistently exceeds 200°F / 90°C an optional oil cooler may be required.

**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

# Specifications

## Chevron Rando HD Premium Oil MV Fluid Properties

| | |
|---|---|
| ISO Grade | 32 |
| Viscosity index | 200 |
| Kinematic Viscosity<br>cSt @ 200°F / 100°C<br>cSt @ 104°F / 40°C | <br>7.5<br>33.5 |
| Brookfield Viscosity<br>cP @ -4°F / -20°C<br>cP @ -22°F / -30°C | <br>1040<br>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<br>cSt @ 200°F / 100°C<br>cSt @ 104°F / 40°C<br>cSt @ -40°F / -40°C | <br>5.5<br>15.0<br>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<br>cSt @ 200°F / 100°C<br>cSt @ 104°F / 40°C | <br>8.0<br>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<br>cSt @ 200°F / 100°C<br>cSt @ 104°F / 40°C | <br>9<br>33.8 |
| Brookfield Viscosity<br>cSt @ -4°F / -20°C<br>cSt @ -13°F / -25°C<br>cSt @ -40°F / -40°C | <br>481<br>702.4<br>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<br>cSt @ 149°F / 65°C<br>cSt @ 104°F / 40°C<br>cSt @ 0°F / -18°C | <br>22<br>46<br>1300 |
| Flash point | None |
| Pour point | -81°F / -63°C |
| Maximum continuous operating temperature | 189°F / 87°C |

# Specifications

## Hydraulic Component Specifications

| **Drive Pump** | |
|---|---|
| Type | gear pump |
| Displacement | 0.4 cu in<br>6 cc |
| Flow rate @ 3100 rpm | 6 gpm<br>22.7 L/min |
| **Function manifold** | |
| System relief valve pressure, maximum | 3500 ps<br>241 bari |
| Lift relief valve pressure GS-2669 BE | 3100 psi<br>214 bar |
| Lift relief valve pressure GS-3369 BE | 2900 psi<br>200 bar |
| Lift relief valve pressure GS-4069 BE | 2850 psi<br>197 bar |
| Steer relief valve pressure | 1500 psi<br>103 bar |
| Oscillate relief valve pressure | 3300 psi<br>228 bar |
| Steer flow regulator | 2 gpm<br>7.6 L/min |
| Oscillate flow regulator | 1 gpm<br>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 | 63 lbs / 29 kg |
| Weight (tray with batteries) | 504 lbs / 229 kg |

| **T145** | |
|---|---|
| Type | 6v DC |
| Quantity | 8 |
| Capacity | 260 AH |
| Reserve capacity @ 25A rate | 530 minutes |
| Reserve capacity @ 75A rate | 145 minutes |
| Weight, each | 72 lbs / 33 kg |
| Weight (tray with batteries) | 576 lbs / 261 kg |

# Specifications

## Kohler KD350 Engine

| | |
|---|---|
| Displacement | 21.3 cu in<br>0.4 liters |
| Number of cylinders | 1 |
| Bore and Stroke | 3.3 x 2.6 inches<br>82 x 66 mm |
| Horsepower | 6.7 @ 3600 rpm<br>5 kW |
| High idle | 3600/3000 rpm |
| Compression ratio | 20.3:1 |
| **Lubrication system** | |
| Oil pressure (@ 2000 rpm) | 40 to 60 psi<br>1.4 to 3 bar |
| Oil capacity (including filter) | 1.3 quarts<br>1.2 liters |
| **Oil viscosity requirements** | |
| Units ship with 15W-40. | |
| Extreme operating temperatures may require the use of alternative engine oils. For oil requirements, refer to the Engine Operator Handbook on your machine. | |
| **Oil Pressure switch** | |
| Oil pressure switch point | 14.5 to 21.8 psi<br>1 to 1.5 bar |
| **Fuel injection system** | |
| Injection pump | Direct |
| **Fuel requirement** | |
| For fuel requirements, refer to the engine Operator Manual for your engine. | |
| **Battery** | |
| Type | 12V DC |
| Group | U1R |
| Quantity | 1 |
| Ampere hour | 33 |
| Cold cranking ampere | 330 |
| Reserve capacity @ 25A rate | 45 minutes |

## 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

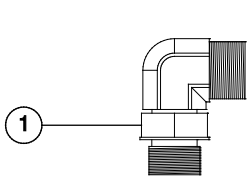
(swivel nut or hose connection)

| 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

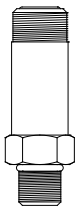
(tube fitting - installed into Aluminum)
(all types)

| 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

### 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.

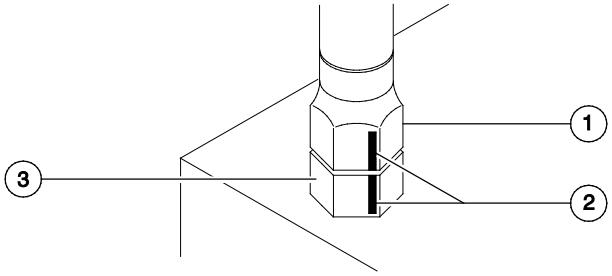



Illustration 1

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.

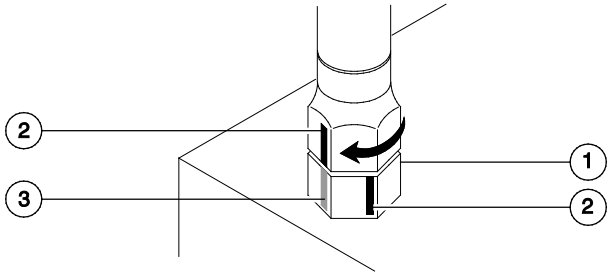



Illustration 2

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

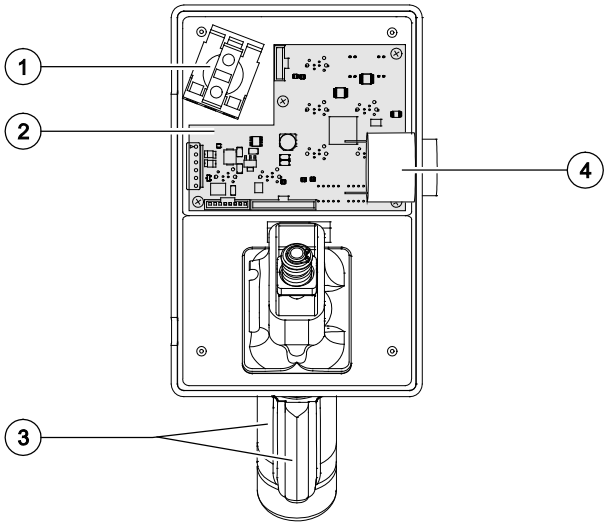
## Platform controls

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.

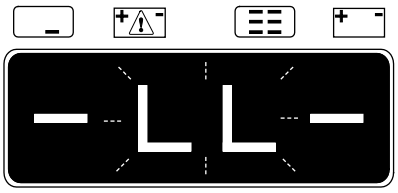



1 red Emergency Stop button P2
2 platform controls circuit board U3
3 proportional control handle and drive/steer enable switch JC9
4 alarm H1

## 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<br>< 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<br>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.

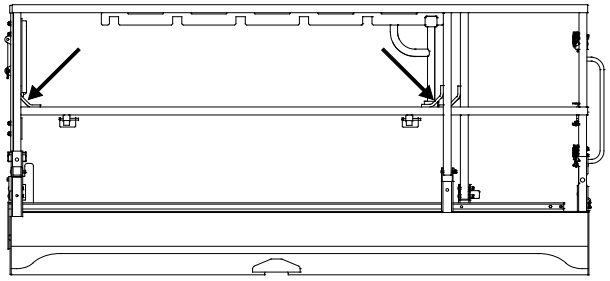
**NOTICE** Component damage hazard. The platform controls wiring can be damaged if it is kinked or pinched.

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

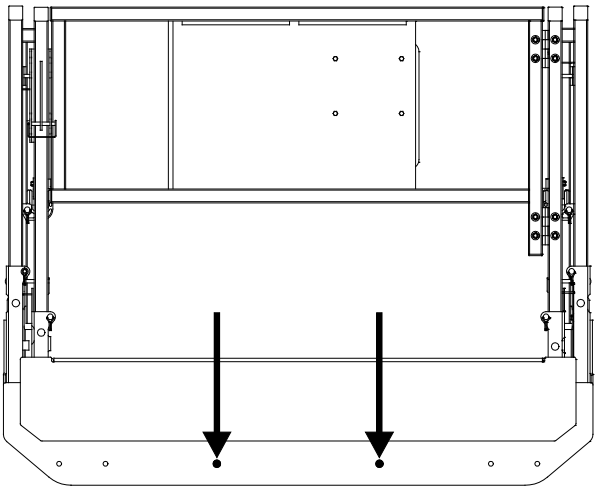
**⚠WARNING** Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

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.

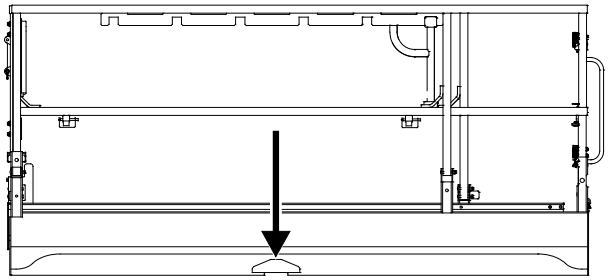


8 Remove the two carriage bolts that secure the platform to the platform pivot at the steer end of the machine.



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.

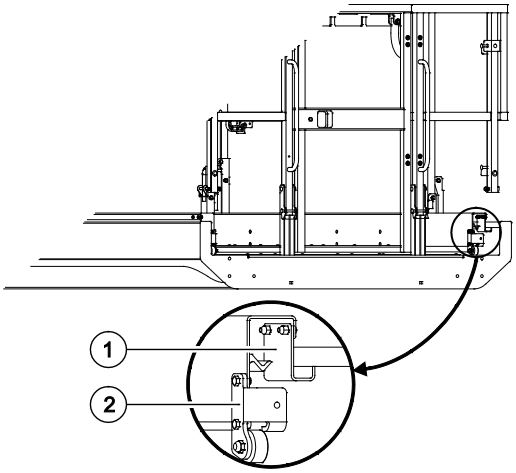
## 2-2 Platform Extension Deck

### 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.

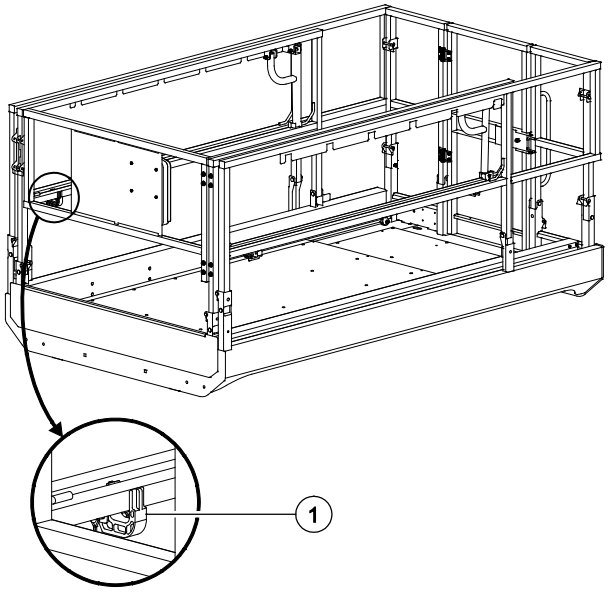



1 deck catch
2 deck stop

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.

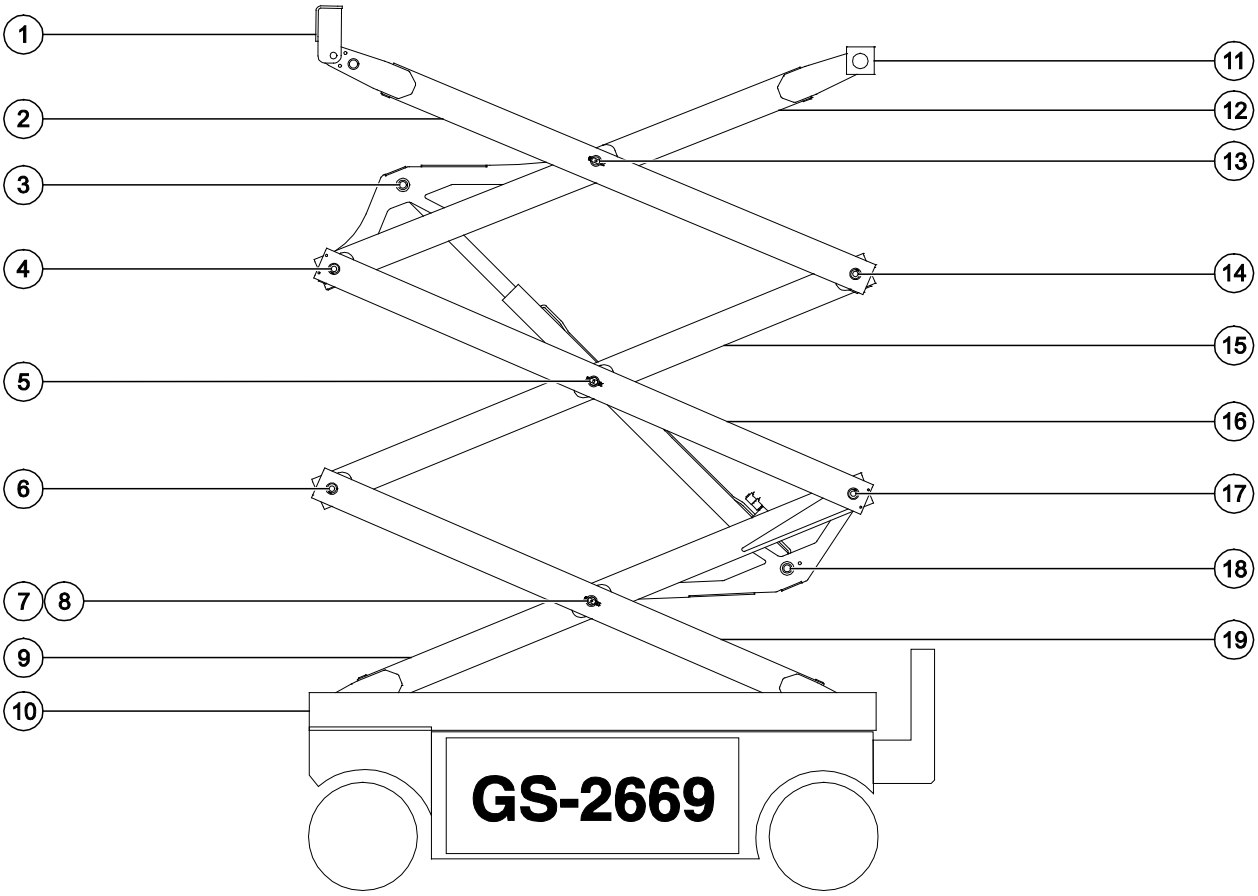
7 Carefully slide the platform extension out until the platform extension makes contact with the carriage on the forklift.

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 BE

### 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.

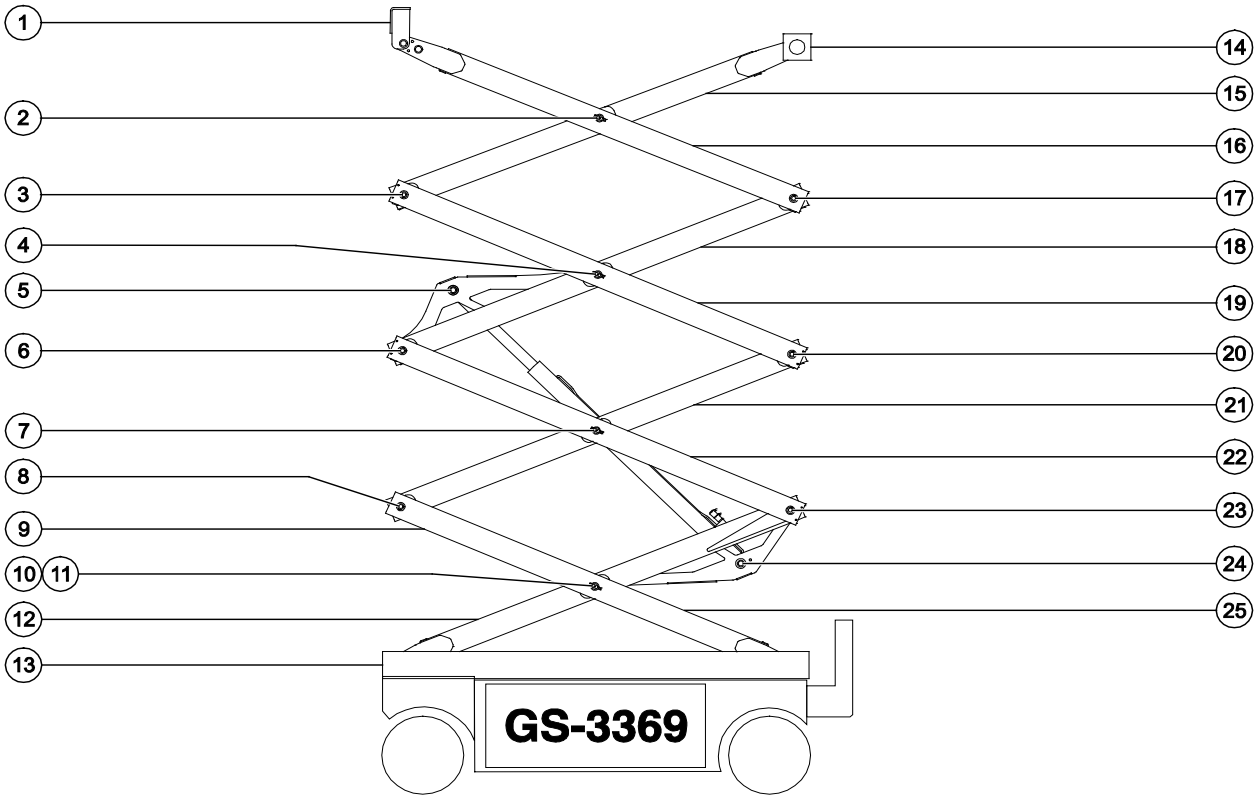
2 Remove the retaining fasteners from the center pivot pins.

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 BE

### 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.

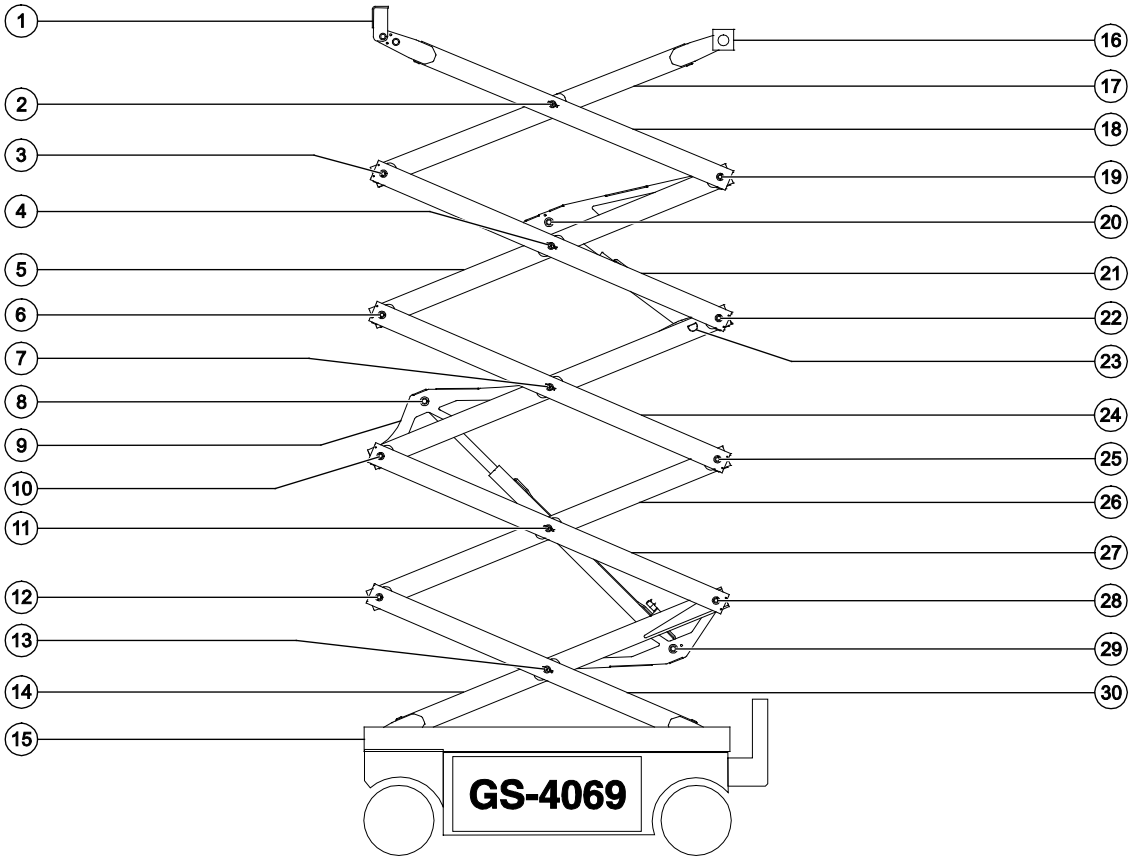
2 Remove the retaining fasteners from the center pivot pins.

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 BE

### 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

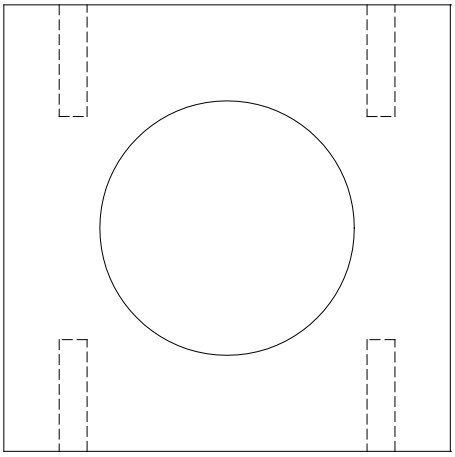
**Platform Scissor Arm Slider Blocks:**

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.

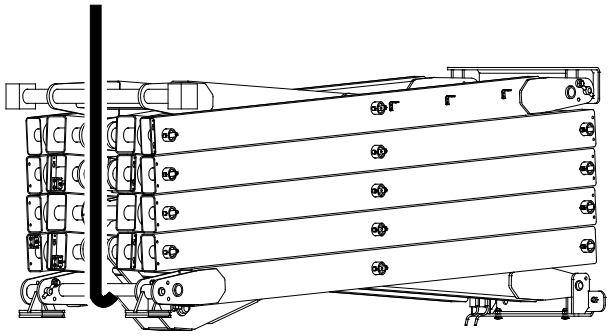
2 Remove the fasteners securing the ladder to the chassis. Remove the ladder from the machine and set aside.

**⚠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.

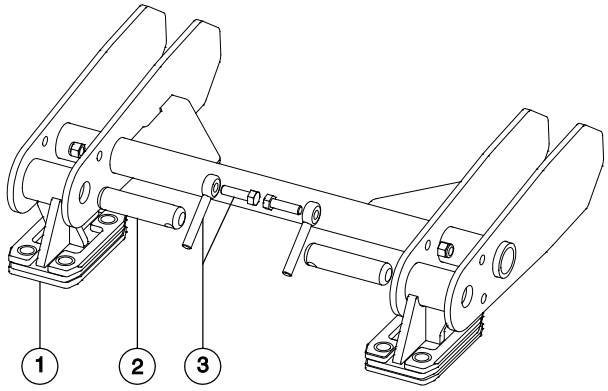
**⚠WARNING** Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported.



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.



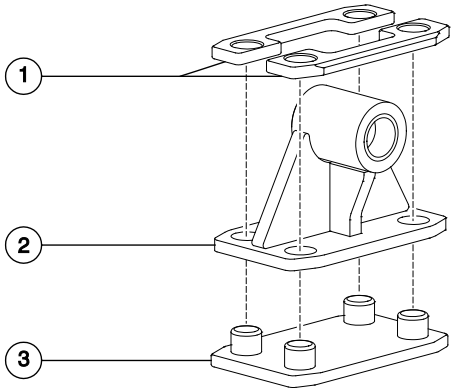

1 Slider foot assembly
2 pivot pin
3 retaining fasteners

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

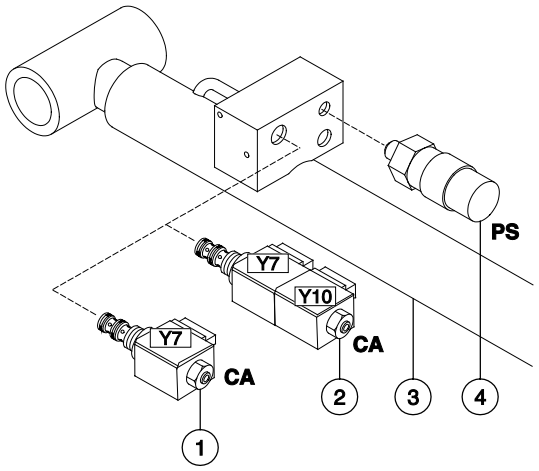
**GS-2669 BE and GS-3369 BE:**

**⚠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 BE and GS-3369 BE

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

# Scissor Components

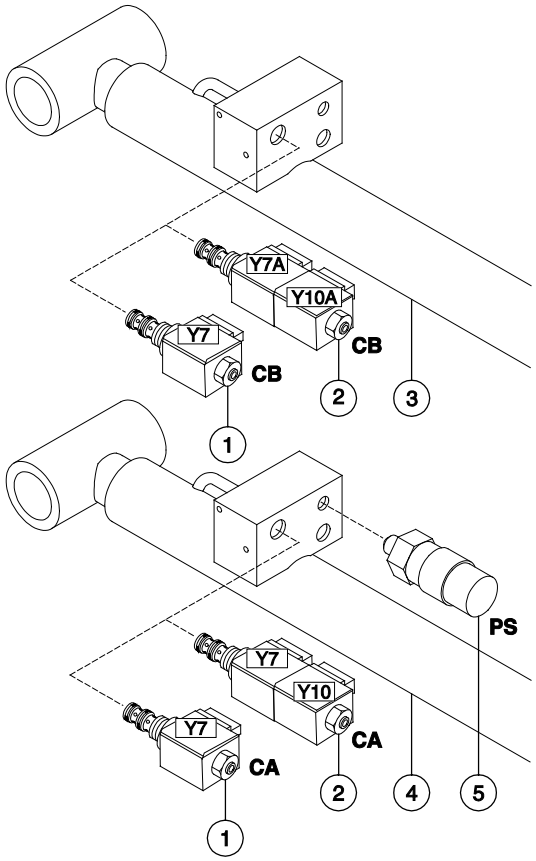
**GS-4069 BE:**

**⚠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 BE

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)

# Engines

## 4-1
## Oil Pressure Switch

The engine oil pressure switch is a normally open switch. The switch contacts close at approximately 7 psi / 0.48 bar. If the oil pressure drops below the switch point, the contacts open and the engine will shut off to prevent damage.

## How to Replace the Oil Pressure Switch

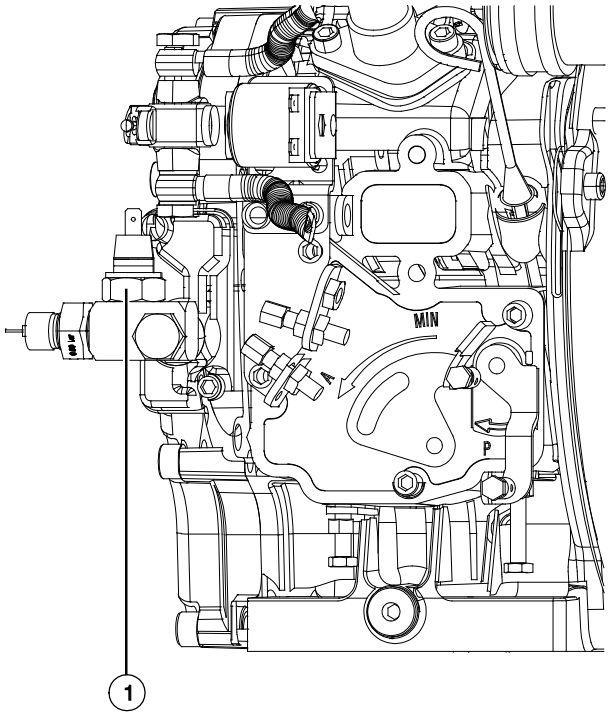
1 Open the battery box on the engine side of the machine.

