Genie®
A TEREX BRAND

Service Manual

Serial Number Range

GS-2669 RT
GS-3369 RT
GS-4069 RT

from GS6911-101

Part No. 229753
Rev D1
May 2014

Introduction

Important

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

This manual provides detailed scheduled maintenance information for the machine owner and user. It also provides troubleshooting fault codes 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 B/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:

www.genielift.com
e-mail: awp.techpub@terex.com

229753 Rev D January 2014
First Edition, Fourth Printing

♻ Printed on recycled paper

Printed in U.S.A.

Revision History

Revision	Date	Section	Procedure / Schematic Page / Description
A	6/2011		New release
B	9/2011	2 - Spec.	Kubota WG972
		3 - Maint.	A-6, A-8, A-9, A-10, A-11, D-3, D-5,E-3
		4 - Repair	5-1, 5-2, 5-3, 5-4, 5-5, 5-6
		6 - Schem.	6-8, 6-10, 6-18, 6-26, 6-34, 6-42, 6-50, 6-58, 6-66
C	12/2011	2 - Spec.	Performance, Hydraulic Comp, Kubota WG972
		3 - Maint.	Inspection report, A-5, B-11
		4 - Repair	7-3, 9-4, 11-5
		6 - Schem.	All schematics.
C1	5/2012	2 - Spec.	Tires & Wheels, Gradeability, Hose & Fitting Torque
		3 - Maint.	A-7, A-11, B-16, D-6
		4 - Repair	4-50
		6 - Schem.	6-2, 6-4, 6-8, 6-11, 6-19, 6-27, 6-35, 6-43, 6-51, 6-59, 6-67, 6-74, 6-75
D	1/2014	4 - Repair	9-2
		6 - Schem.	All schematics and Legends
D1	5/2014	2 - Spec.	Machine Spec.

REFERENCE EXAMPLES:

Kubota Engine_Section 2_Specifications.
A-6,B-3,C-7_Section 3_Maintenance Procedure.
3-2, 6-4, 9-1_Section 4_Repair Procedure.
Fault Codes_Section 5.
6-35, 6-56, 6-104_Section 6_Schematic Page #.

Electronic Version

Click on any procedure or page number highlighted in blue to view the update.

REVISION HISTORY, CONTINUED

Revision	Date	Section	Procedure / Schematic Page / Description

REFERENCE EXAMPLES:

Kubota Engine_Section 2_Specifications.
A-6,B-3,C-7_Section 3_Maintenance Procedure.
3-2, 6-4, 9-1_Section 4_Repair Procedure.
Fault Codes_Section 5.
6-35, 6-56, 6-104_Section 6_Schematic Page #.

Electronic Version

Click on any procedure or page number highlighted in blue to view the update.

Serial Number Legend

A TEREX BRAND

Model: GS-3369
Serial number: GS6911A-12345
Model year: 2011 **Manufacture date:** 04/12/11
Electrical schematic number: ES0141
Machine unladen weight: 2,714 lb / 1,231 kg

Rated work load (including occupants): 500 lb / 227 kg

Maximum allowable inclination of the chassis:

N/A

Gradeability: N/A

Maximum allowable side force : 100 lb / 445 N
Maximum number of platform occupants: 2

Country of manufacture: USA
This machine complies with:

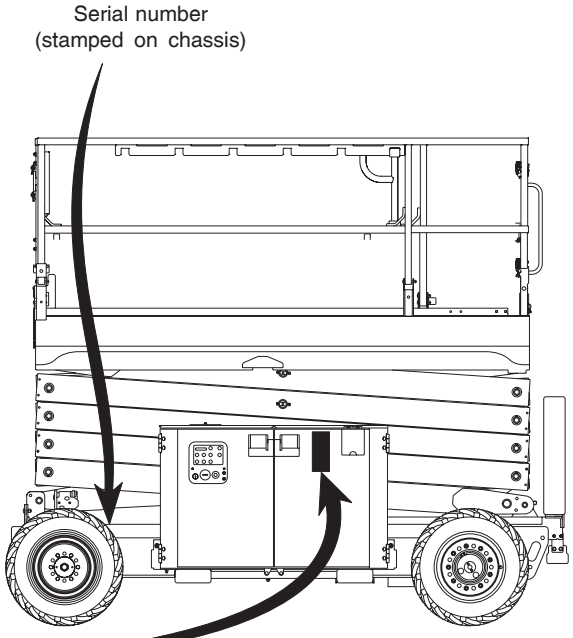
ANSI A92.6
CAN B354.2

Terex South Dakota, Inc.
500 Oak Wood Road
PO Box 1150
Watertown, SD 57201
USA

PN - 96472

GS69 11 A - 12345

- GS69: Model
- 11: Model year
- A: Facility code (used only for models manufactured in multiple facilities)
- 12345: Sequence number



Safety Rules

Danger

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

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

Do Not Perform Maintenance Unless:

- ☑ You are trained and qualified to perform maintenance on this machine.
- ☑ You read, understand and obey:
  - manufacturer's instructions and safety rules
  - employer's safety rules and worksite regulations
  - applicable governmental regulations
- ☑ You have the appropriate tools, lifting equipment and a suitable workshop.

Personal Safety

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

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

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

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

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

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

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

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

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

Workplace Safety

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.

Table of Contents

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

Section 6 **Schematics,** continued

TABLE OF CONTENTS

Section 6 **Schematics,** continued

Specifications

Machine Specifications

Fluid capacities	
Hydraulic tank (maximum fill capacity)	16.5 gallons 62.5 liters
Hydraulic system without outriggers (including tank), GS-2669 RT	18 gallons 68 liters
Hydraulic system with outriggers (including tank), GS-2669 RT	19.5 gallons 74 liters
Hydraulic system without outriggers (including tank), GS-3369 RT	18 gallons 68 liters
Hydraulic system with outriggers (including tank), GS-3369 RT	19.5 gallons 74 liters
Hydraulic system without outriggers (including tank), GS-4069 RT	18.5 gallons 70 liters
Hydraulic system with outriggers (including tank), GS-4069 RT	20 gallons 76 liters
Drive hub EP 90 or SAE 90 multipurpose hypoid gear oil API service classification GL5	24.5 ounces 0.7 liters
Fuel tank	10 gallons 38 liters

Tire and wheels	
Wheel lugs (steer end)	6 @ 1/2-20
Lug bolt torque, dry Front	90 ft-lbs 122 Nm
Lug bolt torque, lubricated Front	68 ft-lbs 92 Nm
Wheel lugs (non-steer end)	9 @ 5/8-18
Lug nut torque, dry Rear	170 ft-lbs 230 Nm
Lug nut torque, lubricated Rear	130 ft-lbs 176 Nm

Castle nut (steer end)	
Castle nut torque, dry	300 ft-lbs 406 Nm
Castle nut torque, lubricated	225 ft-lbs 305 Nm

Rough Terrain, foam-filled	
Tire size	26 x 12D380
Tire ply rating	6
Tire diameter	26 in 66 cm
Tire width	12 in 30 cm
Weight	177.5 lbs (+/- 7.5 lbs) 80.5 kg (+/- 3.4 kg)

Non-marking, foam	
Tire size	26 x 12D380
Tire ply rating	6
Tire diameter	26 in 66 cm
Tire width	12 in 30 cm
Weight	177.5 lbs (+/- 7.5 lbs) 80.5 kg (+/- 3.4 kg)

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

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice.

SPECIFICATIONS

Performance Specifications

Drive speed, maximum	
Platform stowed Low torque	3.5 mph 5.6 km/h 40 ft / 7.2 sec 12.2 m / 7.2 sec
Platform stowed High torque	0.9 mph 1.4 km/h 40 ft / 24.8 sec 12.2 m / 24.8 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 2 ft less than 0.6 m

Gradeability	See Operator's Manual

Function speed, maximum from platform controls (with maximum rated load in platform)	
GS-2669 RT	
Platform up	29 to 39 seconds
Platform down	26 to 36 seconds
GS-3369 RT	
Platform up	34 to 44 seconds
Platform down	24 to 34 seconds
GS-4069 RT	
Platform up	56 to 66 seconds
Platform down	26 to 36 seconds

Outrigger leveling, maximum	
Front	5.3°
Back	4.2°
Side to side	11.7°

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice.

Hydraulic Specifications

Hydraulic Oil Specifications	
Hydraulic oil type	Chevron Rando HD MV equivalent
Viscosity grade	Multi-viscosity
Viscosity index	200
Cleanliness level, minimum	15/13
Water content, maximum	200 ppm

Chevron Rando HD MV oil is fully compatible and mixable with Shell Donax TG (Dexron III) oils.
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, corrosion inhibition, seal conditioning, and foam and aeration suppression properties.

Optional fluids	
Biodegradable	Petro Canada Environ MV 46 Statoil Hydra Way Bio Pa 32 BP Biohyd SE-S
Fire resistant	UCON Hydrolube HP-5046 Quintolubric 822
Mineral based	Shell Tellus S2 V 32 Shell Tellus S2 V 46 Chevron Aviation A Arnica 32

NOTICE Continued use of Chevron Aviation A hydraulic fluid when ambient temperatures are consistently above 32°F / 0°C may result in component damage.

Note: Use Chevron Aviation A hydraulic fluid when ambient temperatures are consistently below 0°F / -17°C.

Note: Use Shell Tellus S2 V 46 hydraulic oil when oil temperatures consistently exceed 205°F / 96°C.

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

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice.

SPECIFICATIONS

Hydraulic Components Specifications

Function pump	
Type:	gear pump
Displacement per revolution	1.0 cu in 16 cc
Flow rate @ 3000 rpm	13 gpm 48 L/min
Hydraulic tank return filter	10 micron with 25 psi / 1.7 bar bypass

Function manifold	
System relief valve pressure	3500 psi 241 bar
Lift relief valve pressure GS-2669 RT	3100 psi 214 bar
Lift relief valve pressure GS-3369 RT	2900 psi 200 bar
Lift relief valve pressure GS-4069 RT	2850 psi 197 bar
Oscillate relief valve pressure	3300 psi 228 bar
Steer flow regulator	2 gpm 7.6 L/min
Lift / Outrigger flow regulator	6 gpm 23 L/min
Oscillate flow regulator	1 gpm 4 L/min

Traction manifold	
Traction relief valve pressure	2500 psi 172 bar

Generator manifold	
Relief valve pressure	2700 psi 186 bar
Flow rate	7 gpm 26 L/min

Drive motors	
Displacement, fixed (steer end)	22.9 cu in 375 cc
Displacement, variable (non-steer end)	.54 - 1.53 cu in 8.8 - 25 cc

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice.

Manifold Component Specifications

Plug torque	
SAE No. 4	13 ft-lbs / 18 Nm
SAE No. 6	18 ft-lbs / 24 Nm
SAE No. 8	50 ft-lbs / 68 Nm
SAE No. 10	55 ft-lbs / 75 Nm

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice.

SPECIFICATIONS

Kubota D1105 Engine

Displacement	68.53 cu in 1.123 liters
Number of cylinders	3
Bore and stroke	3.07 x 3.09 inches 78 x 78.4 mm
Horsepower, gross intermittent	24.8 @ 3000 rpm 18.5 kW
Firing order	1 - 2 - 3
Compression ratio	24:1
Compression pressure	412 to 469 psi 28.4 to 32.3 bar
Low idle Frequency	1500 rpm 25 hz
High idle Frequency	3000 rpm 50 hz
Governor	centrifugal mechanical
Valve clearance, cold	0.0057 to 0.0072 in 0.145 to 0.185 mm
Engine coolant capacity	3.3 quarts 3.1 liters
Lubrication system	
Oil pressure	28 to 64 psi 1.93 to 4.41 bar
Oil capacity (including filter)	5.4 quarts 5.1 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.

Injection system	
Injection pump make	Bosch MD
Injection timing	18° BTDC
Injection pump pressure	1991 psi 137 bar

Fuel requirement
For fuel requirements, refer to the engine Operator's Manual on your machine.

Battery	
Type	12V DC
Group	34/78
Quantity	1
Ampere hour	75 A
Cold cranking ampere	900A
Reserve capacity @ 25A rate	120 minutes

Alternator	
Output	40A, 14V DC
Fan belt deflection inch 7 to 9 mm	0.28 to 0.35

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice.

SPECIFICATIONS

Kubota WG972 Engine

Displacement	58.7 cu in 0.96 liters
Number of cylinders	3
Bore & stroke	2.93 x 2.90 inches 74.5 x 73.6 mm
Horsepower, Gross intermittent	29.0 @ 3200 rpm 21.6 kW @ 3200 rpm
Firing order	1 - 2 - 3
Compression ratio	9.2:1
Compression pressure	128 to 185 psi 8.8 to 12.7 bar
Low idle Frequency	1500 rpm 25 hz
High idle Frequency	3000 rpm 50 hz
Governor	centrifugal flyweight mechanical
Valve clearances, cold	0.0057 to 0.0073 inches 0.145 to 0.185 mm
Engine coolant capacity	2.4 quarts 2.3 liters

Lubrication system	
Oil pressure (operating temperature @ 3850 rpm)	28 to 64 psi 1.9 to 4.4 bar
Oil capacity (including filter)	3.6 quarts 3.4 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.

Fuel pump	
Fuel pressure, static	2.84 psi 0.19 bar
Fuel flow rate	0.125 gpm 0.47 L/min

Starter motor	
Brush length, new	0.669 in 17 mm
Brush length wear limit	0.453 in 11.5 mm
Brush spring tension	50 to 91 ounces 13.7 to 25.5 N

Battery	
Type	12V DC
Group	34/78
Quantity	1
Ampere hour	75AH
Cold cranking ampere	900A
Reserve capacity at 25A rate	120 minutes

SPECIFICATIONS

Ignition System	
Ignition spark advance	21° BTDC
Ignition coil primary resistance	1.3 to 1.6Ω @ 75°F / 24°C
Ignition coil secondary resistance	10.7 to 14.5 kΩ @ 75°F / 24°C
#1 Spark plug wire resistance	2.81 to 4.79kΩ
#2 Spark plug wire resistance	3.4 to 5.8kΩ
#3 Spark plug wire resistance	3.57 to 6.09kΩ
Spark plug type	NGK BKR4E-11
Spark plug gap	0.024 to 0.028 inches 0.6 to 0.7 mm
Alternator	
Output	30A, 14V DC
Fan belt deflection	0.28 to 0.35 inch 7.0 to 9.0 mm

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice.

SPECIFICATIONS

Perkins 403D-11 Engine

Displacement	68.9 cu in 1.1 liters
Number of cylinders	3
Bore and stroke	3.03 x 3.19 inches 77 x 81 mm
Horsepower, net intermittent	25 @ 3000 rpm 18.6 kW
Firing order	1 - 2 - 3
Compression ratio	23:1
Compression pressure	425 psi 29 bar
Pressure of the lowest cylinder must be within 50 psi / 3.5 bar of the highest cylinder, though at no time less than 360 psi / 25 bar	
Low idle Frequency	1500 rpm 25 hz
High idle Frequency	3000 rpm 50 hz
Governor	all-speed mechanical
Valve clearance, cold	0.0078 in 0.2 mm
Engine coolant capacity	2.0 quarts 1.9 liters

Engine coolant should be clean soft water with 50% anti freeze concentration ethylene glycol to BS 6580:1992 or ASTMD 3306-89 or AS 2108-1977

Lubrication system	
Oil pressure (hot @ 2000 rpm)	40 to 60 psi 3 to 4 bar
Oil capacity (including filter)	4.6 quarts 4.4 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.

Injection system	
Injection pump make	Bosch
Injection timing	23° BTDC @ 3000 rpm
Injection pump pressure	2133 psi 150 bar
Fuel requirement	diesel number 2-D

Battery	
Type	12V DC
Group	34/78
Quantity	1
Ampere hour	75AH
Cold cranking ampere	900A
Reserve capacity @ 25A rate	120 minutes

Alternator	
Output	40A, 12V DC
Fan belt deflection	3/16 inch 5 mm

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)

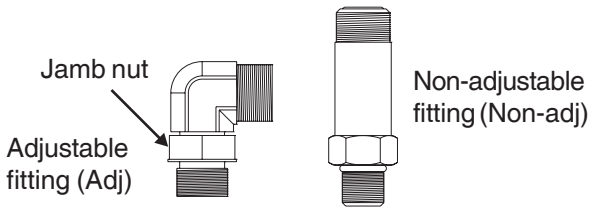
SAE Dash size	Torque
-4	10 ft-lbs / 13.6 Nm
-6	30 ft-lbs / 40.7 Nm
-8	40 ft-lbs / 54.2 Nm
-10	60 ft-lbs / 81.3 Nm
-12	85 ft-lbs / 115 Nm
-16	110 ft-lbs / 150 Nm
-20	140 ft-lbs / 190 Nm
-24	180 ft-lbs / 245 Nm

JIC 37° Fittings
(swivel nut or hose connection)

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

SAE O-ring Boss Port
(tube fitting - installed into Aluminum)
(all types)

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



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

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-rings used in the Parker Seal Lok™ fittings and hose ends are custom-size O-rings. They are not standard SAE 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 that the face seal O-ring 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 per given size as shown in the table.

6 Operate all machine functions and inspect the hoses and fittings and related components to confirm that 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 Make a reference mark on one of the flats of the hex nut, and continue it on to the body hex fitting with a permanent ink marker. Refer to Figure 1.

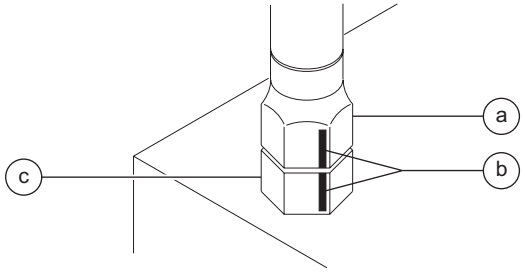


Figure 1

a hex nut
b reference mark
c body hex fitting

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

Note: Use the *JIC 37° Fittings* table on the previous page to determine the correct number of flats for the proper tightening position.

Note: The marks indicate that 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.

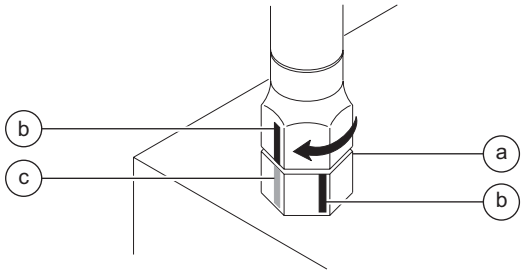


Figure 2

a body hex fitting
b reference mark
c 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 hoses and fittings and related components to confirm that there are no leaks.

SPECIFICATIONS

SAE FASTENER TORQUE CHART

• This chart is to be used as a guide only unless noted elsewhere in this manual •

SIZE	THREAD	Grade 5				Grade 8				A574 High Strength Black Oxide Bolts	
		LUBED		DRY		LUBED		DRY		LUBED	
		in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
1/4	20	80	9	100	11.3	110	12.4	140	15.8	130	14.7
	28	90	10.1	120	13.5	120	13.5	160	18	140	15.8
		LUBED		DRY		LUBED		DRY		LUBED	
		ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm
5/16	18	13	17.6	17	23	18	24	25	33.9	21	28.4
	24	14	19	19	25.7	20	27.1	27	36.6	24	32.5
3/8	16	23	31.2	31	42	33	44.7	44	59.6	38	51.5
	24	26	35.2	35	47.4	37	50.1	49	66.4	43	58.3
7/16	14	37	50.1	49	66.4	50	67.8	70	94.7	61	82.7
	20	41	55.5	55	74.5	60	81.3	80	108.4	68	92.1
1/2	13	57	77.3	75	101.6	80	108.4	110	149	93	126
	20	64	86.7	85	115	90	122	120	162	105	142
9/16	12	80	108.4	110	149	120	162	150	203	130	176
	18	90	122	120	162	130	176	170	230	140	189
5/8	11	110	149	150	203	160	217	210	284	180	244
	18	130	176	170	230	180	244	240	325	200	271
3/4	10	200	271	270	366	280	379	380	515	320	433
	16	220	298	300	406	310	420	420	569	350	474
7/8	9	320	433	430	583	450	610	610	827	510	691
	14	350	474	470	637	500	678	670	908	560	759
1	8	480	650	640	867	680	922	910	1233	770	1044
	12	530	718	710	962	750	1016	990	1342	840	1139
1 1/8	7	590	800	790	1071	970	1315	1290	1749	1090	1477
	12	670	908	890	1206	1080	1464	1440	1952	1220	1654
1 1/4	7	840	1138	1120	1518	1360	1844	1820	2467	1530	2074
	12	930	1260	1240	1681	1510	2047	2010	2725	1700	2304
1 1/2	6	1460	1979	1950	2643	2370	3213	3160	4284	2670	3620
	12	1640	2223	2190	2969	2670	3620	3560	4826	3000	4067

METRIC FASTENER TORQUE CHART

• This chart is to be used as a guide only unless noted elsewhere in this manual •

Size	Class 4.6				Class 8.8				Class 10.9				Class 12.9			
(mm)	LUBED		DRY		LUBED		DRY		LUBED		DRY		LUBED		DRY	
	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
5	16	1.8	21	2.4	41	4.63	54	6.18	58	6.63	78	8.84	68	7.75	91	10.3
6	19	3.05	36	4.07	69	7.87	93	10.5	100	11.3	132	15	116	13.2	155	17.6
7	45	5.12	60	6.83	116	13.2	155	17.6	167	18.9	223	25.2	1.95	22.1	260	29.4
	LUBED		DRY		LUBED		DRY		LUBED		DRY		LUBED		DRY	
	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm
8	5.4	7.41	7.2	9.88	14	19.1	18.8	25.5	20.1	27.3	26.9	36.5	23.6	32	31.4	42.6
10	10.8	14.7	14.4	19.6	27.9	37.8	37.2	50.5	39.9	54.1	53.2	72.2	46.7	63.3	62.3	84.4
12	18.9	25.6	25.1	34.1	48.6	66	64.9	88	69.7	94.5	92.2	125	81	110	108	147
14	30.1	40.8	40	54.3	77.4	105	103	140	110	150	147	200	129	175	172	234
16	46.9	63.6	62.5	84.8	125	170	166	226	173	235	230	313	202	274	269	365
18	64.5	87.5	86.2	117	171	233	229	311	238	323	317	430	278	377	371	503
20	91	124	121	165	243	330	325	441	337	458	450	610	394	535	525	713
22	124	169	166	225	331	450	442	600	458	622	612	830	536	727	715	970
24	157	214	210	285	420	570	562	762	583	791	778	1055	682	925	909	1233

Scheduled Maintenance Procedures

Observe and Obey:

- ☑ Maintenance inspections shall be completed by a person trained and qualified on the maintenance of this machine.
- ☑ Scheduled maintenance inspections shall be completed daily, quarterly, semiannually, annually and every 2 years as specified on the *Maintenance Inspection Report.*

⚠WARNING Failure to perform each procedure as presented and scheduled could result in death, serious injury or substantial damage.

- ☑ Immediately tag and remove from service a damaged or malfunctioning machine.
- ☑ Repair any machine damage or malfunction before operating the machine.
- ☑ Use only Genie approved replacement parts.
- ☑ Machines that have been out of service for a period longer than 3 months must complete the quarterly inspection.
- ☑ Unless otherwise specified, perform each maintenance procedure with the machine in the following configuration:
  - Machine parked on a firm, level surface
  - Platform in the stowed position
  - Key switch in the off position with the key removed
  - The red Emergency Stop button in the off position at both ground and platform controls
  - Wheels chocked
  - All external AC power supply disconnected from the machine

About This Section

This section contains detailed procedures for each scheduled maintenance inspection.

Each procedure includes a description, safety warnings and step-by-step instructions.

Symbols Legend

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

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

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

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

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

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

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

SCHEDULED MAINTENANCE PROCEDURES

Maintenance Symbols Legend

Note: The following symbols have been used in this manual to help communicate the intent of the instructions. When one or more of the symbols appear at the beginning of a maintenance procedure, it conveys the meaning below.

Indicates that tools will be required to perform this procedure.

Indicates that new parts will be required to perform this procedure.

Indicates that a cold engine will be required to perform this procedure.

Indicates that a warm engine will be required to perform this procedure.

Indicates that dealer service will be required to perform this procedure.

Pre-delivery Preparation Report

The pre-delivery preparation report contains checklists for each type of scheduled inspection.

Make copies of the *Pre-delivery Preparation* report to use for each inspection. Store completed forms as required.

Maintenance Schedule

There are five types of maintenance inspections that must be performed according to a schedule—daily, quarterly, semiannually, annually, and two year. The *Scheduled Maintenance Procedures Section and the Maintenance Inspection Report* have been divided into five subsections—A, B, C, D, and E. Use the following chart to determine which group(s) of procedures are required to perform a scheduled inspection.

Inspection	Checklist
Daily or every 8 hours	A
Quarterly or every 250 hours	A + B
Semiannually or every 500 hours	A + B + C
Annually or every 1000 hours	A + B + C + D
Two year or every 2000 hours	A + B + C + D + E

Maintenance Inspection Report

The maintenance inspection report contains checklists for each type of scheduled inspection.

Make copies of the *Maintenance Inspection Report* to use for each inspection. Maintain completed forms for a minimum of 4 years or in compliance with your employer, jobsite and governmental regulations and requirements.

Pre-Delivery Preparation

Fundamentals

It is the responsibility of the dealer to perform the Pre-delivery Preparation.

The Pre-delivery Preparation is performed prior to each delivery. The inspection is designed to discover if anything is apparently wrong with a machine before it is put into service.

A damaged or modified machine must never be used. If damage or any variation from factory delivered condition is discovered, the machine must be tagged and removed from service.

Repairs to the machine may only be made by a qualified service technician, according to the manufacturer's specifications.

Scheduled maintenance inspections shall be performed by qualified service technicians, according to the manufacturer's specifications and the requirements listed in the responsibilities manual.

Instructions

Use the operator's manual on your machine.

The Pre-delivery Preparation consists of completing the Pre-operation Inspection, the Maintenance items and the Function Tests.

Use this form to record the results. Place a check in the appropriate box after each part is completed. Follow the instructions in the operator's manual.

If any inspection receives an N, remove the machine from service, repair and reinspect it. After repair, place a check in the R box.

Legend

Y = yes, completed
N = no, unable to complete
R = repaired

Comments

Pre-Delivery Preparation	Y	N	R
Pre-operation inspection completed			
Maintenance items completed			
Function tests completed			

Model

Serial number

Date

Machine owner

Inspected by (print)

Inspector signature

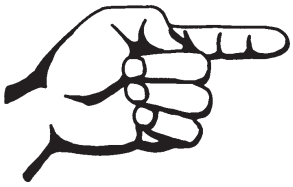
Inspector title

Inspector company

Genie®
A TEREX BRAND

Terex South Dakota, Inc. USA
500 Oak Wood Road
PO Box 1150
Watertown, SD 57201-6150
(605) 882-4000

Genie UK
The Maltings, Wharf Road
Grantham, Lincolnshire
NG31- 6BH England
(44) 1476-584333



This page intentionally left blank.

Maintenance Inspection Report

Model

Serial number

Date

Hour meter

Machine owner

Inspected by (print)

Inspector signature

Inspector title

Inspector company

Instructions

- Make copies of this report to use for each inspection.
- Select the appropriate checklist(s) for the type of inspection to be performed.

☐	**Daily or 8 hours Inspection: A**
☐	**Quarterly or 250 hours Inspection: A+B**
☐	**Semiannually or 500 hours Inspection: A+B+C**
☐	**Annually or 1000 hours Inspection: A+B+C+D**
☐	**Two year or 2000 hours Inspection: A+B+C+D+E**

- Place a check in the appropriate box after each inspection procedure is completed.
- Use the step-by-step procedures in this section to learn how to perform these inspections.
- If any inspection receives an “N”, tag and remove the machine from service, repair and reinspect it. After repair, place a check in the “R” box.

Legend

Y = yes, acceptable

N = no, remove from service

R = repaired

Checklist A	Y	N	R
A-1 Manuals and decals			
A-2 Pre-operation inspect			
A-3 Function tests			
A-4 Engine maintenance			
A-5 Test the oscillate			
Perform every 40 hours:			
A-6 Engine air filter			
Perform after 40 hours:			
A-7 30 day service			
Perform after 50 hours:			
A-8 Engine maintenance - Kubota models			
Perform every 50 hours:			
A-9 Engine maintenance - Kubota models			
Perform every 100 hours:			
A-10 Engine maintenance - Kubota models			
Perform every 150 hours:			
A-11 Drive hub oil			
Perform every 200 hours:			
A-12 Engine maintenance - Kubota models			
A-13 Drain filter/separator - Kubota diesel models			
Perform every 1-2 months:			
A-14 Engine maintenance - Kubota diesel models			

Checklist B	Y	N	R
B-1 Battery			
B-2 Electrical wiring			
B-3 Tires and wheels			
B-4 Engine maintenance - Perkins models			
B-5 Key switch			
B-6 Emergency Stop			
B-7 Horn			
B-8 Fuel select - Gasoline/LPG models			
B-9 Drive brakes			
B-10 Drive speed - stowed			
B-11 Drive speed - raised			
B-12 Fuel tank check valve - Gas / LPG Models			
B-13 Tank venting systems			
B-14 Hydraulic oil analysis			
B-15 Flashing beacons (if equipped)			
B-16 Drive hub oil			
Perform every 400 hours:			
B-17 Engine maintenance - Kubota diesel models			

Comments

MAINTENANCE INSPECTION REPORT

Model

Serial number

Date

Hour meter

Machine owner

Inspected by (print)

Inspector signature

Inspector title

Inspector company

Instructions

- Make copies of this report to use for each inspection.
- Select the appropriate checklist(s) for the type of inspection to be performed.

☐	**Daily or 8 hours Inspection: A**
☐	**Quarterly or 250 hours Inspection: A+B**
☐	**Semiannually or 500 hours Inspection: A+B+C**
☐	**Annually or 1000 hours Inspection: A+B+C+D**
☐	**Two year or 2000 hours Inspection: A+B+C+D+E**

- Place a check in the appropriate box after each inspection procedure is completed.
- Use the step-by-step procedures in this section to learn how to perform these inspections.
- If any inspection receives an “N”, tag and remove the machine from service, repair and reinspect it. After repair, place a check in the “R” box.

Legend

Y = yes, acceptable
N = no, remove from service
R = repaired

Checklist C	Y	N	R
C-1 Platform overload (if equipped)			
C-2 Down limit switch delay (if equipped)			
C-3 Fuel tank - Diesel models			
C-4 Breather cap - models with optional oil			
C-5 Engine maintenance - Diesel models			
Perform every 800 hours:			
C-6 Engine maintenance - Kubota diesel models			

Checklist D	Y	N	R
D-1 Scissor arm wear pads			
D-2 Hydraulic filter			
D-3 Engine maintenance - Kubota models			
D-4 Engine maintenance - Perkins models			
D-5 Engine maintenance - Gas/LPG models			
D-6 Drive hub oil			
Perform every 1500 hours:			
D-7 Engine maintenance - Kubota diesel models			

Checklist E	Y	N	R
E-1 Test or replace hydraulic oil			
E-2 Engine maintenance - Perkins models			
E-3 Engine maintenance - Gasoline/LPG models			
E-4 Engine maintenance - Kubota diesel models			
Perform every 3000 hours:			
E-5 Engine maintenance - Perkins models			
E-6 Engine maintenance - Kubota diesel models			

Comments

Checklist A Procedures

A-1
Inspect the Manuals and Decals

Genie specifications require that this procedure be performed every 8 hours or daily, whichever comes first.

Maintaining the operator's and safety manuals in good condition is essential to safe machine operation. Manuals are included with each machine and should be stored in the container provided in the platform. An illegible or missing manual will not provide safety and operational information necessary for a safe operating condition.

In addition, maintaining all of the safety and instructional decals in good condition is mandatory for safe machine operation. Decals alert operators and personnel to the many possible hazards associated with using this machine. They also provide users with operation and maintenance information. An illegible decal will fail to alert personnel of a procedure or hazard and could result in unsafe operating conditions.

1 Check to make sure that the operator's and safety manuals are present and complete in the storage container on the platform.

2 Examine the pages of each manual to be sure that they are legible and in good condition.

⊙ Result: The operator's manual is appropriate for the machine and all manuals are legible and in good condition.

⊠ Result: The operator's manual is not appropriate for the machine or all manuals are not in good condition or is illegible. Remove the machine from service until the manual is replaced.

3 Open the operator's manual to the decals inspection section. Carefully and thoroughly inspect all decals on the machine for legibility and damage.

⊙ Result: The machine is equipped with all required decals, and all decals are legible and in good condition.

⊠ Result: The machine is not equipped with all required decals, or one or more decals are illegible or in poor condition. Remove the machine from service until the decals are replaced.

4 Always return the manuals to the storage container after use.

Note: Contact your authorized Genie distributor or Genie Industries if replacement manuals or decals are needed.

CHECKLIST A PROCEDURES

A-2
Perform Pre-operation Inspection

Genie specifications require that this procedure be performed every 8 hours or daily, whichever comes first.

Completing a Pre-operation Inspection is essential to safe machine operation. The Pre-operation Inspection is a visual inspection performed by the operator prior to each work shift. The inspection is designed to discover if anything is apparently wrong with a machine before the operator performs the function tests. The Pre-operation Inspection also serves to determine if routine maintenance procedures are required.

Complete information to perform this procedure is available in the appropriate operator's manual. Refer to the Operator's Manual on your machine.

A-3
Perform Function Tests

Genie specifications require that this procedure be performed every 8 hours or daily, whichever comes first.

Completing the function tests is essential to safe machine operation. Function tests are designed to discover any malfunctions before the machine is put into service. A malfunctioning machine must never be used. If malfunctions are discovered, the machine must be tagged and removed from service.

Complete information to perform this procedure is available in the appropriate operator's manual. Refer to the Operator's Manual on your machine.

A-4
Perform Engine Maintenance

Engine specifications require that this procedure be performed every 8 hours or daily, whichever comes first.

- Check oil level
- Check radiator level
- Oil or coolant leaks
- Loose or missing fasteners

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166) OR the *Kubota WG972 Operator's Manual* (Kubota part number EG801-8916-2) OR the *Perkins 403D-11 Operator's Manual* (Perkins part number SEBU8311-01).

Kubota D1105 Operator's Manual	
Genie part number	131379
Kubota WG972 Operator's Manual	
Genie part number	234803
Perkins 403D-11 Operator's Manual	
Genie part number	131661

A-5
Test the Oscillate Axle

Note: Genie specifications require that this procedure be performed daily or every 8 hours, whichever comes first.

The oscillate system is designed so that all four tires maintain firm contact to the ground on unlevel terrain improving traction and machine stability.

Proper axle oscillation is essential to safe machine operation. If the axle oscillation system is not operating correctly, the stability of the machine is compromised and it may tip over.

1 Start the engine from the platform controls. Select the high idle function.

Test the Oscillate System (stowed position):

2 Drive the left steer tire up onto a 4 in / 10 cm high ramp.

⊙ Result: All four tires should maintain firm contact with the ground.

3 Drive the right steer tire up onto a 4 in / 10 cm high ramp.

⊙ Result: All four tires should maintain firm contact with the ground.

Test the Oscillate System (elevated position):

4 Push and hold the lift function enable button and raise the platform between 7 ft / 213 cm to 9 ft / 274 cm.

5 Drive the left steer tire into a 4 in / 10 cm deep hole.

⊙ Result: All four tires should maintain firm contact with the ground.

6 Drive the right steer tire into a 4 in / 10 cm deep hole.

⊙ Result: All four tires should maintain firm contact with the ground.

Note: Verify there are no fault codes shown on the ground control display.

CHECKLIST A PROCEDURES

A-6
Inspect the Engine Air Filter

Genie specifications require that this procedure be performed every 40 hours or weekly, whichever comes first.

Maintaining the engine air filter in good condition is essential to good engine performance and service life. Failure to perform this procedure can lead to poor engine performance and component damage.

1 **Kubota WG972 models:** Remove the engine tray flange nut, located under the radiator on the engine pivot tray. Swing the engine pivot tray out and away from the machine for access.

2 **Kubota D1105 models:** Remove the wing nut securing the end cap to the air cleaner canister. Remove the end cap.

All other models: Disconnect the retaining clamps securing the end cap to the air cleaner canister. Remove the end cap.

3 Remove the air filter element.

4 Clean the inside of the air filter canister and the canister gasket with a damp cloth.

5 Inspect for and remove any blockage or debris from the intake air passages.

6 Inspect the air filter element. If needed, blow from the inside out using low pressure dry compressed air, or carefully tap out dust.

7 Securely install the filter element into the canister.

8 Install the gasket and baffle (if equipped), and end cap onto the air cleaner canister.

Note: Be sure the dust discharge valve is facing down when installed.

9 Secure the end cap to the air cleaner cannister with the retaining clamps.

10 **Kubota WG972 models:** Swing the engine pivot tray back to its original position and secure with the flange nut.

CHECKLIST A PROCEDURES

A-7
Perform 30 Day Service

The 30 day maintenance procedure is a one-time sequence of procedures to be performed after the first 30 days or 40 hours of usage. After this interval, refer to the maintenance checklists for continued scheduled maintenance.

1 Perform the following maintenance procedures:

Kubota models:

- B-3 Inspect the Tires, Wheels and Lug Nut Torque
- B-8 Check the Oil Level in the Drive Hubs
- D-2 Replace the Hydraulic Tank Return Filter

Perkins models:

- B-3 Inspect the Tires, Wheels and Lug Nut Torque
- B-4 Perform Engine Maintenance - Perkins Models
- B-8 Check the Oil Level in the Drive Hubs
- C-4 Perform Engine Maintenance - Diesel Models
- D-2 Replace the Hydraulic Tank Return Filter

A-8
Perform Engine Maintenance - Kubota Models

Engine specifications require that this one time procedure be performed after the first 50 hours of operation.

- Change engine oil
- Replace oil filter

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166) OR the *Kubota WG972 Operator's Manual* (Kubota part number EG801-8916-2).

Kubota D1105 Operator's Manual	
Genie part number	131379
Kubota DF972 Operator's Manual	
Genie part number	234803

CHECKLIST A PROCEDURES

A-9
Perform Engine Maintenance - Kubota Models

Engine specifications require that this procedure be performed every 50 hours or weekly, whichever comes first.

Kubota D1105:
• Check fuel lines and clamps

Kubota WG972:
• Check fuel lines and clamps
• Clean air filter

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166) OR the *Kubota WG972 Operator's Manual* (Kubota part number EG801-8916-2).

Kubota D1105 Operator's Manual	
Genie part number	131379
Kubota WG972 Operator's Manual	
Genie part number	234803

A-10
Perform Engine Maintenance - Kubota Models

Engine specifications require that this procedure be performed every 100 hours.

Kubota D1105:
• Clean air filter
• Clean fuel filter
• Inspect fan belt

Kubota WG972:
• Clean fuel filter
• Inspect fan belt
• Inspect spark plugs

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166) OR the *Kubota WG972 Operator's Manual* (Kubota part number EG801-8916-2).

Kubota D1105 Operator's Manual	
Genie part number	131379
Kubota WG972 Operator's Manual	
Genie part number	234803

CHECKLIST A PROCEDURES

A-11
Replace the Drive Hub Oil

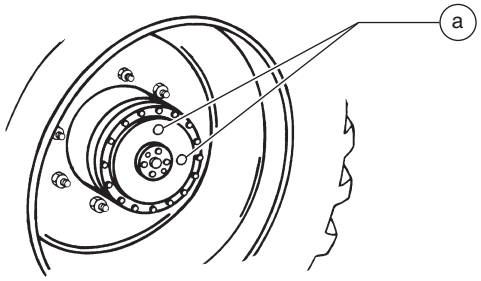
Note: Manufacturer drive hub specifications require that this one-time procedure be performed after the first 150 hours.

Replacing the drive hub oil is essential for good machine performance and service life. Failure to replace the drive hub oil after the first 150 hours of use may cause the machine to perform poorly and continued use may cause component damage.

1 Select the drive hub to be serviced. Drive the machine until one of the two plugs is at the lowest point.

2 Remove both plugs and drain the oil into a suitable container.

3 Drive the machine until one of the two plugs is at the highest point.



a drive hub plugs

4 Fill the hub until the oil level is even with the bottom of the lowest plug hole. Refer to Section 2, *Specifications.*

5 Install the plugs into the drive hub.

6 Repeat this procedure for the other drive hub.

A-12
Perform Engine Maintenance - Kubota Models

Engine specifications require that this procedure be performed every 200 hours.

- Change engine oil
- Replace oil filter
- Inspect radiator hoses and clamps
- Inspect air intake hose (Kubota D1105)

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166) OR the *Kubota WG972 Operator's Manual* (Kubota part number EG801-8916-2).

Kubota D1105 Operator's Manual	
Genie part number	131379
Kubota WG972 Operator's Manual	
Genie part number	234803

CHECKLIST A PROCEDURES

A-13
Drain the Fuel Filter/ Water Separator - Kubota Diesel Models

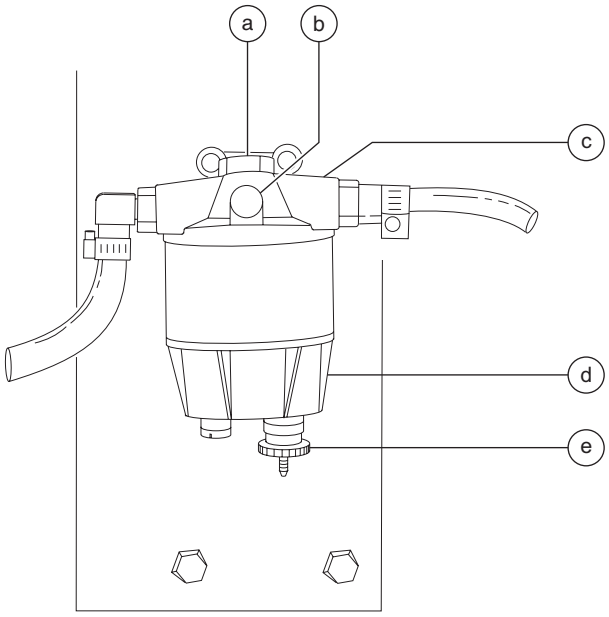
Genie specifications require that this procedure be performed every 200 hours or monthly, whichever comes first.

Proper maintenance of the fuel filter/water separator is essential for good engine performance. Failure to perform this procedure can lead to poor engine performance and component damage.

⚠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.

1 Locate the fuel filter/water separator and loosen the vent plug located on the fuel filter/water separator head.

2 Loosen the drain plug located at the bottom of the bowl. Allow the water to drain into a suitable container until fuel starts to come out. Immediately tighten the drain plug.



a head bolt
b vent plug
c separator head
d filter bowl
e drain plug

3 Tighten the vent plug and clean up any spills or wet surfaces.

Note: If the fuel bowl is completely drained, you must prime, or bleed, the fuel filter/water separator before starting the engine. See step 5.

4 Start the engine from the ground controls and check the fuel filter/water separator for leaks.

Bleed the fuel system:

Note: Before bleeding the system, fill the fuel tank.

5 Loosen the vent plug/screw located on the filter head.

6 Operate the hand primer until fuel, free of air, flows from the vent plug/screw. Tighten the vent plug/screw on the filter head.

7 Loosen the vent screw, located on top of the fuel injection pump.

8 Operate the hand primer until fuel, free of air, flows from the vent plug/screw. Tighten the vent plug/screw on the injection pump.

9 Clean up any fuel that may have spilled.

10 Attempt to start the engine using the starter motor for a maximum of 15 seconds, resting the starter for 30 seconds before trying again.

11 Inspect the fuel filter/water separator for leaks.

⚠DANGER Explosion and fire hazard. If a fuel leak is discovered, keep any additional personnel from entering the area and do not operate the machine. Repair the leak immediately.

Note: Information to perform this procedure is also available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166) OR the

Kubota D1105 Operator's Manual	
Genie part number	131379

A-14
Perform Engine Maintenance - Kubota Diesel Models

Engine specifications require that this procedure be performed every one or two months.

• Recharge battery

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166).

Kubota D1105 Operator's Manual	
Genie part number	131379

Checklist B Procedures

B-1
Inspect the Battery

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Proper battery condition is essential to good machine performance and operational safety. Improper fluid levels or damaged cables and connections can result in component damage and hazardous conditions.

⚠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. Batteries contain acid. Avoid spilling or contacting battery acid. Neutralize battery acid spills with baking soda and water.

1 Put on protective clothing and eye wear.

2 Be sure that the battery cable connections are free of corrosion.

Note: Adding terminal protectors and a corrosion preventative sealant will help eliminate corrosion on the battery terminals and cables.

3 Be sure that the battery retainers and cable connections are tight.

4 Fully charge the battery. Allow the battery to rest 24 hours before performing this procedure to allow the battery cells to equalize.

5 Remove the battery vent caps and check the specific gravity of each battery cell with a hydrometer. Note the results.

6 Check the ambient air temperature and adjust the specific gravity reading for each cell as follows:

- Add 0.004 to the reading of each cell for every 10° F / 5.5° C above 80° F / 26.7° C.
- Subtract 0.004 from the reading of each cell for every 10° F / 5.5° C below 80° F / 26.7° C.

⊙ Result: All battery cells display an adjusted specific gravity of 1.277 +/- 0.007. The battery is fully charged. Proceed to step 10.

⊠ Result: One or more battery cells display a specific gravity of 1.269 or below. Proceed to step 7.

7 Perform an equalizing charge OR fully charge the batteries and allow the battery to rest at least 6 hours.

8 Remove the battery vent caps and check the specific gravity of each battery cell with a hydrometer. Note the results.

9 Check the ambient air temperature and adjust the specific gravity reading for each cell as follows:

- Add 0.004 to the reading of each cell for every 10° F / 5.5° C above 80° F / 26.7° C.
- Subtract 0.004 from the reading of each cell for every 10° F / 5.5° C below 80° F / 26.7° C.

⊙ Result: All battery cells display a specific gravity of 1.277 +/- 0.007. The battery is fully charged. Proceed to step 10.

⊠ Result: One or more battery cells display a specific gravity from 1.269 to 1.218. The battery is still usable, but at a lower performance so will need to be recharged more often. Proceed to step 11.

⊠ Result: One or more battery cells display a specific gravity from 1.217 to 1.173. The battery is approaching the end of its life. Proceed to step 11.

⊠ Result: The difference in specific gravity readings between cells is greater than 0.1 OR the specific gravity of one or more cells is 1.172 or less. Replace the battery.

10 Check the battery acid level. If needed, replenish with distilled water to 1/8 inch / 3 mm below the bottom of the battery fill tube. Do not overfill.

11 Install the vent caps and neutralize any electrolyte that may have spilled.

B-2
Inspect the Electrical Wiring

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Maintaining electrical wiring in good condition is essential to safe operation and good machine performance. Failure to find and replace burnt, chafed, corroded or pinched wires could result in unsafe operating conditions and may cause component damage.

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

1 Inspect the following areas for burnt, chafed, corroded and loose wires:

- Ground control panel
- Hydraulic tray
- Engine tray
- Scissor arms
- Platform controls

CHECKLIST B PROCEDURES

2 Inspect for a liberal coating of dielectric grease in the following locations:

- Between the ECM and platform controls
- All wire harness connectors
- Level sensor

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

4 Start the engine and raise the platform approximately 10 feet / 3 m from the ground.

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

6 Lower the platform onto the safety arm.

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

7 Inspect the center chassis area and scissor arms for burnt, chafed and pinched cables.

8 Inspect the following areas for burnt, chafed, corroded, pinched and loose wires:

- ECM to platform controls
- Power to platform wiring

9 Raise the platform and return the safety arm to the stowed position.

10 Lower the platform to the stowed position and turn the machine off.

B-3
Inspect the Tires, Wheels and Lug Bolt Torque

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Maintaining the tires and wheels in good condition is essential to safe operation and good performance. Tire and/or wheel failure could result in a machine tip-over. Component damage may also result if problems are not discovered and repaired in a timely fashion.

1 Check the tire tread and sidewalls for cuts, cracks, punctures and unusual wear.

2 Check each wheel for damage, bends and cracked welds.

3 Remove the castle nut lock plate or cotter pin and check each castle nut for proper torque. Refer to Section 2, *Specifications*.

Note: Always replace the cotter pin with a new one when removing the castle nut or checking the torque of the castle nut.

4 Check each lug bolt for proper torque.

5 Install the castle nut lock plate using a new lock washer OR install a new cotter pin and secure.

B-4
Perform Engine Maintenance - Perkins Models

Engine specifications require that this procedure be performed every 250 hours or six months, whichever comes first.

• Inspect alternator and fan belts

Required maintenance procedures and additional engine information is available in the *Perkins 403D-11 Operator's Manual* (Perkins part number SEBU8311-01).

Perkins 403D-11 Operator's Manual	
Genie part number	131661

B-5
Test the Key Switch

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Proper key switch action and response is essential to safe machine operation. The machine can be operated from the ground or platform controls and the activation of one or the other is accomplished with the key switch. Failure of the key switch to activate the appropriate control panel could cause a hazardous operating situation.

1 Pull out the red Emergency Stop button to the ON position at both the ground and platform controls.

2 Turn the key switch to **platform control**.

3 Check the platform up/down function from the **ground controls**.

⊙ Result: The machine functions should **not** operate.

4 Turn the key switch to **ground control**.

5 Check the machine functions from the **platform controls**.

⊙ Result: The machine functions should **not** operate.

6 Turn the key switch to the OFF position.

⊙ Result: The engine should stop and no functions should operate.

CHECKLIST B PROCEDURES

B-6
Test the Emergency Stop

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

A properly functioning Emergency Stop is essential for safe machine operation. An improperly operating red Emergency Stop button will fail to shut off power and stop all machine functions, resulting in a hazardous situation.

Note: As a safety feature, selecting and operating the ground controls will override the platform controls, except the platform red Emergency Stop button.

1 Start the engine from ground controls.

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

⊙ Result: The engine should shut off and no machine functions should operate.

3 Start the engine from platform controls.

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

⊙ Result: The engine should shut off and no machine functions should operate.

Note: The red Emergency Stop button at the ground controls should stop all machine operation, even if the key switch is switched to platform control.

B-7
Test the Automotive-style Horn

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

A functioning horn is essential to safe machine operation. The horn is activated at the platform controls and sounds at the ground as a warning to ground personnel. An improperly functioning horn will prevent the operator from alerting ground personnel of hazards or unsafe conditions.

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 Push down the horn button at the platform controls.

⊙ Result: The horn should sound.

Note: If necessary, the horn can be adjusted to obtain the loudest volume by turning the adjustment screw near the wire terminals on the horn.

B-8
Test the Fuel Select Operation - Kubota Gas/LPG Models

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

The ability to select and switch between gasoline and LPG fuels as needed is essential to safe machine operation. A fuel selection can be made whether the engine is running or not. Switching malfunctions and/or the failure of the engine to start and run properly in both fuel modes and through all idle speeds can indicate fuel system problems that could develop into a hazardous situation.

Note: Perform this test after checking the gasoline and LPG fuel levels, and warming the engine to normal operating temperature.

Note: Be sure that the valve on the LPG tank is in the OPEN position.

1 Move the fuel select toggle switch to the gasoline position at the ground controls.

2 Start the engine from the platform controls and allow the engine to run at low idle.

3 Press the high idle button at the platform controls to allow the engine to run at high idle.

⊙ Result: The high idle indicator light should be ON and the engine should start promptly and operate smoothly in low and high idle.

4 Press the high idle button again to return the engine to low idle.

⊙ Result: The high idle indicator light should turn OFF and the engine should return to low idle.

5 Press the engine stop button.

⊙ Result: The engine should stop.

6 Press the LPG operation button.

⊙ Result: The LPG indicator light should be ON.

7 Start the engine and allow it to run at low idle.

8 Press the high idle button to allow the engine to run at high idle.

⊙ Result: The high idle indicator light should be ON and the engine should start promptly and operate smoothly in low and high idle.

Note: The engine may hesitate momentarily and then continue to run on the selected fuel if the fuel source is switched while the engine is running.

CHECKLIST B PROCEDURES

B-9
Test the Drive Brakes

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Proper brake action is essential to safe machine operation. The drive brake function should operate smoothly, free of hesitation, jerking and unusual noise. Hydraulically-released individual wheel brakes can appear to operate normally when they are actually not fully operational.

1 Mark a test line on the ground for reference.

2 Start the engine from platform controls.

3 Choose a point on the machine; i.e., contact patch of a tire, as a visual reference for use when crossing the test line.

4 Slowly move the joystick in the direction indicated by the blue arrow on the control panel until the machine begins to move, then return the joystick to the center position.

⊙ Result: The machine should move in the direction that the blue arrow points on the control panel, then come to an abrupt stop.

5 Slowly move the joystick in the direction indicated by the yellow arrow on the control panel until the machine begins to move, then return the joystick to the center position.

⊙ Result: The machine should move in the direction that the yellow arrow points on the control panel, then come to an abrupt stop.

6 Bring the machine to maximum drive speed before reaching the start line. Release the function enable switch on the joystick or release the joystick when your reference point on the machine crosses the test line.

7 Measure the distance between the test line and your machine reference point. Refer to Section 2, *Specifications*.

Note: The brakes must be able to hold the machine on any slope it is able to climb.

B-10
Test the Drive Speed - Stowed Position


Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Proper drive function movement is essential to safe machine operation. The drive function should respond quickly and smoothly to operator control. Drive performance should also be free of hesitation, jerking and unusual noise over the entire proportionally controlled speed range.

1 Create start and finish lines by marking two lines on the ground 40 feet / 12.2 m apart.

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

3 Start the engine from the platform controls.

4 Lower the platform to the stowed position.

5 Choose a point on the machine; i.e., contact patch of a tire, as a visual reference for use when crossing the start and finish lines.

6 Bring the machine to maximum forward drive speed before reaching the start line. Begin timing when your reference point on the machine crosses the start line.

7 Continue at full speed and note the time when the machine reference point passes over the finish line. Refer to Section 2, *Specifications.*

8 Bring the machine to maximum reverse drive speed before reaching the start line. Begin timing when your reference point on the machine crosses the start line.

