



Service and Repair Manual

Serial Number Range

GS™-2669 BE
GS™-3369 BE
GS™-4069 BE

from GS69F-18000

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

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

Original Instructions
Part No. 1306586GT
Rev A1
August 2022

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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1306586GT Rev A, May 2021

Second Edition, First Printing

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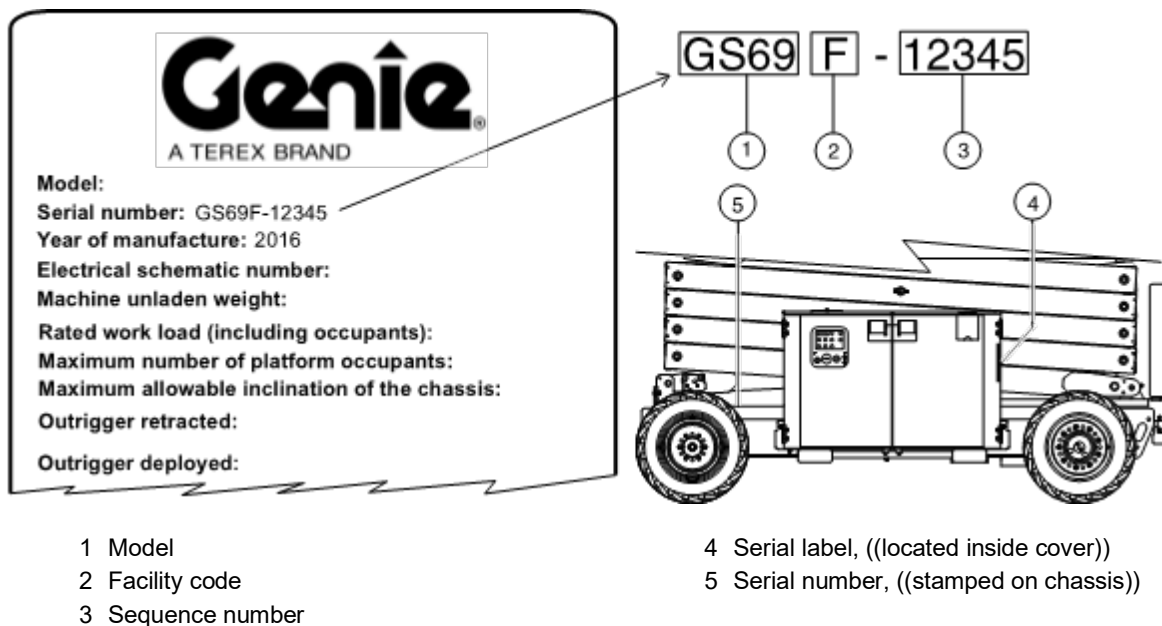
Introduction

Revision History

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Introduction

Serial Number Legend



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 modify or alter a MEWP without prior written permission from the manufacturer.

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.



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



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



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



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



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



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

Workplace Safety

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



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



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



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



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



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



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

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Specifications

Machine Specifications

Fluid capacities

Hydraulic tank (maximum fill capacity)	16.5 gallons 62.5 liters
Hydraulic system (including tank)	18 gallons 68.1 liters
Drive hub EP 90 or SAE 90 multipurpose hypoid gear oil API service classification GL5	24.5 ounces 725 cc
Fuel tank	3.3 gallons 12.5 liters

Tires and wheels

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

Non-marking, foam filled, RT

Tire size	26 x 12D380
Tire ply rating	8
Tire diameter	26 in 66 cm
Tire width	12 in 30 cm
Weight, each	177.5 lbs 80.5 kg

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

Specifications

Performance Specifications

Drive speed, maximum	
Platform stowed	4.5 mph
Forward direction	7.2 km/h 40 ft / 6.1 sec 12.2 m / 6.1 sec
Platform stowed	3.0 mph
Reverse direction	4.8 km/h 40 ft / 9.1 sec 12.2 m / 9.1 sec
Platform raised	0.3 mph 0.5 km/h 40 ft / 91 sec 12.2 m / 91 sec
Braking distance, maximum	
High range on paved surface	less than 3 ft 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	29 to 39 seconds
Platform down	26 - 36 seconds
GS-3369 BE	
Platform up	34 to 44 seconds
Platform down	24 - 34 seconds
GS-4069 BE	
Platform up	56 to 66 seconds
Platform down	23 - 33seconds
Outrigger leveling, maximum	
Front	5.3°
Back	4.2°
Side to side	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
ISO Grade	32
Viscosity index, maximum	200

Optional Hydraulic Fluids

Mineral based	Shell Tellus S2 V 32 Shell Tellus S2 V 46 Shell Tellus S4 VX 32 Shell Donax TG (Dexron III) Chevron 5606A
Biodegradable	Petro Canada Environ MV 46
Fire resistant	UCON Hydrolube HP-5046

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

NOTICE

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

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

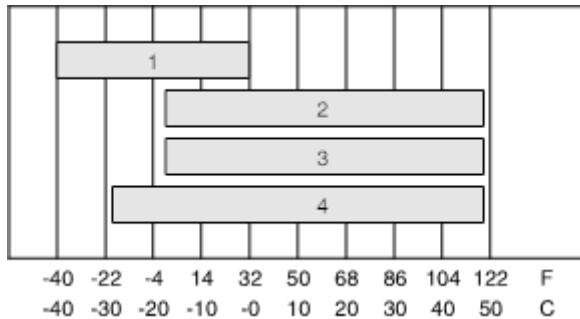
Specifications

NOTICE

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

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

Hydraulic Fluid Temperature Range



Ambient air temperature

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

Chevron Rando HD Premium Oil MV Fluid Properties

ISO Grade	32
Viscosity index, maximum	200
Kinematic Viscosity, maximum	
cSt @ 200°F / 100°C	7.5
cSt @ 104°F / 40°C	33.5
Brookfield Viscosity, maximum	
cP @ -4°F / -20°C	1040
cP @ -22°F / -30°C	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.

Specifications

Chevron 5606A Hydraulic Oil Fluid Properties

ISO Grade	15
Viscosity index, maximum	300
Kinematic Viscosity, maximum	
cSt @ 200°F / 100°C	5.5
cSt @ 104°F / 40°C	15.0
cSt @ -40°F / -40°C	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, maximum	154
Kinematic Viscosity, maximum	
cSt @ 200°F / 100°C	8.0
cSt @ 104°F / 40°C	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, maximum	300
Kinematic Viscosity, maximum	
cSt @ 200°F / 100°C	9
cSt @ 104°F / 40°C	33.8
Brookfield Viscosity, maximum	
cSt @ -4°F / -20°C	481
cSt @ -13°F / -25°C	702.4
cSt @ -40°F / -40°C	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, maximum	192
Kinematic Viscosity, maximum	
cSt @ 149°F / 65°C	22
cSt @ 104°F / 40°C	46
cSt @ 0°F / -18°C	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 6 cc
Flow rate @ 3100 rpm	6 gpm 22.7 L/min
Function manifold	
System relief valve pressure, maximum	3500 ps 241 bari
Lift relief valve pressure GS-2669 BE	3100 psi 214 bar
Lift relief valve pressure GS-3369 BE	2900 psi 200 bar
Lift relief valve pressure GS-4069 BE	2850 psi 197 bar
Steer relief valve pressure	1500 psi 103 bar
Oscillate relief valve pressure	3300 psi 228 bar
Steer flow regulator	2 gpm 7.6 L/min
Oscillate flow regulator	1 gpm 4 L/min

Manifold Component Specifications

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

Specifications

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

Machine Component Weights

Platform assembly	936 lbs 425 kg
Link assembly (GS-4069)	3430 lbs 1556 kg
Link assembly (GS-3369)	2607 lbs 1183 kg
Link assembly (GS-2669)	2156 lbs 978 kg
Outrigger assembly (if equipped)	850 lbs 386 kg
Chassis assembly (GS-3369) (T105 battery option)	5342 lbs 2423 kg
Chassis assembly (GS-2669) (T105 battery option)	6053 lbs 2746 kg
Chassis assembly (GS-4069) (T145 battery option)	7521 lbs 3411 kg
Chassis assembly (GS-3369) (T145 battery option)	5430 lbs 2463 kg
Chassis assembly (GS-2669) (T145 battery option)	6141 lbs 2786 kg



Specifications

Kohler KD350 Engine

Displacement	21.3 cu in 0.4 liters
Number of cylinders	1
Bore and Stroke	3.3 x 2.6 inches 82 x 66 mm
Horsepower	6.7 @ 3600 rpm 5 kW
High idle	3600/3000 rpm
Compression ratio	20.3:1
Lubrication system	
Oil pressure (@ 2000 rpm)	40 to 60 psi 1.4 to 3 bar
Oil capacity (including filter)	1.3 quarts 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 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

Specifications

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.

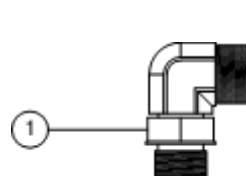
Seal-Lok™ Fittings (hose end - ORFS)	
SAE Dash Size	Torque
-4	18 ft-lbs / 25 Nm
-6	30 ft-lbs / 41 Nm
-8	40 ft-lbs / 55 Nm
-10	60 ft-lbs / 81 Nm
-12	85 ft-lbs / 115 Nm
-16	110 ft-lbs / 150 Nm
-20	150 ft-lbs / 205 Nm
-24	230 ft-lbs / 315 Nm

JIC 37° Fittings (swivel nut or hose connection)		
SAE Dash Size	Thread Size	Flats
-4	7/16-20	2
-6	9/16-18	1 1/2
-8	3/4-16	1 1/2
-10	7/8-14	1 1/2
-12	1 1/16-12	1 1/4
-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 / 49 Nm
-10	62 ft-lbs / 84 Nm
-12	84 ft-lbs / 114 Nm
-16	125 ft-lbs / 169,5 Nm
-20	151 ft-lbs / 204,7 Nm
-24	184 ft-lbs / 249,5 Nm



Adjustable Fitting

1 jam nut



Non-adjustable fitting

SAE O-ring Boss Port

(tube fitting - installed into Steel)

SAE Dash Size	Torque
-4 ORFS / 37° (Adj)	15 ft-lbs / 20,3 Nm
ORFS (Non-adj)	26 ft-lbs / 35,3 Nm
37° (Non-adj)	22 ft-lbs / 30 Nm
-6 ORFS (Adj / Non-adj)	35 ft-lbs / 47,5 Nm
37° (Adj / Non-adj)	29 ft-lbs / 39,3 Nm
-8 ORFS (Adj / Non-adj)	60 ft-lbs / 81,3 Nm
37° (Adj / Non-adj)	52 ft-lbs / 70,5 Nm
-10 ORFS (Adj / Non-adj)	100 ft-lbs / 135,6 Nm
37° (Adj / Non-adj)	85 ft-lbs / 115,3 Nm
-12 (All types)	135 ft-lbs / 183 Nm
-16 (All types)	200 ft-lbs / 271,2 Nm
-20 (All types)	250 ft-lbs / 339 Nm
-24 (All types)	305 ft-lbs / 413,5 Nm

Specifications

Torque Procedure

Seal-Lok™ fittings

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

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

- 2 Lubricate the O-ring before installation.
- 3 Be sure the O-ring face seal is seated and retained properly.
- 4 Position the tube and nut squarely on the face seal end of the fitting, and tighten the nut finger tight.
- 5 Tighten the nut or fitting to the appropriate torque. Refer to the appropriate torque chart in this section.
- 6 Operate all machine functions and inspect the hose, fittings and related components to confirm there are no leaks.

JIC 37° fittings

- 1 Align the tube flare (hex nut) against the nose of the fitting body (body hex fitting) and tighten the hex nut to the body hex fitting to hand tight, approximately 30 in-lbs / 3.4 Nm.
- 2 Using a permanent ink marker, make a reference mark on one the flats of the hex nut and continue the mark onto the body of the hex fitting. Refer to Illustration 1.

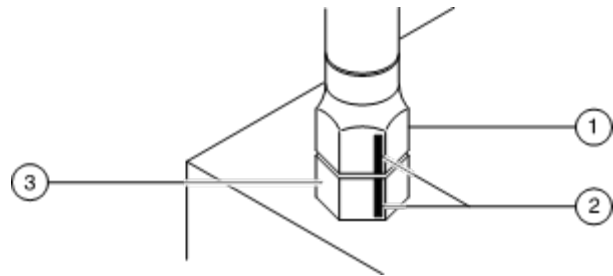


Illustration 1

- 1 hex nut
- 2 reference mark
- 3 body hex fitting

Specifications

- 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.

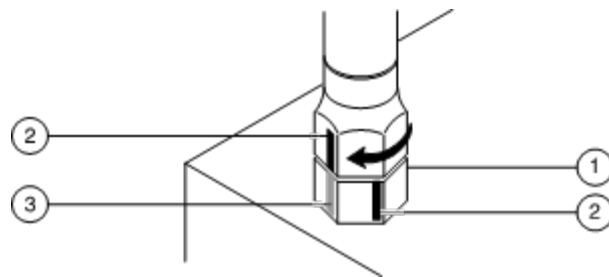


Illustration 2

- 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.



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



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



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



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

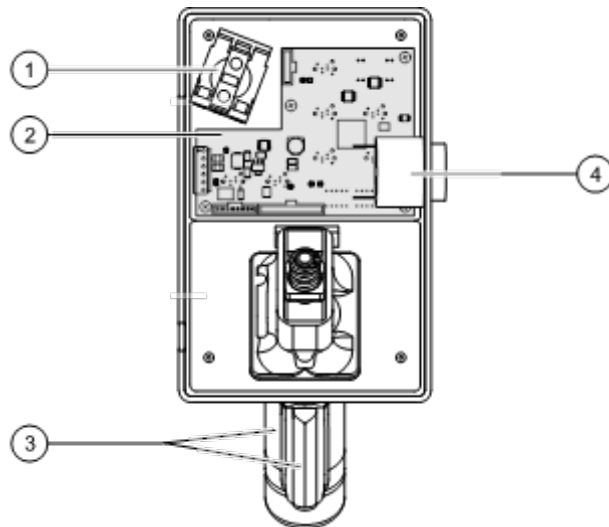
Platform controls

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
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.

Platform Controls

1-1 Circuit Board

How to Remove the Platform Controls Circuit Board

- 1 Push in the red Emergency Stop button to the off position at both the ground and platform controls.
- 2 Disconnect the platform controls from the control cable at the platform.
- 3 Remove the fasteners securing the platform control box to the platform control bracket.
- 4 Remove the fasteners securing the bottom cover to the platform control box. Open the control box.
- 5 Remove the ties securing the wire harness.
- 6 Disconnect the red and black wires from the alarm.
- 7 Carefully remove the alarm from the platform control box.

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

⚠ WARNING

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

NOTICE

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

- 9 Carefully remove the platform controls circuit board fasteners.
- 10 Carefully remove the platform controls circuit board from the platform control box.
- 11 Remove the transparent caps from the platform controls circuit board and save.

Circuit board fastener torque specifications

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

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

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

Platform Controls

1-2 Joystick

How to Remove the Joystick

- 1 Push in the red Emergency Stop button to the off position at both the ground and platform controls.
- 2 Disconnect the platform controls from the control cable at the platform.
- 3 Remove the fasteners securing the platform control box to the platform control bracket.
- 4 Remove the fasteners securing the bottom cover to the platform control box. Open the control box.
- 5 Remove the ties securing the joystick wire harness.
- 6 Carefully disconnect the joystick wire harness from the platform controls circuit board.

▲ WARNING

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

NOTICE

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

- 7 Carefully remove the joystick fasteners.
- 8 Carefully remove the joystick from the platform control box.

Torque specifications

Joystick fasteners	9 in-lbs 1 Nm
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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.

Platform Controls

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 supporting 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.

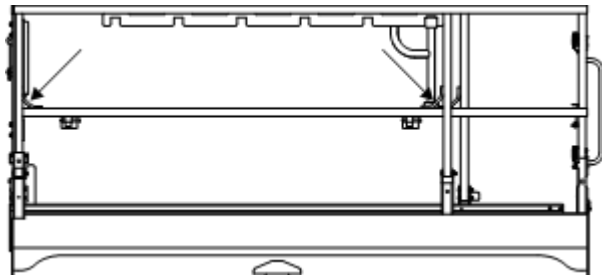
- 2 Remove the clamp that secures the platform controls cable to the platform.
- 3 Disconnect the platform controls cable from the connector located under the platform.
- 4 Remove the platform controls from the platform.

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

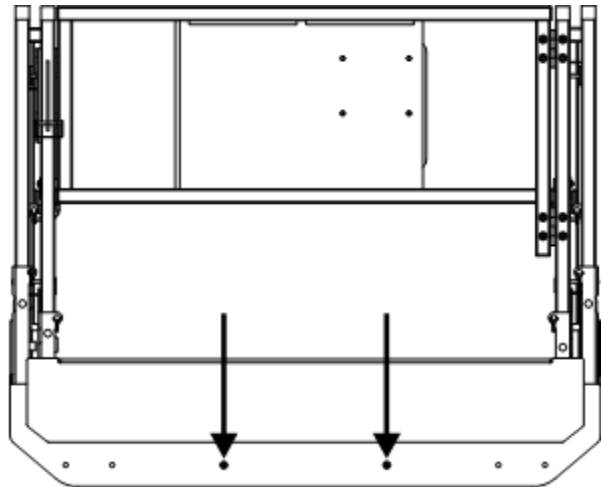
- 5 Remove the cover from the AC outlet. Tag and disconnect the wiring from the outlet.

⚠ WARNING Electrocutation/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.

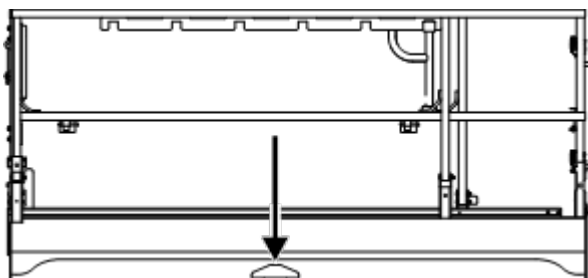


- 8 Remove the two carriage bolts that secure the platform to the platform pivot at the steer end of the machine.



Platform Components

- 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 if not properly supported.

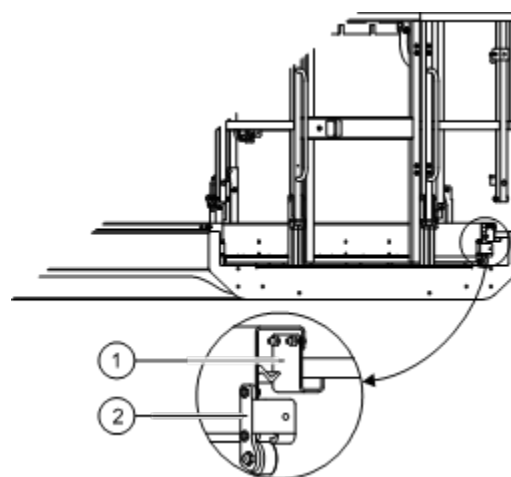
Note: Note the position of the slider blocks before the platform is removed so that when the platform is installed they will be in the correct position.

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.

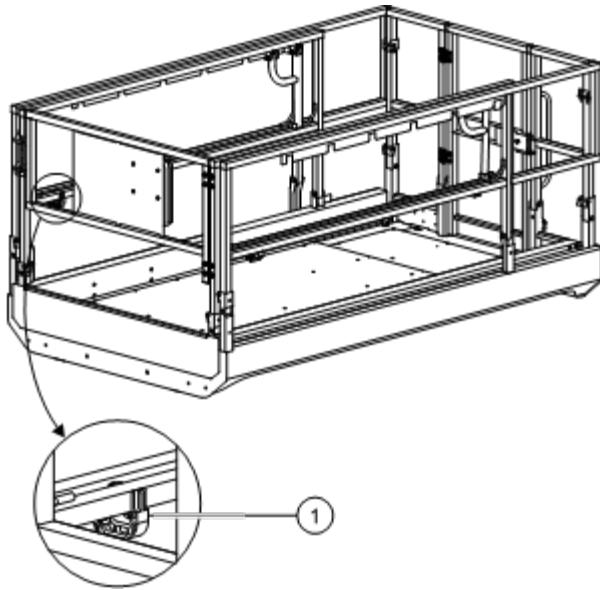


- 1 deck catch
- 2 deck stop

- 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

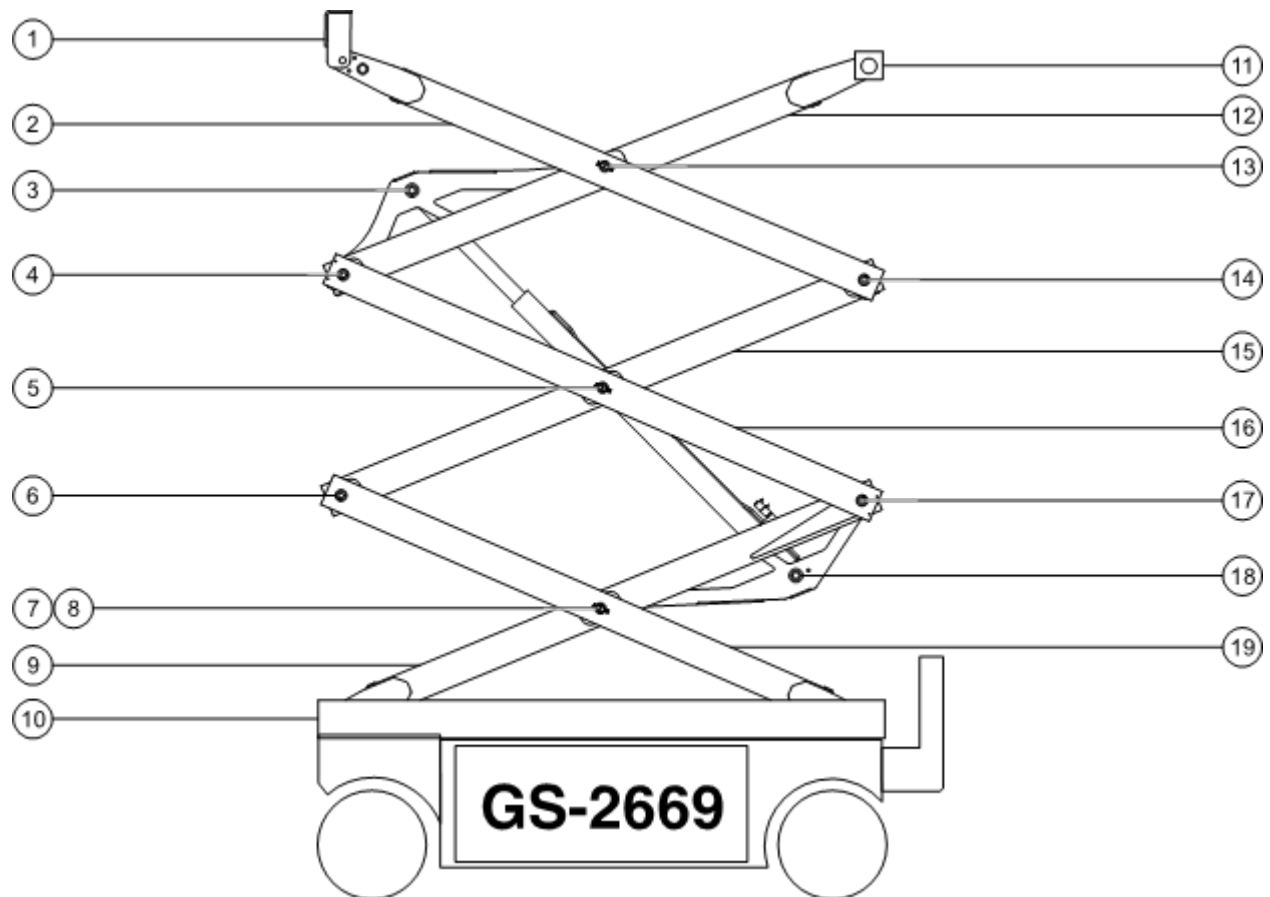
- 9 Carefully slide the platform extension out and away from the platform and place it on a structure capable of supporting it.

⚠ 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.

- 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.

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 supporting 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 supporting 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 supporting 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.