2 Tag and disconnect the wiring from the switch. Remove the switch from the engine.

**⚠ CAUTION** Burn hazard. Beware of hot engine components. Contact with hot engine components may result in severe burns.

3 Install the new switch and tighten. Torque to 8-18 ft-lbs / 11-24 Nm.

4 Note: Always use pipe thread sealant when installing a new switch.




1 oil pressure switch

## How to Repair the Kohler KD350 Engine

Repair procedures and additional engine information are available in the Kohler KD350 Operator's Manual (Kohler part number ED0053028360). Kohler KD350 Workshop Manual (Kohler part number ED0053029330).

| | |
|---|---|
| **Kohler KD350 Operator's Manual** | |
| Genie part number | 1255885 |
| **Kohler KD350 Workshop Manual** | |
| Genie part number | 1255884 |

## Ground Controls

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

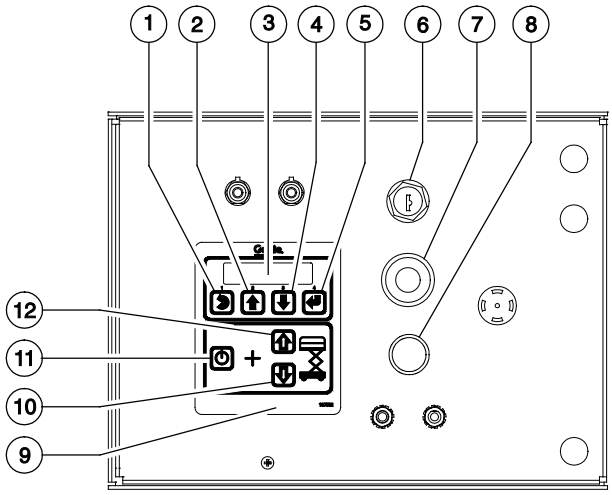
The ground controls consist of an Electronic Control Module (ECM), emergency stop button, key switch and circuit breaker.

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

# Ground Controls

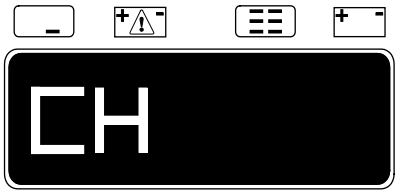
## 5-1
## Software Revision Level

### How to Determine the Software Revision Level

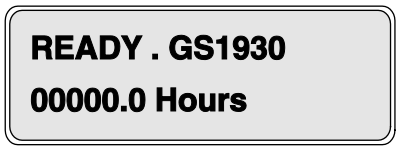
The machine software revision level is displayed at the ground controls LCD display.

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.



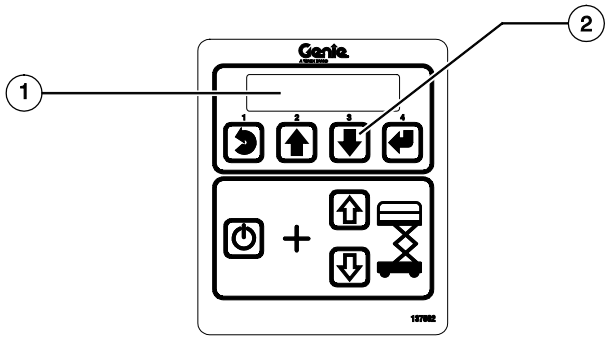

2 Press the ground control scroll down button.

⊙ 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

## 5-2
## 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.

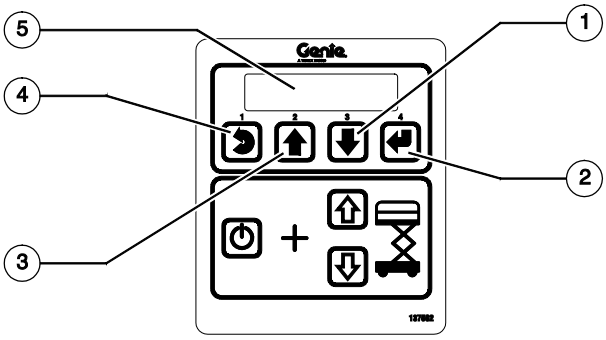
**⚠ DANGER** Tip-over hazard. Do not adjust function speeds higher than specified in this procedure. Setting the function speeds greater than specifications could cause the machine to tip over resulting in death or serious injury.

**⚠ 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.

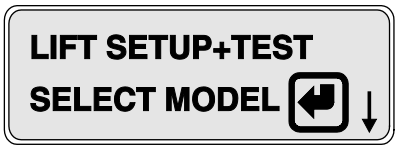



Ground Control Menu Buttons

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:

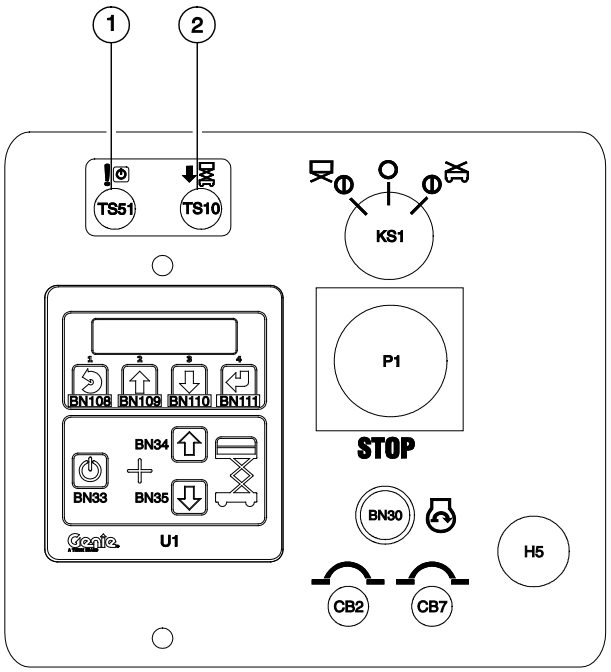



4 Use the ground control menu buttons to select machine Model, Options and Speed Setup parameters. Follow the menu structure indicated on the ground control LCD display.

# Ground Controls

## 5-3
## 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

## 5-4
## 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

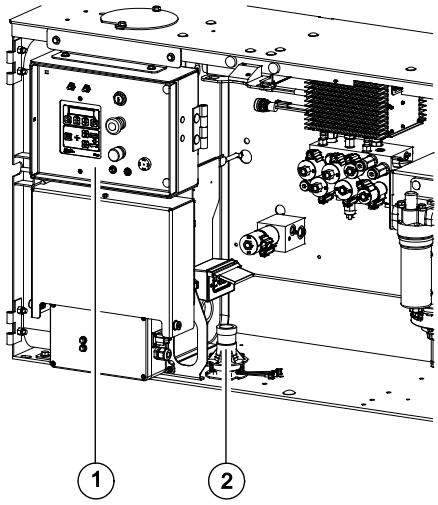
**⚠ DANGER** Tip-over hazard. Failure to install or calibrate the level sensor as instructed will compromise machine stability and cause the machine to tip over, resulting in death or serious injury. Do not install or calibrate the level sensor other than specified in this procedure.

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.**

2 Locate the level sensor in the ground controls compartment.



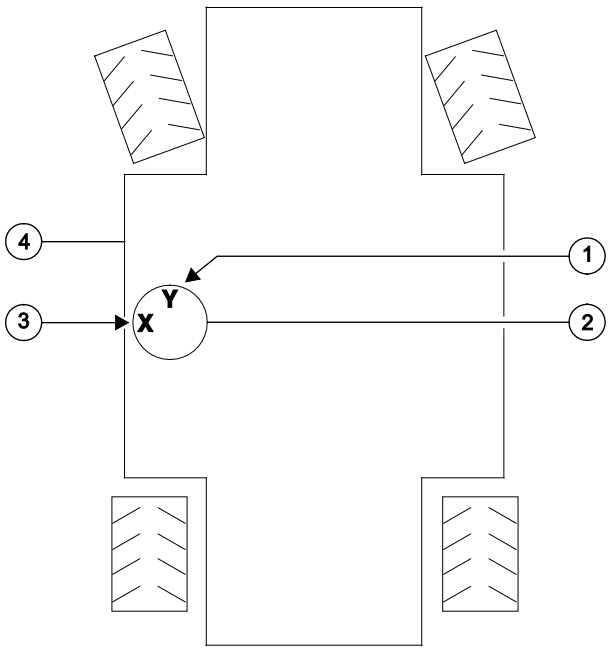

1 ground control box
2 level sensor

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.

# Ground Controls

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.

## 5-5
## 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

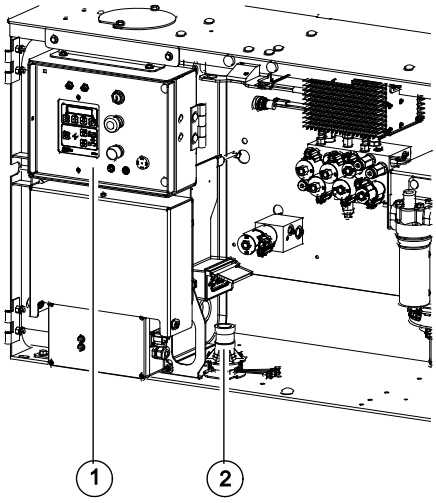
**⚠ DANGER** Tip-over hazard. Failure to install or calibrate the level sensor as instructed will compromise machine stability and cause the machine to tip over, resulting in death or serious injury. Do not install or calibrate the level sensor other than specified in this procedure.

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.



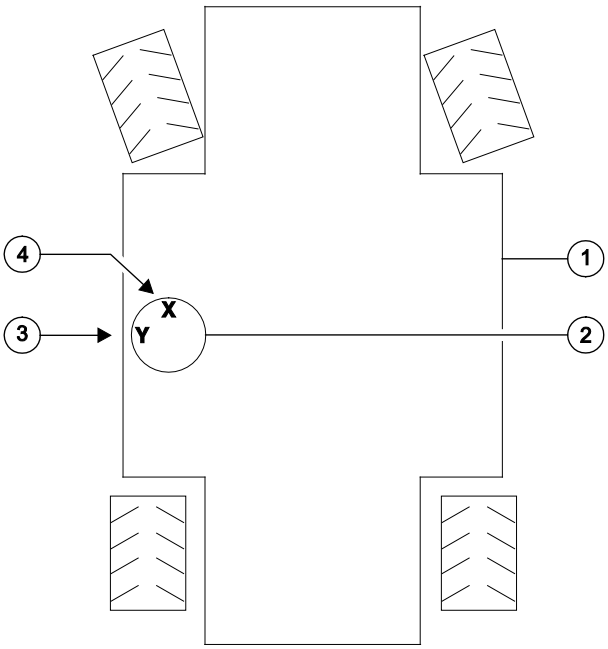

1 ground control box
2 level sensor

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

# Ground Controls

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*.

## 5-6
## 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.

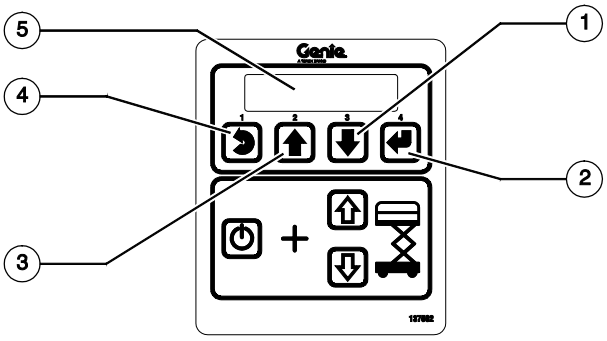
Note: Before entering Service Override mode, fault codes or the malfunction affecting the operation of the machine should be fully understood to ensure Service Override mode is required.

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.

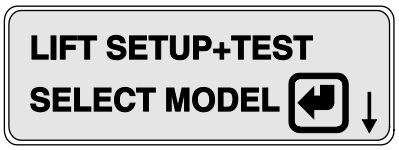



Ground Control Menu Buttons

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:

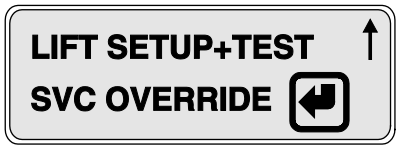



4 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

# Ground Controls

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:



# 6-1 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.

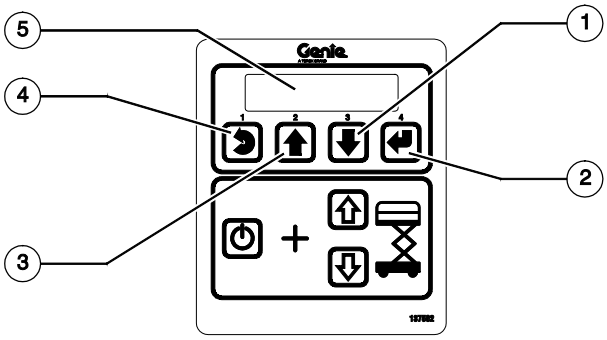
**⚠WARNING** Component damage hazard. After replacing the hydraulic pump, it is critical to return the lift and drive speed settings to original factory specifications. Refer to Specifications, *Performance Specifications*.

# Hydraulic Pump

## 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.

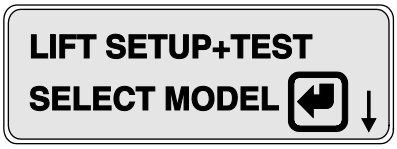



Ground Control Menu Buttons

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

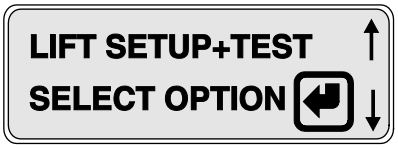
3 Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ 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:



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.

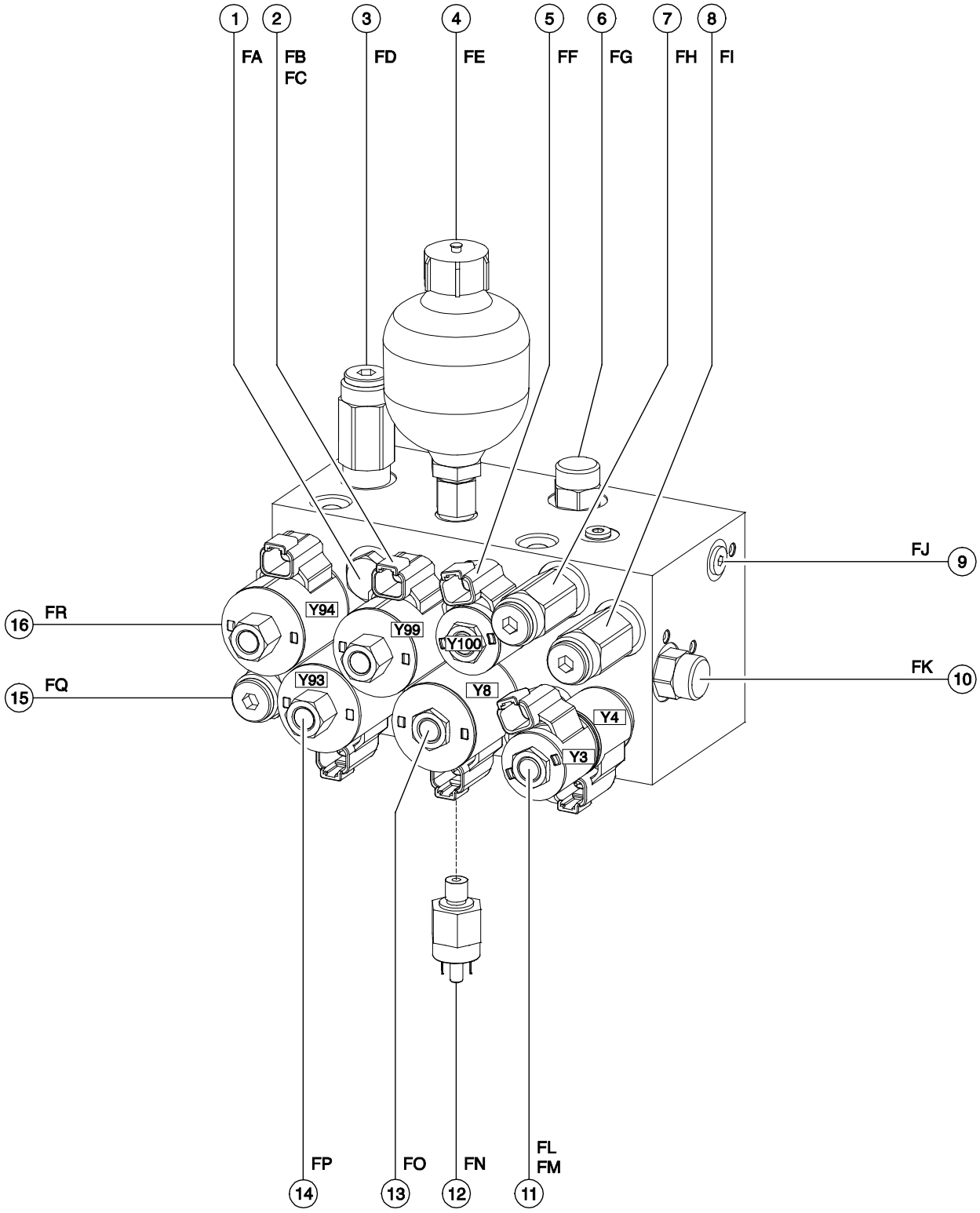
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## 7-1
## Function Manifold Components – to serial number GS6916F-10014

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<br>(GS 2669 - 3100 psi / 214 bar)<br>(GS 3369 - 2900 psi / 200 bar)<br>(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

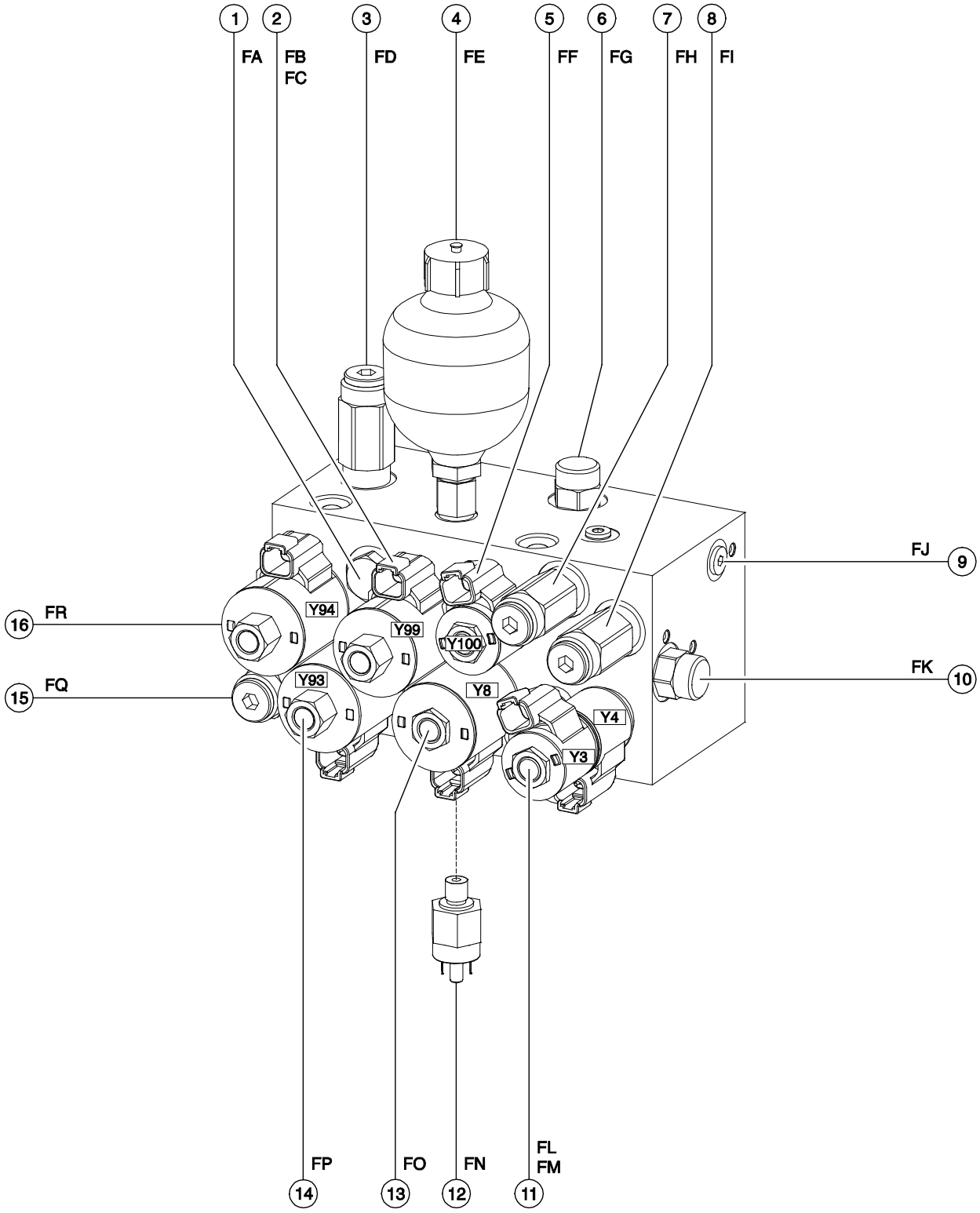

1
2
3
4
5
6
7
8
FA
FB
FC
FD
FE
FF
FG
FH
FI
FJ
9
16
FR
15
FQ
FK
10
Y94
Y99
Y100
Y93
Y8
Y4
Y3
FP
FO
FN
FL
FM
14
13
12
11

## 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<br>(GS 2669 - 3100 psi / 214 bar)<br>(GS 3369 - 2900 psi / 200 bar)<br>(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<br>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<br>Check valve | FL<br>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<br>Orifice | FB<br>FC | Oscillate / Accumulator<br>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
2
3
4
5
6
7
8
FA
FB
FC
FD
FE
FF
FG
FH
FI
FJ
9
16
FR
15
FQ
FK
10
Y94
Y99
Y100
Y93
Y8
Y4
Y3
FP
FO
FN
FL
FM
14
13
12
11

# 7-2 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*.

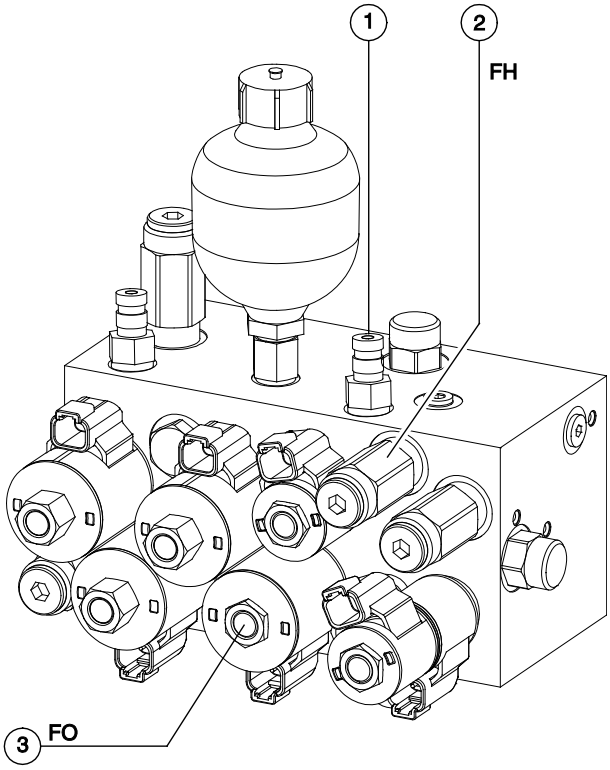
6 Use a wrench to hold the system relief valve and remove the cap.

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.

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.

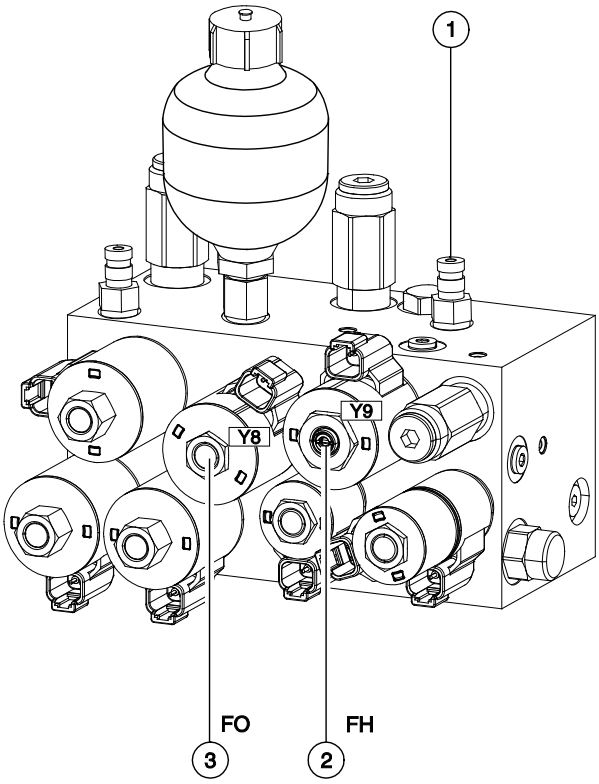
2 Remove the platform controls from the platform and place the controls near the function manifold on the hydraulic tank side of the machine.

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*.

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




1 test port #1
2 proportional relief valve
3 platform up valve
4

## 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.

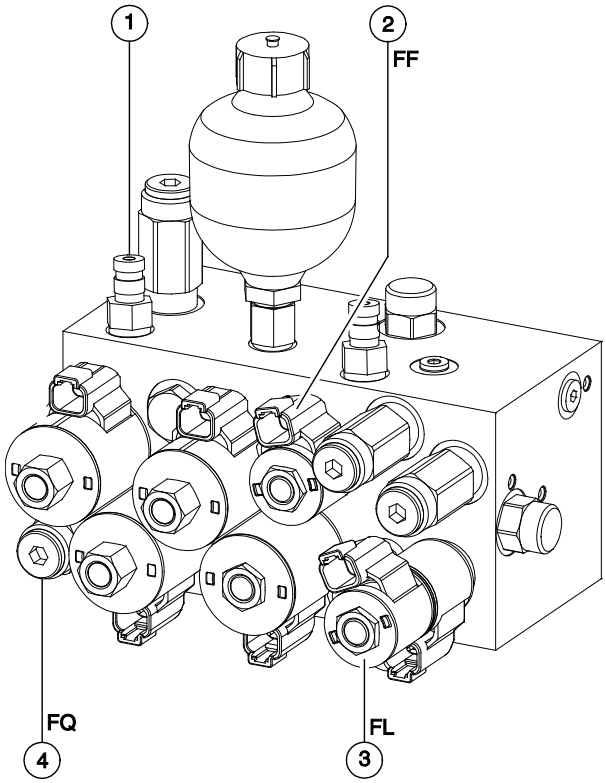
7 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

**⚠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 relif 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*.

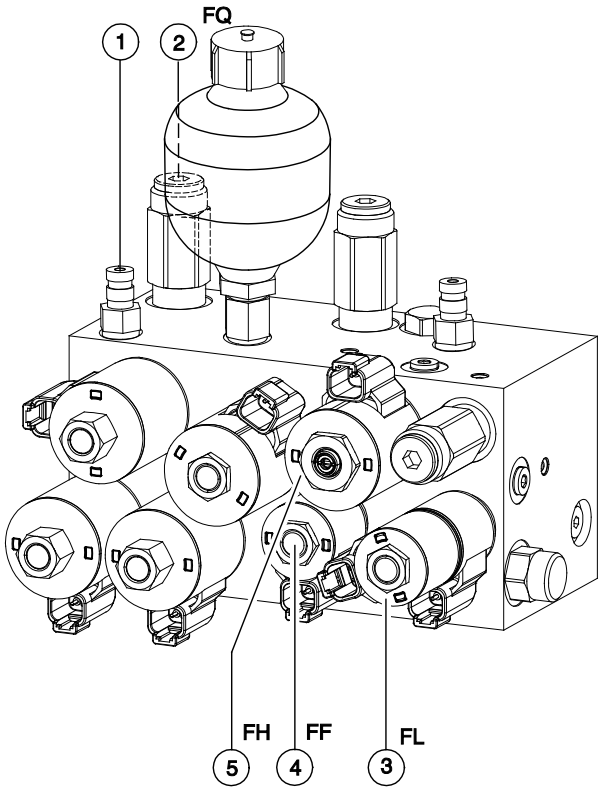
7 Use a wrench to hold the oscillate relief valve and remove the cap.