9 Continue at full speed and note the time when the machine reference point passes over the finish line. Refer to Section 2, *Specifications.*

CHECKLIST B PROCEDURES

B-11
Test the Drive Speed - Raised Position

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Proper drive function movement is essential to safe machine operation. The drive function should respond quickly and smoothly to operator control. Drive performance should also be free of hesitation, jerking and unusual noise over the entire proportionally controlled speed range.

1 Create start and finish lines by marking two lines on the ground 40 feet / 12.2 m apart.

2 Start the engine from the platform controls.

3 Raise the platform to approximately 8 feet / 2.4 m.

4 Choose a point on the machine; i.e., contact patch of a tire, as a visual reference for use when crossing the start and finish lines.

5 Bring the machine to maximum drive speed before reaching the start line. Begin timing when your reference point on the machine crosses the start line.

6 Continue at maximum speed and note the time when your reference point on the machine crosses the finish line. Refer to Section 2, *Specifications*.

Note: If the raised drive speed does not meet specifications, refer to the Repair procedure 7-2, *Function Speed Tuning*.

B-12
Inspect the Fuel Tank Check Valve Venting System - Gas/LPG Models

Note: For machines located in the United States, *EPA Certificate 40 CFR Part 1060* requires that the check valve be in proper working condition.

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first. Perform this procedure more often if dusty conditions exist.

Free-breathing fuel tank check valve is essential for good machine performance and service life. A dirty or clogged check valve may cause the fuel tank to not vent properly. Extremely dirty conditions may require that the check valve be inspected more often.

⚠ 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.

1 Locate the check valve near the top of the fuel tank.

2 Remove the check valve from the fuel lines.

3 Check for proper venting.

⊙ Result: Air passes through the check valve. Proceed to step 4.

⊠ Result: If air does not pass through the check valve, replace the check valve. Proceed to step 4.

Note: When checking for positive venting, air should pass freely through the check valve only in one direction from the tank.

4 Securely install the check valve to the fuel lines.

B-13
Inspect the Fuel and Hydraulic Tank Cap Venting Systems

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first. Perform this procedure more often if dusty conditions exist.

Free-breathing fuel and hydraulic tank caps are essential for good machine performance and service life. A dirty or clogged tank cap may cause the machine to perform poorly and continued use may cause component damage. Extremely dirty conditions may require that the caps be inspected more often.

Note: For machines located in the United States, *EPA Certificate 40 CFR Part 1060* requires that the fuel tank cap be in proper working condition.

⚠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.

1 Remove the cap from the fuel tank.

CHECKLIST B PROCEDURES

2 Check for proper venting.

⊙ Result: Air passes through the fuel tank cap. Proceed to step 4.

⊠ Result: If air does not pass through the cap, clean or replace the cap. Proceed to step 3.

Note: When checking for positive tank cap venting, air should pass freely through the cap only in one direction from the tank.

3 Using a mild solvent, carefully wash the cap venting system. Dry using low pressure compressed air. Repeat this procedure beginning with step 2.

4 Install the fuel tank cap onto the fuel tank.

5 Remove the breather cap from the hydraulic tank.

6 Check for proper venting.

⊙ Result: Air passes through the fuel tank cap. Proceed to step 8.

⊠ Result: If air does not pass through the cap, clean or replace the cap. Proceed to step 7.

Note: When checking for positive tank cap venting, air should pass freely through the cap.

7 Using a mild solvent, carefully wash the cap venting system. Dry using low pressure compressed air. Repeat this procedure beginning with step 6.

8 Install the breather cap onto the hydraulic tank.

B-14
Perform Hydraulic Oil Analysis

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Replacement or testing of the hydraulic oil is essential for good machine performance and service life. Dirty oil and a clogged suction strainer may cause the machine to perform poorly and continued use may cause component damage. Extremely dirty conditions may require oil changes to be performed more often.

Note: Before replacing the hydraulic oil, the oil may be tested by an oil distributor for specific levels of contamination to verify that changing the oil is necessary. **If the hydraulic oil is not replaced at the two year inspection, test the oil quarterly. Replace the oil when it fails the test.** See E-1, *Test or Replace the Hydraulic Oil.*

B-15
Test the Flashing Beacons (if equipped)

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Flashing beacons are used to alert operators and ground personnel of machine proximity and motion. The flashing beacons are located on both sides of the machine.

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

⊙ Result: The beacons should flash.

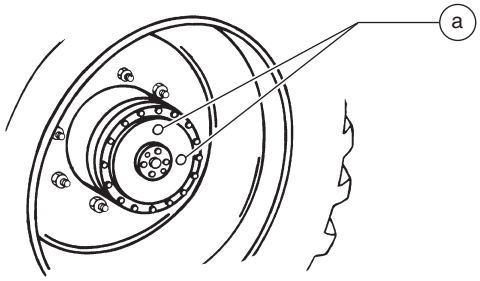
2 Turn the key switch to platform controls.

⊙ Result: The beacons should flash.

B-16
Check the Oil Level in the Drive Hubs

Failure to maintain proper drive hub oil levels may cause the machine to perform poorly and continued use may cause component damage.

1 Select the drive hub to be serviced. Drive the machine until one of the two plugs is at the highest point.



a drive hub plugs

2 Remove the plug located at 90 degrees and check the oil level.

⊙ Result: The oil level should be even with the bottom of the hole.

3 If necessary, remove the top plug and add oil until the oil level is even with the bottom of the hole.

4 Apply pipe thread sealant to the plugs and install the plugs.

5 Repeat steps 1 through 4 for the other drive hub.

6 Check the torque of the drive hub mounting bolts. Refer to Section 2, *Specifications*.

CHECKLIST B PROCEDURES

B-17
Perform Engine Maintenance - Kubota Diesel Models

Engine specifications require that this procedure be performed every 400 hours.

• Replace fuel filter

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166).

Kubota D1105 Operator's Manual	
Genie part number	131379

Checklist C Procedures

C-1
Test the Platform Overload System (if equipped)

Genie specifications require that this procedure be performed every 500 hours or six months, whichever comes first OR when the machine fails to lift the maximum rated load.

Testing the platform overload system regularly is essential to safe machine operation. Continued use of an improperly operating platform overload system could result in the system not sensing an overloaded platform condition. Machine stability could be compromised resulting in the machine tipping over.

1 Disconnect the platform controls from the machine at the platform.

2 Open the side covers at the ground controls side of the machine.

3 Locate the Electronic Control Module (ECM) wire harness 6 pin connector to platform controls connection below and behind the control box.

4 Securely connect the platform controls to the ECM wire harness.

5 Tag and disconnect the platform controls wire harness from the ECM wire harness.

6 Securely connect the platform controls to the ECM wire harness..

7 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. Start the machine.

8 Raise the platform approximately 10 feet / 3 m.

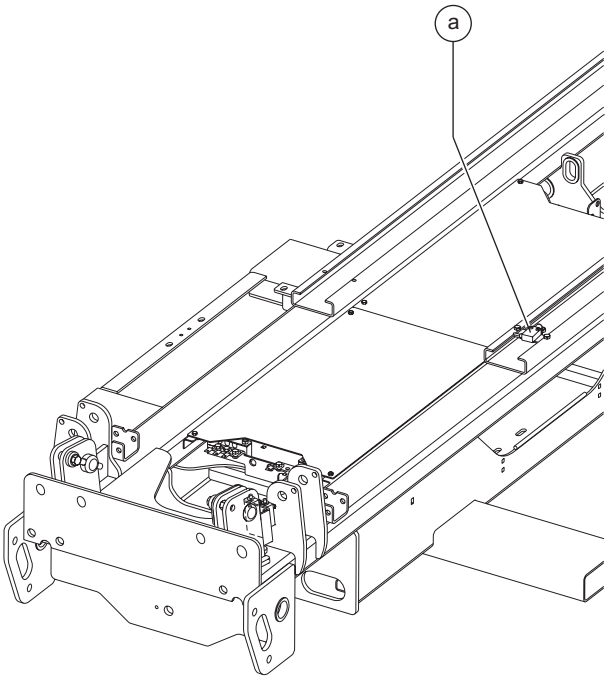
9 Lift the safety arm and move it to the center of the linkage and rotate to a vertical position.

10 Lower the platform onto the safety arm.

11 Turn the machine off.

12 Locate and remove the maximum height limit switch from the lower slider channel and set aside.

Note: Do not disconnect the limit switch harness.



a maximum height limit switch

CHECKLIST C PROCEDURES

13 Start the machine and fully raise the platform. Release the joystick.

⊙ Result: The engine should stop and an alarm should sound. A fault code 99 PLATFORM OVERLOAD should be present in the ECM diagnostic display window at the ground controls.

⊠ Result: The engine does not stop OR an alarm doesn't sound OR fault code 99 is not present in the ECM diagnostic display window at the ground controls. Refer to Repair Procedure 14-1, *Calibrate the Platform Overload System (if equipped).*

14 Lower the platform onto the safety arm.

15 Turn the machine off.

16 Securely install the limit switch to the lower slider channel.

17 Start the machine and fully raise the platform. Release the joystick.

⊙ Result: The platform should stop raising at maximum height. The engine should continue to run and an alarm should not sound.

⊠ Result: The engine stops OR an alarm sounds. Refer to Repair Procedure 14-1, *Calibrate the Platform Overload System (if equipped).*

18 Lower the platform to the stowed position.

19 Disconnect the platform controls from the ECM wire harness.

20 Securely connect the platform controls wire harness to the ECM wire harness.

21 Securely connect the platform controls to the platform controls wire harness at the platform.

C-2
Down Limit Switch Descent Delay (if equipped)

Check the Descent Delay Function

1 Turn the key switch to platform controls. Start the engine.

2 Raise the platform approximately 10 ft / 3 m.

3 Lower the platform until the down limit switch activates and the platform stops lowering. Quickly release the controls and then **immediately** attempt to lower the platform to the stowed position.

⊙ Result: The platform stops for 4 to 6 seconds. Release the joystick and proceed to step 4.

⊠ Result: The platform does not stop. Confirm that the descent delay option has been selected to ON. See Repair Procedure 7-3, *Software Configuration*. Repeat this procedure.

4 Lower the platform to the stowed position.

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

Check the Down Limit Switch Height

1 Turn the key switch to platform controls. Start the engine.

2 Raise the platform approximately 10 ft / 3 m.

3 Lower the platform until the down limit switch activates and the platform stops lowering.

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

5 Measure the distance between the working surface and the platform deck.

GS-2669 RT	63 to 69 inches 1.6 to 1.75 m
GS-3369 RT	66 to 72 inches 1.7 to 1.83 m
GS-4069 RT	76 to 82 inches 1.9 to 2.1 m

C-3 Clean the Fuel Tank - Diesel Models

Genie requires that this procedure be performed every 500 hours or six months, whichever comes first.

Removing sediment from the fuel tank is essential to good engine performance and service life. A dirty fuel tank may cause the fuel filter to clog prematurely resulting in poor engine performance and possible component damage.

⚠DANGER Explosion and fire hazard. Engine fuels are combustible. Clean the fuel tank in an open, well-ventilated area away from heater, sparks, flames and lighted tobacco. Always have an approved fire extinguisher within easy reach.

Note: Immediately clean up any fuel that may have spilled during this procedure.

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

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

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

CHECKLIST C PROCEDURES

2 Tag, plug and remove the fuel lines from the side of the tank.

3 Loosen the tank strap retaining fastener in front of the tank. Move the strap off to the side.

4 Remove the tank from the machine.

5 Tag and remove the fuel fittings from the fuel tank.

Note: Note the orientation of the fuel fittings before removing so when the fittings are installed they will be in the correct position.

6 Rinse out the inside of the tank using a mild solvent.

7 Install the fittings (removed in step 5) into the side of the tank.

8 Install the tank onto the machine.

9 Attach the fuel lines to the tank. Tighten the clamps.

10 Secure the tank with the tank strap. Tighten the retaining fastener. Do not over tighten.

C-4
Replace the Hydraulic Tank Breather Cap - Models with Optional Hydraulic Oil

Genie requires that this procedure be performed every 500 hours or six months, whichever comes first.

The hydraulic tank is a vented-type tank. The breather cap has an internal air filter that can become clogged or deteriorate. If the breather cap is faulty or improperly installed, impurities can enter the hydraulic system which may cause component damage. Extremely dirty conditions may require that the cap be inspected more often.

1 Remove and discard the hydraulic tank breather cap.

2 Install and new cap onto the tank.

CHECKLIST C PROCEDURES

C-5
Perform Engine Maintenance - Diesel Models

Engine specifications require that this procedure be performed every 500 hours.

Kubota D1105:
- Replace fan belt
- Flush coolant system

Perkins 403D-11:
- Clean radiator fins
- Inspect radiator coolant
- Inspect radiator hoses and clamps
- Change engine oil
- Replace oil filter
- Replace air filter

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166) OR the *Perkins 403D-11 Operator's Manual* (Perkins part number SEBU8311-01).

Kubota D1105 Operator's Manual	
Genie part number	131379

Perkins 403D-11 Operator's Manual	
Genie part number	131661

C-6
Perform Engine Maintenance - Kubota Diesel Models

Engine specifications require that this procedure be performed every 800 hours.

- Inspect valve clearance

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166).

Kubota D1105 Operator's Manual	
Genie part number	131379

Checklist D Procedures

D-1
Check the Scissor Arm Wear Pads and Slider Blocks

Genie requires that this procedure be performed every 1000 hours or annually, whichever comes first.

Maintaining the scissor arm wear pads in good condition is essential to safe machine operation. Continued use of worn out wear pads may result in component damage and unsafe operating conditions.

1 Measure the thickness of each platform scissor arm slider blocks at the non-steer end of the machine.

⊙ Result: The measurement is 3.875 inch / 9.843 cm or more. Proceed to step 2.

⊠ Result: The measurement is less than 3.875 inch / 9.843 cm. Replace both slider blocks.

2 Measure the thickness of each chassis scissor arm upper and lower slider wear pads at the non-steer end of the machine.

⊙ Result: The measurement is 1/4 inch / 6.35 mm or more. Proceed to step 3.

⊠ Result: The measurement is less than 11/32 inch / 8.71 mm. Replace both upper and lower slider wear pads.

D-2
Replace the Hydraulic Tank Return Filter

Genie requires that this procedure be performed every 1000 hours or annually, whichever comes first.

Replacement of the hydraulic tank return filter is essential for good machine performance and service life. A dirty or clogged filter may cause the machine to perform poorly and continued use may cause component damage. Extremely dirty conditions may require that the filter be replaced more often.

⚠CAUTION Bodily injury hazard. Beware of hot oil. Contact with hot oil may cause severe burns.

1 Remove the filter with an oil filter wrench. Clean the area where the hydraulic oil filter meets the filter head.

⚠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.

Note: The hydraulic filter is mounted on the hydraulic tank.

2 Apply a thin layer of fresh oil to the new oil filter gasket.

3 Install the new filter and tighten it securely by hand.

4 Use a permanent ink marker to write the date and number of hours from the hour meter on the filter.

5 Clean up any oil that may have spilled during the replacement procedure.

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

7 Raise the platform approximately 3 feet / 1 m.

8 Inspect the filter and related components to be sure that there are no leaks.

D-3
Perform Engine Maintenance - Kubota Models

Engine specifications require that this procedure be performed annually.

Kubota D1105:
• Replace air filter

Kubota WG972:
• Replace air filter
• Replace fuel lines and clamps
• Clean carburetor

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166) OR the *Kubota WG972 Operator's Manual* (Kubota part number EG801-8916-2).

Kubota D1105 Operator's Manual	
Genie part number	131379
Kubota WG972 Operator's Manual	
Genie part number	234803

CHECKLIST D PROCEDURES

D-4
Perform Engine Maintenance - Perkins Models

Engine specifications require that this procedure be performed every 1000 hours.

- Replace fan belt
- Adjust valve lash

Required maintenance procedures and additional engine information is available in the *Perkins 403D-11 Operator's Manual* (Perkins part number SEBU8311-01.

Perkins 403D-11 Operator's Manual	
Genie part number	131661

D-5
Perform Engine Maintenance - Kubota Gas/LPG Models

Engine specifications require that this procedure be performed every 1000 hours.

- Replace spark plugs
- Inspect LPG coolant hoses
- Inspect LPG vacuum hose
- Flush coolant system
- Adjust valves
- Inspect valve seats
- Clean cylinder heads

Required maintenance procedures and additional engine information is available in the *Kubota WG972 Operator's Manual* (Kubota part number EG801-8916-2).

Kubota WG972 Operator's Manual	
Genie part number	234803

CHECKLIST D PROCEDURES

D-6
Replace the Drive Hub Oil

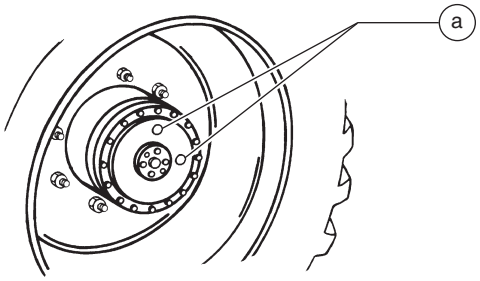
Note: Genie specifications require that this procedure be performed every 1000 hours or annaully, whichever comes first.

Replacing the drive hub oil is essential for good machine performance and service life. Failure to replace the drive hub oil at yearly intervals may cause the machine to perform poorly and continued use may cause component damage.

1 Select the drive hub to be serviced. Drive the machine until one of the two plugs is at the lowest point.

2 Remove both plugs and drain the oil into a suitable container.

3 Drive the machine until one of the two plugs is at the highest point.



a drive hub plugs

4 Fill the hub until the oil level is even with the bottom of the lowest plug hole. Refer to Section 2, *Specifications.*

5 Install the plugs into the drive hub.

6 Repeat this procedure for the other drive hub.

D-7
Perform Engine Maintenance - Kubota Diesel Models

Engine specifications require that this procedure be performed every 1500 hours.

• Inspect injectors

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166).

Kubota D1105 Operator's Manual	
Genie part number	131379

Checklist E Procedures

E-1
Test or Replace the Hydraulic Oil

Genie requires that this procedure be performed every 2000 hours or two years, whichever comes first.

Replacement or testing of the hydraulic oil is essential for good machine performance and service life. Dirty oil and suction strainers may cause the machine to perform poorly and continued use may cause component damage. Extremely dirty conditions may require oil changes to be performed more often.

Note: Before replacing the hydraulic oil, the oil may be tested by an oil distributor for specific levels of contamination to verify that changing the oil is necessary. **If the hydraulic oil is not replaced at the two year inspection, test the oil quarterly. Replace the oil when it fails the test.**

Note: When removing a hose assembly or fitting, the O-ring (if equipped) on the fitting and/or the hose end must be replaced. All connections must be torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting torque Specifications.*

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

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

3 Remove the ground control box retaining fasteners and set aside. Remove the ground control box.

4 Locate the tank cover plate. Remove the tank cover plate mounting fasteners and remove the cover.

5 Place a drain pan or other suitable container under the hydraulic tank. Refer to Section 2, *Specifications*.

6 Remove the drain plug from the hydraulic tank and completely drain the tank.

⚠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.

7 Tag, disconnect and plug the suction hose from the hydraulic tank. Cap the fitting.

8 Tag, disconnect and plug the return hose at the return filter. Cap the fitting on the filter.

9 Remove the return filter and head assembly from the tank. Cap and plug the fittings.

10 Loosen the tank strap retaining fastener in front of the tank. Move the strap to the side.

11 Remove the hydraulic tank from the machine.

12 Remove the suction strainer and clean using a mild solvent or replace.

13 Clean the inside of the hydraulic tank using a mild solvent.

14 Install the drain plug using thread sealer on the threads.

15 Install the suction strainer using thread sealer on the threads.

16 Install the hydraulic tank onto the machine.

17 Secure the tank with the tank strap. Do not over tighten.

18 Install the suction hose onto the tank.

19 Install the return filter and head assembly.

Note: Replace the return filter if needed.

20 Install the return hose to the return filter.

21 Fill the tank with hydraulic oil until the fluid is within the top 2 inches / 5 cm of the sight gauge. Do not overfill.

22 Clean up any oil that may have spilled. Properly discard the oil.

23 Operate all machine functions through a full cycle and check for leaks.

24 Check the oil level in the tank and add if needed.

25 Install the tank cover plate and install the tank cover plate mounting fasteners.

E-2
Perform Engine Maintenance - Perkins Models

Engine specifications require that this procedure be performed every 2000 hours.

- Inspect alternator
- Replace crankcase breather
- Inspect engine mounts
- Inspect starter

Required maintenance procedures and additional engine information is available in the *Perkins 403D-11 Operator's Manual* (Perkins part number SEBU8311-01).

Perkins 403D-11 Operator's Manual	
Genie part number	131661

CHECKLIST E PROCEDURES

E-3
Perform Engine Maintenance - Kubota Gas/LPG Models

Engine specifications require that this procedure be performed every two years.

- Replace air intake hose and clamps
- Replace fuel filter
- Replace LPG fuel hose and clamps
- Replace LPG coolant hoses and clamps
- Replace LPG vacuum hose and clamps
- Replace radiator hoses and clamps

Required maintenance procedures and additional engine information is available in the *Kubota WG972 Operator's Manual* (Kubota part number EG801-8916-2).

Kubota WG972 Operator's Manual	
Genie part number	234803

E-4
Perform Engine Maintenance - Kubota Diesel Models

Engine specifications require that this procedure be performed every two years.

- Replace radiator hoses and clamps
- Flush coolant system
- Replace fuel hoses and clamps
- Replace air intake hose and clamps

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166).

Kubota D1105 Operator's Manual	
Genie part number	131379

CHECKLIST E PROCEDURES

E-5
Perform Engine Maintenance - Perkins Models

Engine specifications require that this procedure be performed every 3000 hours.

- Inspect fuel injectors
- Inspect water pump
- Flush coolant system

Required maintenance procedures and additional engine information is available in the *Perkins 403D-11 Operator's Manual* (Perkins part number SEBU8311-01).

Perkins 403D-11 Operator's Manual	
Genie part number	131661

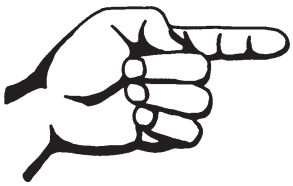
E-6
Perform Engine Maintenance - Kubota Diesel Models

Engine specifications require that this procedure be performed every 3000 hours.

- Inspect injection pump
- Inspect injection timing

Required maintenance procedures and additional engine information is available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166).

Kubota D1105 Operator's Manual	
Genie part number	131379



This page intentionally left blank.

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.
- ☑ Unless otherwise specified, perform each repair procedure with the machine in the following configuration:
  - Machine parked on a firm, level surface
  - Platform in the stowed position
  - Key switch in the off position with the key removed
  - The red Emergency Stop button in the off position at both ground and platform controls
  - Wheels chocked
  - All external AC power supply disconnected from the machine

About This Section

Most of the procedures in this section should only be performed by a 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 reassemble, perform the disassembly steps in reverse order.

Symbols Legend

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

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

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

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

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

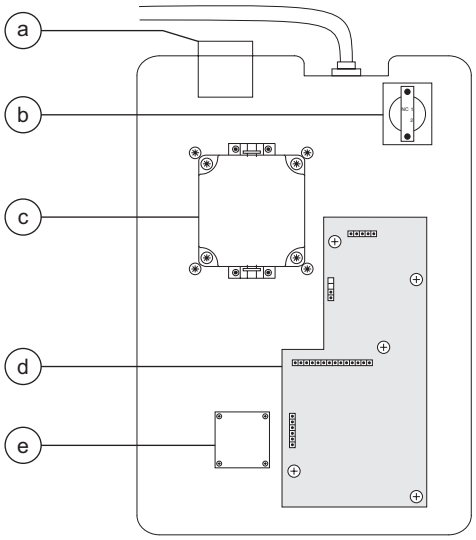
⊙ Indicates that a specific result is expected after performing a series of steps.

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

Platform Controls

The platform controls, used to activate machine functions from the platform or while standing on the ground, contain a printed circuit board, joystick, decal membrane pad, buttons, and LEDs. All of these components are replaceable.

For further information or assistance, consult the Genie Industries Service Department.



a alarm H1
b red Emergency Stop button P2
c joystick controller JC4
d circuit board U3
e platform up/down and outrigger up/down switch JC10

1-1 Circuit Boards

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 Loosen the platform control box lid retaining fasteners. Open the control box and secure the control box lid in a level position.

3 Visually locate the circuit board mounted to the inside of the platform control box lid.

4 Tag and disconnect the wire connections from the red Emergency Stop button.

5 Tag and disconnect the 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.

6 Remove the platform controls circuit board retaining fasteners.

7 Remove the platform controls circuit board from the platform control box lid.

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 required.

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

1 Remove the zip tie 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 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 control box from the platform and lay it off to the side.

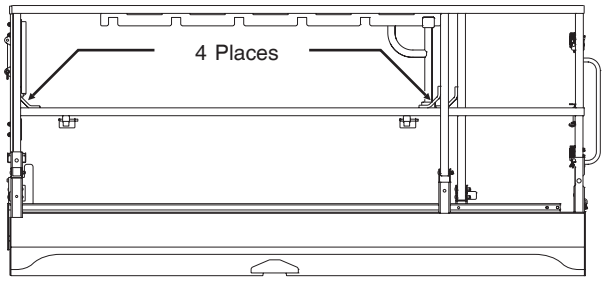
NOTICE Component damage hazard. The platform controls wiring can be damaged if it is kinked or pinched.

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

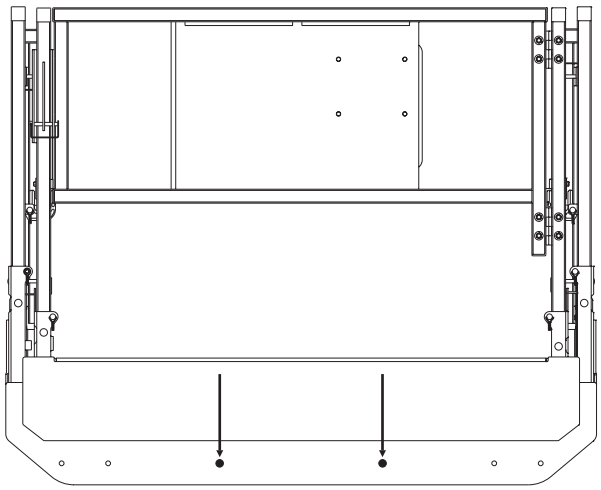
⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

Note: If your machine is equipped with an air line to platform option, the air line must be disconnected from the platform before removal.

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



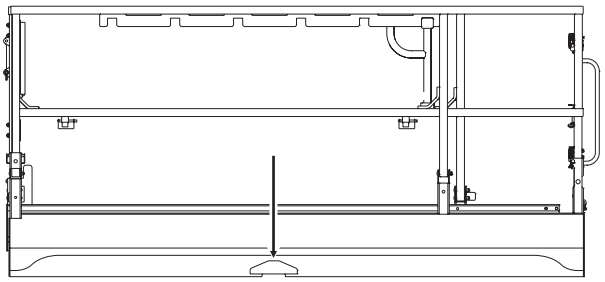
7 Remove the two carriage bolts that secure the platform to the platform pivot at the steer end of the machine.



PLATFORM COMPONENTS

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

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



10 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 when removed from the machine 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.

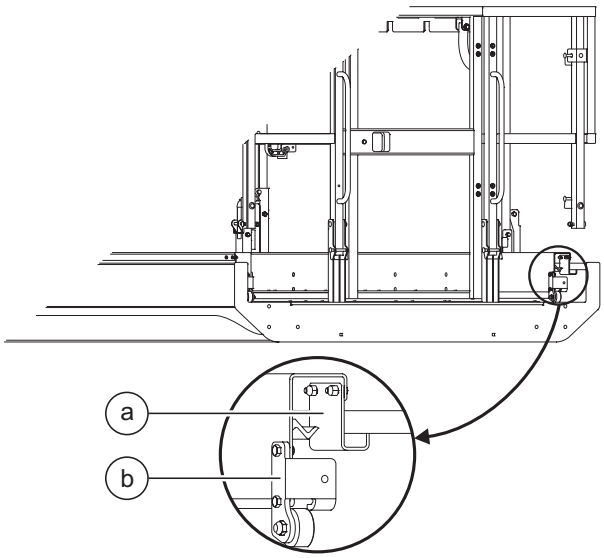
2-2 Platform Extension Deck

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.

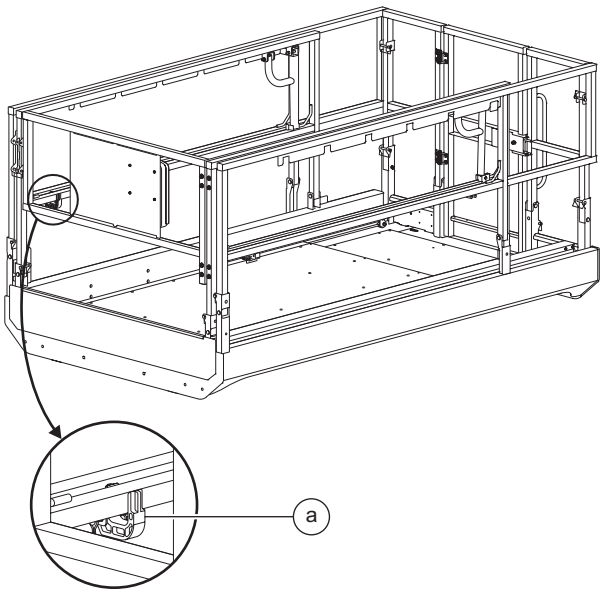
3 Repeat steps 1 and 2 for the other side of the platform.



a deck catch
b deck stop

4 Remove the platform controls from the platform and lay it off to the side.

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



a rail spacer

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

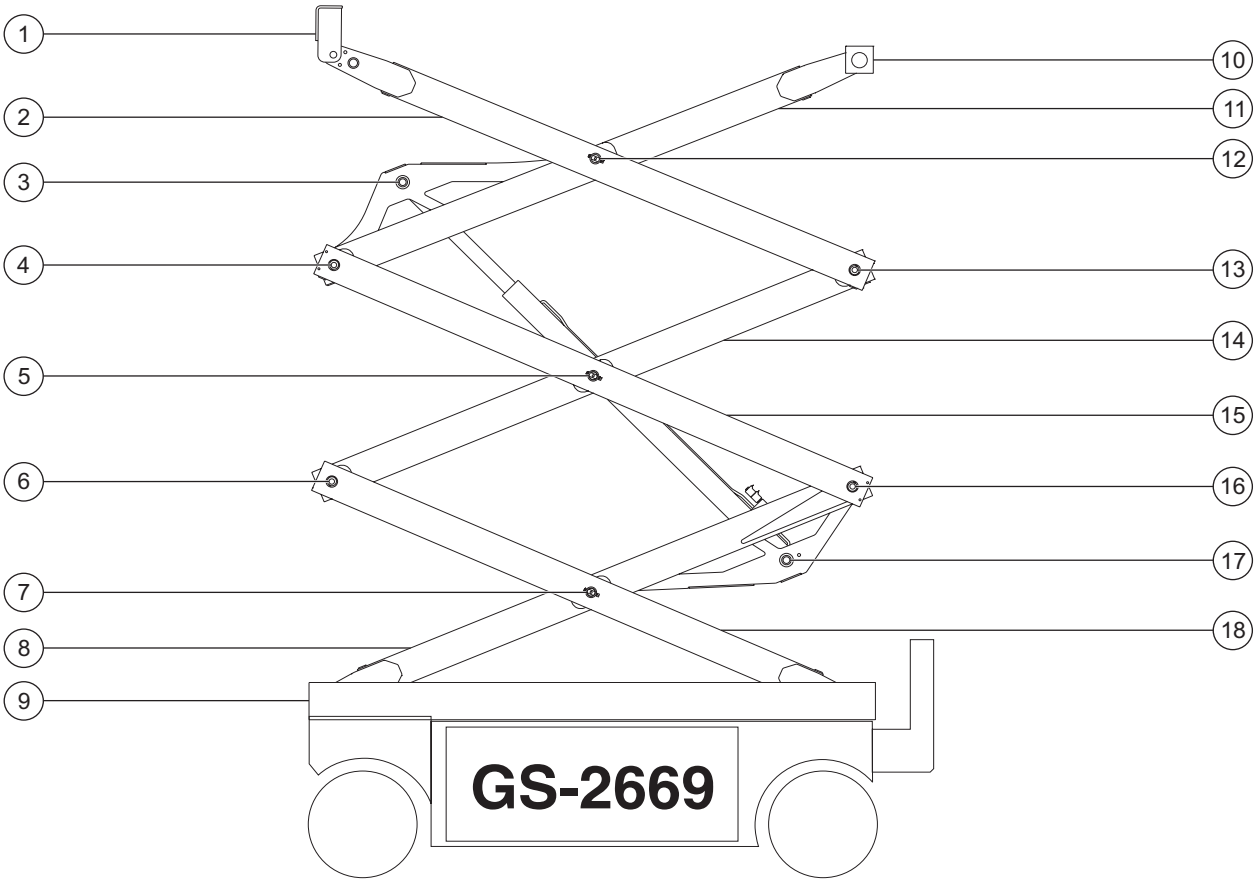
7 Carefully slide the platform extension out until the platform extension makes contact with the carriage on the forklift.

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

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

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

Scissor Components



Steer End Non-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 (2 each)
6 Number 2 pivot pin (steer end)
7 Number 1 center pivot pin (2 each)
8 Number 1 inner arm
9 Chassis pivot
10 Slider block (2 each)
11 Number 3 inner arm
12 Number 3 center pivot pin (2 each)
13 Number 3 pivot pin (non-steer end)
14 Number 2 inner arm
15 Number 2 outer arm
16 Number 2 pivot pin (non-steer end)
17 Lift cylinder barrel-end pivot pin
18 Number 1 outer arm

3-1
Scissor Assembly, GS-2669 RT

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 required.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*.

Note: This procedure will require an overhead lifting device and sling chains capable of supporting 1000 lbs / 454 kgs.

1 Remove the platform. See 2-1, *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.

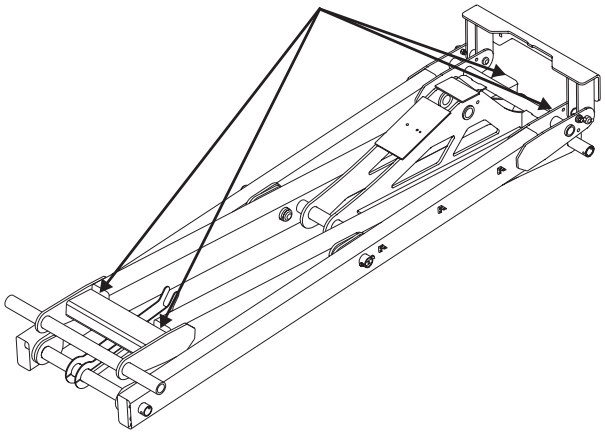
5 Remove the lift cylinder rod end pivot pin (index #3) retaining fasteners.

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

7 Lower the lift cylinder and remove the strap.

8 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 3 inner arm (index #10). 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 (index #4 and #13).

Note: Do not remove the external snap ring.

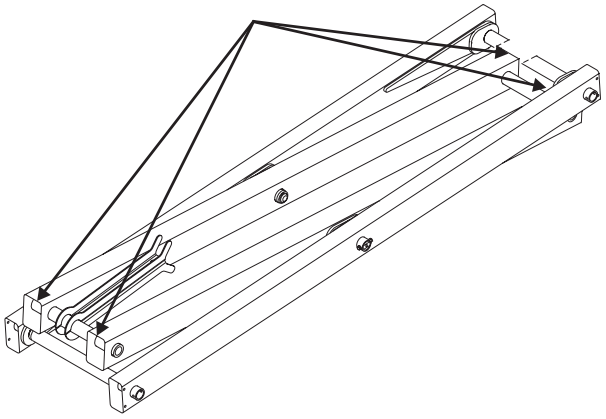
SCISSOR COMPONENTS

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

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

12 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 2 inner arm (index #14). Make the chains tight but do not apply lifting pressure.

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



13 Remove the retaining fasteners from the number 2 pivot pins (index #6 and #16).

Note: Do not remove the external snap ring.

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

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

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

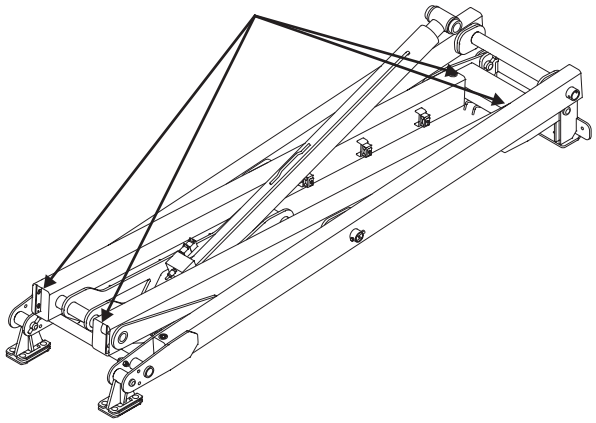
17 Tag and disconnect the hydraulic hoses from the lift cylinder. Plug the hoses and cap the fittings.

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

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

19 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 1 inner arm (index #8). Make the chains tight but do not apply lifting pressure.

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



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

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

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

Separate the link sets:

1 Using an overhead lifting device attach a 4 hook sling chain to the ends of the inner arm (index #8, #11 or #14). 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.

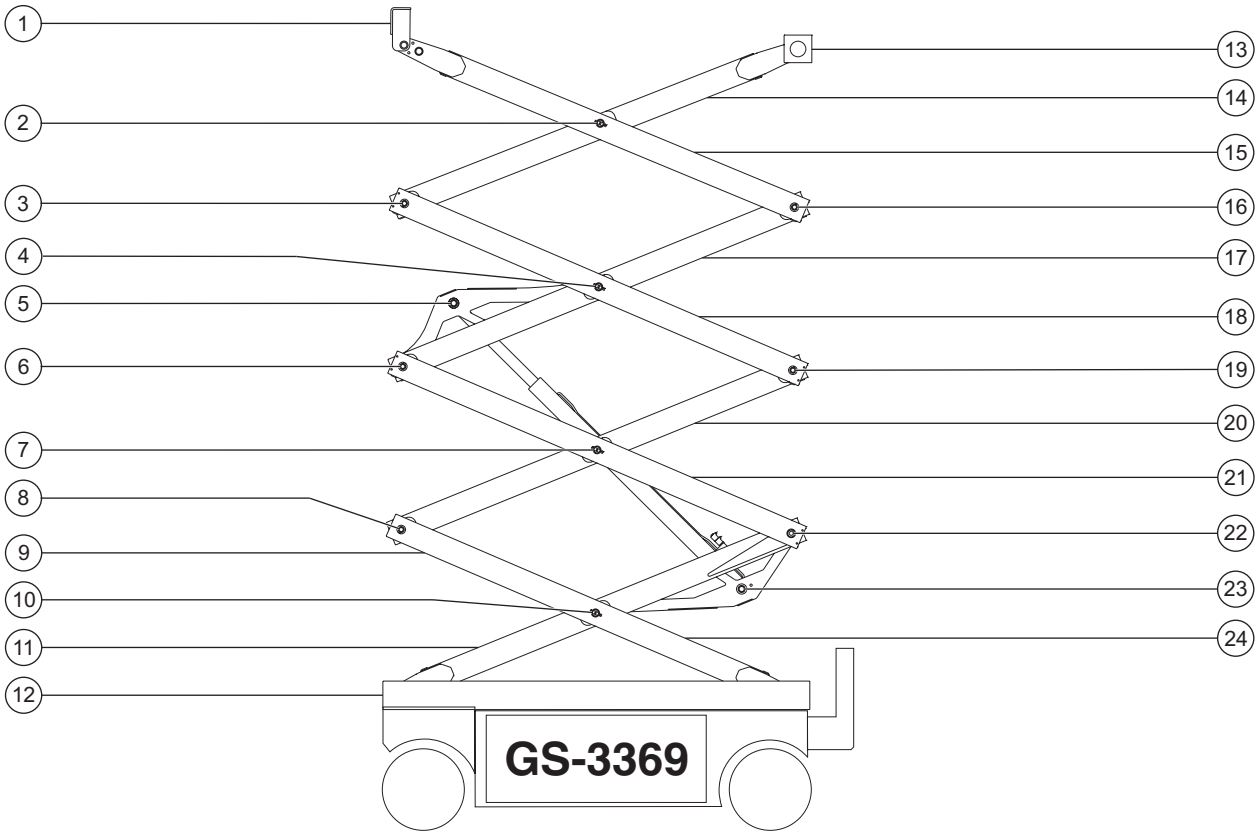
2 Remove the retaining fasteners from the center pivot pins (index #5, #7 or #12).

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		Non-steer End	
1	Platform pivot	13	Slider block (2 each)
2	Number 4 center pivot pin (2 each)	14	Number 4 inner arm
3	Number 4 pivot pin (steer end)	15	Number 4 outer arm
4	Number 3 center pin (2 each)	16	Number 4 pivot pin (non-steer end)
5	Lift cylinder rod-end pivot pin	17	Number 3 inner arm
6	Number 3 pivot pin (steer end)	18	Number 3 outer arm
7	Number 2 center pivot pin (2 each)	19	Number 3 pivot pin (non-steer end)
8	Number 2 pivot pin (steer end)	20	Number 2 inner arm
9	Number 1 outer arm	21	Number 2 outer arm
10	Number 1 center pivot pin (2 each)	22	Number 2 pivot pin (non-steer end)
11	Number 1 inner arm	23	Lift cylinder barrel-end pivot pin
12	Chassis pivot	24	Number 1 outer arm

3-2
Scissor Assembly, GS-3369 RT

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 required.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*.

Note: This procedure will require an overhead lifting device and sling chains capable of supporting 1000 lbs / 454 kgs.

1 Remove the platform. See 2-1, *How to Remove the Platform.*

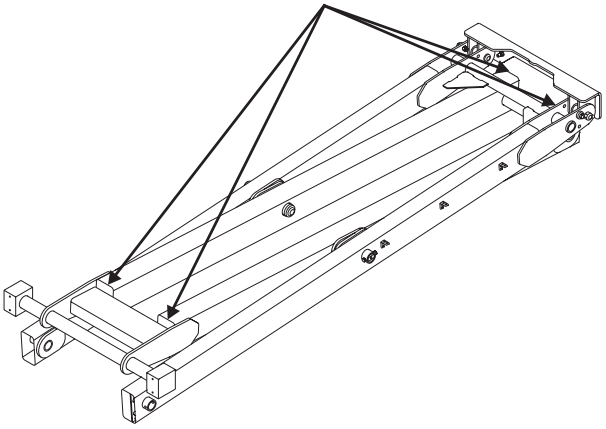
2 Remove the retaining fasteners that attach the ladder to the drive chassis. Remove the ladder and set aside.

3 Remove the cables from the linkage assembly.

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

4 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 4 inner arm (index #14). 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 (index #3 and #16).

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.

SCISSOR COMPONENTS

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

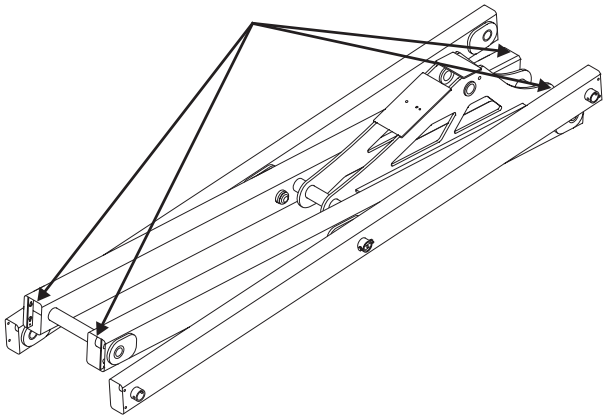
9 Remove the lift cylinder rod end pivot pin (index #5) retaining fasteners.

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

11 Lower the lift cylinder and remove the strap.

12 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 3 inner arm (index #19). Make the chains tight but do not apply lifting pressure.

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



13 Remove the retaining fasteners from the number 3 pivot pins (index #6 and #19).

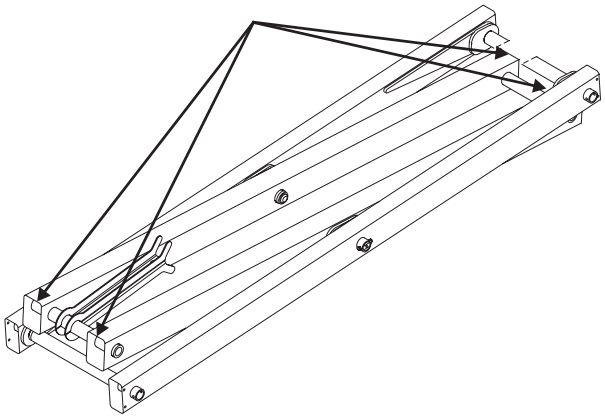
Note: Do not remove the external snap ring.

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

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

16 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 2 inner arm (index #20). 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 (index #8 and #22).

Note: Do not remove the external snap ring.

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

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

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

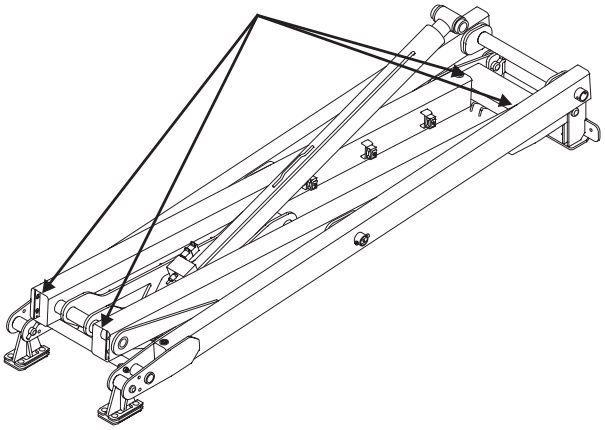
21 Tag and disconnect the hydraulic hoses from the lift cylinder. Plug the hoses and cap the fittings.

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

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

23 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 1 inner arm (index #11). 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.

Separate the link sets:

1 Using an overhead lifting device attach a 4 hook sling chain to the ends of the inner arm (index #11, #14, #17 or #20). 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.

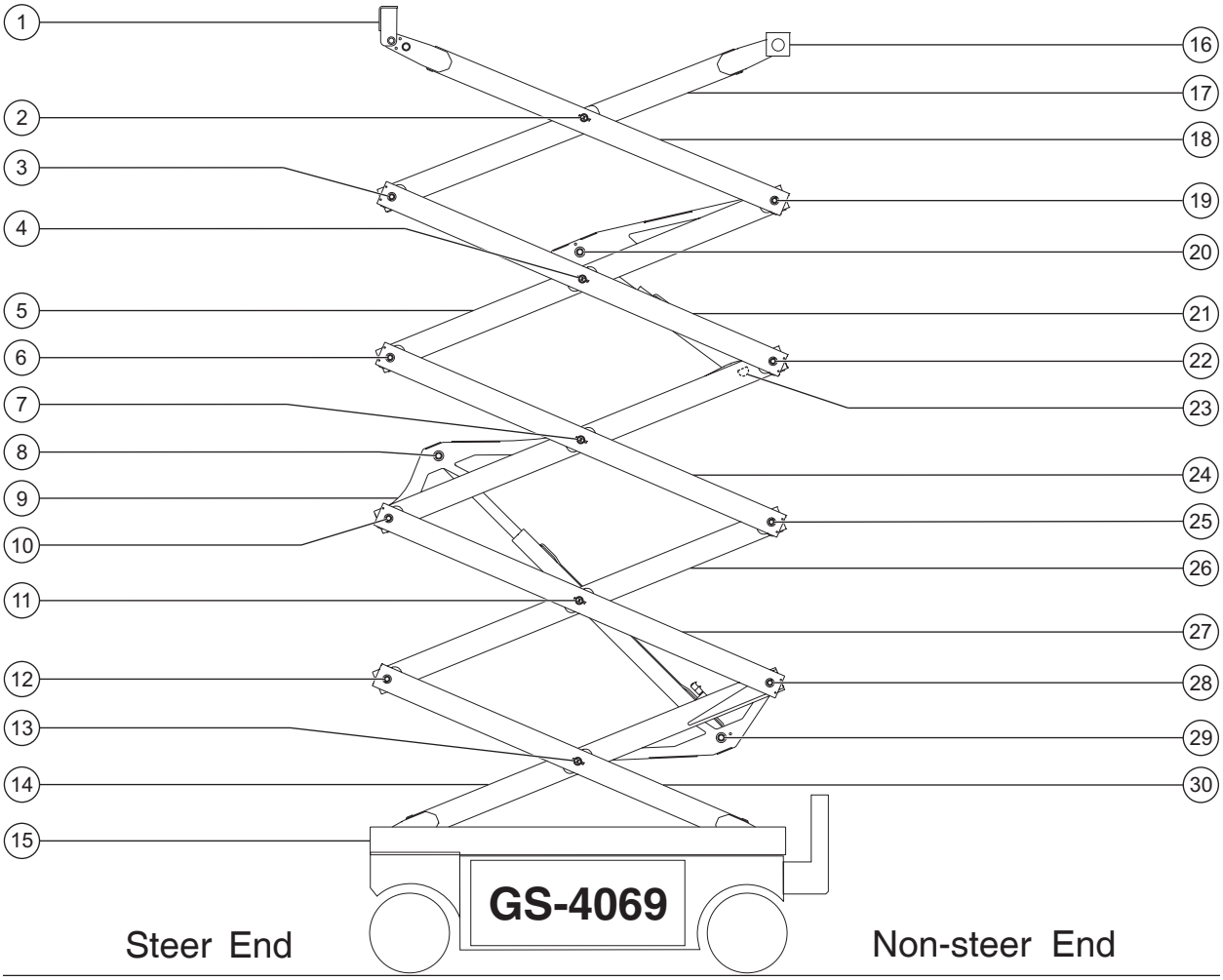
2 Remove the retaining fasteners from the center pivot pins (index #2, #4, #7 or #10).

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



1 Platform pivot
2 Number 5 center pivot pin (2 each)
3 Number 5 pivot pin (steer end)
4 Number 4 center pivot pin (2 each)
5 Number 4 inner arm
6 Number 4 pivot pin (steer end)
7 Number 3 center pivot pin (2 each)
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 (2 each)
12 Number 2 pivot pin (steer end)
13 Number 1 center pivot pin (2 each)
14 Number 1 inner arm
15 Chassis pivot
16 Slider block (2 each)
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)

3-3
Scissor Assembly, GS-4069 RT

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 required.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*.

Note: This procedure will require an overhead lifting device and sling chains capable of supporting 1000 lbs / 454 kgs.

1 Remove the platform. See 2-1, *How to Remove the Platform.*

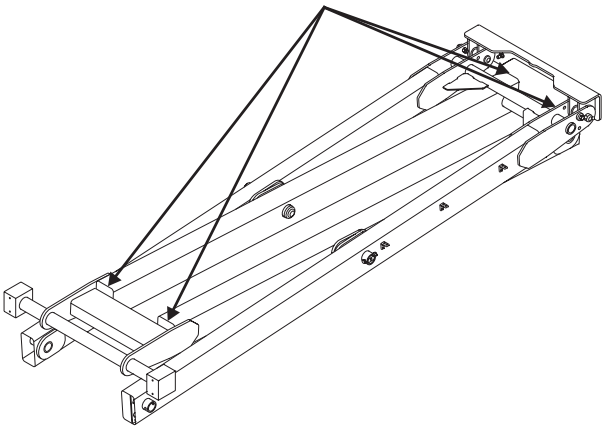
2 Remove the retaining fasteners that attach the ladder to the drive chassis. Remove the ladder and set aside.

3 Remove the cables from the platform through the linkage assembly.

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

4 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 5 inner arm (index #17). 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 (index #3 and #19).

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.

SCISSOR COMPONENTS

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

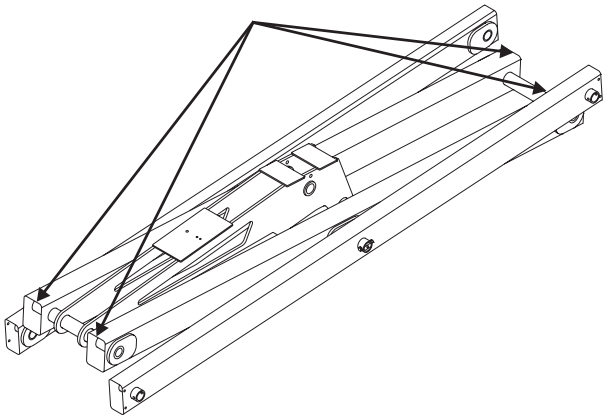
9 Remove the upper cylinder rod end pivot pin (index #20) retaining fasteners.

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

11 Lower the lift cylinder and remove the strap.

12 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 4 inner arm (index #5). Make the chains tight but do not apply lifting pressure.

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



13 Remove the retaining fasteners from the number 4 pivot pins (index #6 and #22).

Note: Do not remove the external snap ring.

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

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

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

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

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

18 Remove the cables and hoses from the linkage assembly.

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

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

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

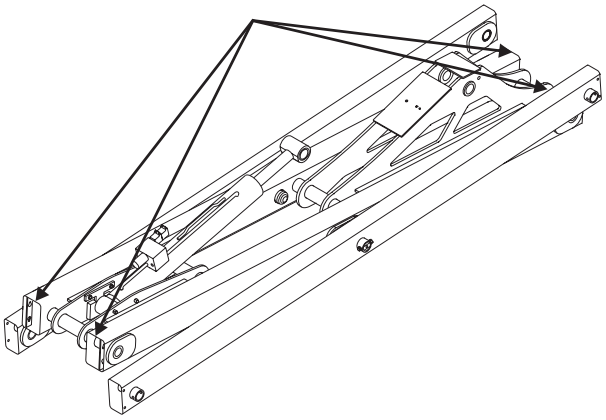
21 Remove the lower cylinder rod end pivot pin (index #8) retaining fasteners.

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

23 Lower the lift cylinder and remove the strap.

24 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 3 inner arm (index #9). 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 (index #10 and #25).