Scissor Components

- 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 supporting 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 supporting 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

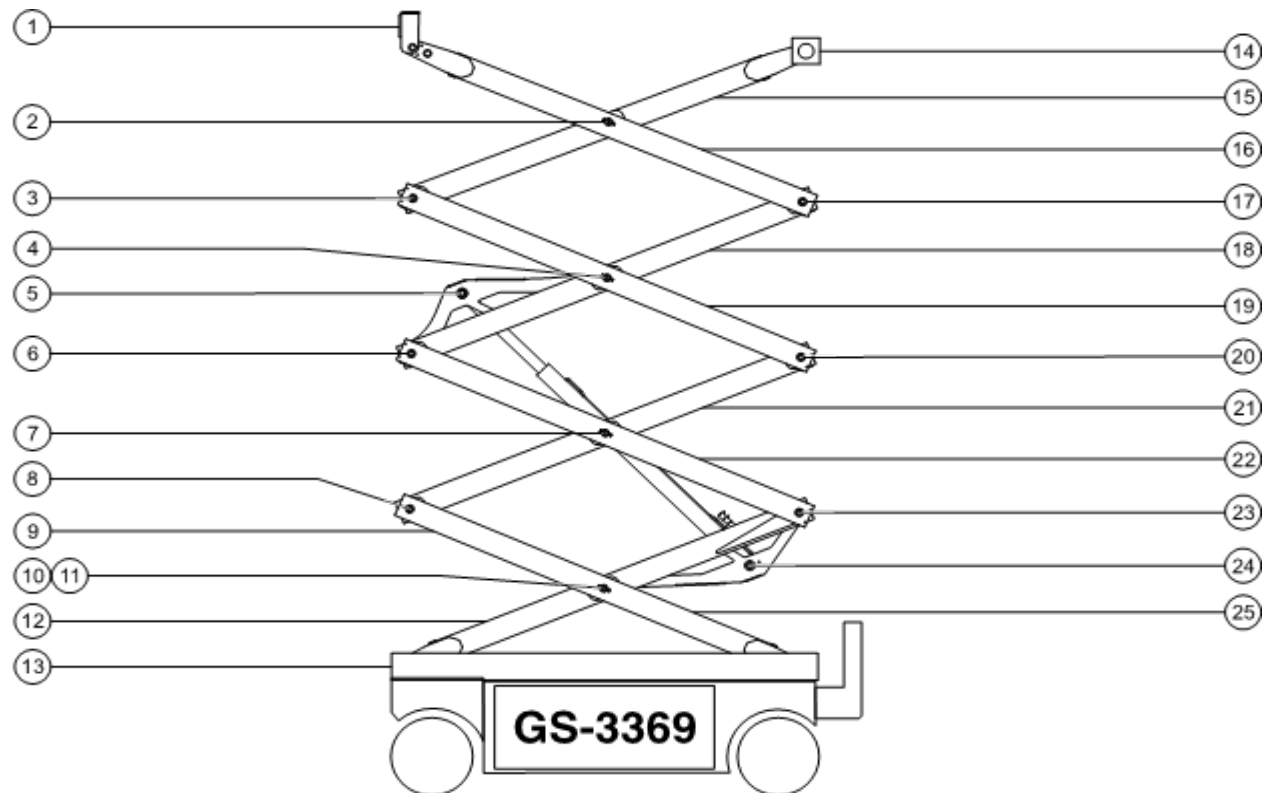
Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

- 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

Scissor Components

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 supporting 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 supporting 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 supporting 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 supporting 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 supporting 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 supporting 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

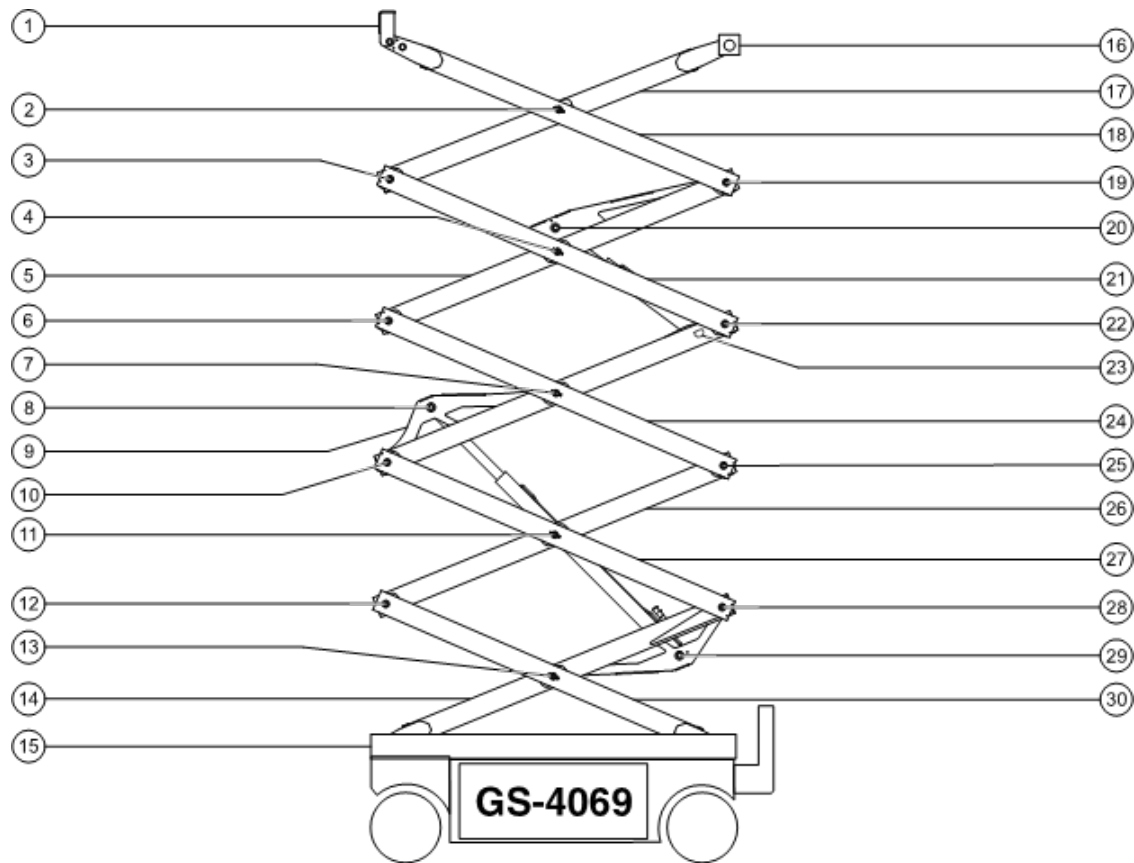
Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported when removed from the machine.

- 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

Scissor Components

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 supporting 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 supporting 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 supporting 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 supporting 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 supporting 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 supporting 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 supporting 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 supporting 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

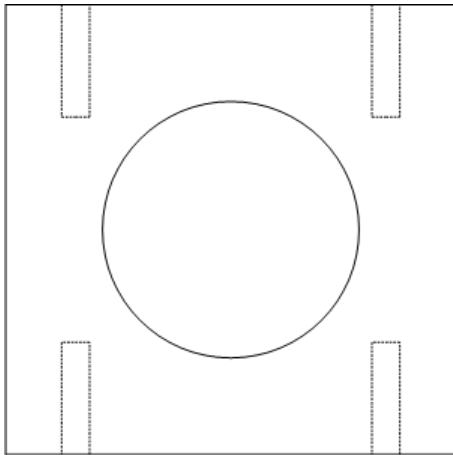
3-4 Wear Pads

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

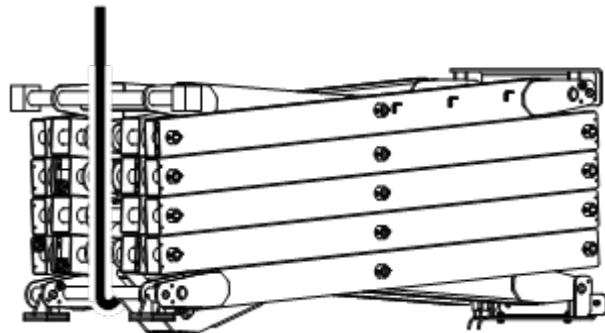
Crushing hazard. The ladder could fall if not properly supported when the fasteners are removed from the machine.

- 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

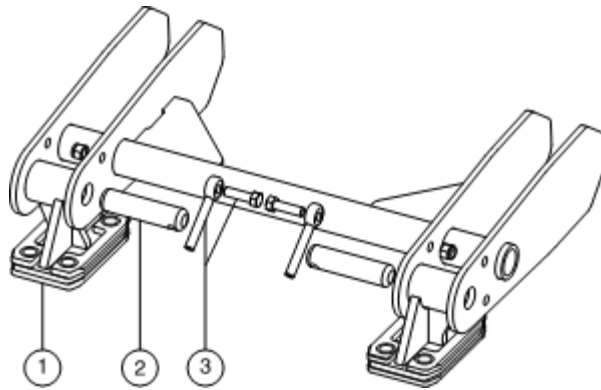
Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported.



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

Scissor Components

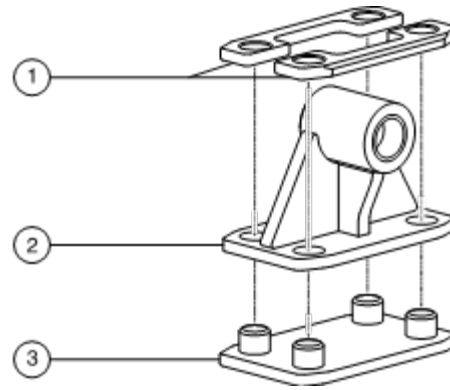
- 5 Remove the retaining fasteners from the slider foot pivot pins and set aside.



- 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

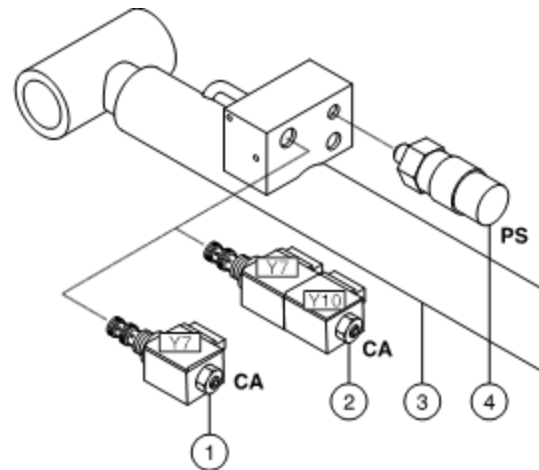
GS-2669 BE and GS-3369 BE:

⚠ 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 sensor

Scissor Components

GS-4069 BE:

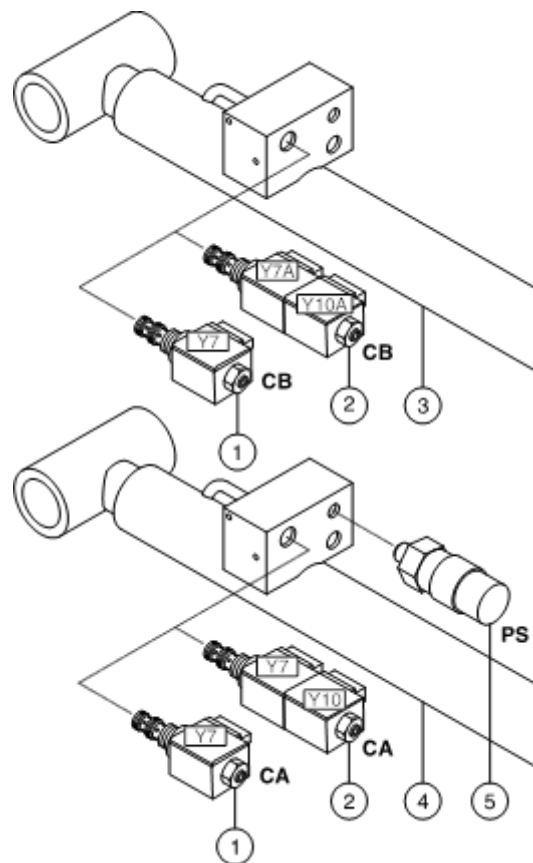
⚠ WARNING

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 sensor

Scissor Components

3-6 Height Angle Sensor

How to Replace the Height Angle Sensor

Note: If the angle sensor is replaced, both the sensor and magnet must be replaced as a set.

- 1 Start the engine from the ground controls and raise the platform approximately 18 feet / 5.5 m from the ground.
- 2 Release the safety arm latch, lift the safety arm and rotate to a vertical position. Lock the safety arm in position.

Note: Verify the safety arm is locked in the vertical position.

- 3 Lower the platform onto the safety arm. Turn the machine off.

WARNING

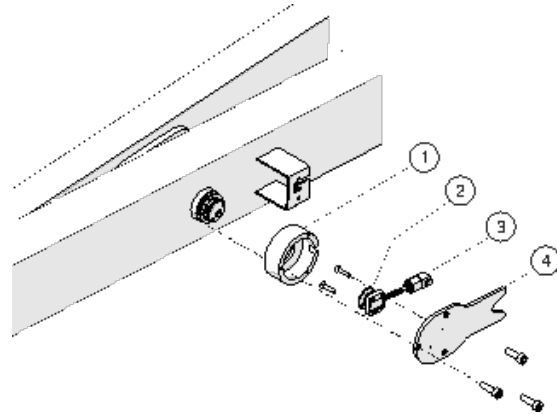
Crushing hazard. Keep hands clear of the safety arm when lowering the platform.

NOTICE

Component damage hazard. The link set cross tube can be damaged if excessive force is applied. Do not continue to lower the platform after the safety arm makes contact with the cross tube.

- 4 Disconnect the height angle sensor from the main harness.

- 5 Remove the retaining fasteners securing the angle sensor mount to the sensor housing. Remove the sensor assembly and set aside.



- 1 sensor housing
- 2 sensor magnet
- 3 angle sensor
- 4 angle sensor mount

- 6 Remove and replace the sensor magnet.

Note: Apply removable thread locker to the retaining fasteners.

- 7 Remove and replace the angle sensor attached to the angle sensor mount.

Note: The printed side of the sensor must face away from the angle sensor mount.

Note: Apply removable thread locker to the retaining fasteners.

- 8 Install the angle sensor assembly onto the machine. Connect the harness.
- 9 Raise the platform and rotate the safety arm to the stowed position.
- 10 Lower the platform to the stowed position.
- 11 Calibrate the platform overload system. Refer to Repair Procedure *How to Calibrate the Platform Overload System*.

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

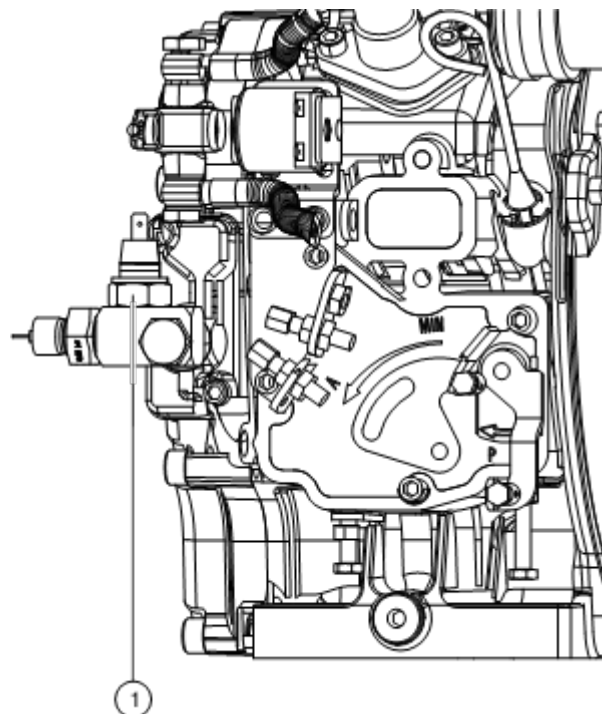
- 1 Open the battery box on the engine side of the machine.
- 2 Tag and disconnect the wiring from the switch. Remove the switch from the engine.

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

Ground Controls

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

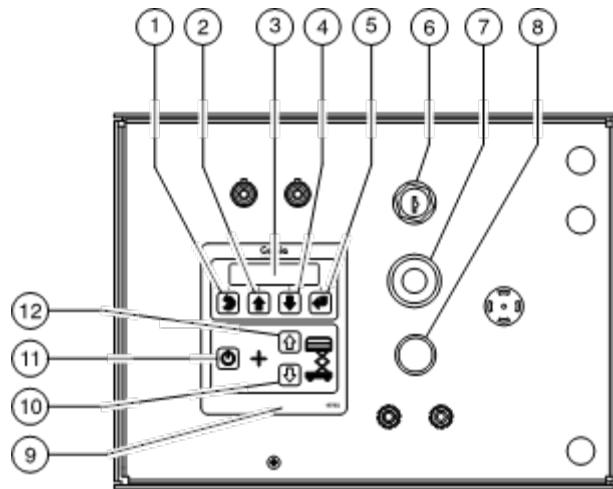
The ground controls consist of an Electronic Control Module (ECM), emergency stop button, key switch and circuit breaker.

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

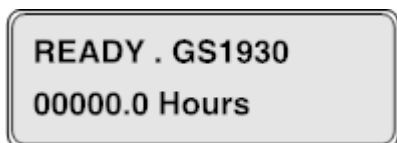
The machine software revision level is displayed at the ground controls LCD display.

- 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.

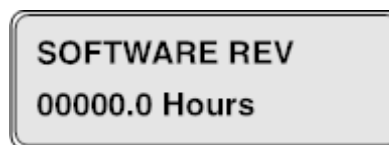


- ⦿ Result: The display at the ground controls will show the machine model and hour meter information. See example below.

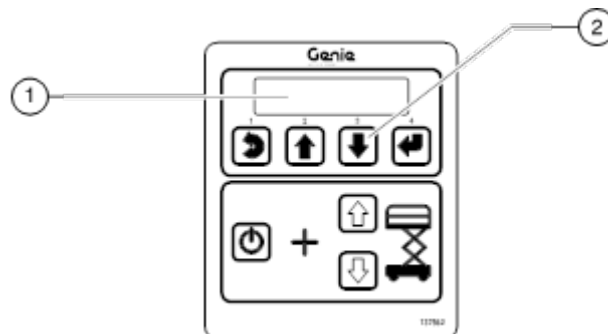


- 2 Press the ground control scroll down button.
- ⦿ Result: The ground control LCD display will indicate the software revision and hour meter information. After 5 seconds, the ground controls LCD display will display machine model and hour meter information again.

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

Ground Controls

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.

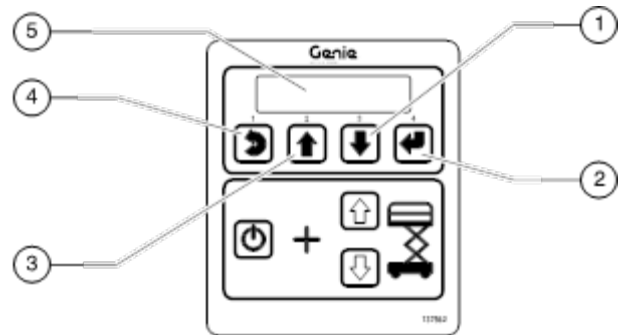
⚠ DANGER

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.

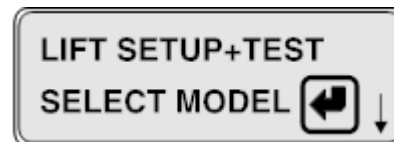
- 2 Press and hold the ground control scroll up and scroll down buttons.



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:

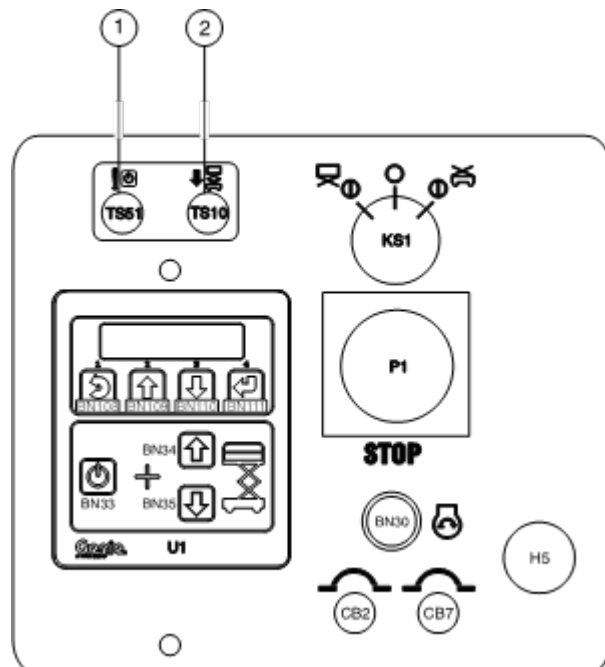


- 4 Use the ground control menu buttons to select machine Model, Options and Speed Setup parameters. Follow the menu structure indicated on the ground control LCD display.

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.

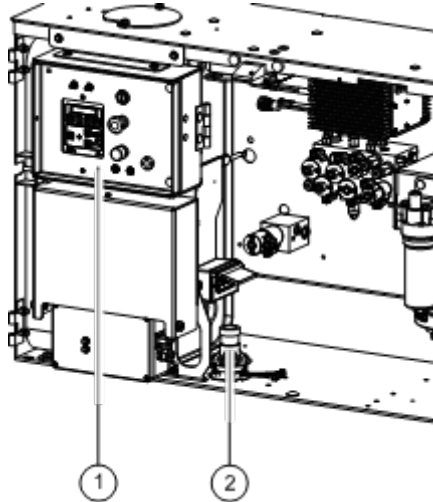
Note: Perform this procedure with the machine on a firm, level surface and the platform in the stowed position. Use a digital level to confirm.

- 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.

Ground Controls

- 2 Locate the level sensor in the ground controls compartment.

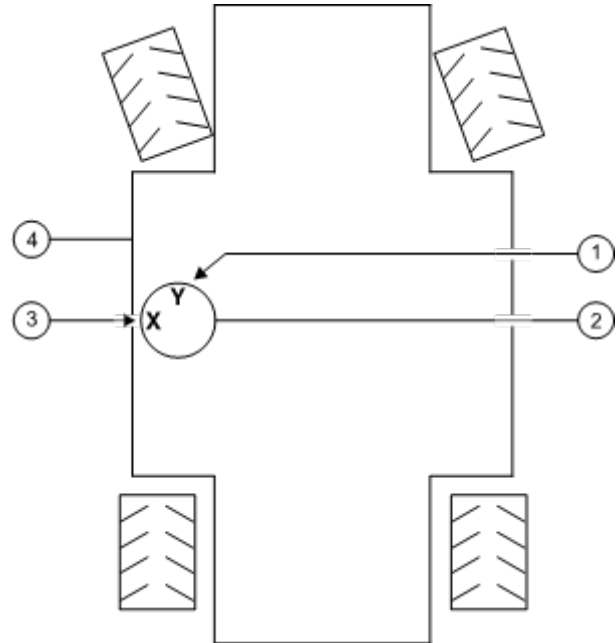


- 1 ground control box
- 2 level sensor

- 3 Tag and disconnect the level sensor wire harness from the chassis wire harness.
- 4 Remove the level sensor retaining fasteners and remove the level sensor from the machine.
- 5 Install the new level sensor onto the machine with the "X" on the level sensor base towards the steer end of the machine. Install and tighten the level sensor retaining fasteners.

⚠ DANGER

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



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

- 6 Connect the wire harness to the level sensor.
- 7 Adjust the level sensor retaining fasteners until the bubble in the top of the level sensor is centered in the circles.

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

- 8 Turn the key switch to ground control and pull out the red Emergency Stop button to the on position at both ground and platform controls.
- ⦿ Result: The tilt sensor alarm should not sound.

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.
- 24 Lower the platform to the stowed position.
- 25 Push in the red Emergency Stop button to the off position at both the ground and platform controls.
- 26 Turn the key switch to the off position.
- 27 Raise the machine approximately 4 inches / 10 cm.
- 28 Remove the blocks from under both wheels.
- 29 Lower the machine and remove the jack.

Ground Controls

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 a 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

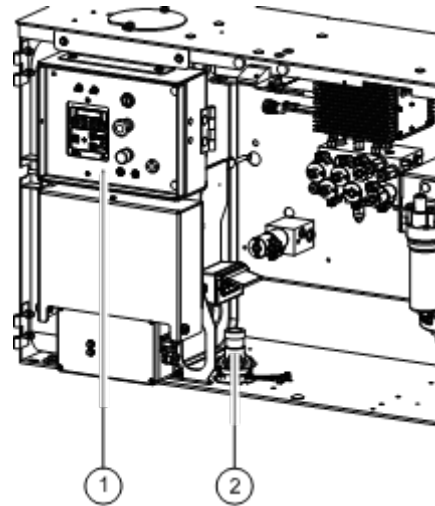
⚠ DANGER

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.

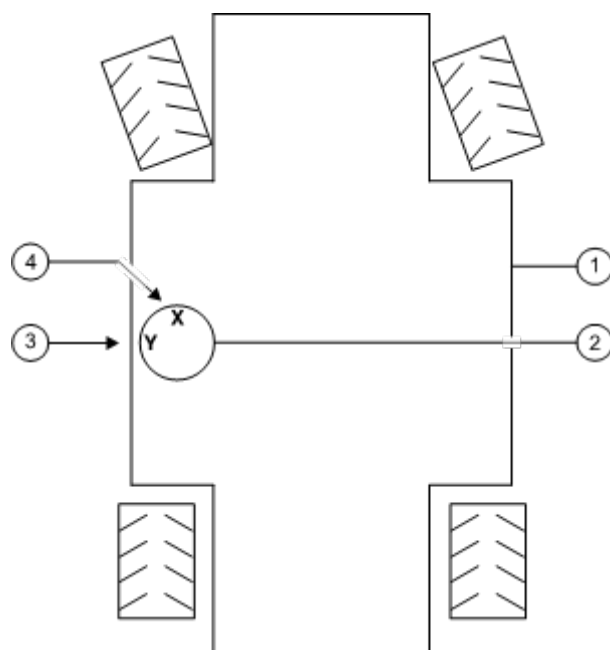
⚠ DANGER

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.