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

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

10 Connect the harness back to the original position.

11 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*.

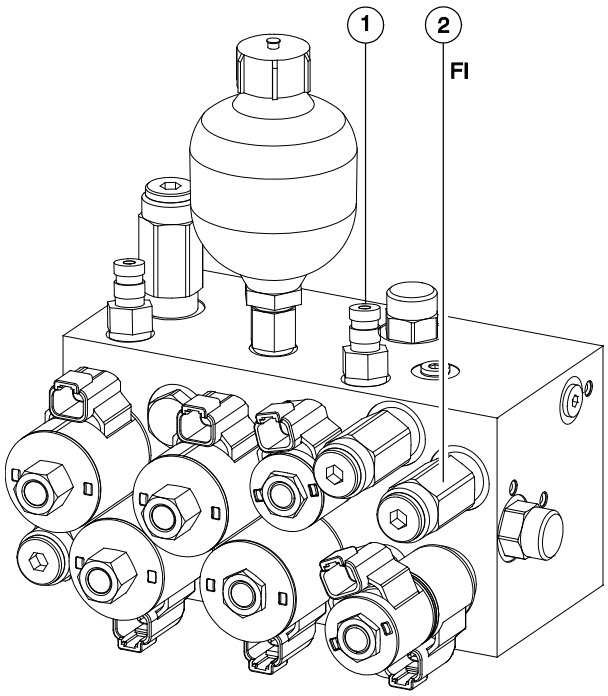
5 Use a wrench to hold the steer relief valve and remove the cap.

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.

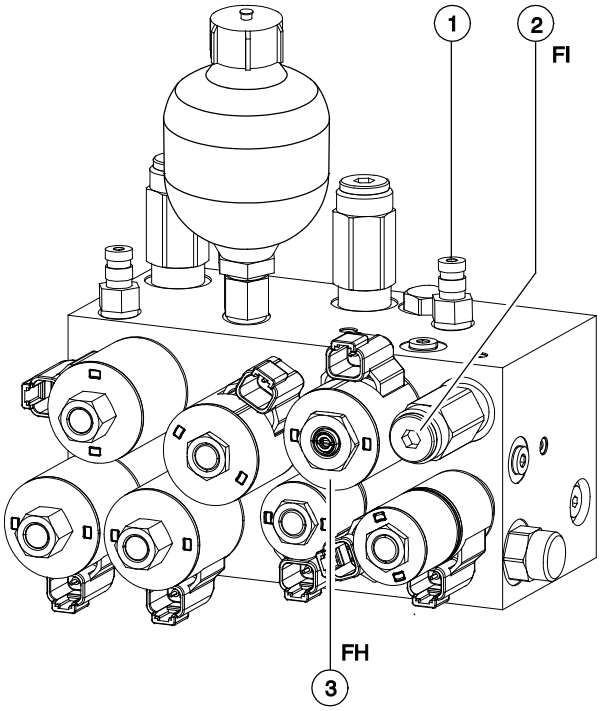
7 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

**⚠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.

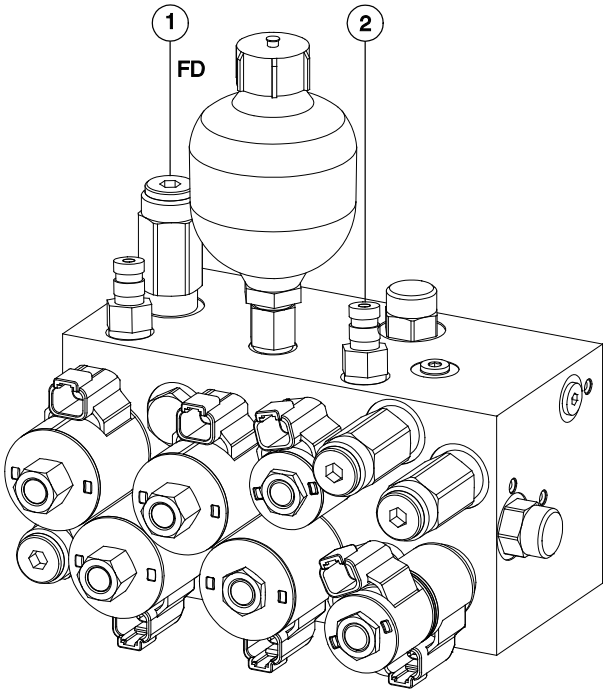



1 test port #1
2 steer relief valve
3 proportional relief valve

## 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.

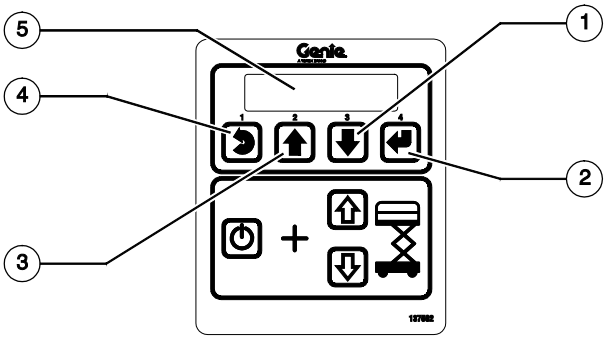
1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.




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.

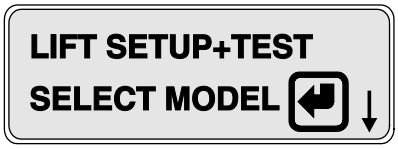



Ground Control Menu Buttons

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:

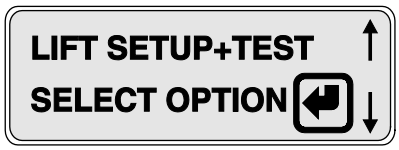



5 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

# Manifolds

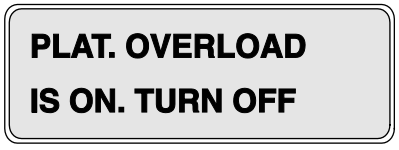
6 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.

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



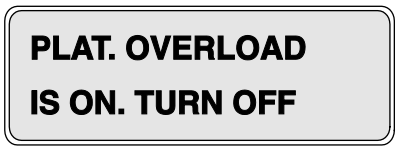

7 Press the Enter button.

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



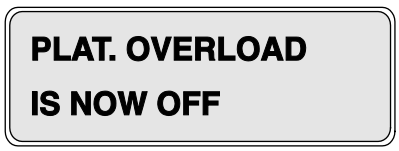

8 Press the Enter button.

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

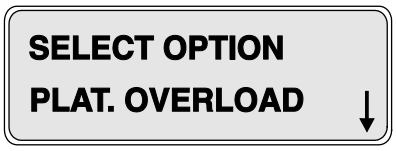



9 Press the Enter button.

⊙ 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.

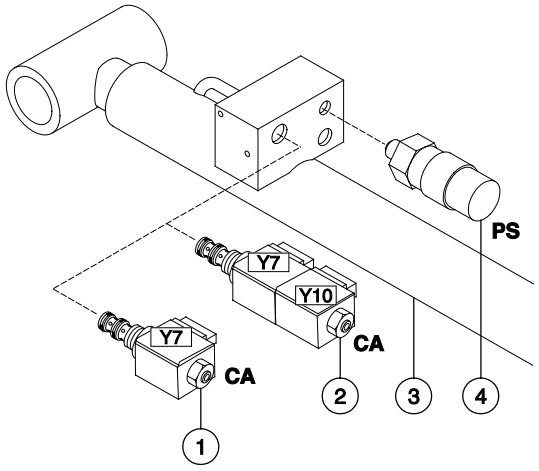
14 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.

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.

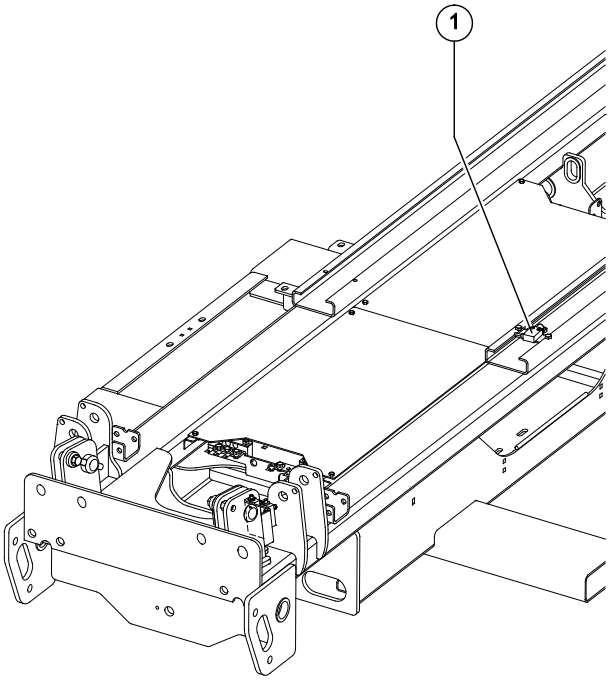
17 Push in the red Emergency Stop button to the off position.

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.

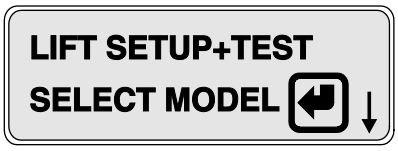
39 Lower the platform to the stowed position.

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.

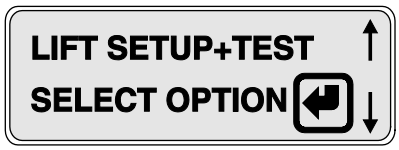
⊙ Result: The ground controls LCD display will show the following:




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

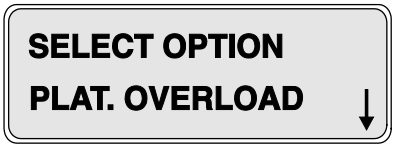
44 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.

⊙ 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:



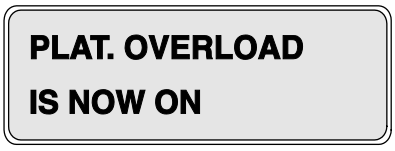

46 Press the Enter button.

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

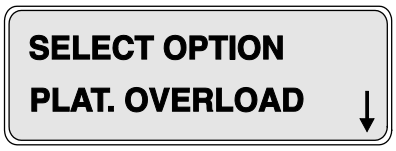



47 Press the Enter button.

⊙ 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:



# Manifolds

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*.

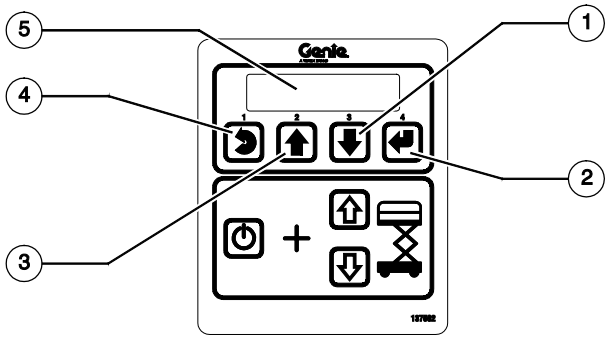
## How to Adjust the Platform Up Relief Valve - Models with Platform Overload and Proportional Relief

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.

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.

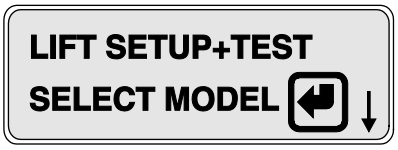



Ground Control Menu Buttons

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

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

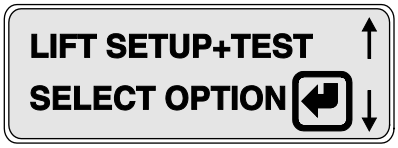
⊙ Result: The ground controls LCD display will show the following:




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

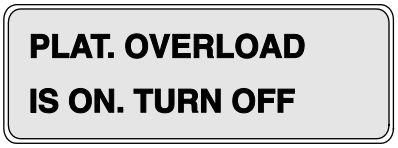
6 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.

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



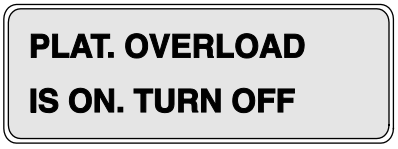

7 Press the Enter button.

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



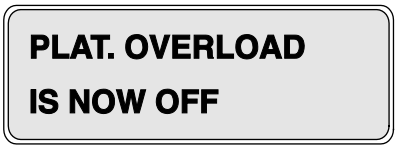

8 Press the Enter button.

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

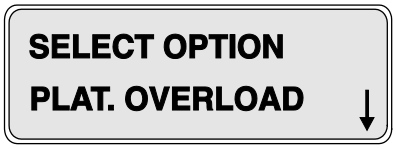



9 Press the Enter button.

⊙ 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:



# Manifolds

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.

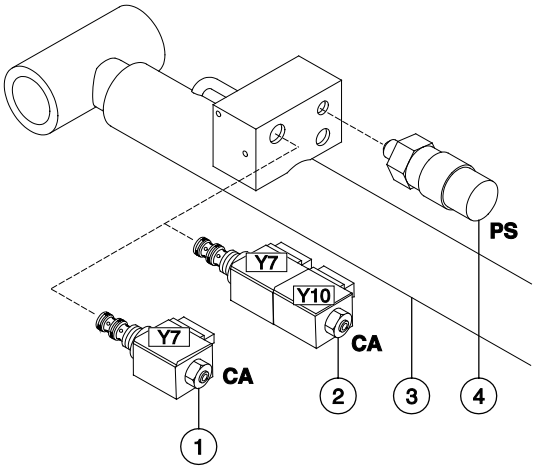
14 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.

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.

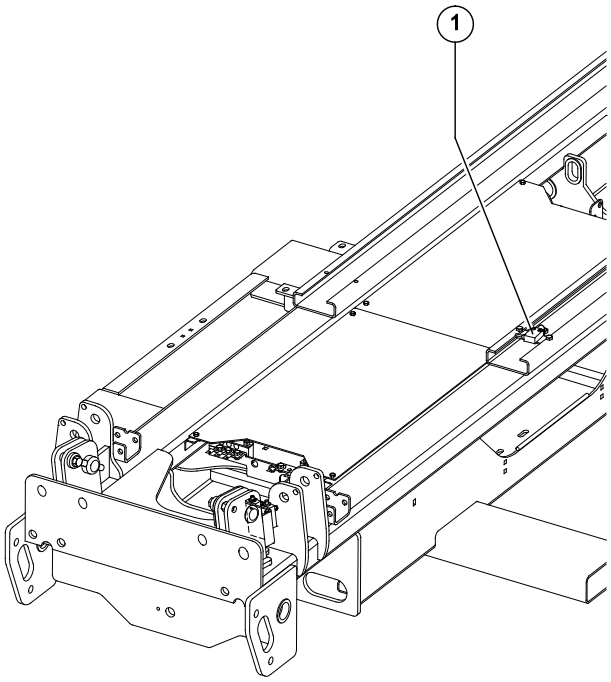
17 Push in the red Emergency Stop button to the off position.

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.

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

21 Return the safety arm to the stowed position.

22 Lower the platform to the stowed position.

23 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 |

24

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.

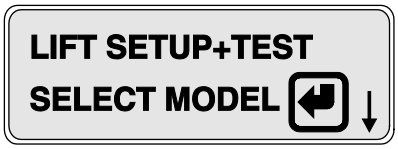
38 Lower the platform to the stowed position.

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.

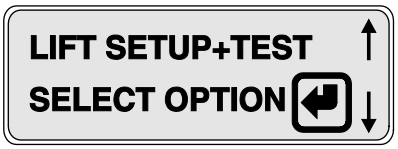
⊙ Result: The ground controls LCD display will show the following:




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

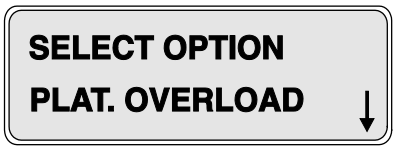
43 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.

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



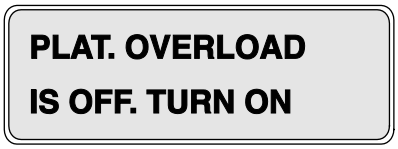

44 Press the Enter button.

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




45 Press the Enter button.

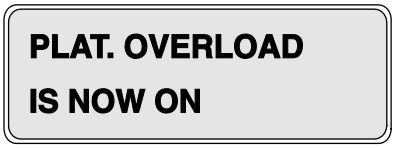
⊙ Result: The ground controls LCD display will show the following:



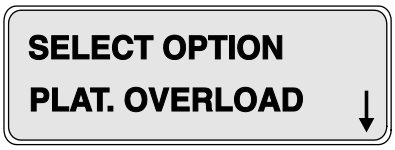

46 Press the Enter button.

# Manifolds

⊙ 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:

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




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.



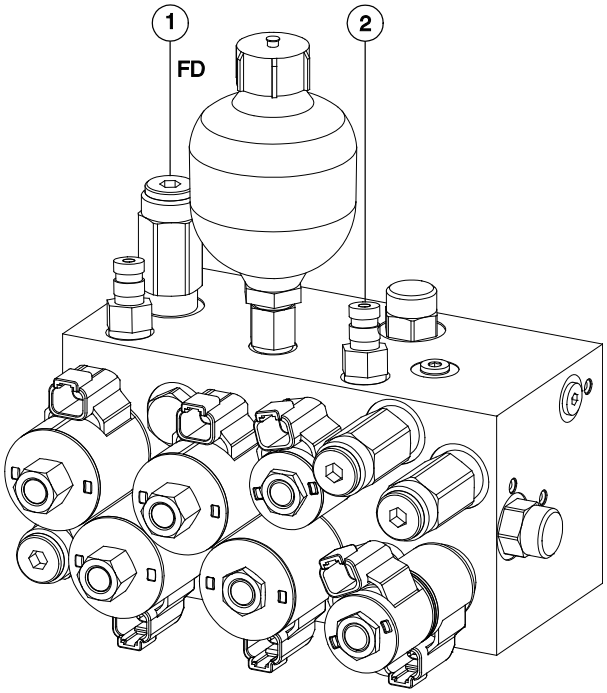

50 Push in the red Emergency Stop button to the off position.

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.

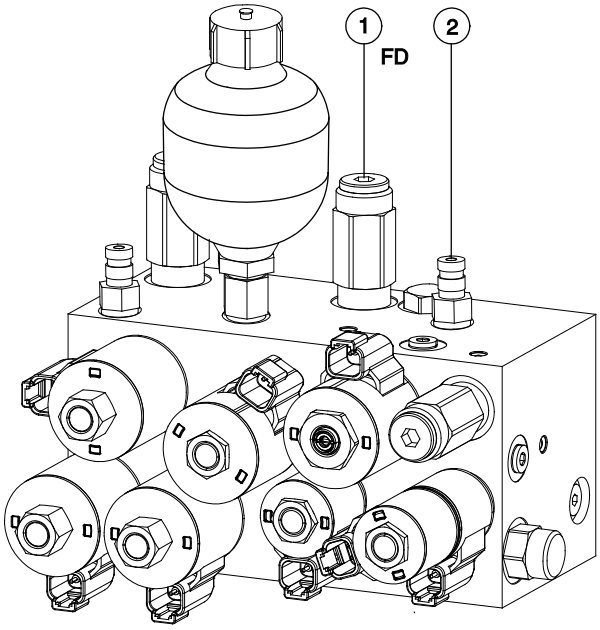
8 Using a suitable lifting device, remove the weight from the platform.

# Manifolds

## 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.

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

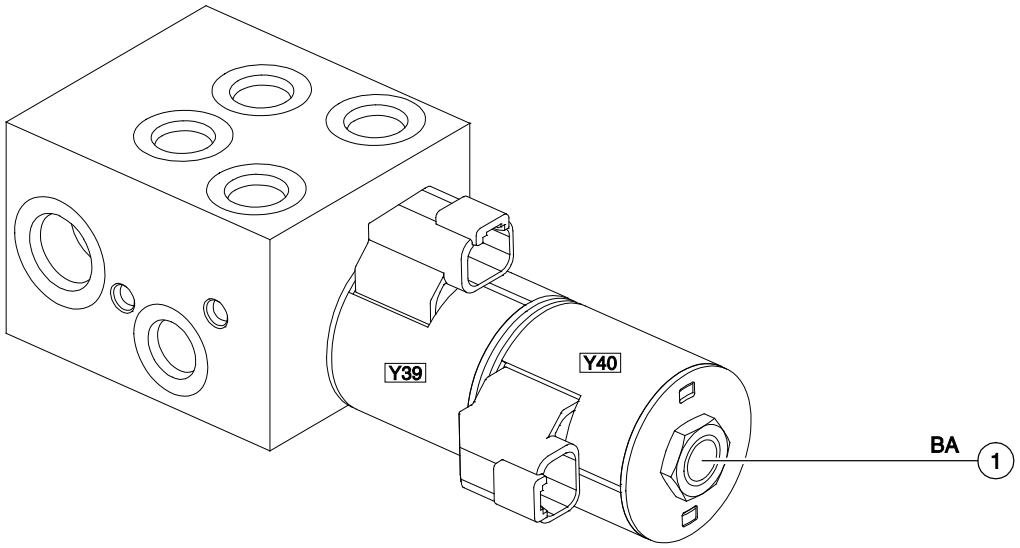
6 Lower the platform to the stowed position.

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

## 7-3
## 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

## 7-4 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.

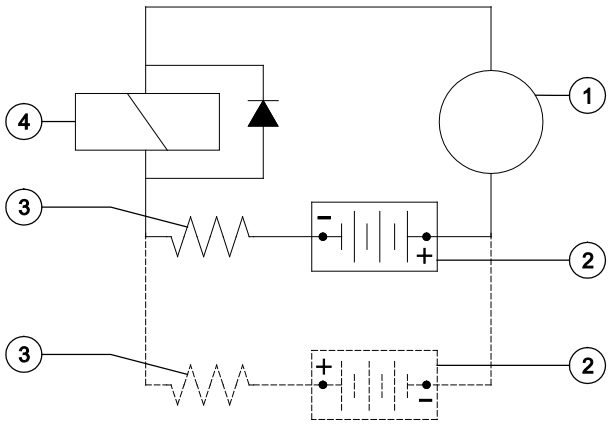
1 Test the coil for resistance. Refer to Repair Procedure, *How to Test a Coil*.

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.

# Fuel and Hydraulic Tanks

## 8-1
## Fuel Tank

### How to Remove the Fuel Tank

**⚠ DANGER** Explosion and fire hazard. Engine fuels are combustible. Perform this procedure in an open, well-ventilated area away from heaters, sparks, flames and lighted tobacco. Always have an approved fire extinguisher within easy reach.

**⚠ DANGER** Explosion and fire hazard. When transferring fuel, connect a grounding wire between the machine and pump or container.

**⚠ DANGER** Explosion and fire hazard. Never drain or store fuel in an open container due to the possibility of fire.

1 Remove the fuel filler cap from the tank.

2 Using an approved hand-operated pump, drain the fuel tank into a suitable container. Refer to Specifications, *Machine Specifications*.

Note: Be sure to only use a hand operated pump suitable for use with gasoline and/or diesel fuel.

3 Clean up any fuel that may have spilled.

4 Remove the intake grill located below the fuel tank and set aside.

5 Disconnect the engine harness from the cooling fan inside the engine compartment.

6 Remove the cooling fan and fan shroud and set aside.

7 Remove the fuel tank cover above the fuel tank.

8 Disconnect the return line from the top of the fuel tank.

9 Disconnect and plug the supply line from the bottom of the tank.

10 Remove the fuel tank from the machine.

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

## 8-2 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.

# Steer Axle Components

## 9-1
## 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.

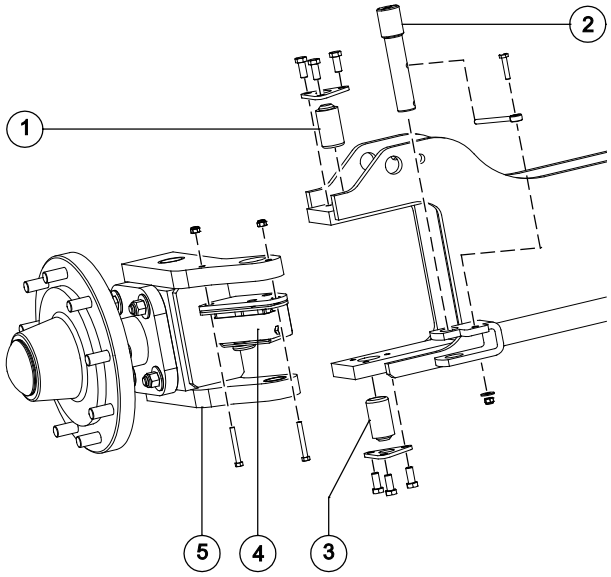
**⚠WARNING** Crushing hazard. The chassis will fall if not properly supported.

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.

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.

# Steer Axle Components

## 9-2 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.

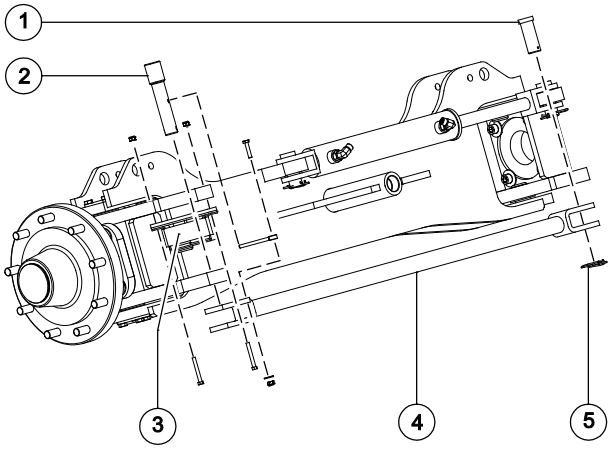
2 Remove the rue ring from each cylinder clevis pin. Remove the clevis pins.

3 Remove the steer cylinder from the machine.

## 9-3 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.

## 9-4 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.

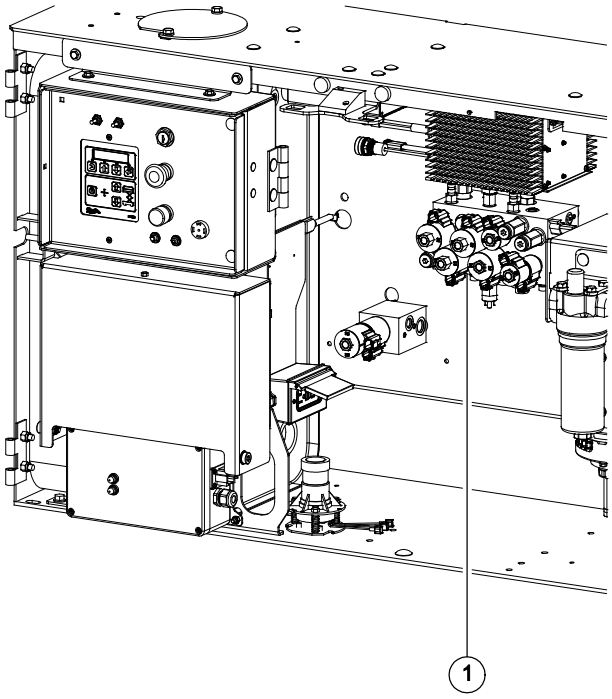
6 Remove the oscillate cylinder from the machine.

## 9-5 Oscillate Hoses

### Test the Oscillate Axle Hose Routing

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

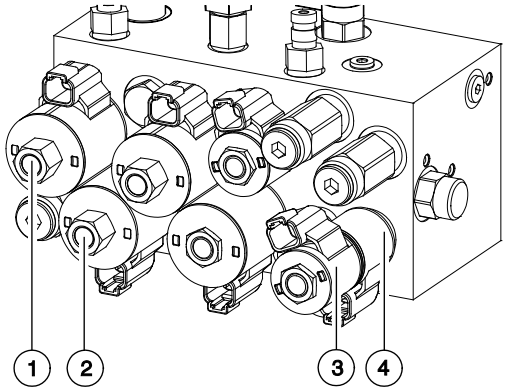
1 Open the ground controls compartment and locate the function manifold.




1 function manifold

# Steer Axle Components

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.