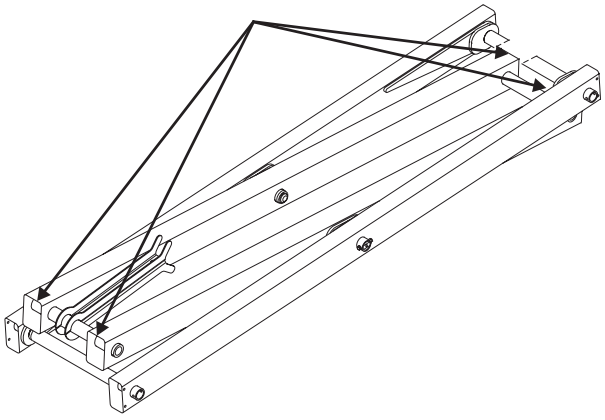
Note: Do not remove the external snap ring.

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

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

28 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 2 inner arm (index #26). 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 (index #12 and #28).

Note: Do not remove the external snap ring.

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

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

SCISSOR COMPONENTS

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

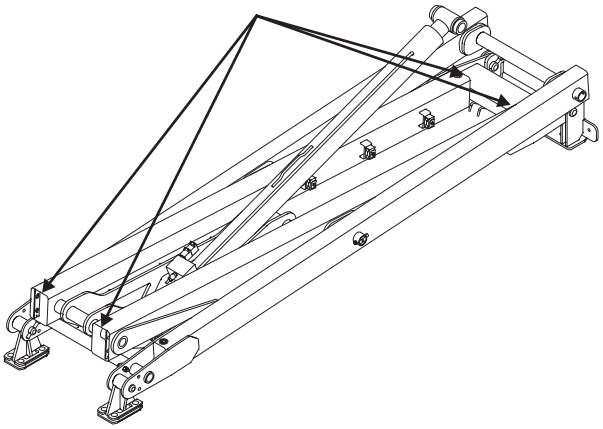
33 Tag and disconnect the hydraulic hoses from the lower lift cylinder. Plug the hoses and cap the fittings.

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

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

35 Using an overhead lifting device attach a 4 hook sling chain to the ends of the number 1 inner arm (index #14). Make the chains tight but do not apply lifting pressure.

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



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

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

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

Separate the link sets:

1 Using an overhead lifting device attach a 4 hook sling chain to the ends of the inner arm (index #5, #9, #14, #17 or #26). 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 (index #2, #4, #7, #11 or #13).

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. It will need to be carefully adjusted for proper balancing.

3-4
Wear Pads

How to Replace the Scissor Arm Wear Pads

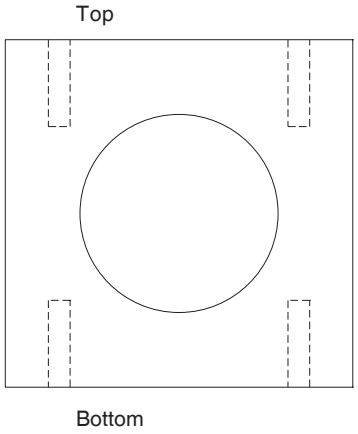
Platform Scissor Arm Slider Blocks:

1 Remove the platform. See 2-1, 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.

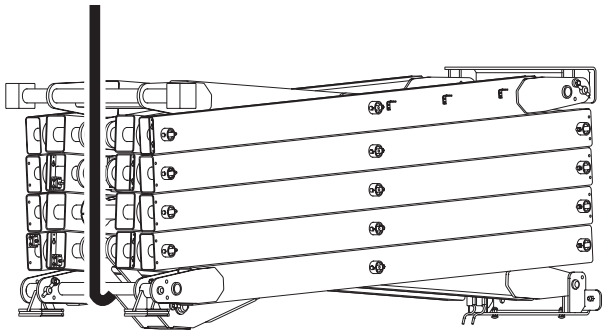
2 Remove the fasteners securing the ladder to the chassis. Remove the ladder from the machine and set aside.

⚠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.

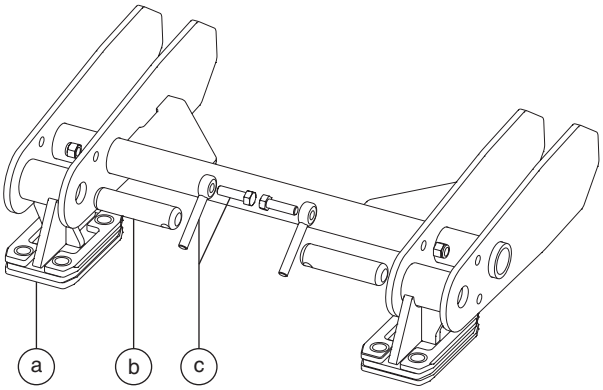
⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported.



SCISSOR COMPONENTS

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

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



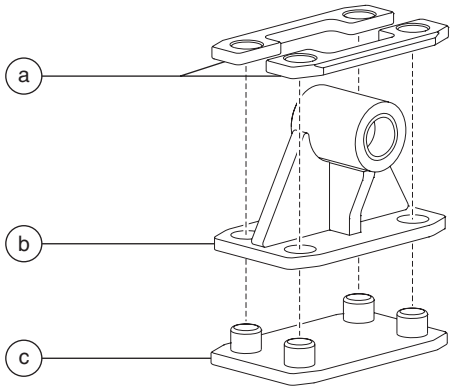
a Slider foot assembly
b pivot pin
c retaining fasteners

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.



a upper wear pads
b slider foot
c 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.

3-5
Lift Cylinder(s)

The lift cylinders are single acting hydraulic cylinders. The GS-2669 RT and GS-3369 RT uses one lift cylinder; the GS-4069 RT 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

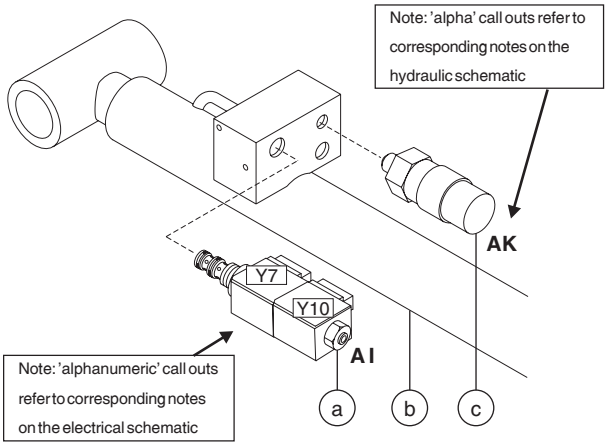
GS-2669 RT and GS-3369 RT:

⚠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 on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*.

1 Remove the platform. See 2-1, *How to Remove the Platform.*

2 Disassemble the scissor assembly. See 3-1 or 3-2, *How to Disassemble the Scissor Assembly.*



GS-2669 RT and GS-3369 RT

a platform down solenoid valve
b lift cylinder
c pressure switch (CE models)

SCISSOR COMPONENTS

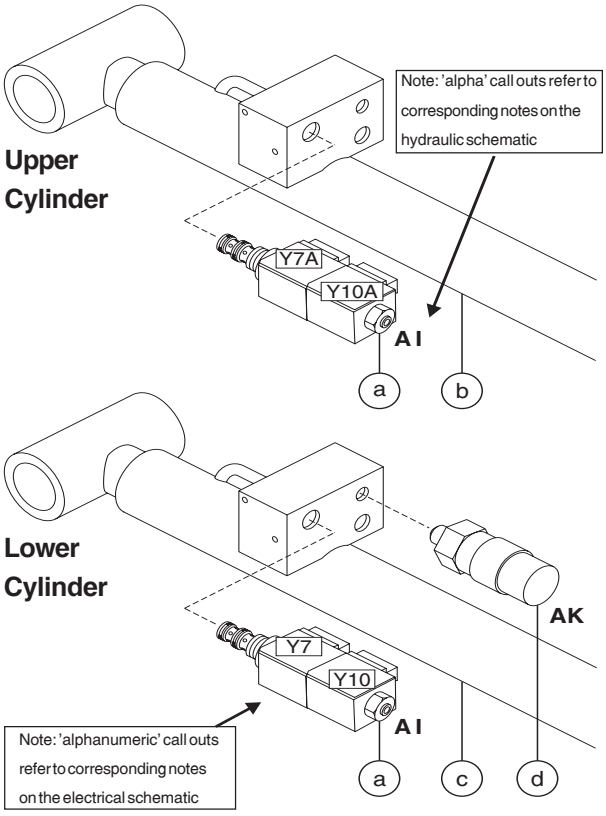
GS-4069 RT:

⚠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 on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*.

1 Remove the platform. See 2-1, *How to Remove the Platform.*

2 Disassemble the scissor assembly. See 3-3, *How to Disassemble the Scissor Assembly.*



GS-4069 RT

a platform down solenoid valve
b upper lift cylinder
c lower lift cylinder
d pressure switch (CE models)

Kubota D1105 Engine

4-1
Timing Adjustment

Complete information to perform this procedure is available in the *Kubota D1105 Workshop Manual* (Kubota part number 9Y111-00123).

Kubota D1105 Workshop Manual	
Genie part number	229761

4-2
Glow Plugs

How to Check the Glow Plugs

1 Connect the leads from an ohmmeter between the far left glow plug and ground.

⊙ Result: The resistance should be approximately 1Ω.

2 If the ohm reading is different than 1Ω, remove the wire and connector plate from the three individual glow plugs. Then, one glow plug at a time, measure the resistance between the glow plug and ground.

⊙ Result: The resistance should be approximately 1.8Ω for each individual glow plug.

3 Install the connector plate and wires to all three glow plugs.

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

5 Connect the red positive (+) lead from a volt meter to the number three glow plug. Connect the black negative (-) lead to ground.

6 Hold the glow plug switch in the on position.

⊙ Result: The volt meter should read 12V DC or more.

KUBOTA D1105 ENGINE

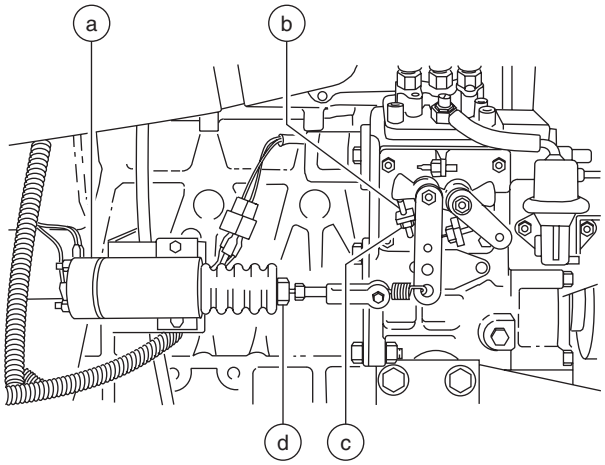
4-3 Engine RPM

How to Adjust the RPM

1 Start the engine from the ground controls.

2 Hold the start toggle switch to the start position and check the engine RPM on the diagnostic display. Refer to Section 2, *Specifications*. Proceed to step 4 if the low idle is correct.

3 To correct the low idle speed, loosen the lock nut, then turn the low idle adjustment screw clockwise to increase the rpm or counterclockwise to decrease the rpm. Tighten the lock nut and recheck the rpm.



a high idle solenoid
b low idle adjustment screw
c lock nut
d high idle adjustment nut

4 Move the engine idle control switch to high idle (rabbit symbol) from the ground controls.

5 Hold the start toggle switch to the start position and check the engine RPM on the diagnostic display. Refer to Section 2, *Specifications*.

6 To correct the high idle speed, loosen the lock nut on the solenoid, then turn the solenoid boot counterclockwise to increase the rpm or clockwise to decrease the rpm. Tighten the lock nut and recheck the rpm.

4-4 Flex Plate

The flex plate couples the engine to the pump. The flex plate is bolted to the engine flywheel and has a splined cutout in the center to engage the pump coupler.

How to Remove the Flex Plate

1 Attach a lifting strap from an overhead crane to the pump assembly for support. Do not lift it.

2 Remove all of the pump mounting plate to engine fasteners.

3 Carefully pull the pump assembly away from the engine and secure it from moving.

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

4 Remove the flex plate mounting fasteners. Remove the flex plate from the flywheel.

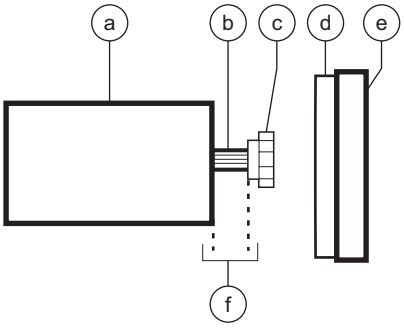
How to Install the Flex Plate

1 Install the flex plate onto the flywheel with the raised spline toward the pump.

Note: Install the coupler onto the pump shaft with the set screw towards the pump. Leave a 1/32 inch / 0.8 mm gap between the coupler and pump end plate. Apply Loctite® removable thread locker to the coupler set screw and torque the set screw to 36-40 ft-lbs / 49-54 Nm.

2 Apply Loctite® removable thread locker to the flex plate mounting fasteners. Torque the flex plate mounting fasteners to 40 ft-lbs / 54 Nm.

NOTICE Component damage hazard. Do not force the drive pump during installation or the flex plate splines may become damaged.



a pump
b pump shaft
c pump coupler
d flex plate
e flywheel
f 1/8 inch / 3.175 mm gap

4-5 Coolant Temperature and Oil Pressure Switches

The engine coolant temperature switch is a normally open switch. The switch contacts close at approximately 225˚F / 107˚C. If the coolant temperature rises above the switch point, the switch contacts close and the engine will shut off to prevent damage. The engine will not start until the temperature drops below the switch point. An over-temperature indicator light at the ground controls should turn on when the switch closes.

The engine oil pressure switch is a normally closed switch. The switch contacts open 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. A low oil pressure indicator light at the ground controls should turn on when the switch opens.

How to Replace the Coolant Temperature and Oil Pressure Switches

1 Open the engine side cover and pull up on the lock pin on the engine pivot tray located under the radiator. Swing the engine pivot tray out and away from the machine to access both switches.

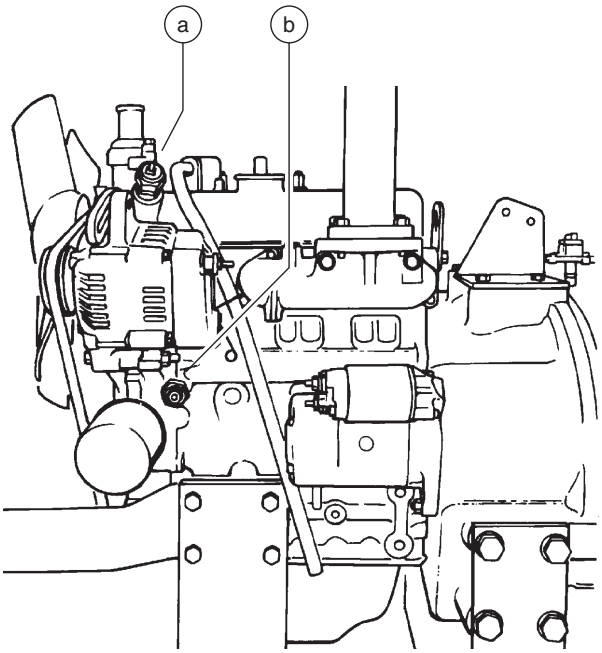
KUBOTA D1105 ENGINE

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

⚠CAUTION Bodily injury hazard. Contact with hot engine fluids or components may cause severe burns.

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

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



a coolant temperature switch
b oil pressure switch

How to Repair the Kubota D1105 Engine

Repair procedures and additional engine information are available in the *Kubota D1105 Operator's Manual* (Kubota part number 16622-89166). *Kubota D1105 Workshop Manual* (Kubota part number 9Y111-00123).

Kubota D1105 Operator's Manual	
Genie part number	131379
Kubota D1105 Workshop Manual	
Genie part number	229761

Kubota WG972 Engine

5-1 Timing Adjustment

Note: The ignition timing cannot be adjusted. The timing adjustment screw is factory sealed with a tamper resistant cap installed by the manufacturer. If service or repair is needed, contact your local Kubota dealer.

5-2 Carburetor Adjustment

Note: The carburetor cannot be adjusted. The carburetor mixture screws are factory sealed with tamper resistant caps installed by the manufacturer. If service or repair is needed, contact your local Kubota dealer.

5-3 Choke Adjustment

The choke is solenoid-operated and functions only in the gasoline mode. The choke will not operate in LPG mode.

5-4 Flex Plate

See 4-4, *Flex Plate*.

5-5 Coolant Temperature and Oil Pressure Switches

See 4-5, *Coolant Temperature and Oil Pressure Switches*.

KUBOTA WG972 ENGINE

5-6
Engine RPM

How to Adjust the RPM

Note: The on-board self diagnostics incorporate a built-in engine tachometer. The engine rpm is displayed on the diagnostic display when the start button is held to the start position with the engine running.

Note: Perform this procedure in gasoline mode with the engine at normal operating temperature.

1 Start the engine from the ground controls.

2 Hold the start button to the start position and check the engine RPM on the diagnostic display. Refer to Section 2, *Specifications*. Proceed to step 9 if the low idle is correct.

3 To correct the low idle speed, Loosen the core clamp screw so the cable moves freely.

4 Loosen the lock nut on the high idle adjustment nut.

5 Turn the high idle adjustment nut counterclockwise until the adjustment nut is flush against the solenoid.

6 Turn the lock nut against the adjustment nut. Do not tighten.

7 Hold the throttle lever against the low idle adjustment screw and turn the adjustment screw clockwise to increase rpm or counterclockwise to decrease rpm.

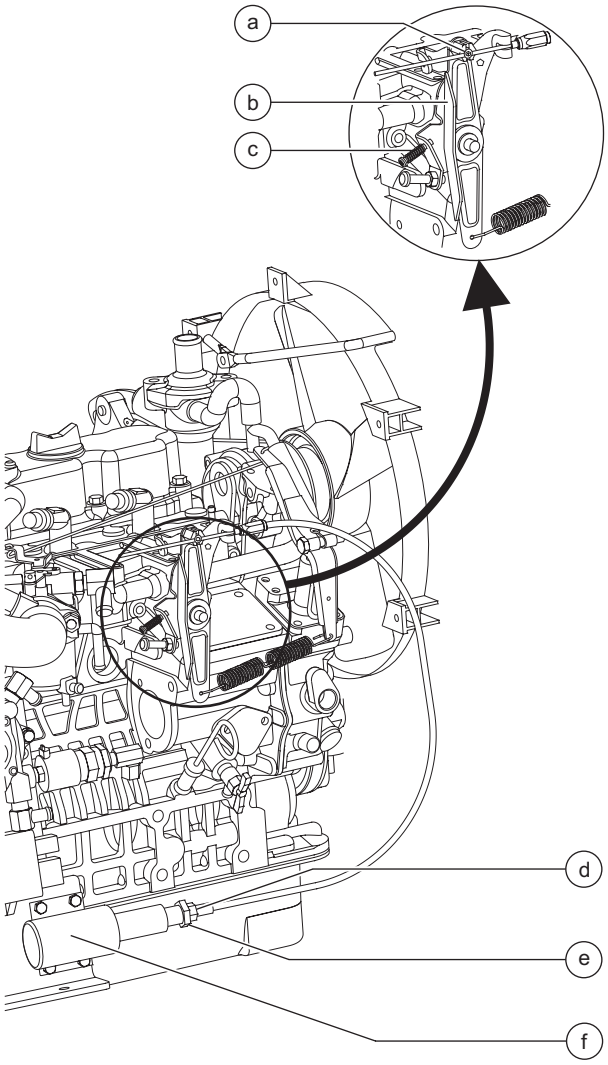
8 While holding the throttle lever against the low idle adjustment screw, tighten the core clamp screw.

9 Push the engine idle control button to high idle (rabbit symbol) from the ground controls.

10 Hold the start button to the start position and check the engine RPM on the diagnostic display. Refer to Section 2, *Specifications*.

11 To correct the high idle speed, loosen the lock nut on the high idle adjustment nut, turn the high idle adjustment nut clockwise to increase the rpm or counterclockwise to decrease the rpm. Tighten the lock nut and confirm the rpm.

Note: Be sure the solenoid fully retracts when activating high idle.



a core clamp screw
b throttle lever
c low idle adjustment screw
d lock nut
e high idle adjustment nut
f high idle solenoid

How to Repair the Kubota WG972 Engine

Repair procedures and additional engine information are available in the *Kubota WG972 Operator's Manual* (Kubota part number EG801-8916-2). *Kubota WG972 Workshop Manual* (Kubota part number 9Y111-03180).

Kubota WG972 Operator's Manual	
Genie part number	234803
Kubota WG972 Workshop Manual	
Genie part number	234802

Perkins 403D-11 Engine

6-1
Engine RPM

How to Adjust the RPM

1 Start the engine from the ground controls.

2 Hold the start toggle switch to the start position and check the engine RPM on the diagnostic display. Refer to Section 2, *Specifications*. Proceed to step 4 if the low idle is correct.

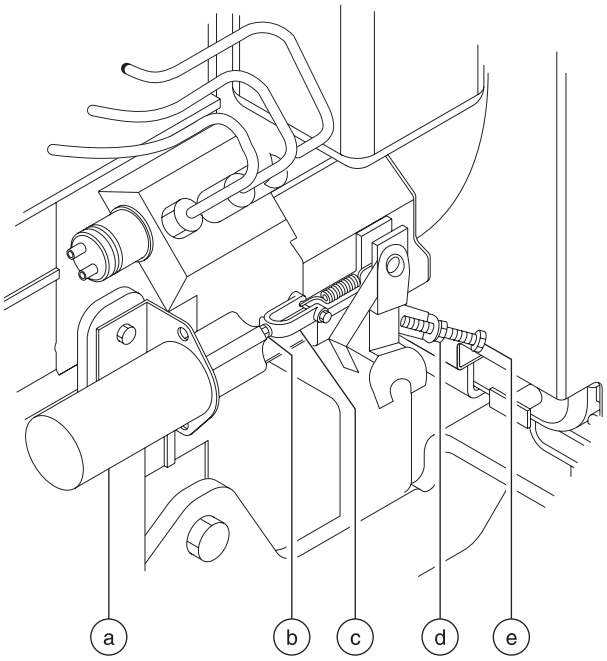
3 To correct the low idle speed, loosen the locknut on the low idle adjustment screw. Turn the low idle adjustment screw on the linkage clockwise to increase rpm or counterclockwise to decrease rpm. Tighten the lock nut and recheck the rpm. See the illustration.

4 Move the engine idle control switch to high idle (rabbit symbol) from the ground controls.

5 Hold the start toggle switch to the start position and check the engine RPM on the diagnostic display. Refer to Section 2, *Specifications*.

6 To correct the high idle speed, loosen the yoke lock nut on the high idle solenoid, then turn the high idle adjustment nut and solenoid boot counterclockwise to increase the rpm or clockwise to decrease the rpm. Tighten the yoke lock nut and recheck the rpm. See the illustration.

Note: Be sure the solenoid fully retracts when activating high idle.



a solenoid
b yoke locknut
c yoke
d low idle lock nut
e low idle adjustment screw

6-2
Timing Adjustment

Complete information to perform this procedure is available in the *Perkins 403D-11 Workshop Manual* (Perkins part number KENR6942).

Perkins 403D-11 Workshop Manual	
Genie part number	131662

6-3
Flex Plate

See 4-4, *Flex Plate*.

6-4
Coolant Temperature and Oil Pressure Switches

The engine coolant temperature switch is a normally open switch. The switch contacts close at approximately 221˚F / 105˚C. If the coolant temperature rises above the switch point, the switch contacts close and the engine will shut off to prevent damage. The engine will not start until the temperature drops below the switch point.

The engine oil pressure switch is a normally open switch. The switch contacts close at approximately 4.27 psi / 0.3 bar. If the oil pressure drops below the switch point, the contacts close and the engine will shut off to prevent damage.

A fault code will be shown in the diagnostic display window at the ground controls when either switch closes.

How to Replace the Coolant Temperature and Oil Pressure Switches

1 Open the engine side cover and pull up on the lock pin on the engine pivot tray located under the radiator. Swing the engine pivot tray out and away from the machine to access both switches.

PERKINS 403D-11 ENGINE

2 **Coolant temperature switch:** Tag and disconnect the wiring from the switch, located at the engine coolant outlet just above the alternator. Remove the switch from the engine.

Oil pressure switch: Tag and disconnect the wiring from the switch, located at the top of the engine just in front of the valve rocker cover. Remove the switch from the engine.

⚠CAUTION Bodily injury hazard. Contact with hot engine fluids or components may cause severe burns.

3 **Coolant temperature switch:** Install the new switch. Torque to 20 ft-lbs / 27 Nm.

Oil pressure switch: Install the new switch. Torque to 88 in-lbs / 10 Nm.

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

How to Repair the Perkins 403D-11 Engine

Repair procedures and additional engine information are available in the *Perkins 403D-11 Operators Manual* (Perkins part number SEBU8311-01) OR the *Perkins 403D-11 Workshop Manual* (Perkins part number KENR6942).

Perkins 403D-11 Operator's Manual	
Genie part number	131661
Perkins 403D-11 Workshop Manual	
Genie part number	131662

Ground Controls

7-1 Auxiliary Platform Lowering

Auxiliary Platform Lowering

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

The auxiliary platform lowering circuit uses the main 12V DC battery for its power source.

7-2 Function Speed Tuning

All machine function speeds are determined by the percentage of total ECM voltage output. The speeds of the following machine functions may be adjusted to compensate for wear in the hydraulic pump and drive motors.

- Stowed drive speed
- High torque drive speed
- Raised drive speed
- Platform lift speed

For further information or assistance, consult the Genie Industries Service Department.

⚠ DANGER Tip-over hazard. Do not adjust the lift and/or drive speed higher than specified in this procedure. Setting drive speed 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 will result in death or serious injury.

How to Determine the Revision Level

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

⊙ Result: The revision level of the ECM will appear in the LED display window.

GROUND CONTROLS

How to Adjust the Stowed Drive Speed

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

1 Pull out the red Emergency Stop button to the on position at the platform controls.

2 Push in the red Emergency Stop button to the off position at the ground controls.

3 Turn the key switch to ground control.

4 Press and hold both the blue platform up and yellow platform down buttons. Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: TUNE SPEEDS is showing in the diagnostic display window. The ECM is now in programming mode.

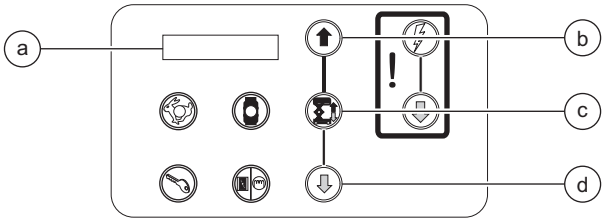
5 Press the lift function enable button.

6 Use the yellow platform down arrow to scroll to max fwd high speed drive.

⊙ Result: MAX FWD HIGH SPEED DRIVE is showing in the diagnostic display window.

7 Press the lift function enable button.

8 Press the yellow platform down button to decrease the drive speed or press the blue platform up button to increase the drive speed. Refer to Section 2, *Specifications*.



a diagnostic display
b blue platform up button
c lift function enable button
d yellow platform down button

9 Press the lift function enable button.

⊙ Result: MAX FWD HIGH SPEED DRIVE is showing in the diagnostic display window.

10 Use the yellow platform down arrow to scroll to max rev high speed drive.

⊙ Result: MAX REV HIGH SPEED DRIVE is showing in the diagnostic display window.

11 Press the lift function enable button.

12 Press the yellow platform down button to decrease the drive speed or press the blue platform up button to increase the drive speed. Refer to Section 2, *Specifications*.

13 Press the lift function enable button.

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

15 Check the stowed drive speed of the machine. Refer to the Maintenance procedure B-10, *Test the Drive Speed - Stowed Position*.

How to Adjust the Stowed High Torque Drive Speed

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

1 Pull out the red Emergency Stop button to the on position at the platform controls.

2 Push in the red Emergency Stop button to the off position at the ground controls.

3 Turn the key switch to ground control.

4 Press and hold both the blue platform up and yellow platform down buttons. Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: TUNE SPEEDS is showing in the diagnostic display window. The ECM is now in programming mode.

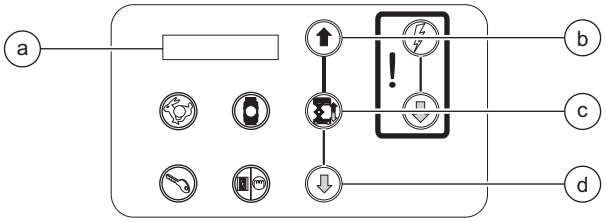
5 Press the lift function enable button.

6 Use the yellow platform down arrow to scroll to max fwd high torque drive.

⊙ Result: MAX FWD HIGH TORQUE DRIVE is showing in the diagnostic display window.

7 Press the lift function enable button.

8 Press the yellow platform down button to decrease the drive speed or press the blue platform up button to increase the drive speed. Refer to Section 2, *Specifications*.



a diagnostic display
b blue platform up button
c lift function enable button
d yellow platform down button

9 Press the lift function enable button.

⊙ Result: MAX FWD HIGH TORQUE DRIVE is showing in the diagnostic display window.

10 Use the yellow platform down arrow to scroll to max rev high torque drive.

⊙ Result: MAX REV HIGH TORQUE DRIVE is showing in the diagnostic display window.

11 Press the lift function enable button.

12 Press the yellow platform down button to decrease the drive speed or press the blue platform up button to increase the drive speed. Refer to Section 2, *Specifications*.

13 Press the lift function enable button.

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

GROUND CONTROLS

How to Adjust the Raised Drive Speed

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

1 Pull out the red Emergency Stop button to the on position at the platform controls.

2 Push in the red Emergency Stop button to the off position at the ground controls.

3 Turn the key switch to ground control.

4 Press and hold both the blue platform up and yellow platform down buttons. Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: TUNE SPEEDS is showing in the diagnostic display window. The ECM is now in programming mode.

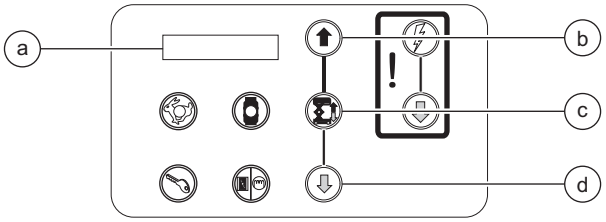
5 Press the lift function enable button.

6 Use the yellow platform down arrow to scroll to max fwd high torque drive.

⊙ Result: MAX FWD RAISED DRIVE SPEED is showing in the diagnostic display window.

7 Press the lift function enable button.

8 Press the yellow platform down button to decrease the drive speed or press the blue platform up button to increase the drive speed. Refer to Section 2, *Specifications*.



a diagnostic display
b blue platform up button
c lift function enable button
d yellow platform down button

9 Press the lift function enable button.

⊙ Result: MAX FWD RAISED DRIVE SPEED is showing in the diagnostic display window. The ECM is now in programming mode.

10 Use the yellow platform down arrow to scroll to max rev high speed drive.

⊙ Result: MAX REV RAISED DRIVE SPEED is showing in the diagnostic display window.

11 Press the lift function enable button.

12 Press the yellow platform down button to decrease the drive speed or press the blue platform up button to increase the drive speed. Refer to Section 2, *Specifications*.

13 Press the lift function enable button.

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

15 Check the raised drive speed of the machine. Refer to the Maintenance procedure B-11, *Test the Drive Speed - Raised Position*.

How to Adjust the Lift Speed

1 Pull out the red Emergency Stop button to the on position at the platform controls.

2 Push in the red Emergency Stop button to the off position at the ground controls.

3 Turn the key switch to ground control.

4 Press and hold both the blue platform up and yellow platform down buttons. Pull out the red Emergency Stop button to the on position at the ground controls.

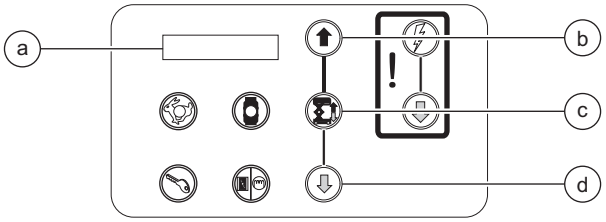
⊙ Result: TUNE SPEEDS is showing in the diagnostic display window. The ECM is now in programming mode.

5 Press the lift function enable button.

6 Use the yellow platform down arrow to scroll to max lift speed.

⊙ Result: MAX LIFT SPEED is showing in the diagnostic display window.

7 Press the lift function enable button.



a diagnostic display
b blue platform up button
c lift function enable button
d yellow platform down button

8 Press the yellow platform down button to decrease the maximum lift speed or press the blue platform up button to increase the maximum lift speed. Refer to Section 2, *Specifications*.

9 Press the lift function enable button.

10 Push in the red Emergency Stop button to the off position at the ground controls.

11 Check the lift speed of the machine. Refer to Section 2, *Specifications*.

GROUND CONTROLS

7-3 Software Configuration

How to Configure the Software

The Electronic Control Module (ECM) contains programming for all configurations of the GS-69. Machines can be adjusted to a different configuration using the buttons at the ground controls. To determine the software revision level, see 7-2, *How to Determine the Revision Level*.

ANSI and CSA models:

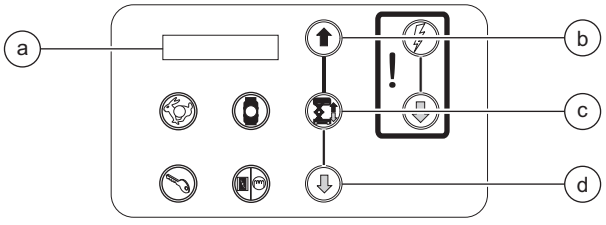
1 Turn the key switch to ground controls and pull out the red Emergency Stop buttons to the on position at both platform and ground controls.

⊙ Result: The revision level of the ECM will appear in the LED display window. Note the result.

2 Push in the red Emergency Stop button to the off position at the ground controls.

3 Press and hold both the blue platform up and yellow platform down buttons. Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: TUNE SPEEDS is showing in the diagnostic display window.



a diagnostic display
b blue platform up button
c lift function enable button
d yellow platform down button

Machine Option Definitions

Descent Delay: This option halts descent when the down limit switch is activated. All controls must be released for 4 to 6 seconds before descent is re-enabled. Required for Europe.

Motion Alarm: The motion alarm will sound when activating a function.

Motion Beacons: The flashing beacons operate only when activating a function.

Overload: This cuts out all functions when the platform overload pressure switch is tripped. The red Emergency Stop button must be cycled before any function can be resumed. Required for Europe and Australia.

Beacons: When installed on the machine, the flashing beacons operate continuously when the key switch is turned to ground or platform controls and both red Emergency Stop buttons are pulled out to the on position.

Generator: When installed on the machine, the generator can only be operated when the engine is running.

Sim Operation: Not available.

Outriggers: When installed on the machine, the outrigger option must be enabled.

4 Use the yellow platform down arrow to scroll to select options.

⊙ Result: SELECT OPTIONS is showing in the diagnostic display window. The ECM is now in programming mode.

5 Press the lift function enable button.

⊙ Result: DESCENT DELAY is showing in the diagnostic display window. Press the lift function enable button to activate or deactivate the descent delay option.

Note: For CE and AS models, the descent delay option should be activated or in the ON position.

6 Use the yellow platform down arrow to scroll to motion alarm.

⊙ Result: MOTION ALARM is showing in the diagnostic display window.

7 Press the lift function enable button to activate or deactivate the motion alarm option OR use the yellow platform down arrow to scroll to motion beacon.

⊙ Result: MOTION BEACON is showing in the diagnostic display window.

8 Press the lift function enable button to activate or deactivate the motion beacon option.

Note: For this option to function correctly, the machine must be equipped with flashing beacons.

Note: If the machine is not equipped with flashing beacons and this option is set to on, the ECU will display a 4021 fault code.

9 **Models with platform overload (option):** Use the yellow platform down arrow to scroll to overload.

⊙ Result: OVERLOAD ON is showing in the diagnostic display window.

⊠ Result: OVERLOAD OFF is showing in the diagnostic display window. Press the lift function enable button to activate the overload option.

Note: For CE and AS models, the overload option should be activated or in the ON position.

10 Use the yellow platform down arrow to scroll to beacons option.

⊙ Result: BEACONS ON is showing in the diagnostic display window. Press the lift function enable button to activate or deactivate the beacons option.

Note: For this option to function, the machine must be equipped with flashing beacons and the software set to BEACONS ON.

Note: If the machine is not equipped with flashing beacons and this option is set to on, the ECU will display a 4021 fault code.

11 Use the yellow platform down arrow to scroll to generator option.

⊙ Result: GENERATOR ON is showing in the diagnostic display window. Press the lift function enable button to activate or deactivate the generator option.

Note: For this option to function correctly, the machine must be equipped with the required generator components and the software set to GENERATOR ON.

GROUND CONTROLS

12 Use the yellow platform down arrow to scroll to outriggers option.

⊙ Result: OUTRIGGERS ON is showing in the diagnostic display window. Press the lift function enable button to activate or deactivate the outrigger option. Proceed to step 18.

Note: For this option to function correctly, the machine must be equipped with the required outrigger components and the software set to OUTRIGGERS AUTO or OUTRIGGERS ON.

13 Use the yellow platform down arrow to scroll to return to the main menu.

⊙ Result: RETURN TO MAIN MENU is showing in the diagnostic display window.

14 Press the lift function enable button.

⊙ Result: SELECT OPTIONS is showing in the diagnostic display window.

15 Push in the red Emergency Stop button to the off position at the ground controls.

7-4 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

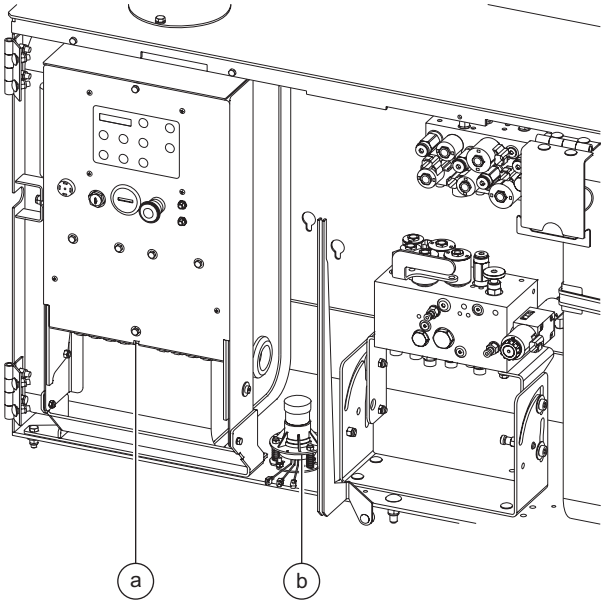
⚠ DANGER Tip-over hazard. Failure to install or calibrate the level sensor as instructed could result in the machine tipping over causing death or serious injury. Do not install or calibrate the level sensor other than specified in this procedure.

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.

If you are not installing a new level sensor, proceed to step 9.

2 Locate the level sensor in the ground controls compartment.



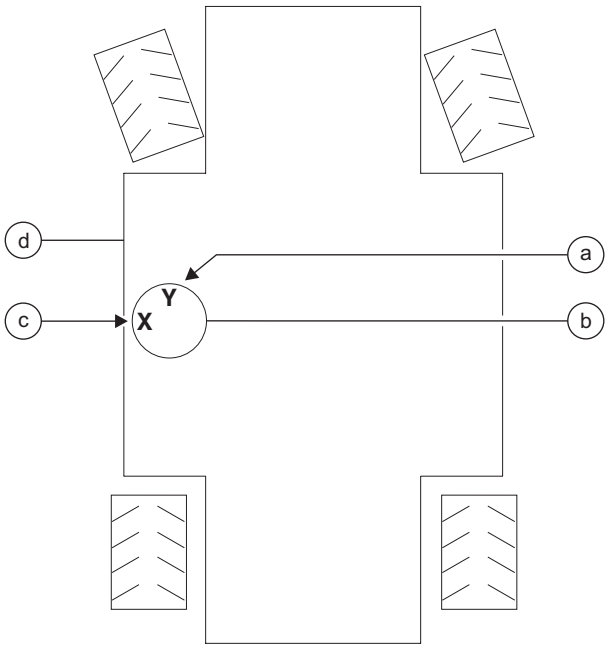
a ground control box
b level sensor

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

4 Remove the retaining fasteners securing the level sensor to the compartment. Remove the level sensor from the machine.

5 Install the new level sensor onto the machine with the "Y" 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 "Y" on the level sensor base towards the steer end of the machine. Failure to install the tilt level sensor as instructed will cause the machine to tip over resulting in death or serious injury.



a "Y" indicator
b level sensor
c "X" indicator
d chassis

GROUND CONTROLS

6 Connect the wire harness to the level sensor.

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

8 Tighten the level sensor adjusting 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.

⊙ Result: The tilt sensor alarm should not sound.

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

10 Raise the machine approximately 4 inches / 10 cm.

11 **Models with RT tires:** Place a 1.85 x 10 x 10 inch / 4.7 x 25 x 25 cm thick steel block under both wheels at the ground controls side of the machine.
Models with non-marking tires: 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 at least 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 **Models with RT tires:** Place a 2.15 x 10 x 10 inch / 5.46 x 25 x 25 cm thick steel block under both wheels at the ground controls side of the machine.
Models with non-marking tires: 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 at least 12 feet / 3.6 m.

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

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

24 Lower the platform to the stowed position.

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

26 Turn the key switch to the off position.

27 Raise the machine approximately 4 inches / 10 cm.

28 Remove the blocks from under both wheels.

29 Lower the machine and remove the jack.

7-5 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, the tilt alarm sounds 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 and Calibrate the Level Sensor

⚠ DANGER Tip-over hazard. Failure to install or calibrate the level sensor as instructed could result in the machine tipping over causing death or serious injury. Do not install or calibrate the level sensor other than specified in this procedure.

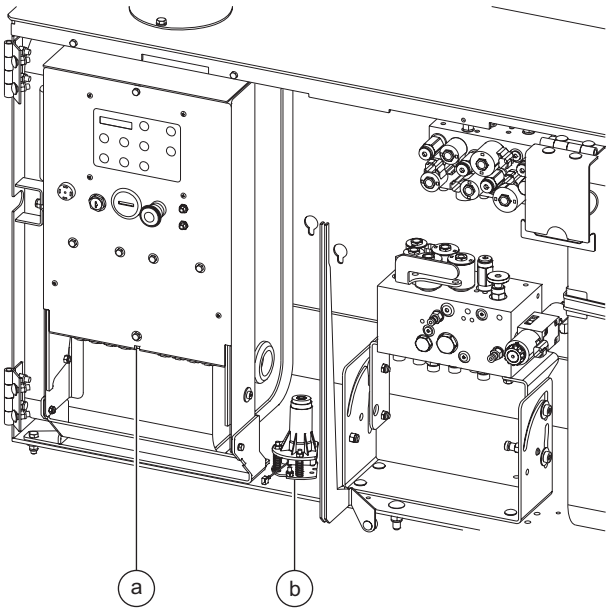
Note: Perform this procedure with the machine on a firm, level surface and the platform in the stowed position. Use a digital level to confirm.

GROUND CONTROLS

1 Remove the platform controls from the platform.

If you are not installing a new level sensor, proceed to step 7.

2 Locate the level sensor in the ground controls compartment.



a ground control box
b level sensor

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

4 Remove the retaining fasteners securing the level sensor to the compartment. 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.

6 Connect the wire harness to the level sensor.

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

8 Set a multimeter to read DC voltage.

Adjust the side-to-side axis:

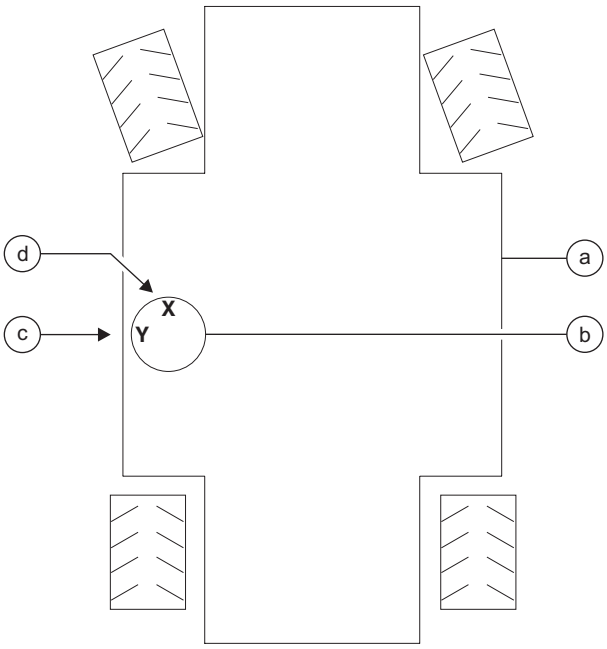
9 Without disconnecting the wire harness from the level sensor, connect the negative lead of the multimeter to the black wire at the level sensor.

10 Without disconnecting the wire harness from the level sensor, connect the positive lead of the multimeter to the yellow wire at the level sensor.

11 Adjust the "Y" axis (side-to-side) to 2.5V DC. Tap the top of the level sensor lightly with fingers after each turn of an adjusting nut.

⚠ DANGER Tip-over hazard. Do not adjust the potentiometers on the bottom of the level sensor or calibrate the level sensor other than specified in this procedure. Failure to calibrate the tilt level sensor as instructed will cause the machine to tip over resulting in death or serious injury.

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



a chassis
b level sensor
c "Y" indicator
d "X" indicator

12 Disconnect the positive lead.

Adjust the front-to-back axis:

13 Without disconnecting the wire harness from the level sensor, connect the positive lead of the multimeter to the blue wire at the level sensor.

14 Adjust the "X" axis (front-to-back) to 2.43V DC. Tap the top of the level sensor lightly with fingers after each turn of an adjusting nut.

⚠ DANGER Tip-over hazard. Do not adjust the potentiometers on the bottom of the level sensor or calibrate the level sensor other than specified in this procedure. Failure to calibrate the tilt level sensor as instructed will cause the machine to tip over resulting in death or serious injury.

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

15 Disconnect the positive and negative leads.

16 Apply Sentry Seal to the adjusting nuts.

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

18 Press and hold the auto level button and press and hold the left front outrigger button. Pull out the red Emergency Stop button to the on position at the platform controls. Continue to hold the auto level button and left front outrigger button for approximately 3 seconds or until a beep is heard. Release the buttons.

19 Push in the red Emergency Stop button to the off position at the platform controls.

GROUND CONTROLS

Confirm the side-to-side level sensor setting:

20 Center a lifting jack under the drive chassis at the ground control side of the machine.

21 Raise the machine approximately 6 inches / 15 cm.

22 **Models with RT tires:** Place a 2.15 x 10 x 10 inch / 5.46 x 25 x 25 cm thick steel block under both wheels at the ground controls side of the machine.

23 Lower the machine onto the blocks.

24 Pull out the red Emergency Stop button to the on position at platform controls. Start the engine.

25 Raise the platform at least 12 feet / 3.6 m.

⊙ Result: The platform stops raising and the tilt alarm will sound at 180 beeps per minute.

⊠ Result: The platform does not stop raising and the tilt alarm does not sound. The level sensor must be replaced. Repeat this procedure beginning with step 2.

Note: For reference only, the output of the level sensor should be approximately 1.7V DC. To confirm, connect the positive lead of a multimeter to the yellow wire at the level sensor, and the negative lead to the black wire.

26 Raise the machine approximately 6 inches / 15 cm.

27 Remove the blocks from under both wheels.

28 Lower the machine and remove the jack.

29 Center a lifting jack under the drive chassis at the tank side of the machine.

30 Raise the machine approximately 6 inches / 15 cm.

31 **Models with RT tires:** Place a 2.15 x 10 x 10 inch / 5.46 x 25 x 25 cm thick steel block under both wheels at the ground controls side of the machine.

32 Raise the platform at least 12 feet / 3.6 m.

⊙ Result: The platform stops raising and the tilt alarm will sound at 180 beeps per minute.

⊠ Result: The platform does not stop raising and the tilt alarm does not sound. The level sensor must be replaced. Repeat this procedure beginning with step 2.

Note: For reference only, the output of the level sensor should be approximately 3.3V DC. To confirm, connect the positive lead of a multimeter to the yellow wire at the level sensor, and the negative lead to the black wire.

33 Lower the platform to the stowed position.

34 Raise the machine approximately 6 inches / 15 cm.

35 Remove the blocks from under both wheels.

36 Lower the machine and remove the jack.

Confirm the front-to-back level sensor setting:

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

38 Raise the machine approximately 6 inches / 15 cm.

39 Place a 4.08 x 10 x 10 inch / 10.36 x 25 x 25 cm thick steel block under both wheels at the steer end of the machine.

40 Lower the machine onto the blocks.

41 Raise the platform at least 12 feet / 3.6 m.

⊙ Result: The platform stops raising and the tilt alarm will sound at 180 beeps per minute.

⊠ Result: The platform does not stop raising and the tilt alarm does not sound. The level sensor must be replaced. Repeat this procedure beginning with step 2.

Note: For reference only, the output of the level sensor should be approximately 1.5V DC. To confirm, connect the positive lead of a multimeter to the blue wire at the level sensor, and the negative lead to the black wire.

42 Lower the platform to the stowed position.

43 Raise the machine approximately 6 inches / 15 cm.

44 Remove the blocks from under both wheels.

45 Lower the machine and remove the jack.

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

47 Raise the machine approximately 6 inches / 15 cm.

48 Place a 4.08 x 10 x 10 inch / 10.36 x 25 x 25 cm thick steel block under both wheels at the non-steer end of the machine.

49 Lower the machine onto the blocks.

50 Raise the platform at least 12 feet / 3.6 m.

⊙ Result: The platform stops raising and the tilt alarm will sound at 180 beeps per minute.

⊠ Result: The platform does not stop raising and the tilt alarm does not sound. The level sensor must be replaced. Repeat this procedure beginning with step 2.

Note: For reference only, the output of the level sensor should be approximately 3.4V DC. To confirm, connect the positive lead of a multimeter to the blue wire at the level sensor, and the negative lead to the black wire.

51 Lower the platform to the stowed position.

52 Raise the machine approximately 6 inches / 15 cm.

53 Remove the blocks from under both wheels.

54 Lower the machine and remove the jack.

55 Turn the key switch to the off position.

Hydraulic Pump

8-1 Hydraulic Pump

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

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *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 (item FF) 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 Start the engine from the platform controls.

4 Steer the machine fully to the right or left and hold. Note the pressure readings on the pressure gauge. Refer to Section 2, *Specifications*.

How to Remove the Hydraulic Pump

1 Tag, disconnect and plug the hydraulic hoses 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 After replacing the hydraulic pump, it is critical to return the lift and drive speed settings to original factory specifications. Refer to Section 3, *Scheduled Maintenance Procedures*.

How to Prime the Pump

NOTICE Component damage hazard. Be sure that the hydraulic tank shut off valves (if equipped) are in the open position before priming the pump. The engine must not be started with the hydraulic tank shut off valves in the closed position or component damage will occur.

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

2 **Gasoline/LPG models:** Disconnect the ignition coil wire from the center of the ignition coil.

Diesel models: Hold the manual fuel shut off lever clockwise in the closed position.

3 Crank the engine with the starter motor for 15 seconds, wait 15 seconds, then crank the engine an additional 15 seconds.

4 Start the engine from the ground controls and check for hydraulic leaks.

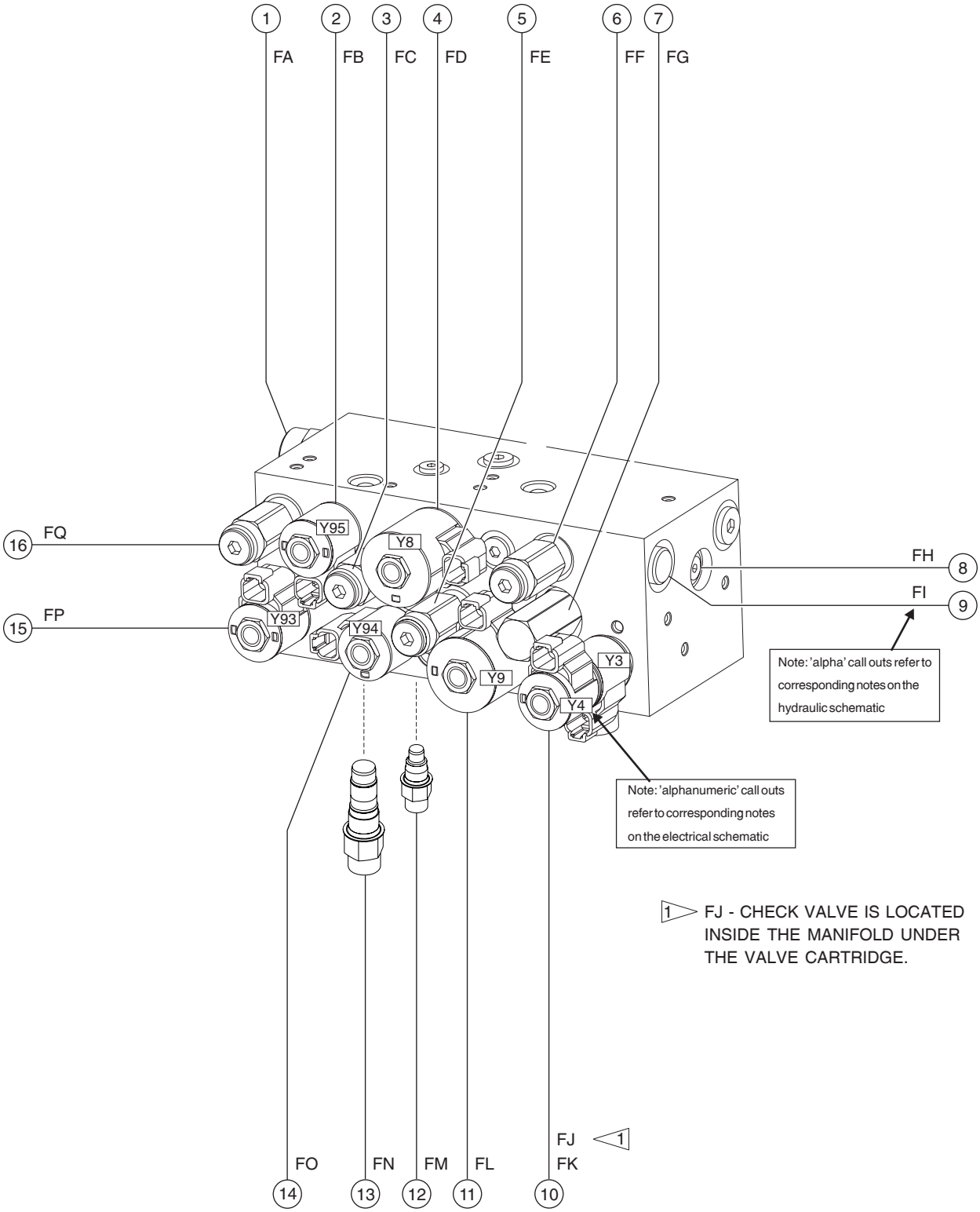
Manifolds

9-1
Function Manifold Components

The function manifold is located inside the hydraulic tray.