- 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*.



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

Ground Controls

5-6 Service Override Mode

The Electronic Control Module (ECM) is programmed with a Service Override mode. Service Override mode is only intended 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.

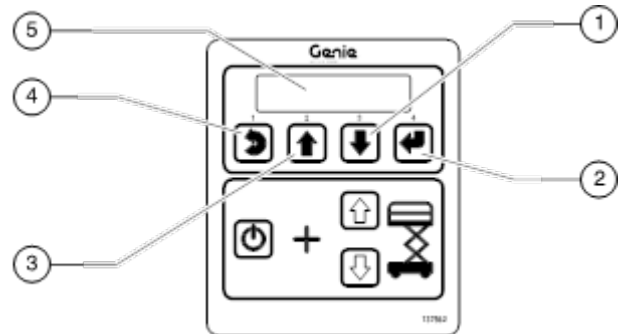
Note: Before entering Service Override mode, fault codes or the malfunction affecting the operation of the machine should be fully understood to ensure Service Override mode is required.

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



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

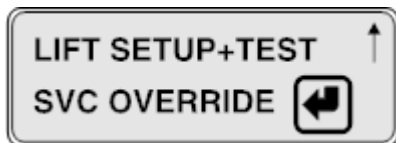
- 3 Pull out the red Emergency Stop button to the on position at the ground controls.
- Result: The ground controls LCD display will show the following:



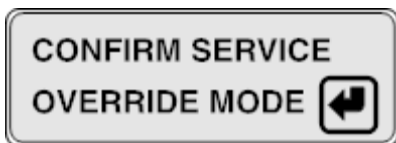
- 4 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

Ground Controls

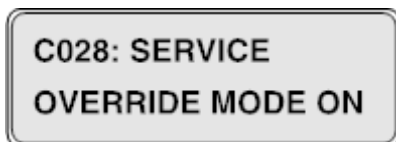
- 5 At the ground controls, use the Scroll Down button to scroll to **SVC Override**.
- ⦿ Result: The ground controls LCD display will show the following:



- 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:



Hydraulic Pump

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.

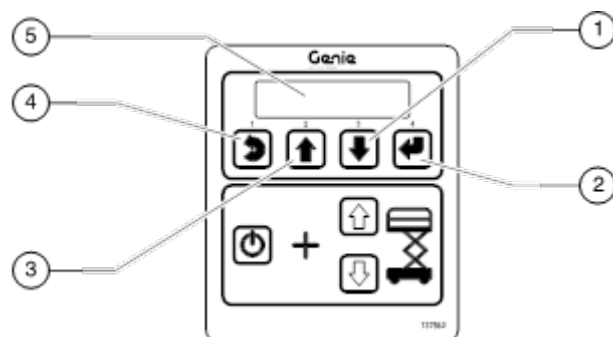
WARNING

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

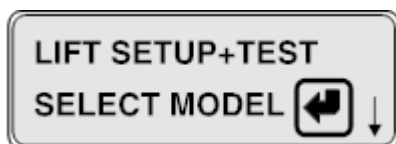
How to Calibrate the Hydraulic Pump

- 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.

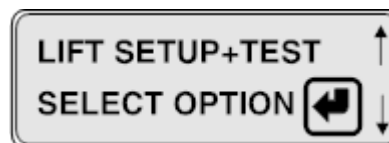


Ground Control Menu Buttons

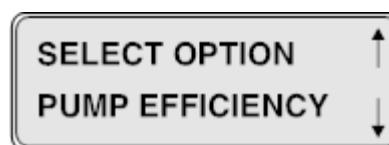
- 1 scroll down button
 - 2 enter button
 - 3 scroll up button
 - 4 escape button
 - 5 LCD display
- 3 Pull out the red Emergency Stop button to the on position at the ground controls.
 - Result: The ground controls LCD display will show the following:



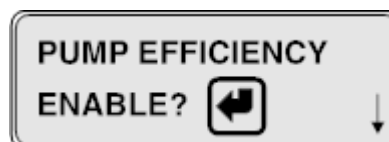
- 4 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.
- 5 At the ground controls, use the Scroll Up or Scroll Down buttons to scroll to Select Option.



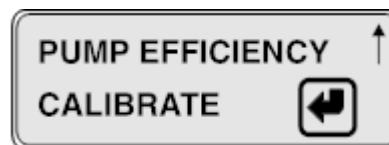
- 6 Press the Enter button.
- 7 Use the Scroll Up or Scroll Down buttons to scroll to Select Option Pump Efficiency.



- 8 Press the Enter button.
- Result: The ground controls LCD display will show the following:



- 9 Press the Scroll Down button.
- Result: The ground controls LCD display will show the following:



Hydraulic Pump

10 Press the Enter button.

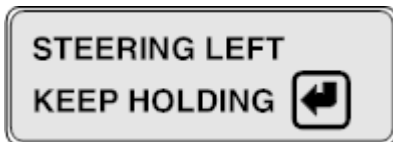
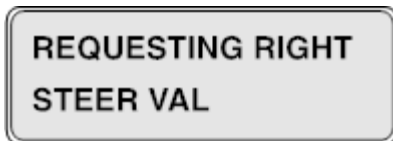
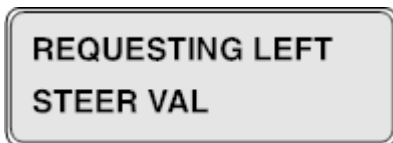
- Result: The ground controls LCD display will show the following:



11 Press and Hold the Enter button.

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

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

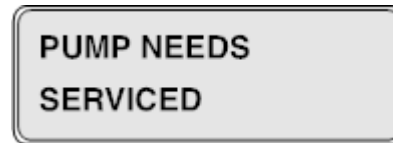


- Result: The ground controls LCD displays the following screen. Calibration data is within range.



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

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



- For a bad result, press the Enter button to return to the option screen
- Push in the red Emergency Stop button to the off position.

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Manifolds

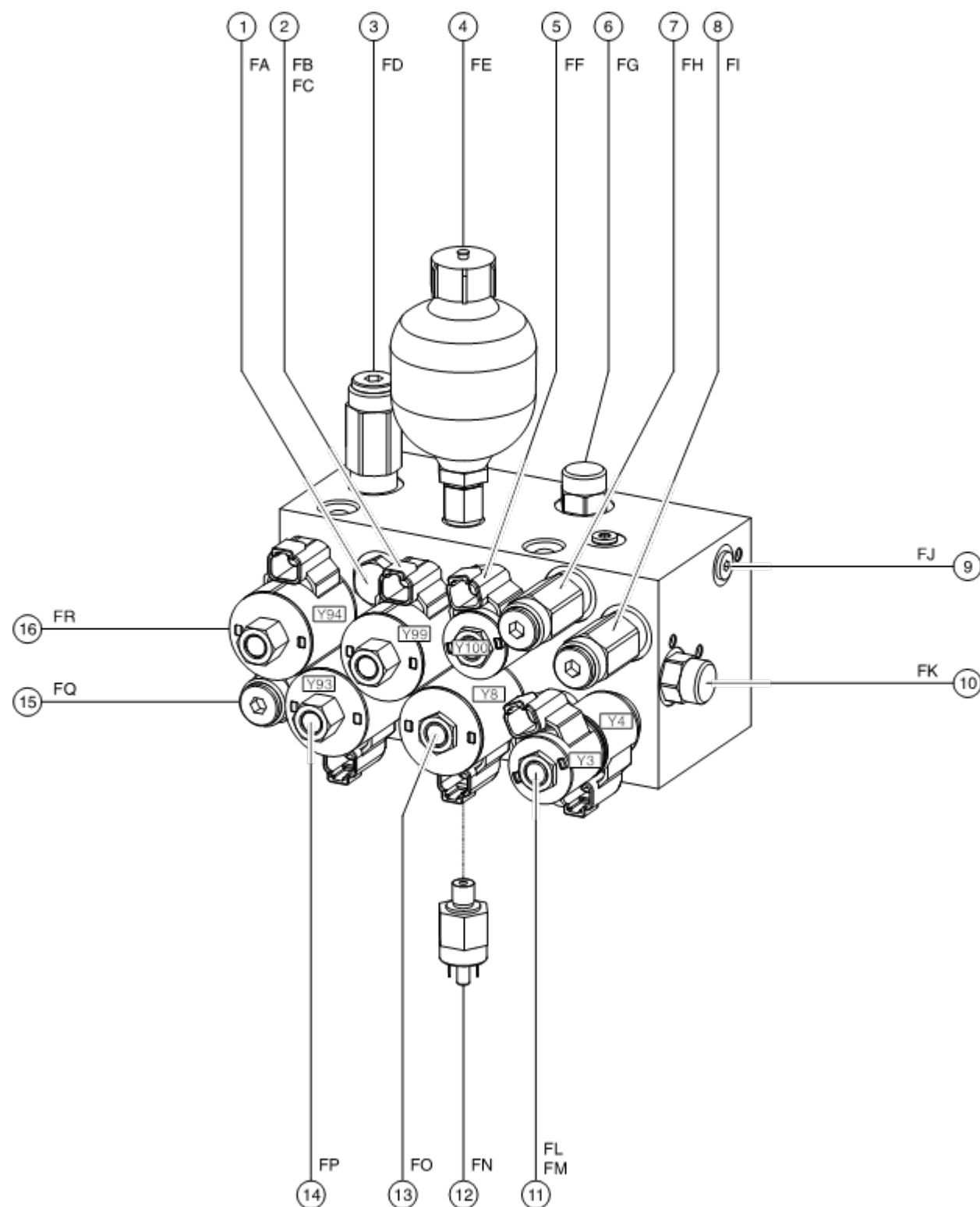
7-1

Function Manifold Components

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 Orifice	FB FC	Oscillate / Accumulator	20 ft-lbs / 27 Nm
3	Relief valve (GS 2669 - 3100 psi / 214 bar) (GS 3369 - 2900 psi / 200 bar) (GS 4069 - 2850 psi / 197 bar)	FD	Lift circuit	20 ft-lbs / 27 Nm
4	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 Check valve	FL FM	Steer circuit	20 ft-lbs / 27 Nm
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



Manifolds

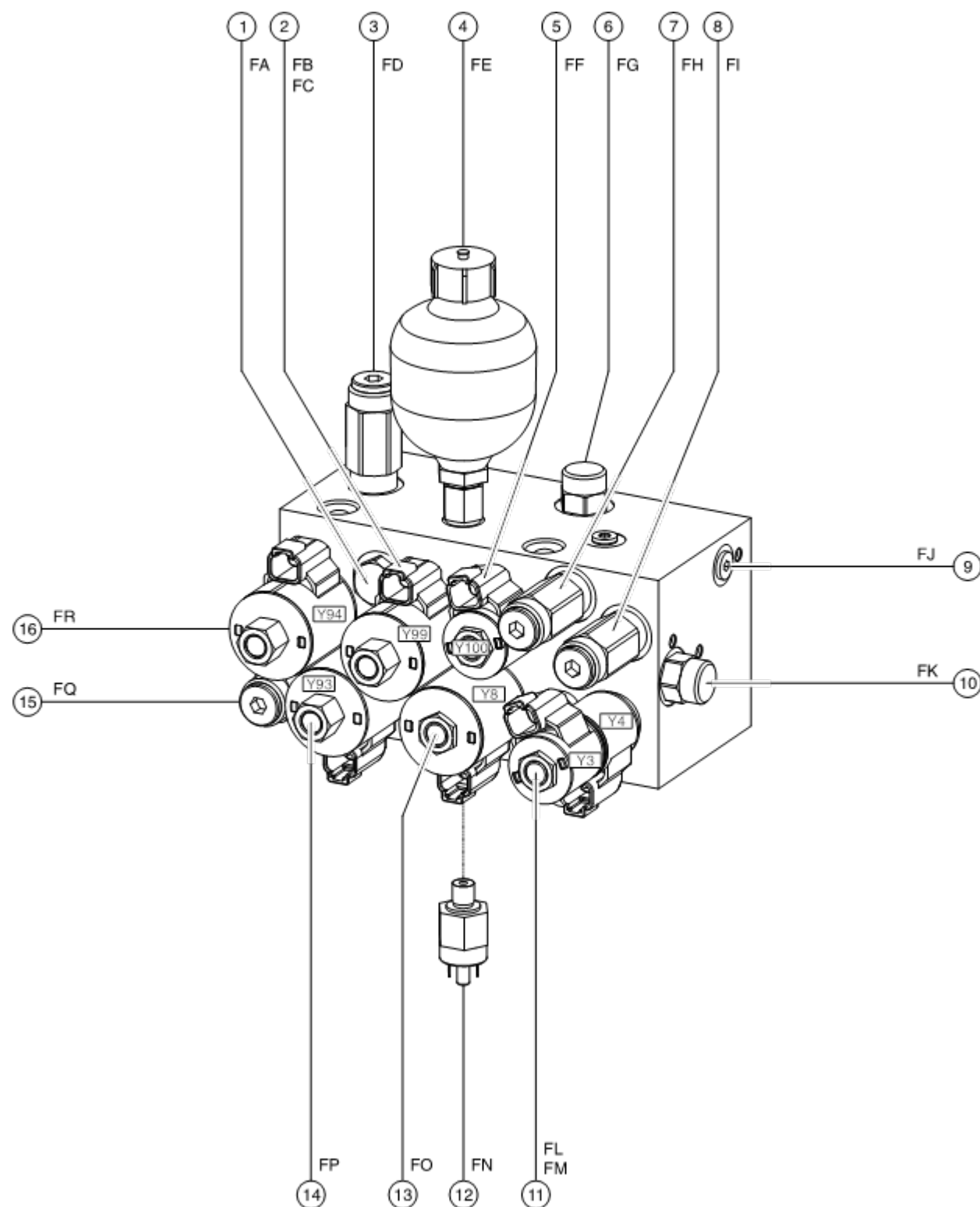
7-1

Function Manifold Components Models with Proportional Relief (from serial number GS6916F-10015)

The function manifold is located inside the hydraulic compartment.

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

Manifolds



Manifolds

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.

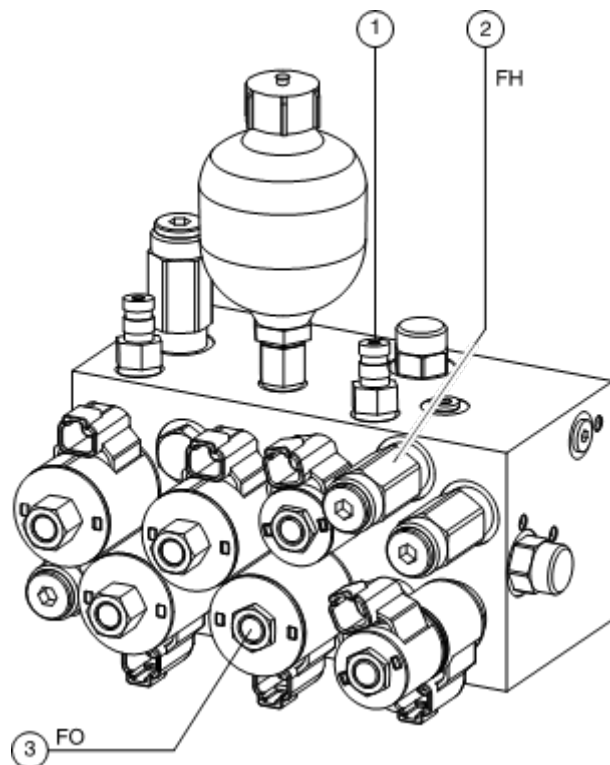
- 1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.
- 2 Remove the platform controls from the platform and place the controls near the function manifold on the hydraulic tank side of the machine.
- 3 Remove the coil from the platform up valve. Do 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

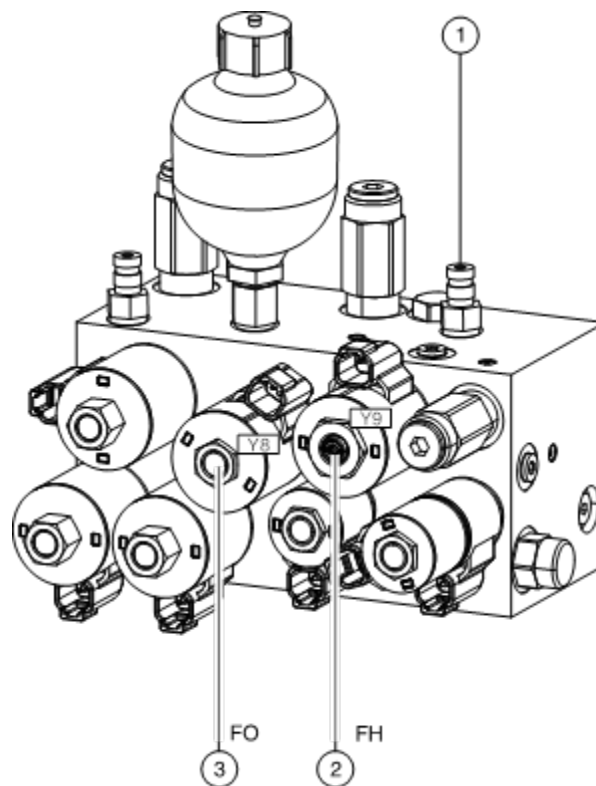
How to Adjust the System Relief Valve – Models with Proportional Relief

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

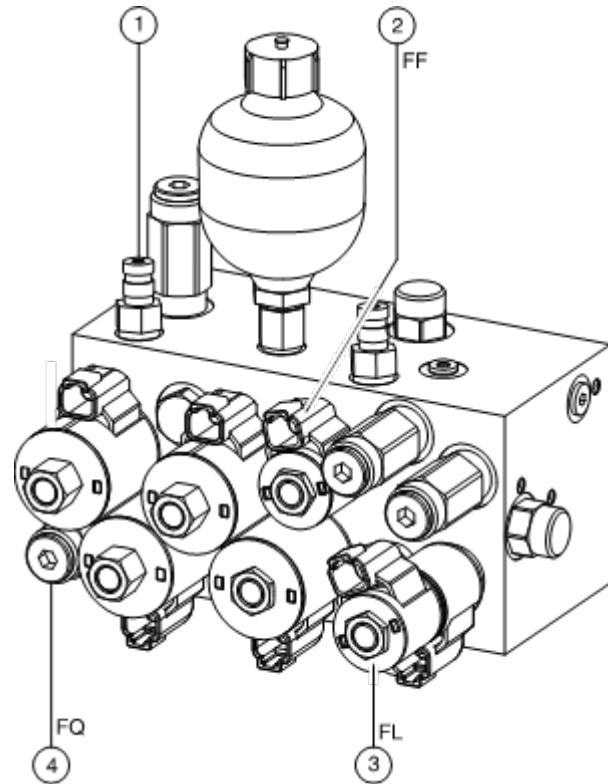
Manifolds

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
- 3 steer right coil
- 4 oscillate relief valve

Manifolds

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

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

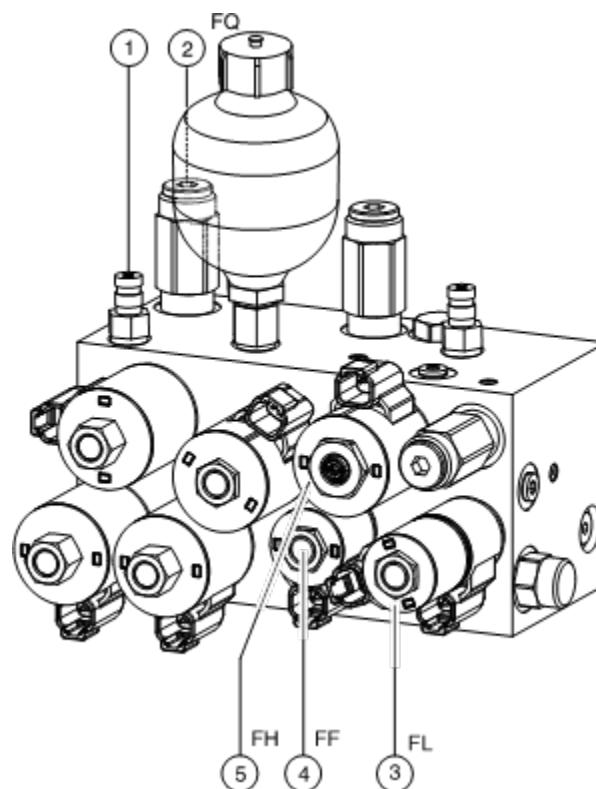
- 1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #2 (TP2) on the function manifold.
- 2 Disconnect the harness from the oscillate supply coil and the steer right coil.
- 3 Connect the oscillate supply harness to the steer right coil and the steer right harness to the oscillate supply coil.
- 4 Disconnect the harness from the proportional relief valve.
- 5 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.
- 6 Steer the machine to the right and hold. Note the pressure readings on the pressure gauge. Refer to Specifications, *Hydraulic Components Specifications*.
- 7 Use a wrench to hold the oscillate relief valve and remove the cap.
- 8 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

WARNING

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

- 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 supply coil
- 3 steer right coil
- 4 oscillate relief valve
- 5 proportional relief valve

Manifolds

How to Adjust the Steer Relief Valve

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

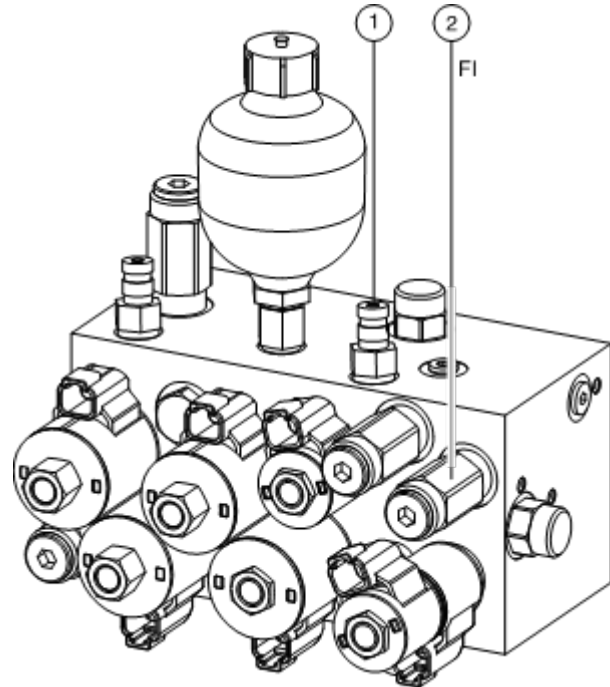
- 1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.
- 2 Remove the platform controls from the platform and place the controls near the function manifold on the hydraulic tank side of the machine.
- 3 Turn the key switch to platform control and pull 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.

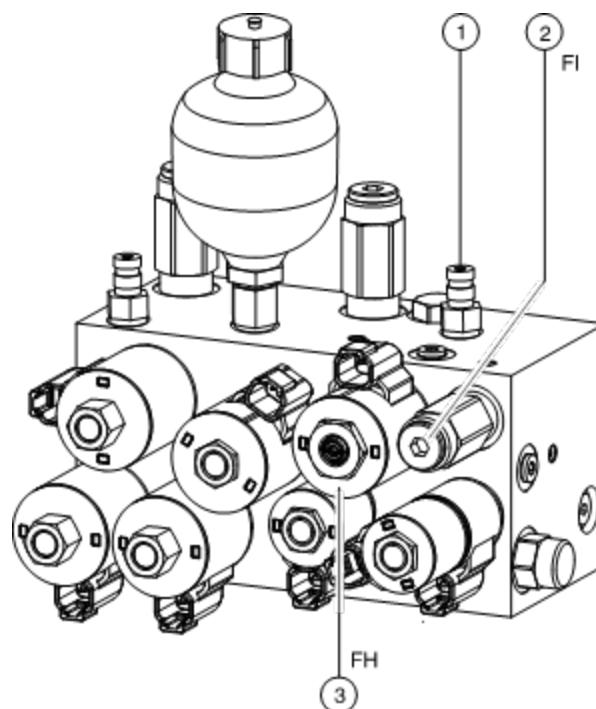
- 1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.
- 2 Disconnect the harness from the proportional relief valve.
- 3 Remove the platform controls from the platform and place the controls near the function manifold on the hydraulic tank side of the 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.