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

## 9-6
## 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.

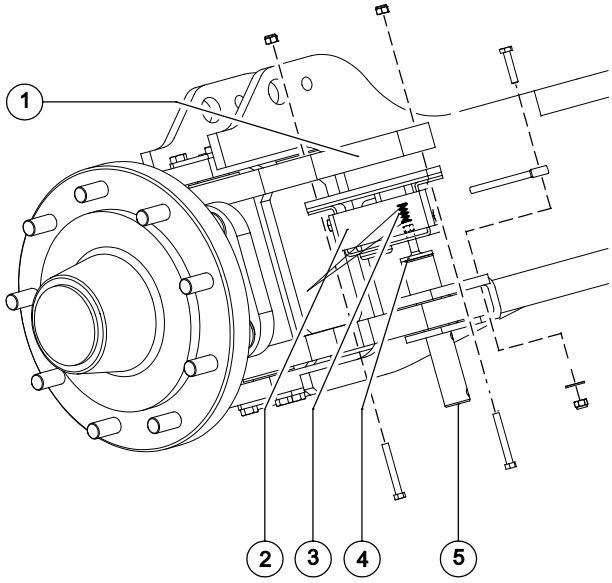
3 Push in the red Emergency Stop button to the off position at both the ground and platform controls and turn the key switch to the off position.

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.

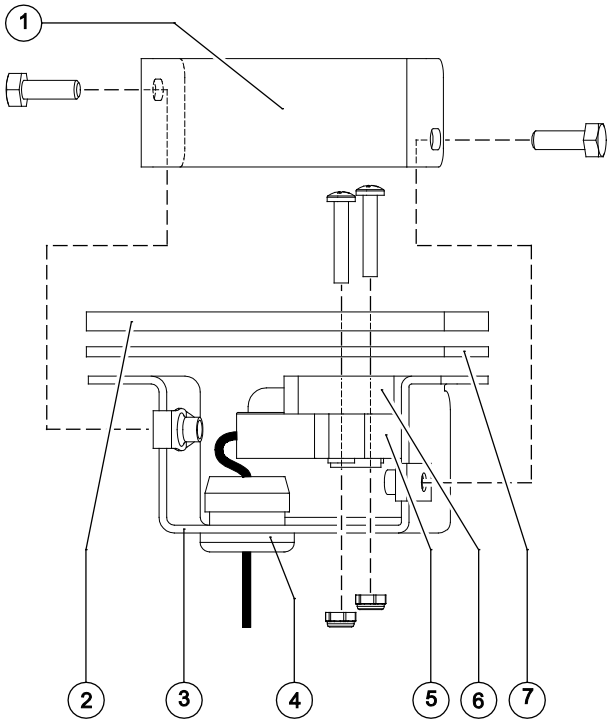
9 Remove the steer sensor actuator and spring from the tie rod pivot pin and set aside.

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

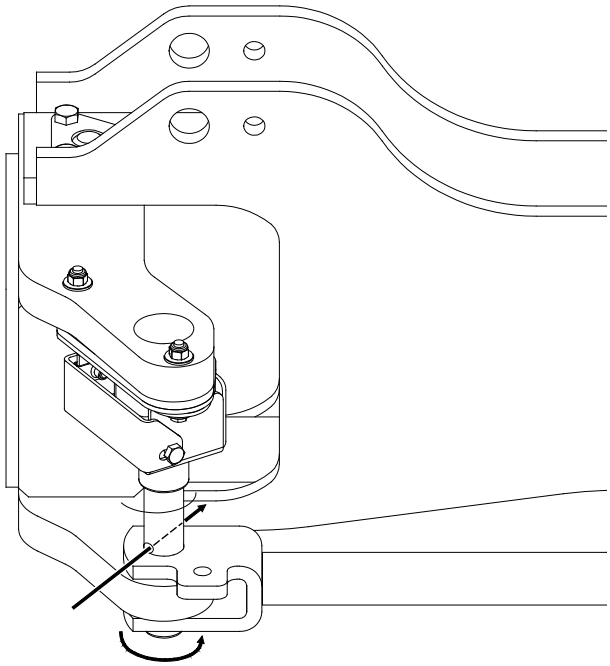
12 Pull the sensor harness through the cable restraint and sensor bracket.

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.

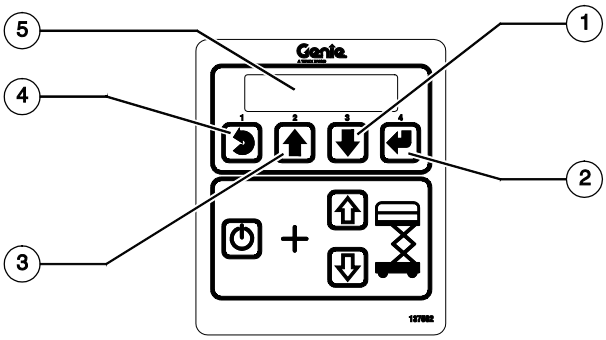
21 Connect the steer sensor harness to the main harness and secure with the cable clamp.

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

## 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.

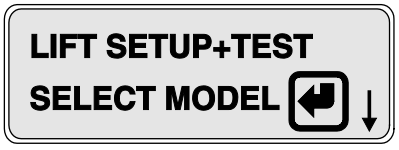
2 Press and hold the ground control scroll up and scroll down buttons.




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.

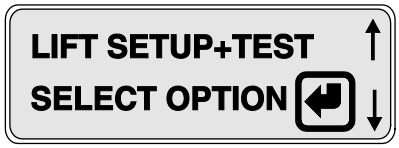
⊙ Result: The ground controls LCD display will show the following:



# Steer Axle Components

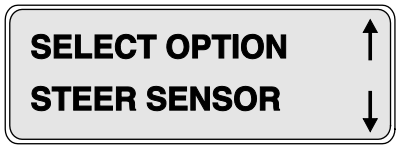
4 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

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.



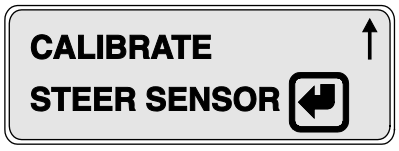

8 Press the Enter button.

⊙ 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:

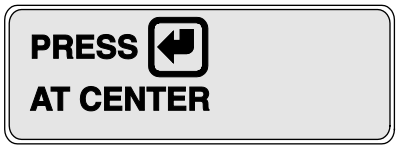
Note: The platform controls do not have to be connected at the chassis ground controls.




11 Press the Enter button.

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

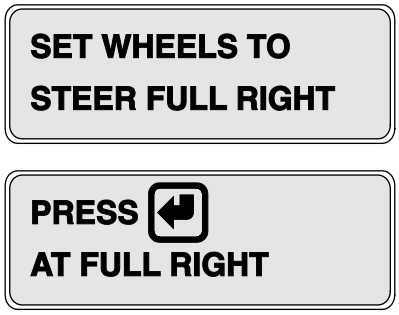



12 Use the platform drive controller steer function to align the steer tires with the drive chassis.

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

## 10-1
## 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.

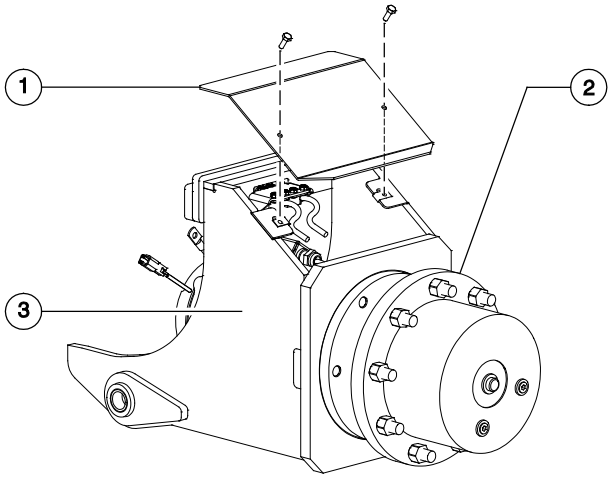
4 Loosen the wheel lug nuts. Do not remove them.

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.

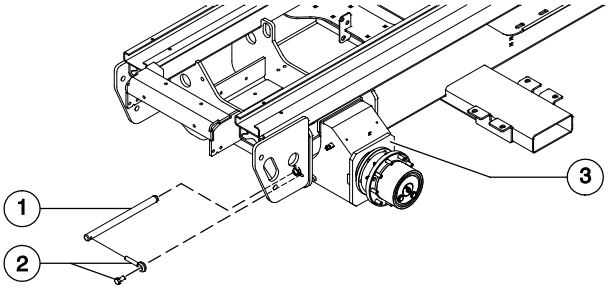
9 Tag and disconnect the electrical connectors for the oscillate limit switches.

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

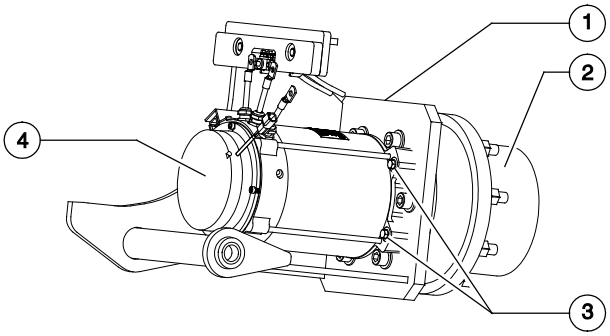
11 Using a suitable supporting device, secure the rear axle assembly. Do not apply pressure.




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

## 10-2
## 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*.

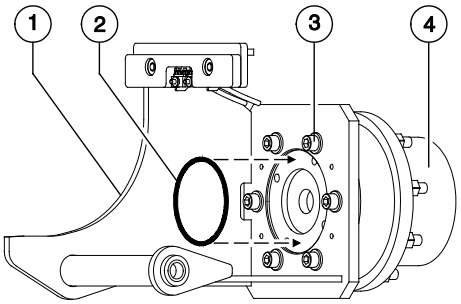
2 Using a suitable supporting device, secure the drive hub. Do not apply pressure.

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

# 11-1 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

## 11-2 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.

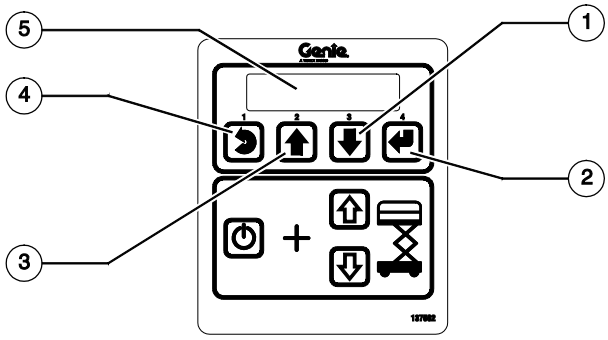
For further information or assistance, contact Genie Product Support.

## How to Calibrate the Outrigger System

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

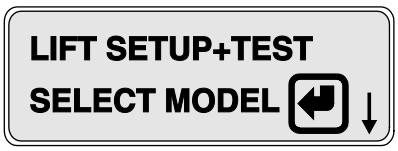
2 Press and hold the ground control scroll up and scroll down buttons.




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 Use the Scroll Up or Scroll Down buttons to scroll to Machine Options.

6 Press the Enter button to select Machine Options.

7 Use the Scroll Up or Scroll Down buttons to scroll to Outriggers.

8 Press the Enter button to select Outriggers.

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

10 Press the Enter button to select Calibrate Outriggers.

11 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.

12 Continue holding the Enter button after the outrigger level sensor is calibrated. The outriggers will retract while the outrigger system gathers and saves data.

13 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.

14 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

## 12-1
## 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<br>680 kg |
| **GS-3369** | 1000 lb<br>454 kg |
| **GS-4069** | 800 lb<br>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<br>680 kg |
| **GS-3369** | 1000 lb<br>454 kg |
| **GS-4069** | 800 lb<br>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.

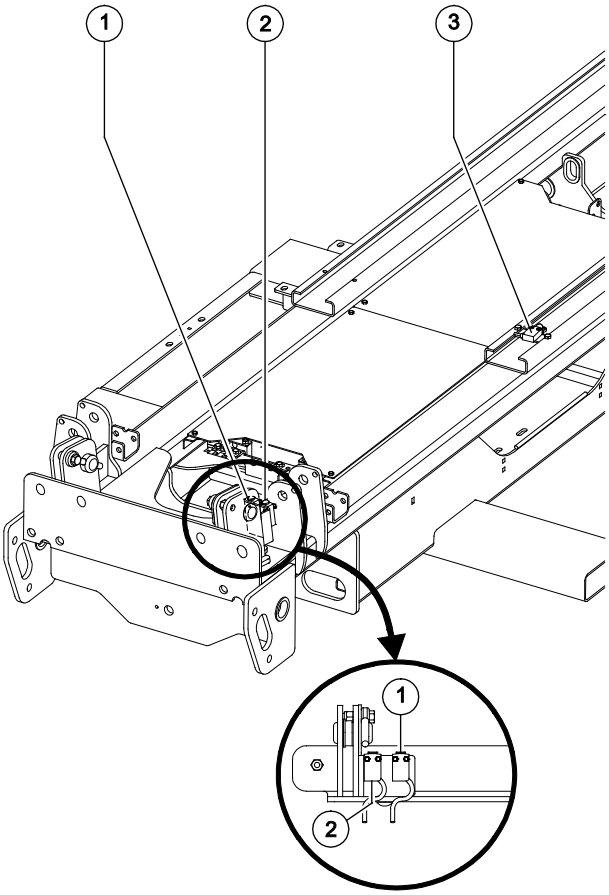
5 Lower the scissor assembly until the safety arm rest on the cross tube.

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

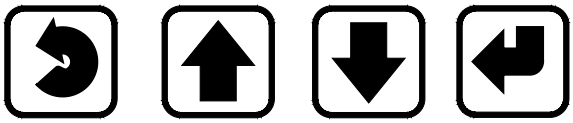
## 12-2 Platform Overload Recovery Message

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.



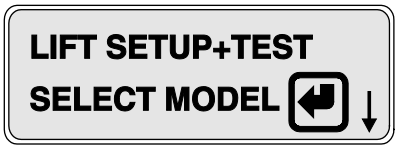
Escape Scroll up Scroll down Enter

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.

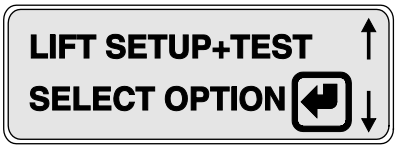
3 Pull out the red Emergency Stop button at the ground controls.

⊙ Result: The ground control LCD display will show the following.



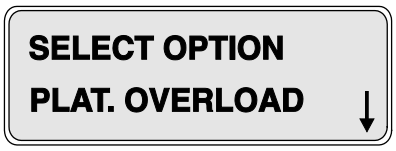

4 Press the **scroll down** button.

⊙ 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.



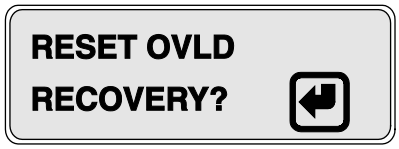

6 Press the **enter** button.

⊙ 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.

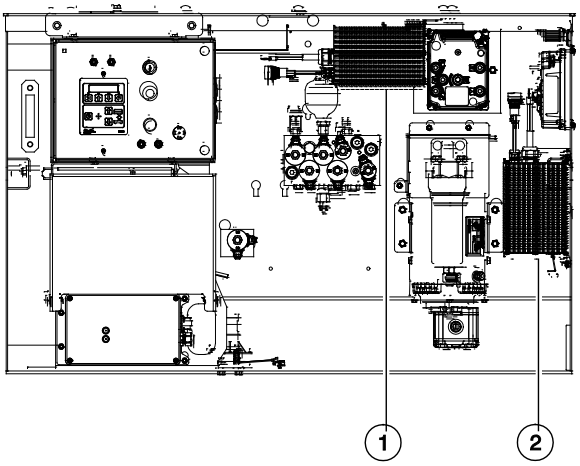
# Battery Charger

## 13-1 Battery Charger

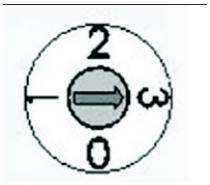
The machine is equipped with 2 battery chargers. The primary charger delivers an output voltage at full power. The boost charger delivers an output voltage at reduce power.

If the primary charger is replaced, no adjustments are required unless your machine is equipped with AGM batteries. If the boost charger is replaced, the charger must be set correctly to properly operate.

To properly set a charger, remove the plug from the selector curve dial located on the front of the charger. Set the selector curve to the proper position for the battery type and charger.




1 boost charger
2 primary charger

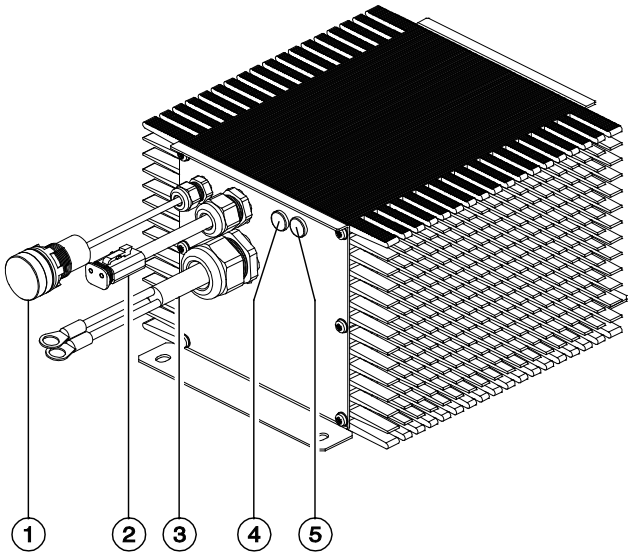


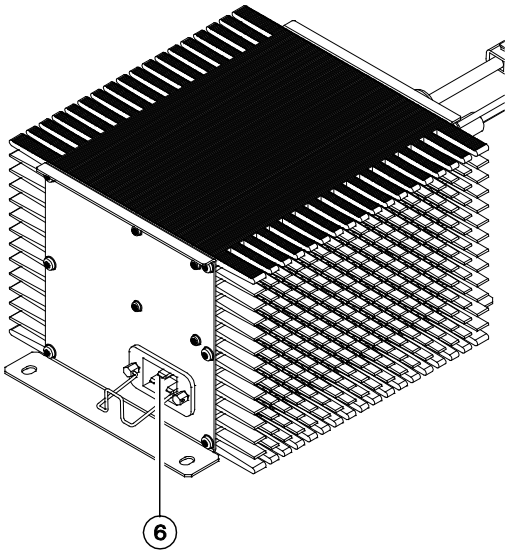

Positions 0 and 1: Open lead flooded batteries.

Position 2: Boost charger.

Position 3: AGM batteries.

# Battery Charger




1 LED charge indicator
2 charger interlock connection
3 battery connection
4 selector curve
5 not used
6 AC input

1 LED is red during phases I1 and P (bulk charger). (20% battery charged)

2 LED is yellow during phases U and I2. (80% battery charged)

3 LED is green at the end of charge. (100% battery charged)

4 LED flashes green during cycle equalization.

5 LED is off when charger is not powered.

6 LED flashes red, indicates defect / fault.

# 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

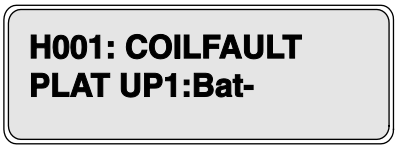
GCON – Ground Controls

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.

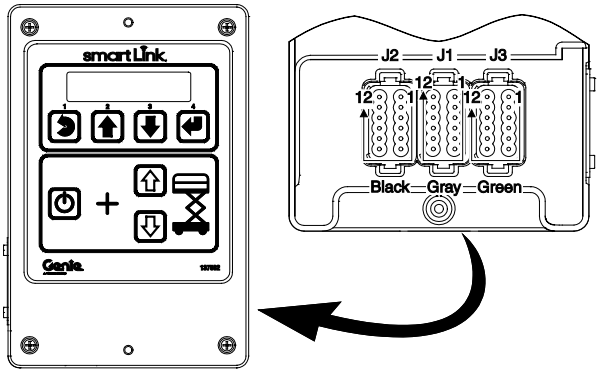
Models are listed below each code to assist in the troubleshooting codes for a specific model.

# Fault Codes

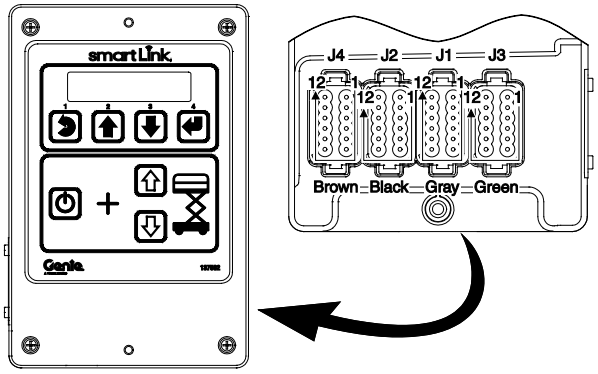
## Genie SmartLink Diagnostic System

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

| | 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 | Engine RPM | Digital Input | BL/RD |
| 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) |
| F053 | DCON RR Thermal Protection |
| F054 | DCON LR Thermal Protection |
| Ld | Lifting Disabled (option) |
| St | Engine Start Delay |

## 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

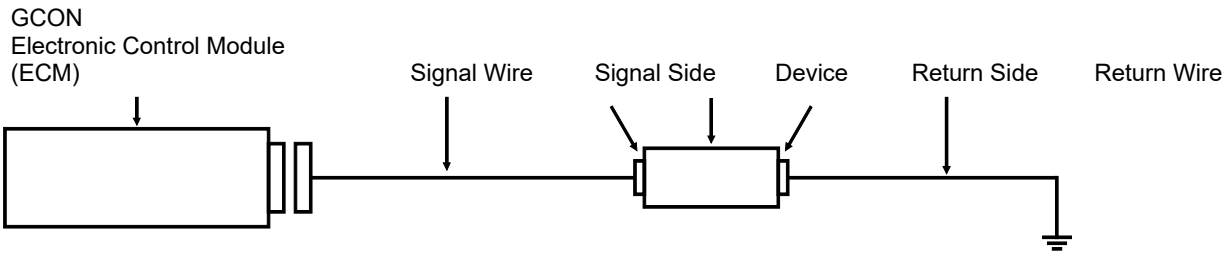
The procedure below illustrates typical steps for diagnosing and fixing faults of type "HXXX" and "PXXX".

### 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. |

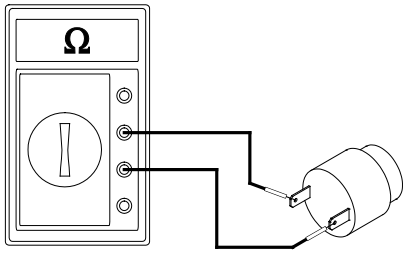
### Wiring Diagram

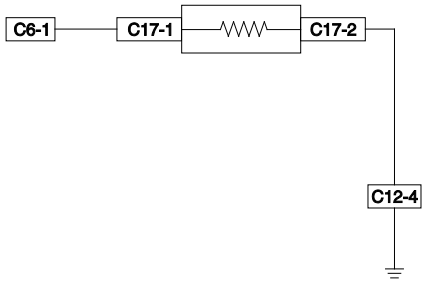
The wiring diagram shown below illustrates how fault type "HXXX" and "PXXX" devices are typically wired. The signal of these types of devices originates at the Ground Controls and terminates at system ground.



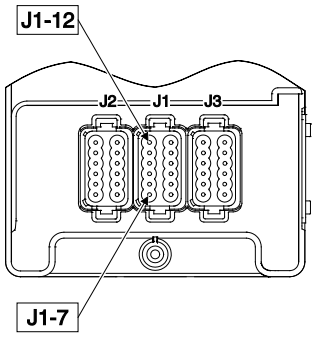

In order to successfully troubleshoot "HXXX" or "PXXX" type faults, the entire faulted out circuit must be investigated.

## Fault Inspection Procedure

| 1 | Check the device associated with the faulted circuit | | |
|---|---|---|---|
|  | 1 Disconnect the faulted device connector.<br>2 Using a multi-meter, measure resistance between the two terminals of the faulted device.<br>3 Resistance should be as follows.<br>**Device** — **Typical Resistance**<br>Solenoid Valve, Drive — 27.2 Ω<br>Solenoid Valve, Steer — 19 Ω<br>Solenoid Valve, Platform Up — 25 Ω<br>Solenoid Valve, Platform Down — 6.25 Ω<br>GCON and PCON Alarm — >1M Ω<br>Automotive Horn — 1.0 Ω<br>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).<br>2 Disconnect the faulted device connector.<br>3 Check the continuity between the GCON ECM connector and the signal side of the faulted device.<br>⊙ Result: Resistance should be close to 0 Ω.<br>4 Check the continuity between the return side of faulted device and system ground.<br>⊙ Result: Resistance should be close to 0 Ω.<br>5 Check resistance between return side and signal side of the harness plug of faulted device.<br>⊙ 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 J1-7 (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 J1-12 (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.<br>• Platform up #1 coil short circuit.<br>• 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.<br>• Platform up #1 coil short circuit.<br>• 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.<br>• Platform up #1 coil short circuit.<br>• 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.<br>• Platform down #1 coil short circuit.<br>• 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.<br>• Steer right coil short circuit.<br>• 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.<br>• Steer left coil short circuit.<br>• 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.<br>• Brake release relay short circuit.<br>• 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.<br>• Brake release relay short circuit.<br>• 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.<br>• Outrigger extend coil short circuit.<br>• 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.<br>• Outrigger extend coil open circuit.<br>• 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.<br>• Outrigger extend coil short circuit.<br>• 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.<br>• Outrigger retract coil short circuit.<br>• 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.<br>• Outrigger retract coil open circuit.<br>• 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.<br>• Outrigger retract coil short circuit.<br>• 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.<br>• Left front outrigger coil short circuit.<br>• 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.<br>• Left rear outrigger coil short circuit.<br>• 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.<br>• Right front outrigger coil short circuit.<br>• 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.<br>• Right rear outrigger coil short circuit.<br>• 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.<br>• Left front outrigger coil short or open circuit.<br>• 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.<br>• Left rear outrigger coil short or open circuit.<br>• 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.<br>• Right front outrigger coil short or open circuit.<br>• 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.<br>• Right rear outrigger coil short or open circuit.<br>• 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.<br>• Platform down #1 coil short or open circuit.<br>• 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.<br>• Steer left coil short or open circuit.<br>• 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.<br>• Steer right coil short or open circuit.<br>• 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.<br>• Oscillate supply coil short circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Oscillate right coil short circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Oscillate right coil open circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Oscillate right coil short circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Oscillate left coil short circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Oscillate left coil open circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Oscillate left coil short circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Accumulator coil short circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Accumulator coil open circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Accumulator coil short circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Oscillate supply coil short or open circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Outrigger supply coil short or open circuit.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• 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.<br>• 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.<br>• Automotive horn short circuit.<br>• GCON ECM. | Automotive horn inhibited. |
| P005 | P005:DEVICEFAULT HORN:Open | Open circuit of the automotive horn circuit. | • Open circuit in automotive horn harness.<br>• Automotive horn open circuit.<br>• 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.<br>• Automotive horn short circuit.<br>• 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.<br>• GCON alarm short circuit.<br>• 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.<br>• GCON alarm short circuit.<br>• 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.<br>• 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.<br>• 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.<br>• 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.<br>• GCON ECM. | All functions inhibited. |
| P023 | P023:PUMPMOTOR VOLTAGE NOT OK | Pump motor voltage out of range. | • Pump voltage to low.<br>• Pump voltage to high.<br>• 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.<br>• Faulty pump.<br>• 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.<br>• Right rear drive motor.<br>• 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.<br>• Left rear drive motor.<br>• GCON ECM. | All functions inhibited. |
| P028 | P028:CONTACTOR STUCK CLOSED | Main contactor (PR1) stuck in the closed position. | • Short circuit in main contactor harness.<br>• Faulty contactor.<br>• 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.<br>• Faulty contactor.<br>• 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.<br>• Faulty contactor.<br>• 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.<br>• Short or open circuit in right rear brake coil<br>• 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.<br>• Short or open circuit in left rear brake coil.<br>• 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.<br>Brake circuit miswired. | • Short circuit in right rear brake harness.<br>• Short circuit in right rear brake coil.<br>• Right rear brake harness miswired.<br>• 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.<br>Brake circuit miswired. | • Short circuit in left rear brake harness.<br>• Short circuit in left rear brake coil.<br>• Left rear brake harness miswired.<br>• 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.<br>• Low batteries.<br>• Faulty battery.<br>• Battery charger connected to AC power source.<br>• Left or right DCON ECM. | All functions inhibited. |
| 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.<br>• Brake relay contact stuck closed.<br>• Faulty brake relay.<br>• 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.<br>• Faulty brake relay.<br>• Left or right DCON ECM.<br>• GCON ECM. | All functions inhibited. |
| P041 | P041:LOW CHARGER POWER | Charging system fault, low power. | • Chargers set incorrectly.<br>• SOC monitor.<br>• Charger harness.<br>• GCON ECM. | Batteries will not charge correctly. |
| P042 | P042:WRONG CHARGER PROFILE | Charging system fault, wrong profile. | • Chargers set incorrectly.<br>• SOC monitor.<br>• Charger harness.<br>• GCON ECM. | Batteries will not charge correctly. |
| P043 | P043:PWR FAULT ENGINE RUN:Bat- | Short circuit of the engine run circuit to battery negative. | • Oil pressure switch closed.<br>• CR2 short to B-.<br>• Faulty CR2 relay.<br>• Faulty fuel valve.<br>• Faulty voltage regulator (VR1).<br>• Left rear DCON ECM.<br>• GCON ECM. | Engine will continue to run with short to B-. |
| P044 | P044:PWR FAULT RUN:Open/Bat+ | Short to battery positive or open circuit of the engine run circuit. | • Short or open in engine harness.<br>• Left rear DCON ECM.<br>• GCON ECM. | Engine will not start and run with open circuit.<br>Engine will not start and run with short to B+. |
| P045 | P045:PWR FAULT START:Bat- | Short circuit of the engine start circuit to battery negative. | • CR1 short to B-.<br>• Faulty CR1 relay.<br>• Faulty starter solenoid.<br>• Left rear DCON ECM.<br>• GCON ECM. | Engine will continue to run with short to B-.<br>Engine will try to start. |