Index No.	Description	Schematic Item	Function	Torque
1	Priority flow regulator, 1 gpm / 3.8 L/min	FA	Oscillate circuit	25-30 ft-lbs / 34-41 Nm
2	Solenoid valve, 2 position 2 way N.C.	FB	Oscillate float	25-30 ft-lbs / 34-41 Nm
3	Relief valve, 3300 psi / 227.5 bar	FC	Oscillate circuit	20-25 ft-lbs / 27-34 Nm
4	Solenoid valve, 2 position 3 way N.O.	FD	Platform up	20-25 ft-lbs / 27-34 Nm
5	Relief valve, (GS 2669 and GS 3369) 3000 psi / 207 bar (GS 4069) 2800 psi / 193 bar	FE	Lift circuit	20-25 ft-lbs / 27-34 Nm
6	Relief valve, 3500 psi / 241.3 bar	FF	System relief	20-25 ft-lbs / 27-34 Nm
7	Differential sensing valve, 160 psi / 11 bar	FG	Proportional valve circuit	20-25 ft-lbs / 27-34 Nm
8	Check valve	FH	Differential sensing circuit	12-14 ft-lbs / 16-19 Nm
9	Flow control valve, 2 gpm / 7.6 L/min	FI	Controls flow to the steer circuit	20-25 ft-lbs / 27-34 Nm
10	Solenoid valve, 3 position 5 way NC	FK	Steer left / right	15-20 ft-lbs / 20-27 Nm
	Check valve	FJ	Steer circuit	
11	Proportional solenoid valve	FL	Lift / Drive circuit	33-37 ft-lbs / 45-50 Nm
12	Flow control valve, 6 gpm / 22.7 L/min	FM	Meters flow to functions	20-25 ft-lbs / 27-34 Nm
13	Pressure compensated valve	FN	Lift / Drive circuit	25-30 ft-lbs / 34-41 Nm
14	Solenoid valve, 2 position 3 way	FO	Oscillate right	15-20 ft-lbs / 20-27 Nm
15	Solenoid valve, 2 position 3 way	FP	Oscillate left	15-20 ft-lbs / 20-27 Nm
16	Sequence valve, 850 psi / 58.6 bar	FQ	Oscillate circuit	20-25 ft-lbs / 27-34 Nm

MANIFOLDS


1
2
3
4
5
6
7
FA
FB
FC
FD
FE
FF
FG
16
FQ
15
FP
Y95
Y8
Y93
Y94
Y9
Y3
Y4
FH
8
FI
9
Note: 'alpha' call outs refer to corresponding notes on the hydraulic schematic
Note: 'alphanumeric' call outs refer to corresponding notes on the electrical schematic
1 FJ - CHECK VALVE IS LOCATED INSIDE THE MANIFOLD UNDER THE VALVE CARTRIDGE.
FJ 1
FO
FN
FM
FL
FK
14
13
12
11
10

MANIFOLDS

9-2 Valve Adjustments - Function Manifold

How to Adjust the System 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 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 Start the engine from the platform controls.

4 Steer the machine fully to the right or left and hold. Note the pressure readings on the pressure gauge. Refer to Section 2, *Specifications*.

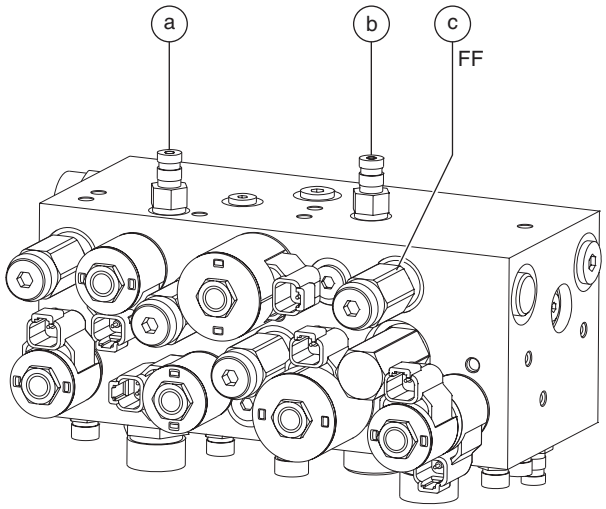
5 Turn the engine off. Use a wrench to hold the system relief valve (item C) and remove the cap .

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 3 to confirm the relief valve pressures.

8 Remove the pressure gauge.



a test port #2
b test port #1
c system relief valve

How to Adjust the Oscillate Relief Valve

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

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

2 Tag and disconnect the harness from the oscillate float valve (item A) on the function manifold.

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 Start the engine from the platform controls.

5 Fully move the drive controller in either direction. Note the pressure readings on the pressure gauge. Refer to Section 2, *Specifications*.

Note: The machine will not drive and a fault will appear on the ground control display.

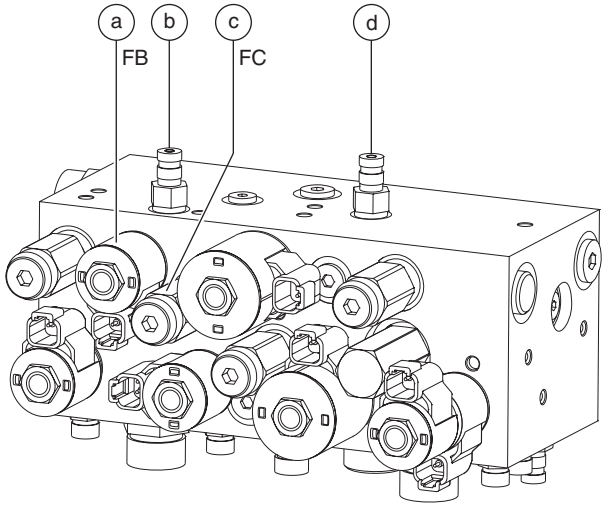
6 Turn the engine off. Use a wrench to hold the oscillate relief valve (item A) and remove the cap.

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

NOTICE Component damage hazard. Do not adjust the relief valve higher than specified.

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

9 Remove the pressure gauge.



a oscillate float valve
b test port #2
c oscillate relief valve
d test port #1

MANIFOLDS

How to Adjust the Platform Up Relief Valve
(Models with Platform overload)

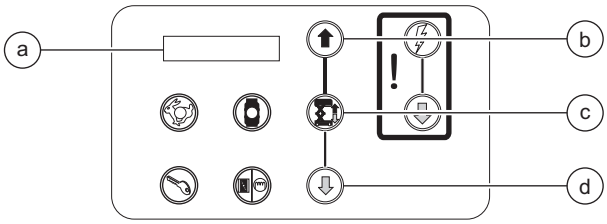
Note: Be sure that the hydraulic oil level is within the top 2 inches / 5 cm of the sight gauge.

Note: This procedure will require a pressure switch harness assembly.

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

2 Press and hold both the blue platform up and yellow platform down buttons. Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: TUNE SPEEDS is showing in the diagnostic display window.



a diagnostic display
b blue platform up button
c lift function enable button
d yellow platform down button

3 Use the yellow platform down arrow to scroll to select options.

⊙ Result: SELECT OPTIONS is showing in the diagnostic display window. The ECM is now in programming mode.

4 Press the lift function enable button.

⊙ Result: DESCENT DELAY is showing in the diagnostic display window.

5 Press the lift function enable button to deactivate the descent delay option.

6 Use the yellow platform down arrow to scroll to overload.

⊙ Result: OVERLOAD ON is showing in the diagnostic display window.

7 Press the lift function enable button to deactivate the overload option.

8 Use the yellow platform down arrow to scroll to return to the main menu.

⊙ Result: RETURN TO MAIN MENU is showing in the diagnostic display window.

9 Press the lift function enable button.

⊙ Result: SELECT OPTIONS is showing in the diagnostic display window.

10 Push in the red Emergency Stop button to the off position at the ground controls.

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

12 Start the engine from the ground controls.

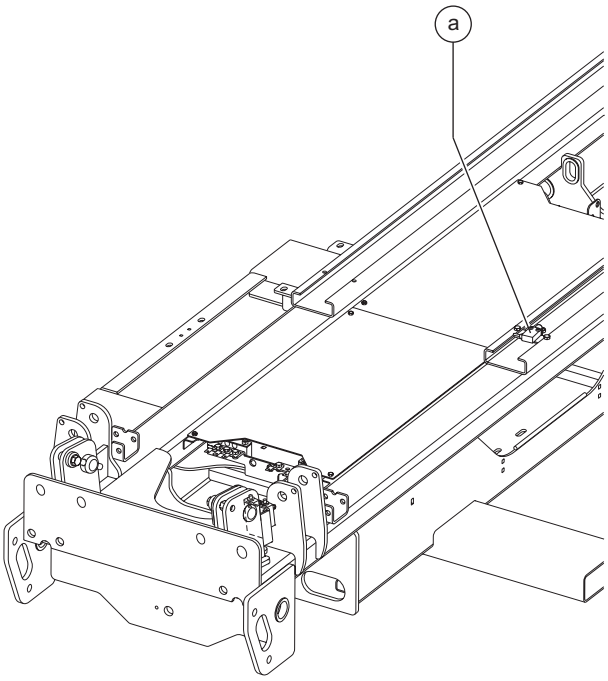
13 Raise the platform approximately 10 feet / 3 m.

14 Lift the safety arm and move it to the center of the linkage and rotate to a vertical position.

15 Lower the platform onto the safety arm. Push in the red Emergency Stop button to the off position.

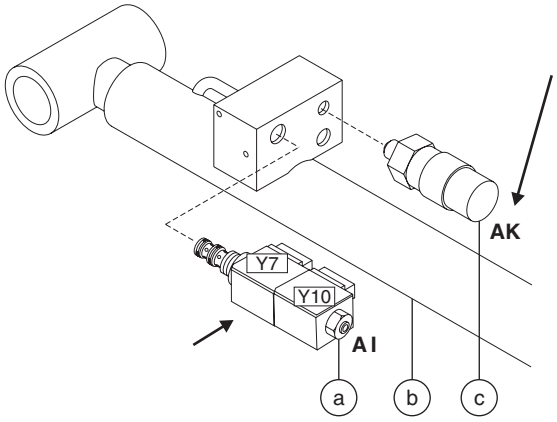
16 Locate and remove the maximum height limit switch from the lower slider channel and set aside.

Note: Do not disconnect the limit switch harness.



a maximum height limit switch

17 Locate and disconnect the lift cylinder pressure switch harness.



a platform down solenoid valve
b lift cylinder
c pressure switch

18 On the machine side of the harness connect a jumper from pin 1 (yellow) to pin 3 (red).

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

20 Return the safety arm to the stowed position.

21 Lower the platform to the stowed position.

22 Place the maximum rated load in the platform. Secure the load to the platform. Refer to Section 2, *Specifications*.

23 Start the engine from the ground controls.

MANIFOLDS

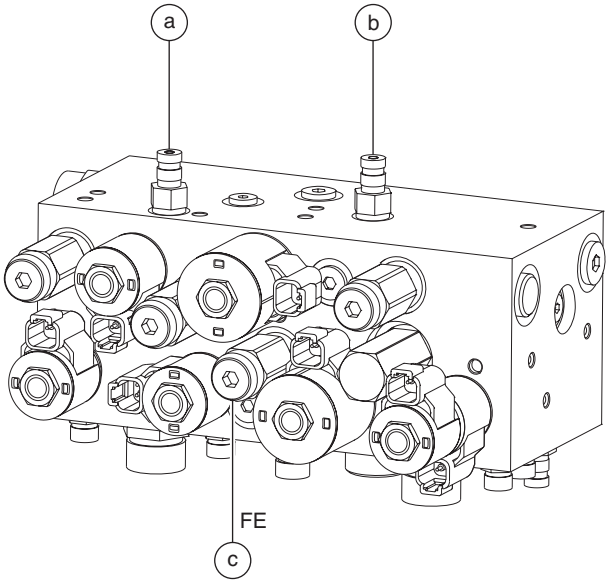
24 Press and hold the lift function enable button and press and hold the blue platform up button. Allow the platform to raise completely, then continue activating the lift function while observing the pressure reading on the pressure gauge. Note the pressure. Refer to Section 2, *Specifications*.

25 Turn the engine off. Hold the lift relief valve (item FE) with a wrench and remove the cap.

26 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 valve as instructed will cause the machine to tip over resulting in death or serious injury. Do not adjust the relief valve higher than specified.

27 Repeat this procedure beginning with step 23 to confirm the relief valve pressure.



a test port #2
b test port #1
c platform up relief valve

28 Lower the platform and remove the test weights.

29 Raise the platform approximately 10 feet / 3 m.

30 Lift the safety arm and move it to the center of the linkage and rotate to a vertical position.

31 Lower the platform onto the safety arm. Push in the red Emergency Stop button to the off position.

32 Remove the jumper from the pressure switch harness and connect it to the pressure switch.

33 Install the maximum height limit switch to the lower slider channel.

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

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 both the blue platform up and yellow platform down buttons. Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: TUNE SPEEDS is showing in the diagnostic display window.

39 Use the yellow platform down arrow to scroll to select options.

⊙ Result: SELECT OPTIONS is showing in the diagnostic display window. The ECM is now in programming mode.

40 Press the lift function enable button.

⊙ Result: DESCENT DELAY is showing in the diagnostic display window.

41 Press the lift function enable button to deactivate the descent delay option.

42 Use the yellow platform down arrow to scroll to overload.

⊙ Result: OVERLOAD ON is showing in the diagnostic display window.

43 Press the lift function enable button to deactivate the overload option.

44 Use the yellow platform down arrow to scroll to return to the main menu.

⊙ Result: RETURN TO MAIN MENU is showing in the diagnostic display window.

45 Press the lift function enable button.

⊙ Result: SELECT OPTIONS is showing in the diagnostic display window.

46 Push in the red Emergency Stop button to the off position at the ground controls.

MANIFOLDS

How to Adjust the Platform Up Relief Valve
(Models without Platform Overload)

Note: Be sure that 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 on the function manifold.

2 Place the maximum rated load in the platform. Secure the load to the platform. Refer to Section 2, *Specifications*.

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

4 Start the engine from the ground controls.

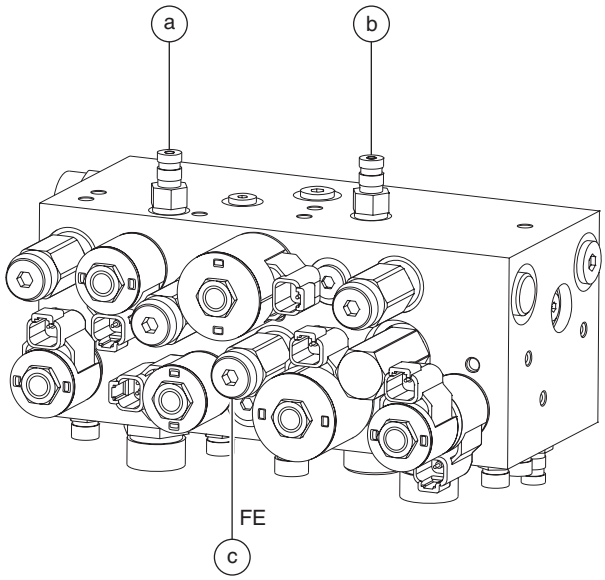
5 Press and hold the lift function enable button and press and hold the blue platform up button. Allow the platform to raise completely, then continue activating the lift function while observing the pressure reading on the pressure gauge. Note the pressure. Refer to Section 2, *Specifications*.

6 Turn the engine off. Hold the lift relief valve (item FE) with a wrench 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.

⚠ DANGER Tip-over hazard. Failure to adjust the relief valve as instructed will cause the machine to tip over resulting in death or serious injury. Do not adjust the relief valve higher than specified.

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

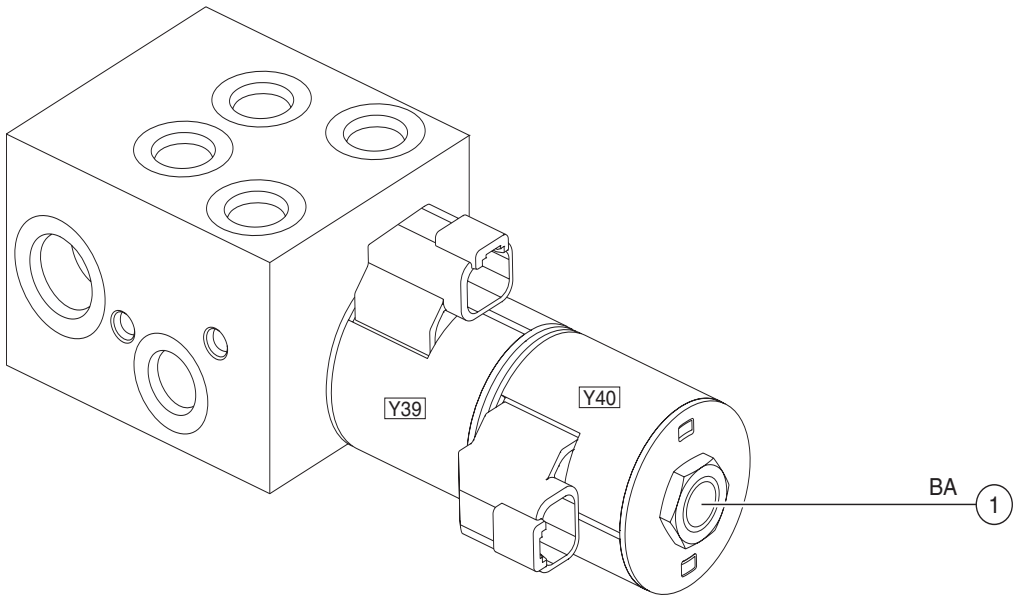


a test port #2
b test port #1
c platform up relief valve

9-3
Outrigger Manifold Components

The outrigger manifold is located beneath the hose cover panel on top of the drive chassis

Index No.	Description	Schematic Item	Function	Torque
1	Solenoid valve, 3 position 4 way NC	BA	Outriggers in / out	20-25 ft-lbs / 27-34 Nm



MANIFOLDS

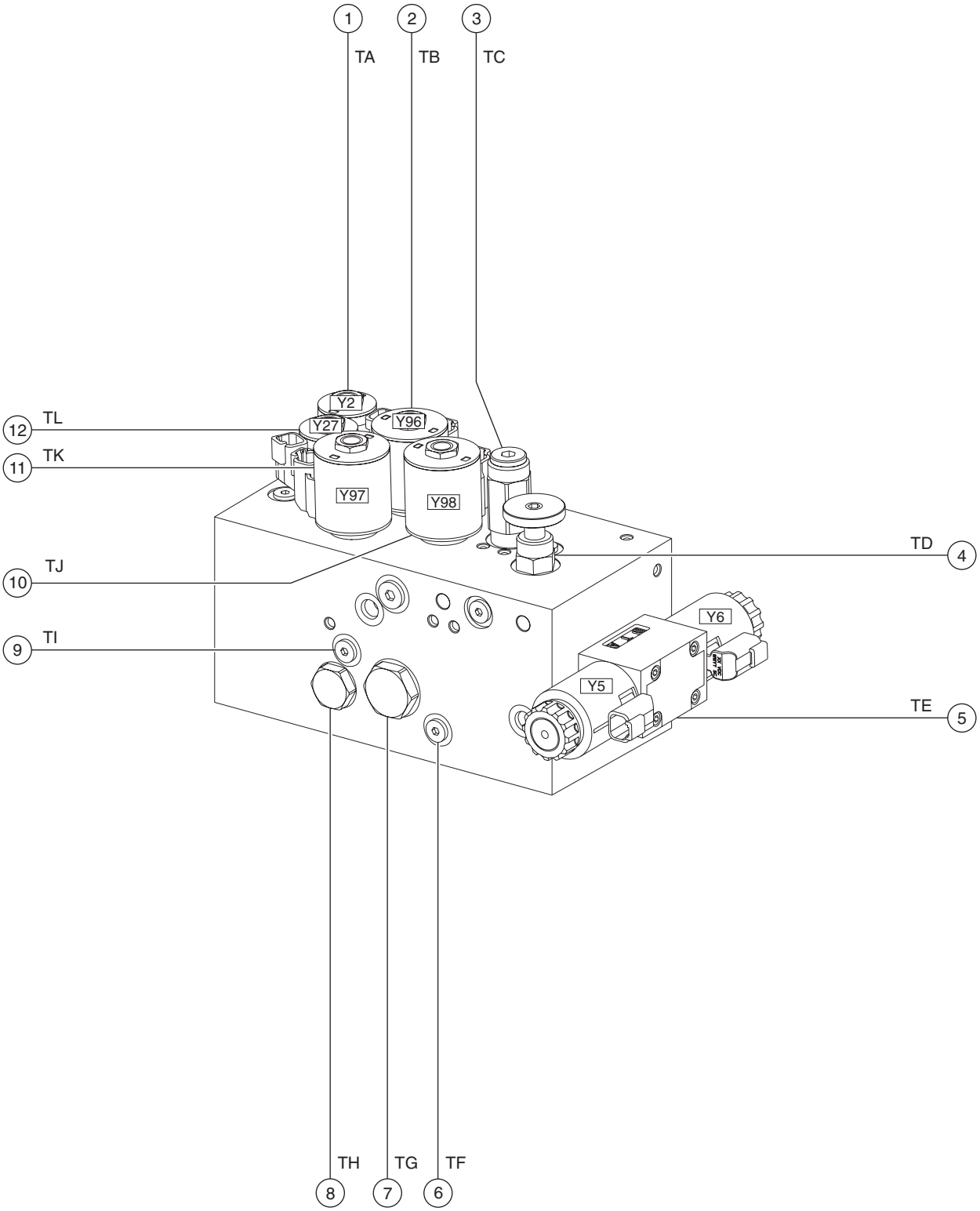
9-4
Traction Manifold Components - View 1

The traction manifold is located inside the ground control box.

Index No.	Description	Schematic Item	Function	Torque
1	Solenoid valve, 2 position 3 way	TA	Brake release	15-20 ft-lbs / 20-27 Nm
2	Solenoid valve, 2 position 4 way	TB	Front motor isolate	20-25 ft-lbs / 27-34 Nm
3	Relief valve, 2500 psi / 172.4 bar	TC	Drive pressure circuit	15-20 ft-lbs / 20-27 Nm
4	Needle valve N.C.	TD	Enables towing ability	20-25 ft-lbs / 27-34 Nm
5	Solenoid valve, 3 position 4 way	TE	Drive forward / reverse	20-25 ft-lbs / 27-34 Nm
6	Orifice, 0.060 inch / 1.5 mm	TF	Equalizes pressure on both sides of flow divider/combiner valve 17	
7	Flow divider/combiner valve	TG	Controls flow to flow divider/combiner valves 8 and 17	73-77 ft-lbs / 99-104 Nm
8	Flow divider/combiner valve	TH	Controls flow to steer end drive motors in forward and reverse	48-52 ft-lbs / 65-71 Nm
9	Orifice, 0.060 inch / 1.5 mm	TI	Equalizes pressure on both sides of flow divider/combiner valve 8	
10	Solenoid valve, 2 position 2 way	TJ	Allows flow to bypass divider/combiner valve 7 in high drive	20-25 ft-lbs / 27-34 Nm
11	Solenoid valve, 2 position 2 way	TK	Allows flow to loop the steer end motors in high drive	20-25 ft-lbs / 27-34 Nm
12	Solenoid valve, 2 position 3 way	TL	Two speed circuit	15-20 ft-lbs / 20-27 Nm

This list continues. Please turn the page.

MANIFOLDS


1
2
3
TA
TB
TC
Y2
Y27
Y96
12
TL
11
TK
Y97
Y98
TD
4
10
TJ
Y6
9
TI
Y5
TE
5
TH
TG
TF
8
7
6

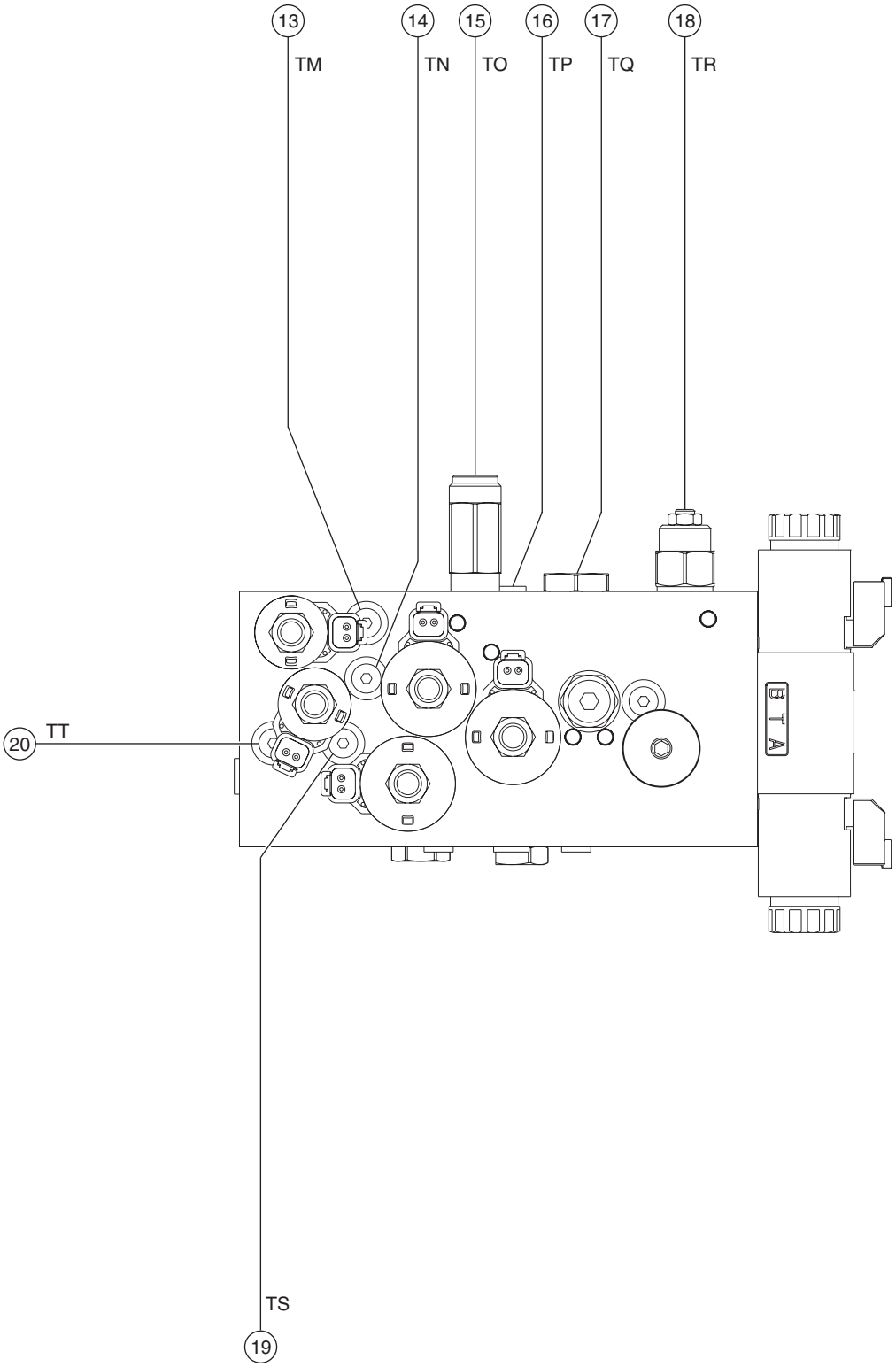
MANIFOLDS

Traction Manifold Components - View 2

The traction manifold is located inside the ground control box.

Index No.	Description	Schematic Item	Function	Torque
13	Orifice, 0.030 inch / .76 mm	TM	Brake circuit	
14	Orifice, 0.030 inch / .76 mm	TN	Two-speed circuit	
15	Pressure reducing valve, 250 psi / 17.2 bar	TO	Two-speed and brake circuit	20-25 ft-lbs / 27-34 Nm
16	Orifice, 0.035 inch / .9 mm	TP	Equalizes pressure on both sides of flow divider/combiner valve 7	
17	Flow divider/combiner valve	TQ	Controls flow to non-steer end drive motors in forward and reverse	73-77 ft-lbs / 99-104 Nm
18	Counterbalance valve, 3500 psi / 241.3 bar	TR	Traction relief	30-35 ft-lbs / 40-47 Nm
19	Check valve	TS	Two-speed circuit	12-14 ft-lbs / 16-19 Nm
20	Check valve	TT	Brake circuit	12-14 ft-lbs / 16-19 Nm

MANIFOLDS

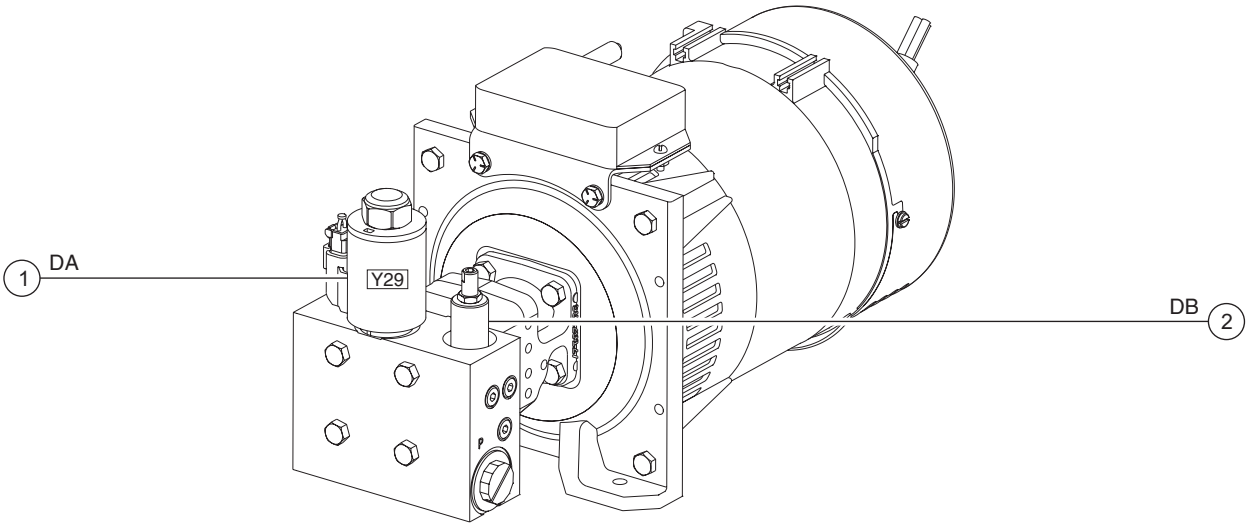


MANIFOLDS

9-5
Generator Manifold Components

The generator manifold is located above the function manifold.

Index No.	Description	Schematic Item	Function	Torque
1	Proportional solenoid valve	DA	Generator speed	33-37 ft-lbs / 45-50 Nm
2	Relief valve, 2700 psi / 186 bar	DB	Generator circuit	20-25 ft-lbs / 27-34 Nm



9-6 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
Proportional valve, 12V DC with diode (schematic item FL)	7.1Ω
Solenoid valve, 2 position 2 way 12V DC with diode (schematic item FB)	8.8Ω
Solenoid valve, 2 position 2 way 12V DC with diode (schematic item TJ, TK)	7.1Ω
Solenoid valve, 2 position 3 way 12V DC with diode (schematic item FO, FP, TL, TT)	8.8Ω
Solenoid valve, 2 position 3 way 12V DC with diode (schematic item FD)	7.1Ω
Solenoid valve, 2 position 4 way 12V DC with diode (schematic items TB)	7.1Ω
Solenoid valve, 3 position 4 way 12V DC with diode (schematic items BA)	7.1Ω
Solenoid valve, 3 position 4 way 12V DC with diode (schematic items TE)	5.1Ω
Solenoid valve, 3 position 5 way 12V DC with diode (schematic item FK)	8.8Ω

MANIFOLDS

How to Test a Coil Diode

Genie incorporates spike suppressing diodes in many valve coils. 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. See 9-6, *How to Test a Coil.*

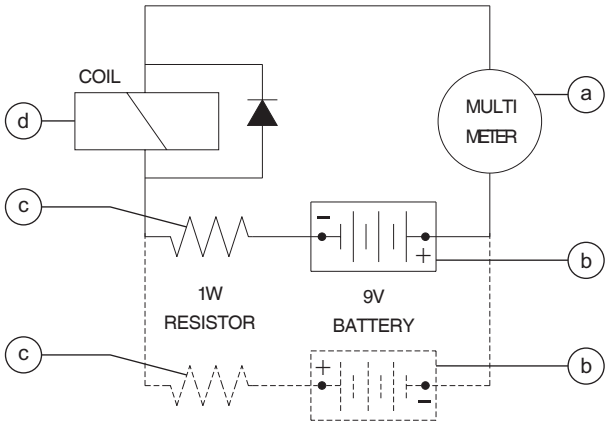
2 Connect a 10Ω resistor to the negative terminal of a known good 9V DC battery. Connect the other end of the resistor to a terminal on the coil.

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

Resistor, 10Ω	
Genie part number	27287

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.



a multimeter
b 9V DC battery
c 10Ω resistor
d coil

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

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

Note: If testing a single-terminal coil, connect the negative lead to the internal metallic ring at either end of the coil.

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

6 At the battery or coil terminals, reverse the connections. Note 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.

How to Test the Coils Using the Test System Function

The Electronic Control Module (ECM) contains programming that can test the coils on the function and traction manifolds. If a fault is detected it will show in the diagnostic display window.

Note: Perform this procedure on a flat level surface and the platform in the stowed position.

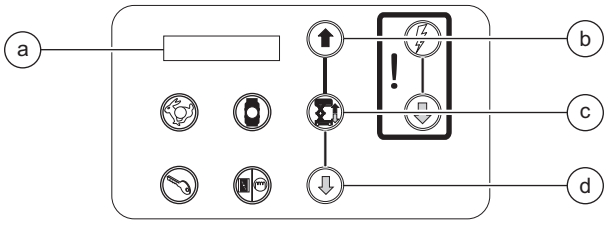
1 Pull out the red Emergency Stop button to the on position at the platform controls.

2 Push in the red Emergency Stop button to the off position at the ground controls.

3 Turn the key switch to ground control.

4 Press and hold both the blue platform up and yellow platform down buttons. Pull out the red Emergency Stop button to the on position at the ground controls.

⊙ Result: TUNE SPEEDS is showing in the diagnostic display window.



a diagnostic display
b blue platform up button
c lift function enable button
d yellow platform down button

5 Use the yellow platform down arrow to scroll to test system.

⊙ Result: TEST SYSTEM is showing in the diagnostic display window.

6 Press the lift function enable button.

⊙ Result: RUN SYSTEM TEST is showing in the diagnostic display window.

7 Press the lift function enable button.

⊙ Result: NO FAULTS DETECTED is showing in the diagnostic display window.

⊠ Result: A fault is detected and showing in the diagnostic display window.
Refer to *Section 5, Fault Codes*.

8 Push in the red Emergency Stop button to the off position at the ground controls.

Fuel and Hydraulic Tanks

10-1
Fuel Tank

How to Remove the Fuel Tank

⚠DANGER Explosion and fire hazard. Engine fuels are combustible. Remove the fuel tank 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 Section 2, *Machine Specifications*.

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

3 Tag, disconnect and plug the fuel supply and return hoses from the fuel tank.

4 Clean up any fuel that may have spilled.

5 Loosen the fuel tank mounting strap fastener. Pull the tank strap to the side.

Note: Do not remove the tank strap.

6 Remove the fuel tank from the machine.

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

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

10-2 Hydraulic Tank

The primary functions of the hydraulic tank are to cool, clean and deaerate the hydraulic fluid during operation. It utilizes internal suction strainer for the pump supply line and has an external return line filter.

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 on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*.

1 Open the hydraulic tank side cover.

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

6 Remove the return filter. Protect the filter head from dirt and debris with a plastic bag.

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

Note: Do not remove the tank strap.

8 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

11-1
Yoke and Drive Motor

How to Remove the Yoke and Drive Motor

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*.

1 Block the non-steer wheels and center a lifting jack under the drive chassis at the steer end of the machine.

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

3 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.

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

5 Tag, disconnect and plug the hoses from the drive motor. Cap the fittings on the drive motor.

⚠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 Support and secure the yoke and drive motor assembly with a lifting device.

Left side yoke:

7 Remove the tie rod rue ring and clevis pin from the yoke and set aside. **Skip to step 9.**

Right side yoke:

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

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

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

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

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

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

13 Remove the yoke and drive motor assembly from the machine.

⚠CAUTION Crushing hazard. The yoke and drive motor 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 on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section Two, *Hydraulic Hose and Fitting Torque Specifications*.

1 Refer to Repair Procedure 11-1, *How to Remove the Yoke and Drive Motor.*

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

11-2 Steer Cylinder

How to Remove the Steer Cylinder

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *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.

STEER AXLE COMPONENTS

11-3 Tie Rod

How to Remove the Tie Rod

1 Remove the rue ring from each tie rod clevis pin. Remove the clevis pins.

2 Remove the tie rod.

11-4 Oscillate Cylinder

How to Remove the Oscillate Cylinder

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *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 Block the non-steer wheels and center a lifting jack under the drive chassis just behind the front axle at the side of the machine.

3 Remove the pivot pin retaining fasteners.

4 Using a soft metal drift, remove the pivot pins.

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

5 Remove the oscillate cylinder from the machine.

11-5
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. Refer to illustration 1, item A.

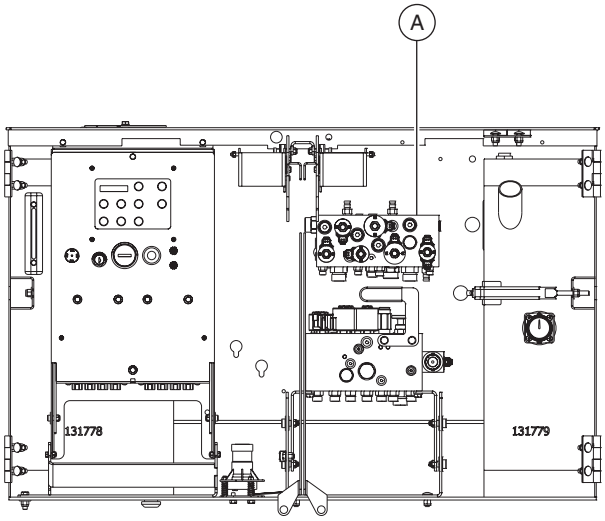


illustration 1

2 Tag and disconnect the connector with the red wire from the oscillate left coil (item A) and the connector with the white wire from the oscillate right coil (item B) and set aside. Refer to illustration 2.

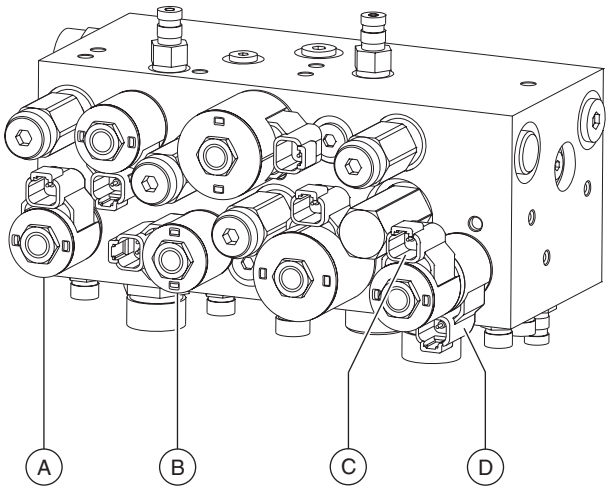


illustration 2

3 Tag and disconnect the connector with the blue wire from the steer right coil (item C). Connect it to the oscillate right coil (item B). Refer to illustration 2.

4 Tag and disconnect the connector with the blue/black wire from the steer left coil (item D). Connect it to the oscillate left coil (item A). Refer to illustration 2.

5 Turn the key switch to platform controls and pull out the red Emergency stop buttons to the on position at both the ground and platform controls. Start the engine.

Note: During this procedure a fault code 64 will appear on the ground controls display.

STEER AXLE COMPONENTS

6 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.

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

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

8 Turn the machine off.

9 Disconnect the connector with the blue wire from the oscillate right coil (item B). Connect it to the steer right coil (item C). Refer to illustration 2.

10 Disconnect the connector with the blue/black wire from the oscillate left coil (item A). Connect it to the steer left coil (item D). Refer to illustration 2.

11 Connect the connector with the red wire to the oscillate left coil (item A) and the connector with the white wire to the oscillate right coil (item B) that were removed in step 2. Refer to illustration 2. Continue to **Check the Steering**.

Check the Steering

1 Turn the key switch to platform controls and pull out the red Emergency stop buttons to the on position at both the ground and platform controls. Start the engine.

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

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

4 Test the axle oscillate axle. Refer Maintenance Procedures A-5, *Test the Oscillate Axle*.

Non-steer Axle Components

12-1
Drive Motor / Brake Assembly

How to Remove a Drive Motor / Brake Assembly

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 on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*

1 Block the steer wheels.

2 Tag, disconnect and plug the hydraulic hoses from the drive motor / brake assembly. 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.

3 Support and secure the drive motor / brake assembly with a lifting device.

4 Remove the drive motor / brake mounting fasteners.

5 Remove the drive motor / brake assembly from the drive hub and remove from the machine.

⚠CAUTION Crushing hazard. The drive motor and brake assembly 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 / brake assembly and drive hub and in the brake port. Be sure that they are in place when installing the drive motor / brake assembly to the drive hub.

Note: Refer to Section 2, *Specifications* for torque specifications.

NON-STEER AXLE COMPONENTS

12-2
Drive Hub

How to Remove a Drive Hub

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 on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*

1 Remove the drive motor / brake assembly. Refer to Repair Procedure 12-1, *How to Remove a Drive Motor / Brake Assembly.*

2 Center a lifting jack of ample capacity under the drive chassis at the non-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 it is not properly supported.

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

6 Support and secure the drive hub with a lifting device.

7 Remove the drive hub mounting 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 / brake assembly and drive hub and in the brake port. Be sure that they are in place when installing the drive motor / brake assembly to the drive hub.

Note: Refer to Section 2, *Specifications* for torque specifications.

Outrigger Components

13-1
Outrigger Cylinder

How to Remove an Outrigger Cylinder (if equipped)

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose must be replaced and then torqued to specification during installation. Refer to Section 2, *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.

Platform Overload Components

14-1
Platform Overload System

How to Calibrate the Platform Overload System (if equipped)

On machines with platform overload systems, proper calibration is essential to safe machine operation. An improperly calibrated platform overload system could result in the system failing to sense an overloaded platform. The stability of the machine is compromised and it could tip over.

Note: For troubleshooting information refer to page 4-76.

1 **Models with outriggers:** Deploy the outriggers and level the machine.

2 Apply a thin layer of dry film lubricant to the area of the chassis where the scissor arm wear pads make contact.

3 Disconnect the platform controls from the machine at the platform.

4 Open the side covers at the ground controls side of the machine.

5 Locate the Electronic Control Module (ECM) wire harness 6 pin connector to platform controls connection below and behind the control box.

6 Tag and disconnect the platform controls wire harness from the ECM wire harness.

7 Securely connect the platform controls to the ECM wire harness.

8 Using a suitable lifting device, place a weight, in the center of the platform floor. Secure the weight to the platform. Refer to the chart below.

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

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

10 Raise the platform to approximately 10 ft / 3 m.

11 Lower the platform until the down limit switch activates and the platform stops lowering.

12 Locate a supporting device under the platform. Do not apply any lifting pressure.

13 Loosen the retaining ring and remove the switch adjustment cover from the pressure switch.

Note: The pressure switch is located on the lower lift cylinder.

14 Using a small slotted screwdriver, turn the adjustment screw of the platform overload pressure switch one-quarter turn into the hydraulic line.

15 Push in the red Emergency Stop button to the off position at the ground controls.

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

⊙ Result: The alarm doesn't sound and the engine will start and run. Proceed to step 17.

⊠ Result: The engine will not start and an alarm is sounding. Repeat this procedure beginning with step 14.

Note: The red Emergency Stop button must be cycled after each quarter turn of the nut to allow the platform overload system to reset.

Note: Wait a minimum of 3 seconds between each quarter turn of the nut to allow the platform overload system to reset.

17 Remove the supporting device from under the platform.

18 Start the engine and raise the platform to 13 ft / 4 m.

19 Rotate the safety arm away from the machine and let it hang down.

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

21 Install the cover onto the platform overload pressure switch or switch box and securely tighten the cover retaining fasteners. Do not over tighten.

22 Apply Sentry Seal to one of the cover retaining fasteners where it contacts the platform overload pressure switch box.

23 Raise the platform enough to return the safety arm to the stowed position.

24 Lower the platform to the stowed position.

PLATFORM OVERLOAD COMPONENTS

Check the Maximum Height Limit Switch

1 Using a suitable lifting device, place a test weight in the center of the platform floor. Secure the weight to the platform. Refer to the chart below.

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

2 Raise the platform to approximately 13 ft / 4 m.

3 Rotate the safety arm away from the machine and let it hang down.

4 Raise the platform until it activates the maximum height limit switch.

⊙ Result: The alarm does not sound and the engine will continue to run. Proceed to step 7.

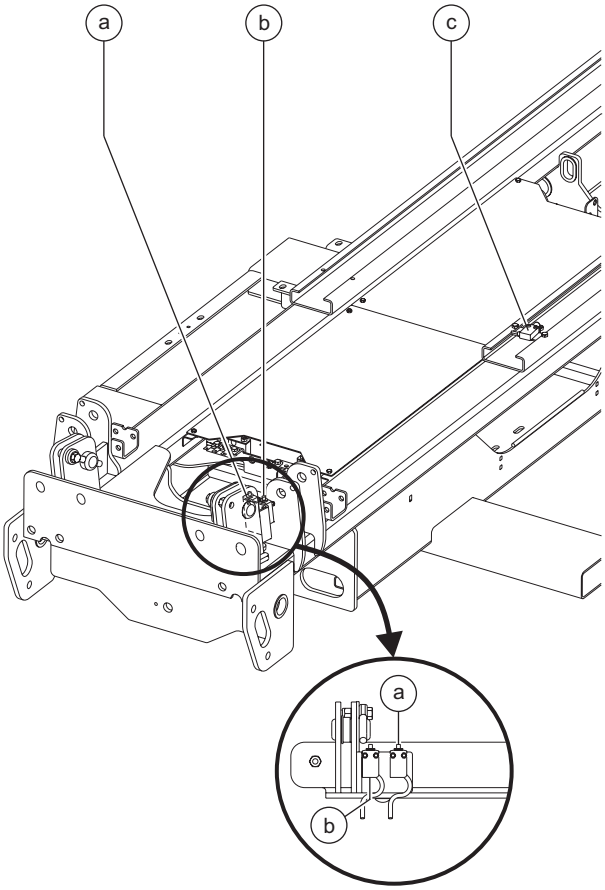
⊠ Result: The overload alarm is sounding and the engine stops running. Proceed to step 5.

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

6 Adjust the maximum height limit switch by moving it towards the non-steer end of the machine. Repeat this procedure beginning with step 2.

7 Lower the platform enough to return the safety arm to the stowed position.

8 Lower the platform to the stowed position. Remove the test weight.

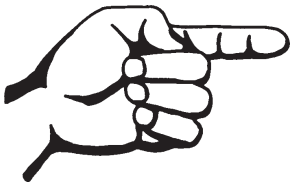


Limit switch legend

a down limit switch
b load sense interrupt limit switch
c maximum height limit switch

TROUBLESHOOTING THE PLATFORM OVERLOAD SYSTEM

CONDITION	POSSIBLE CAUSE	SOLUTION
CANNOT LIFT RATED LOAD	RELIEF VALVE SET TOO LOW	INCREASE RELIEF VALVE PRESSURE
AT MAX. HEIGHT WITH RATED LOAD IN PLATFORM, PRESSURE SWITCH ALARM CONTINUES TO SOUND	SYSTEM NEEDS TO BE RESET	TURN OFF RED EMERGENCY STOP BUTTON, WAIT THREE SECONDS AND TURN MACHINE BACK ON
	MAX. HEIGHT LIMIT SWITCH OUT OF ADJUSTMENT OR FAULTY	LOWER THE UP LIMIT SWITCH SLIGHTLY OR REPLACE CONTACTS
	TOO MUCH WEIGHT IN PLATFORM	PUT CORRECT RATED LOAD IN PLATFORM
	PRESSURE SWITCH OUT OF ADJUSTMENT	TURN THE PRESSURE SWITCH NUT 1/4 TURN INTO THE HYDRAULIC LINE
	BATTERIES ARE NOT FULLY CHARGED	CHARGE BATTERIES
	OVERLOAD SYSTEM NOT ADJUSTED PROPERLY	REPEAT CALIBRATION PROCEDURE
	SLIDER CHANNEL NOT LUBRICATED	LUBRICATE THE SLIDER CHANNEL
AT DOWN LIMIT WITH RATED LOAD IN PLATFORM, THE PRESSURE SWITCH ALARM CONTINUES TO SOUND	SYSTEM NEEDS TO BE RESET	TURN OFF RED EMERGENCY STOP BUTTON, WAIT THREE SECONDS AND TURN MACHINE BACK ON
	DOWN LIMIT SWITCH OUT OF ADJUSTMENT	RAISE THE DOWN LIMIT SWITCH
	TOO MUCH WEIGHT IN PLATFORM	PUT CORRECT RATED LOAD IN PLATFORM
	OVERLOAD SYSTEM NOT ADJUSTED PROPERLY	TURN THE PRESSURE SWITCH NUT 1/4 TURN INTO THE HYDRAULIC LINE OR REPEAT CALIBRATION PROCEDURE



This page intentionally left blank.

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

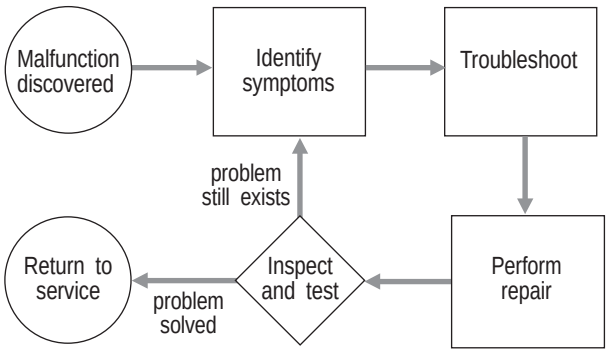
⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

FAULT CODES

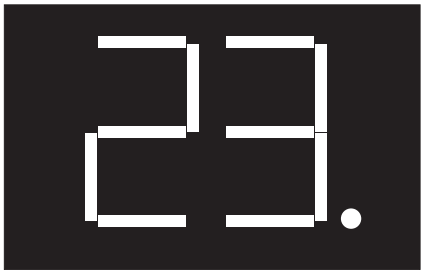
About This Section

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.

General Repair Process



Ground Control LED Diagnostic Readout



The diagnostic readout displays numerical codes that provide information about the machine operating status and about malfunctions. The dot to the right of the numbers remain on when a fault code is displayed.

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

Platform LED

Green - System ready, normal operation.

Red - A fault condition has occurred.

Fault Code Chart

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
01	Internal ECU Fault	N/A	Internal ECU error.	System shutdown.	Replace ECU.
02	Platform ECU Fault	N/A	Platform / Ground communication error.	System shutdown.	Troubleshoot control cable or platform controls.
20	Chassis Start Switch	N/A	Engine start button fault at ground controls.	Engine will not start.	Replace ECU.
21	Chassis Choke Switch	N/A	Starting aid button fault at ground controls.	Starting aid disabled.	Replace ECU.
22	Chassis Up Switch	N/A	Platform up switch fault at ground controls.	Platform up disabled.	Replace ECU.
23	Chassis Lift Switch	N/A	Platform up/down enable button fault at ground controls.	Platform up/down functions disabled.	Replace ECU.
24	Down Switch	N/A	Platform down switch fault at ground controls.	Platform down disabled.	Replace ECU.
25	Left Turn Switch	N/A	Left turn switch fault.	Malfunctioning steer left microswitch.	Troubleshoot steer left microswitch.
26	Right Turn Switch	N/A	Right turn switch fault.	Malfunctioning steer right microswitch.	Troubleshoot steer right microswitch.
27	Drive Enable Switch	N/A	Function enable switch activated when machine is powered on.	Machine functions disabled.	Release function enable switch before power up or replace joystick.

FAULT CODE CHART

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
28	Drive Joystick Off Neutral	N/A	Drive joystick off neutral when machine is powered on.	Machine functions disabled.	Release joystick before power up or replace joystick.
29	Platform Up Switch	N/A	Platform up enable button fault at platform controls.	Platform up function disabled.	Troubleshoot button or replace circuit board at platform controls.
30	Lift Joystick Off Neutral	N/A	Up / Down switch off neutral.	Up / Down function disabled.	Replace up / down switch at platform.
31	Platform Choke Switch	N/A	Starting aid fault at platform controls.	Starting aid disabled.	Troubleshoot button or replace circuit board at platform controls.
32	Platform Start Switch	N/A	Engine start button fault at platform controls.	Engine will not start.	Troubleshoot button or replace circuit board at platform controls.
33	Left Front Outrigger Switch	N/A	Left front outrigger enable button fault, platform controls.	Outriggers disabled.	Troubleshoot button or replace circuit board at platform controls.
34	Right Front Outrigger Switch	N/A	Right front outrigger enable button fault, platform controls.	Outriggers disabled.	Troubleshoot button or replace circuit board at platform controls.
35	Left Rear Outrigger Switch	N/A	Left rear outrigger enable button fault, platform controls.	Outriggers disabled.	Troubleshoot button or replace circuit board at platform controls.
36	Right Rear Outrigger Switch	N/A	Right rear outrigger enable button fault, platform controls.	Outriggers disabled.	Troubleshoot button or replace circuit board at platform controls.