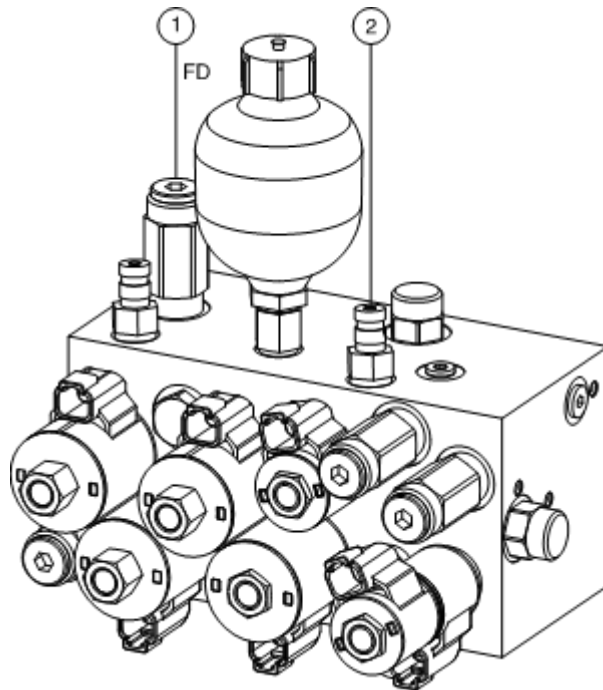
- 1 test port #1
- 2 steer relief valve
- 3 proportional relief valve

Manifolds

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.

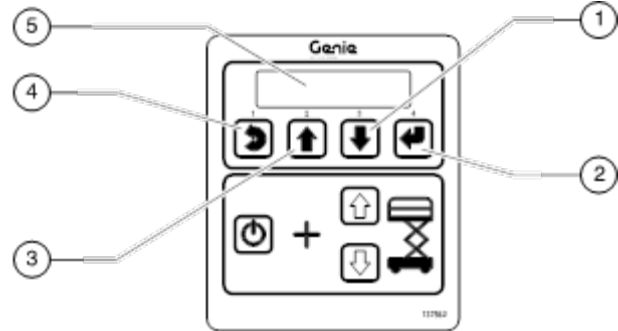
- 1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (TP1) on the function manifold.



- 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.

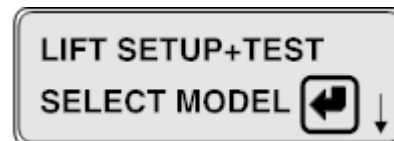


Ground Control Menu Buttons

- 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.

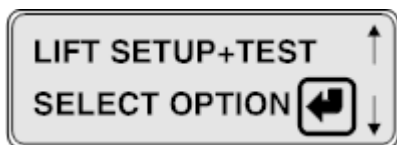
- Result: The ground controls LCD display will show the following:



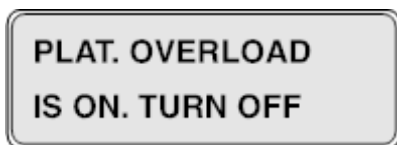
- 5 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

Manifolds

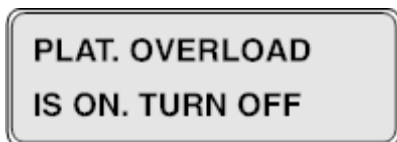
- 6 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.
- Result: The ground controls LCD display will show the following:



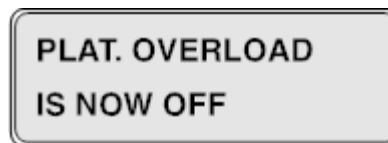
- 7 Press the **enter** button.
- Result: The ground controls LCD display will show the following:



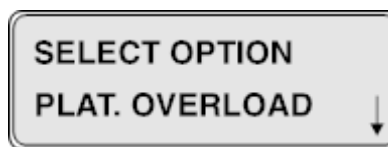
- 8 Press the **enter** button.
- Result: The ground controls LCD display will show the following:



- 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:



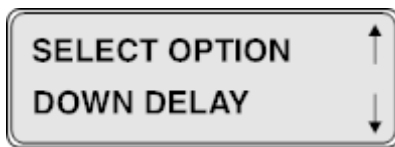
Manifolds

- 12 Press the **enter** button.

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

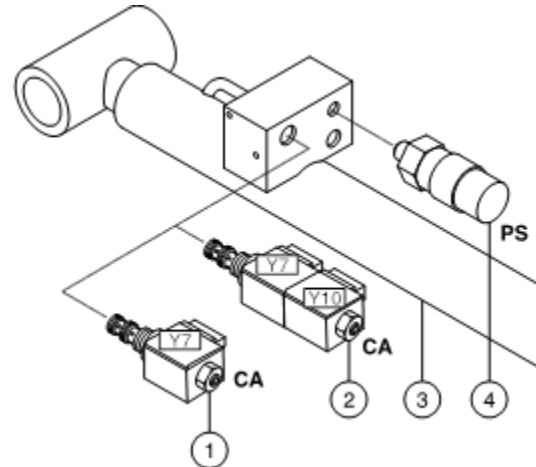


Note: After 1 second the display will return to SELECT OPTION, DOWN DELAY.



- 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 sensor harness.



- 1 solenoid valve (proportional lift models)
- 2 solenoid valve (2 speed lift models)
- 3 lift cylinder
- 4 pressure sensor

- 19 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.
- 20 Return the safety arm to the stowed position.
- 21 Lower the platform to the stowed position.

Manifolds

- 22 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

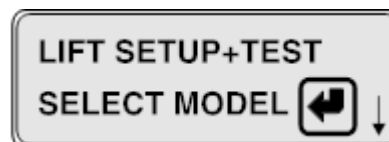
- 23 Press and hold the lift function enable button and platform up button. Allow the platform to raise completely, then continue activating the lift function while observing the pressure reading on the pressure gauge. Note the pressure. Refer to Specifications, *Hydraulic Component Specifications*.
- 24 Hold the lift relief valve (item 1) with a wrench and remove the cap.
- 25 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.

- 26 Repeat this procedure beginning with step 22 to confirm the relief valve pressure.
- 27 Lower the platform to the stowed position.
- 28 Remove the weight from the platform.
- 29 Raise the platform approximately 10 feet / 3 m.

- 30 Lift the safety arm, move it to the center of the scissor arm and rotate down to a vertical position.
- 31 Lower the platform onto the safety arm.
- 32 Push in the red Emergency Stop button to the off position.
- 33 Connect the harness to the lift cylinder pressure sensor.
- 34 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.
- 35 Return the safety arm to the stowed position.
- 36 Lower the platform to the stowed position.
- 37 Push in the red Emergency Stop button to the off position.
- 38 Press and hold the ground control scroll up and scroll down buttons.
- 39 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:

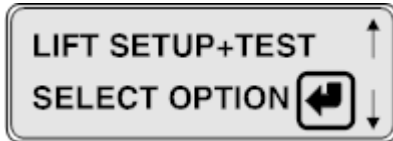


- 40 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.

Manifolds

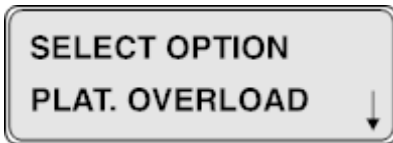
- 41 At the ground controls, use the Scroll Down button to scroll to **SELECT OPTION**.

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



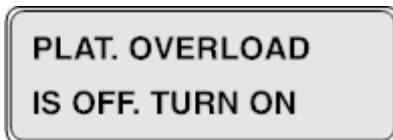
- 42 Press the **enter** button.

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



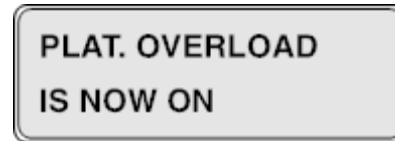
- 43 Press the **enter** button.

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

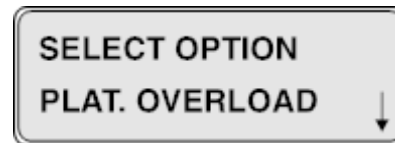


- 44 Press the **enter** button.

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

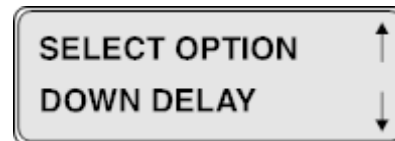


Note: After 1 second the display will return to **SELECT OPTION, PLAT. OVERLOAD**.



- 45 Press the Scroll Down button to scroll to **Down Delay**.

- 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:



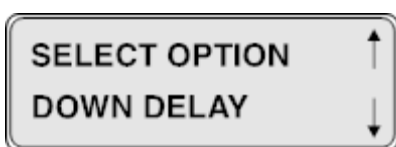
Manifolds

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, DOWN DELAY.



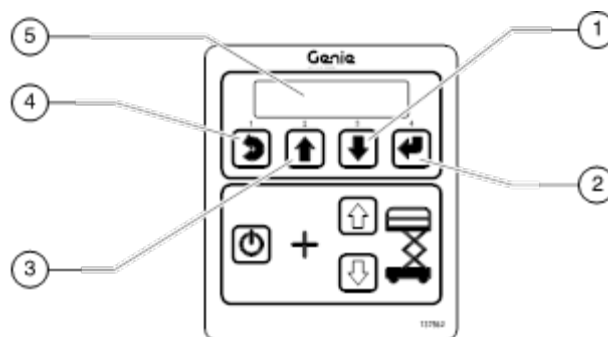
48 Push in the red Emergency Stop button to the off position.

49 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

Manifolds

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

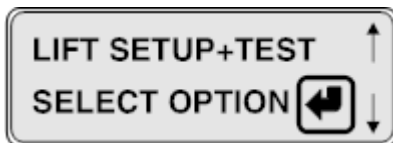
- Result: The ground controls LCD display will show the following:



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

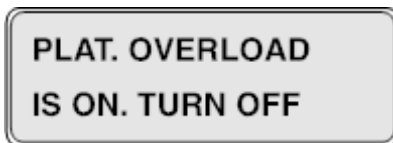
- 6 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.

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



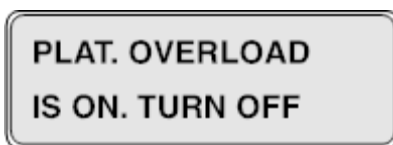
- 7 Press the **enter** button.

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



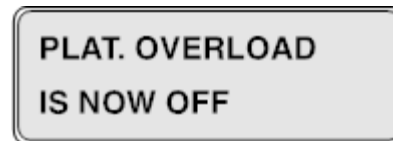
- 8 Press the **enter** button.

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

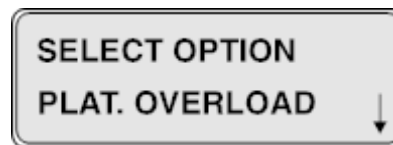


- 9 Press the **enter** button.

- 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:



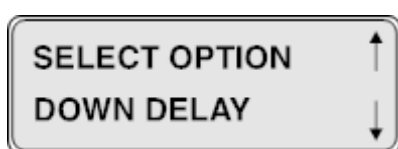
Manifolds

- 12 Press the **enter** button.

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

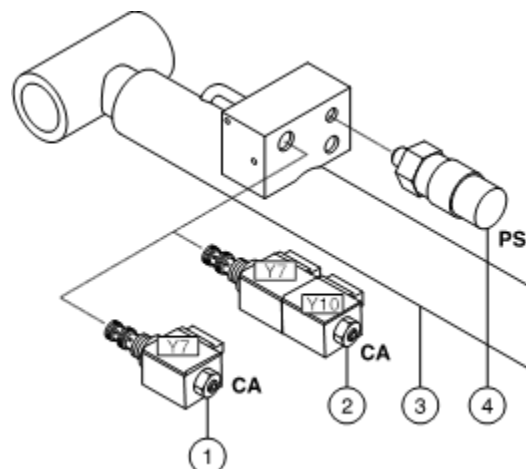


Note: After 1 second the display will return to SELECT OPTION, DOWN DELAY.



- 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 sensor harness.



- 1 solenoid valve (proportional lift models)
- 2 solenoid valve (2 speed lift models)
- 3 lift cylinder
- 4 pressure sensor

- 19 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.
- 20 Return the safety arm to the stowed position.
- 21 Lower the platform to the stowed position.
- 22 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

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

Manifolds

- 24 Hold the lift relief valve (item 1) with a wrench and remove the cap.
- 25 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.

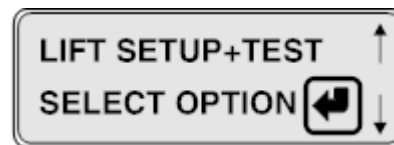
Repeat this procedure beginning with step 22 to confirm the relief valve pressure.

- 26 Lower the platform to the stowed position.
- 27 Remove the weight from the platform.
- 28 Raise the platform approximately 10 feet / 3 m.
- 29 Lift the safety arm, move it to the center of the scissor arm and rotate down to a vertical position.
- 30 Lower the platform onto the safety arm.
- 31 Push in the red Emergency Stop button to the off position.
- 32 Connect the harness to the lift cylinder pressure sensor.
- 33 Pull out the red Emergency Stop button to the on position and raise the platform approximately 10 feet / 3 m.
- 34 Return the safety arm to the stowed position.
- 35 Lower the platform to the stowed position.
- 36 Push in the red Emergency Stop button to the off position.

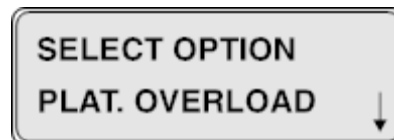
- 37 Press and hold the ground control scroll up and scroll down buttons.
- 38 Pull out the red Emergency Stop button to the on position at the ground controls.
- ⦿ Result: The ground controls LCD display will show the following:



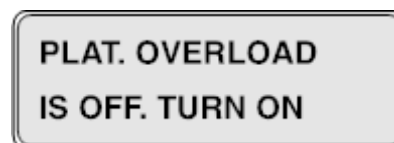
- 39 Release the Scroll Up and Scroll Down buttons after the ground controller powers up.
- 40 At the ground controls, use the Scroll Down button to scroll to SELECT OPTION.
- ⦿ Result: The ground controls LCD display will show the following:



- 41 Press the **enter** button.
- ⦿ Result: The ground controls LCD display will show the following:



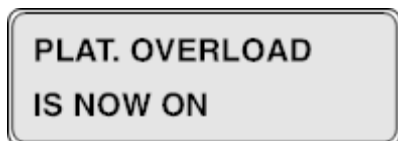
- 42 Press the **enter** button.
- ⦿ Result: The ground controls LCD display will show the following:



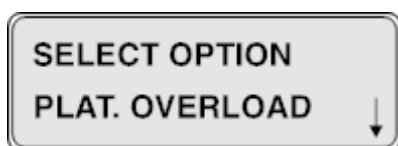
Manifolds

43 Press the **enter** button.

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



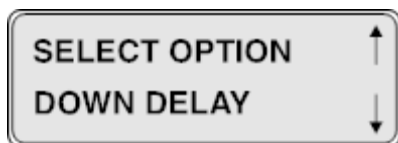
Note: After 1 second the display will return to SELECT OPTION, PLAT. OVERLOAD.



44 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:



45 Press the **enter** button.

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



46 Press the **enter** button.

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



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



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

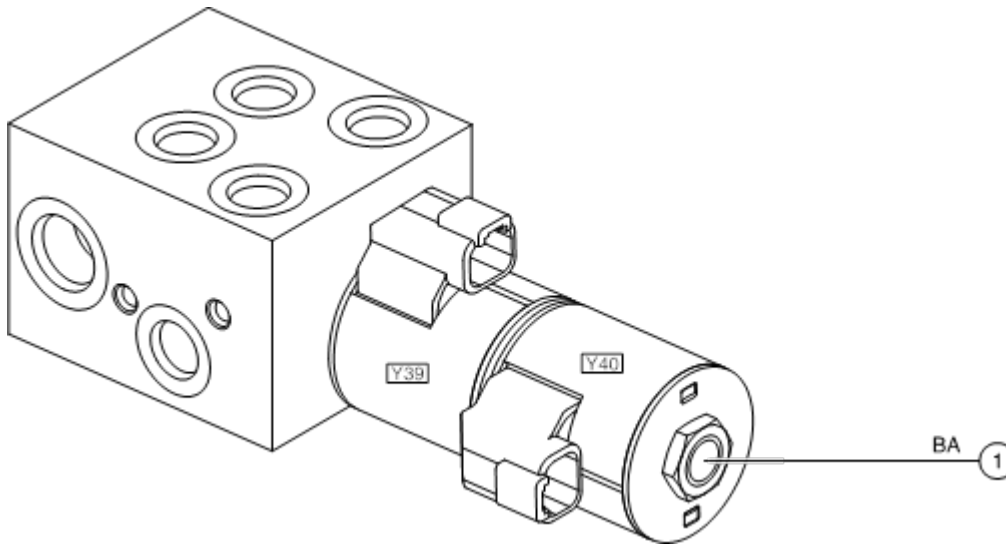
48 Perform Maintenance Procedures, *Test the Platform overload System and Down Limit Switch Decent delay.*

Manifolds

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)	25 Ω
Solenoid valve, 2 position 3 way 24V DC with diode (schematic items BA, FB, FF, FO, FP, FR,)	35 Ω
Solenoid valve, 3 position 5 way 24V DC with diode (schematic item FL)	35 Ω

Manifolds

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.

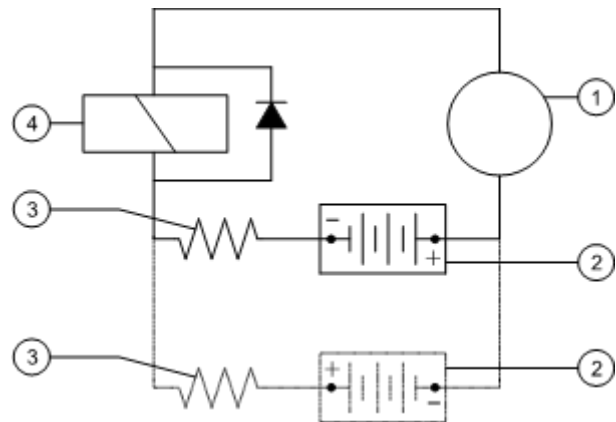
⚠ WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

- 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.

Fuel and Hydraulic Tanks

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 Assembly

- 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 nuts. Do not remove them.
- 4 Raise the machine approximately 2 inches / 5 cm. Place blocks under the chassis for support.

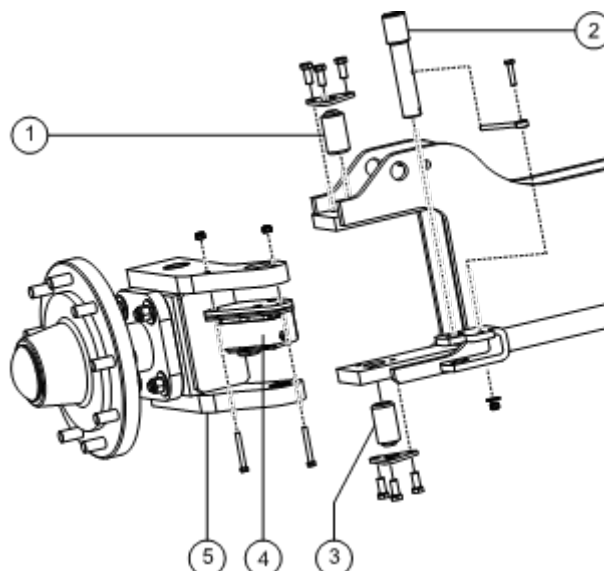
⚠ WARNING

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

- 5 Remove the wheel lug bolts. Remove the tire and wheel assembly.
- 6 Support and secure the yoke and assembly with a lifting device.

Left side yoke:

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



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

- 8 Use a small pry bar to move the pivot pin down enough to clear the steer sensor assembly.
- 9 Remove the steer sensor actuator and spring from the tie rod pivot pin and set aside.
- 10 Remove the steer sensor assembly and set it aside.
- 11 Using a soft metal drift pin and a mallet, drive the pivot pin up to remove it.

Steer Axle Components

- 12 Remove the retaining fastener from the lower yoke king pin.
- 13 Use a small pry bar to remove the king pin.
- 14 Remove the retaining fastener from the upper yoke king pin.
- 15 Use a small pry bar to remove the king pin.
- 16 Remove the yoke assembly from the machine.

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

Right side yoke:

- 17 Remove the steer cylinder rue ring and clevis pin from the yoke and set aside.
- 18 Remove the tie rod rue ring and clevis pin from the yoke and set aside.
- 19 Remove the retaining fastener from the lower yoke king pin.
- 20 Use a small pry bar to remove the king pin.
- 21 Remove the retaining fastener from the upper yoke king pin.
- 22 Use a small pry bar to remove the king pin.
- 23 Remove the yoke assembly from the machine.

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

How to Remove a Drive Motor

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

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

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

- 1 Refer to Repair Procedure, *How to Remove the Yoke*.
- 2 Remove the drive motor mounting fasteners. Remove the drive motor from the yoke.

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

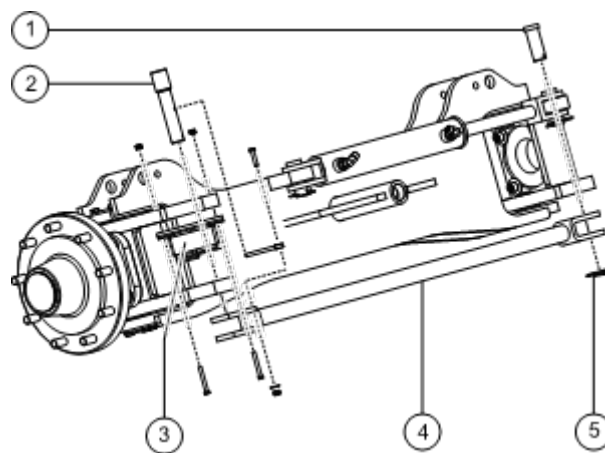
Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

- 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.

Steer Axle Components

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.

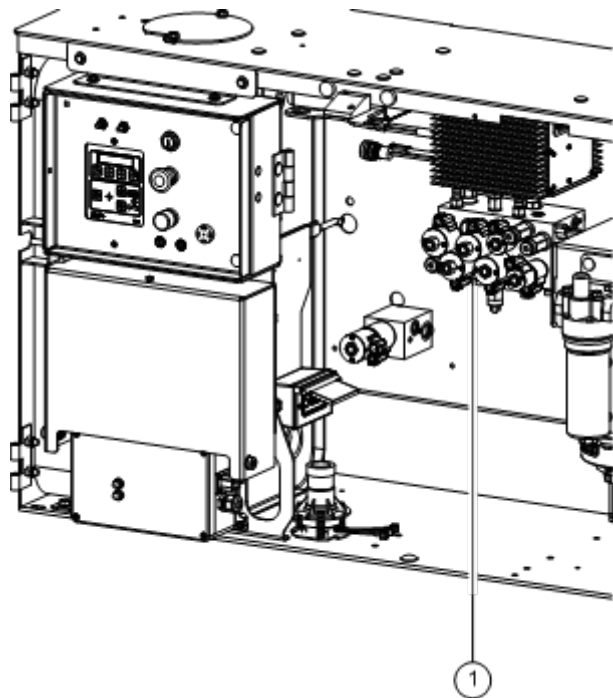
- 6 Remove the oscillate cylinder from the machine.

9-5 Oscillate Hoses

Test the Oscillate Axle Hose Routing

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

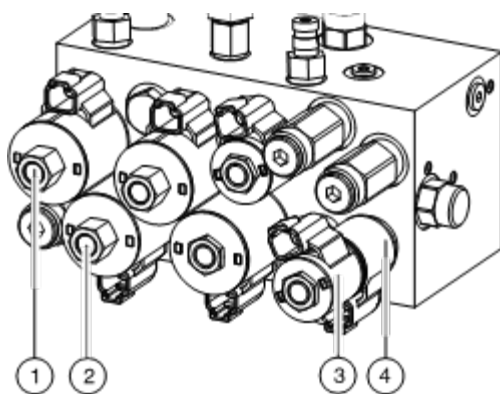
- 1 Open the ground controls compartment and locate the function manifold.



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 and 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*.

Steer Axle Components

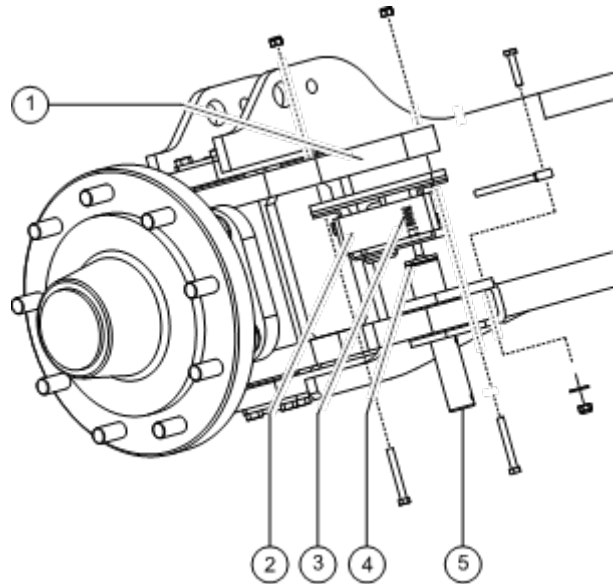
9-6 Steer Angle Sensor

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

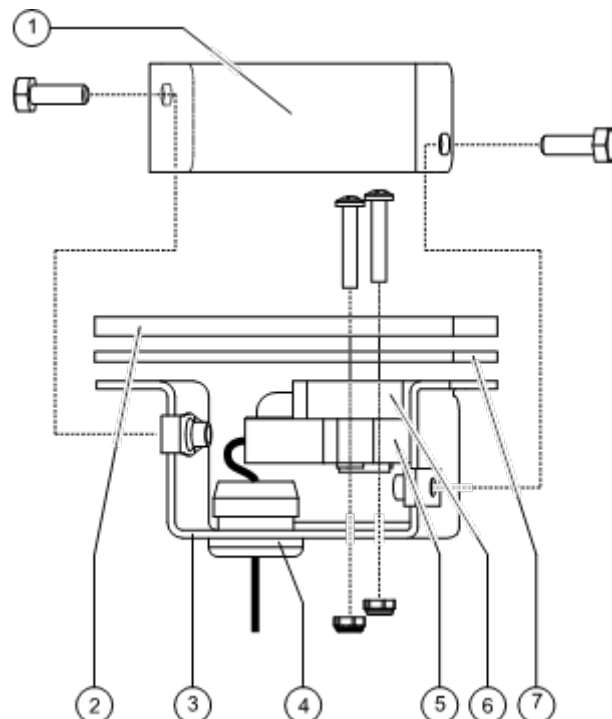
- 8 Use a small pry bar to move the pivot pin down enough to clear the steer sensor assembly.
- 9 Remove the steer sensor actuator and spring from the tie rod pivot pin and set aside.