# Fault Codes

## Type "PXXX" Faults, continued

| DTC Number | Message on GCON LCD | Description | Possible Causes | Failure Mode |
|---|---|---|---|---|
| P046 | P046:PWR FAULT START:Open/Bat+ | Short to battery positive or open circuit of the engine start circuit. | • Short or open in engine harness.<br>• Left rear DCON ECM.<br>• GCON ECM. | Engine will not start and run with open circuit.<br>Engine will not start and run with short to B+. |
| P047 | P047:CHRGR FAULT MAIN:Bat- | Short circuit of the primary battery charger circuit to battery negative. | • Faulty primary charger.<br>• Short in motor controller harness.<br>• Faulty left DCON ECM. | Batteries will not charge correctly in generator mode. |
| P048 | P048:CHRGR FAULT MAIN:Open/Bat+ | Short or open circuit of the primary battery charger to battery positive. | • Faulty primary charger.<br>• Short in motor controller harness.<br>• Faulty left DCON ECM. | Batteries will not charge correctly in generator mode. |
| P049 | P049:CHRGR FAULT Boost:Bat- | Short circuit of the boost battery charger circuit to battery negative. | • Faulty boost charger.<br>• Faulty motor controller harness.<br>• Faulty right DCON ECM. | Batteries will not charge correctly in generator mode. |
| P050 | P050:CHRGR FAULT Boost:Open/Bat+ | Short or open circuit of the boost battery charger to battery positive. | • Faulty boost charger.<br>• Faulty motor controller harness.<br>• Faulty right DCON ECM. | Batteries will not charge correctly in generator mode. |
| P051 | P051:PWR FAULT GLOWPLUG:B- | Short circuit of the glow plug circuit to battery negative. | • Faulty glow plug.<br>• Faulty CR15 relay.<br>• Faulty motor controller harness.<br>• Right rear DCON ECM. | Glow plug always activated. |
| P052 | P052:PWR FAULT GLOWPLUG:Open/Bat+ | Short or open circuit of the glow plug circuit to battery positive. | • Faulty glow plug.<br>• Faulty fuse (F33).<br>• Faulty motor controller harness.<br>• Right rear DCON ECM. | Engine may not start at cold temperatures. |

## 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.<br>• 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.<br>• 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.<br>• 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.<br>• 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.<br>• 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.<br>• 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.<br>• 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.<br>• 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.<br>• 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.<br>• GCON ECM. | PCON horn switch function inhibited. |

# Fault Codes

## 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.<br>• PCON joystick.<br>• 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.<br>• PCON joystick.<br>• 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.<br>• PCON joystick.<br>• 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.<br>• GCON key switch.<br>• GCON ECM. | All functions inhibited. |
| U037 | U037:SWITCHFAULT FOOTSW PRESSED | Foot switch or Enable switch depressed at startup. | • Enable switch activated at startup.<br>• Enable switch contact stuck closed.<br>• 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.<br>• Enable switch shorted battery positive.<br>• 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.<br>• Enable switch short or open to battery negative.<br>• 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.<br>• Drive mode switch is depressed at system startup.<br>• 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.<br>• Outrigger mode switch is depressed at system startup.<br>• 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.<br>• PCON ECM.<br>• 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.<br>• PCON ECM. | All functions operate except platform up or down. |

## 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.<br>• Down limit #1 switch short circuit.<br>• 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<br>• Faulty tilt sensor<br>• 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.<br>• Faulty level sensor.<br>• 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.<br>• Faulty level sensor.<br>• 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.<br>• Faulty level sensor.<br>• 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.<br>• Faulty level sensor.<br>• 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.<br>• 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.<br>• 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.<br>• Short circuit in outrigger harness.<br>• GCON ECM. | Left front outrigger inhibited if outrigger extend is activated.<br>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.<br>• Short circuit in outrigger harness.<br>• GCON ECM. | Right front outrigger inhibited if outrigger extend is activated.<br>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.<br>• Short circuit in outrigger harness.<br>• GCON ECM. | Left rear outrigger inhibited if outrigger extend is activated.<br>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.<br>• Short circuit in outrigger harness.<br>• GCON ECM. | Right rear outrigger inhibited if outrigger extend is activated.<br>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.<br>• Short circuit in axle limit switch harness.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Short circuit in axle limit switch harness.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>If machine is in stowed position, all functionality is resumed. |

# Fault Codes

## 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.<br>• Short circuit in pump speed sensor harness.<br>• 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.<br>• Short or open circuit in pump speed sensor harness.<br>• 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.<br>• Short circuit in function manifold harness.<br>• GCON ECM.<br>• Faulty hydraulic pump | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Short circuit in function manifold harness.<br>• GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Faulty thermal sensor in right rear drive controller.<br>• Right rear DCON ECM. | Drive speed reduces from 185° F / 85° C to 221° F / 105° C.<br>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.<br>• Faulty thermal sensor in left rear drive controller.<br>• Right rear DCON ECM. | Drive speed reduces from 185° F / 85° C to 221° F / 105° C.<br>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.<br>• Faulty encoder in right rear drive motor.<br>• Faulty right rear drive motor.<br>• 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.<br>• Faulty encoder in left rear drive motor.<br>• Faulty left rear drive motor.<br>• 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.<br>• Short or open of the drive motor encoder.<br>• Faulty encoder in right rear drive motor.<br>• Faulty right rear drive motor.<br>• 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.<br>• Short or open of the drive motor encoder.<br>• Faulty encoder in left rear drive motor.<br>• Faulty left rear drive motor.<br>• 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.<br>• Faulty thermal sensor in right rear drive motor.<br>• 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.<br>• Faulty thermal sensor in left rear drive motor.<br>• 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.<br>• Short or open circuit of the steer angle sensor harness.<br>• Steer angle sensor needs to be calibrated.<br>• Faulty steer angle sensor.<br>• Right rear DCON ECM. | Drive performance reduced. |

## 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.<br>• Short or open circuit of the left axle safety and/or operational limit switch harness.<br>• Faulty left axle safety and/or operational limit switch.<br>• Right rear DCON or GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Short or open circuit of the right axle safety and/or operational limit switch harness.<br>• Faulty right axle safety and/or operational limit switch.<br>• Right rear DCON or GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Open circuit in safety or operational limit switch.<br>• Right rear DCON or GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Open circuit of the right and/or left axle safety or operational limit switch harness.<br>• Right rear DCON or GCON ECM. | All functions inhibited except platform as long as machine is in the elevated position.<br>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.<br>• Open or short circuit of the platform down safety and/or operational limit switch harness.<br>• Faulty safety and/or operational limit switch.<br>• 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.<br>• Faulty thermal sensor in rear drive motor.<br>• Faulty rear drive motor.<br>• 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.<br>• Faulty starter solenoid.<br>• CR1 Relay stuck open.<br>• Left rear DCON ECM.<br>• No fuel.<br>• Engine start battery. | Engine restart function disabled. |
| F075 | F075:UNEXPECTED ENGINE STOP | Engine stops running unexpectedly. | • Fuel.<br>• Faulty CR2 relay.<br>• Faulty CR62 relay.<br>• GCON ECM. | Engine restart function disabled. |
| F077 | F077:BATTERY TEMPERATURE HIGH | Battery high temperature exceeded 113°F / 45° C. | • SOC monitor.<br>• Ambient temperature condition too high.<br>• Batteries just charged. | Batteries may not charge correctly. |
| F078 | F078:BATTERY TEMPERATURE LOW | Battery low temperature exceeded 4°F / -15° C. | • SOC monitor.<br>• SOC monitor harness.<br>• Ambient temperature condition too low. | Batteries may not charge correctly. |
| F079 | F079:BATTERY SOC ERROR | State of charge monitor communication error to GCON. | • SOC monitor.<br>• SOC monitor harness. | Engine restart and engine auto stop function disabled. |
| F080 | F080:UNEXPECTED ENGINE START | Engine started unexpectedly. | • GCON receiving Engine PWM input signal. No input signal from run and start.<br>• Short circuit of the engine harness.<br>• Clear fault. Cycle power.<br>• GCON ECM. | All functions operate. |

# Fault Codes

## 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.<br>• 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.<br>• GCON ECM. | All functions inhibited. |
| C005 | C005:GCON ECM FAULT TYPE 5 | GCON ECM safety switch error. | • Short circuit in the safety switch circuit.<br>• GCON ECM. | All functions inhibited. |
| C006 | C006:GCON ECM FAULT TYPE 6 | GCON input redundancy error. | • Input conditioning circuit failure.<br>• GCON ECM. | All functions inhibited. |
| C007 | C007:GCON ECM FAULT TYPE 7 | GCON ECM inter-processor communication error. | • Incorrectly programmed device.<br>• Error in loading software on device.<br>• GCON ECM. | All functions inhibited. |
| C008 | C008:GCON ECM FAULT TYPE 8 | GCON ECM temperature sensor error. | • GCON ECM internal failure.<br>• 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<br>• Contact Genie support. | All functions inhibited. |
| C021 | C021:PCON NOT DETECTED | Communication failure between GCON and PCON. | • CAN communication failure.<br>• CAN communication harness.<br>• PCON disconnected.<br>• GCON or PCON ECM. | All functions inhibited. |
| C023 | C023:MACHINE MODEL FAULT | Discrepancy between model detected and model programmed. | • Incorrect machine model programmed.<br>• GCON or PCON ECM. | All functions inhibited. |
| C025 | C025:SYSTEMFAULT PLAT OVLD:NOCAL | Platform overload system not calibrated. | • Platform overload system not calibrated.<br>• 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.<br>Platform can be elevated only once with the maximum elevate time of XX seconds.<br>Elevate time XX depends on machine model. |
| C029 | C029:SYSTEMFAULT OUTRIGGER:NoCal | Outrigger fault, not calibrated. | • Calibrate outriggers<br>• 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.<br>• Faulty drive joystick.<br>• Incorrect software.D14<br>• 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.<br>• Faulty drive joystick.<br>• Incorrect software.D14<br>• Left rear DCON ECM. | Performance reduced or drive inhibited or all functions inhibited. |

## 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.<br>• Batteries to low.<br>• 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.<br>• Batteries to low.<br>• 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.<br>• 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.<br>• 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.<br>• Key switch relay CR61 not closed.<br>• 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.<br>• Key switch relay CR61 not closed.<br>• 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.<br>• Open circuit to B+ and/or B-.<br>• Key switch relay CR61 not closed.<br>• 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.<br>• Open circuit to B+ and/or B-.<br>• Key switch relay CR61 not closed.<br>• 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.<br>• 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.<br>• 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.<br>• 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.<br>• 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<br>• SOC monitor harness<br>• Incorrect baud rate setting on acuity<br>• 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.<br>• 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 Component and Wire Color Legends

| Electrical Component Legend | |
|---|---|
| **Item** | **Description** |
| **ALT** | **Alternator** |
| **B** | **Battery** |
| | B1 = 12V DC Start battery |
| | B7 = 48V DC Battery pack |
| **BN** | **Button** |
| | BN2 = Engine start (platform) |
| | BN5 = Horn (platform) |
| | BN12 = High speed function enable (platform) |
| | BN13 = Low speed function enable (platform) |
| | BN20 = Outrigger enable (platform) |
| | BN30 = Engine start (ground) |
| | BN33 = Function enable (ground) |
| | BN34 = Platform up (ground) |
| | BN35 = Platform down (ground) |
| | BN61 = Platform / Outrigger down (platform) |
| | BN62 = Platform / Outrigger up (platform) |
| | BN108 = Menu escape (ground) |
| | BN109 = Scroll up (ground) |
| | BN110 = Scroll down (ground) |
| | BN111 = Menu enter (ground) |
| **C** | **Capacitor** |
| | C1 = 16 microfarad |
| **CB** | **Circuit breaker** |
| | CB2 = 7 amp (controls) |
| | CB4 = 25 amp (110V AC generator) |
| | CB4 = 12 amp (240V AC generator) |
| | CB4A = 15 amp (110V AC generator) |
| | CB4A = 8 amp (240V AC generator) |
| | CB4B = 15 amp (110V AC generator) |
| | CB4B = 8 amp (240V AC generator) |
| | CB7 = 15 amp (power) |
| **CR** | **Control relay** |
| | CR1 = Starter |
| | CR2 = Ignition |
| | CR15 = Glow plug |
| | CR60 = Brake release |
| | CR61 = Key switch |
| | CR62 = Engine RPM |
| | CR63 = Charger |
| | CR64 = Boost Charger |
| **CS** | **Current sensor** |
| | CS1 = 1 amp (AC switch - low) |
| | CS2 = 8 amp (AC switch - high) |
| **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** |
| | F8 = 325 amp (48V DC power) |
| | F21 = 5 amp (telematics) |
| | F27 = 50 amp (48V DC battery charger) |
| | F28 = 10 amp (48V DC converter) |
| | F31 = 25 amp (start battery) |
| | F32 = 25 amp (120V AC generator) |
| | F32 = 12 amp (240V AC generator) |
| | F33 = 50 amp (glow plug) |
| **FB** | **Flashing beacon** |
| | FB1 = Option |
| **GEN** | **Generator** |
| **H** | **Horn or alarm** |
| | H2 = Horn |
| | H5 = Multi-function alarm (ground) |
| | H8 = Alarm (platform) |
| **JC** | **Joystick - Hall effect controller** |
| | JC3 = Drive / Steer |

# Electrical Component and Wire Color Legends

| Electrical Component Legend (cont.) | |
|---|---|
| **Item** | **Description** |
| **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) |
| | LS16 = 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** |
| | M3 = Starter |
| | 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 |
| **Q** | **Solenoid** |
| | Q8 = Fuel shut off |
| **R** | **Resistor** |
| | R1 = 2k ohm |
| **RCBO** | **Residual current circuit breaker with overload protection (CE / AS)** |
| **S** | **Sensor** |
| | S7 = Digital level sensor (w/o outriggers) |
| | S8 = Analog level sensor (w/ outrigger option) |
| | S13 = Steer angle sensor |
| | S25 = Pressure switch (Plat. overload option) |
| | S26 = Lift pump speed sensor |
| **SW** | **Switch** |
| | SW2 = Oil pressure |
| **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 |
| | U5 = Boost charger |
| | U6 = Converter |
| **VR** | **Voltage regulator** |
| | VR1 = Voltage regulator (alternator) |

# Electrical Component and Wire Color Legends

| Electrical Component Legend (cont.) | |
|---|---|
| **Item** | **Description** |
| **Y** | **Valve coil** |
| | Y3 = Steer right / CW |
| | Y4 = Steer left / CCW |
| | 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 |
| | Y100 = Oscillate supply |

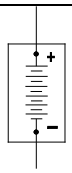
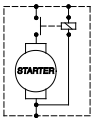
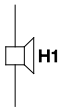
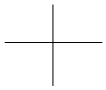
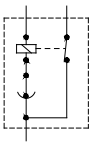
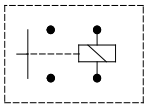
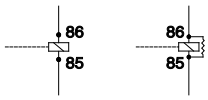
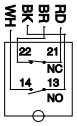
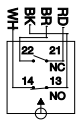
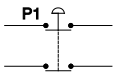
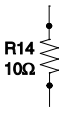
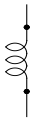
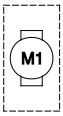
| Wire Color Legend | |
|---|---|
| **Color** | **Description** |
| BL | Blue |
| BK | Black |
| BR | Brown |
| GR | Green |
| OR | Orange |
| PP | Purple |
| RD | Red |
| WH | White |
| YL | Yellow |
| BL/RD | Blue/Red |
| BL/WH | Blue/White |
| BK/RD | Black/Red |
| OR/WH | Orange/White |
| RD/BK | Red/Black |
| RD/WH | Red/White |
| WH/BL | White Blue |
| WH/BK | White/Black |
| WH/RD | White/Red |
| WH/YL | White/Yellow |
| YL/BK | Yellow/Black |

# Hydraulic Component Legend

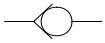
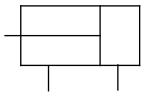
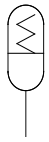
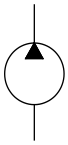
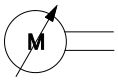
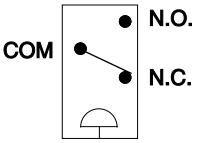
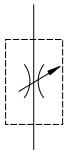
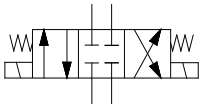
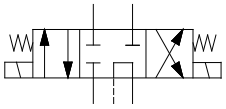
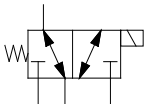
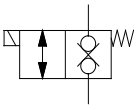
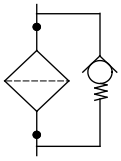
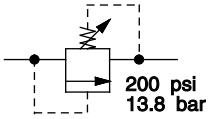
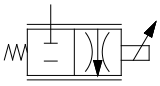
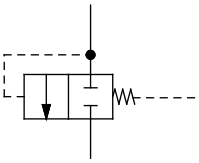
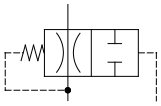
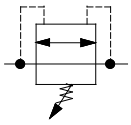
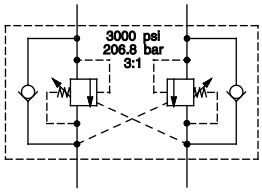
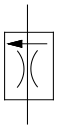
| Item | Function |
|---|---|
| BA | 3 position, 4 way directional valve - outrigger cylinders extend/retract (option) |
| CA | 2 position, 2 way valve - platform down (all models) |
| CB | 2 position, 2 way valve - platform down (GS-4069) |
| CC | 2 position, 2 way valve - LR outrigger (option) |
| 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 |

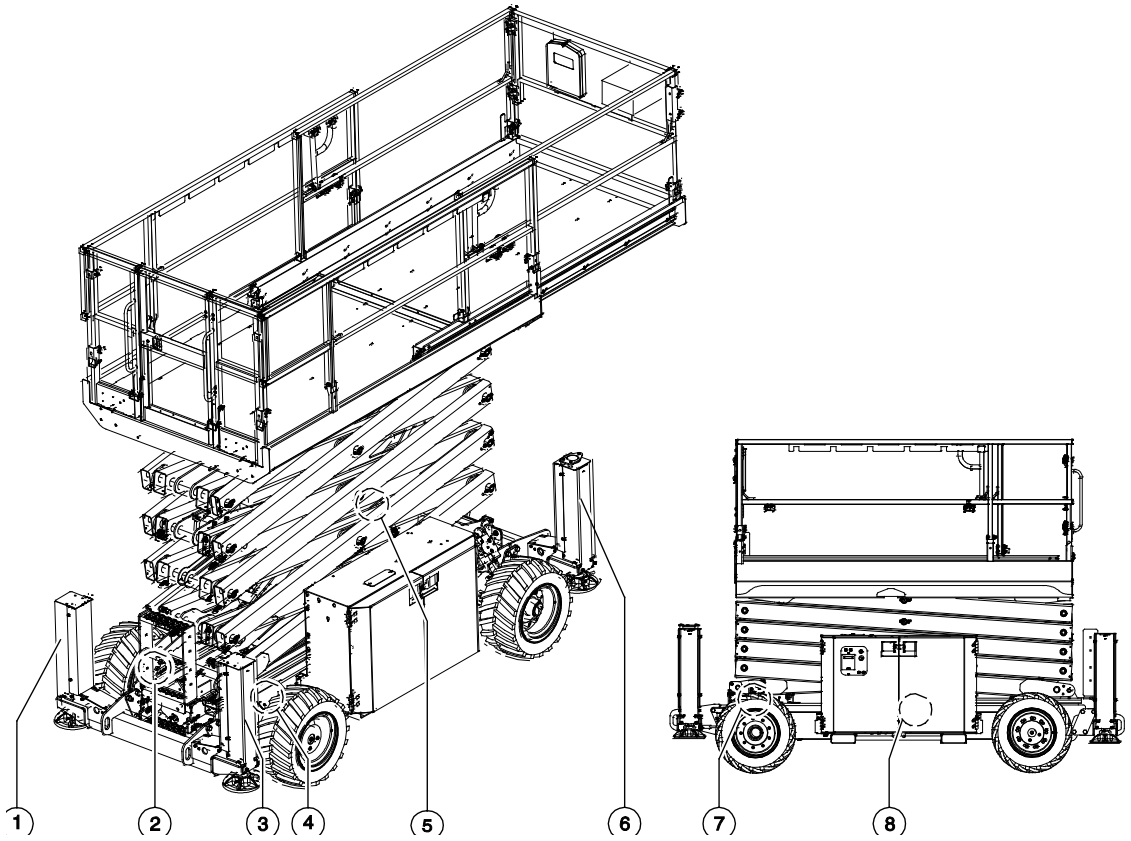
# Electrical Symbols Legend

| | | | | |
|---|---|---|---|---|
|  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

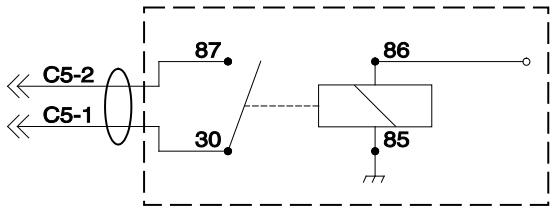
| | | | |
|---|---|---|---|
|  Orifice with size |  Check valve |  Cylinder, double acting |  Accumulator |
|  Pump, fixed displacement |  Pump, prime mover (engine or motor) |  Pressure switch |  Needle valve |
|  Solenoid operated 3 position 4 way directional valve |  Solenoid operated 3 position 5 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

# Charger Interlock




Interlock relay (NO), 10A contact

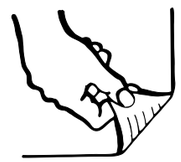
1 Charger not connected to battery or main supply. (Contact open)

2 Charger connected to battery. (Contact closed)

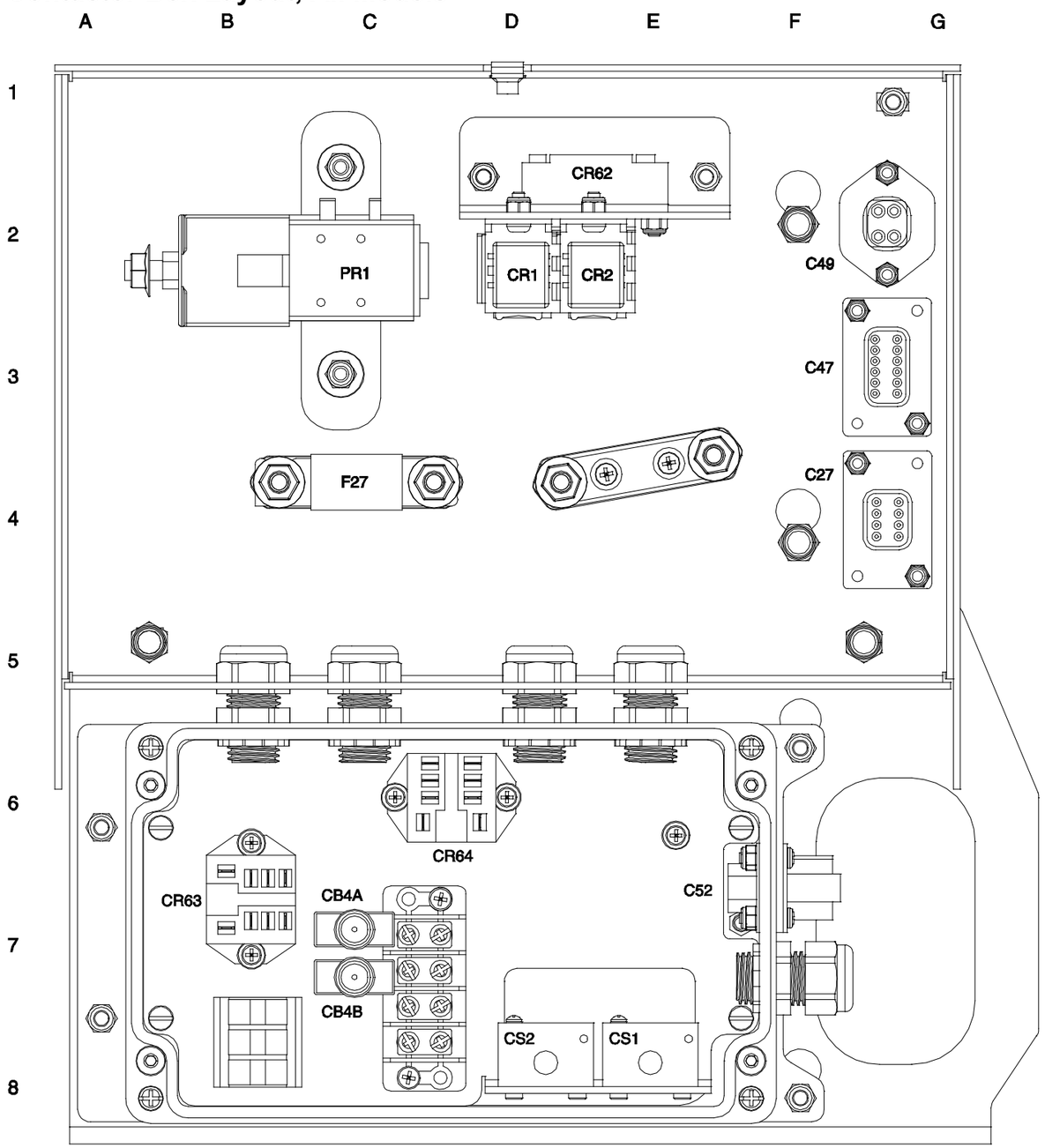
3 Charger connected to battery and main supply. (Contact open)

| Supply | Battery | Contact |
|---|---|---|
| Not connected | Not connected | Open |
| Not connected | Connected | Closed |
| Connected | Connected | Open |
| Connected | Not connected | Open |