FAULT CODE CHART

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
37	Auto Level Switch	N/A	Outrigger auto level enable button fault at platform controls.	Outriggers disabled.	Troubleshoot button or replace circuit board at platform controls.
38	Oscillate Limit Switches	12	Value to high. Voltage above 3000 mV.	Elevated drive and platform up disabled.	Troubleshoot oscillate limit switches.
		15	Value to low. Voltage below 1000 mV.		
		19	Voltage out of range.		
		21	Voltage inconsistent.		
39	Down Limit Switch	21	Voltage inconsistent.	Elevated drive and platform up disabled.	Troubleshoot stowed limit switch.
40	Oscillate Output	21	Both oscillate valve outputs are on at the same time while elevated. Flashing or Motion Beacon option is set to on and it is not installed on the machine.	Elevated drive and platform up disabled.	Troubleshoot oscillate limit switches or replace ECU. Set the option to off if not installed on the machine.
		22	Oscillate valve output is active for more than 4 sec's.		
49	Drive Coil 1	N/A	Drive coil 1 (Y27) fault.	High speed drive function disabled.	Troubleshoot 2 speed valve coil.

FAULT CODE CHART

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
50	Drive Coil 2	N/A	Drive coil 2 (Y98) fault.	High speed drive function disabled.	Troubleshoot high speed bypass valve coil.
51	Drive Coil 3	N/A	Drive coil 3 (Y96) fault.	High speed drive function disabled.	Troubleshoot front motor isolate valve coil.
52	Function Proportional Coil	N/A	Proportional coil (Y9) fault.	Platform up and outrigger functions disabled.	Troubleshoot proportional valve coil or wiring.
54	Up Coil	N/A	Platform up coil (Y8) fault.	Platform up function disabled.	Troubleshoot platform up valve coil or wiring.
55	Down Coil	N/A	Platform down coil (Y7) or (Y7A - GS4069).	Platform down function disabled.	Troubleshoot platform down valve coil or wiring.
56	Right Turn Coil	N/A	Steer right coil (Y3) fault.	Steer right function disabled.	Troubleshoot steer right valve coil or wiring.
57	Left Turn Coil	N/A	Steer left coil (Y4) fault.	Steer left function disabled.	Troubleshoot steer left valve coil or wiring.
58	Brake Coil	N/A	Brake release coil (Y2) fault.	Drive function disabled.	Troubleshoot brake release valve coil or wiring.
60	Forward 1 Coil	N/A	Drive forward coil (Y6) fault.	High speed drive function disabled.	Troubleshoot drive forward valve coil or wiring.
61	Reverse 1 Coil	N/A	Drive reverse coil (Y5) fault.	High speed drive function disabled.	Troubleshoot drive reverse valve coil or wiring.

FAULT CODE CHART

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
62	Drive Coil 4	N/A	Drive coil 4 (Y97) fault.	High speed drive function disabled.	Troubleshoot front motor free wheel valve coil or wiring.
64	Oscillate Left Coil	N/A	Value too low OR Value too high.	Elevated drive and platform up disabled.	Troubleshoot oscillate left valve coil (Y93) or wiring.
65	Oscillate Right Coil	N/A	Value too low OR Value too high.	Elevated drive and platform up disabled.	Troubleshoot oscillate right valve coil (Y94) or wiring.
66	Low Oil Pressure	N/A	Low engine oil pressure.	Engine shutdown.	Check engine oil level. Check wiring to pressure switch. Replace oil pressure switch.
67	High Coolant Temperature	N/A	High engine coolant temperature.	Engine shutdown.	***Gas / LPG Models***: Check the engine coolant. Check wiring to temperature switch. Replace temperature switch ***Diesel Models***: Check oil level. Check wiring to temperature switch. Replace temperature switch.
68	Low ECU Voltage	N/A	Low input voltage to ECU.	System shutdown.	Charge battery. Replace battery. Check alternator.

FAULT CODE CHART

Error Source		Error Type		Condition	Solution
ID	Name	ID	Name		
69	Low Engine RPM	N/A	Engine rpm to low.	Engine shutdown.	Adjust engine rpm.
70	High Engine RPM	N/A	Engine rpm to high.	Engine shutdown.	Adjust engine rpm.
80	Left Front Outrigger Coil	N/A	Left front outrigger coil (Y35) fault.	Left front outrigger disabled.	Troubleshoot coil or wiring.
81	Left Rear Outrigger Coil	N/A	Left rear outrigger coil (Y33) fault.	Left rear outrigger disabled.	Troubleshoot coil or wiring.
82	Right Front Outrigger Coil	N/A	Right front outrigger coil (Y36) fault.	Right front outrigger disabled.	Troubleshoot coil or wiring.
83	Right Rear Outrigger Coil	N/A	Right rear outrigger coil (Y34) fault.	Right front outrigger disabled.	Troubleshoot coil or wiring.
84	Outrigger Extend Coil	N/A	Outrigger extend coil (Y40) fault.	Outrigger extend function disabled.	Troubleshoot coil or wiring.
85	Outrigger Retract Coil	N/A	Outrigger retract coil (Y39) fault.	Outrigger retract function disabled.	Troubleshoot coil or wiring.
86	Float Coil	N/A	Oscillate float coil (Y95) fault.	Elevated drive and platform up disabled.	Troubleshoot coil or wiring.
94	Machine Type	N/A	Incorrect model configuration selected.	Machine will not operate.	Select correct model configuration.

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.

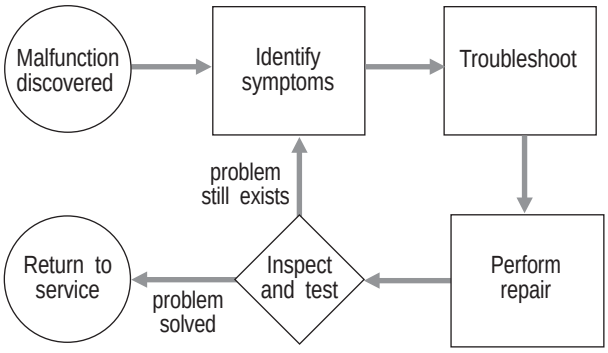
Electrical Schematics

⚠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.

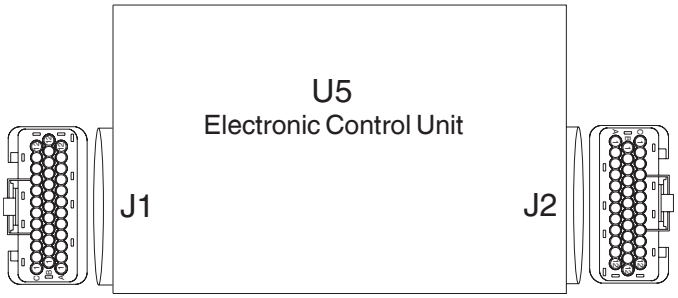
General Repair Process

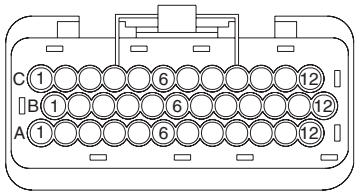


Electronic Control Module Pin-Out Legend

J1 Connector (36 pin)	
A1	Right turn Y3 (output)
A2	Left turn Y4 (output)
A3	Platform up Y8 output) (ANSI / CSA)
A4	Brake Y2 (output)
A5	Drive forward 1 Y6 (output)
A6	Drive reverse 1 Y5 (output)
A7	Front motor free wheel Y97 (output)
A8	Not used
A9	Platform down Y7 (output) (ANSI / CSA)
A9	Platform overload CR55/LS6B (output) (AS / CE)
A10	2 speed Y27 (output)
A11	High speed bypass Y98 (output)
A12	Front motor isolate Y96 (output)
B1	Generator Y29 (output) (option)
B2	Not used
B3	Proportional flow control Y9 (output)
B4	Not used
B5	Right front outrigger Y36 (output)
B6	Outrigger retract Y40 (output)
B7	Outrigger extend Y39 (output)
B8	Oscillate float relays CR9/CR10 (output)
B9	Left front outrigger Y35 (output)
B10	Left rear outrigger Y34 (output)
B11	Right rear outrigger Y34 (output)
B12	LPG select/LPG lockout (output) (Gas/LPG models)
C1	Not used
C2	Platform overload relay CR74 (input) (AS / CE)
C3	Right front outrigger limit switch LS13 (input)
C4	Right rear outrigger limit switch LS15 (input)
C5	Left front outrigger limit switch LS12 (input)
C6	Left rear outrigger limit switch LS14 (input)
C7	Alternator (input)
C8	Engine oil pressure SW2 (input)
C9	Engine water temp SW1 (input)
C10	Not used
C11	Fuel pump (output) (Gas/LPG models)
C12	Oscillate resistor R1 (input)

J2 Connector (36 pin)	
A1	Not used
A2	Down limit switch LS6 (input)
A3	Auxiliary down power (input)
A4	Auxiliary down relay CR72-86 (output)
A5	Key switch KS1-3 (input)
A6	Level sensor S7 (white) (input) (w/o outriggers)
A7	Right axle oscillate limit switch LSA2OS (input)
A8	Left axle oscillate limit switch LSA2OS (input)
A9	Not used
A10	Platform controls (ground)
A11	Platform controls data high (+) (input)
A12	Platform controls data low (-) (input)
B1	Level sensor pitch S8 (blue) (input) (outrigger option)
B2	Level sensor ground S7 (black)
B3	Level sensor roll S8 (yellow) (input) (outrigger option)
B4	ECU ground
B5	Oscillate fault detection LSA1OSS/LSA2OSS (input)
B6	Not used
B7	Starter relay CR1-86 (output)
B8	Ignition relay CR2-86 / Hour meter G6 (output)
B9	High idle relay CR4-86 (output)
B10	Level sensor power S7 (red) (output)
B11	Horn relay CR5-86 (output)
B12	Alarm H5 (output)
C1	System power CR71-87 (input)
C2	System power CR71-87 (input)
C3	System power CR71-87 (input)
C4	Engine glow plug CR15-86 (output) (Diesel models)
C4	Engine choke CR73-86 (output) (Gas/LPG models)
C5	Not used
C6	Not used
C7	ECU ground
C8	Left axle oscillate valve coil (output)
C9	Right axle oscillate valve coil (output)
C10	Not used
C11	Flashing beacons FB1 (output)
C12	ECU power CR62-87 (input)





Electrical Schematic Abbreviations, Wire Colors and Hydraulic Component Legends

ELECTRICAL SCHEMATIC LEGEND	
Item	**Description**
B	Battery B1 = Engine start
BN	Button BN2 = Engine start (platform) BN3 = Glow plug (Diesel models) (platform) BN3 = Choke (Gas/LPG models) (platform) BN4 = High idle (platform) BN5 = Horn (platform) BN6 = High / Low torque (platform) BN7 = Generator (option) (platform) BN9 = Platform up/down enable (platform) BN14 = Propane select (platform) BN20 = Outrigger auto level (platform) BN23 = Auxiliary platform down enable (ground) BN29 = High idle (ground) BN30 = Engine start (ground) BN31 = Glow plug (Diesel models) (ground) BN31 = Choke (Gas/LPG models) (ground) BN32 = Propane select (ground) BN33 = Platform up/down enable (ground) BN34 = Platform up (ground) BN35 = Platform down (ground) BN91 = Auxiliary platform down (ground)
C	Capacitor C1 = 4700 µf
CB	Circuit breaker CB2 = 20 amp (controls) CB7 = 15 amp (engine)
CR	Control relay CR1 = Engine start CR2 = Ignition power CR4 = High idle CR5 = Horn CR9 = Oscillate float enable CR10 = Oscillate float disable CR15 = Glow plug (Diesel models) CR17 = Oil cooler (option) CR54 = Platform overlad (CE / AS models) CR55 = Platform overload (CE / AS models) CR62 = Platform E-stop control CR71 = Ground E-stop power CR72 = Auxiliary down CR73 = Choke (Gas/LPG models) CR74 = Platform overload (CE / AS models)
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
D	Power supply D1 = Alternator
F	Fuse F7 = 20 amp (oil cooler option) F20 = 30 amp (Kubota diesel models) F22 = 40 amp (Perkins diesel models) 50 amp (Kubota diesel models) F26 = 5 amp
FB	Flashing beacon FB1 = Option
G	Gauge G6 = Hour meter G8 = Diagnostic display
H	Horn or alarm H1 = Level sensor alarm (platform) H2 = Horn H5 = Multi-function alarm (ground)
JC	Hall effect controller JC4 = Drive / Steer JC10 = Platform up/down, Outriggers extend/retract (Option)

ELECTRICAL SCHEMATIC LEGEND	
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) L16 = Platform up/down enable (platform) L21 = High torque (platform) L22 = Propane (platform) L23 = High idle (platform) L25 = System status (platform) L27 = Generator (option) (platform) L30 = Work light (option)
LS	Limit switch LS6 = Platform down LS6B = Platform down (CE / AS models) LS12 = Left front outrigger (option) LS13 = Right front outrigger (option) LS14 = Left rear outrigger (option) LS15 = Right rear outrigger (option) LS20 = Platform full height (CE / AS models) LSALOO = Left axle oscillate (operational) LSAROO = Right axle oscillate (operational) LSALOS = Left axle oscillate (safety) LSAROS = Right axle oscillate (safety)
M	Motor or Pump M1 = Oil cooler (option) M3 = Starter M4 = Fuel pump (Gas / LPG models)
P	Red emergency stop button P1 = Ground control P2 = Platform controls
PS	Pressure switch PS2 = Platform overload (CE / AS models)
PR	Solenoid relay PR2 = Starter
Q	Solenoid Q1 = LPG select (Gas/LPG models) Q2 = Fuel shut off (Gas/LPG models) Q3 = High idle Q7 = Choke (Gas/LPG models) Q8 = Fuel shut off (Diesel models) Q9 = LPG lockout
R	Resistor R1 = 1k ohm R2 = 1k ohm R3 = 620 ohm R4 = 100 ohm
S	Sensor S7 = Digital level sensor (w/o outriggers) S8 = Analog level sensor (w/ outrigger option)
SW	Switch SW1 = Engine coolant temperature SW2 = Engine oil pressure SW4 = Hydraulic oil temperature (oil cooler option) SW5 = Function enable (platform) SW6 = Steer right/left (platform)
TB	Terminal base (Ground controls terminal strip)
TS	Toggle switch TS18 = Work light (option)
U	Electronic Component U3 = Circuit board (platform) U5 = ECU (Electronic control unit) U19 = Ignition coil (Gas/LPG models) U20 = Spark plugs (Gas/LPG models) U26 = Distributor (Gas/LPG models) U32 = Glow plug (Diesel models)

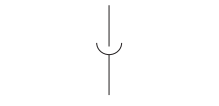
Electrical Schematic Abbreviations, Wire Color and Hydraulic Component Legends, continued

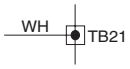
ELECTRICAL SCHEMATIC LEGEND	
Item	**Description**
Y	Valve coil Y2 = Brake release Y3 = Steer right / CW Y4 = Steer left / CCW Y5 = Drive reverse Y6 = Drive forward Y7 = Platform down Y7A = Platform down (GS-4069 models) Y8 = Platform up Y9 = Proportional flow control Y10 = Auxiliary platform down Y10A = Auxiliary platform down (GS-4069 models) Y27 = 2 speed (high / low torque) Y29 = Generator (option) Y33 = Left rear outrigger (option) Y34 = Right rear outrigger (option) Y35 = Left front outrigger (option) Y36 = Right front outrigger (option) Y39 = Outrigger extend (option) Y40 = Outrigger retract (option) Y93 = Oscillate left Y94 = Oscillate right Y95 = Oscillate float Y96 = Front motors isolate Y97 = Front motors free wheel Y98 = High speed bypass

WIRE COLOR LEGEND	
Item	**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

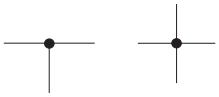
HYDRAULIC COMPONENT LEGEND	
Item	**Function**
BA	3 position, 4 way directional valve - outrigger cylinders extend/retract
DA	Proportional valve - controls flow to the generator (option)
DB	Relief valve - reduces high pressure in the generator (option)
FA	Flow regulator valve - controls flow to oscillate circuit
FB	2 position, 2 way valve- oscillate float
FC	Relief valve - oscillate circuit
FD	2 position, 3 way directional valve - platform up/down
FE	Relief valve - Platform up circuit
FF	Relief valve - Main system
FG	Differential sensing valve - meters flow to functions
FH	Check valve - differential sensing circuit
FI	Flow regulator valve - controls flow to the steer circuit
FJ	Check valve - steer circuit
FK	3 position, 5 way directional valve - steer right/left
FL	Proportional valve - controls function speeds
FM	Flow regulator valve - controls flow to lift and outriggers
FN	Pressure compensating valve - proportional valve circuit
FO	2 position, 3 way valve - oscillate right
FP	2 position, 3 way valve - oscillate left
FQ	Sequence valve - oscillate float valve circuit
TA	2 position, 3 way valve - brake release
TB	2 position, 4 way valve - blocks flow to the steer motors in high drive
TC	Bidirectional relief valve - drive circuit
TD	Needle valve - enables towing ability
TE	3 position, 4 way valve - drive forward/reverse
TF	Orifice - equalizes drive pressure at non-steer end
TG	Combiner/Divider valve - controls flow to front and rear drive motors
TH	Combiner/Divider valve - Controls flow to steer end drive motors
TI	Orifice - equalizes drive pressure at steer end
TJ	2 position, 2 way valve - high speed bypass
TK	2 position, 2 way - allows flow to loop the steer end drive motors in high drive
TL	2 position, 3 way valve - two speed
TM	Orifice - brake circuit
TN	Orifice - two speed circuit
TO	Pressure reducing valve - two speed / brake circuit
TP	Orifice - equalizes drive pressure
TQ	Combiner/Divider valve - Controls flow to non-steer end drive motors
TR	Counterbalance valve - Traction relief
TS	Check valve - two speed circuit
TT	Check valve - brake circuit

Electrical Symbols Legend


Quick disconnect terminal / connector

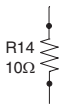


T-circuit connects at terminal


Circuit connections


Circuits crossing no connection


Diode

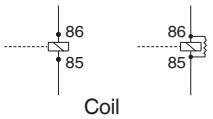


Resistor with ohm value

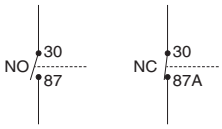
Capacitor


LED

Fuse with amperage



Coil solenoid or relay



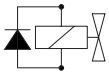
Contact solenoid or relay


Flashing beacon

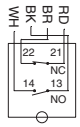
Hour meter / Gauge


Work light (option)

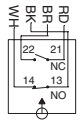

Horn


Valve coil with suppression diode


Valve coil without suppression diode

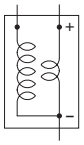


Limit switch not held

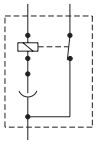


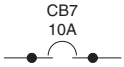
Limit switch - held


Spark plug



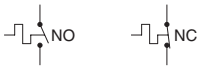
Ignition coil


Level sensor (without outriggers)



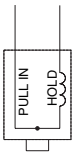
Circuit breaker with amperage


Button normally open

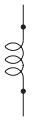


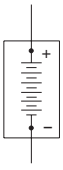
Temperature switch

Pressure switch normally closed



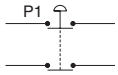
Fuel solenoid


Starting aid: glow plug

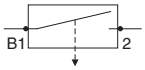


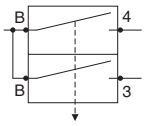
Battery


Negative ground

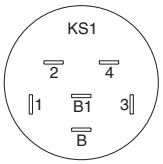


Red Emergency Stop button normally closed

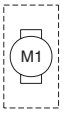




Key switch

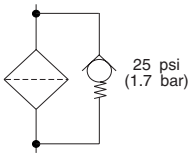


Key switch



Electric motor

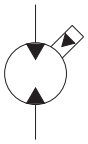
Hydraulic Symbols Legend



Filter with bypass check valve

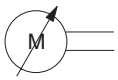
Pump fixed displacement

Motor bidirectional



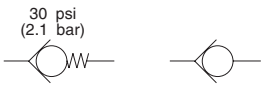
Motor 2 speed, bidirectional

Hydraulically released brake



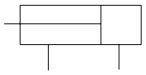
Pump prime mover (engine or motor)

Orifice with size

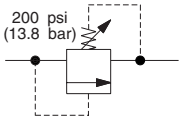


Check valve

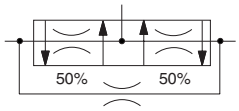
Single acting cylinder



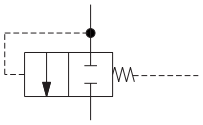
Double acting cylinder



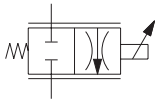
Relief valve with pressure setting



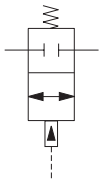
Flow divider/combiner valve with pressure balancing orifice and flow percentages



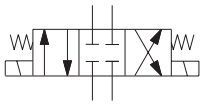
Differential sensing valve



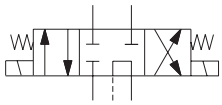
Solenoid operated proportional valve



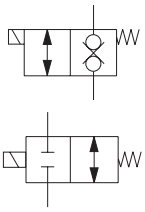
Pilot operated directional valve 2 position, 2 way



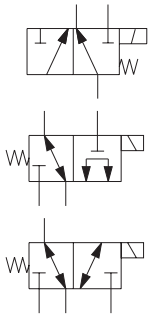
Solenoid operated 3 position, 4 way, directional valve, closed center



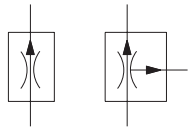
Solenoid operated 3 position, 5 way, directional valve, closed center



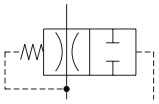
Solenoid operated 2 position, 2 way, directional valve, normally closed



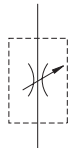
Solenoid operated 2 position, 3 way, directional valve, normally open



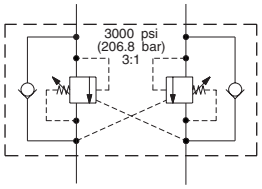
Priority flow regulator valve



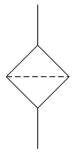
Pilot operated flow regulator valve



Needle valve

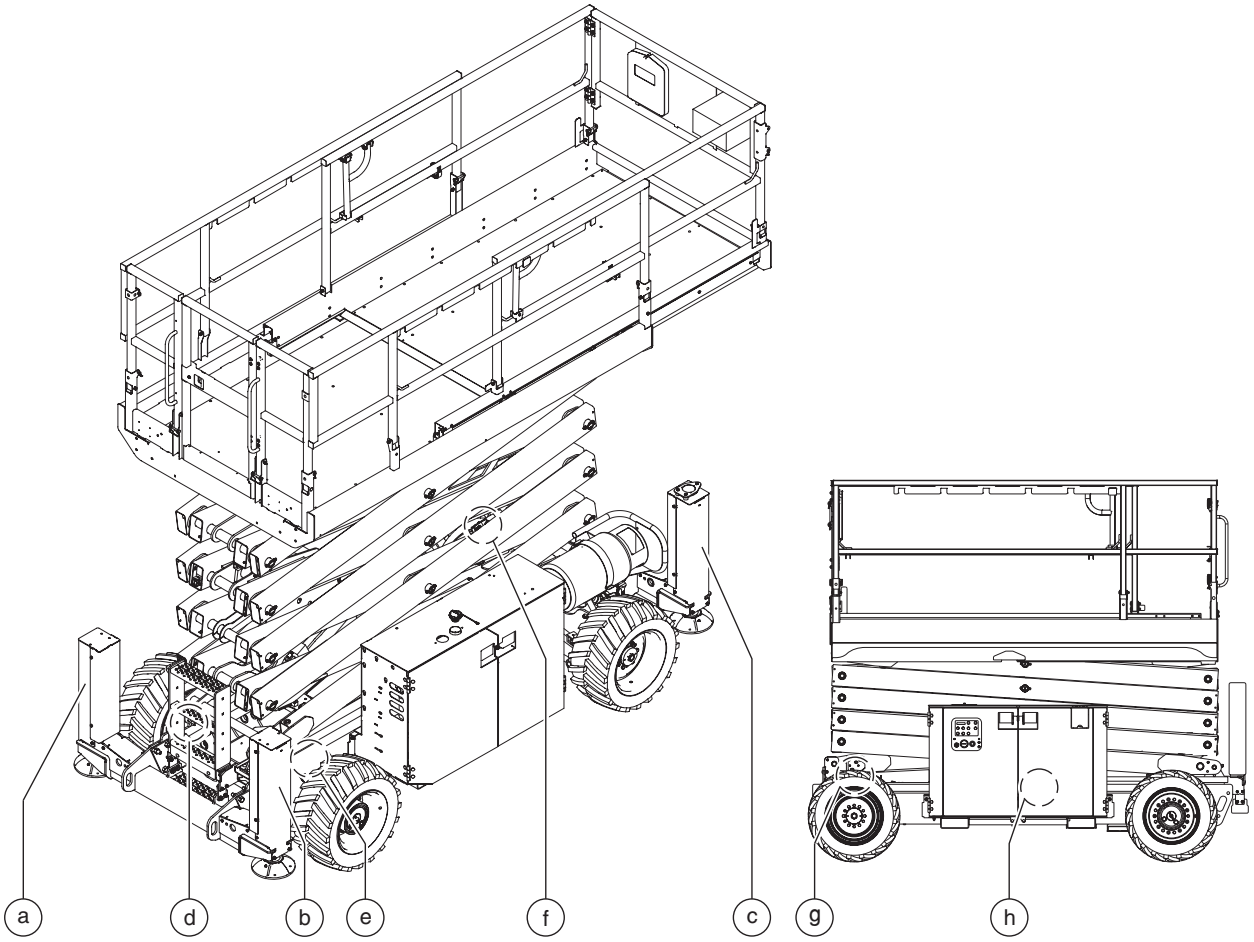


Counterbalance valves with pressure and pilot ratio

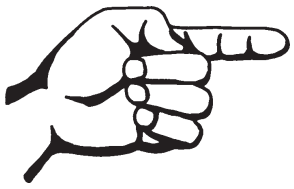


Hydraulic tank strainer

Limit Switch Legend



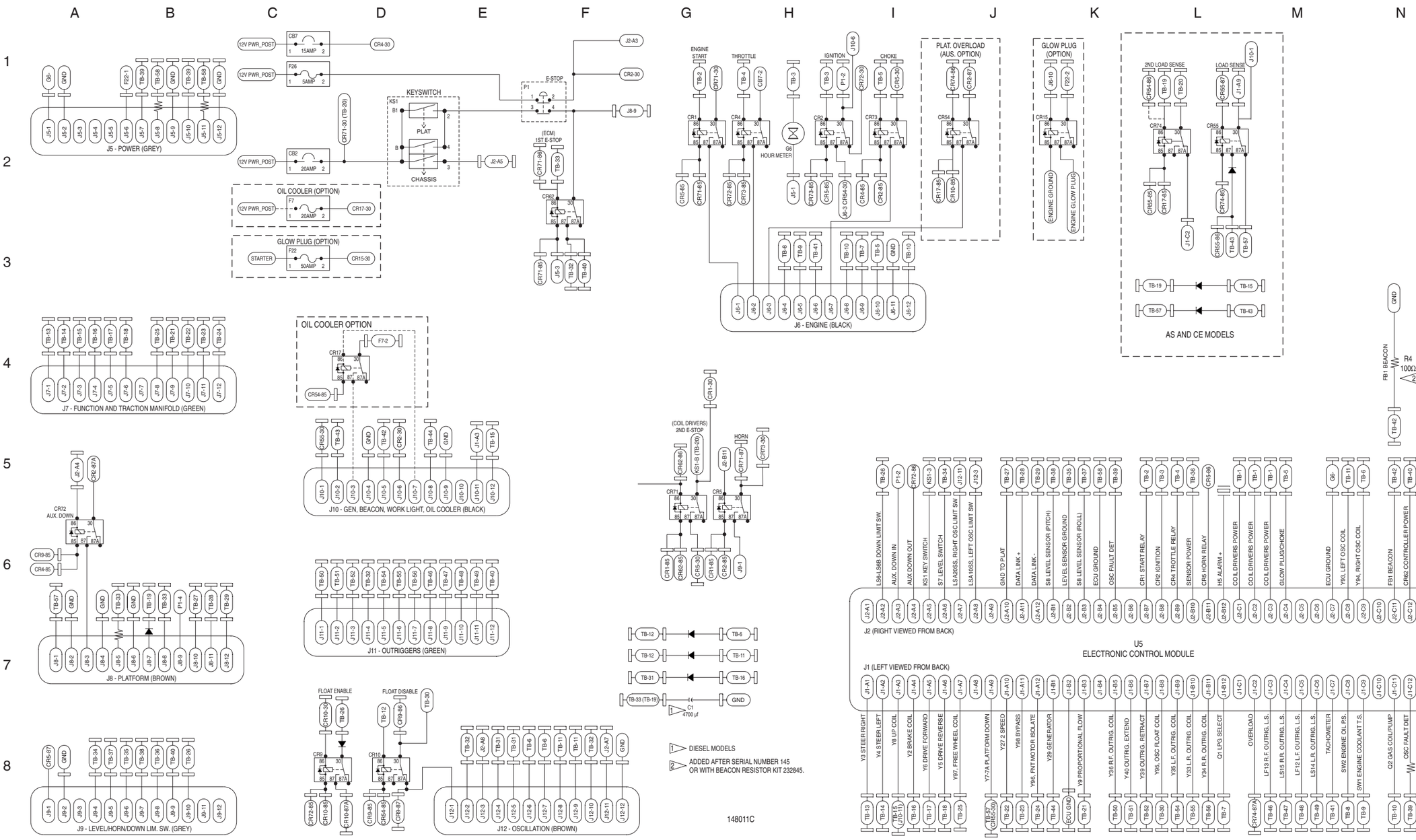
a left rear outrigger limit switch, LS14
b right rear outrigger limit switch, LS15
c right front outrigger limit switch, LS13
- left front outrigger limit switch, LS12 (not shown)
d left axle oscillate limit switches, LSA10S and LSA10SS
e right axle oscillate limit switches, LSA20S and LSA20SS
f platform overload pressure switch, S25
g platform down limit switches, LS6 and LS6B
h platform up limit switch, LS16



This page intentionally left blank.

Control Panel Circuit Diagram

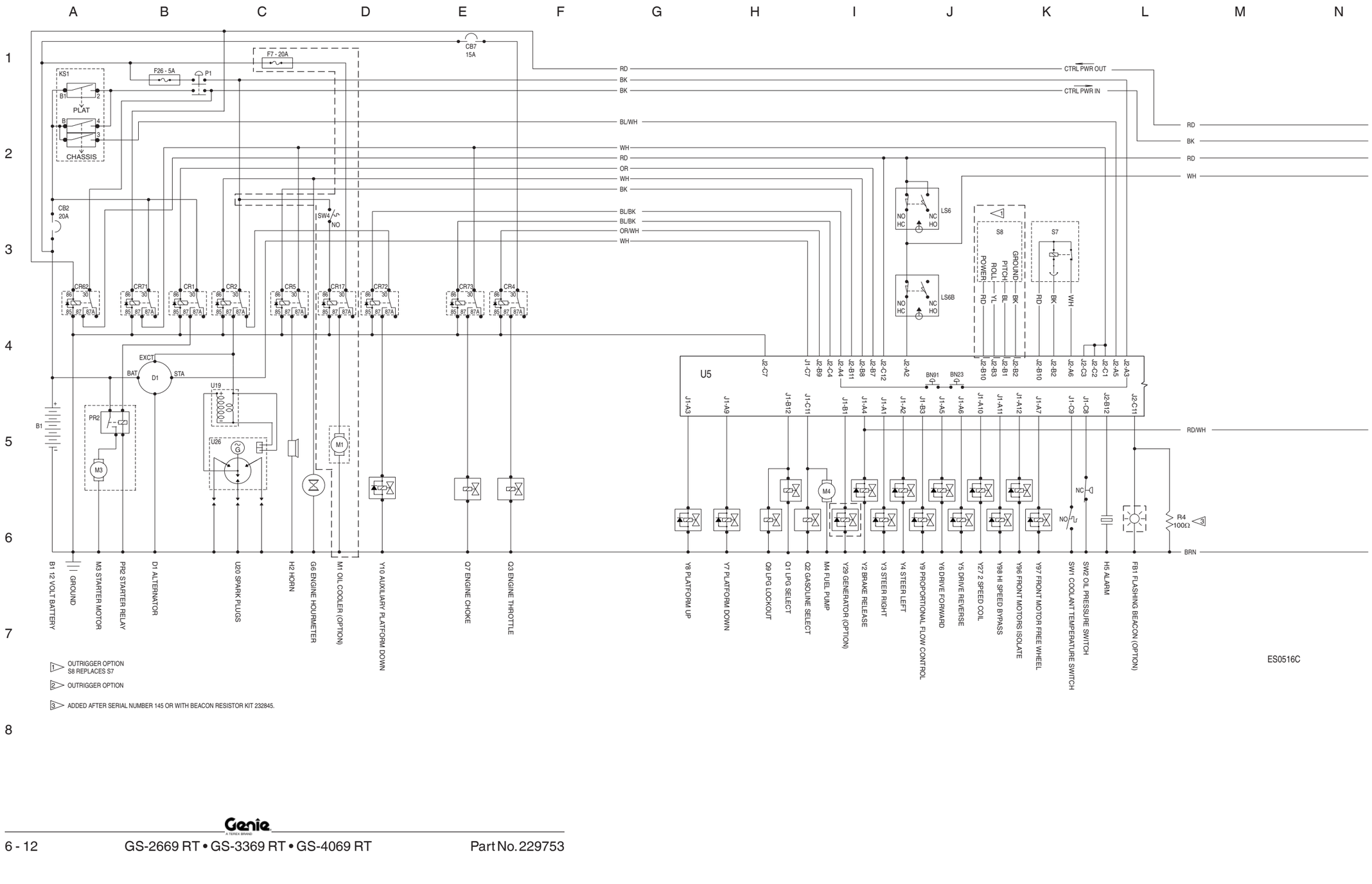
Control Panel Circuit Diagram



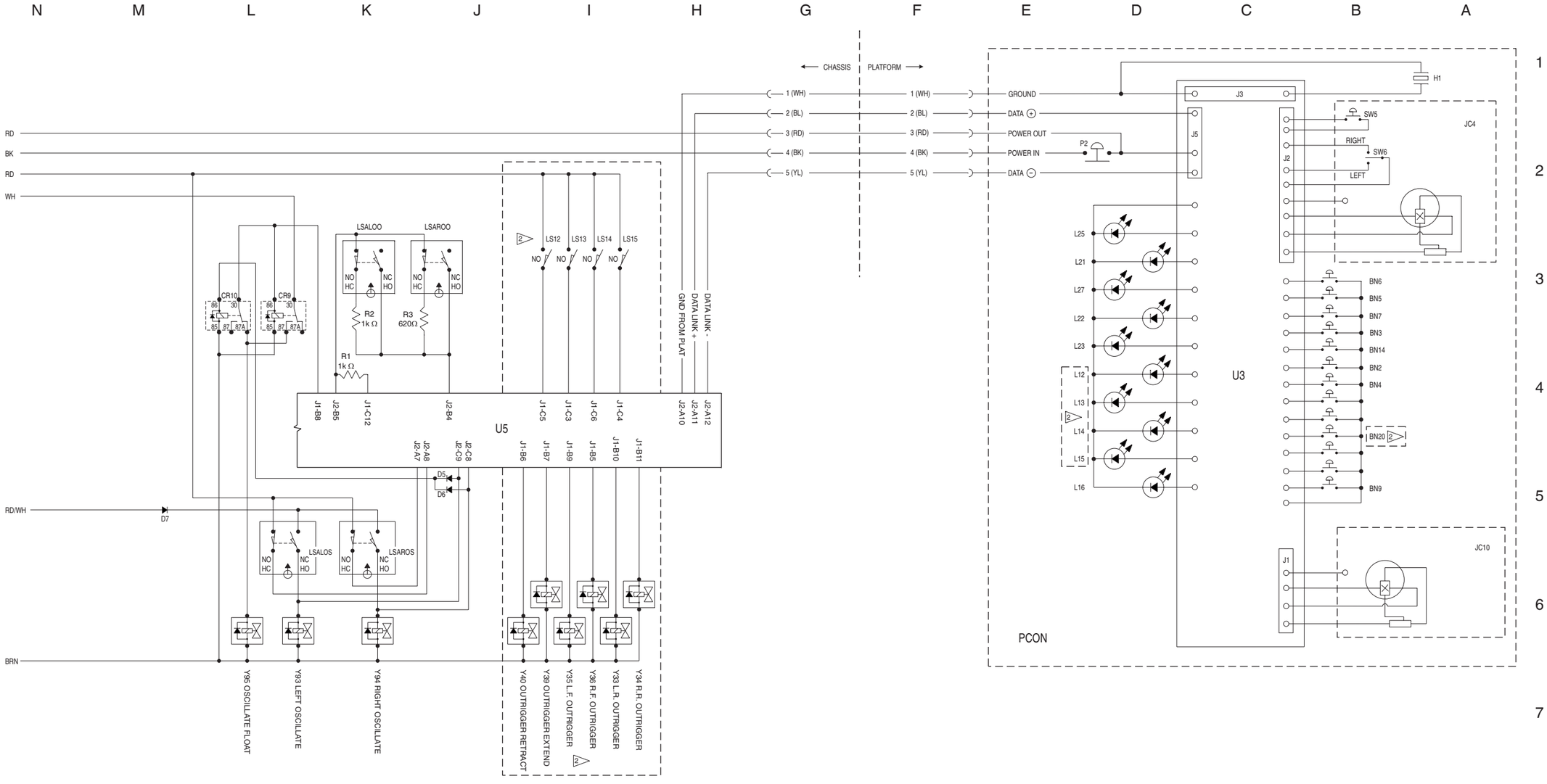
Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (ANSI / CSA)

Electrical Schematic, GS-2669 RT and GS-3369 RT,

Gas / LPG Models (ANSI / CSA)



Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (ANSI / CSA)

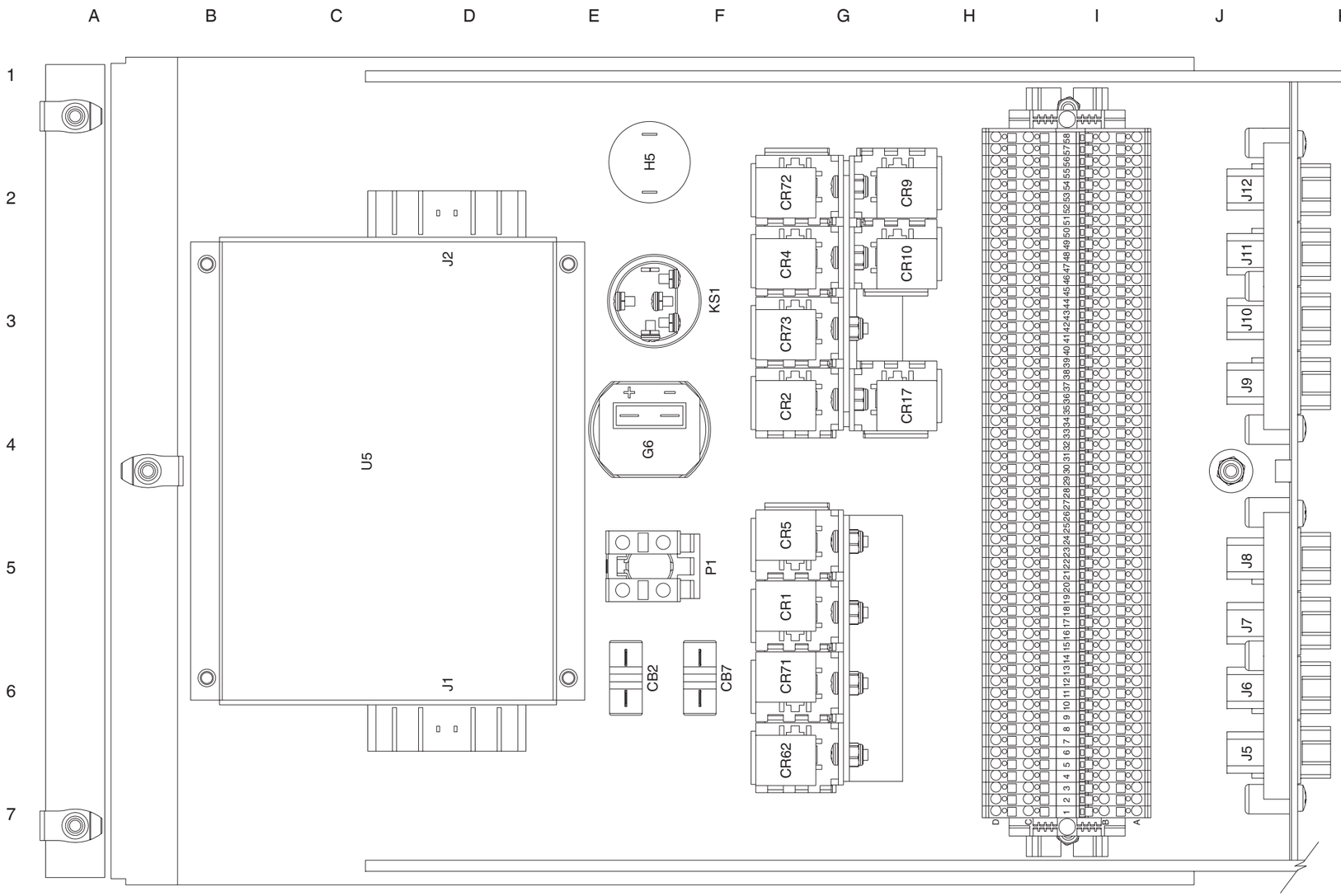


Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (ANSI / CSA)

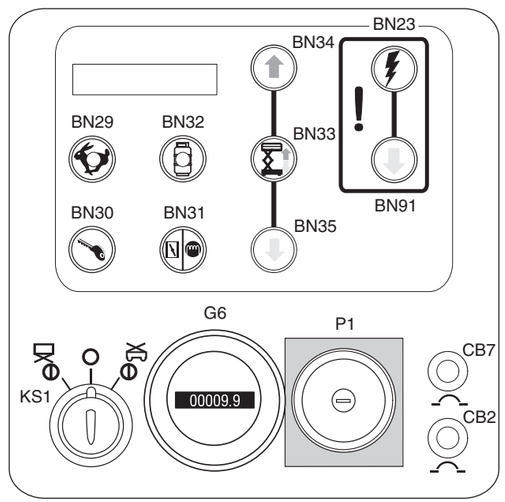
Ground Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (ANSI / CSA)

Ground Control Box Layout, GS-2669 RT and GS-3369 RT,

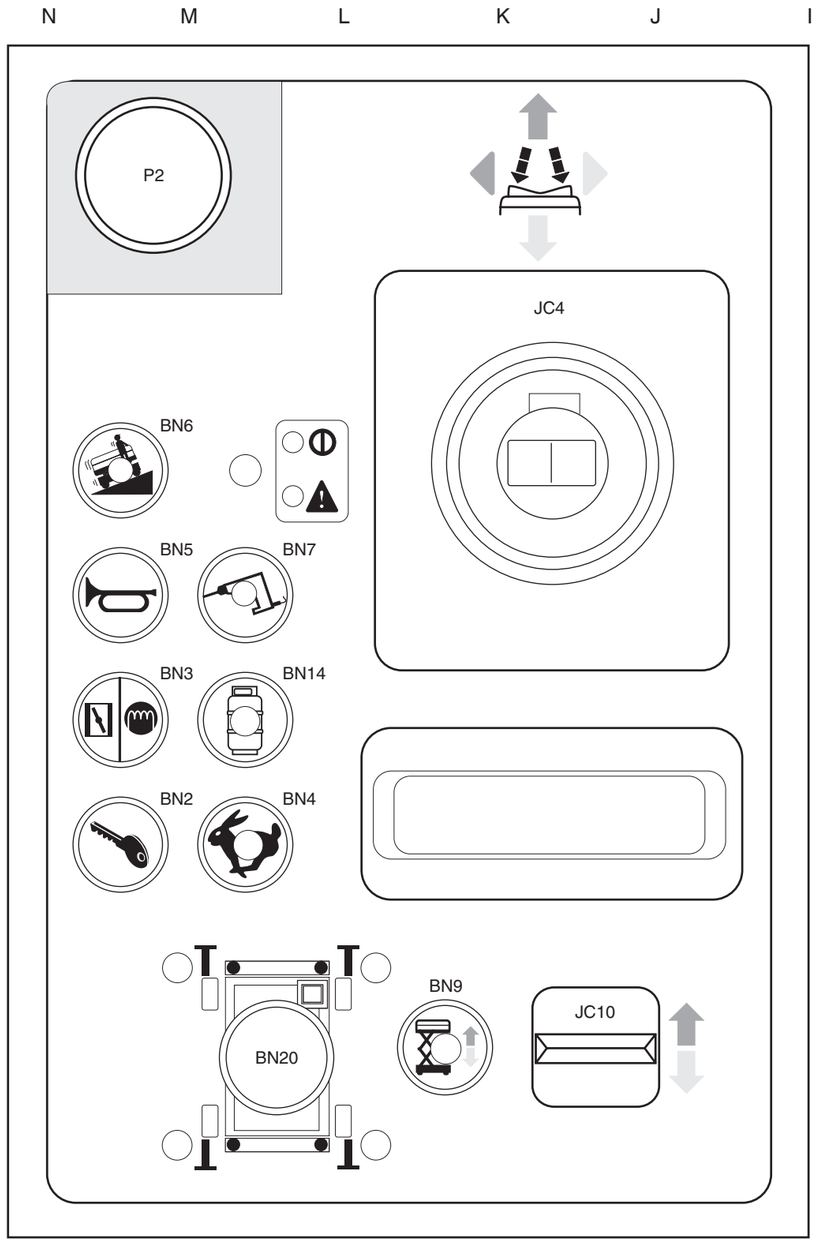
Gas / LPG Models (ANSI / CSA)



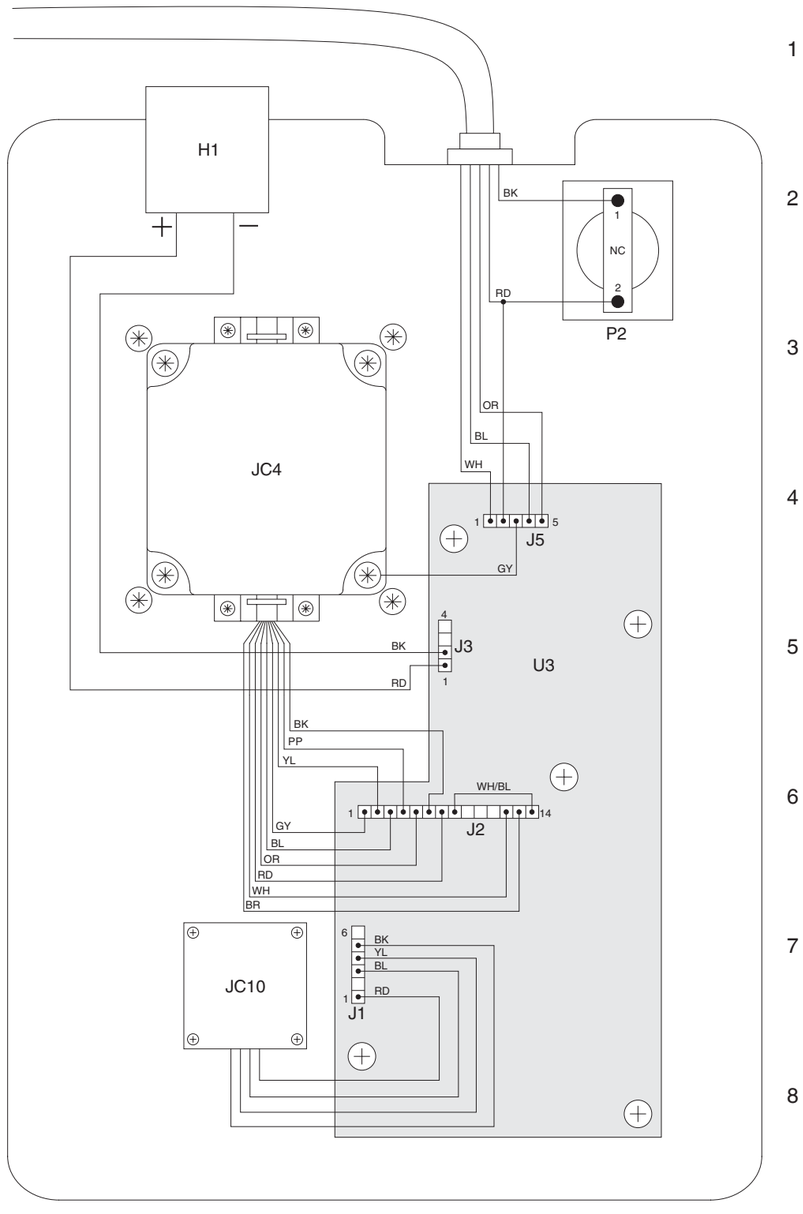
LABEL	DESCRIPTION
BN23	AUXILIARY PLATFORM DOWN ENABLE BUTTON
BN29	HIGH RPM BUTTON
BN30	ENGINE START BUTTON
BN31	ENGINE CHOKE BUTTON
BN32	PROPANE SELECT BUTTON
BN33	FUNCTION ENABLE BUTTON
BN34	PLATFORM UP BUTTON
BN35	PLATFORM DOWN BUTTON
BN91	AUXILIARY PLATFORM DOWN BUTTON
CB2	CONTROLS / ENGINE CIRCUIT BREAKER, 20A
CB7	HIGH IDLE CIRCUIT BREAKER, 15A
CR1	ENGINE START RELAY
CR2	IGNITION RELAY
CR4	HIGH IDLE RELAY
CR5	HORN RELAY
CR9	OSCILLATE FLOAT ENABLE RELAY
CR10	OSCILLATE FLOAT DISABLE RELAY
CR17	OIL COOLER RELAY (OPTION)
CR62	EMERGENCY STOP CONTROL RELAY
CR71	EMERGENCY STOP POWER RELAY
CR72	AUXILIARY PLATFORM DOWN RELAY
CR73	ENGINE CHOKE RELAY
G6	HOUR METER
H5	ALARM
KS1	KEY SWITCH
P1	EMERGENCY STOP BUTTON
U5	ECU



Platform Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (ANSI / CSA)



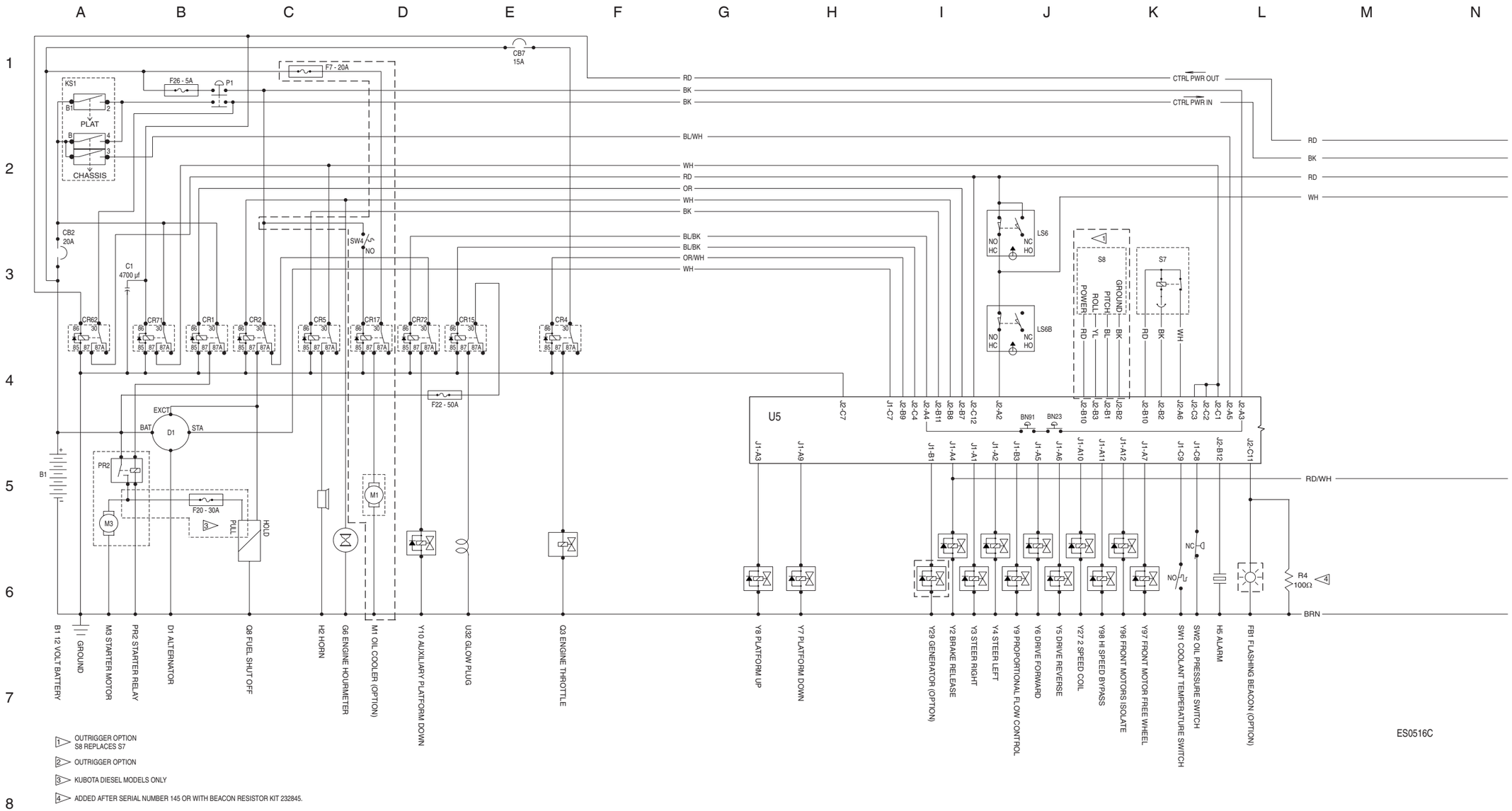
LABEL	DESCRIPTION
BN2	ENGINE START BUTTON
BN3	ENGINE CHOKE BUTTON
BN4	HIGH RPM BUTTON
BN5	HORN BUTTON
BN6	DRIVE SPEED BUTTON
BN7	GENERATOR BUTTON (OPTION)
BN9	PLATFORM UP/DOWN ENABLE BUTTON
BN14	PROPANE SELECT BUTTON
BN20	AUTO LEVEL ENABLE BUTTON (OPTION)
H1	ALARM
JC4	DRIVE / STEER CONTROLLER
JC10	PLATFORM UP/DOWN - OUTRIGGER UP/DOWN SWITCH
P2	EMERGENCY STOP BUTTON
SW5	FUNCTION ENABLE SWITCH
SW6	STEER RIGHT / LEFT SWITCH
U3	PLATFORM CONTROLS CIRCUIT BOARD