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

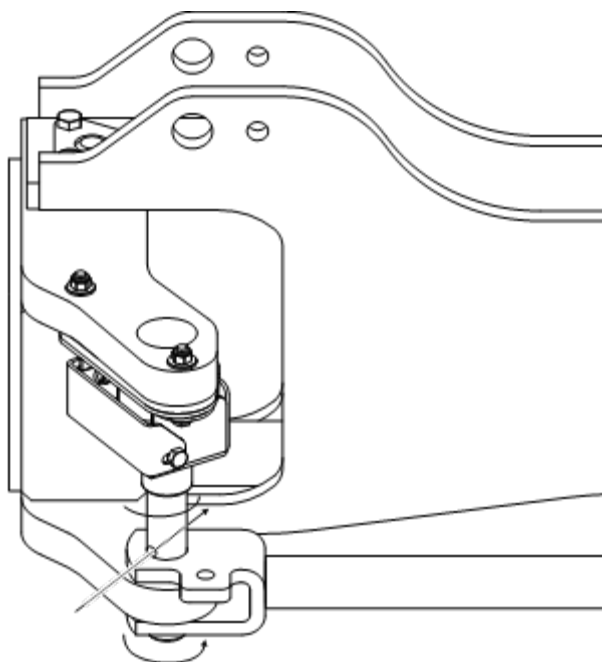
12 Pull the sensor harness through the cable restraint and sensor bracket.

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.



Steer Axle Components

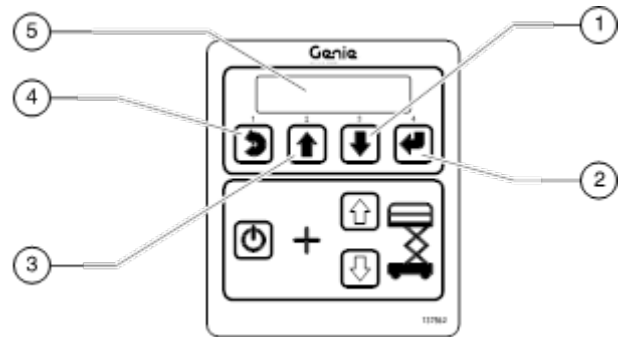
- 17 Install the steer sensor actuator onto the tie rod pivot pin.
- 18 Insert the compression spring into the steer sensor and push the tie rod pivot pin up until the actuator hex pin is engaged into the steer sensor.

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*.

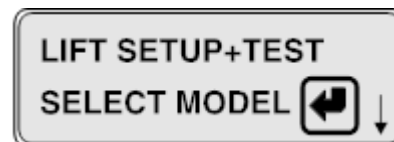
How to Calibrate the Steer Angle Sensor

- 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.



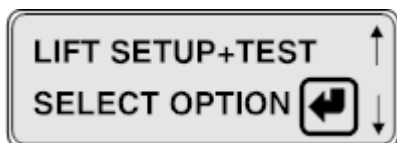
- 1 scroll down button
- 2 enter button
- 3 scroll up button
- 4 escape button
- 5 LCD display

- 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:

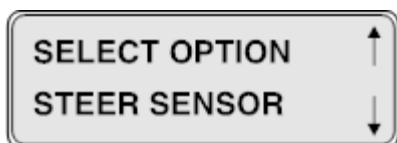


Steer Axle Components

- 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:



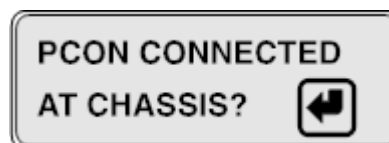
Note: Do not press the Enter button. Pressing the Enter button will disable the steer sensor.

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

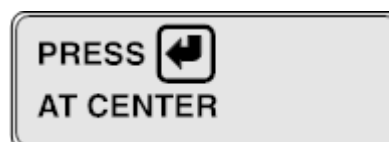
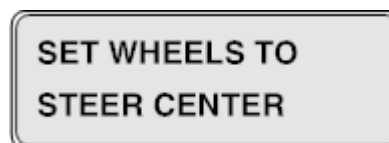


- 10 Press the **enter** button.
- ⦿ Result: The ground controls LCD display will show the following:

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:

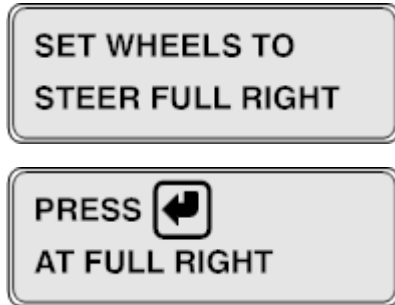


- 12 Use the platform drive controller steer function to align the steer tires with the drive chassis.

Steer Axle Components

- 13 Press the **enter** button.

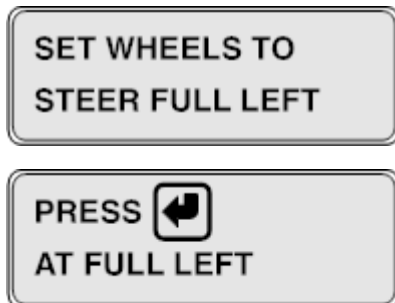
- Result: The ground controls LCD display will show the following:



- 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

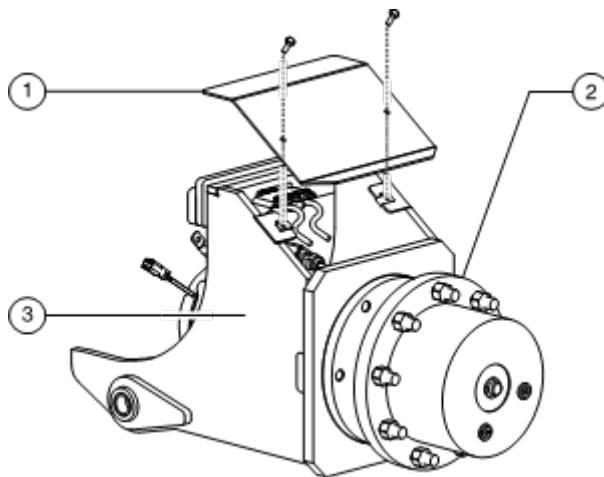
Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

- 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.



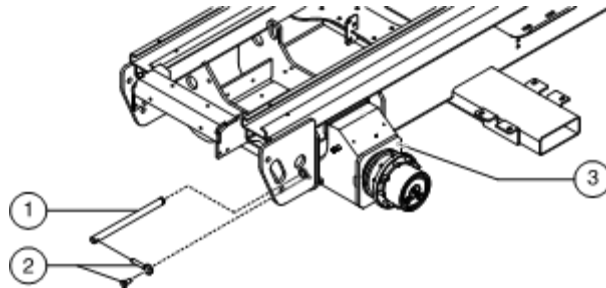
- 1 axle cover
- 2 drive hub
- 3 axle assembly

- 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.

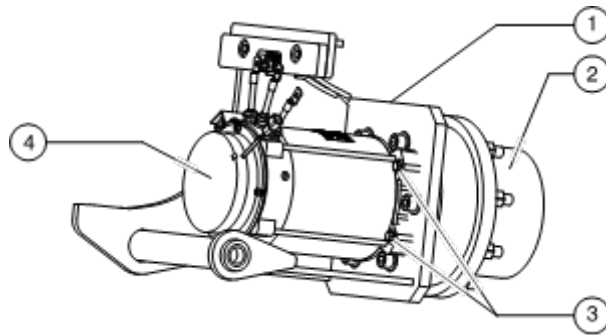
Non-steer Axle Components

- 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.

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.

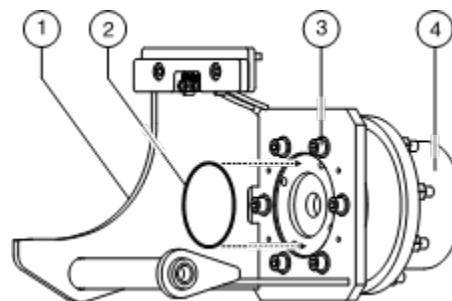
- 1 Remove the drive motor. Refer to Repair Procedure, *How to Remove a Drive Motor*.
- 2 Using a suitable supporting device, secure the drive hub. Do not apply pressure.
- 3 Remove the drive hub retaining fasteners. Remove the drive hub.

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

Outrigger Components

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.

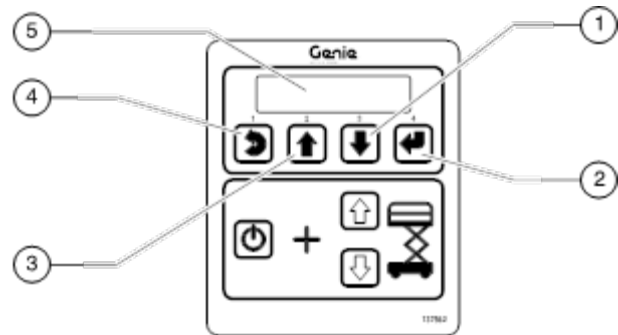
For further information or assistance, contact Genie Product Support.

How to Calibrate the Outrigger System

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

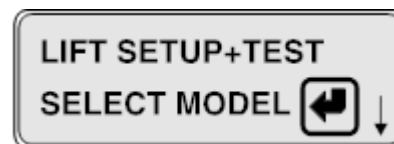
- 1 Turn the key switch to the ground controls position and pull out the red Emergency Stop button to the on position at the platform controls.

- 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.

Outrigger Components

- 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

How to Calibrate the Platform Overload System

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: Perform this procedure with the machine on a firm, level surface with all weight, tools and equipment removed from the platform.

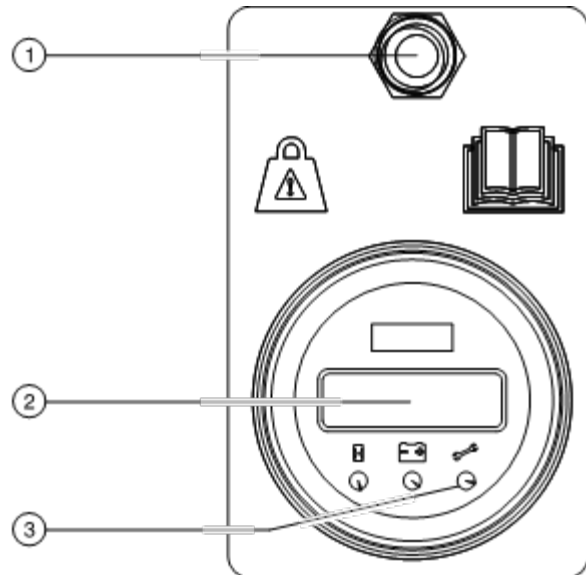
Note: Perform this procedure in an area that is free of overhead obstructions.

- 1 **Models with outriggers:** Fully lower the outriggers and level the machine.
- 2 Using a suitable lifting device, place and secure the maximum rated load in the center of the platform deck.

Model	Maximum rated load
GS-2669	1500 lbs 680 kg
GS-3369	1000 lbs 454 kg
GS-4069	800 lbs 363 kg

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

- 4 Pull out the red Emergency Stop button at the ground controls and momentarily activate the calibration toggle switch in the up position 3 times.
- Result: The red LED is on and the LCD screen displays **LOAD**.



- 1 calibration toggle switch
- 2 LCD screen
- 3 red LED

Platform Overload Components

- 5 Activate and hold the calibration toggle switch in the up position for 4 seconds to enter full load calibration mode.

⦿ Result: The LCD screen first displays **DOWN CHK**, then **GO UP: ?**.

- 6 Start the engine from the ground controls and fully raise the platform.

- 7 When the platform has reached full height, momentarily activate the calibration toggle switch in the up position to confirm.

⦿ Result: The LCD screen first displays **UP CHK**, then **GO DWN: ?**.

- 8 Fully lower the platform to the stowed position.

- 9 When the platform is fully stowed, momentarily activate the calibration toggle switch in the up position to confirm.

- 10 Fully raise the platform from the ground controls.

Note: The platform will raise and automatically stop at predetermined points to gather data. Continue holding the Function Enable and Platform Up buttons until the platform has reached full height.

- 11 When the platform has reached full height, momentarily activate the calibration toggle switch in the up position to confirm.

- 12 Fully lower the platform to the stowed position.

Note: The platform will lower and automatically stop at predetermined points to gather data. Continue holding the Function Enable and Platform Down buttons until the platform is fully stowed.

- 13 When the platform is fully stowed, momentarily activate the calibration toggle switch in the up position to confirm.

⦿ Result: The LCD screen displays **Success**. Calibration is complete.

- 14 Push in the ground controls red Emergency Stop button to the off position.

Confirm Calibration:

- 1 Add additional weight to the platform.

Model	Additional weight
GS-2669	300 lbs 136 kg
GS-3369	200 lbs 91 kg
GS-4069	160 lbs 73 kg

- 2 Pull out the red Emergency Stop button to the on position and start the engine.

- 3 Raise the platform.

⦿ Result: At a predetermined height the engine shuts off, an audible alarm sound and platform up function does not operate.

- 4 Cycle the red Emergency Stop button off, then back on.

- 5 Use the emergency down function to lower the platform to the stowed position.

- 6 Remove the weight or rated load from the platform.

Platform Overload Components

12-2 Platform Overload Recovery Message

If the ground controls LCD screen displays **OL:**
PLATFORM OVERLOADED, the auxiliary
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.

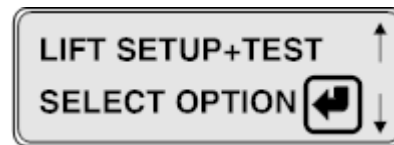
- 3 Pull out the red Emergency Stop button at the ground controls.

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



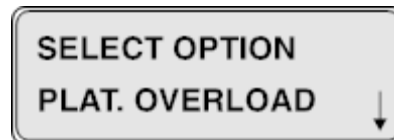
- 4 Press the **scroll down** button.

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



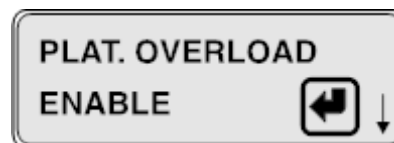
- 5 Press the **enter** button.

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



- 6 Press the **enter** button.

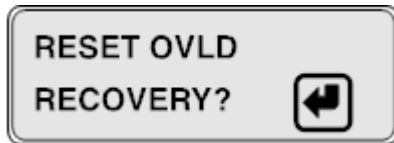
- ⦿ Result: The ground control LCD display will show the following.



Platform Overload Components

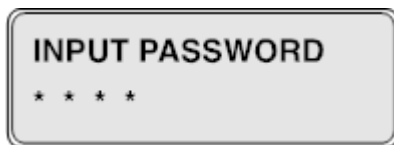
- 7 Press and hold the **scroll down** button for 5 seconds.

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



- 8 Press the **enter** button.

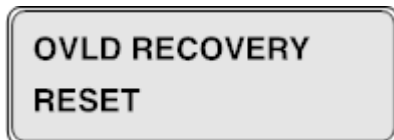
- ⦿ Result: The ground control LCD display will show the following.



- 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.

Platform Overload Components

12-3

Down Limit Height

How to Calibrate the Down Limit Height

Note: Perform this procedure on a firm, level surface with the machine in the stowed position unless otherwise instructed.

Note: The Genie® Tech Pro™ Link will be required to adjust the platform down limit height.

- 1 Open the ground controls compartment and locate the level sensor.
- 2 Start the engine from the ground controls.
- 3 Push and hold the level to the side until an audible alarm is heard.
- 4 Raise the platform until it stops.
- 5 Push in the red Emergency Stop button to the off position.
- 6 Measure the distance between the surface and the platform floor.

Model	Measurement
GS-2669	64 - 76 inches 163 - 193 cm
GS-3369	66 - 78 inches 168 - 198 cm
GS-4069	74 - 86 inches 188 - 218 cm

- ⦿ Result: Platform height is within range. Adjustment not required.
- ⊗ Result: Platform height is not within range. Continue with procedure.

- 7 Connect the Tech Pro Link to the machine.
- 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.
- 9 Go to Settings / Calibration / DLS Percentage. Increase or decrease the setting between 3.0% - 11%. Repeat this procedure until platform up stops within the required range.

Note: The default setting is 9.0%.

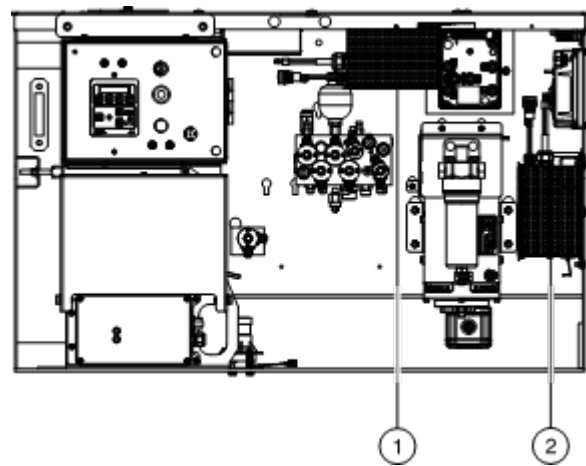
Battery Charger

13-1 Battery Charger

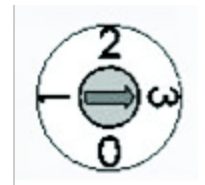
The machine is equipped with 2 battery chargers. The primary charger delivers an output voltage at full power. The boost charger delivers an output voltage at reduce power.

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

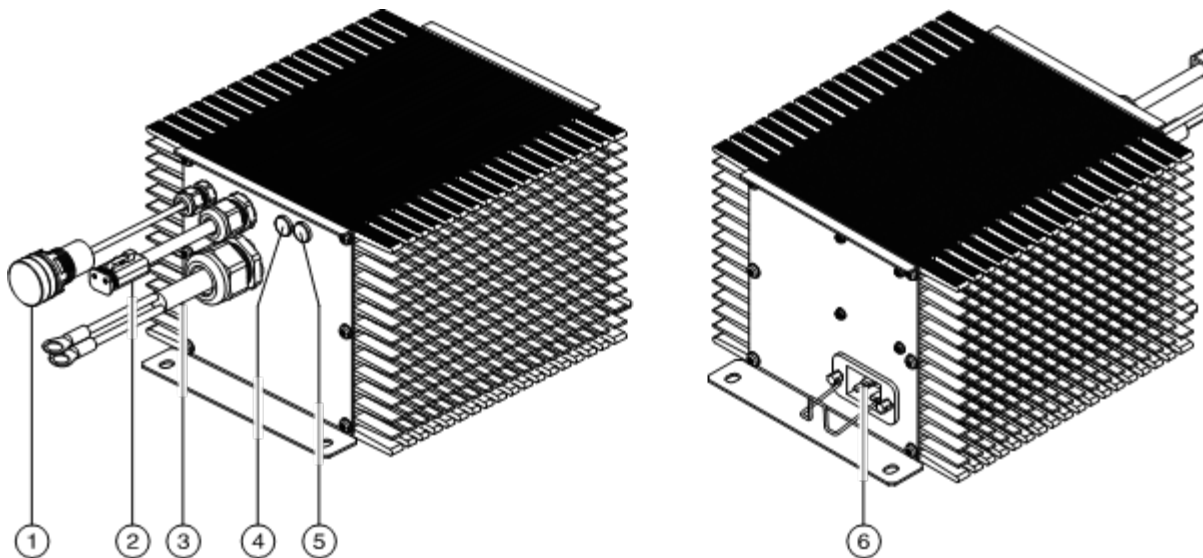


Positions 0 and 1: Open lead flooded batteries.

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

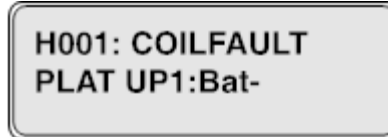
GCON – Ground Controls

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.

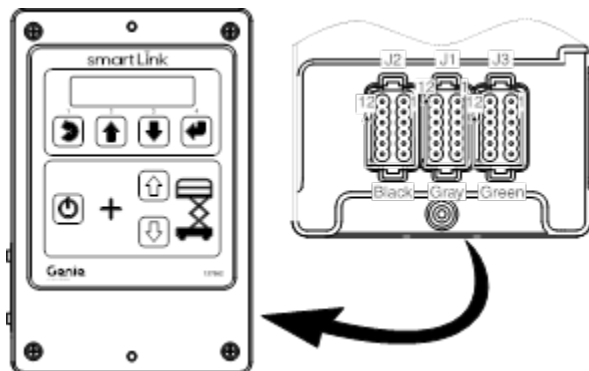
Models are listed below each code to assist in the troubleshooting codes for a specific model.

Fault Codes

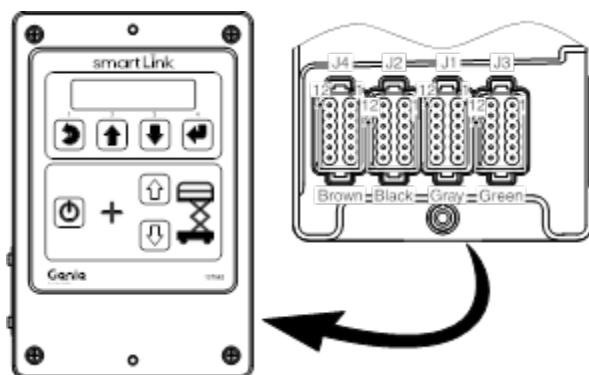
Genie® SmartLink™ Diagnostic System

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



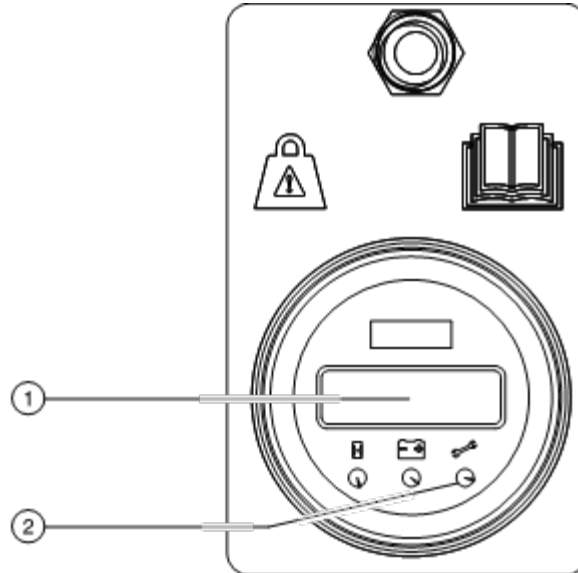
Rear of Ground Controls ECM (models without outriggers)



Rear of Ground Controls ECM (models with outriggers)

Platform Overload Fault Codes

Platform Overload Display



- 1 LCD screen
- 2 red LED

The diagnostic readout displays numerical codes that provide information about height sensor, pressure sensor and platform overload malfunctions.

The codes listed in the Fault Code Chart can aid in troubleshooting the machine by pinpointing the area or component affected.