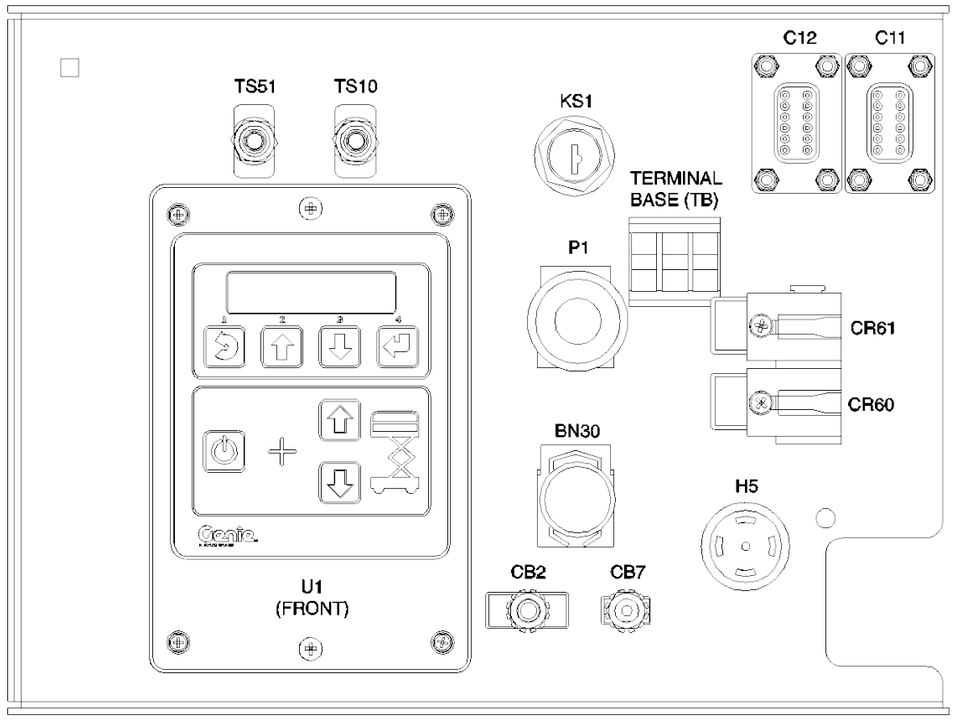
## Contactor Box Layout, All Models

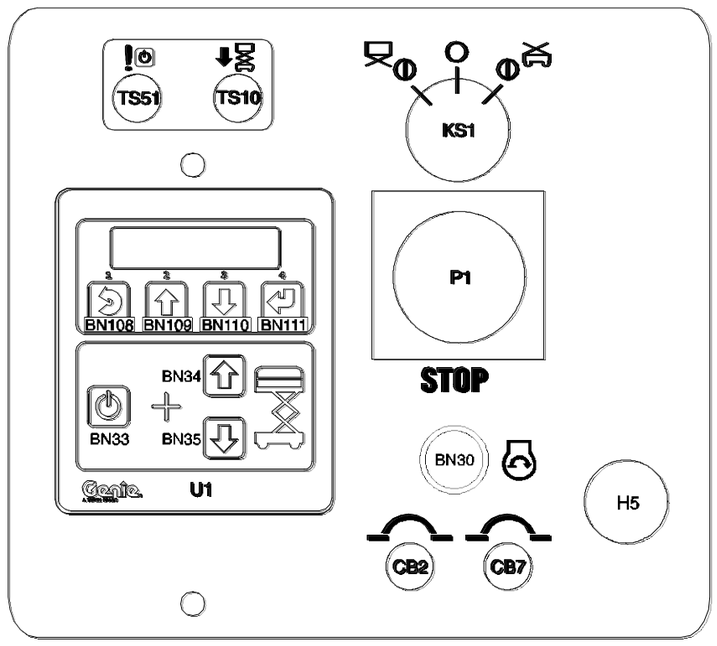


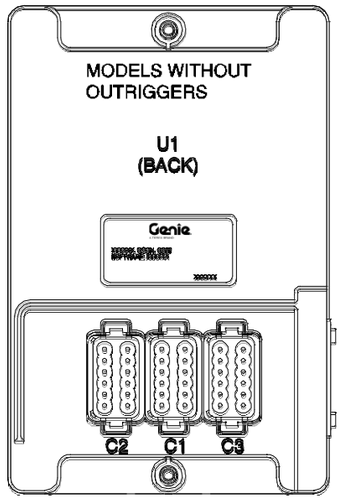
## Contactor Box Layout, All Models

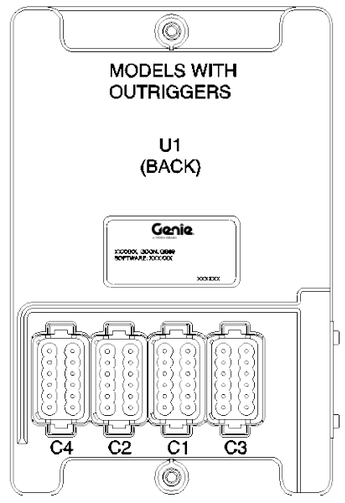


# Ground Control Box Layout, All Models

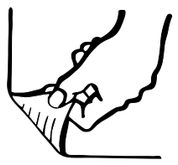


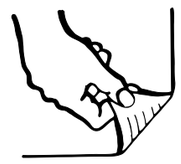



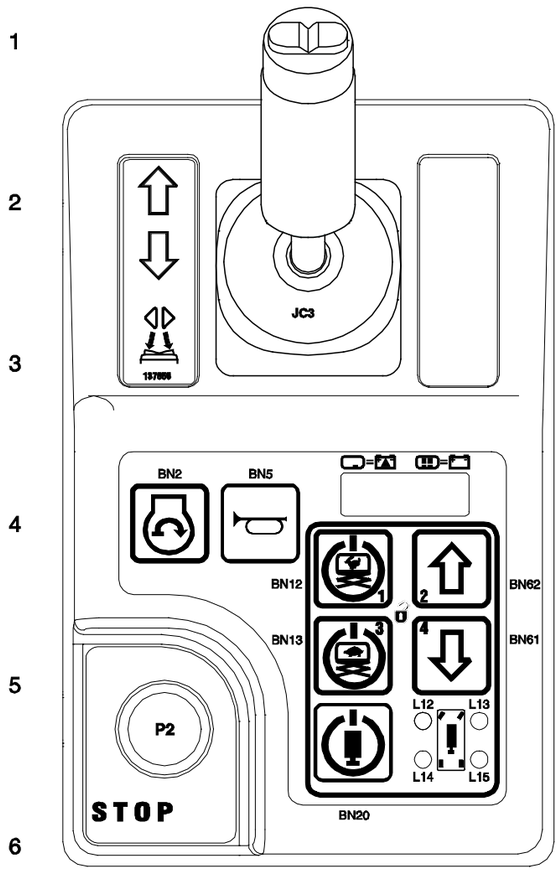
# Ground Control Box Layout, All Models



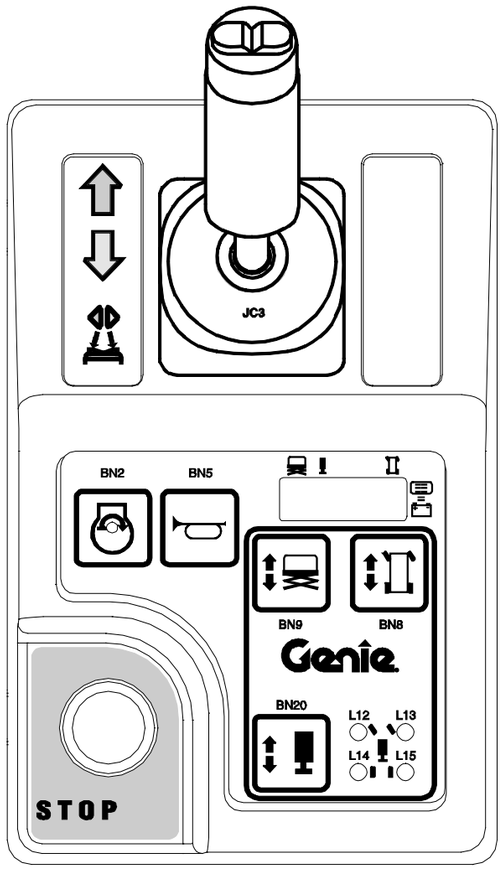
# Platform Control Box Layout, All Models



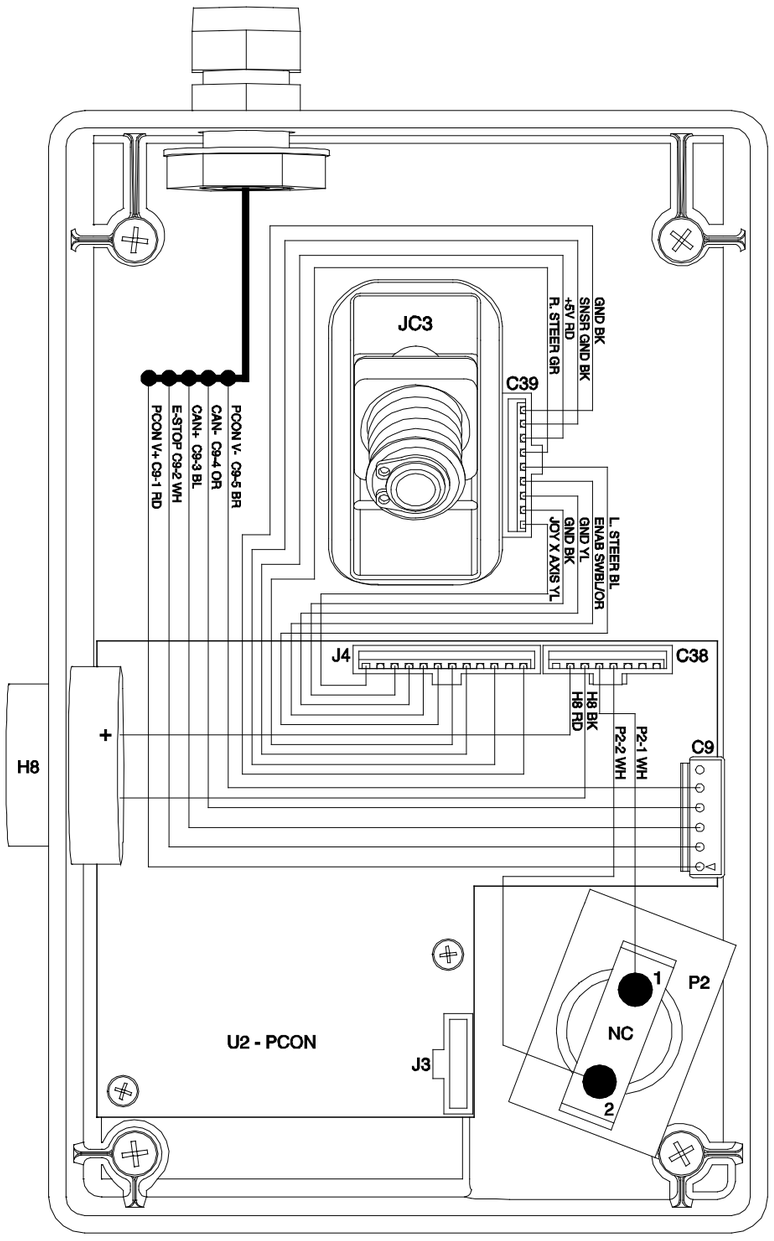
## Platform Control Box Layout, All Models



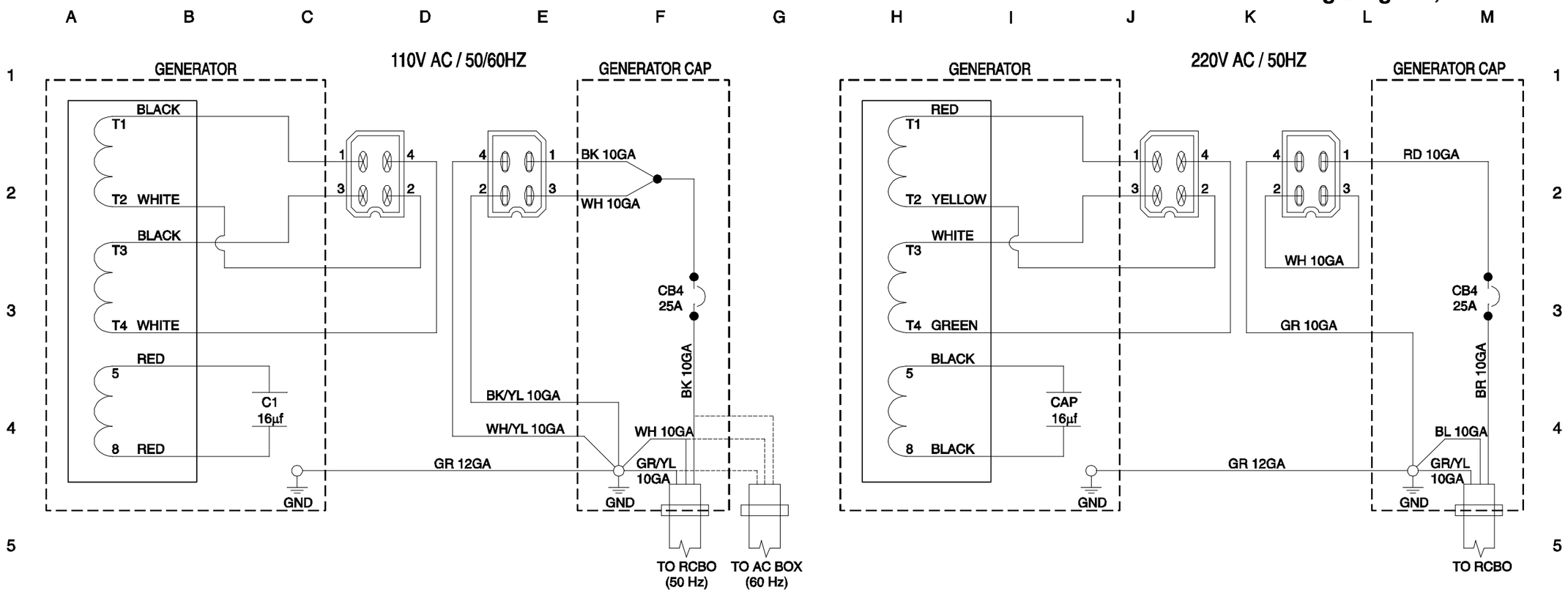

2 SPEED LIFT MODELS



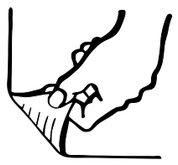

PROPORTIONAL LIFT MODELS



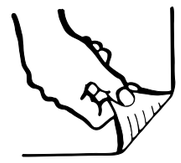
## Generator Wiring Diagram, All Models



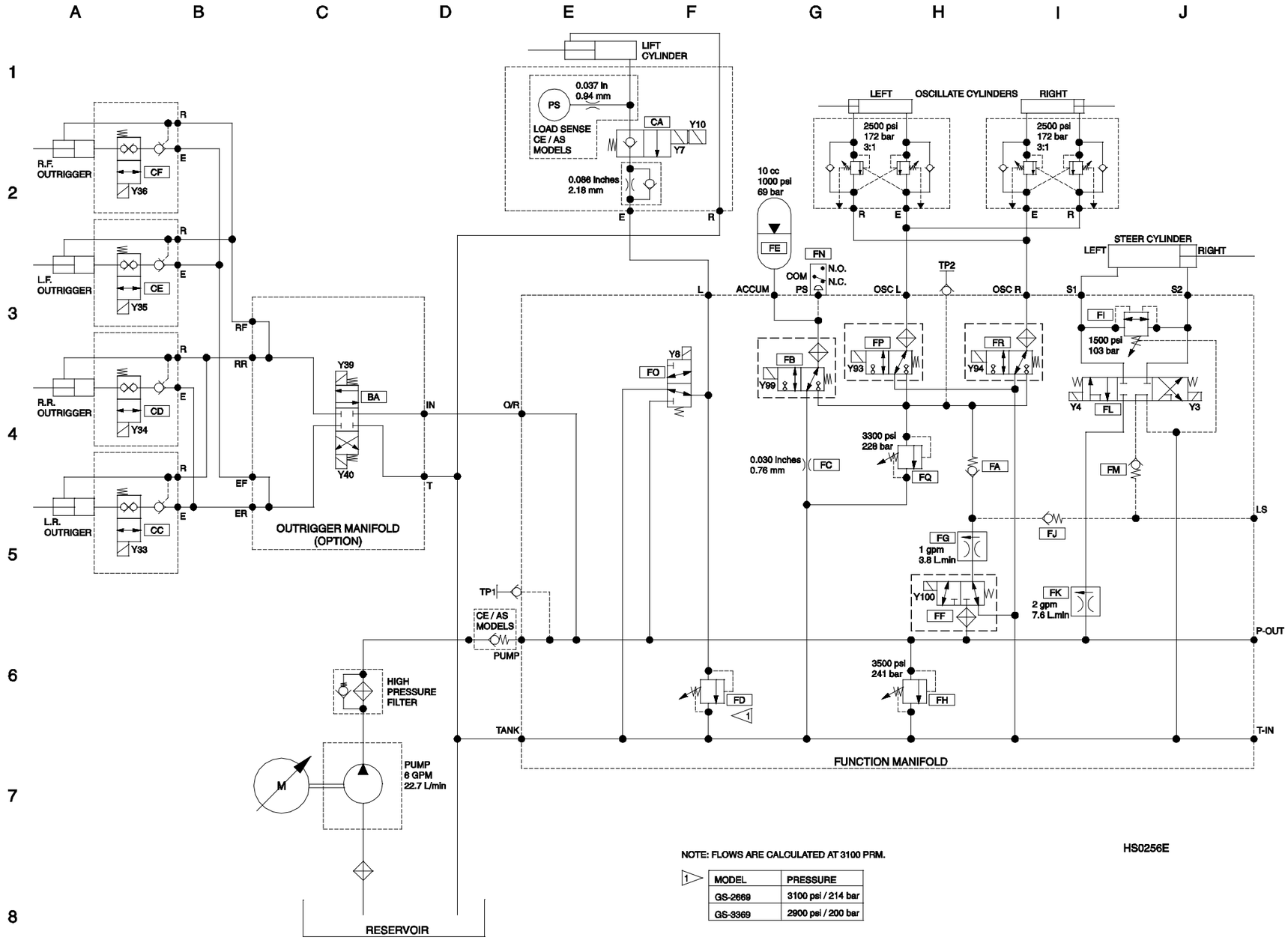
# Generator Wiring Diagram, All Models



# Hydraulic Schematic, GS-2669 BE and GS-3369 BE with 2 Speed Lift (to serial number GS6915-6385)



# Hydraulic Schematic, GS-2669 BE and GS-3369 BE with 2 Speed Lift (to serial number GS6915-6385)

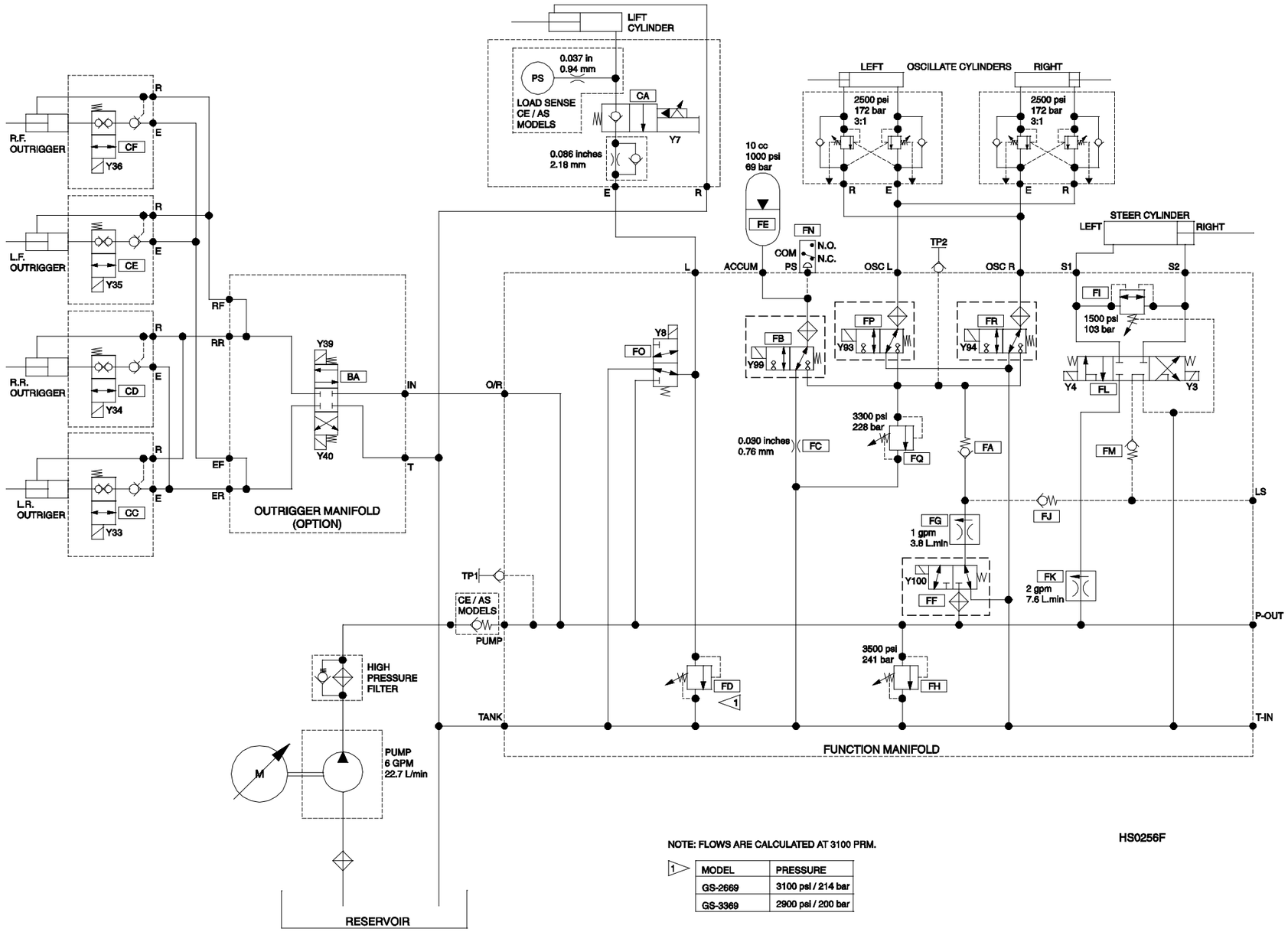



NOTE: FLOWS ARE CALCULATED AT 3100 PRM.

| 1 | MODEL | PRESSURE |
|---|---|---|
| | GS-2669 | 3100 psi / 214 bar |
| | GS-3369 | 2900 psi / 200 bar |

HS0256E

# Hydraulic Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift (from serial number GS6915-6386)

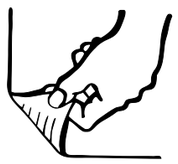



NOTE: FLOWS ARE CALCULATED AT 3100 PRM.

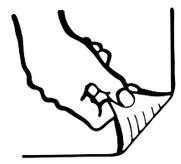
| 1 | MODEL | PRESSURE |
|---|---|---|
| | GS-2669 | 3100 psi / 214 bar |
| | GS-3369 | 2900 psi / 200 bar |

HS0256F

# Hydraulic Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift (from serial number GS6915-6386)



# Hydraulic Schematic, GS-4069 BE with 2 Speed Lift (to serial number GS6915-6385)



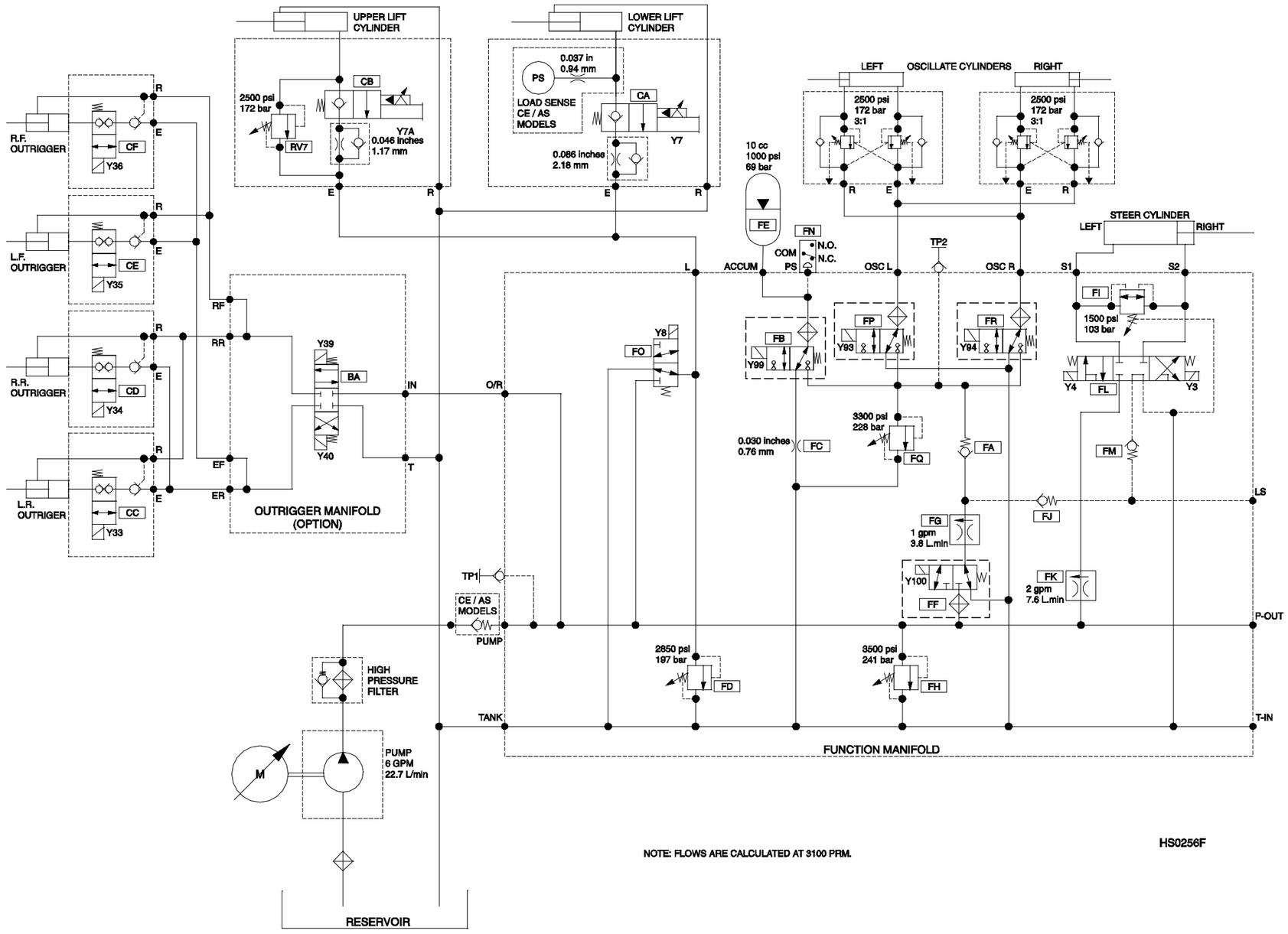
# Hydraulic Schematic, GS-4069 BE with 2 Speed Lift (to serial number GS6915-6385)




NOTE: FLOWS ARE CALCULATED AT 3100 PRM.

HS0256E

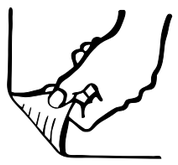
# Hydraulic Schematic, GS-4069 BE with Proportional Lift (from serial number GS6915-6386)



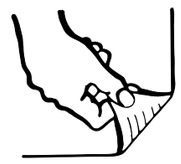

NOTE: FLOWS ARE CALCULATED AT 3100 PRM.