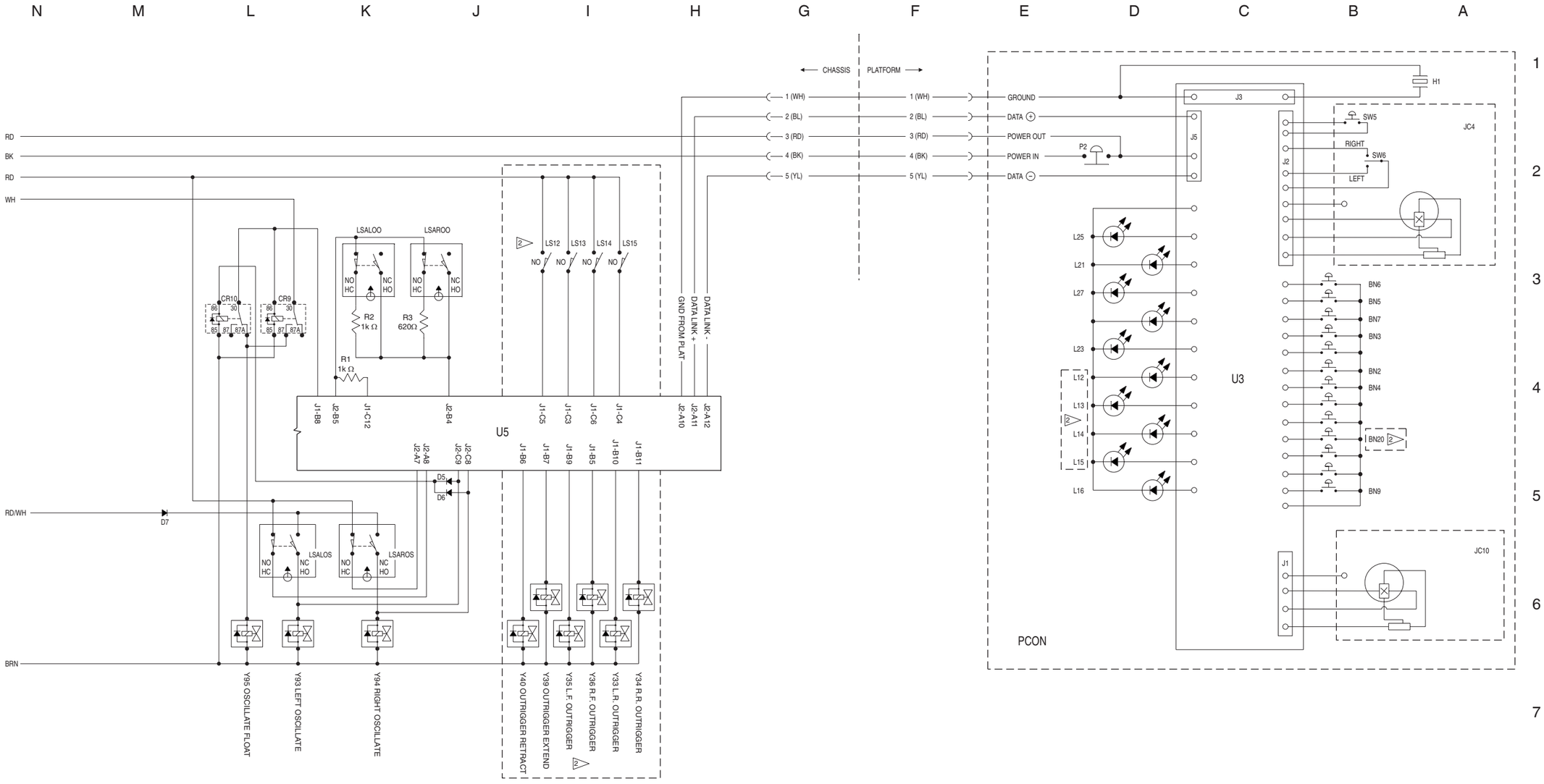
Platform Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (ANSI / CSA)

Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (ANSI / CSA)

Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (ANSI / CSA)



Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (ANSI / CSA)



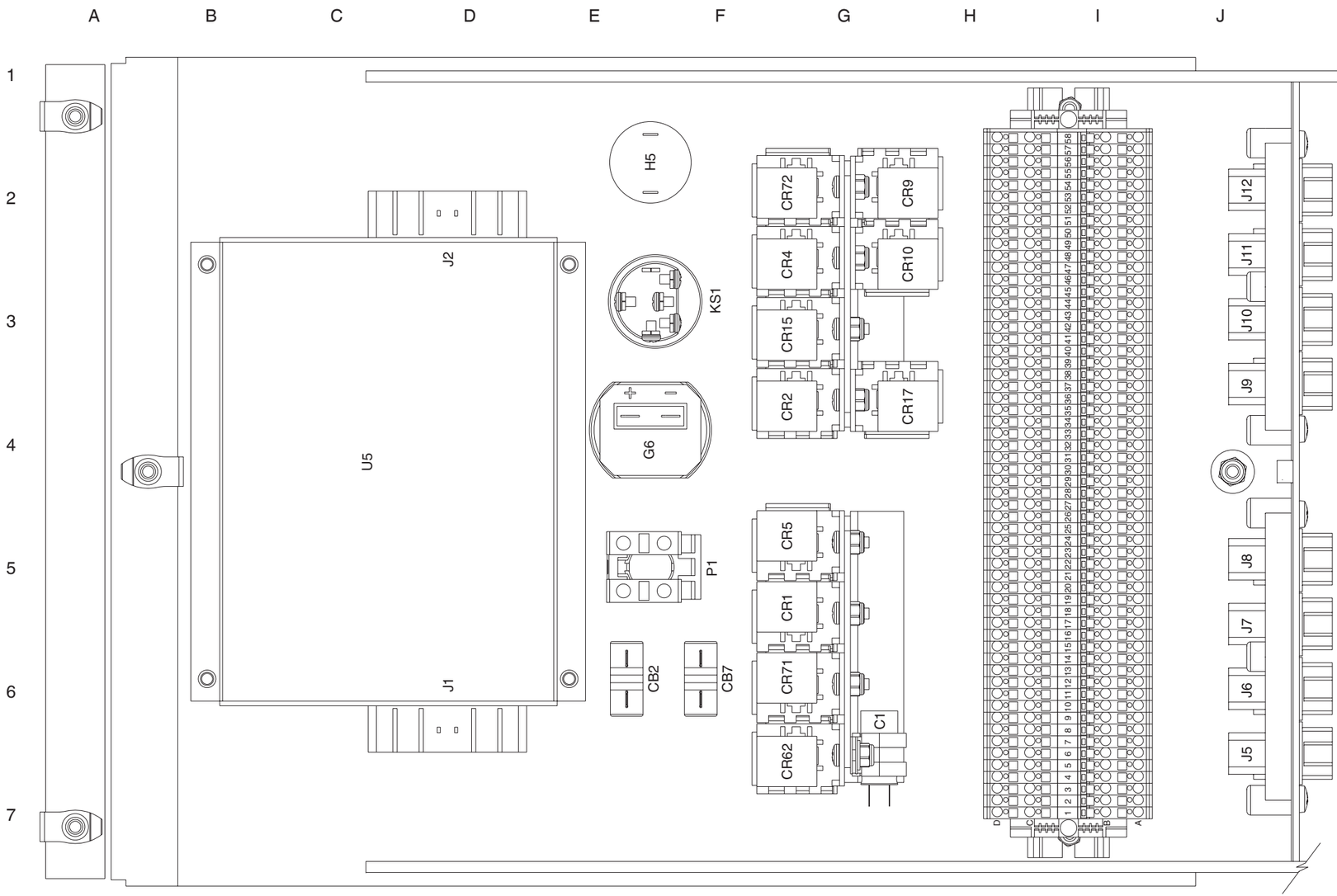
Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (ANSI / CSA)

Ground Control Box Layout, GS-2669 RT and GS-3369 RT

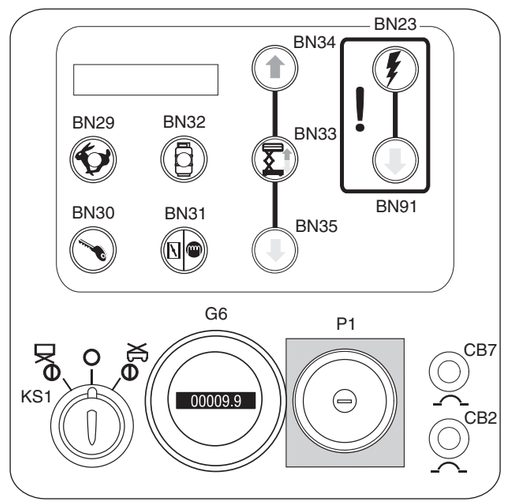
Diesel Models (ANSI / CSA)

Ground Control Box Layout, GS-2669 RT and GS-3369 RT

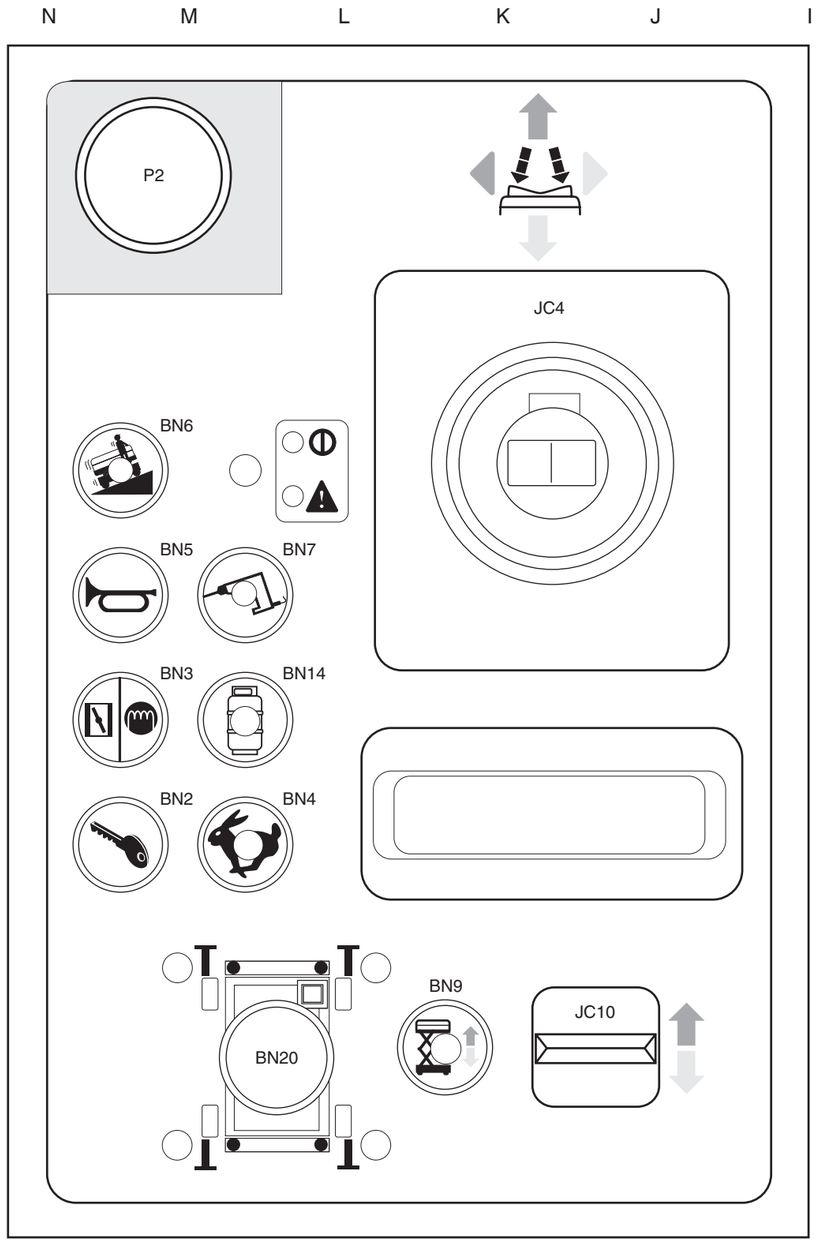
Diesel Models (ANSI / CSA)



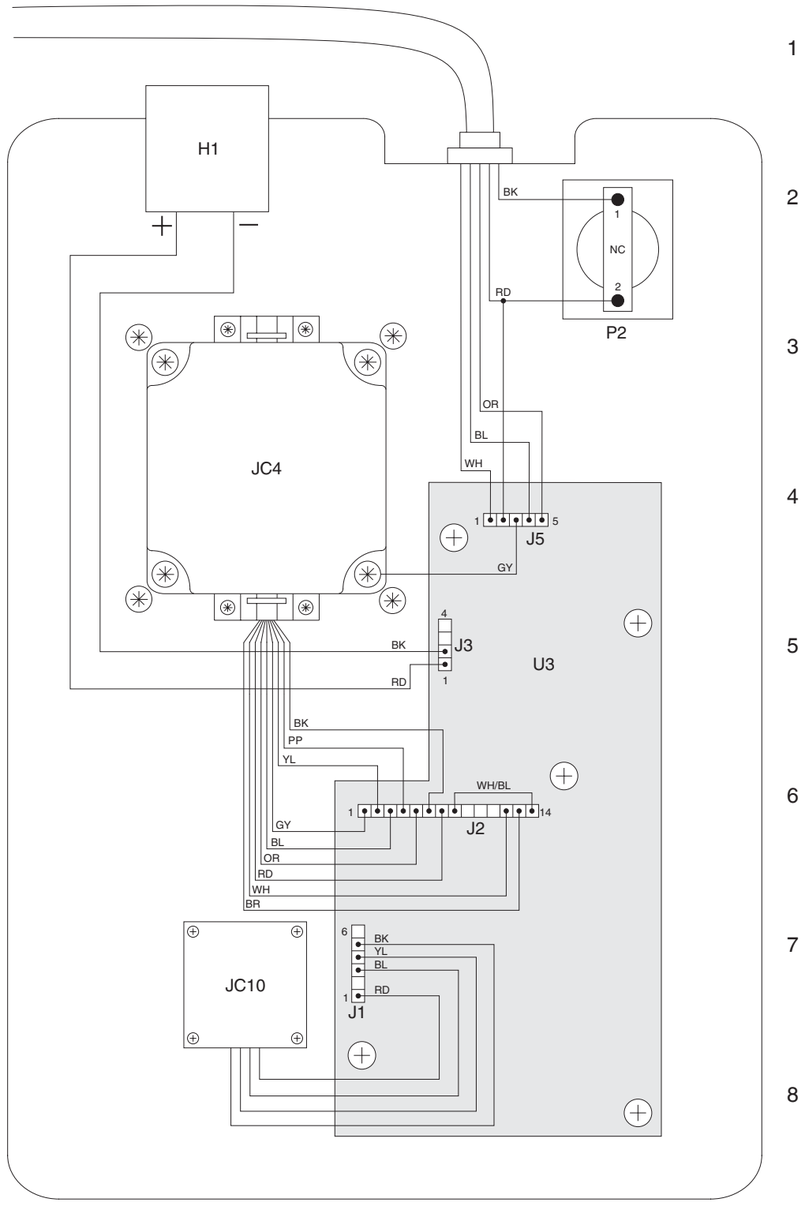
LABEL	DESCRIPTION
BN23	AUXILIARY PLATFORM DOWN ENABLE BUTTON
BN29	HIGH RPM BUTTON
BN30	ENGINE START BUTTON
BN31	ENGINE GLOW PLUG BUTTON
BN32	NOT USED
BN33	FUNCTION ENABLE BUTTON
BN34	PLATFORM UP BUTTON
BN35	PLATFORM DOWN BUTTON
BN91	AUXILIARY PLATFORM DOWN BUTTON
C1	CAPACITOR, 4700µf, 25V DC
CB2	CONTROLS / ENGINE CIRCUIT BREAKER, 20A
CB7	HIGH IDLE CIRCUIT BREAKER, 15A
CR1	ENGINE START RELAY
CR2	IGNITION RELAY
CR4	HIGH IDLE RELAY
CR5	HORN RELAY
CR9	OSCILLATE FLOAT ENABLE RELAY
CR10	OSCILLATE FLOAT DISABLE RELAY
CR15	ENGINE GLOW PLUG RELAY
CR17	OIL COOLER RELAY (OPTION)
CR62	EMERGENCY STOP CONTROL RELAY
CR71	EMERGENCY STOP POWER RELAY
CR72	AUXILIARY PLATFORM DOWN RELAY
G6	HOUR METER
H5	ALARM
KS1	KEY SWITCH
P1	EMERGENCY STOP BUTTON
U5	ECU



Platform Control Box Layout, GS-2669 RT and GS-3369 RT,
Diesel Models (ANSI / CSA)



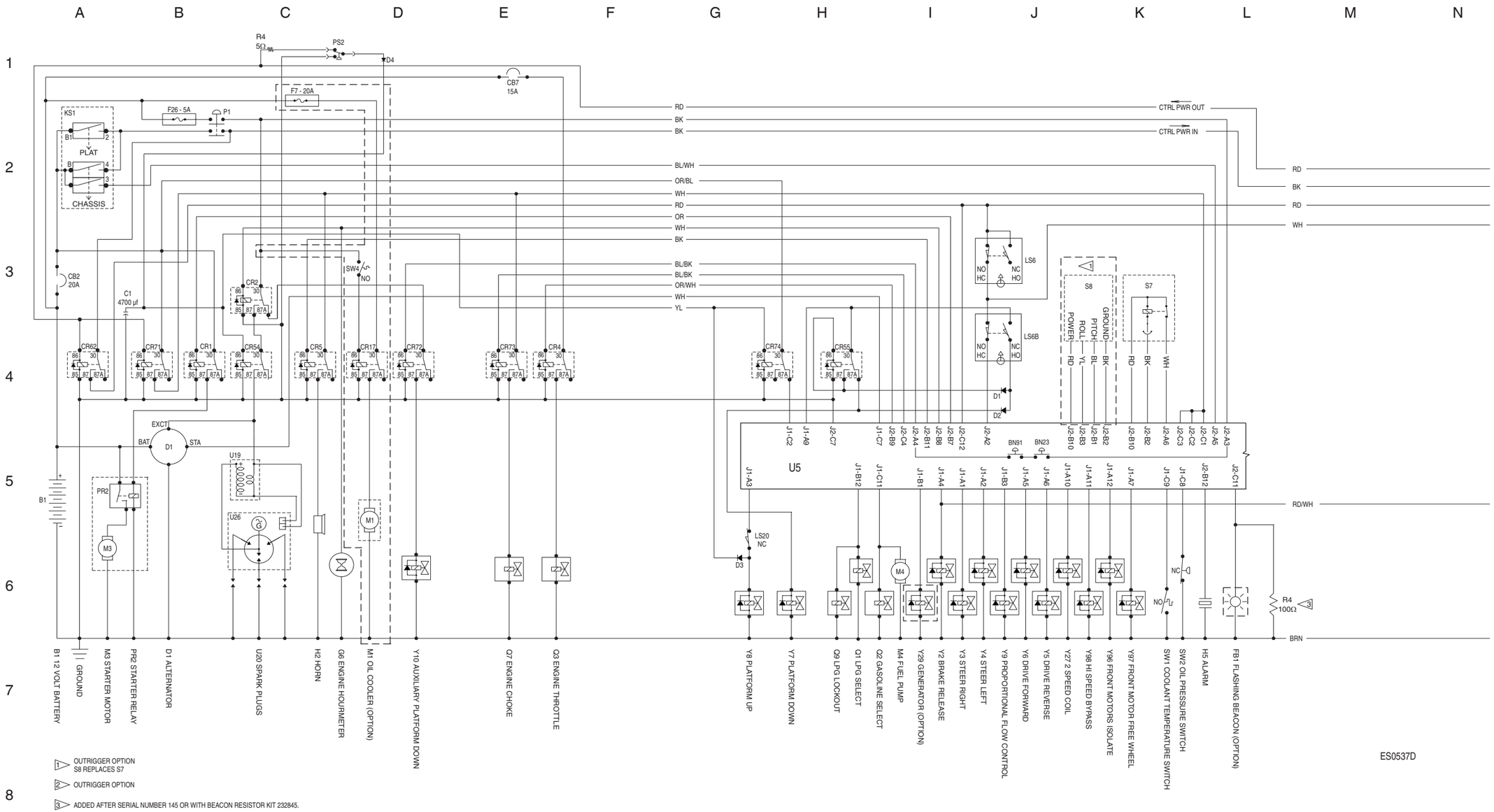
LABEL	DESCRIPTION
BN2	ENGINE START BUTTON
BN3	ENGINE GLOW PLUG BUTTON
BN4	HIGH RPM BUTTON
BN5	HORN BUTTON
BN6	DRIVE SPEED BUTTON
BN7	GENERATOR BUTTON (OPTION)
BN9	PLATFORM UP/DOWN ENABLE BUTTON
BN14	NOT USED
BN20	AUTO LEVEL ENABLE BUTTON (OPTION)
H1	ALARM
JC4	DRIVE / STEER CONTROLLER
JC10	PLATFORM UP/DOWN - OUTRIGGER UP/DOWN SWITCH
P2	EMERGENCY STOP BUTTON
SW5	FUNCTION ENABLE SWITCH
SW6	STEER RIGHT / LEFT SWITCH
U3	PLATFORM CONTROLS CIRCUIT BOARD



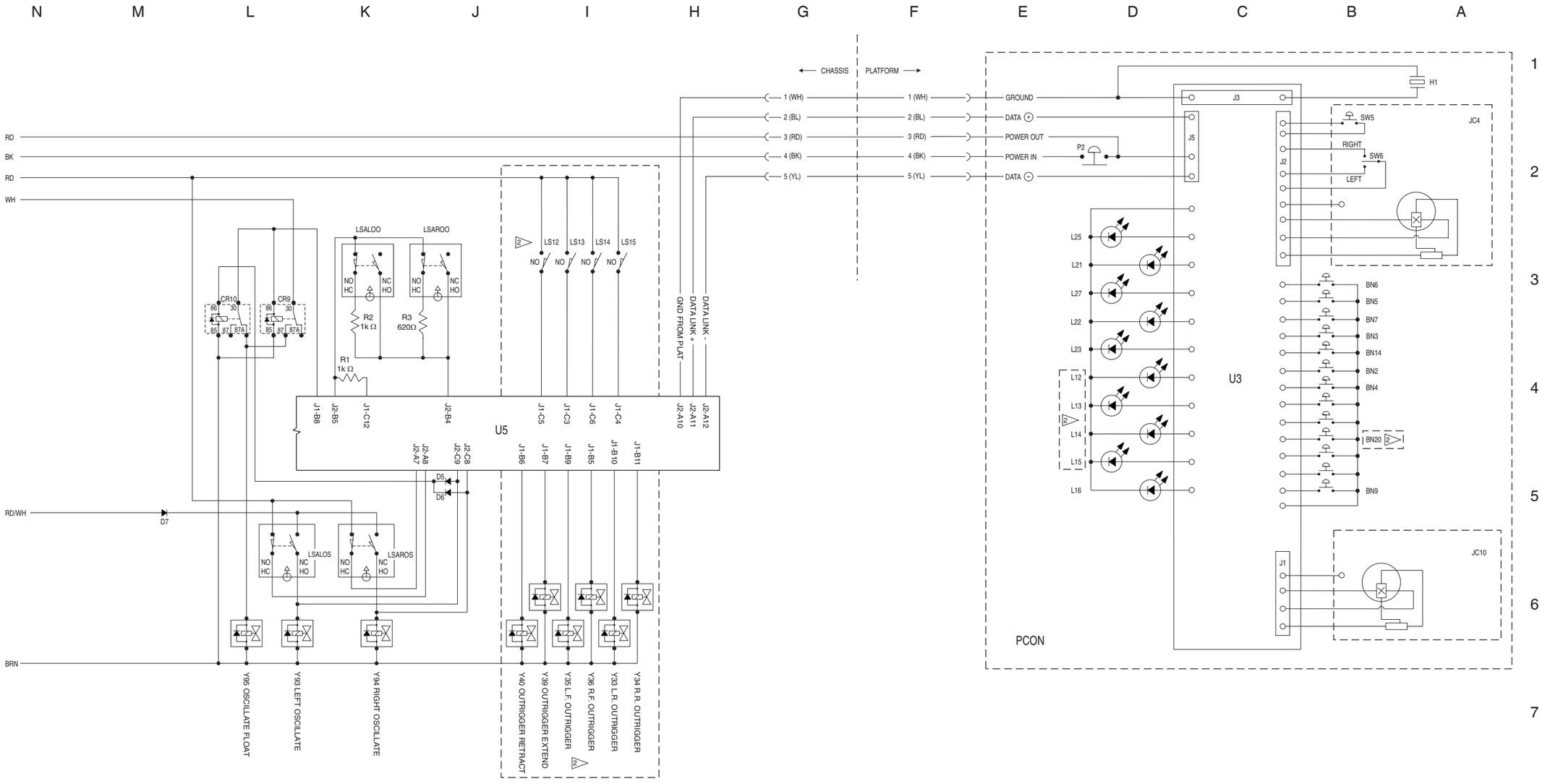
Platform Control Box Layout, GS-2669 RT and GS-3369 RT,
Diesel Models (ANSI / CSA)

Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (AS)

Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (AS)



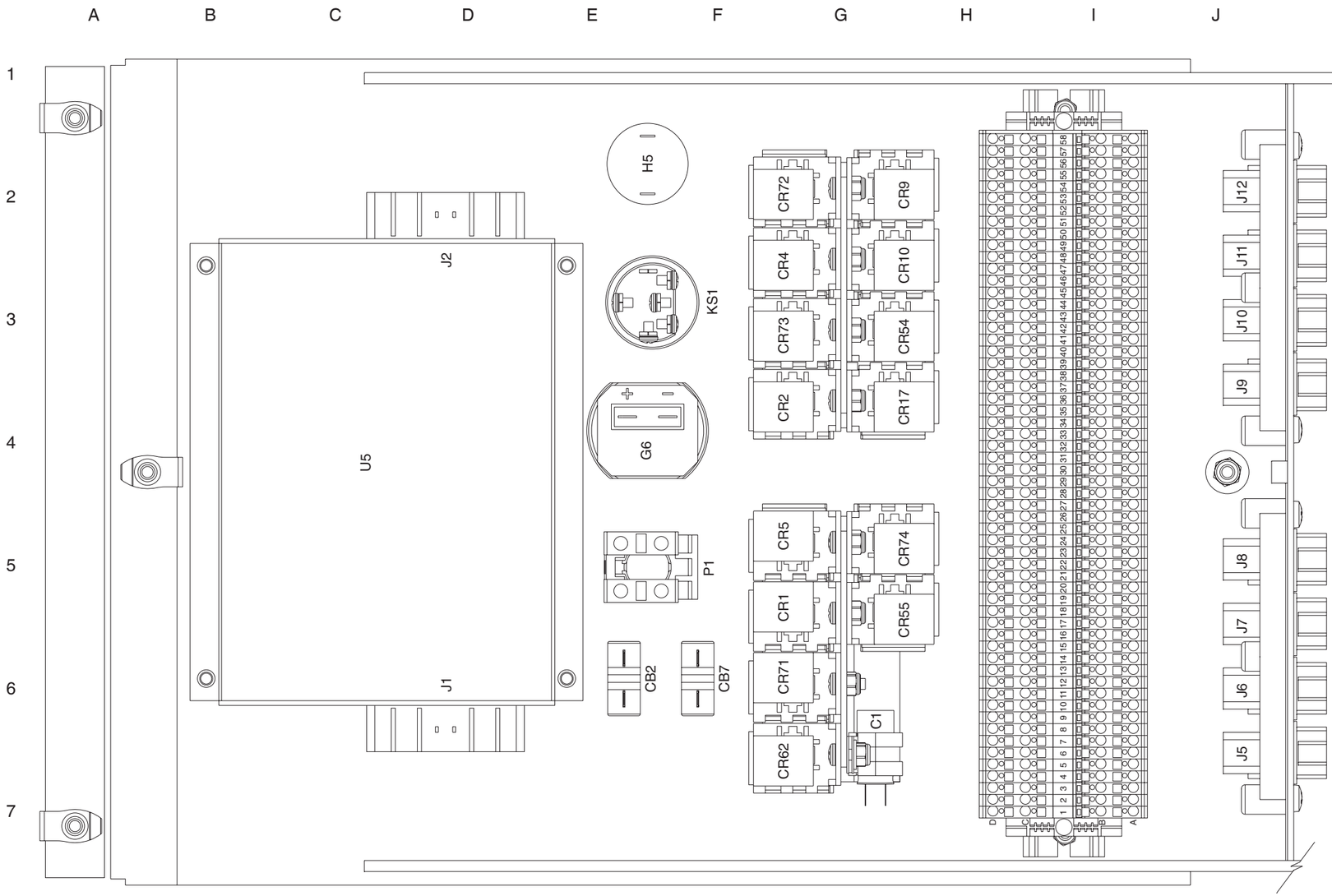
Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (AS)



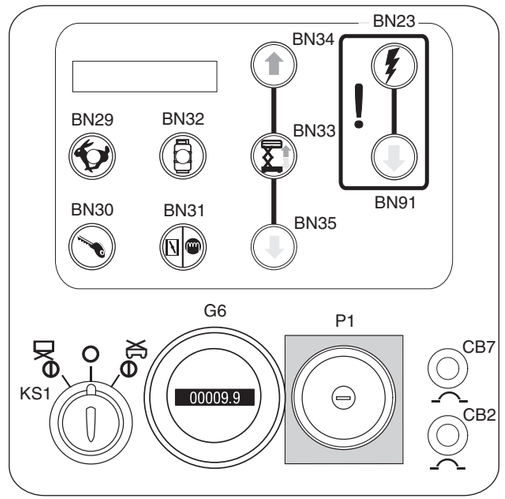
Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (AS)

Ground Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (AS)

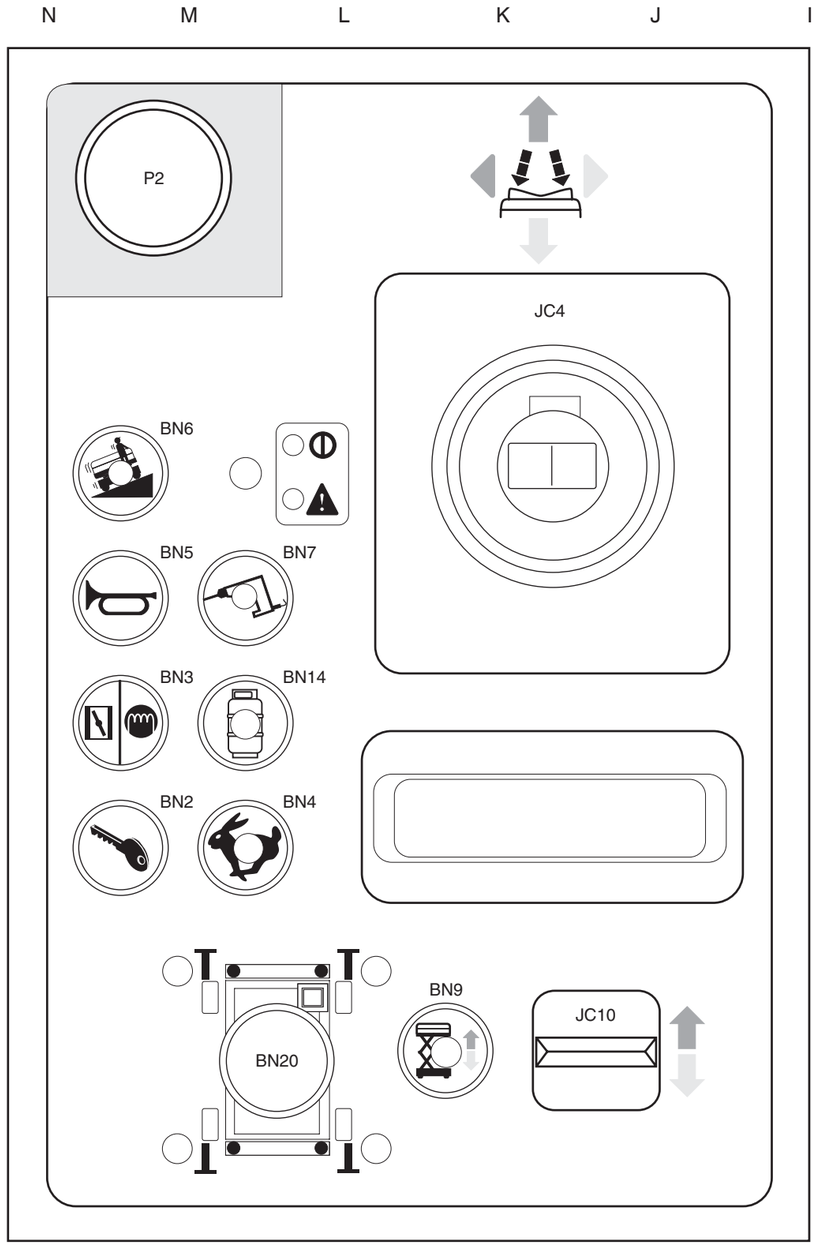
Ground Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (AS)



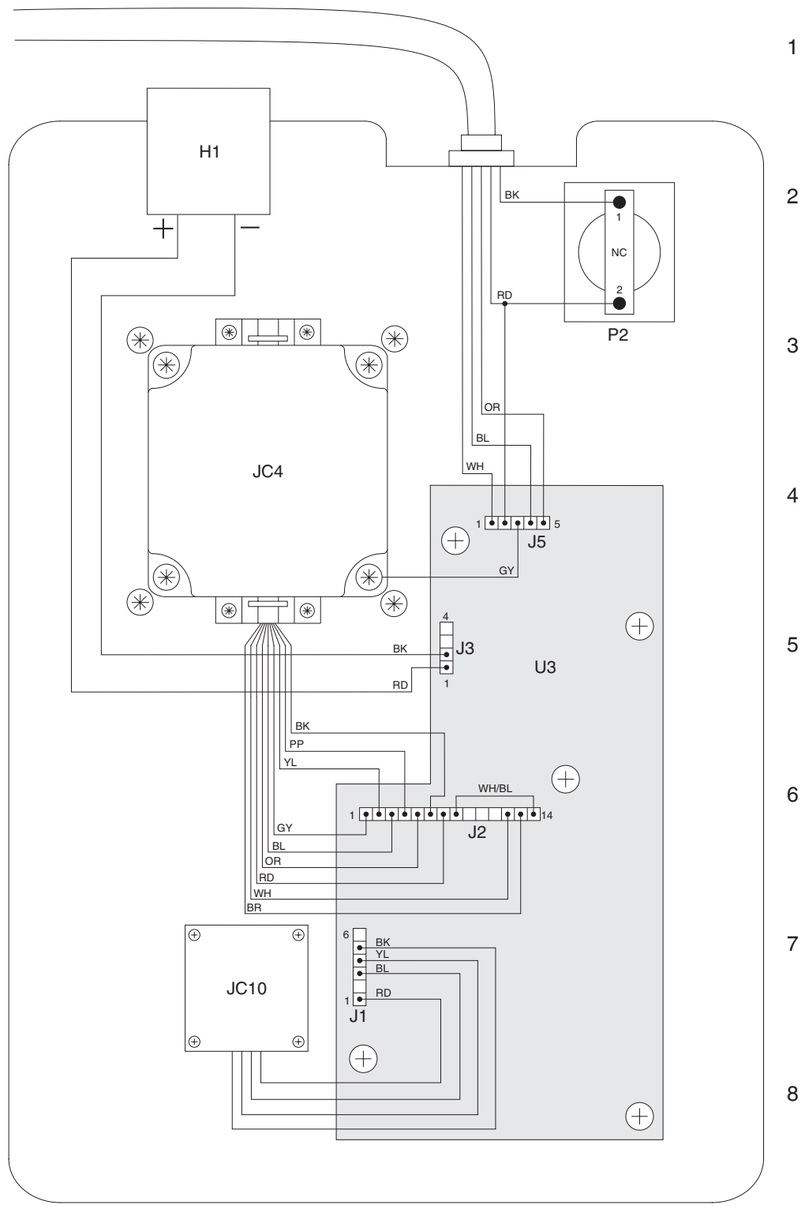
LABEL	DESCRIPTION
BN23	AUXILIARY PLATFORM DOWN ENABLE BUTTON
BN29	HIGH RPM BUTTON
BN30	ENGINE START BUTTON
BN31	ENGINE CHOKE BUTTON
BN32	PROPANE SELECT BUTTON
BN33	FUNCTION ENABLE BUTTON
BN34	PLATFORM UP BUTTON
BN35	PLATFORM DOWN BUTTON
BN91	AUXILIARY PLATFORM DOWN BUTTON
C1	CAPACITOR, 4700µf, 25V DC
CB2	CONTROLS / ENGINE CIRCUIT BREAKER, 20A
CB7	HIGH IDLE CIRCUIT BREAKER, 15A
CR1	ENGINE START RELAY
CR2	IGNITION RELAY
CR4	HIGH IDLE RELAY
CR5	HORN RELAY
CR9	OSCILLATE FLOAT ENABLE RELAY
CR10	OSCILLATE FLOAT DISABLE RELAY
CR17	OIL COOLER RELAY (OPTION)
CR55	#1 PLATFORM OVERLOAD RELAY
CR62	EMERGENCY STOP CONTROL RELAY
CR71	EMERGENCY STOP POWER RELAY
CR72	AUXILIARY PLATFORM DOWN RELAY
CR73	ENGINE CHOKE RELAY
CR74	#2 PLATFORM OVERLOAD RELAY
G6	HOUR METER
H5	ALARM
KS1	KEY SWITCH
P1	EMERGENCY STOP BUTTON
U5	ECU



Platform Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (AS)



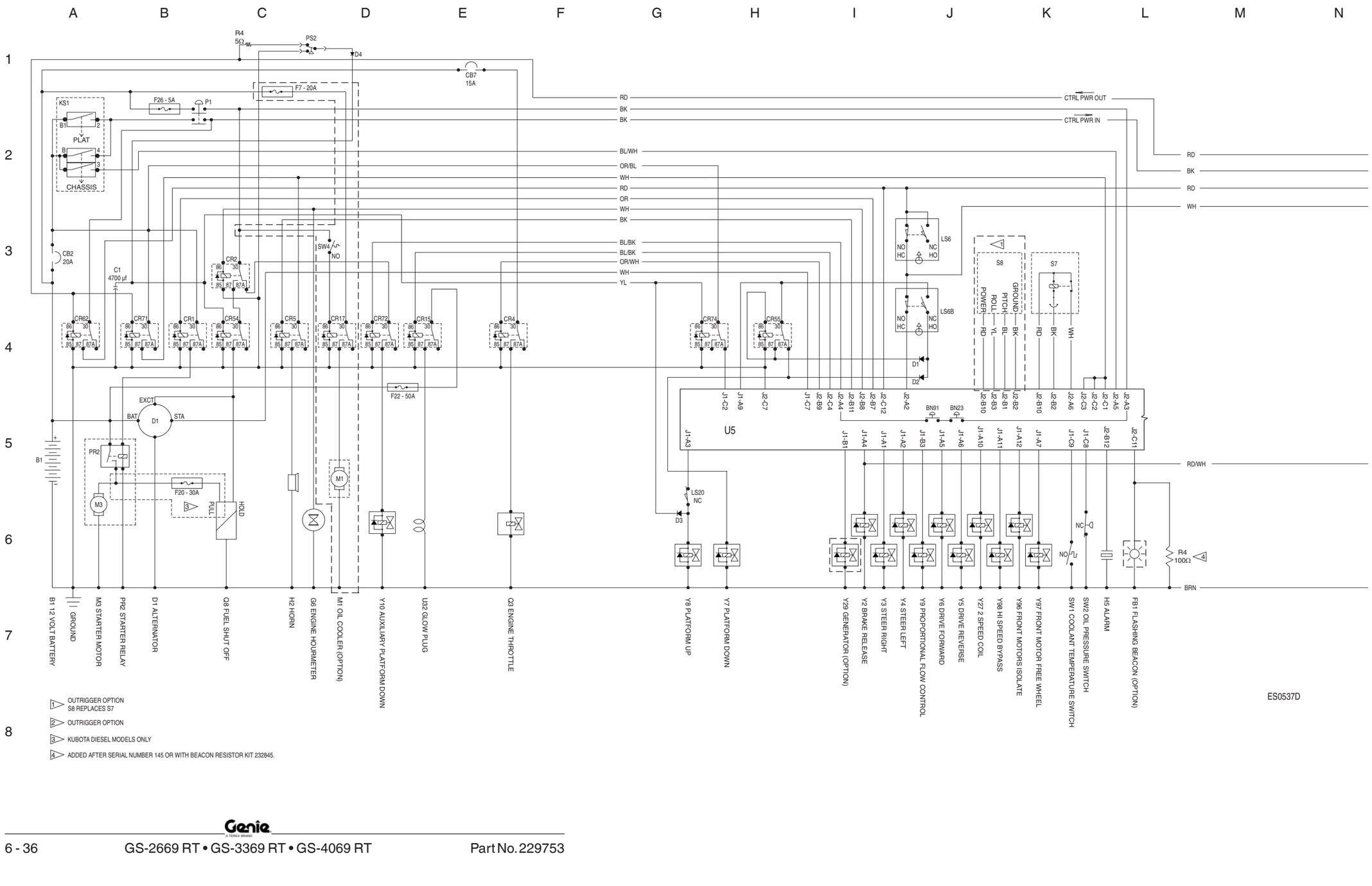
LABEL	DESCRIPTION
BN2	ENGINE START BUTTON
BN3	ENGINE CHOKE BUTTON
BN4	HIGH RPM BUTTON
BN5	HORN BUTTON
BN6	DRIVE SPEED BUTTON
BN7	GENERATOR BUTTON (OPTION)
BN9	PLATFORM UP/DOWN ENABLE BUTTON
BN14	PROPANE SELECT BUTTON
BN20	AUTO LEVEL ENABLE BUTTON (OPTION)
H1	ALARM
JC4	DRIVE / STEER CONTROLLER
JC10	PLATFORM UP/DOWN - OUTRIGGER UP/DOWN SWITCH
P2	EMERGENCY STOP BUTTON
SW5	FUNCTION ENABLE SWITCH
SW6	STEER RIGHT / LEFT SWITCH
U3	PLATFORM CONTROLS CIRCUIT BOARD



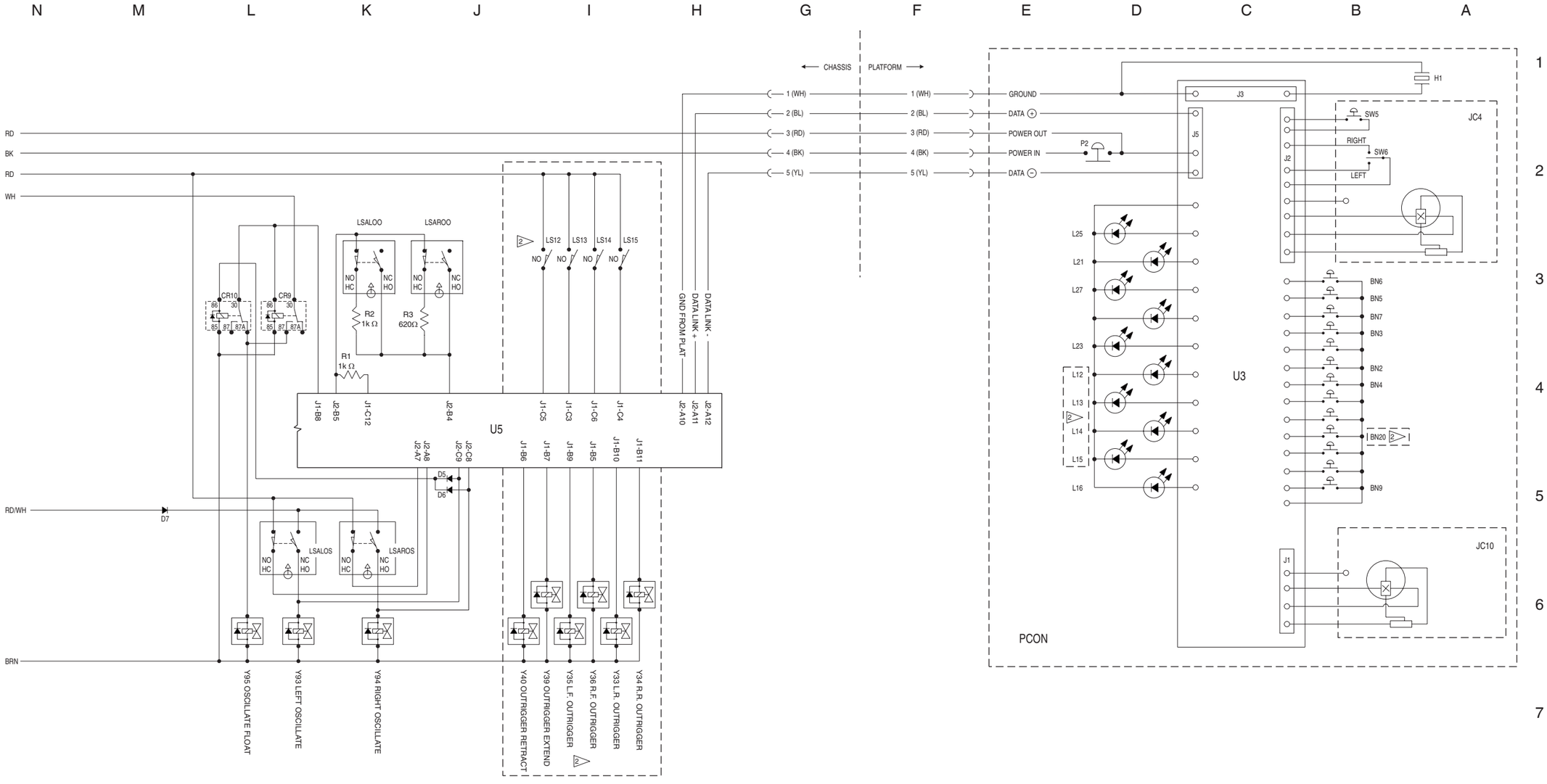
Platform Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (AS)

Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (AS)

Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (AS)



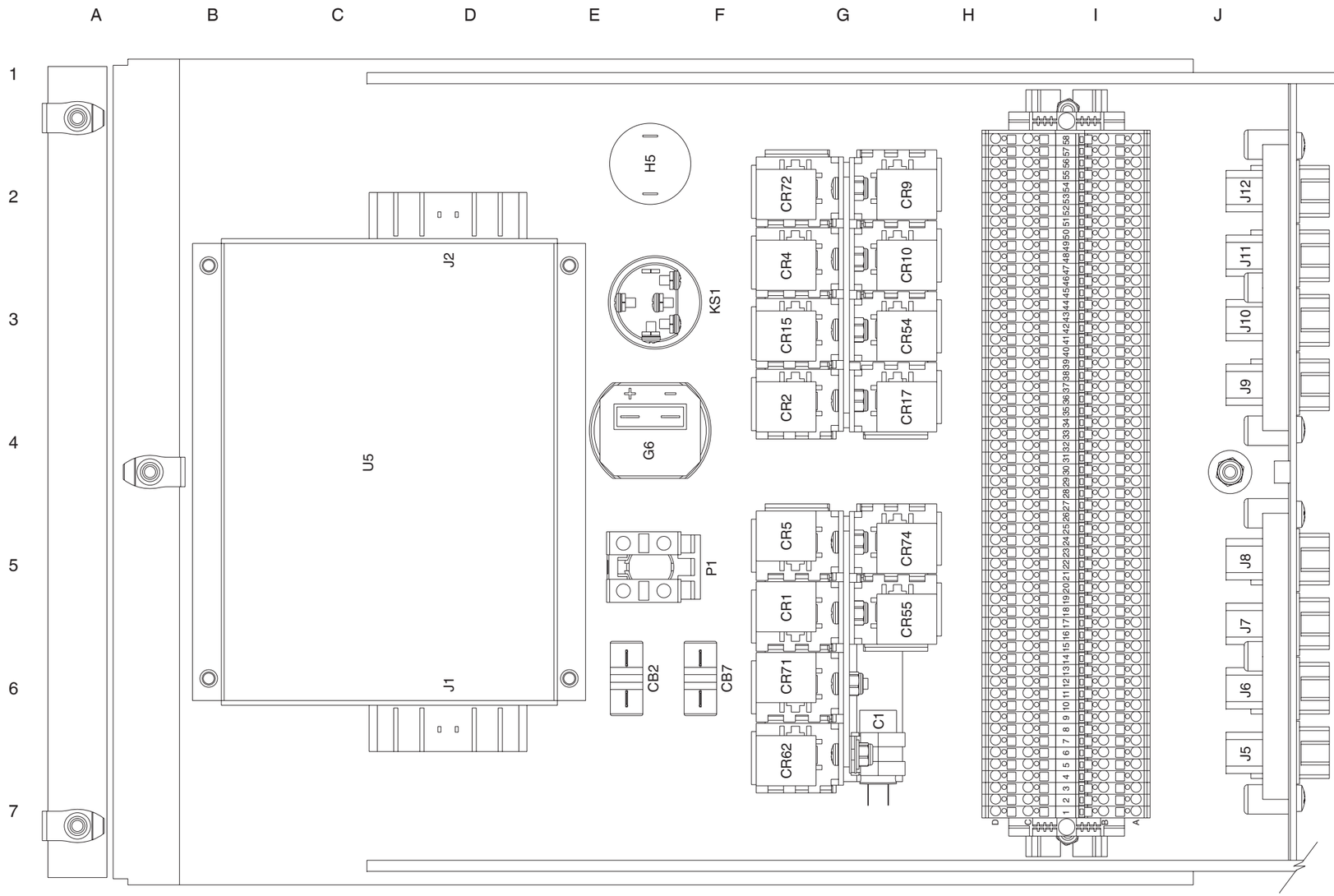
Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (AS)



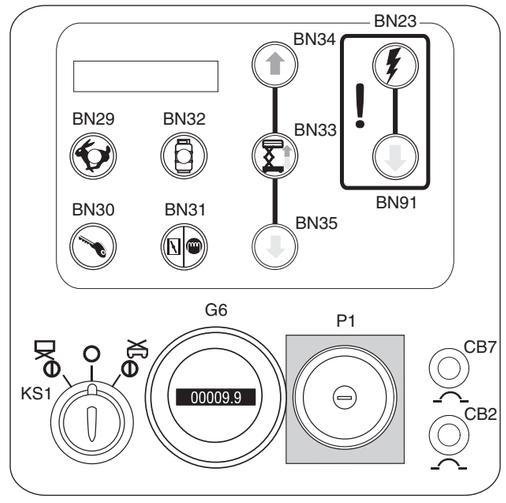
Electrical Schematic, GS-2669 RT and GS-3369 RT, Diesel Models (AS)

Ground Control Box Layout, GS-2669 RT and GS-3369 RT,
Diesel Models (AS)

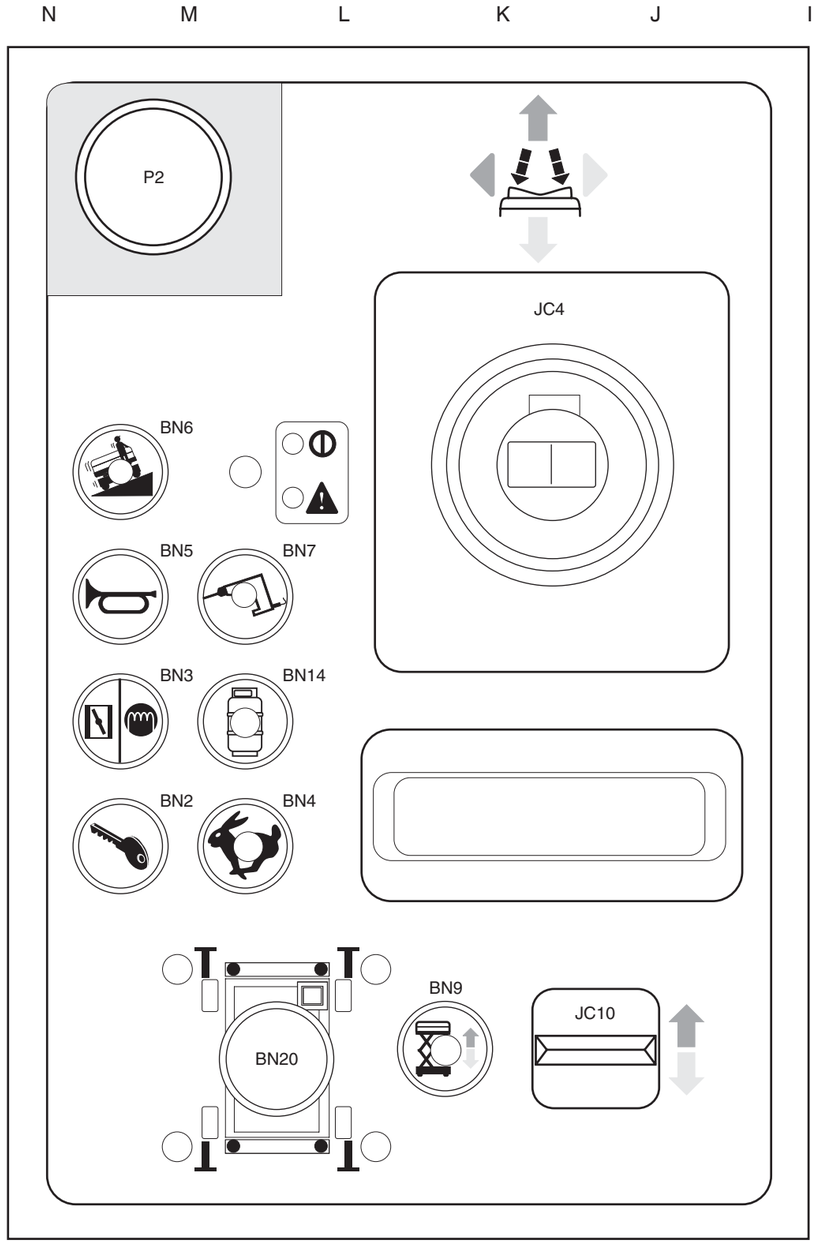
Ground Control Box Layout, GS-2669 RT and GS-3369 RT,
Diesel Models (AS)