Fault Codes

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
212	Height sensor	12	Value too high	Output higher than normal.	• Check wiring • Check 5V supply voltage • Shorted too high • Replace sensor
		14	Cross check fault	Height channels not reading consistent or correlated signals	• Check wiring • Shorted to high or low • Replace sensor
		15	Value too low	Output lower than normal.	• Check wiring • Check 5V supply voltage • Check ground • Open or short circuit • Replace sensor
		16	Value at 0 V	Output at 0 volts.	• Check wiring • Open circuit. • Replace sensor • Replace SCON
		23	Too high	Outputs higher than calibration point.	• Check height sensor for loose or missing fasteners. • Calibrate Sensor
		24	Too low	Outputs lower than calibration point.	• Check height sensor for loose or missing fasteners • Calibrate Sensor

Fault Codes

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
213	Height sensor (Safety)	12	Value too high	Output higher than normal.	• Check wiring • Check 5V supply voltage • Shorted too high • Replace sensor
		15	Value too low	Output lower than normal.	• Check wiring • Check 5V supply voltage • Check ground • Open or short circuit • Replace sensor
		16	Value at 0 V	Output at 0 volts.	• Check wiring • Open circuit. • Replace sensor • Replace SCON
		23	Too high	Outputs higher than calibration point.	• Check height sensor for loose or missing fasteners. • Calibrate Sensor
		24	Too low	Outputs lower than calibration point.	• Check height sensor for loose or missing fasteners • Calibrate Sensor

Fault Codes

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
214	Pressure sensor	12	Value too high	Output higher than normal.	• Check wiring • Check 5V supply voltage • Shorted too high • Replace sensor
		14	Cross check fault	Pressure channels not reading consistent or correlated signals.	• Check wiring • Shorted to high or low • Replace sensor
		15	Value too low	Output lower than normal.	• Check wiring • Check 5V supply voltage • Check ground • Open or short circuit • Replace sensor
		16	Value at 0 V	Output at 0 volts.	• Check wiring • Open circuit. • Replace sensor • Replace SCON
215	Pressure sensor (Safety)	12	Value too high	Output higher than normal.	• Check wiring • Check 5V supply voltage • Shorted too high • Replace sensor
		15	Value too low	Output lower than normal.	• Check wiring • Check 5V supply voltage • Check ground • Open or short circuit • Replace sensor
		16	Value at 0 V	Output at 0 volts.	• Check wiring • Open circuit. • Replace sensor • Replace SCON

Fault Codes

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
75	SCON - Safety controller	10		Primary and secondary micros in the SCON detect an internal safety fault.	• Replace SCON
		29	Software version mismatch	Primary and secondary processors software do not match.	• Update software • Replace SCON
76	Platform Overload	23	Too high	Platform overloaded.	• Remove weight from platform
79	DISCON - Display controller	13	Not detected	No communication between SCON and platform overload display (DISCON).	• Check wiring • Check SCON connections • Check GCON connections • Replace SCON • Replace DISCON

Fault Codes

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
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".

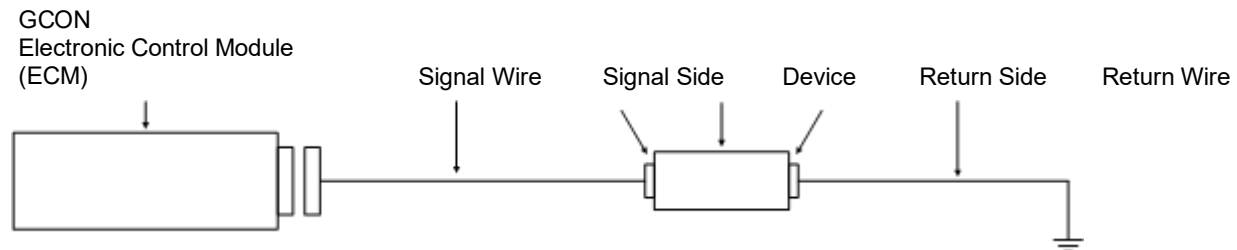
Diagnostic Chart

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 ↓			
3	Check GCON Electronic Control Module (ECM).	No Good →	Replace ECM.

Wiring Diagram

The wiring diagram shown below illustrates how fault type "HXXX" and "PXXX" devices are typically wired.

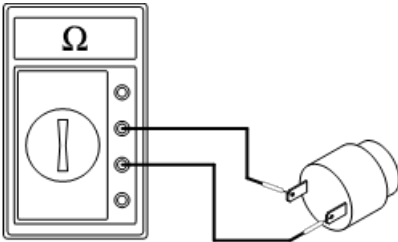
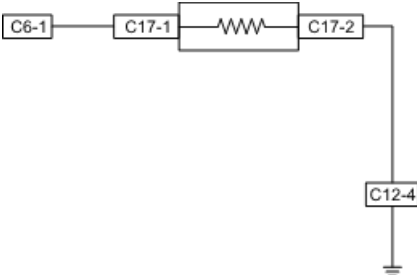
The signal of these types of devices originates at the Ground Controls and terminates at system ground.



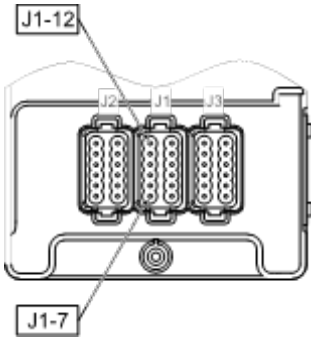
In order to successfully troubleshoot "HXXX" or "PXXX" type faults, the entire faulted out circuit must be investigated.

Fault Codes

Fault Inspection Procedure

1	Check the device associated with the faulted circuit																
	1 Disconnect the faulted device connector. 2 Using a multi-meter, measure resistance between the two terminals of the faulted device. 3 Resistance should be as follows. <table><thead><tr><th>Device</th><th>Typical Resistance</th></tr></thead><tbody><tr><td>Solenoid Valve, Drive</td><td>27.2 Ω</td></tr><tr><td>Solenoid Valve, Steer</td><td>19 Ω</td></tr><tr><td>Solenoid Valve, Platform Up</td><td>25 Ω</td></tr><tr><td>Solenoid Valve, Platform Down</td><td>6.25 Ω</td></tr><tr><td>GCON and PCON Alarm</td><td>>1M Ω</td></tr><tr><td>Automotive Horn</td><td>1.0 Ω</td></tr><tr><td>Contactor Coil</td><td>47 Ω</td></tr></tbody></table>	Device	Typical Resistance	Solenoid Valve, Drive	27.2 Ω	Solenoid Valve, Steer	19 Ω	Solenoid Valve, Platform Up	25 Ω	Solenoid Valve, Platform Down	6.25 Ω	GCON and PCON Alarm	>1M Ω	Automotive Horn	1.0 Ω	Contactor Coil	47 Ω
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Automotive Horn	1.0 Ω																
Contactor Coil	47 Ω																
OK	Go to step 2	No Good	Replace faulted device														
2	Check the harness between the ground controls and the faulted device																
	1 Disconnect the GCON ECM connectors, C1, C2 and C3. (or C4 if equipped with outriggers). 2 Disconnect the faulted device connector. 3 Check the continuity between the GCON ECM connector and the signal side of the faulted device. ⊙ Result: Resistance should be close to 0 Ω. 4 Check the continuity between the return side of faulted device and system ground. ⊙ Result: Resistance should be close to 0 Ω. 5 Check resistance between return side and signal side of the harness plug of faulted device. ⊙ Result: Resistance should be 1M Ω or higher.																
OK	Go to step 3	No Good	Replace or repair harness														
3	Check the GCON ECM																

Fault Codes

	1 Disconnect the GCON ECM connectors, J1/QD31, J2/QD33 and J3/QD32. 2 For short to B- type faults, measure resistance between pins J1-7/QD31-7 (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/QD31-12 (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

Fault Codes

Type "HXXX" Faults

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
H001	H001:COILFAULT PLAT UP1:Bat-	Short circuit of the platform up #1 circuit to battery negative.	- Short circuit in platform up #1 harness. - Platform up #1 coil short circuit. - GCON ECM.	Platform up function inhibited.
H002	H002:COILFAULT PLAT UP1:Open	Open circuit in the platform up #1 circuit.	- Short circuit in platform up #1 harness. - Platform up #1 coil short circuit. - GCON ECM.	Platform up function inhibited.
H003	H003:COILFAULT PLAT UP1:Bat+	Short circuit of the platform up #1 circuit to battery positive.	- Short circuit in platform up #1 harness. - Platform up #1 coil short circuit. - GCON ECM.	All functions inhibited except platform down.
H009	H009:COILFAULT PLAT DOWN1:Bat+	Short circuit of the platform down #1 circuit to battery positive.	- Short circuit in platform down #1 harness. - Platform down #1 coil short circuit. - GCON ECM.	All functions inhibited.
H027	H027:COILFAULT STEER RT:Bat+	Short circuit of the steer right circuit to battery positive.	- Short circuit in steer right harness. - Steer right coil short circuit. - GCON ECM.	All functions inhibited except platform down.
H030	H030:COILFAULT STEER LT:Bat+	Short circuit of the steer left circuit to battery positive.	- Short circuit in steer left harness. - Steer left coil short circuit. - GCON ECM.	All functions inhibited except platform down.
H043	H043:COIL FAULT BRAKE REL:Bat-	Short circuit of the brake circuit to battery negative.	- Short circuit in brake release enable harness. - Brake release relay short circuit. - GCON ECM.	All functions inhibited except platform down.
H045	H045:COILFAULT BRAKE REL:Bat+	Short circuit of the brake circuit to battery positive.	- Short circuit in brake release enable harness. - Brake release relay short circuit. - GCON ECM.	All functions inhibited except platform down.
H049	H049:COILFAULT O/R EXTEND:Bat-	Short circuit of the outrigger extend coil to battery negative.	- Short circuit in outrigger extend coil harness. - Outtrigger extend coil short circuit. - GCON ECM.	Outtrigger 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. - Outtrigger extend coil open circuit. - GCON ECM.	Outtrigger 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. - Outtrigger extend coil short circuit. - GCON ECM.	All functions inhibited except platform down.
H052	H052:COILFAULT O/R RETRACT:Bat-	Short circuit of the outrigger retract coil to battery negative.	- Short circuit in outrigger retract coil harness. - Outtrigger retract coil short circuit. - GCON ECM.	Outtrigger 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. - Outtrigger retract coil open circuit. - GCON ECM.	Outtrigger 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. - Outtrigger retract coil short circuit. - GCON ECM.	All functions inhibited except platform down.
H057	H057:COILFAULT LF RIGGER:Bat+	Short circuit of the left front outrigger coil to battery positive.	- Short circuit in left front outrigger coil harness. - Left front outrigger coil short circuit. - GCON ECM.	All functions inhibited except platform down.
H060	H060:COILFAULT LR RIGGER:Bat+	Short circuit of the left rear outrigger coil to battery positive.	- Short circuit in left rear outrigger coil harness. - Left rear outrigger coil short circuit. - GCON ECM.	All functions inhibited except platform down.
H063	H063:COILFAULT RF RIGGER:Bat+	Short circuit of the right front outrigger coil to battery positive.	- Short circuit in right front outrigger coil harness. - Right front outrigger coil short circuit. - GCON ECM.	All functions inhibited except platform down.

Fault Codes

Type "HXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
H066	H066:COILFAULT RR RIGGER:Bat+	Short circuit of the right rear outrigger coil to battery positive.	• Short circuit in right rear outrigger coil harness. • Right rear outrigger coil short circuit. • GCON ECM.	All functions inhibited except platform down.
H074	H074:COILFAULT LF RIGGER	Short circuit of the left front outrigger circuit to battery positive/negative or open circuit.	• Short or open circuit in left front outrigger harness. • Left front outrigger coil short or open circuit. • GCON ECM.	Left front outrigger function inhibited.
H075	H075:COILFAULT LR RIGGER	Short circuit of the left rear outrigger circuit to battery positive/negative or open circuit.	• Short or open circuit in left rear outrigger harness. • Left rear outrigger coil short or open circuit. • GCON ECM.	Left rear outrigger function inhibited.
H076	H076:COILFAULT RF RIGGER	Short circuit of the right front outrigger circuit to battery positive/negative or open circuit.	• Short or open circuit in right front outrigger harness. • Right front outrigger coil short or open circuit. • GCON ECM.	Right front outrigger function inhibited.
H077	H077:COILFAULT RR RIGGER	Short circuit of the right rear outrigger circuit to battery positive/negative or open circuit.	• Short or open circuit in right rear outrigger harness. • Right rear outrigger coil short or open circuit. • GCON ECM.	Right rear outrigger function inhibited.
H078	H078:COILFAULT PLAT DOWN 1	Short circuit of the platform down #1 circuit to battery positive/negative or open circuit.	• Short or open circuit in platform down #1 harness. • Platform down #1 coil short or open circuit. • GCON ECM.	Platform down function inhibited.
H080	H080:COILFAULT STEER LEFT	Short circuit of the steer left circuit to battery negative or open circuit.	• Short or open circuit in steer left harness. • Steer left coil short or open circuit. • GCON ECM.	Steer left function inhibited.
H081	H081:COILFAULT STEER RIGHT	Short circuit of the steer right circuit to battery negative or open circuit.	• Short or open circuit in steer right harness. • Steer right coil short or open circuit. • GCON ECM.	Steer right function inhibited.
H084	H084:COILFAULT OSC SUPPLY:Bat+	Short circuit of the oscillate supply circuit to battery positive.	• Short circuit in oscillate supply harness. • Oscillate supply coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H085	H085:COILFAULT OSC RIGHT:Bat-	Short circuit of the oscillate right circuit to battery negative.	• Short circuit in oscillate right harness. • Oscillate right coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H086	H086:COILFAULT OSC RIGHT:Open	Open circuit of the oscillate right circuit.	• Open circuit in oscillate right harness. • Oscillate right coil open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H087	H087:COILFAULT OSC RIGHT:Bat+	Short circuit of the oscillate right circuit to battery positive.	• Short circuit in oscillate right harness. • Oscillate right coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H088	H088:COILFAULT OSC LEFT:Bat-	Short circuit of the oscillate left circuit to battery negative.	• Short circuit in oscillate left harness. • Oscillate left coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.

Fault Codes

Type "HXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
H089	H089:COILFAULT OSC LEFT:Open	Open circuit of the oscillate left circuit.	• Open circuit in oscillate left harness. • Oscillate left coil open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H090	H090:COILFAULT OSC LEFT:Bat+	Short circuit of the oscillate left circuit to battery positive.	• Short circuit in oscillate left harness. • Oscillate left coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H091	H091:COILFAULT ACCUM:Bat-	Short circuit of the accumulator circuit to battery negative.	• Short circuit in accumulator harness. • Accumulator coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H092	H092:COILFAULT ACCUM:Open	Open circuit of the accumulator circuit.	• Open circuit in accumulator harness. • Accumulator coil open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H093	H093:COILFAULT ACCUM:Bat+	Short circuit of the accumulator circuit to battery positive.	• Short circuit in accumulator harness. • Accumulator coil short circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H105	H105:COILFAULT OSC SUPPLY	Short circuit of the oscillate supply circuit to battery positive/negative or open circuit.	• Short or open circuit in oscillate supply harness. • Oscillate supply coil short or open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
H116	H116:COILFAULT EXTEND/RETRACT	Short circuit of the outrigger supply circuit to battery positive/negative or open circuit.	• Short or open circuit in outrigger harness. • Outrigger supply coil short or open circuit. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.

Fault Codes

Type "PXXX" Faults

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
P001	P001:PWRFAULT SW PWR:Bat-	Short circuit of the switched power #1 circuit to battery negative.	• Short circuit in switched power #1, down limit switch or digital tilt switch harness. • GCON ECM.	All functions inhibited.
P003	P003:PWRFAULT SW PWR1:Bat+	Short circuit of the switched power #1 circuit to battery positive.	• Short circuit in switched power #1, down limit switch or digital tilt switch harness. • GCON ECM.	All functions inhibited.
P004	P004:DEVICEFAULT HORN:Bat-	Short circuit of the automotive horn circuit to battery negative.	• Short circuit in automotive horn harness. • Automotive horn short circuit. • GCON ECM.	Automotive horn inhibited.
P005	P005:DEVICEFAULT HORN:Open	Open circuit of the automotive horn circuit.	• Open circuit in automotive horn harness. • Automotive horn open circuit. • GCON ECM.	Automotive horn inhibited.
P006	P006:DEVICEFAULT HORN:Bat+	Short circuit of the automotive horn circuit to battery positive.	• Short circuit in automotive horn harness. • Automotive horn short circuit. • GCON ECM.	Automotive horn inhibited.
P007	P007:DEVICEFAULT GCON ALARM:Bat-	Short circuit of the GCON alarm circuit to battery negative.	• Short circuit in GCON alarm harness. • GCON alarm short circuit. • GCON ECM.	GCON alarm inhibited.
P009	P009:DEVICEFAULT GCON ALARM:Bat+	Short circuit of the GCON alarm circuit to battery positive.	• Short circuit in GCON alarm harness. • GCON alarm short circuit. • GCON ECM.	GCON alarm inhibited.
P013	P013:PWRFAULT PCON PWRET:Bat-	Short circuit of the PCON power return circuit to battery negative.	• Short circuit in PCON power return harness. • GCON ECM.	All functions inhibited.
P015	P015:PWRFAULT PCON PWRET:Bat+	Short circuit of the PCON power return circuit to battery positive.	• Short circuit in PCON power return harness. • GCON ECM.	All functions inhibited.
P018	P018:PWRFAULT PCON POWER:Bat-	Short circuit of the PCON power circuit to battery negative.	• Short circuit in PCON power harness. • GCON ECM.	All functions inhibited.
P019	P019:PWRFAULT PCON POWER:Bat+	Short circuit of the PCON power circuit to battery positive.	• Short circuit in PCON power harness. • GCON ECM.	All functions inhibited.
P023	P023:PUMP MOTOR VOLTAGE NOT OK	Pump motor voltage out of range.	• Pump voltage to low. • Pump voltage to high. • Right rear DCON ECM.	All functions inhibited.
P025	P025:PUMP MOTOR CURRENT FEEDBK	Open or short circuit of the P- circuit from the right rear drive controller to the pump motor.	• Open or short circuit in pump motor P- cable. • Faulty pump. • Right rear DCON ECM.	All functions inhibited.
P026	P026:MOTOR RR VOLTAGE NOT OK	Open or short circuit of the U or W circuit from the right rear drive controller to the right rear drive motor.	• Open circuit in right rear drive motor U or W cable. • Right rear drive motor. • Right rear DCON ECM.	All functions inhibited.
P027	P027:MOTOR LR VOLTAGE NOT OK	Open or short circuit of the U or W circuit from the left rear drive controller to the left rear drive motor.	• Open circuit in left rear drive motor U or W cable. • Left rear drive motor. • GCON ECM.	All functions inhibited.
P028	P028:CONTACTOR STUCK CLOSED	Main contactor (PR1) stuck in the closed position.	• Short circuit in main contactor harness. • Faulty contactor. • Right rear DCON ECM.	All functions inhibited.
P029	P029:CONTACTOR DOES NOT CLOSE	Main contactor (PR1) stuck in the open position.	• Open circuit in main contactor harness. • Faulty contactor. • Right rear DCON ECM.	All functions inhibited.
P030	P030:COILFAULT LC RR:Open	Short circuit of the main contactor (PR1) coil to battery negative or open circuit.	• Short or open circuit in main contactor harness. • Faulty contactor. • Right rear DCON ECM.	All functions inhibited.
P031	P031:COILFAULT BRAKE/LC RR:Bat+	Short or open circuit of the right rear brake coil circuit.	• Short or open circuit in right rear brake harness. • Short or open circuit in right rear brake coil • Right rear DCON ECM.	All functions inhibited.

Fault Codes

Type "PXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
P032	P032:COILFAULT BRAKE/LC LR:Bat+	Short or open circuit of the left rear brake coil circuit.	• Short or open circuit in left rear brake harness. • Short or open circuit in left rear brake coil. • Left rear DCON ECM.	All functions inhibited.
P035	P035:COILFAULT BRAKE RR:Bat-	Short circuit of the right rear coil circuit (B5) to battery negative. Brake circuit miswired.	• Short circuit in right rear brake harness. • Short circuit in right rear brake coil. • Right rear brake harness miswired. • Right rear DCON ECM.	All functions inhibited.
P036	P036:COILFAULT BRAKE LR:Bat-	Short circuit of the left rear brake coil circuit (B5) to battery negative. Brake circuit miswired.	• Short circuit in left rear brake harness. • Short circuit in left rear brake coil. • Left rear brake harness miswired. • Left rear DCON ECM.	All functions inhibited.
P037	P037:BATTERY OUT OF RANGE	Battery voltage is out of range at startup.	• Short or open circuit in voltage sensor circuits. • Low batteries. • Faulty battery. • Battery charger connected to AC power source. • Left or right DCON ECM.	All functions inhibited.
P039	P039:DEVICEFAULT BRAKE PWR RELAY	Short or open circuit of the brake relay contact or coil.	• Short or open circuit in brake relay harness. • Brake relay contact stuck closed. • Faulty brake relay. • GCON ECM.	All functions inhibited.
P040	P040:COILFAULT BRAKE PWR OPEN	Short or open circuit of the brake relay contact or coil to battery negative.	• Short or open circuit in brake relay harness. • Faulty brake relay. • Left or right DCON ECM. • GCON ECM.	All functions inhibited.
P041	P041:LOW CHARGER POWER	Charging system fault, low power.	• Chargers set incorrectly. • SOC monitor. • Charger harness. • GCON ECM.	Batteries will not charge correctly.
P042	P042:WRONG CHARGER PROFILE	Charging system fault, wrong profile.	• Chargers set incorrectly. • SOC monitor. • Charger harness. • 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. • CR2 short to B-. • Faulty CR2 relay. • Faulty fuel valve. • Faulty voltage regulator (VR1). • Left rear DCON ECM. • 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. • Left rear DCON ECM. • GCON ECM.	Engine will not start and run with open circuit. 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-. • Faulty CR1 relay. • Faulty starter solenoid. • Left rear DCON ECM. • GCON ECM.	Engine will continue to run with short to B-. 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. • Left rear DCON ECM. • GCON ECM.	Engine will not start and run with open circuit. 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. • Short in motor controller harness. • 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. • Short in motor controller harness. • 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. • Faulty motor controller harness. • 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. • Faulty motor controller harness. • 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. • Faulty CR15 relay. • Faulty motor controller harness. • 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. • Faulty fuse (F33). • Faulty motor controller harness. • Right rear DCON ECM.	Engine may not start at cold temperatures.

Fault Codes

Type "UXXX" Faults

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
U001	U001:SWITCHFAULT GCON MAIN FTN EN	Short circuit of the GCON main function enable switch at system startup.	• Short circuit of the GCON main function enable switch. • GCON ECM.	All GCON functions inhibited.
U002	U002:SWITCHFAULT GCON PLAT UP	Short circuit of the GCON up directional switch at system startup.	• Short circuit of the GCON up directional switch. • GCON ECM.	All GCON functions inhibited except platform up.
U003	U003:SWITCHFAULT GCON PLAT DOWN	Short circuit of the GCON down directional switch at system startup.	• Short circuit of the GCON down directional switch. • GCON ECM.	All GCON functions inhibited except platform down.
U004	U004:SWITCHFAULT GCON LCD UP	Short circuit of the GCON LCD scroll up switch at system startup.	• Short circuit of the GCON LCD scroll up switch. • GCON ECM.	All GCON LCD menu functions inhibited.
U005	U005:SWITCHFAULT GCON LCD DOWN	Short circuit of the GCON LCD scroll down switch at system startup.	• Short circuit of the GCON LCD scroll down switch. • GCON ECM.	All GCON LCD menu functions inhibited.
U006	U006:SWITCHFAULT GCON LCD ENTER	Short circuit of the GCON LCD enter switch at system startup.	• Short circuit of the GCON LCD enter switch. • GCON ECM.	All GCON LCD menu functions inhibited.
U007	U007:SWITCHFAULT GCON LCD ESCAPE	Short circuit of the GCON LCD escape switch at system startup.	• Short circuit of the GCON LCD escape switch. • GCON ECM.	All GCON LCD menu functions inhibited.
U015	U015:SWITCHFAULT PCON STEER LEFT	Short circuit of the PCON steer left switch at system startup.	• Short circuit of the PCON steer left switch. • GCON ECM.	All PCON drive and steer functions inhibited.
U016	U016:SWITCHFAULT PCON STEER RIGHT	Short circuit of the PCON steer right switch at system startup.	• Short circuit of the PCON steer right switch. • GCON ECM.	All PCON drive and steer functions inhibited.
U017	U017:SWITCHFAULT PCON HORN	Short circuit of the PCON horn switch at system startup.	• Short circuit of the PCON horn switch. • GCON ECM.	PCON horn switch function inhibited.

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. • PCON joystick. • GCON ECM.	All drive and steer functions inhibited.
U034	U034:JSTICKFAULT OUT OF RANGE:HI	Short circuit of the PCON drive joystick signal to battery positive at system startup.	• Short circuit of the PCON drive joystick signal circuit. • PCON joystick. • GCON ECM.	All drive and steer functions inhibited.
U035	U035:JSTICKFAULT OUT OF RANGE:LO	Short circuit of the PCON drive joystick signal to battery negative at system startup.	• Short circuit of the PCON drive joystick signal circuit. • PCON joystick. • GCON ECM.	All drive and steer functions inhibited.
U036	U036:SWITCHFAULT GCON + PCON:ON	Mis-wiring or short circuit of GCON key switch.	• Short circuit of the GCON key switch harness. • GCON key switch. • GCON ECM.	All functions inhibited.
U037	U037:SWITCHFAULT FOOTSW PRESSED	Foot switch or Enable switch depressed at startup.	• Enable switch activated at startup. • Enable switch contact stuck closed. • PCON ECM.	All drive and steer functions inhibited.
U038	U038:SWITCHFAULT FOOTSW:Bat+	Short circuit of the PCON power circuit to enable switch to battery positive.	• Short circuit in PCON power harness. • Enable switch shorted battery positive. • PCON ECM.	All drive and steer functions inhibited.
U039	U039:SWITCHFAULT FOOTSW:Open/Bat-	Open or short circuit of the PCON power circuit to enable switch to battery negative.	• Open or short circuit in PCON power harness. • Enable switch short or open to battery negative. • PCON ECM.	All drive and steer functions inhibited.
U042	U042:SWITCHFAULT PCON DRIVE MODE	PCON drive mode switch stuck closed, or depressed prior to startup.	• Drive mode switch stuck closed. • Drive mode switch is depressed at system startup. • PCON ECM.	Drive functions inhibited.
U043	U043:SWITCHFAULT PCON OR MODE	PCON outrigger mode switch stuck closed, or depressed prior to startup.	• Outrigger mode switch stuck closed. • Outrigger mode switch is depressed at system startup. • PCON ECM.	Outrigger extend / retract function inhibited.
U045	U045:SWITCHFAULT PCON DRIVE EN	Short circuit of the PCON drive enable switch at system startup.	• Short circuit of the PCON drive enable switch. • PCON ECM. • GCON ECM.	All drive and steer functions inhibited.
U046	U046:SWITCHFAULT PCON LIFT MODE	PCON lift mode fault	• PCON lift mode switch is depressed at system startup. • PCON ECM.	All functions operate except platform up or down.