HS0256F

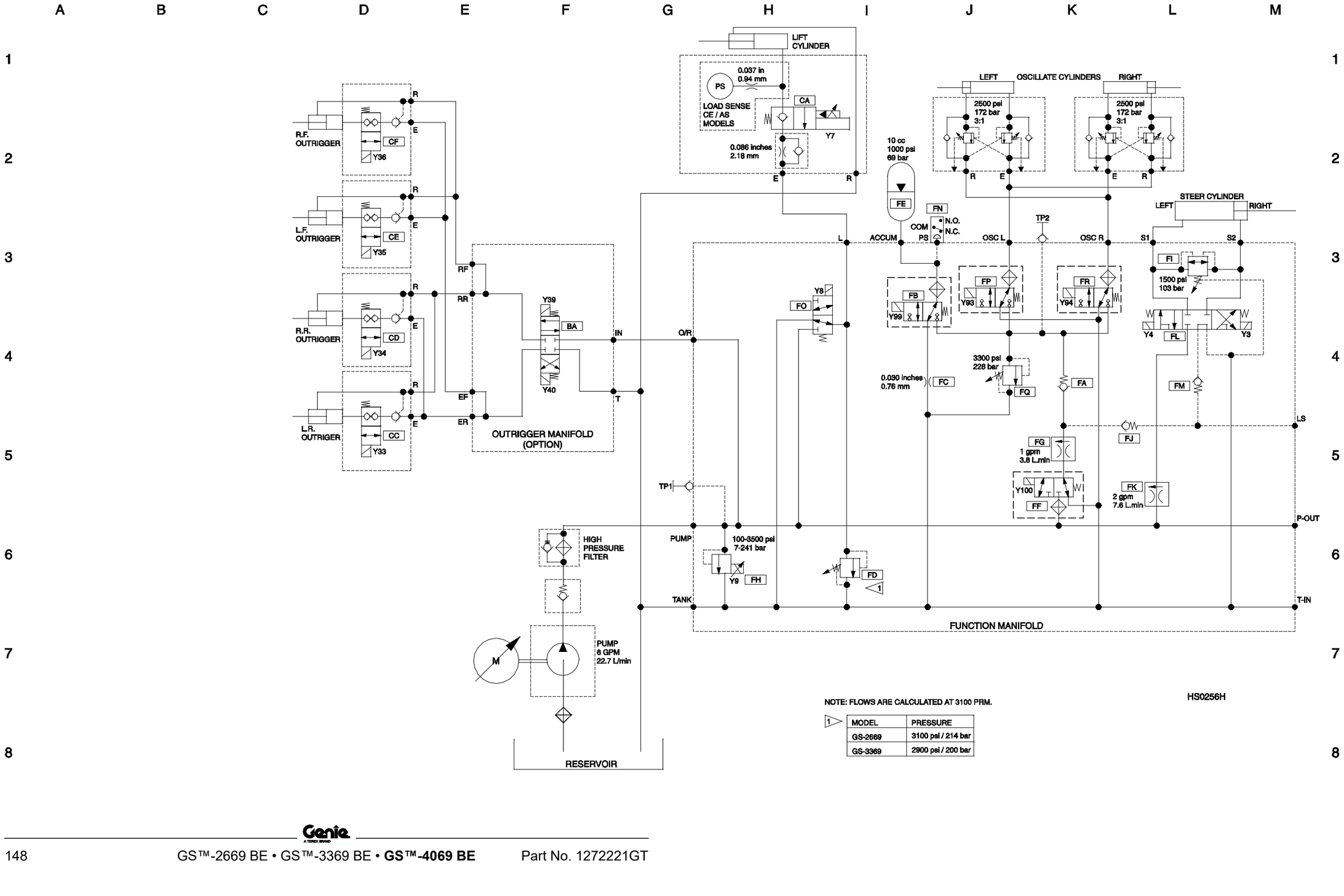
# Hydraulic Schematic, GS-4069 BE with Proportional Lift (from serial number GS6915-6386)



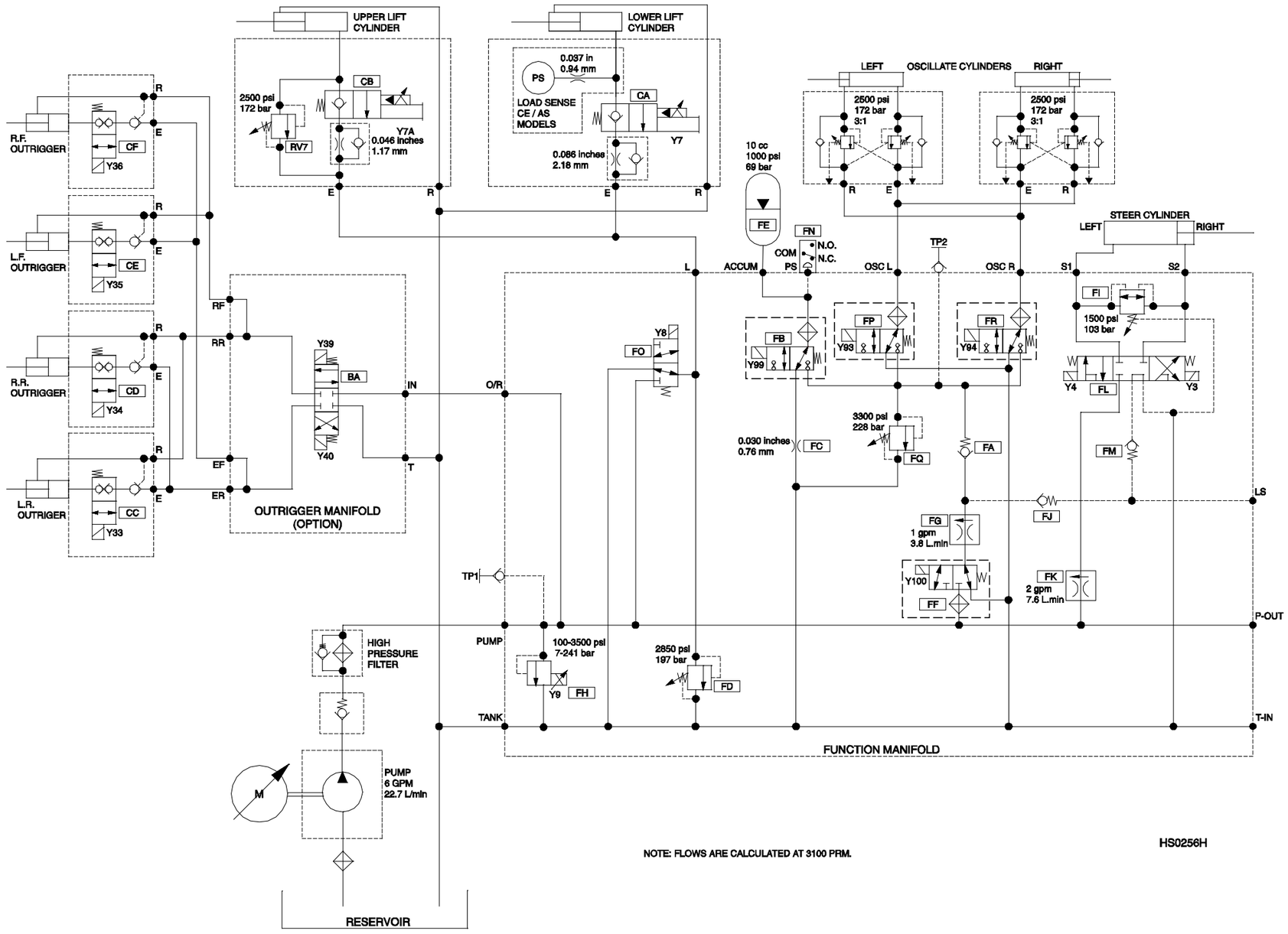
# Hydraulic Schematic, GS-2669 BE and GS-3369 BE with 2 Speed Lift (to serial number GS6915-6385)



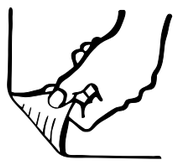
# Hydraulic Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift (from serial number GS6916F-10015)



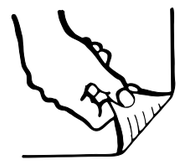
# Hydraulic Schematic, GS-4069 BE with Proportional Relief (from serial number GS6915-6386)



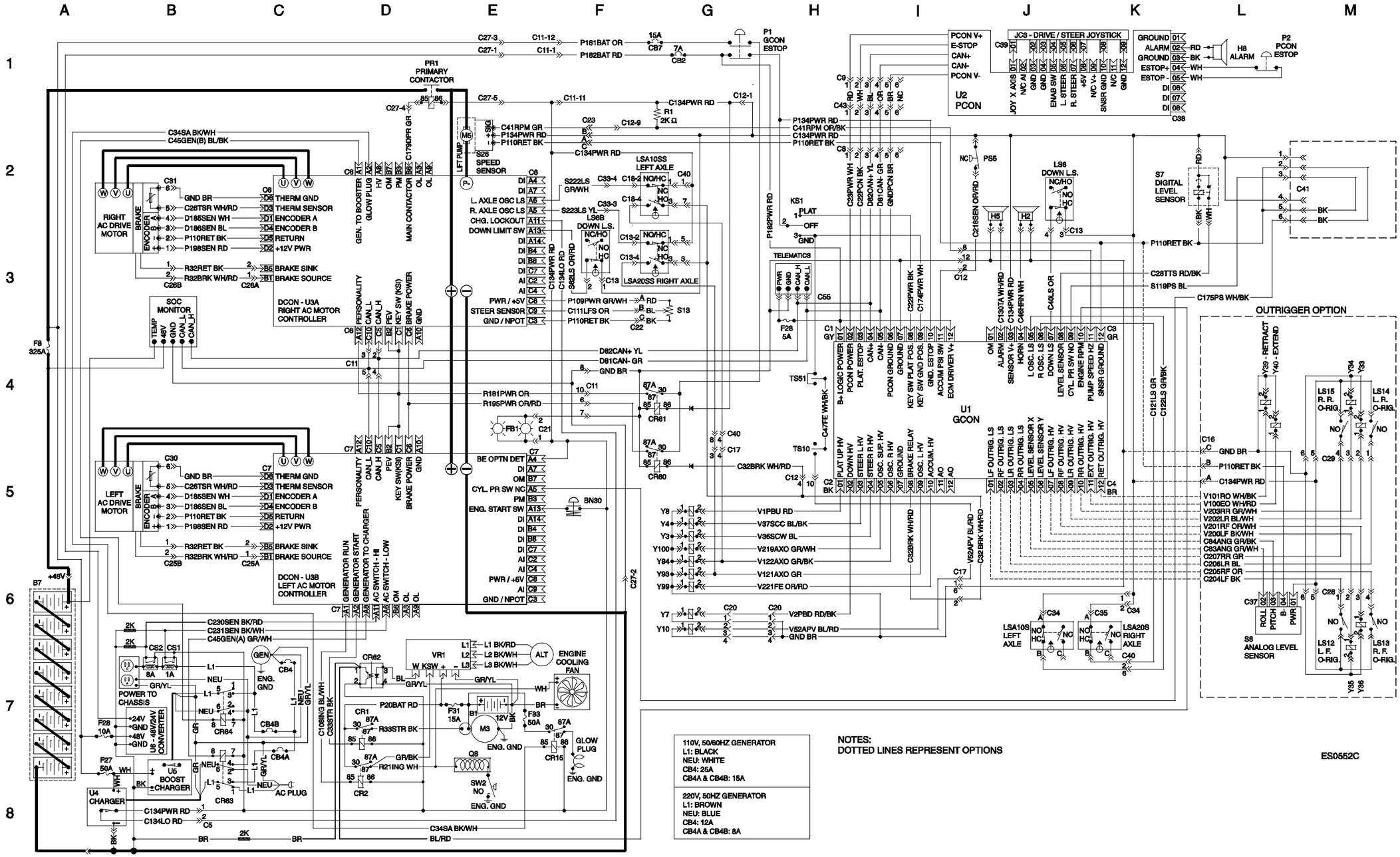
# Hydraulic Schematic, GS-4069 BE with Proportional Relief (from serial number GS6916F-10015)



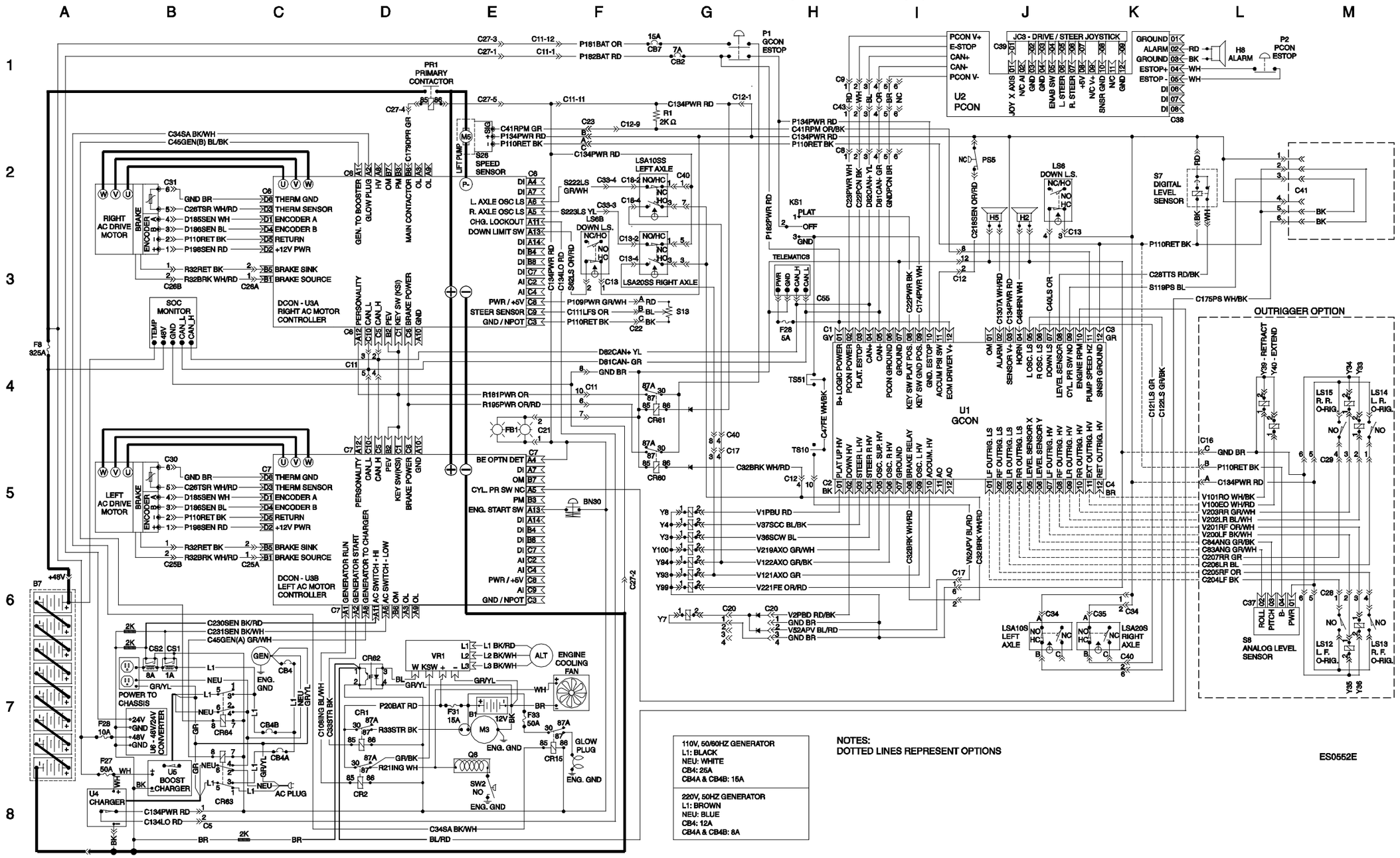
# Electrical Schematic, GS-2669 BE and GS-3369 BE with 2 Speed Lift, (ANSI / CSA) (to serial number GS6915-6385)



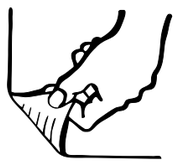
# Electrical Schematic, GS-2669 BE and GS-3369 BE with 2 Speed Lift, (ANSI / CSA) (to serial number GS6915-6385)



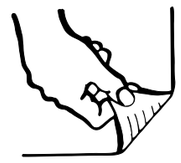
# Electrical Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift, (ANSI / CSA) (from serial number GS6915-6386 to GS6915-7719)



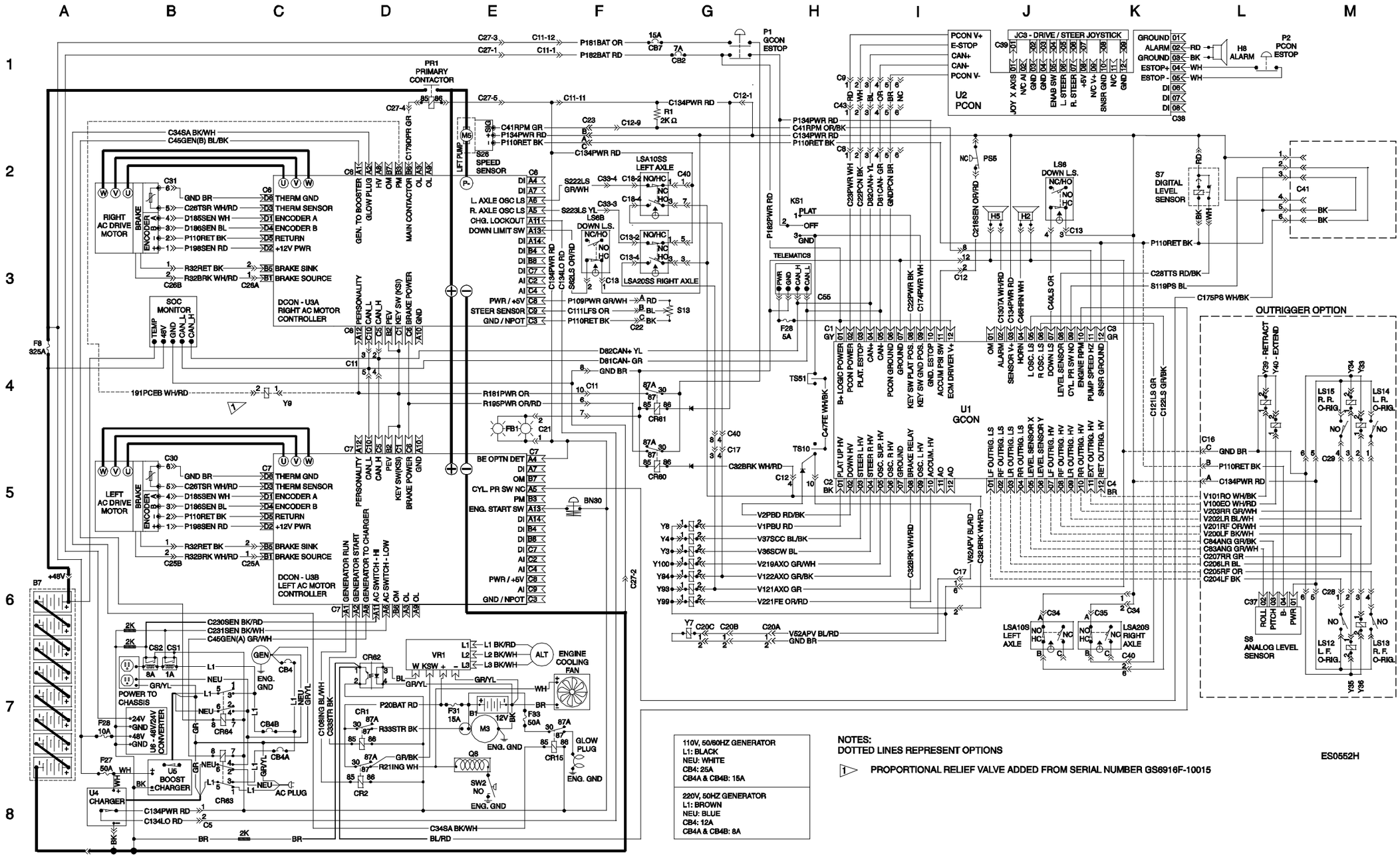
# Electrical Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift, (ANSI / CSA) (from serial number GS6915-6386 to GS6915-7719)



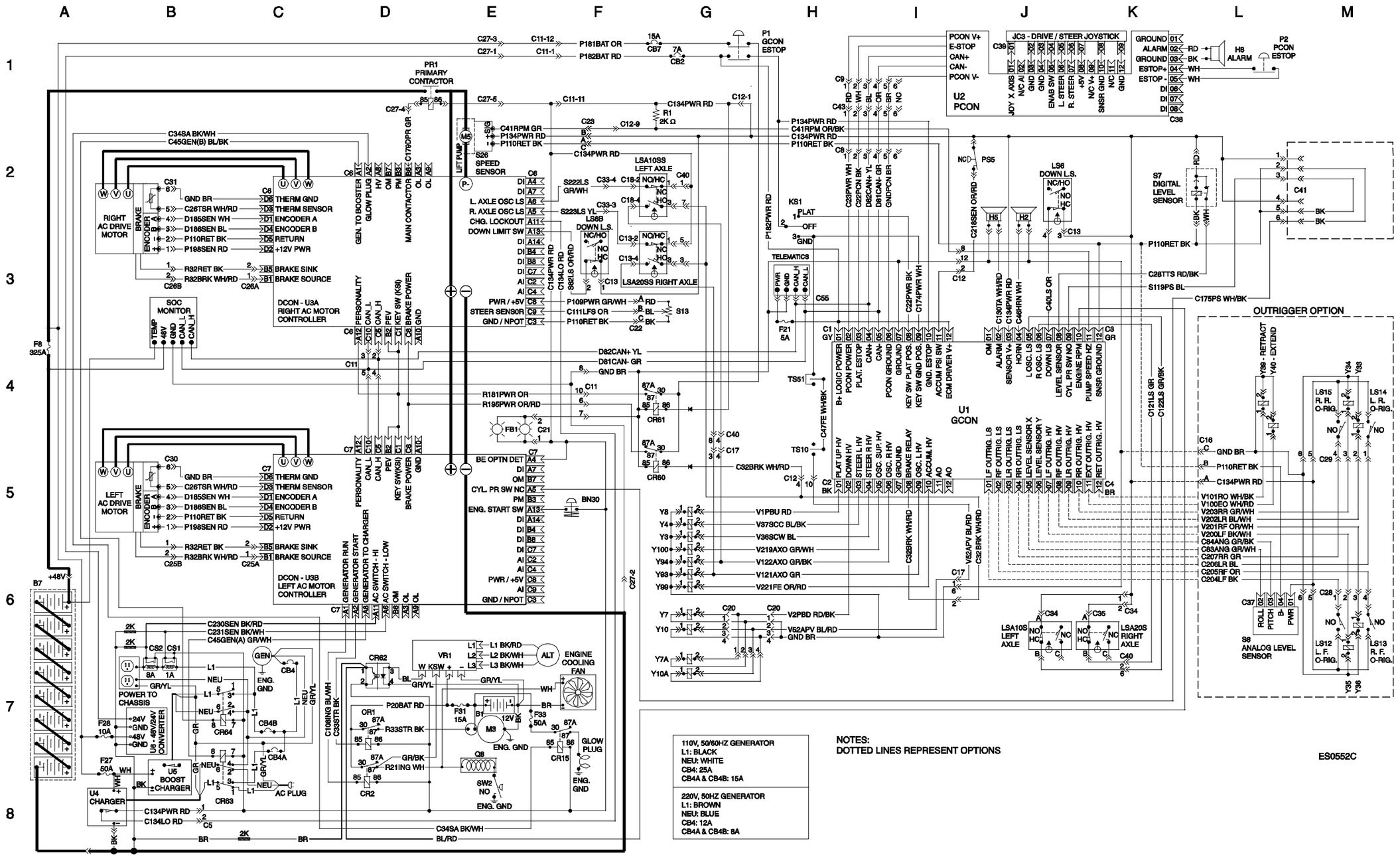
# Electrical Schematic, GS-2669 BE and GS-3369 with Proportional Lift, (ANSI / CSA) (from serial number GS6915-7720)



# Electrical Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift, (ANSI / CSA) (from serial number GS6915-7720)



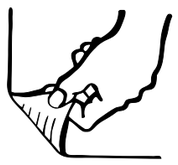
# Electrical Schematic, GS-4069 BE with 2 Speed Lift, (ANSI / CSA) (to serial number GS6915-6385)



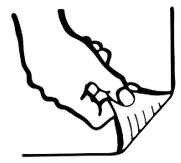

| 110V, 50/60HZ GENERATOR |
|---|
| L1: BLACK |
| NEU: WHITE |
| CB4: 25A |
| CB4A & CB4B: 15A |
| **220V, 50HZ GENERATOR** |
| L1: BROWN |
| NEU: BLUE |
| CB4: 12A |
| CB4A & CB4B: 8A |

NOTES:
DOTTED LINES REPRESENT OPTIONS

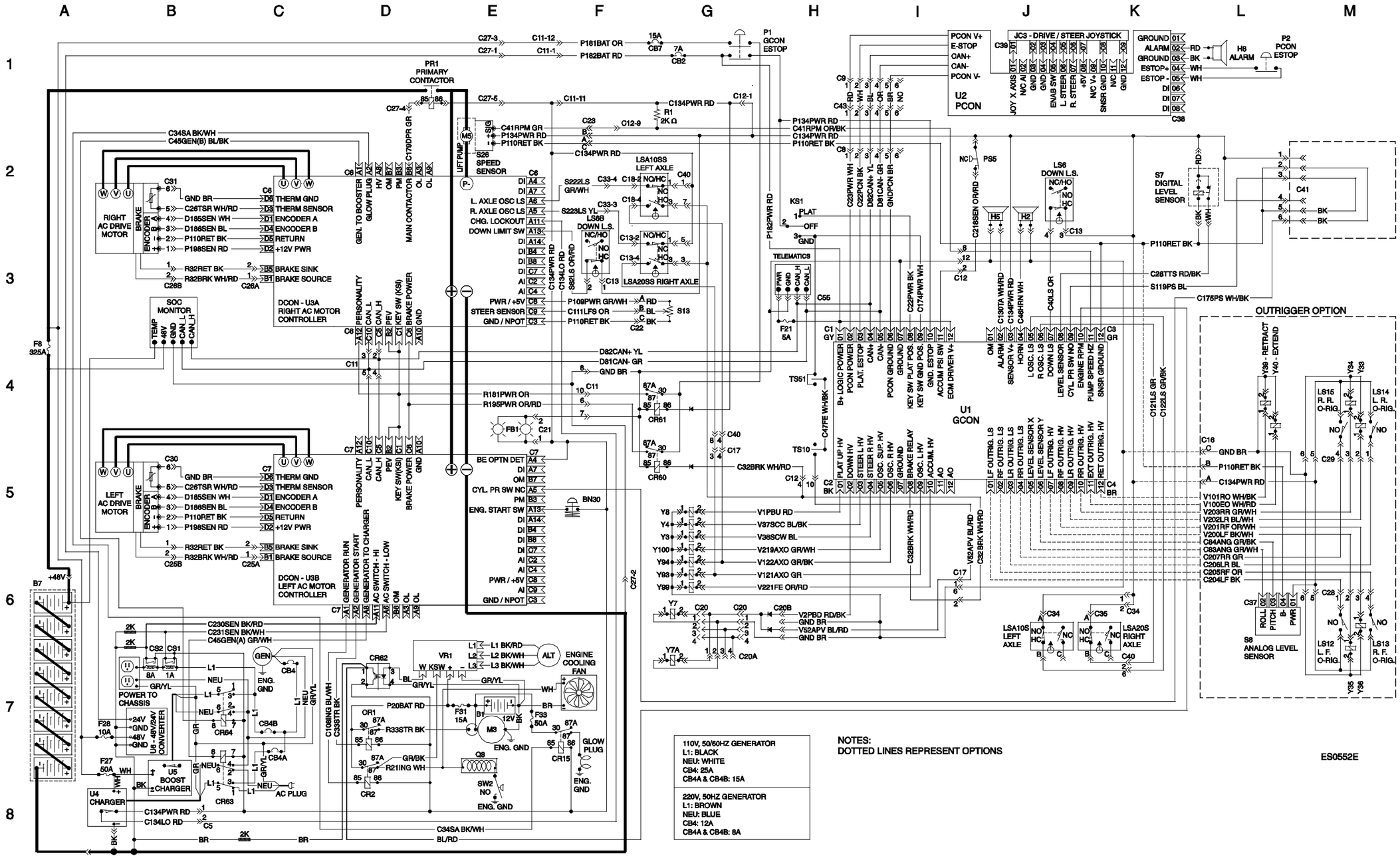
# Electrical Schematic, GS-4069 BE with 2 Speed Lift, (ANSI / CSA) (to serial number GS6915-6385)