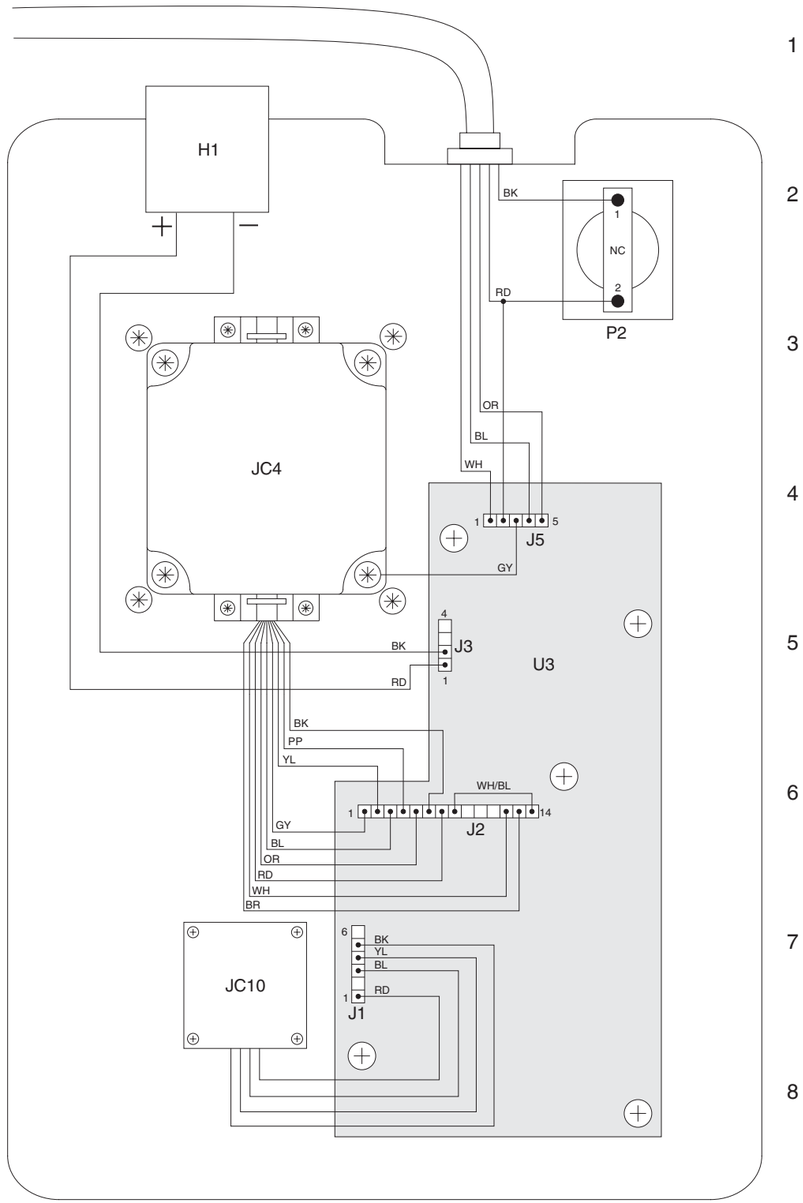
LABEL	DESCRIPTION
BN23	AUXILIARY PLATFORM DOWN ENABLE BUTTON
BN29	HIGH RPM BUTTON
BN30	ENGINE START BUTTON
BN31	ENGINE GLOW PLUG BUTTON
BN32	NOT USED
BN33	FUNCTION ENABLE BUTTON
BN34	PLATFORM UP BUTTON
BN35	PLATFORM DOWN BUTTON
BN91	AUXILIARY PLATFORM DOWN BUTTON
C1	CAPACITOR, 4700µf, 25V DC
CB2	CONTROLS / ENGINE CIRCUIT BREAKER, 20A
CB7	HIGH IDLE CIRCUIT BREAKER, 15A
CR1	ENGINE START RELAY
CR2	IGNITION RELAY
CR4	HIGH IDLE RELAY
CR5	HORN RELAY
CR9	OSCILLATE FLOAT ENABLE RELAY
CR10	OSCILLATE FLOAT DISABLE RELAY
CR15	ENGINE GLOW PLUG RELAY
CR17	OIL COOLER RELAY (OPTION)
CR55	#1 PLATFORM OVERLOAD RELAY
CR62	EMERGENCY STOP CONTROL RELAY
CR71	EMERGENCY STOP POWER RELAY
CR72	AUXILIARY PLATFORM DOWN RELAY
CR74	#2 PLATFORM OVERLOAD RELAY
G6	HOUR METER
H5	ALARM
KS1	KEY SWITCH
P1	EMERGENCY STOP BUTTON
U5	ECU



Platform Control Box Layout, GS-2669 RT and GS-3369 RT, Diesel Models (AS)



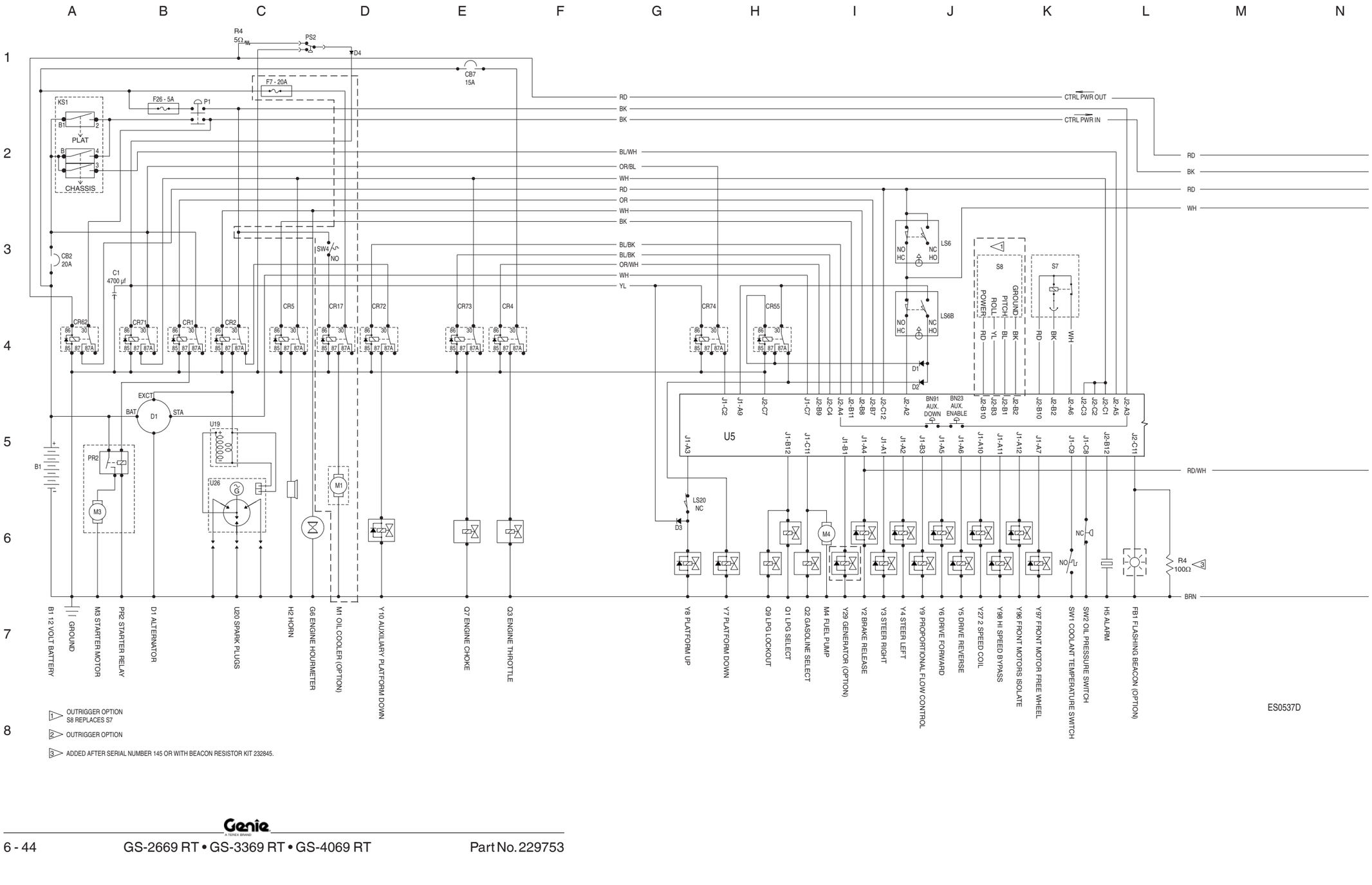
LABEL	DESCRIPTION
BN2	ENGINE START BUTTON
BN3	ENGINE GLOW PLUG BUTTON
BN4	HIGH RPM BUTTON
BN5	HORN BUTTON
BN6	DRIVE SPEED BUTTON
BN7	GENERATOR BUTTON (OPTION)
BN9	PLATFORM UP/DOWN ENABLE BUTTON
BN14	NOT USED
BN20	AUTO LEVEL ENABLE BUTTON (OPTION)
H1	ALARM
JC4	DRIVE / STEER CONTROLLER
JC10	PLATFORM UP/DOWN - OUTRIGGER UP/DOWN SWITCH
P2	EMERGENCY STOP BUTTON
SW5	FUNCTION ENABLE SWITCH
SW6	STEER RIGHT / LEFT SWITCH
U3	PLATFORM CONTROLS CIRCUIT BOARD



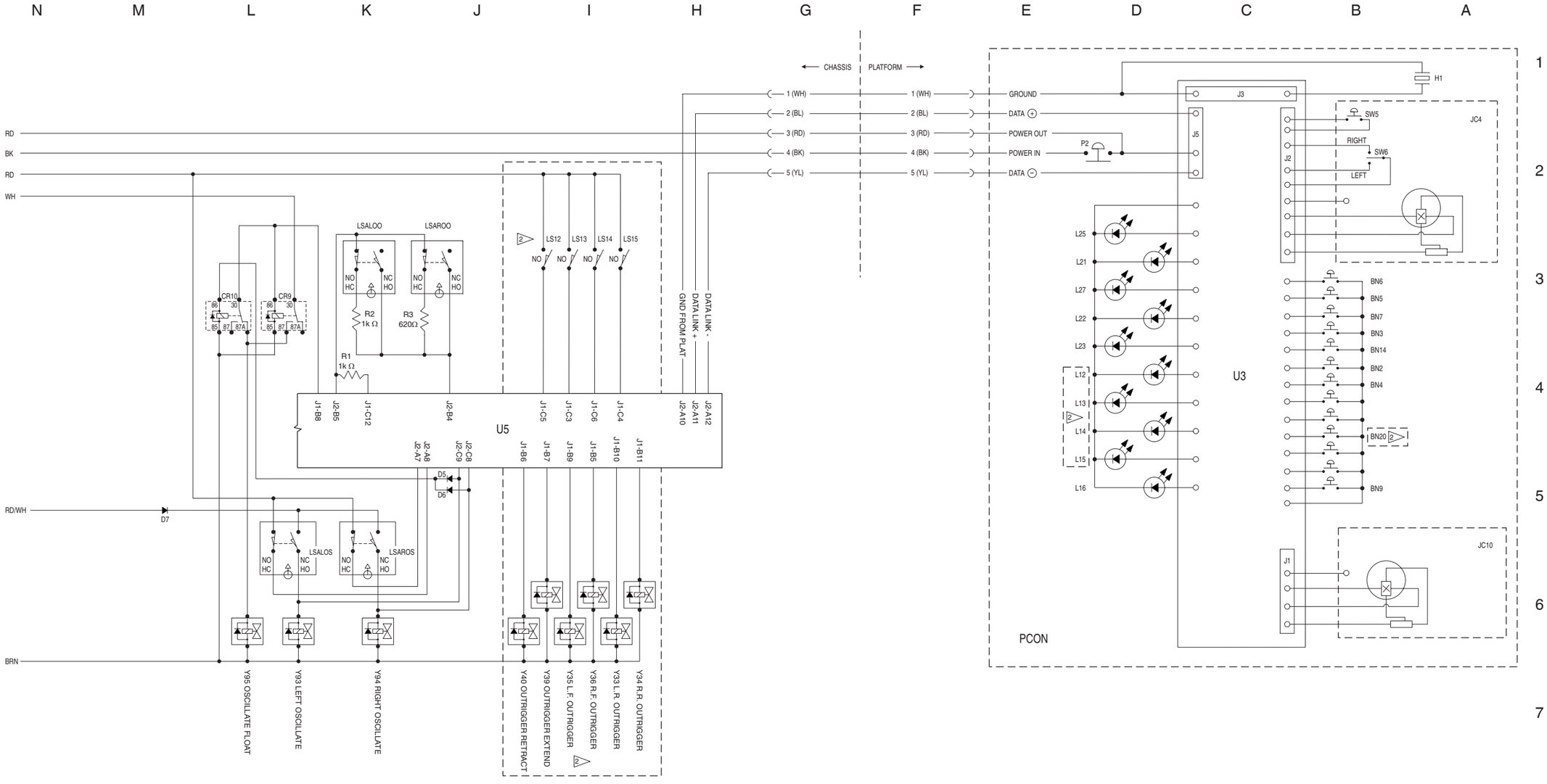
Platform Control Box Layout, GS-2669 RT and GS-3369 RT, Diesel Models (AS)

Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (CE)

Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (CE)



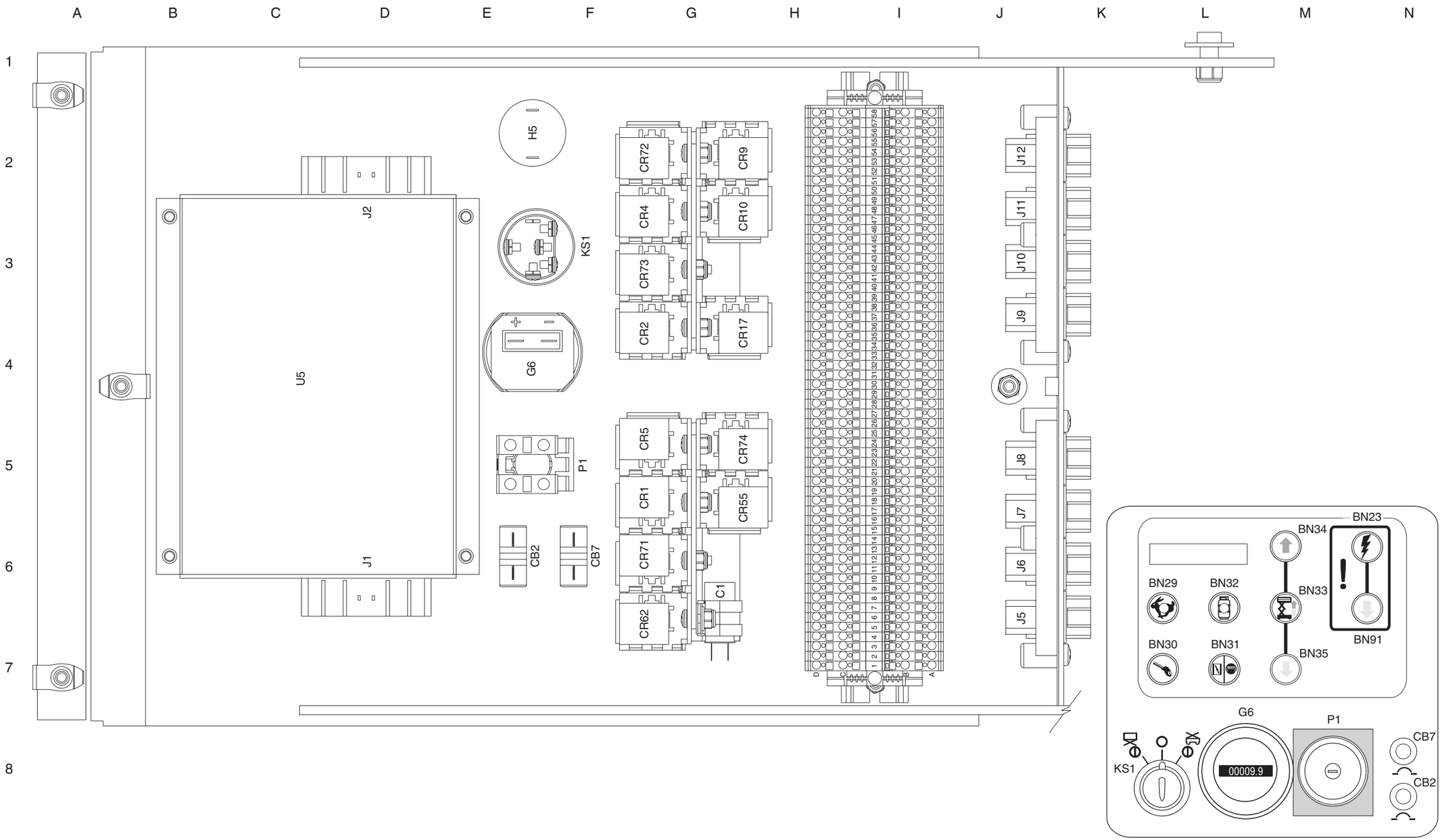
Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (CE)



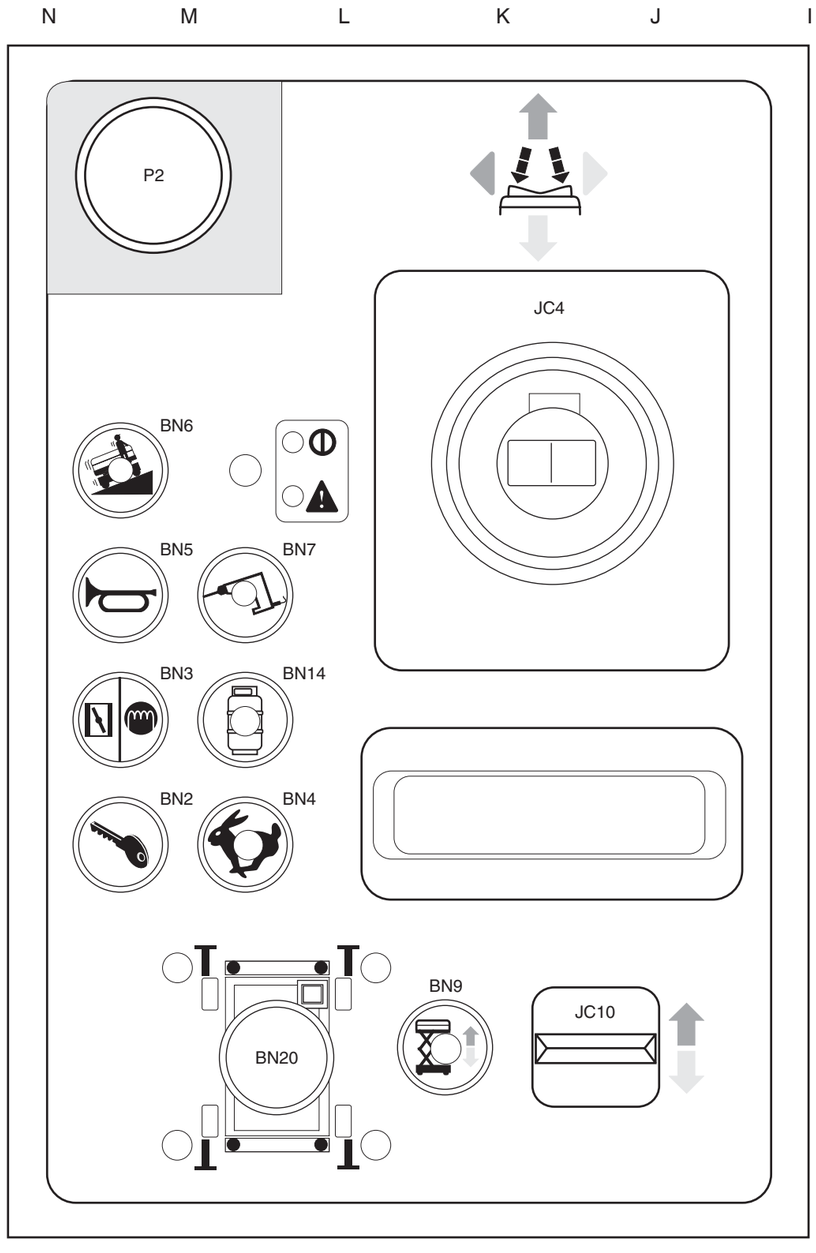
Electrical Schematic, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (CE)

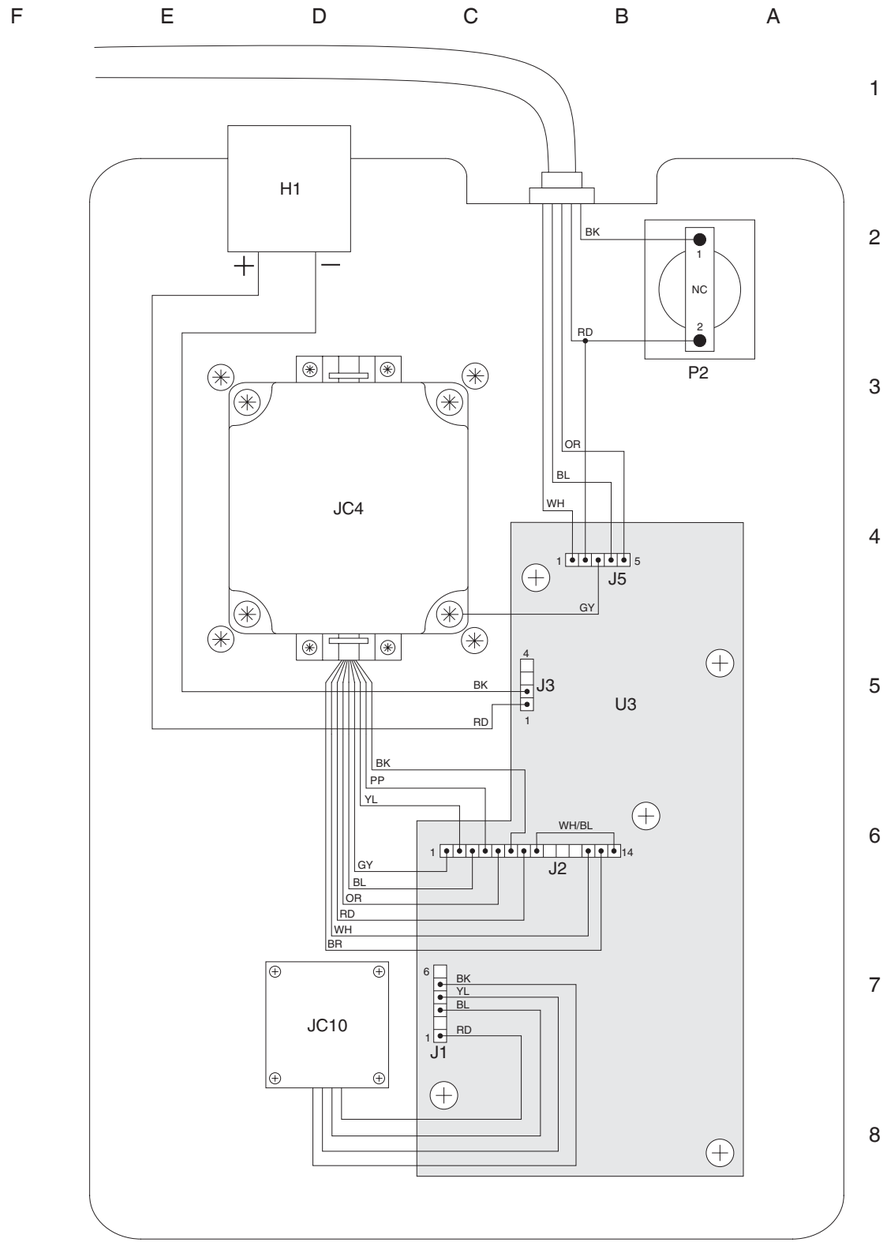
Ground Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (CE)

Ground Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (CE)

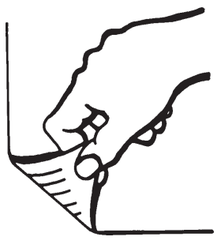


Platform Control Box Layout, GS-2669 RT and GS-3369 RT,
Gas / LPG Models (CE)



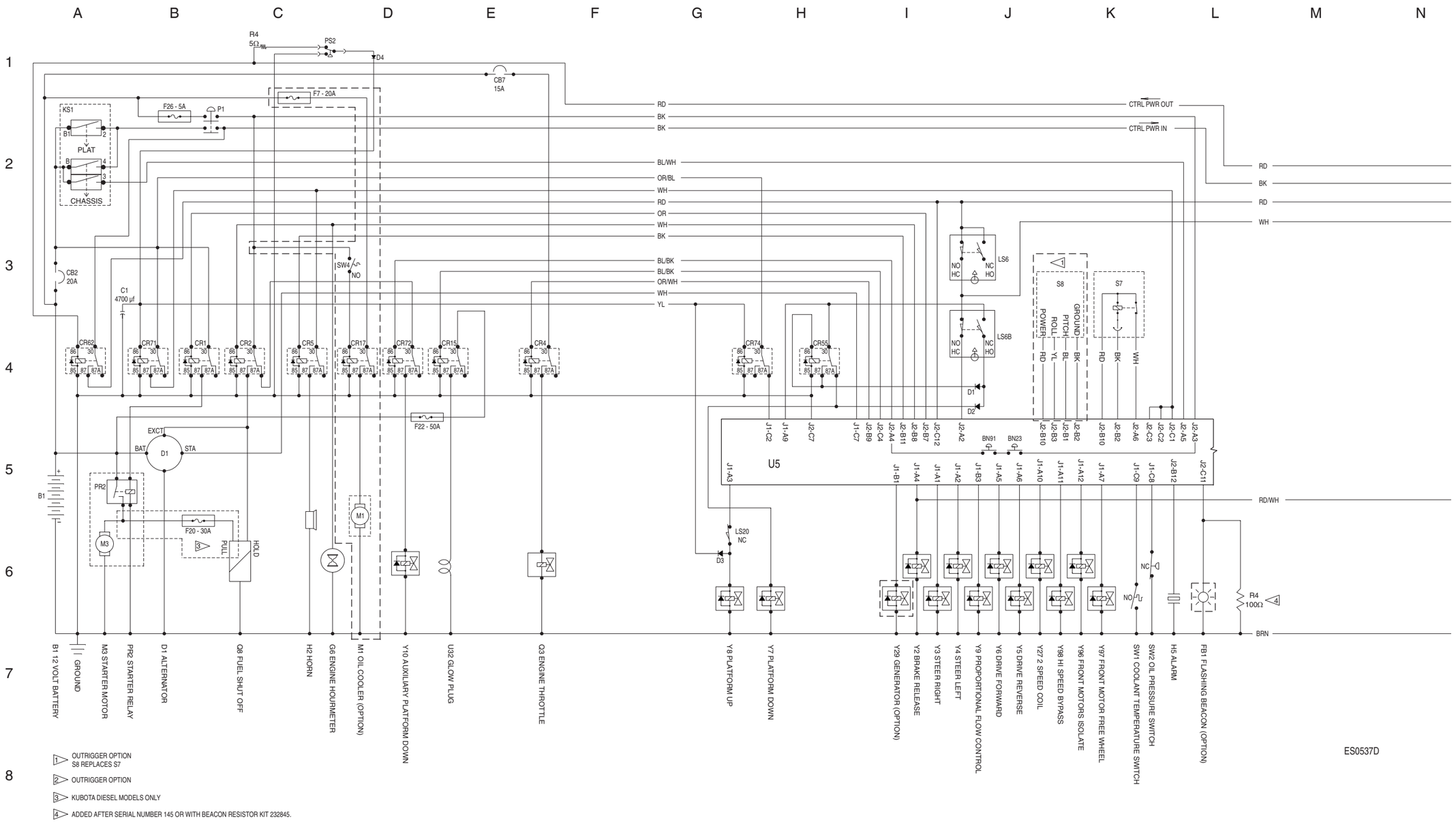


Platform Control Box Layout, GS-2669 RT and GS-3369 RT, Gas / LPG Models (CE)

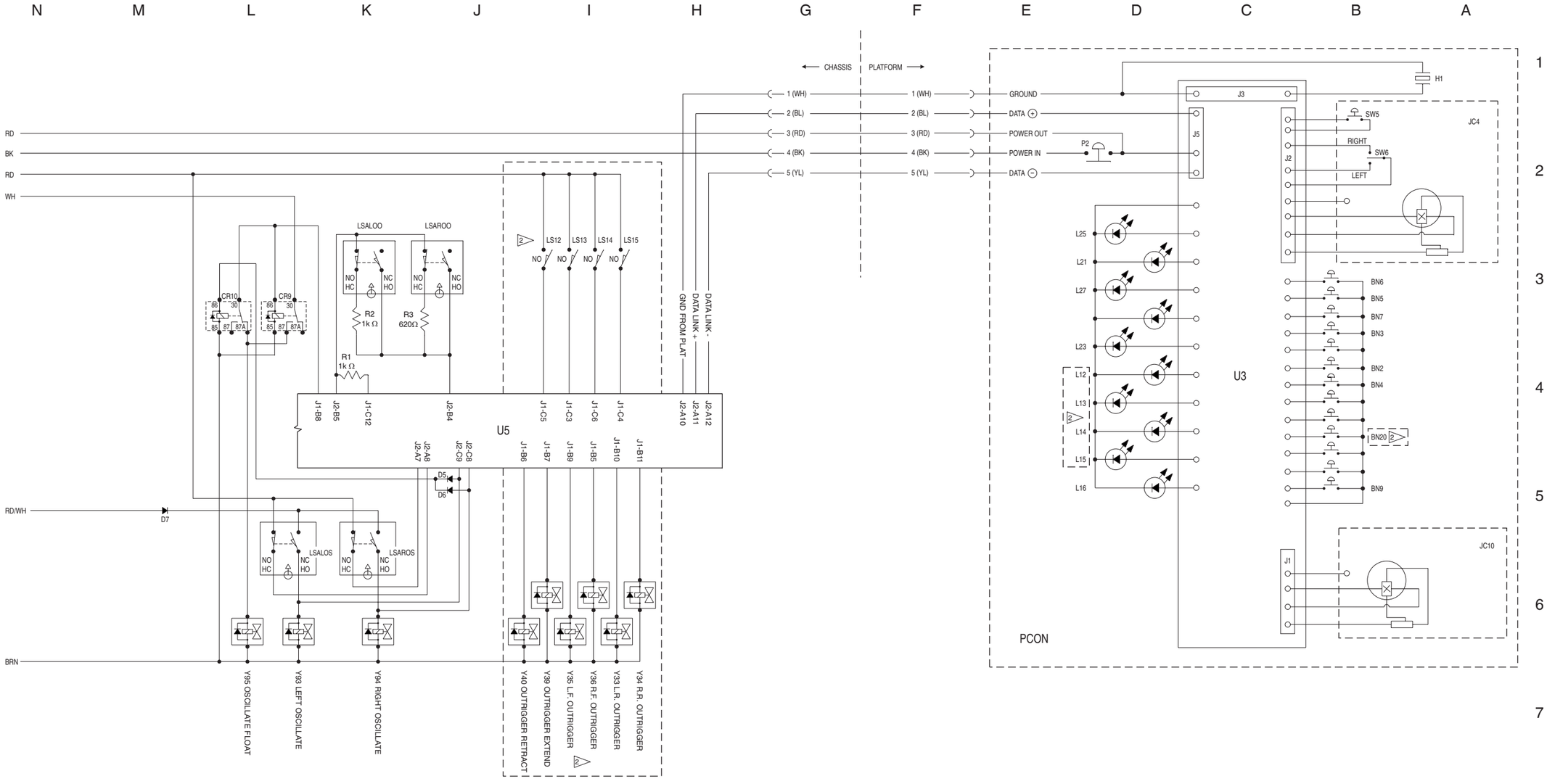


Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (CE)

Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (CE)



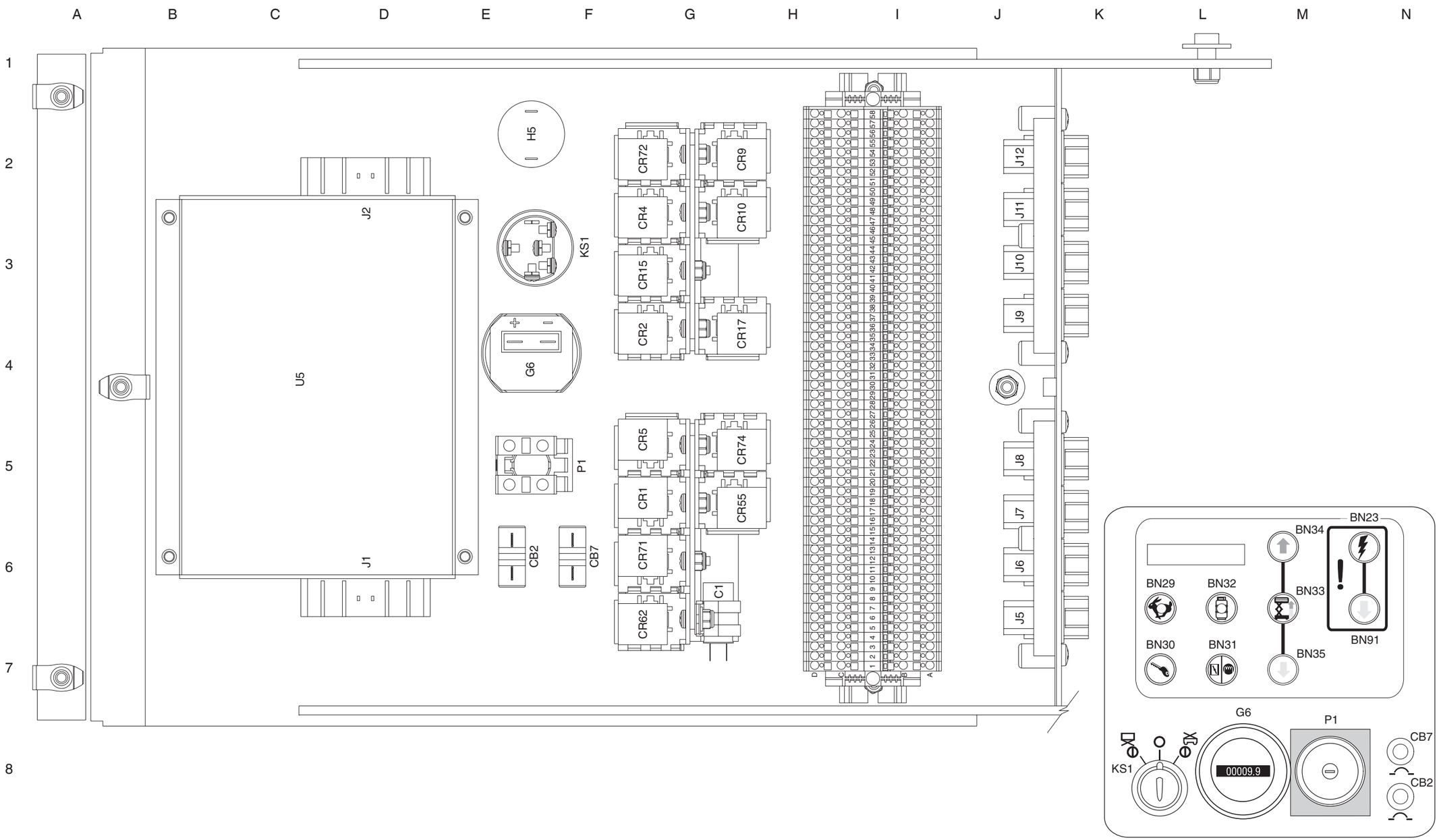
Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (CE)



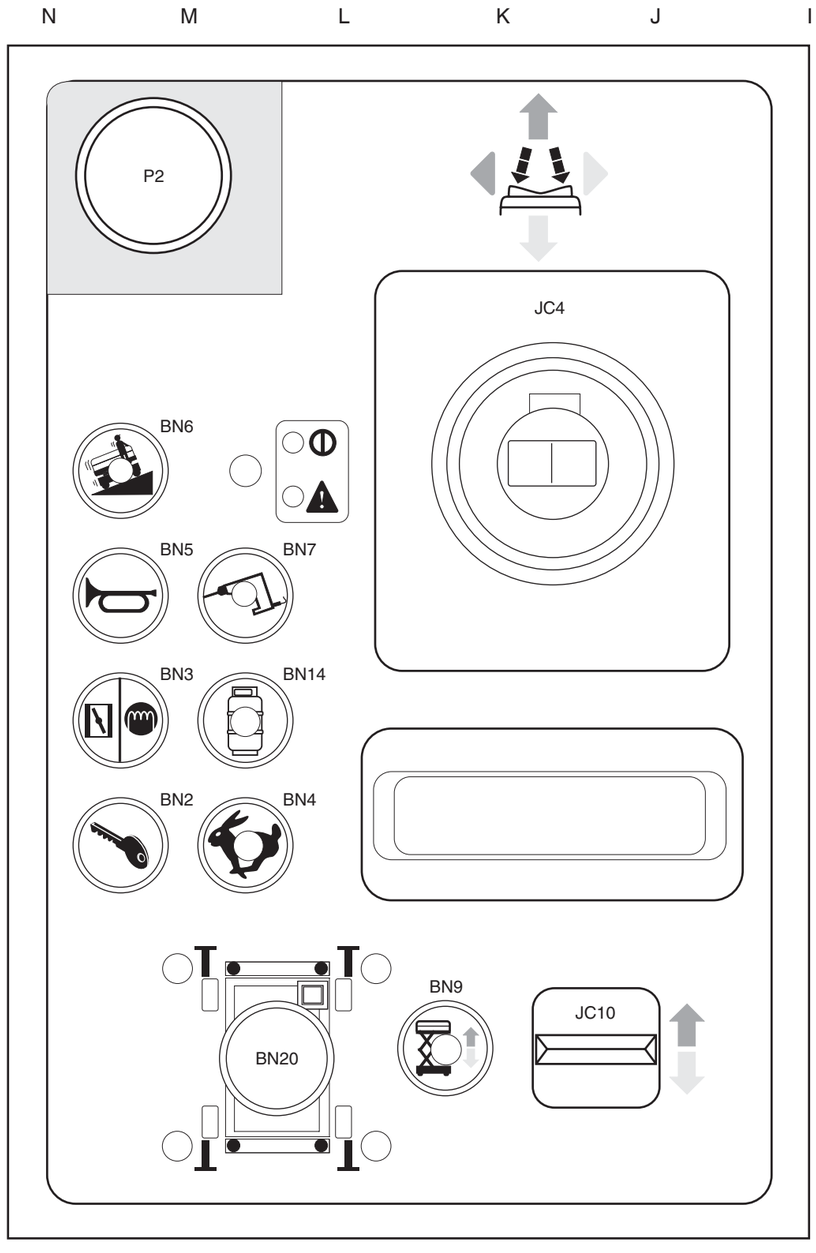
Electrical Schematic, GS-2669 RT and GS-3369 RT,
Diesel Models (CE)

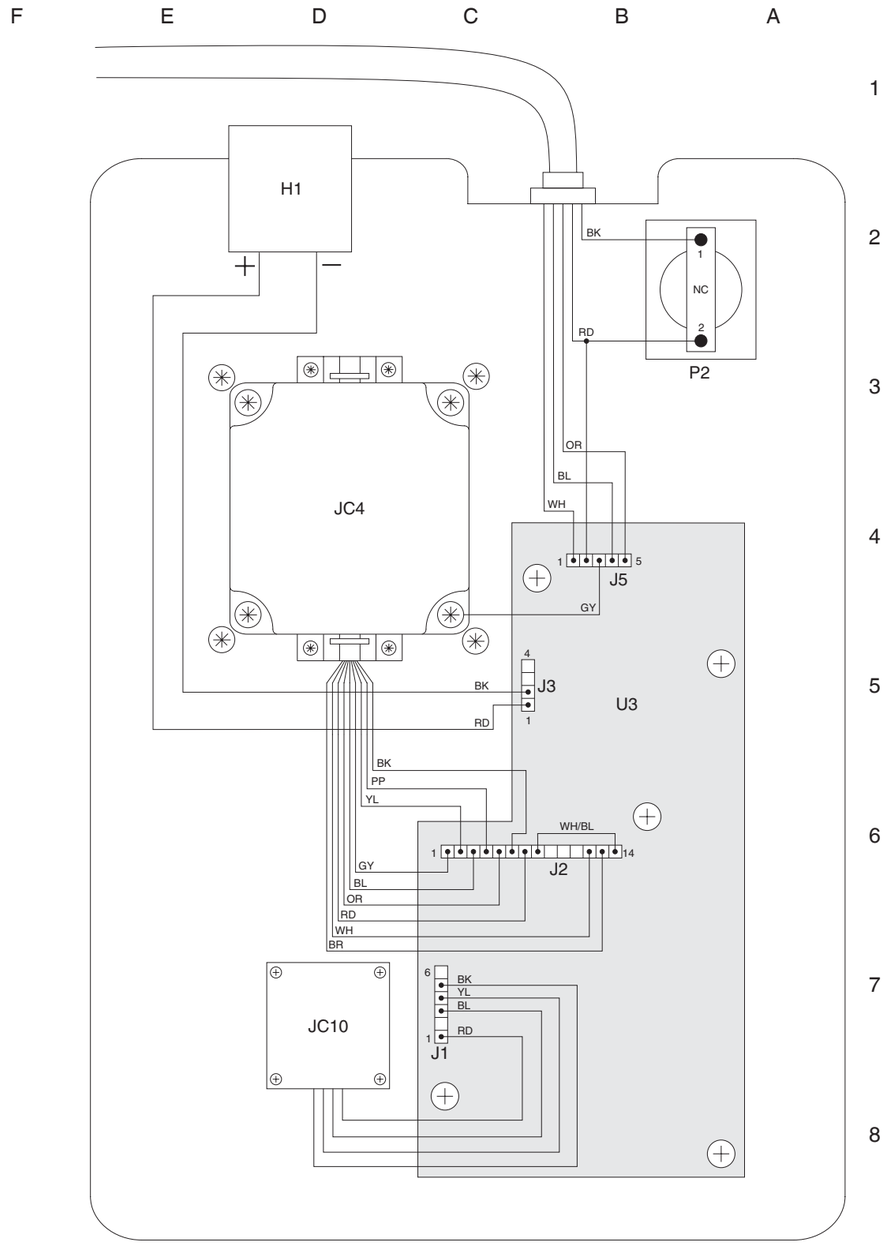
Ground Control Box Layout, GS-2669 RT and GS-3369 RT,
Diesel Models (CE)

Ground Control Box Layout, GS-2669 RT and GS-3369 RT,
Diesel Models (CE)



Platform Control Box Layout, GS-2669 RT and GS-3369 RT, Diesel Models (CE)



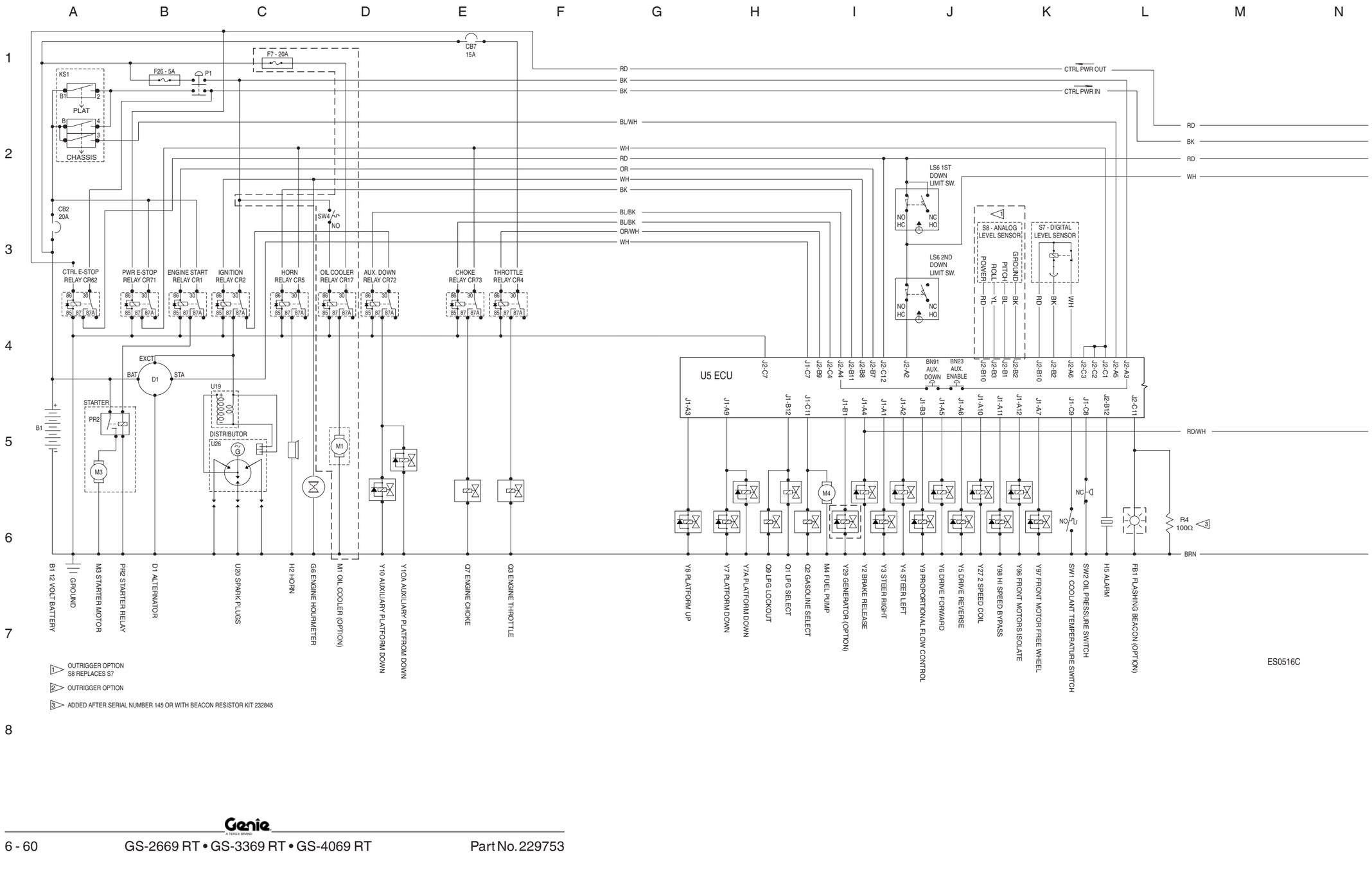


Platform Control Box Layout, GS-2669 RT and GS-3369 RT, Diesel Models (CE)

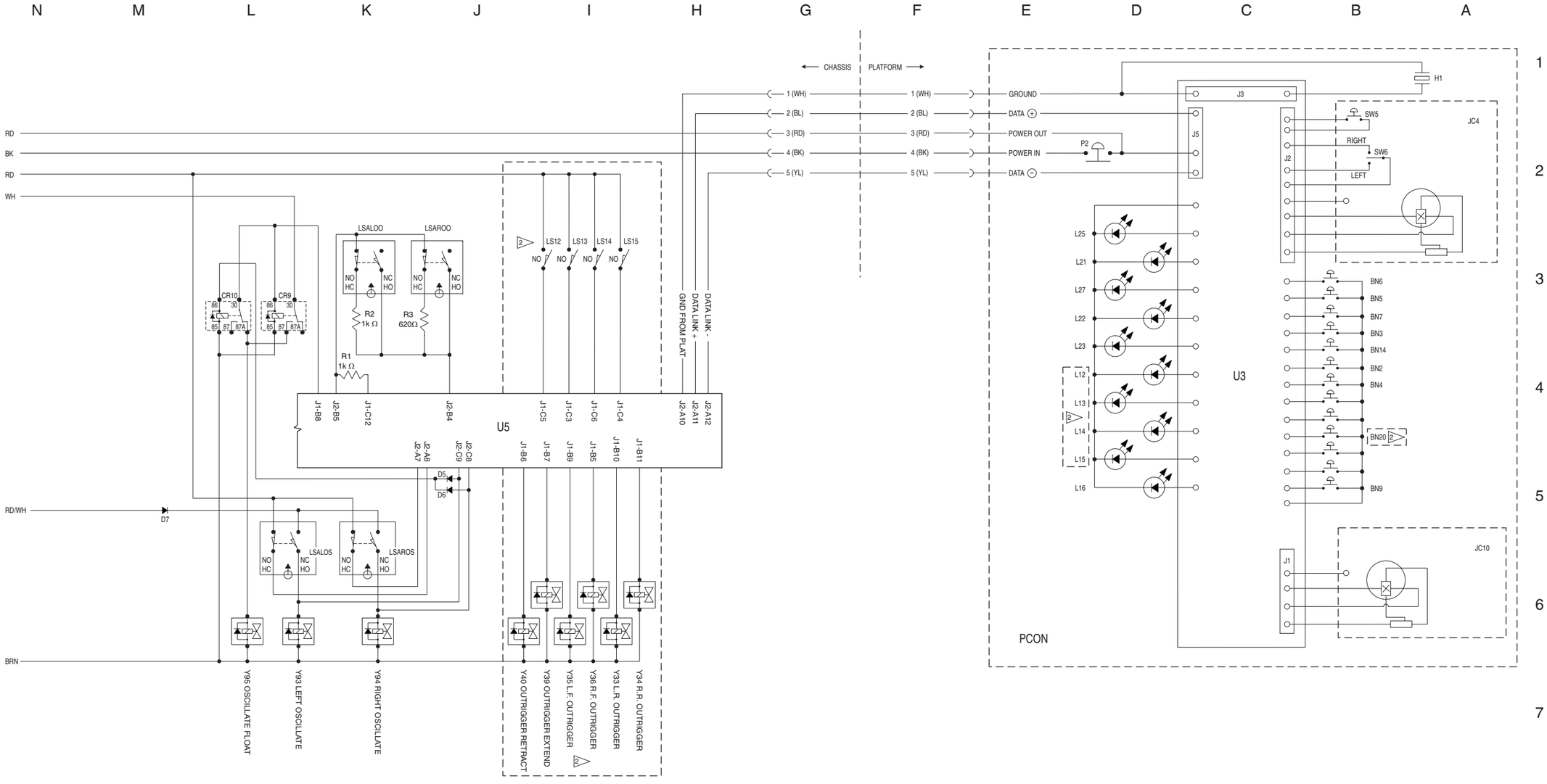
Electrical Schematic, GS-4069 RT,
Gas / LPG Models (ANSI / CSA)

Electrical Schematic, GS-4069 RT,

Gas / LPG Models (ANSI / CSA)



Electrical Schematic, GS-4069 RT,
Gas / LPG Models (ANSI / CSA)

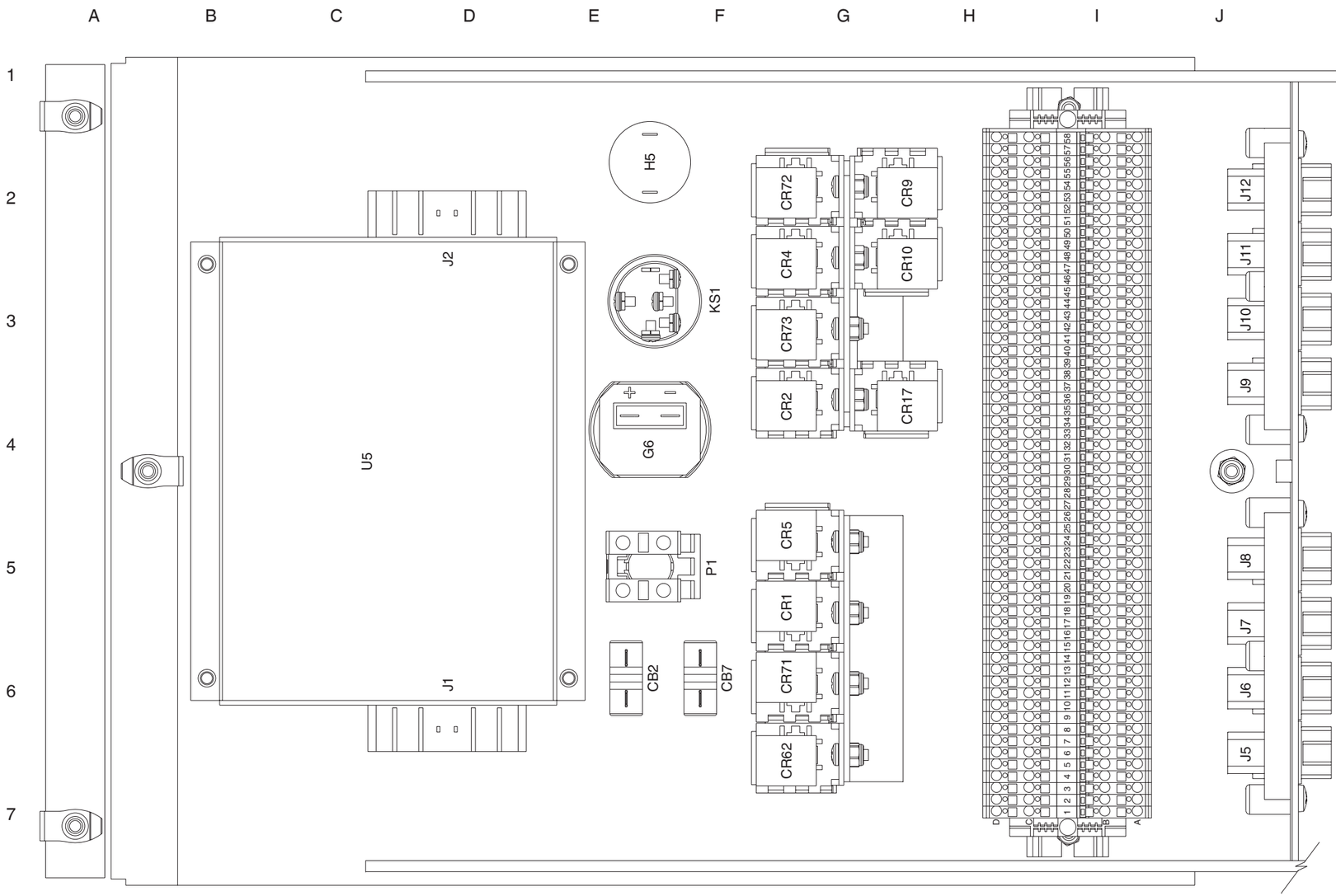


Electrical Schematic, GS-4069 RT,
Gas / LPG Models (ANSI / CSA)