Fault Codes

Type "FXXX" Faults

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
F003	F003:SWITCHFAULT DOWN LIMIT1:Bat+	Short circuit of the down limit #1 switch at system startup.	• Short circuit of the down limit switch circuit. • Down limit #1 switch short circuit. • GCON ECM.	All functions inhibited except platform down.
F007	F007:SWITCHFAULT CHASSISTILT:Bat+	Short circuit of the Chassis Tilt Sensor circuit to battery positive.	• Short circuit in the chassis tilt sensor • Faulty tilt sensor • GCON ECM.	All functions inhibited except platform down.
F012	F012:SENSORFAULT LEVEL PITCH:Bat+	Short circuit of the Level Pitch Sensor circuit to battery positive.	• Short circuit in the level pitch sensor circuit. • Faulty level sensor. • GCON ECM.	All functions inhibited.
F013	F013:SENSORFAULT LEVEL PITCH:Bat-	Short circuit of the Level Pitch Sensor circuit to battery negative.	• Short circuit in the level pitch sensor circuit. • Faulty level sensor. • GCON ECM.	All functions inhibited.
F014	F014:SENSORFAULT LEVEL ROLL:Bat+	Short circuit of the Level Roll Sensor circuit to battery positive.	• Short circuit in the level roll sensor circuit. • Faulty level sensor. • GCON ECM.	All functions inhibited.
F015	F015:SWITCHFAULT LEVEL ROLL:Bat-	Short circuit of the Level Roll Sensor circuit to battery negative.	• Short circuit in the level roll sensor circuit. • Faulty level sensor. • GCON ECM.	All functions inhibited.
F032	F032:SWITCHFAULT OVLD SWITCH:Bat+	Short circuit of pressure switch to battery positive.	• Short circuit in the limit switch harness. • GCON ECM.	All functions inhibited.
F033	F033:SWITCHFAULT OVLD:Open/Bat-	Open or short circuit of pressure switch.	• Open or short circuit in the limit switch harness. • GCON ECM.	All functions inhibited.
F037	F037:SWITCHFAULT LF RIGGER:Bat+	Short circuit of the left front outrigger limit switch to battery positive.	• Short circuit of the left front outrigger limit switch. • Short circuit in outrigger harness. • GCON ECM.	Left front outrigger inhibited if outrigger extend is activated. Outrigger can still be retracted.
F039	F039:SWITCHFAULT RF RIGGER:Bat+	Short circuit of the right front outrigger limit switch to battery positive.	• Short circuit of the right front outrigger limit switch. • Short circuit in outrigger harness. • GCON ECM.	Right front outrigger inhibited if outrigger extend is activated. Outrigger can still be retracted.
F041	F041:SWITCHFAULT LR RIGGER:Bat+	Short circuit of the left rear outrigger limit switch to battery positive.	• Short circuit of the left rear outrigger limit switch. • Short circuit in outrigger harness. • GCON ECM.	Left rear outrigger inhibited if outrigger extend is activated. Outrigger can still be retracted.
F043	F043:SWITCHFAULT RR RIGGER:Bat+	Short circuit of the right rear outrigger limit switch to battery positive.	• Short circuit of the right rear outrigger limit switch. • Short circuit in outrigger harness. • GCON ECM.	Right rear outrigger inhibited if outrigger extend is activated. Outrigger can still be retracted.
F045	F045:SWITCHFAULT LEFT AXLE:Bat+	Short circuit of the left axle operational limit switch to battery positive.	• Short circuit of the left axle operational limit switch. • Short circuit in axle limit switch harness. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F047	F047:SWITCHFAULT RIGHT AXLE:Bat+	Short circuit of the right axle operational limit switch to battery positive.	• Short circuit of the right axle operational limit switch. • Short circuit in axle limit switch harness. • GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.

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. - Short circuit in pump speed sensor harness. - GCON ECM.	All functions operate.
F050	F050:SENSORFAULT PUMP:Open/Bat-	Short circuit of the pump speed sensor to battery negative or open circuit.	- Short or open circuit of the pump speed sensor. - Short or open circuit in pump speed sensor harness. - GCON ECM.	All functions operate.
F051	F051:SWITCHFAULT ACC PRESS:Bat+	Short circuit of the accumulator pressure switch to battery positive.	- Short circuit of the accumulator pressure switch. - Short circuit in function manifold harness. - GCON ECM. - Faulty hydraulic pump	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F052	F052:SWITCHFAULT ACC PRESS:Bat-	Short circuit of the accumulator pressure switch to battery negative.	- Short circuit of the accumulator pressure switch. - Short circuit in function manifold harness. - GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F053	F053:DCON RR ECM THERM PROTECTION	Right rear drive controller, thermal protection senses that temperature has exceeded 185° F / 85° C.	- Excessive heat. - Faulty thermal sensor in right rear drive controller. - Right rear DCON ECM.	Drive speed reduces from 185° F / 85° C to 221° F / 105° C. Drive inhibited at 221° F / 105° C.
F054	F054:DCON LR ECM THERM PROTECTION	Left rear drive controller, thermal protection senses that temperature has exceeded 185° F / 85° C.	- Excessive heat. - Faulty thermal sensor in left rear drive controller. - Right rear DCON ECM.	Drive speed reduces from 185° F / 85° C to 221° F / 105° C. Drive inhibited at 221° F / 105° C.
F057	F057:MOTOR RR ENCODER FAULT	Return signal from the right rear drive motor encoder to the right rear drive controller is 40 Hz or higher.	- Short or open circuit of the drive motor encoder. - Faulty encoder in right rear drive motor. - Faulty right rear drive motor. - Right rear DCON ECM.	All functions inhibited.
F058	F058:MOTOR LR ENCODER FAULT	Return signal from the left rear drive motor encoder to the left rear drive controller is 40 Hz or higher.	- Short or open circuit of the drive motor encoder. - Faulty encoder in left rear drive motor. - Faulty left rear drive motor. - Left rear DCON ECM.	All functions inhibited.
F059	F059:MOTOR RR STALL/ENCODER	Right rear drive motors rotor is stuck or the return signal from the encoder is incorrect.	- Right rear drive motor not turning. - Short or open of the drive motor encoder. - Faulty encoder in right rear drive motor. - Faulty right rear drive motor. - Right rear DCON ECM.	Drive functions inhibited.
F060	F060:MOTOR LR STALL/ENCODER	Left rear drive motors rotor is stuck or the return signal from the encoder is incorrect.	- Left rear drive motor not turning. - Short or open of the drive motor encoder. - Faulty encoder in left rear drive motor. - Faulty left rear drive motor. - Left rear DCON ECM.	Drive functions inhibited.
F061	F061:MOTOR RR THERMAL SENSOR	Open circuit of the right rear drive motor thermal sensor to right rear drive controller (D3) or faulty thermal sensor.	- Open circuit in right rear drive motor harness. - Faulty thermal sensor in right rear drive motor. - Right rear DCON ECM.	Drive performance reduced.
F062	F062:MOTOR LR THERMAL SENSOR	Open circuit of the left rear drive motor thermal sensor to left rear drive controller (D3) or faulty thermal sensor.	- Open circuit in left rear drive motor harness. - Faulty thermal sensor in left rear drive motor. - Left rear DCON ECM.	Drive performance reduced.
F063	F063:SENSORFAULT STEER ANG:RANGE	Steer angle sensor out of range.	- Short or open circuit of the steer angle sensor. - Short or open circuit of the steer angle sensor harness. - Steer angle sensor needs to be calibrated. - Faulty steer angle sensor. - Right rear DCON ECM.	Drive performance reduced.

Fault Codes

Type "FXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
F064	F064:SWITCHFAULT LEFT AXLE:MISM	Left axle safety limit switch state not matching the left axle operational limit switch state.	• Short or open circuit of the left axle safety and/or operational limit switches. • Short or open circuit of the left axle safety and/or operational limit switch harness. • Faulty left axle safety and/or operational limit switch. • Right rear DCON or GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F065	F065:SWITCHFAULT RIGHT AXLE:MISM	Right axle safety limit switch state not matching the right axle operational limit switch state.	• Short or open circuit of the right axle safety and/or operational limit switches. • Short or open circuit of the right axle safety and/or operational limit switch harness. • Faulty right axle safety and/or operational limit switch. • Right rear DCON or GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F068	F068:OSCILLATE TIMEOUT	Oscillate axle safety or operational limit switches failed to close within 4 seconds after opening.	• Open circuit of a safety or operational limit switch. • Open circuit in safety or operational limit switch. • Right rear DCON or GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F069	F069:SWITCHFAULT OSC LIM SWITCHES	Right and left axle safety or operational limit switches are in an open state.	• Open circuit of the right and/or left axle safety or operational limit switches. • Open circuit of the right and/or left axle safety or operational limit switch harness. • Right rear DCON or GCON ECM.	All functions inhibited except platform as long as machine is in the elevated position. If machine is in stowed position, all functionality is resumed.
F070	F070:SWITCHFAULT DOWN LIMIT:MISM	Platform down safety and operational limit switches are not in the same state.	• Open or short circuit of the platform down safety and/or operational limit switches. • Open or short circuit of the platform down safety and/or operational limit switch harness. • Faulty safety and/or operational limit switch. • Right rear DCON or GCON ECM.	All functions inhibited.
F071	F071:MOTOR THERM PROTECTION	Drive motor(s) thermal sensor has exceeded 185° F / 85° C.	• One or both drive motors over heated. • Faulty thermal sensor in rear drive motor. • Faulty rear drive motor. • Left or right rear DCON or GCON ECM.	All drive and steer functions inhibited.
F074	F074:ENGINE START FAULT	Engine fails to start.	• Faulty fuel valve. • Faulty starter solenoid. • CR1 Relay stuck open. • Left rear DCON ECM. • No fuel. • Engine start battery.	Engine restart function disabled.
F075	F075:UNEXPECTED ENGINE STOP	Engine stops running unexpectedly.	• Fuel. • Faulty CR2 relay. • Faulty CR62 relay. • GCON ECM.	Engine restart function disabled.
F077	F077:BATTERY TEMPERATURE HIGH	Battery high temperature exceeded 113°F / 45° C.	• SOC monitor. • Ambient temperature condition too high. • Batteries just charged.	Batteries may not charge correctly.
F078	F078:BATTERY TEMPERATURE LOW	Battery low temperature exceeded 4°F / -15° C.	• SOC monitor. • SOC monitor harness. • 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. • 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. • Short circuit of the engine harness. • Clear fault. Cycle power. • 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. - GCON ECM internal failure.	All functions inhibited.
C004	C004:GCON ECM FAULT TYPE 4	GCON ECM master switch error.	- Short circuit in the master switch circuit. - GCON ECM.	All functions inhibited.
C005	C005:GCON ECM FAULT TYPE 5	GCON ECM safety switch error.	- Short circuit in the safety switch circuit. - GCON ECM.	All functions inhibited.
C006	C006:GCON ECM FAULT TYPE 6	GCON input redundancy error.	- Input conditioning circuit failure. - GCON ECM.	All functions inhibited.
C007	C007:GCON ECM FAULT TYPE 7	GCON ECM inter-processor communication error.	- Incorrectly programmed device. - Error in loading software on device. - GCON ECM.	All functions inhibited.
C008	C008:GCON ECM FAULT TYPE 8	GCON ECM temperature sensor error.	- GCON ECM internal failure. - GCON ECM.	All functions operate.
C009	C009:GCON ECM FAULT TYPE 9	GCON ECM fault type 9.	Contact Genie support.	
C010	C010:SECONDARY NOT PROGRAMMED	Secondary not programmed.	- Reinstall software - Contact Genie support.	All functions inhibited.
C021	C021:PCON NOT DETECTED	Communication failure between GCON and PCON.	- CAN communication failure. - CAN communication harness. - PCON disconnected. - GCON or PCON ECM.	All functions inhibited.
C023	C023:MACHINE MODEL FAULT	Discrepancy between model detected and model programmed.	- Incorrect machine model programmed. - GCON or PCON ECM.	All functions inhibited.
C025	C025:SYSTEMFAULT PLAT OVLD:NOCAL	Platform overload system not calibrated.	- Platform overload system not calibrated. - GCON or PCON ECM.	All functions inhibited.
C028	C028:SERVICE OVERRIDE MODE ON	Machine is in service override mode.	Machine programmed for use in service override mode.	All functions inhibited except for down function and up function. Platform can be elevated only once with the maximum elevate time of XX seconds. Elevate time XX depends on machine model.
C029	C029:SYSTEMFAULT OUTRIGGER:NoCal	Outrigger fault, not calibrated.	- Calibrate outriggers - Contact Genie support.	All functions operate. Will not lift above the down limit switches.
C030	C030:DCON RR ECM FAULT TYPE 01	Hardware failure of the right rear drive controller.	Right rear DCON ECM.	Performance reduced or all functions inhibited.
C031	C031:DCON LR ECM FAULT TYPE 01	Hardware failure of the left rear drive controller.	Left rear DCON ECM.	Performance reduced or all functions inhibited.
C032	C032:DCON RR ECM FAULT TYPE 02	Setup initialization failure of the right rear drive controller at system startup.	- Drive input active at system startup. - Faulty drive joystick. - Incorrect software.D14 - Right rear DCON ECM.	Performance reduced or drive inhibited or all functions inhibited.
C033	C033:DCON LR ECM FAULT TYPE 02	Setup initialization failure of the left rear drive controller at system startup.	- Drive input active at system startup. - Faulty drive joystick. - Incorrect software.D14 - Left rear DCON ECM.	Performance reduced or drive inhibited or all functions inhibited.

Fault Codes

Type "CXXX" Faults, continued

DTC Number	Message on GCON LCD	Description	Possible Causes	Failure Mode
C034	C034:DCON RR ECM FAULT TYPE 03	Valve driver failure of the right rear drive controller.	• Right rear DCON ECM.	Drive functions inhibited.
C035	C034:DCON LR ECM FAULT TYPE 03	Valve driver failure of the left rear drive controller.	• Left rear DCON ECM.	Drive functions inhibited.
C036	C036:DCON RR ECM FAULT TYPE 04	Right rear drive controller voltage out of range.	• Battery charger connected to AC power source. • Batteries to low. • Right rear DCON ECM.	All functions inhibited.
C037	C037:DCON LR ECM FAULT TYPE 04	Left rear drive controller voltage out of range.	• Battery charger connected to AC power source. • Batteries to low. • Left rear DCON ECM.	All functions inhibited.
C038	C038:DCON RR ECM FAULT TYPE 05	Capacitor charge failure of the right rear drive controller.	• Open on B+ or B- to the right rear drive controller. • Right rear DCON ECM.	All functions inhibited.
C039	C039:DCON LR ECM FAULT TYPE 05	Capacitor charge failure of the left rear drive controller.	• Open on B+ or B- to the left rear drive controller. • Left rear DCON ECM.	All functions inhibited.
C040	C040:DCON RR ECM FAULT TYPE 06	Open circuit to the PEV (B2) circuit of the right rear drive controller.	• Open circuit of the right rear motor controller harness. • Key switch relay CR61 not closed. • Right rear DCON or GCON ECM.	All functions inhibited.
C041	C041:DCON LR ECM FAULT TYPE 06	Open circuit to the PEV (B2) circuit of the LEFT rear drive controller.	• Open circuit of the left rear motor controller harness. • Key switch relay CR61 not closed. • Left rear DCON or GCON ECM.	All functions inhibited.
C042	C042:DCON RR ECM FAULT TYPE 07	Open circuit of the key switch circuit or battery positive/negative of the right rear drive controller.	• Open circuit of the right rear motor controller harness. • Open circuit to B+ and/or B-. • Key switch relay CR61 not closed. • Right rear DCON or GCON ECM.	All functions inhibited.
C043	C043:DCON LR ECM FAULT TYPE 07	Open circuit of the key switch circuit or battery positive/negative of the left rear drive controller.	• Open circuit of the left rear motor controller harness. • Open circuit to B+ and/or B-. • Key switch relay CR61 not closed. • Left rear DCON or GCON ECM.	All functions inhibited.
C044	C044:DCON RR ECM FAULT TYPE 08	Communication error of the CAN circuit between the GCON and the right rear motor controller.	• Open circuit of the right rear motor controller harness. • Right rear DCON or GCON ECM.	All functions inhibited.
C045	C045:DCON LR ECM FAULT TYPE 08	Communication error of the CAN circuit between the GCON and the left rear motor controller.	• Open circuit of the left rear motor controller harness. • Left rear DCON or GCON ECM.	All functions inhibited.
C046	C046:DCON RR ECM FAULT TYPE 09	Communication error of the CAN circuit between the GCON and the right rear motor controller.	• Open or short circuit of the right rear motor controller harness. • Right rear DCON or GCON ECM.	All functions inhibited.
C047	C045:DCON LR ECM FAULT TYPE 09	Communication error of the CAN circuit between the GCON and the left rear motor controller.	• Open or short circuit of the left rear motor controller harness. • Left rear DCON or GCON ECM.	All functions inhibited.
C048	C048:DCON RR ECM FAULT TYPE 10	Output error of the thermal sensor circuit of the right rear motor controller.	• Right rear DCON ECM.	Performance reduced.
C049	C049:DCON LR ECM FAULT TYPE 10	Output error of the thermal sensor circuit of the left rear motor controller.	• Left rear DCON ECM.	Performance reduced.
C050	C050:SOC MONITOR NOT DETECTED	State of charge monitor not detected.	• SOC monitor • SOC monitor harness • Incorrect baud rate setting on acuity • GCON ECM.	Performance reduced.
C053	C053:PCON-GCON SOFTWARE MISMATCH	Software revisions do not match between the PCON and GCON.	• C053 displayed at GCON, PCON with older software revision connected to GCON with newer software revision. • C053 displayed at PCON, PCON with newer software revision connected to GCON with older software revision.	All functions inhibited.

Schematics



Observe and Obey:

- ☑ Troubleshooting and repair procedures shall be completed by a person trained and qualified on the repair of this machine
- ☑ Immediately tag and remove from service a damaged or malfunctioning machine.
- ☑ Repair any machine damage or malfunction before operating the machine.

Before Troubleshooting:

- ☑ Read, understand and obey the safety rules and operating instructions in the appropriate operator's manual on your machine.
- ☑ Be sure that all necessary tools and test equipment are available and ready for use.

About This Section

There are two groups of schematics in this section.

Electrical Schematics

⚠ WARNING

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

Hydraulic Schematics

⚠ WARNING

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

Electrical 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 (120V AC generator)
	CB4 = 10 amp (240V AC generator)
	CB4A = 15 amp (110V AC generator)
	CB4A = 8 amp (220V AC generator)
	CB4B = 15 amp (110V AC generator)
	CB4B = 8 amp (220V 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
	CR77 = Down interrupt
	CR78 = Up interrupt
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 = 15 amp (start battery)
	F32 = 25 amp (120V AC generator)
	F32 = 12 amp (240V AC generator)
	F33 = 20 amp (glow plug)
FB	Flashing beacon
	FB1 = Option
G	Gauge
	G8 = Diagnostic display

Electrical Component and Wire Color Legends

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 Legend, continued	
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
	LS12 = Left front outrigger (option)
	LS13 = Right front outrigger (option)
	LS14 = Left rear outrigger (option)
	LS15 = Right rear outrigger (option)
	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

Electrical Component and Wire Color Legends

R	Resistor
	R1 = 2k ohm
	R2 = 51 ohm
	R3 = 51 ohm
	R4 = 180 ohm
	R5 = 180 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
	S26 = Lift pump speed sensor
SW	Switch
	SW1 = Load sense calibration
	SW2 = Oil pressure
TB	Terminal base (Ground controls terminal strip)
TS	Toggle Switch
	TS10 = Auxiliary down (ground)
	TS51 = Auxiliary down enable (ground)
	TS73 = Calibrate
U	Electronic component
	U1 = GCON ground)
	U2 = PCON (platform)
	U3A = Right DCON
	U3B = Left DCON
	U4 = Battery charger
	U5 = Boost charger
	U6 = Converter
	U7 = SC050
	U8 = CAN display
	U9 = PSI transducer
	U10 = Angle sensor
VR	Voltage regulator
	VR1 = Voltage regulator (alternator)

Electrical Component Legend, continued	
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

Electrical Component and Wire Color Legends

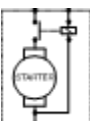
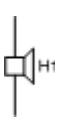
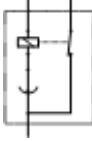
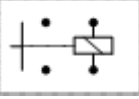
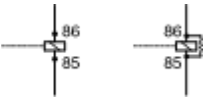
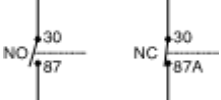
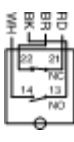
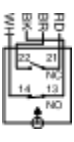
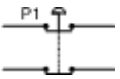
Wire Color Legend	
Color	Description
BL	Blue
BK	Black
BR	Brown
GR	Green
OR	Orange
PP	Purple
RD	Red
WH	White
YL	Yellow
BL/RD	Blue/Red
BL/WH	Blue/White
BK/RD	Black/Red
OR/WH	Orange/White
RD/BK	Red/Black
RD/WH	Red/White
WH/BL	White Blue
WH/BK	White/Black
WH/RD	White/Red
WH/YL	White/Yellow
YL/BK	Yellow/Black

Hydraulic Component Legend

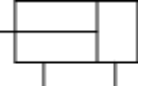
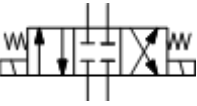
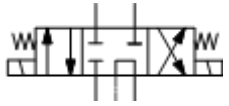
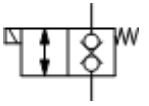
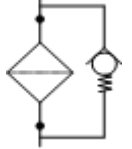
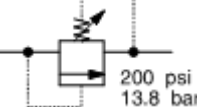
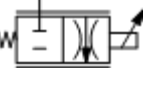
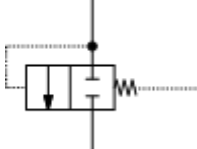
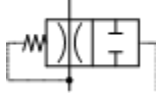
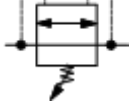
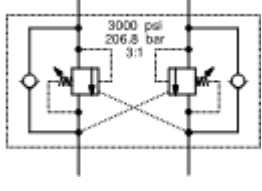
Item	Function
BA	3 position, 4 way directional valve - outrigger cylinders extend/retract (option)
CA	2 position, 2 way valve - platform down (all models)
CB	2 position, 2 way valve - platform down (GS-4069)
CC	2 position, 2 way valve - LR outrigger (option)
CD	2 position, 2 way valve - RR outrigger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

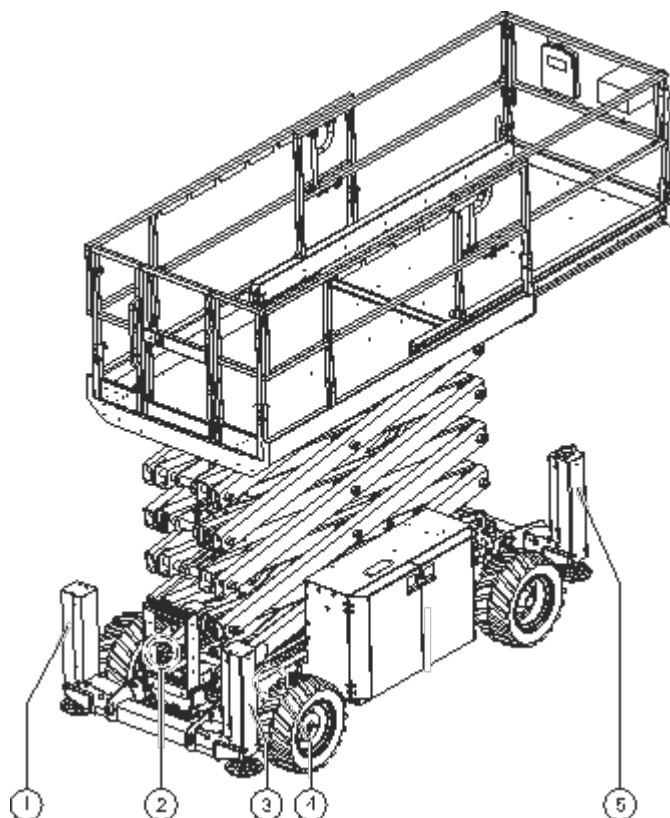
Electrical Symbols Legend

				
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)	Priority flow regulator	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	