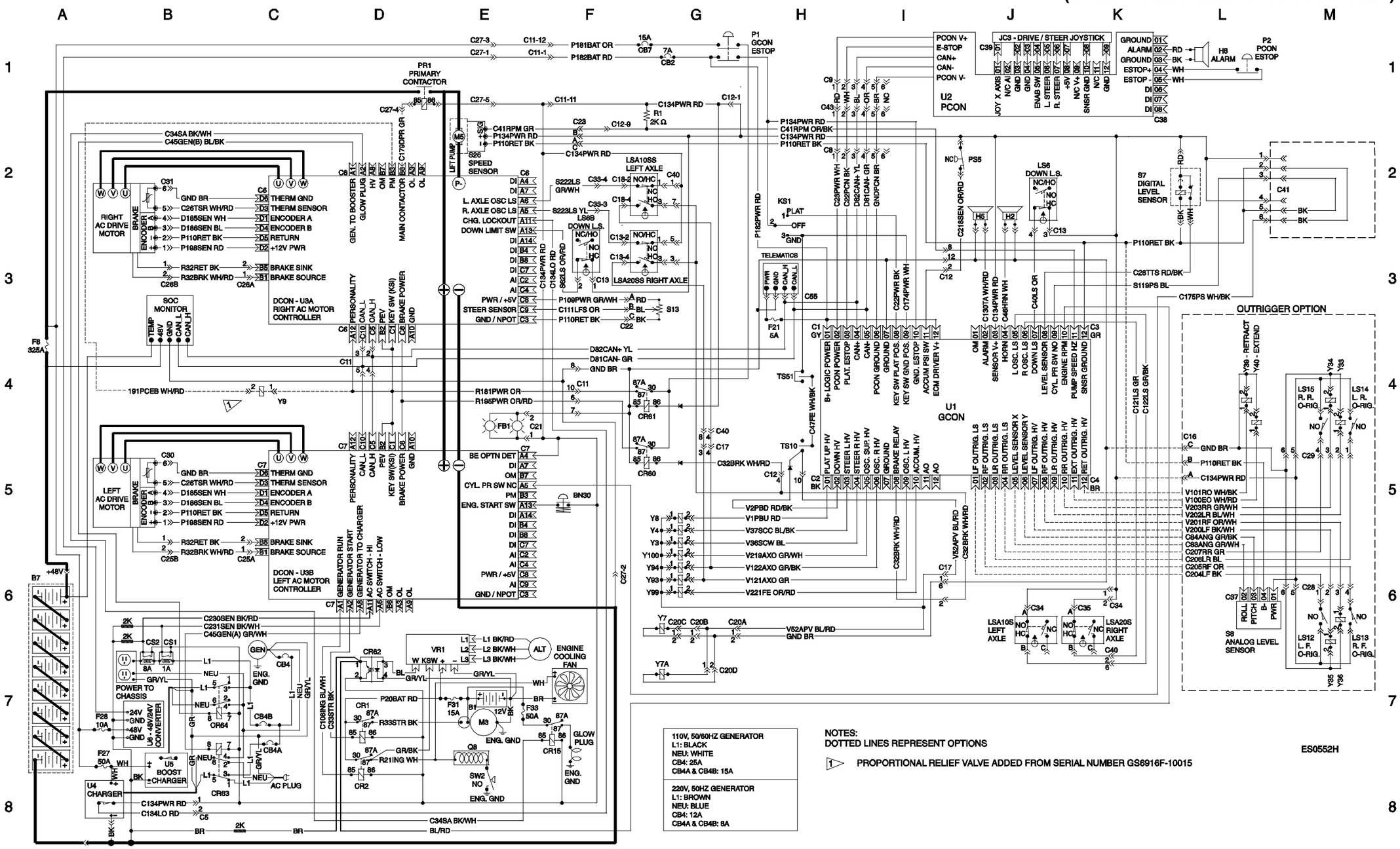
# Electrical Schematic, GS-4069 BE with Proportional Lift, (ANSI / CSA) (from serial number GS6915-6386 to GS6915-7719)



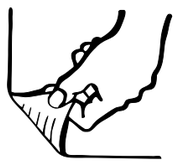
# Electrical Schematic, GS-4069 BE with Proportional Lift, (ANSI / CSA) (from serial number GS6915-6386 to GS6915-7719)



# Electrical Schematic, GS-4069 BE with Proportional Lift, (ANSI / CSA) (from serial number GS6915-7720)

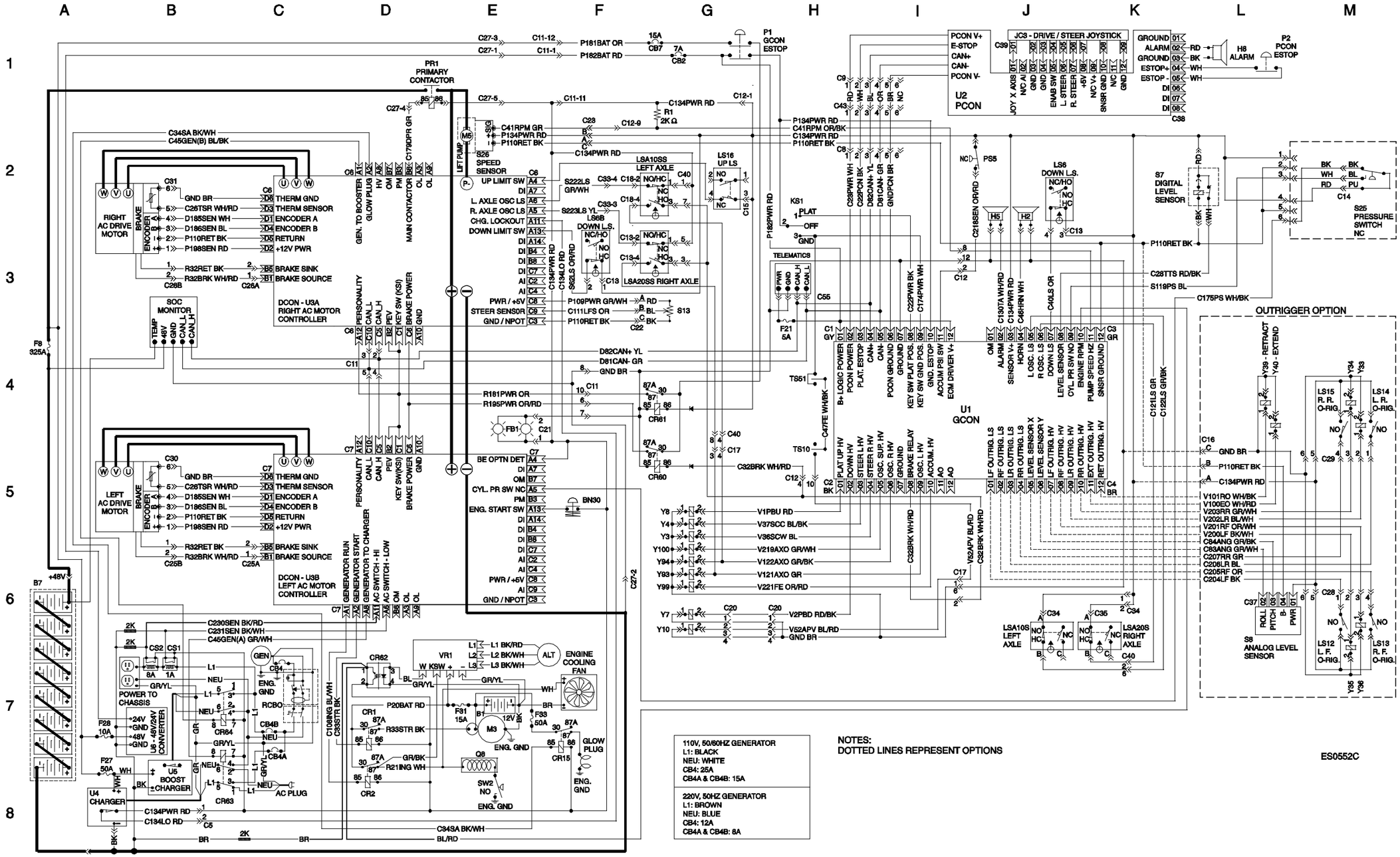


# Electrical Schematic, GS-4069 BE with Proportional Lift, (ANSI / CSA) (from serial number GS6915-7720)

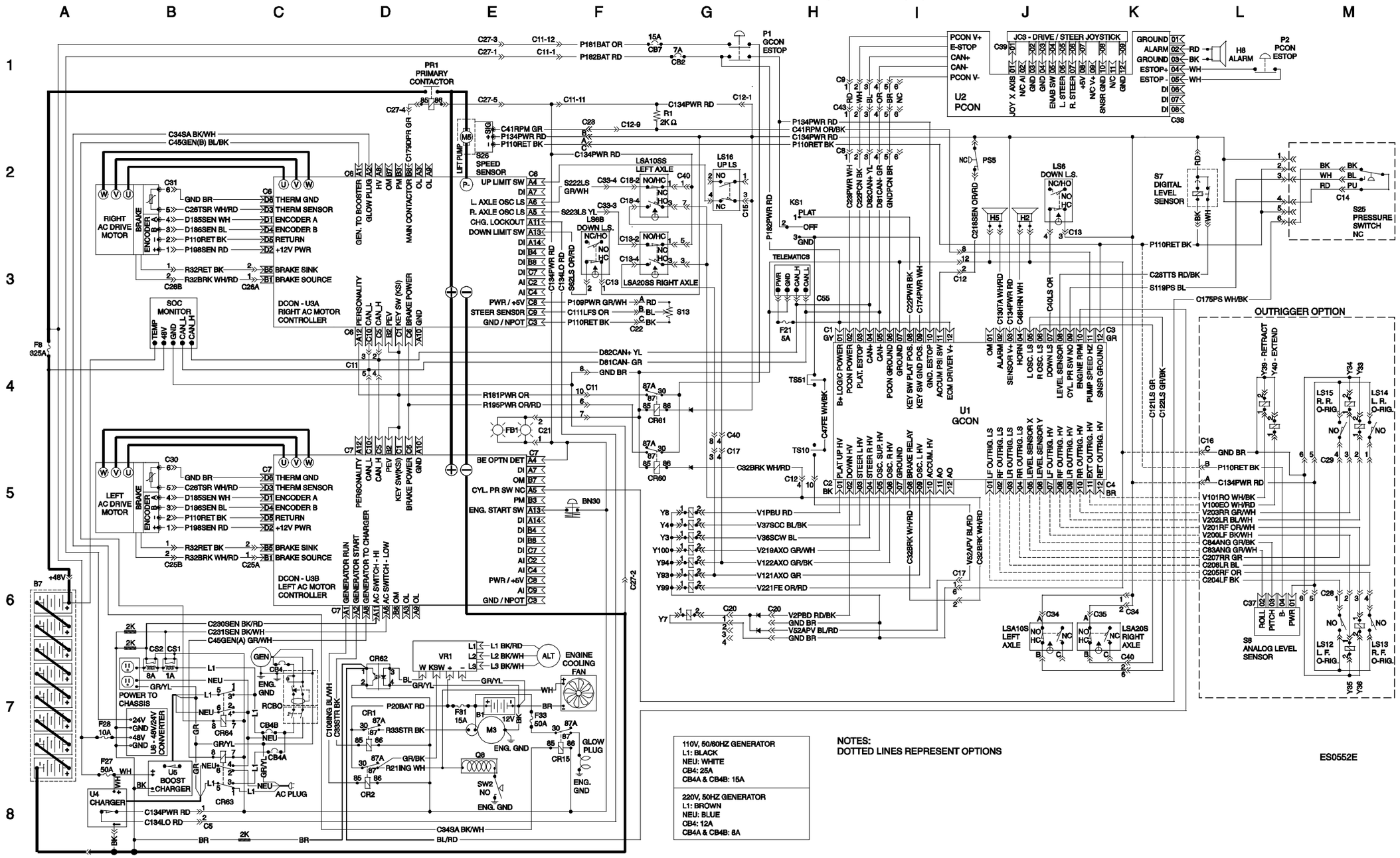


# Electrical Schematic, GS-2669 BE and GS-3369 BE with 2 Speed Lift, (AS / CE) (to serial number GS6915-6385)

# Electrical Schematic, GS-2669 BE and GS-3369 BE with 2 Speed Lift, (AS / CE) (to serial number GS6915-6385)



# Electrical Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift, (AS / CE) (from serial number GS6915-6386 to GS6915-7719)

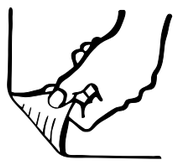



| 110V, 50/60HZ GENERATOR |
|---|
| L1: BLACK |
| NEU: WHITE |
| CB4: 25A |
| CB4A & CB4B: 15A |
| **220V, 50HZ GENERATOR** |
| L1: BROWN |
| NEU: BLUE |
| CB4: 12A |
| CB4A & CB4B: 8A |

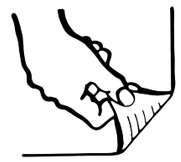
NOTES:
DOTTED LINES REPRESENT OPTIONS

ES0552E

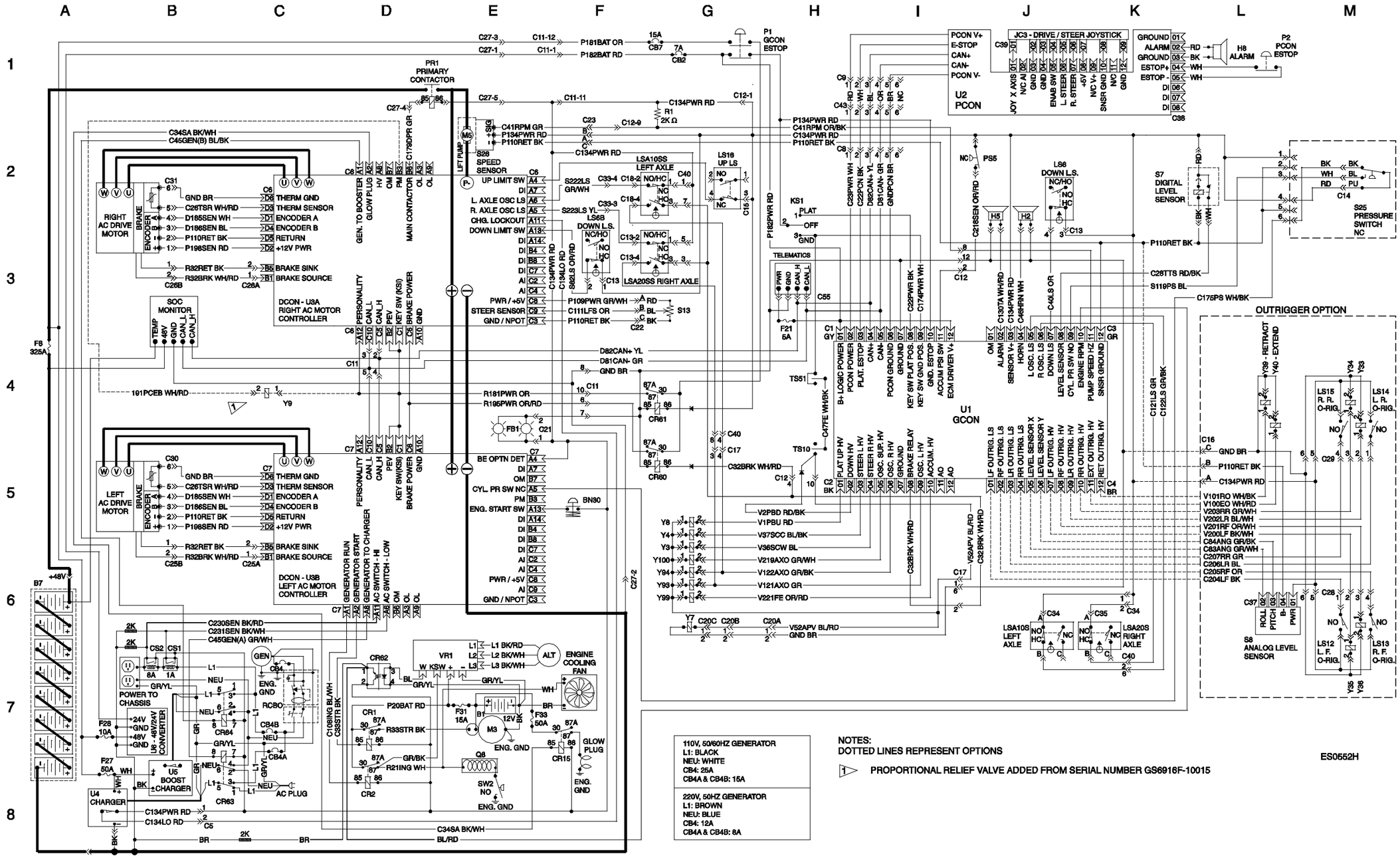
# Electrical Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift, (AS / CE) (from serial number GS6915-6386 to GS6915-7719)



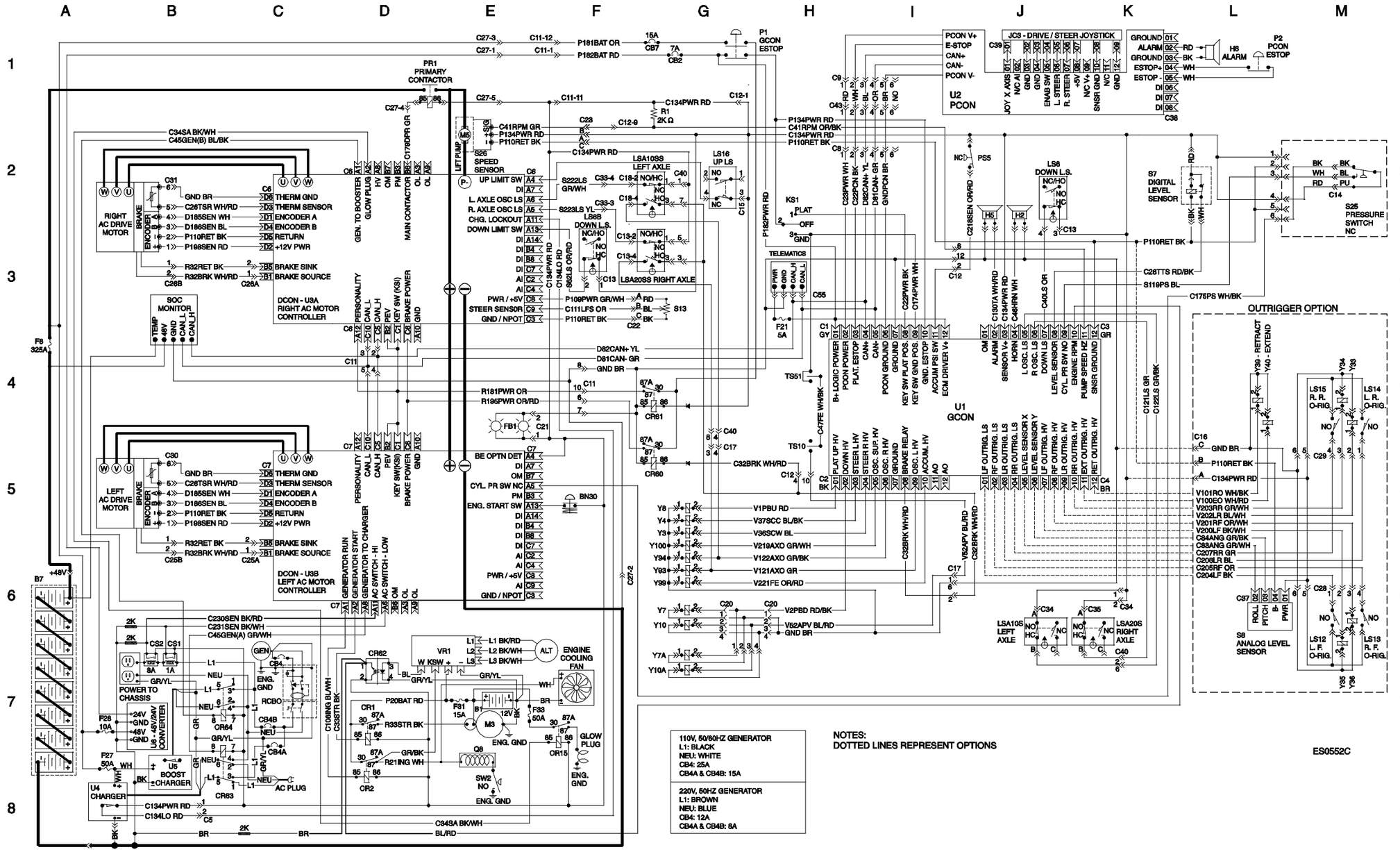
# Electrical Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift, (AS / CE) (from serial number GS6915-7720)



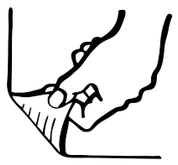
# Electrical Schematic, GS-2669 BE and GS-3369 BE with Proportional Lift, (AS / CE) (from serial number GS6915-6989)



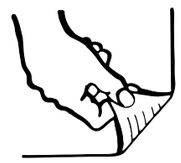
# Electrical Schematic, GS-4069 BE with 2 Speed Lift, (AS / CE) (to serial number GS6915-6385)



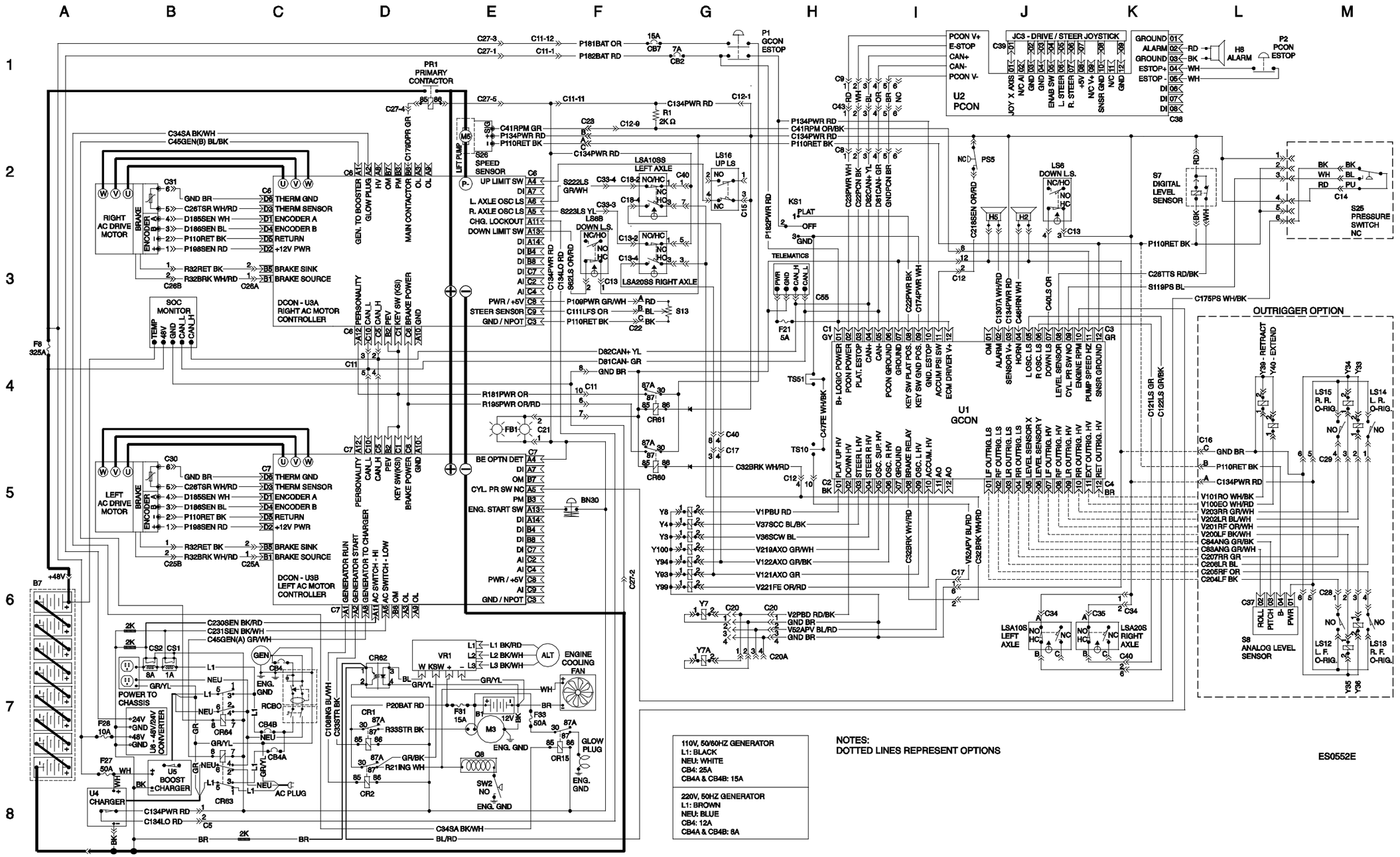
# Electrical Schematic, GS-4069 BE with 2 Speed Lift, (AS / CE) (to serial number GS6915-6385)



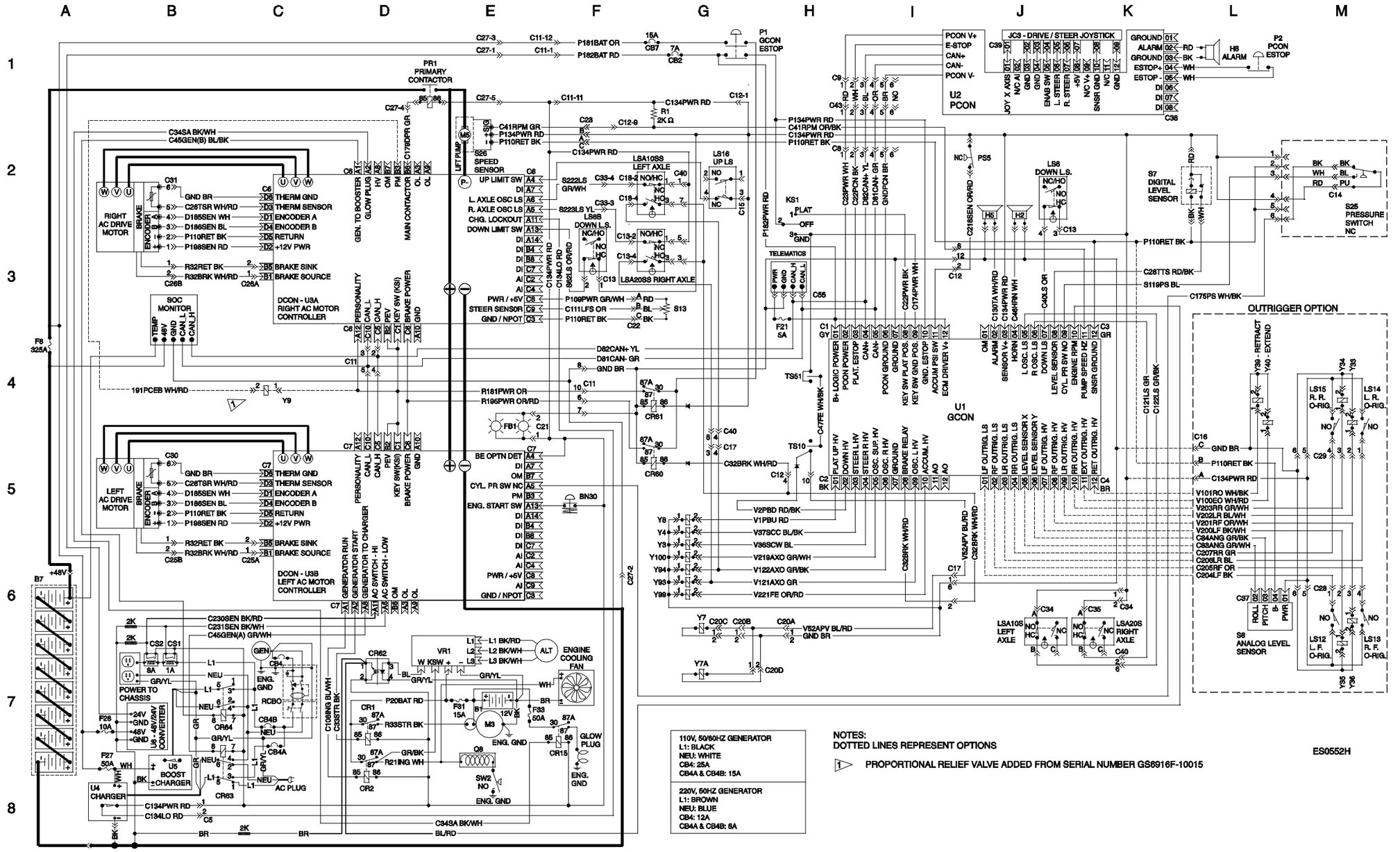
# Electrical Schematic, GS-4069 BE with Proportional Lift, (AS / CE) (from serial number GS6915-6386 to GS6915-7719)



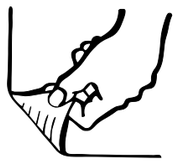
# Electrical Schematic, GS-4069 BE with Proportional Lift, (AS / CE) (from serial number GS6915-6386 to GS6915-7719)



# Electrical Schematic, GS-4069 BE with Proportional Lift, (AS / CE) (from serial number GS6915-7720)



# Electrical Schematic, GS-4069 BE with Proportional Lift, (AS / CE) (from serial number GS6915-7720)



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.

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.

**www.genielift.com**

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