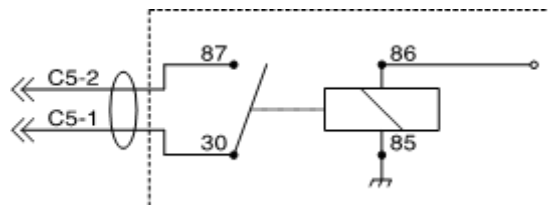
Limit Switch Legend



- 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 right front outrigger limit switch, LS13
left front outrigger limit switch, LS12 (not shown)

Charger Interlock

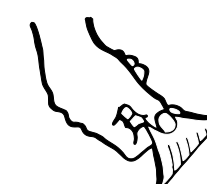


Interlock relay (NO), 10A contact

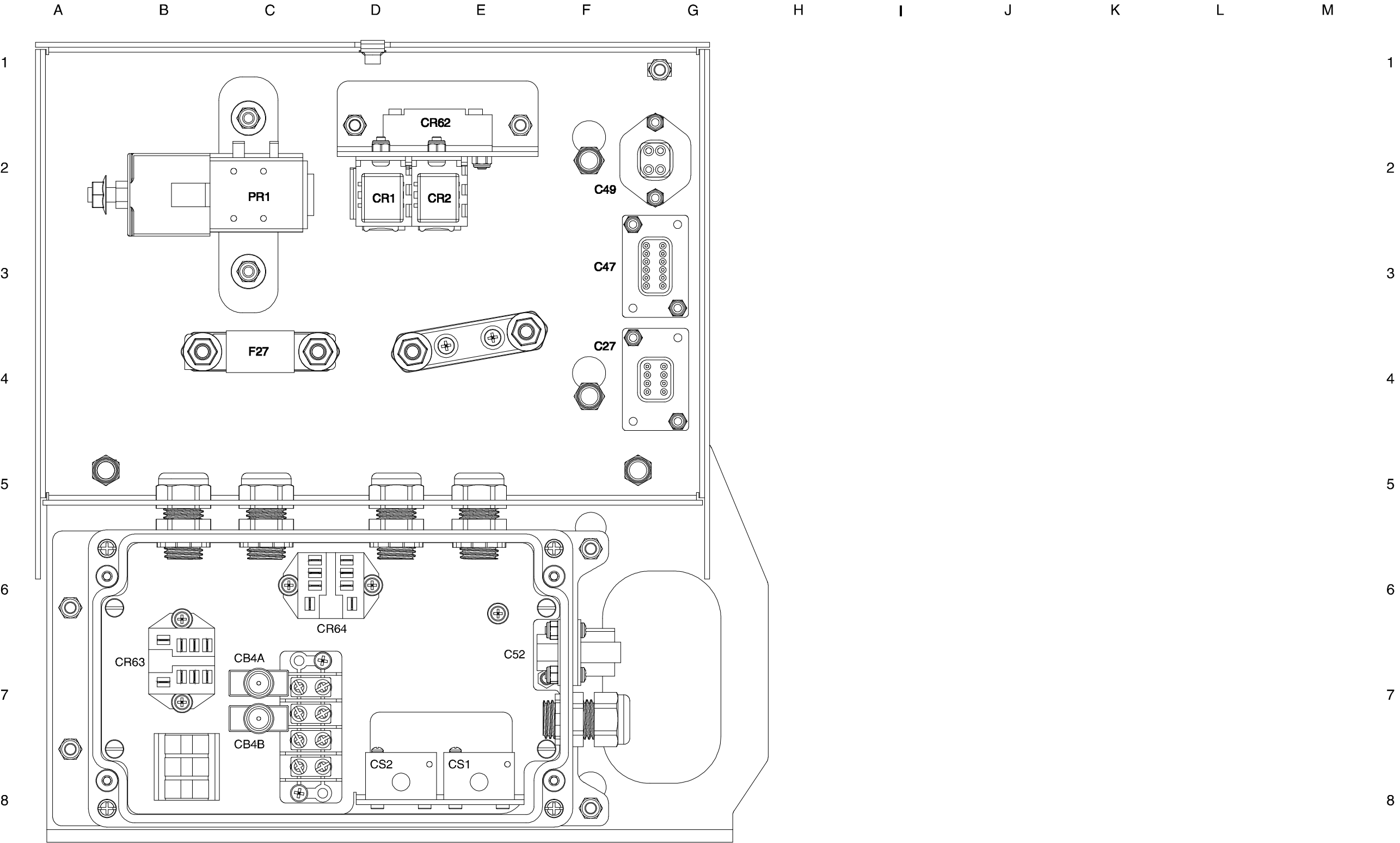
- 1 Charger not connected to battery or main supply. (Contact open)
- 2 Charger connected to battery. (Contact closed)
- 3 Charger connected to battery and main supply. (Contact open)

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

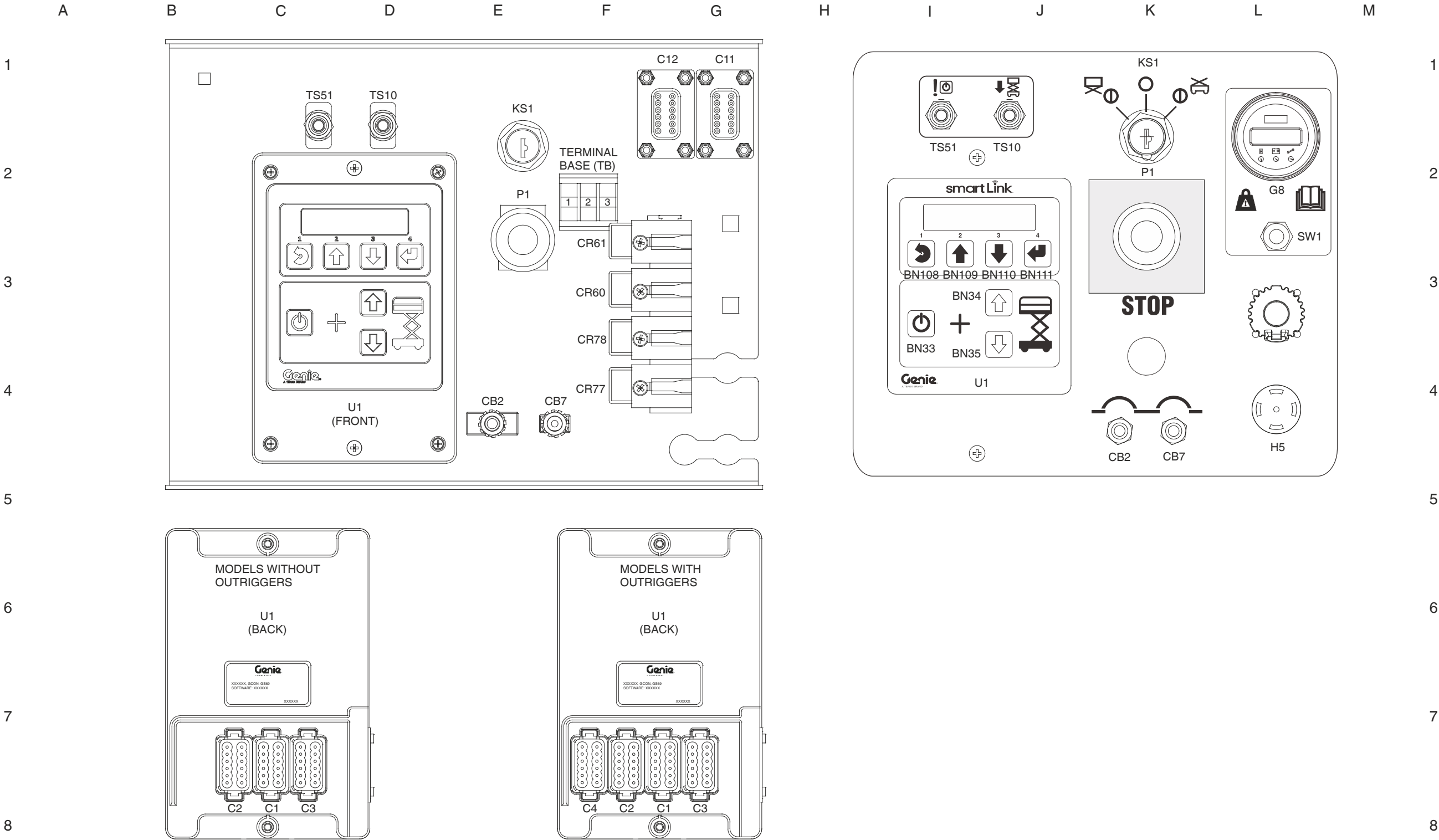
Contactor Box Layout, All Models



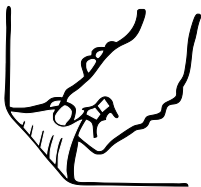
Contactor Box Layout, All Models



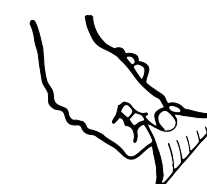
Ground Control Box Layout



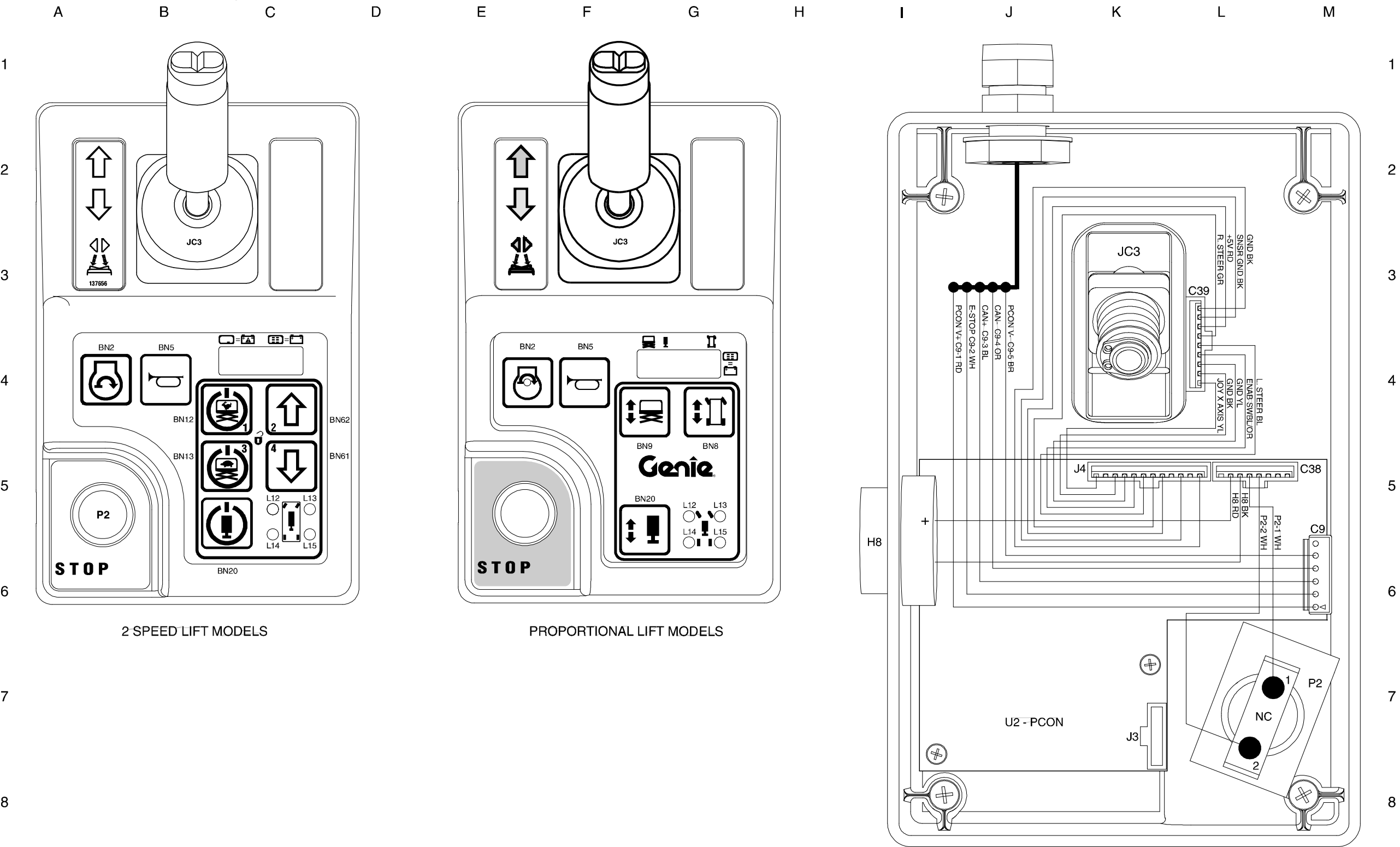
Ground Control Box Layout



Platform Control Box Layout, All Models



Platform Control Box Layout, All Models



Electrical Schematic, Generator Option

A B C D E F G H I J K L M

1

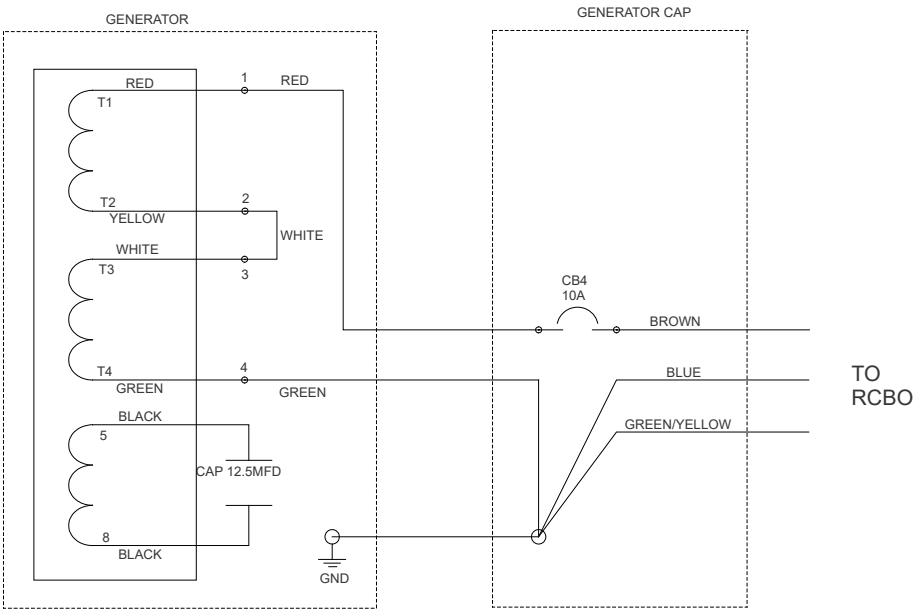
240VAC/50HZ DESIGN

1

2

3

4



2

3

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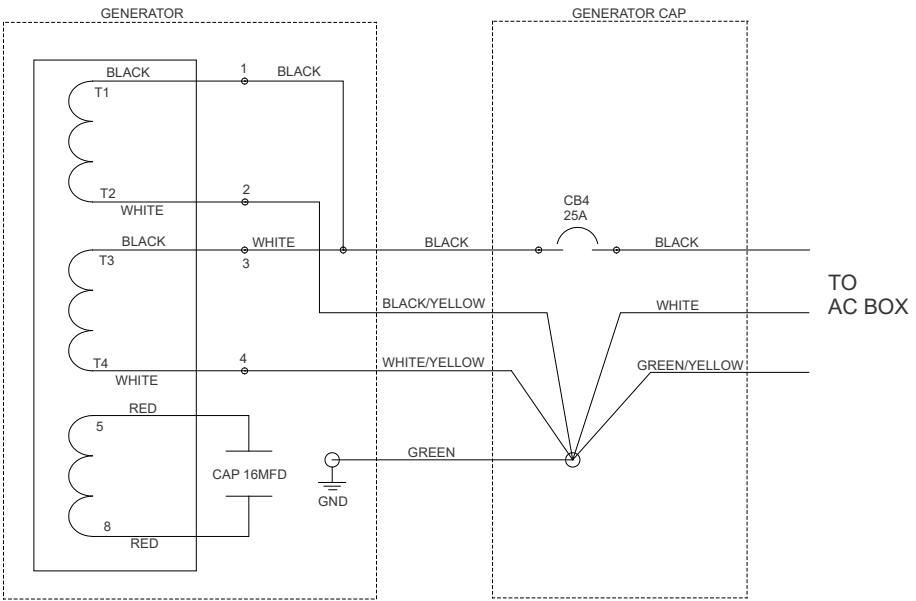
120VAC/60HZ DESIGN

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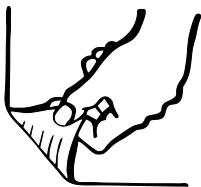


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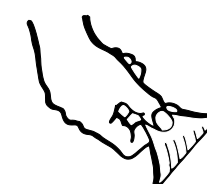
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8

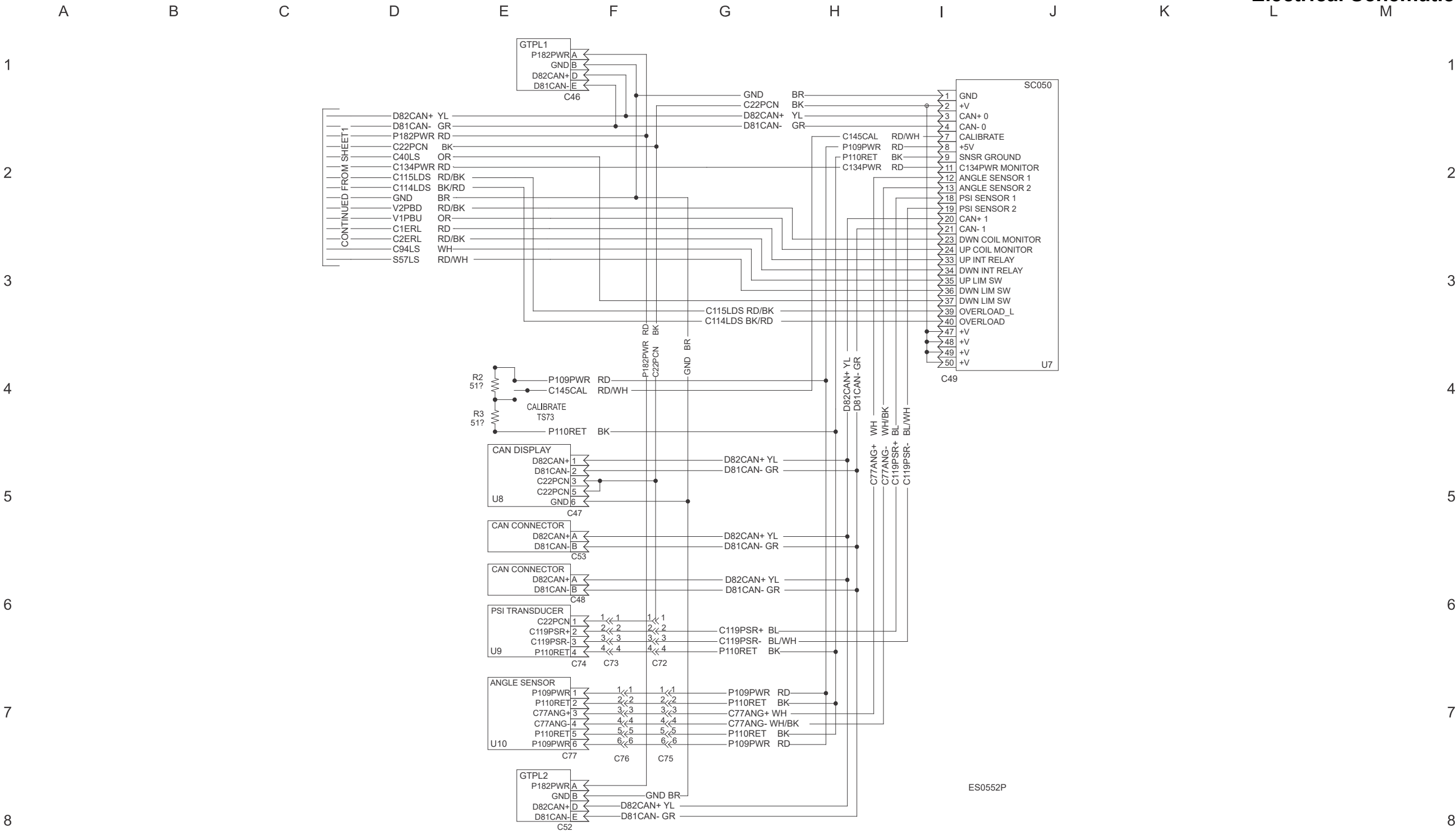
Electrical Schematic, Generator Option



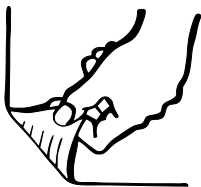
Electrical Schematic



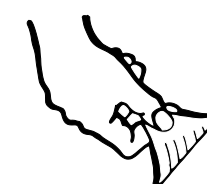
Electrical Schematic



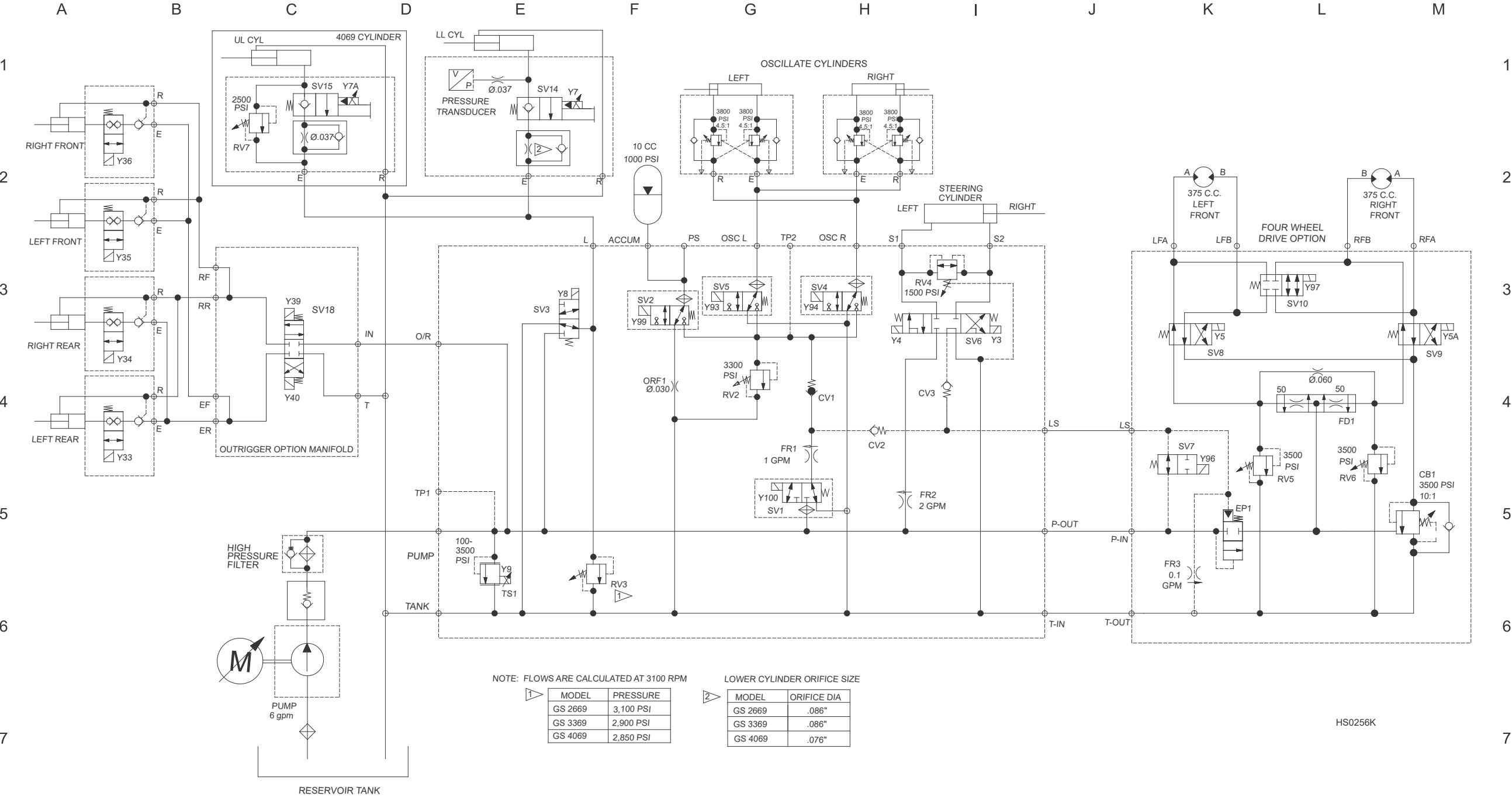
Electrical Schematic



Hydraulic Schematic



Hydraulic Schematic



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.