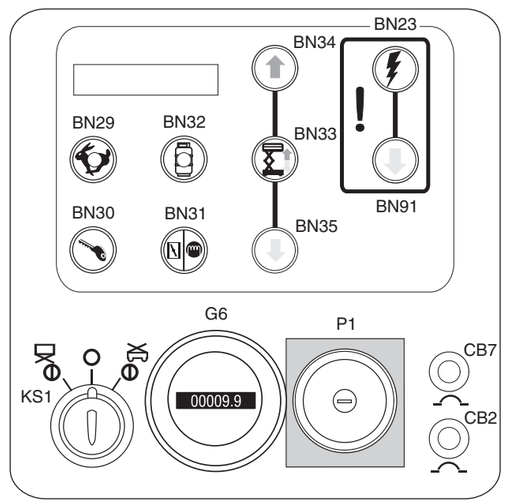
Ground Control Box Layout, GS-4069 RT,
Gas / LPG Models (ANSI / CSA)

Ground Control Box Layout, GS-4069 RT,

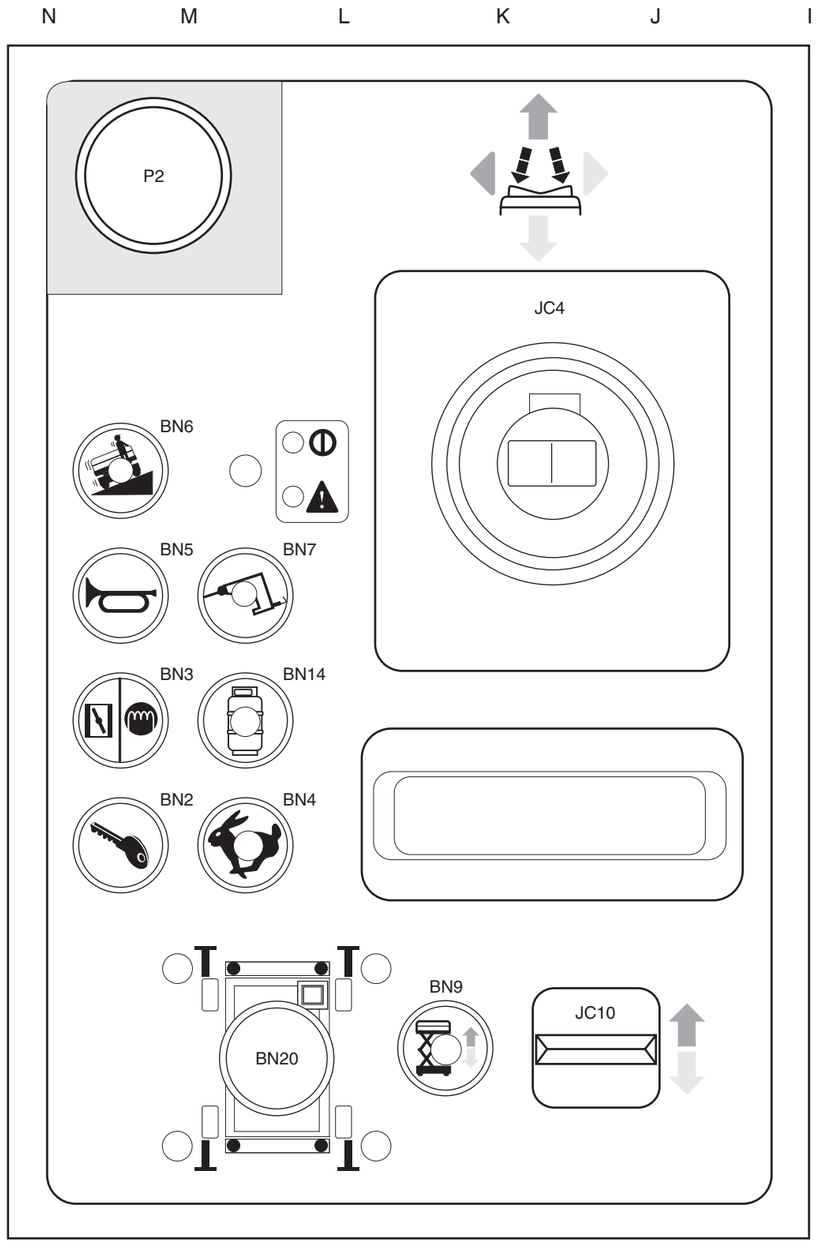
Gas / LPG Models (ANSI / CSA)



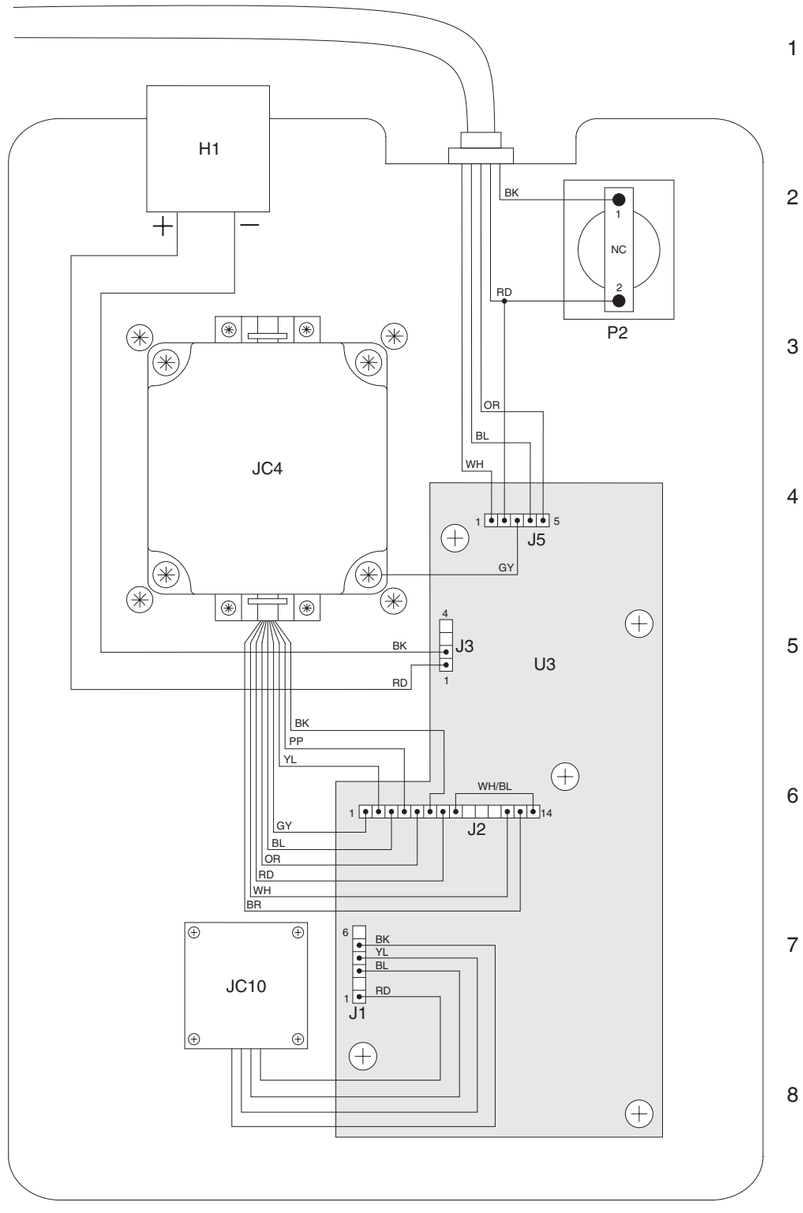
LABEL	DESCRIPTION
BN23	AUXILIARY PLATFORM DOWN ENABLE BUTTON
BN29	HIGH RPM BUTTON
BN30	ENGINE START BUTTON
BN31	ENGINE CHOKE BUTTON
BN32	PROPANE SELECT BUTTON
BN33	FUNCTION ENABLE BUTTON
BN34	PLATFORM UP BUTTON
BN35	PLATFORM DOWN BUTTON
BN91	AUXILIARY PLATFORM DOWN BUTTON
CB2	CONTROLS / ENGINE CIRCUIT BREAKER, 20A
CB7	HIGH IDLE CIRCUIT BREAKER, 15A
CR1	ENGINE START RELAY
CR2	IGNITION RELAY
CR4	HIGH IDLE RELAY
CR5	HORN RELAY
CR9	OSCILLATE FLOAT ENABLE RELAY
CR10	OSCILLATE FLOAT DISABLE RELAY
CR17	OIL COOLER RELAY (OPTION)
CR62	EMERGENCY STOP CONTROL RELAY
CR71	EMERGENCY STOP POWER RELAY
CR72	AUXILIARY PLATFORM DOWN RELAY
CR73	ENGINE CHOKE RELAY
G6	HOUR METER
H5	ALARM
KS1	KEY SWITCH
P1	EMERGENCY STOP BUTTON
U5	ECU



Platform Control Box Layout, GS-4069 RT,
Gas / LPG Models (ANSI / CSA)



LABEL	DESCRIPTION
BN2	ENGINE START BUTTON
BN3	ENGINE CHOKE BUTTON
BN4	HIGH RPM BUTTON
BN5	HORN BUTTON
BN6	DRIVE SPEED BUTTON
BN7	GENERATOR BUTTON (OPTION)
BN9	PLATFORM UP/DOWN ENABLE BUTTON
BN14	PROPANE SELECT BUTTON
BN20	AUTO LEVEL ENABLE BUTTON (OPTION)
H1	ALARM
JC4	DRIVE / STEER CONTROLLER
JC10	PLATFORM UP/DOWN - OUTRIGGER UP/DOWN SWITCH
P2	EMERGENCY STOP BUTTON
SW5	FUNCTION ENABLE SWITCH
SW6	STEER RIGHT / LEFT SWITCH
U3	PLATFORM CONTROLS CIRCUIT BOARD

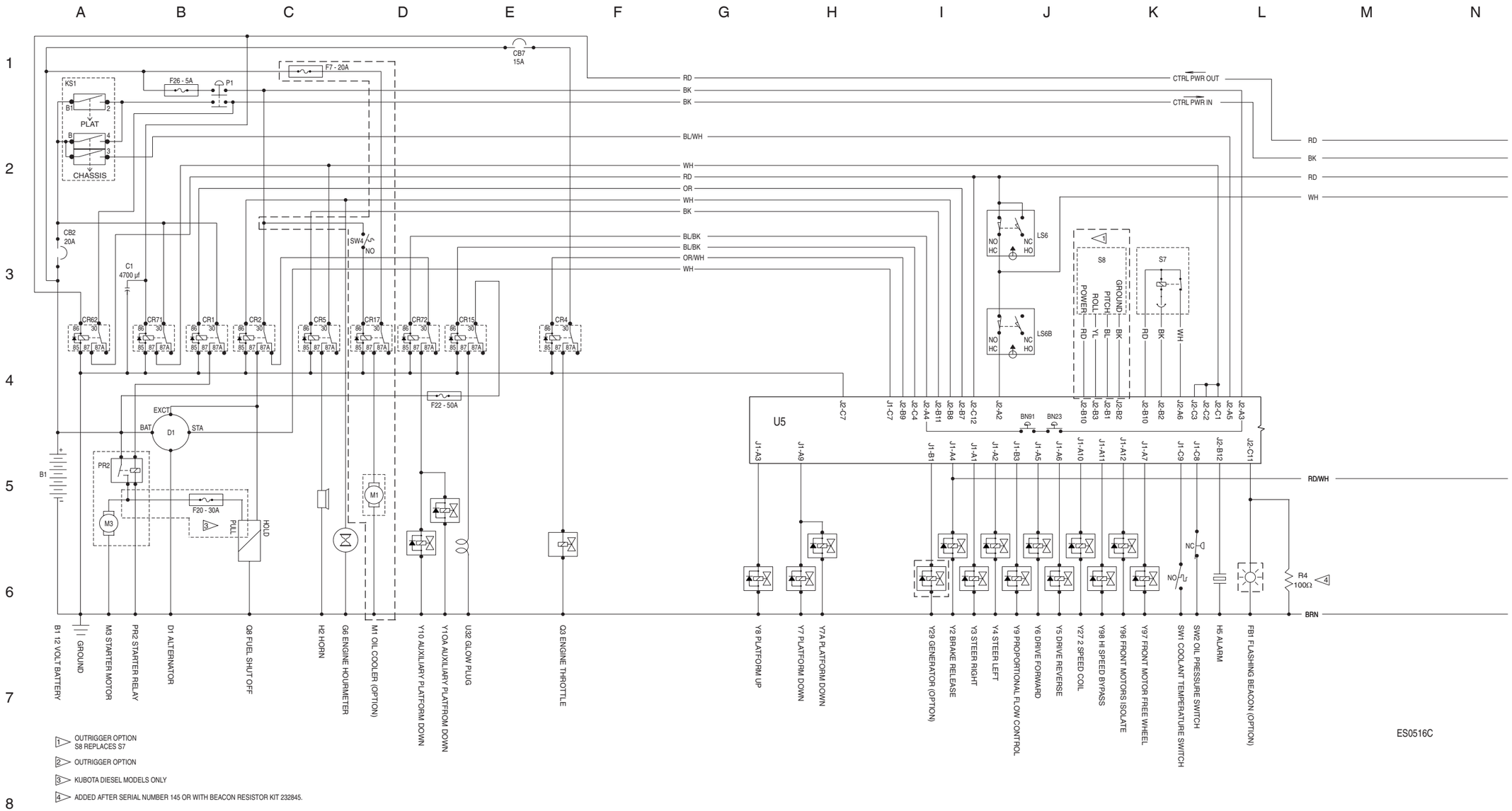


Platform Control Box Layout, GS-4069 RT,
Gas / LPG Models (ANSI / CSA)

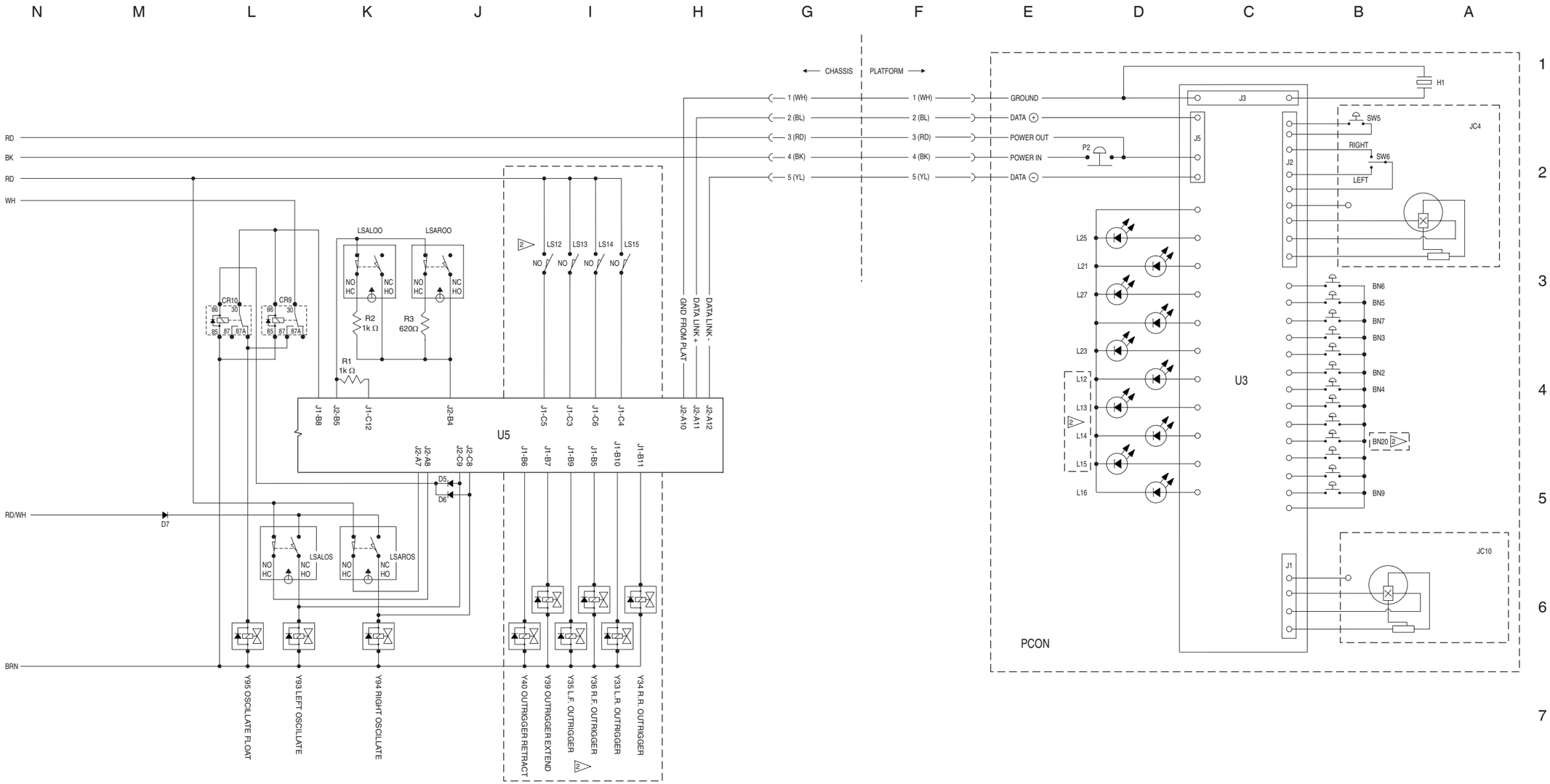
Electrical Schematic, GS-4069 RT,
Diesel Models (ANSI / CSA)

Electrical Schematic, GS-4069 RT,

Diesel Models (ANSI / CSA)



Electrical Schematic, GS-4069 RT,
Diesel Models (ANSI / CSA)

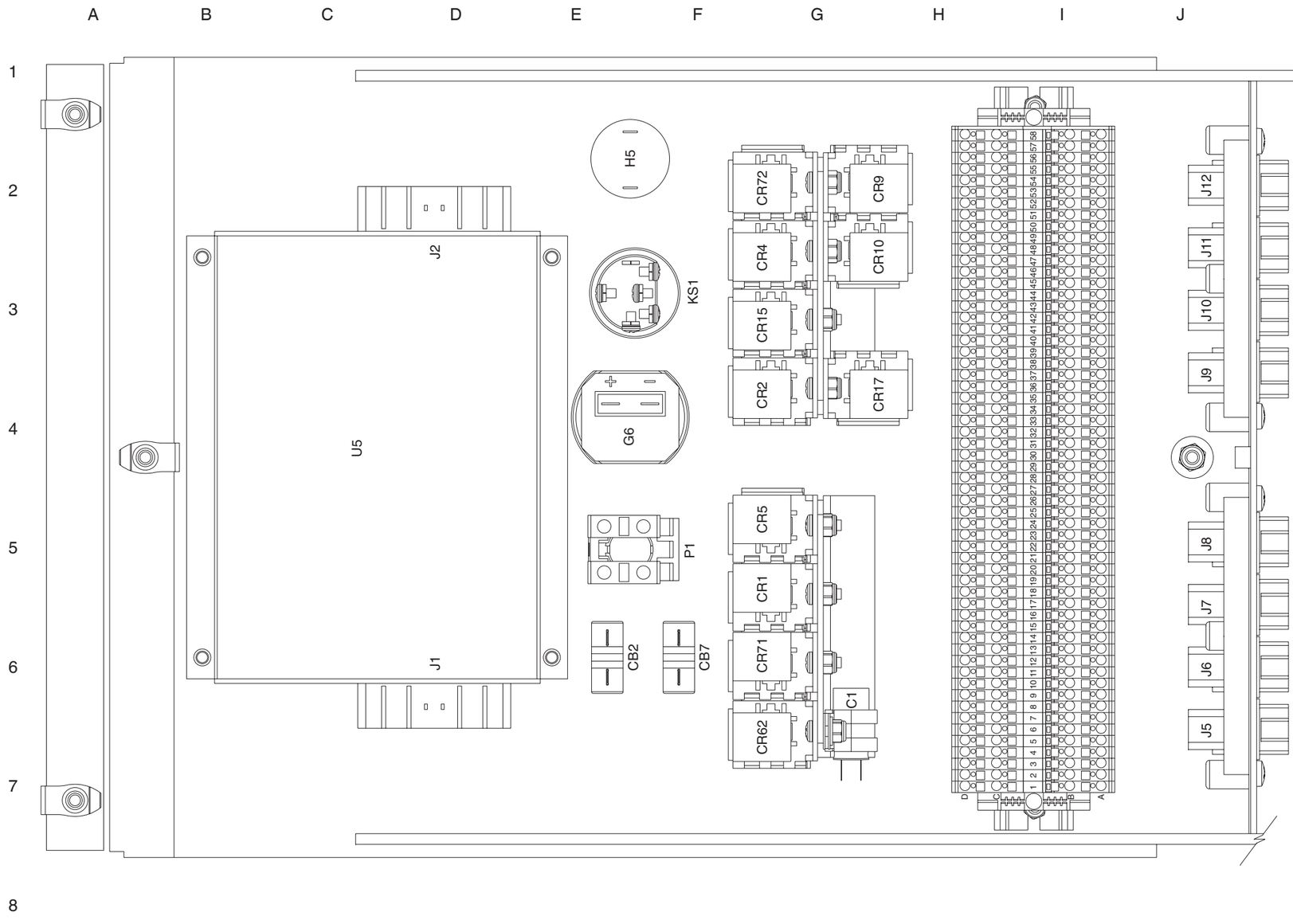


Electrical Schematic, GS-4069 RT,
Diesel Models (ANSI / CSA)

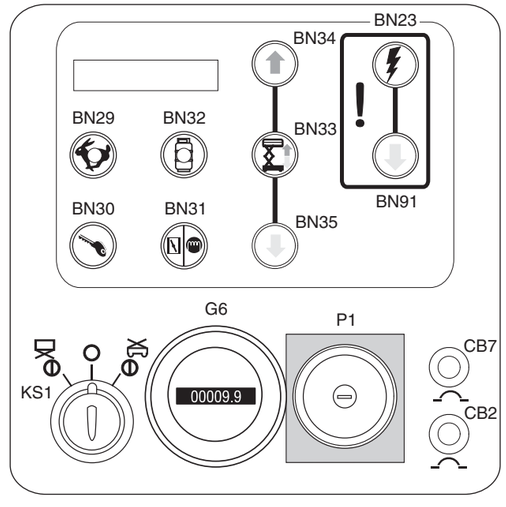
Ground Control Box Layout, GS-4069 RT,
Diesel Models (ANSI / CSA)

Ground Control Box Layout, GS-4069 RT,

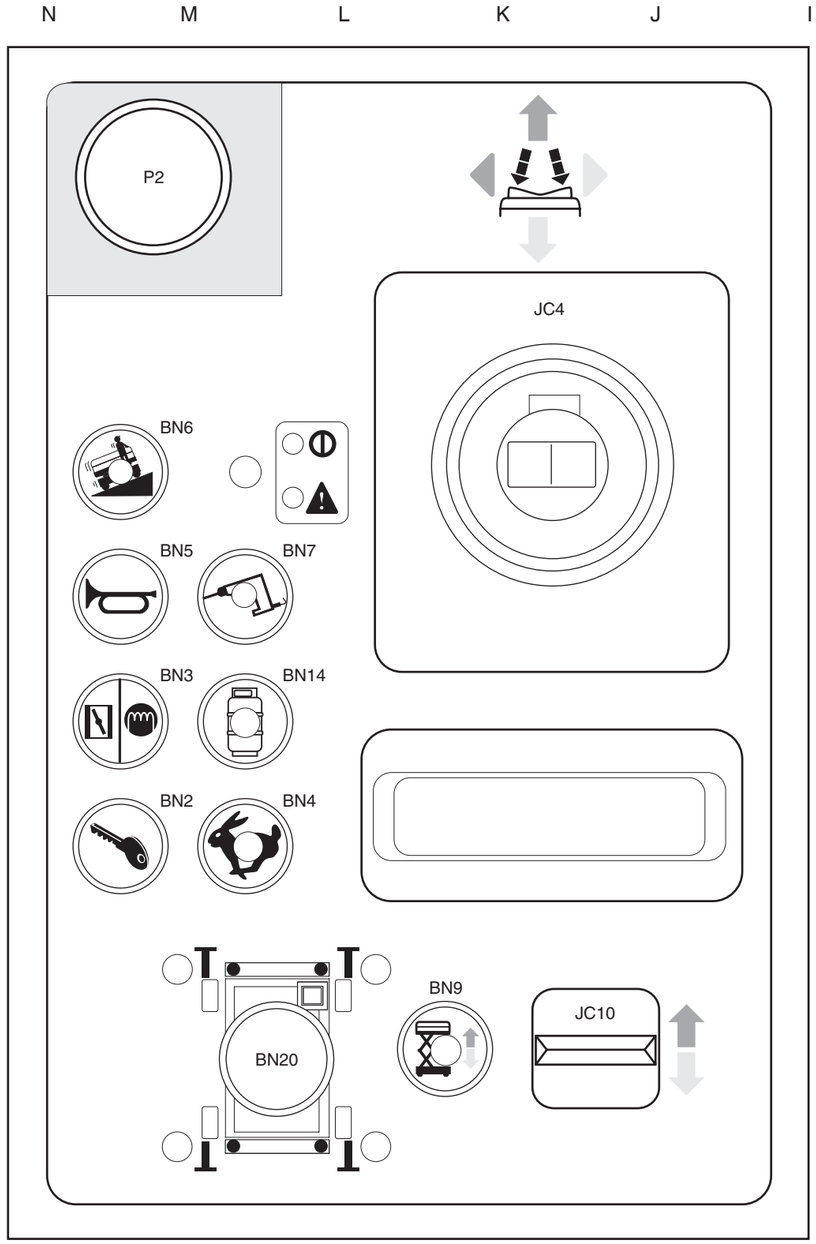
Diesel Models (ANSI / CSA)



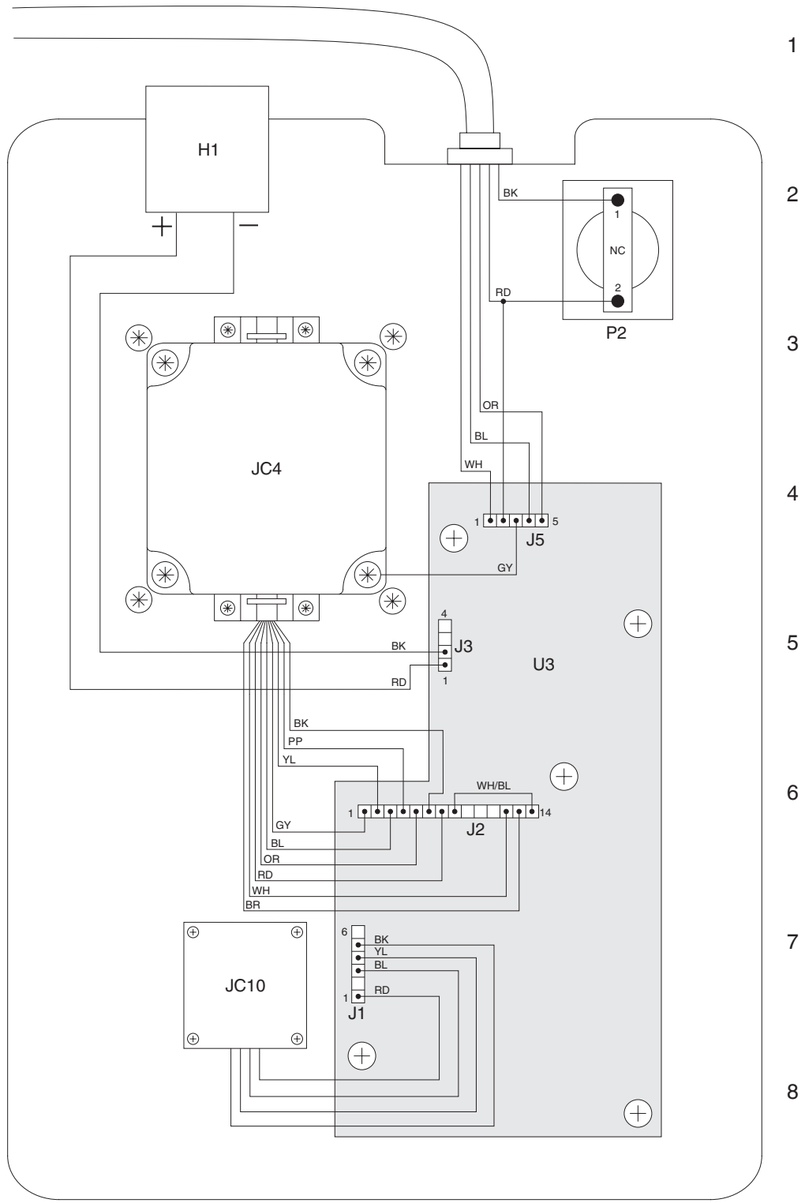
LABEL	DESCRIPTION
BN23	AUXILIARY PLATFORM DOWN ENABLE BUTTON
BN29	HIGH RPM BUTTON
BN30	ENGINE START BUTTON
BN31	ENGINE GLOW PLUG BUTTON
BN32	NOT USED
BN33	FUNCTION ENABLE BUTTON
BN34	PLATFORM UP BUTTON
BN35	PLATFORM DOWN BUTTON
BN91	AUXILIARY PLATFORM DOWN BUTTON
C1	CAPACITOR, 4700µf, 25V DC
CB2	CONTROLS / ENGINE CIRCUIT BREAKER, 20A
CB7	HIGH IDLE CIRCUIT BREAKER, 15A
CR1	ENGINE START RELAY
CR2	IGNITION RELAY
CR4	HIGH IDLE RELAY
CR5	HORN RELAY
CR9	OSCILLATE FLOAT ENABLE RELAY
CR10	OSCILLATE FLOAT DISABLE RELAY
CR15	ENGINE GLOW PLUG RELAY
CR17	OIL COOLER RELAY (OPTION)
CR62	EMERGENCY STOP CONTROL RELAY
CR71	EMERGENCY STOP POWER RELAY
CR72	AUXILIARY PLATFORM DOWN RELAY
G6	HOUR METER
H5	ALARM
KS1	KEY SWITCH
P1	EMERGENCY STOP BUTTON
U5	ECU



Platform Control Box Layout, GS-4069 RT,
Diesel Models (ANSI / CSA)



LABEL	DESCRIPTION
BN2	ENGINE START BUTTON
BN3	ENGINE GLOW PLUG BUTTON
BN4	HIGH RPM BUTTON
BN5	HORN BUTTON
BN6	DRIVE SPEED BUTTON
BN7	GENERATOR BUTTON (OPTION)
BN9	PLATFORM UP/DOWN ENABLE BUTTON
BN14	NOT USED
BN20	AUTO LEVEL ENABLE BUTTON (OPTION)
H1	ALARM
JC4	DRIVE / STEER CONTROLLER
JC10	PLATFORM UP/DOWN - OUTRIGGER UP/DOWN SWITCH
P2	EMERGENCY STOP BUTTON
SW5	FUNCTION ENABLE SWITCH
SW6	STEER RIGHT / LEFT SWITCH
U3	PLATFORM CONTROLS CIRCUIT BOARD



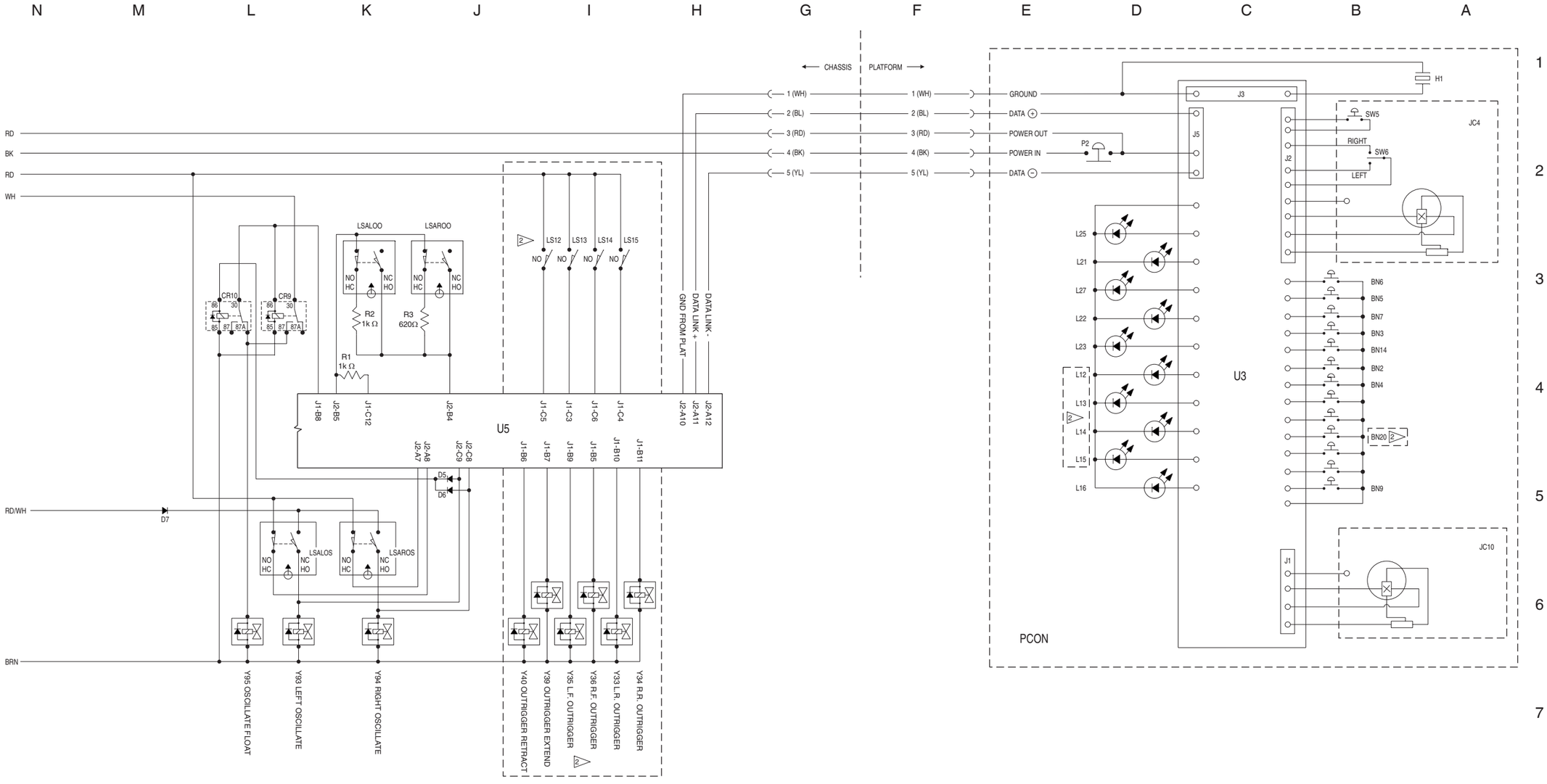
Platform Control Box Layout, GS-4069 RT,
Diesel Models (ANSI / CSA)

Electrical Schematic, GS-4069 RT,
Gas / LPG Models (AS)

Electrical Schematic, GS-4069 RT,

Gas / LPG Models (AS)

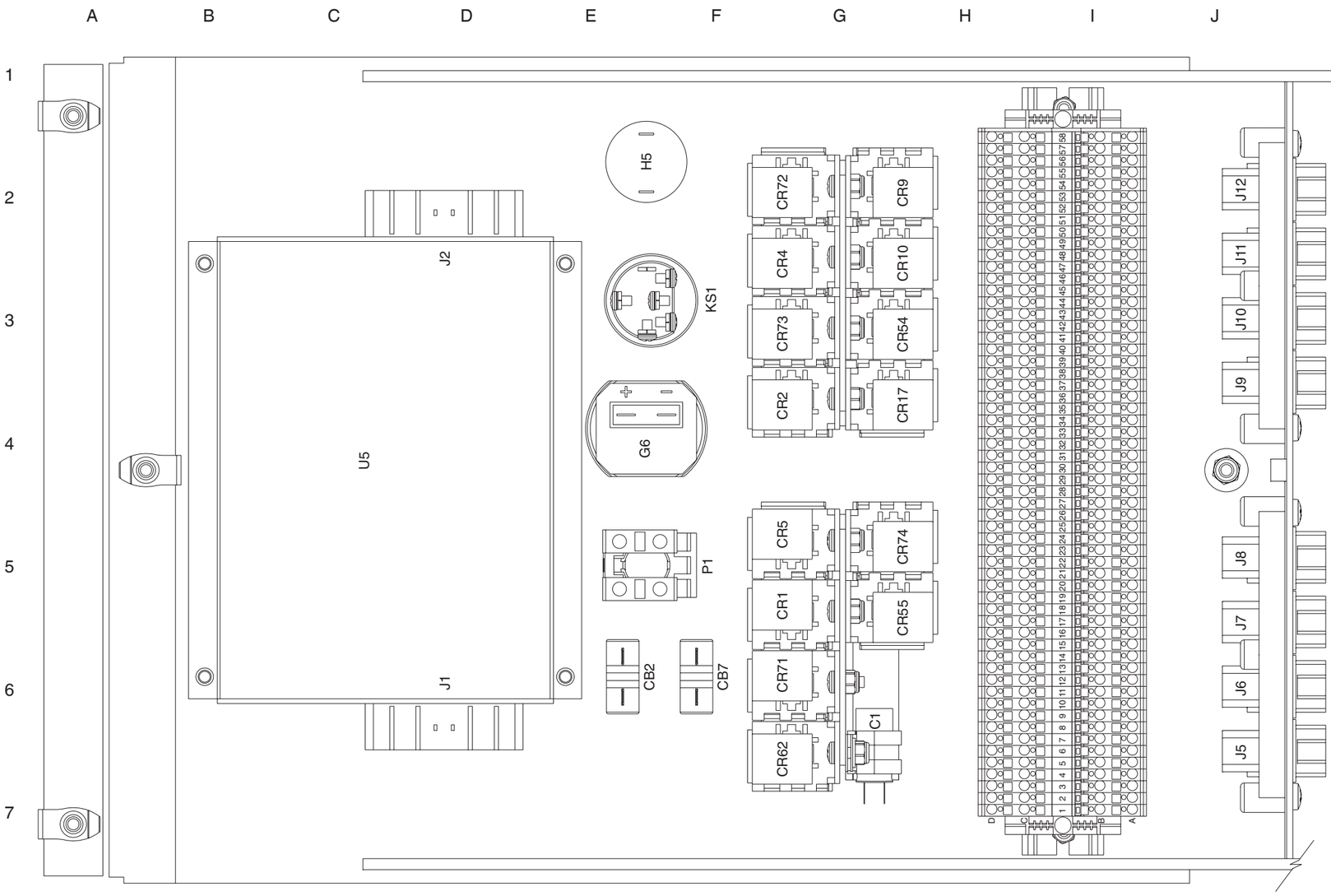
Electrical Schematic, GS-4069 RT,
Gas / LPG Models (AS)



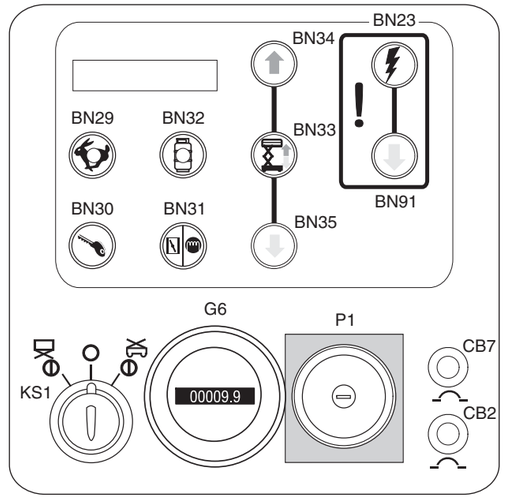
Electrical Schematic, GS-4069 RT,
Gas / LPG Models (AS)

Ground Control Box Layout, GS-4069 RT,
Gas / LPG Models (AS)

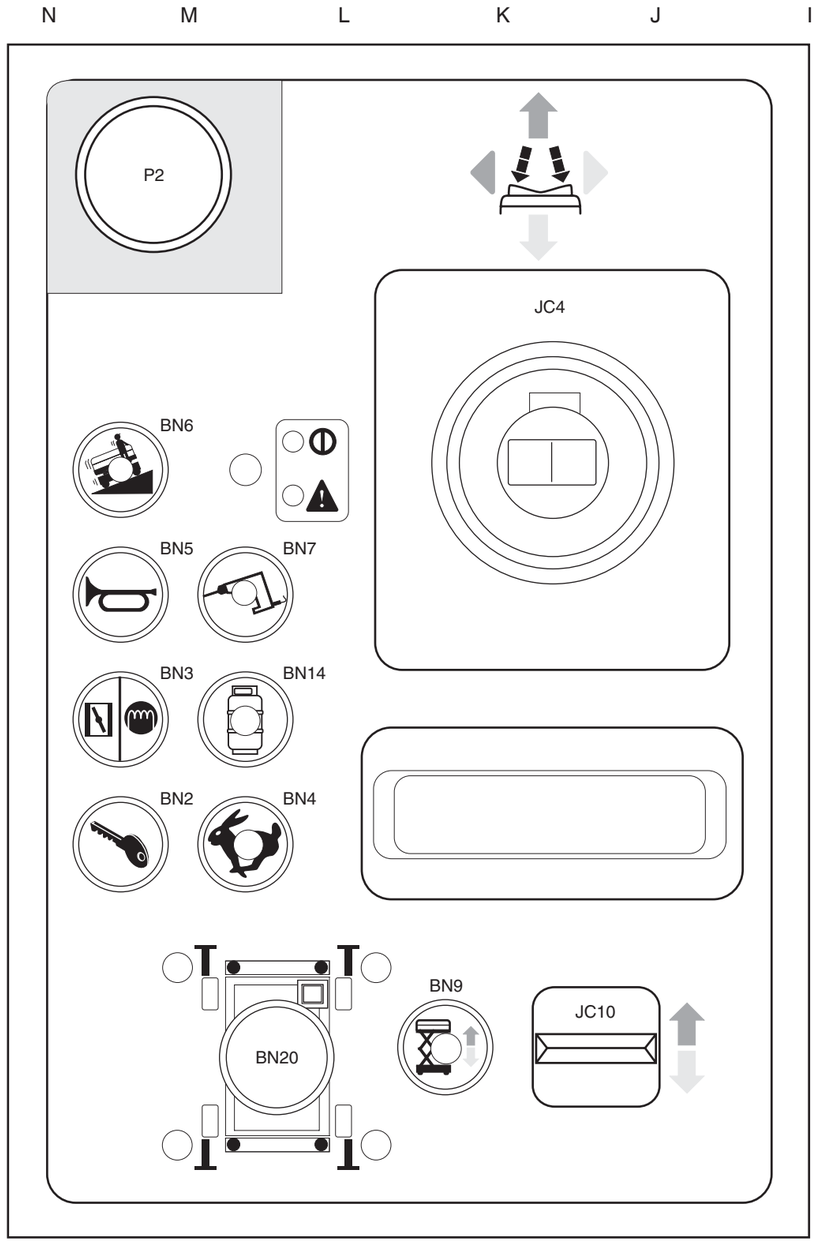
Ground Control Box Layout, GS-4069 RT,
Gas / LPG Models (AS)



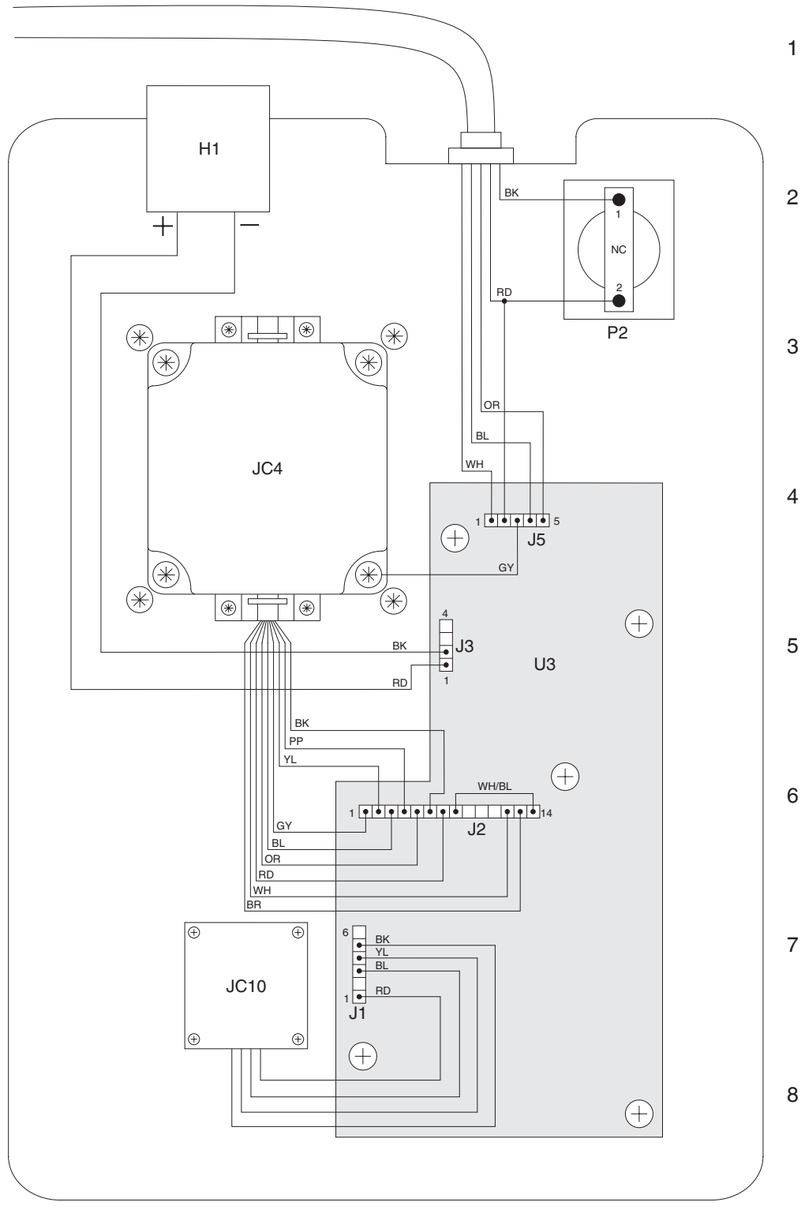
LABEL	DESCRIPTION
BN23	AUXILIARY PLATFORM DOWN ENABLE BUTTON
BN29	HIGH RPM BUTTON
BN30	ENGINE START BUTTON
BN31	ENGINE CHOKE BUTTON
BN32	PROPANE SELECT BUTTON
BN33	FUNCTION ENABLE BUTTON
BN34	PLATFORM UP BUTTON
BN35	PLATFORM DOWN BUTTON
BN91	AUXILIARY PLATFORM DOWN BUTTON
C1	CAPACITOR, 4700µf, 25V DC
CB2	CONTROLS / ENGINE CIRCUIT BREAKER, 20A
CB7	HIGH IDLE CIRCUIT BREAKER, 15A
CR1	ENGINE START RELAY
CR2	IGNITION RELAY
CR4	HIGH IDLE RELAY
CR5	HORN RELAY
CR9	OSCILLATE FLOAT ENABLE RELAY
CR10	OSCILLATE FLOAT DISABLE RELAY
CR17	OIL COOLER RELAY (OPTION)
CR55	#1 PLATFORM OVERLOAD RELAY
CR62	EMERGENCY STOP CONTROL RELAY
CR71	EMERGENCY STOP POWER RELAY
CR72	AUXILIARY PLATFORM DOWN RELAY
CR73	ENGINE CHOKE RELAY
CR74	#2 PLATFORM OVERLOAD RELAY
G6	HOUR METER
H5	ALARM
KS1	KEY SWITCH
P1	EMERGENCY STOP BUTTON
U5	ECU



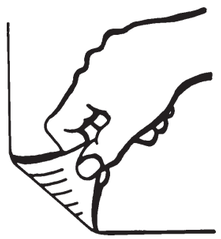
Platform Control Box Layout, GS-4069 RT, Gas / LPG Models (AS)



LABEL	DESCRIPTION
BN2	ENGINE START BUTTON
BN3	ENGINE CHOKE BUTTON
BN4	HIGH RPM BUTTON
BN5	HORN BUTTON
BN6	DRIVE SPEED BUTTON
BN7	GENERATOR BUTTON (OPTION)
BN9	PLATFORM UP/DOWN ENABLE BUTTON
BN14	PROPANE SELECT BUTTON
BN20	AUTO LEVEL ENABLE BUTTON (OPTION)
H1	ALARM
JC4	DRIVE / STEER CONTROLLER
JC10	PLATFORM UP/DOWN - OUTRIGGER UP/DOWN SWITCH
P2	EMERGENCY STOP BUTTON
SW5	FUNCTION ENABLE SWITCH
SW6	STEER RIGHT / LEFT SWITCH
U3	PLATFORM CONTROLS CIRCUIT BOARD



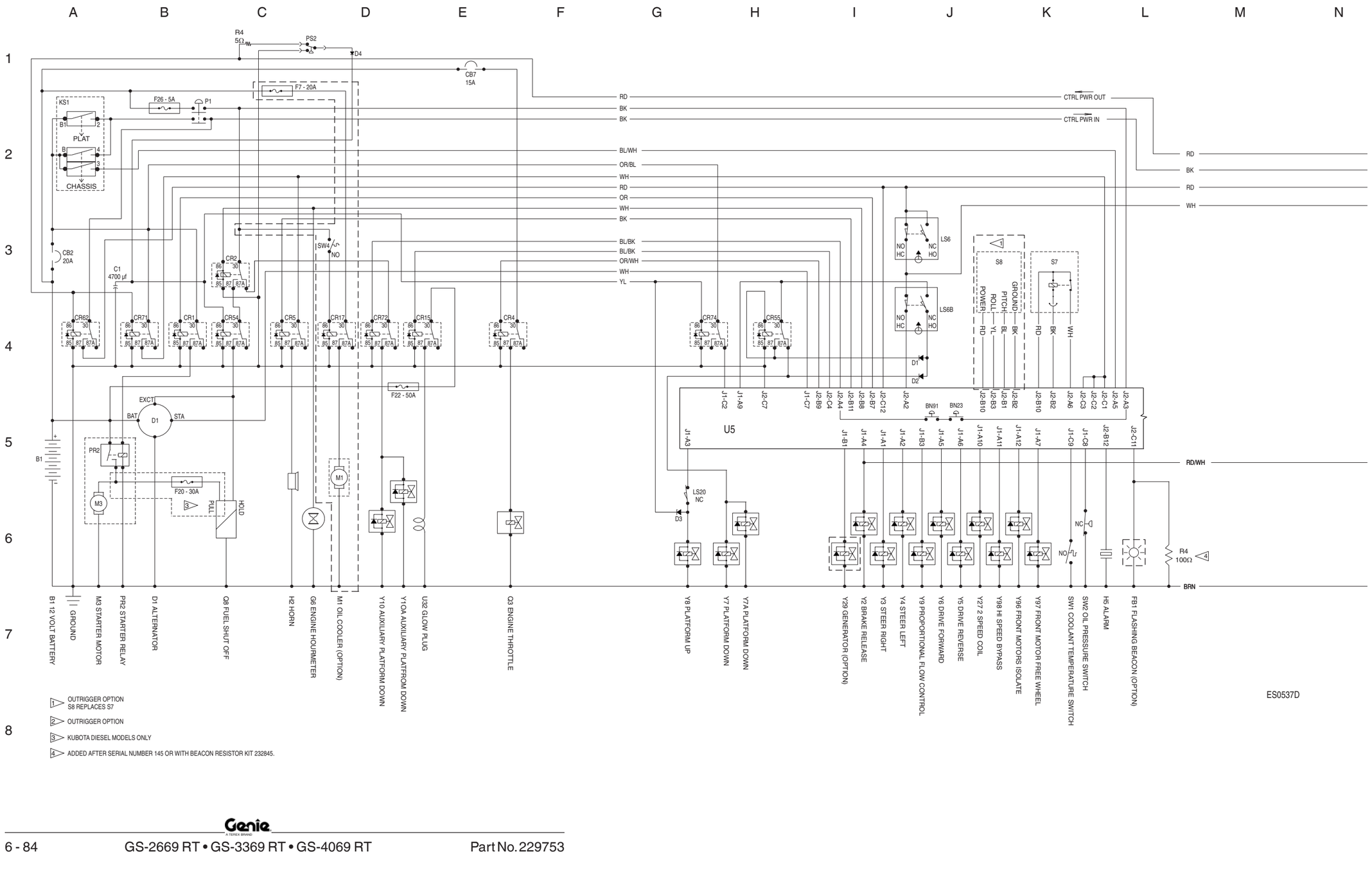
Platform Control Box Layout, GS-4069 RT,
Gas / LPG Models (AS)



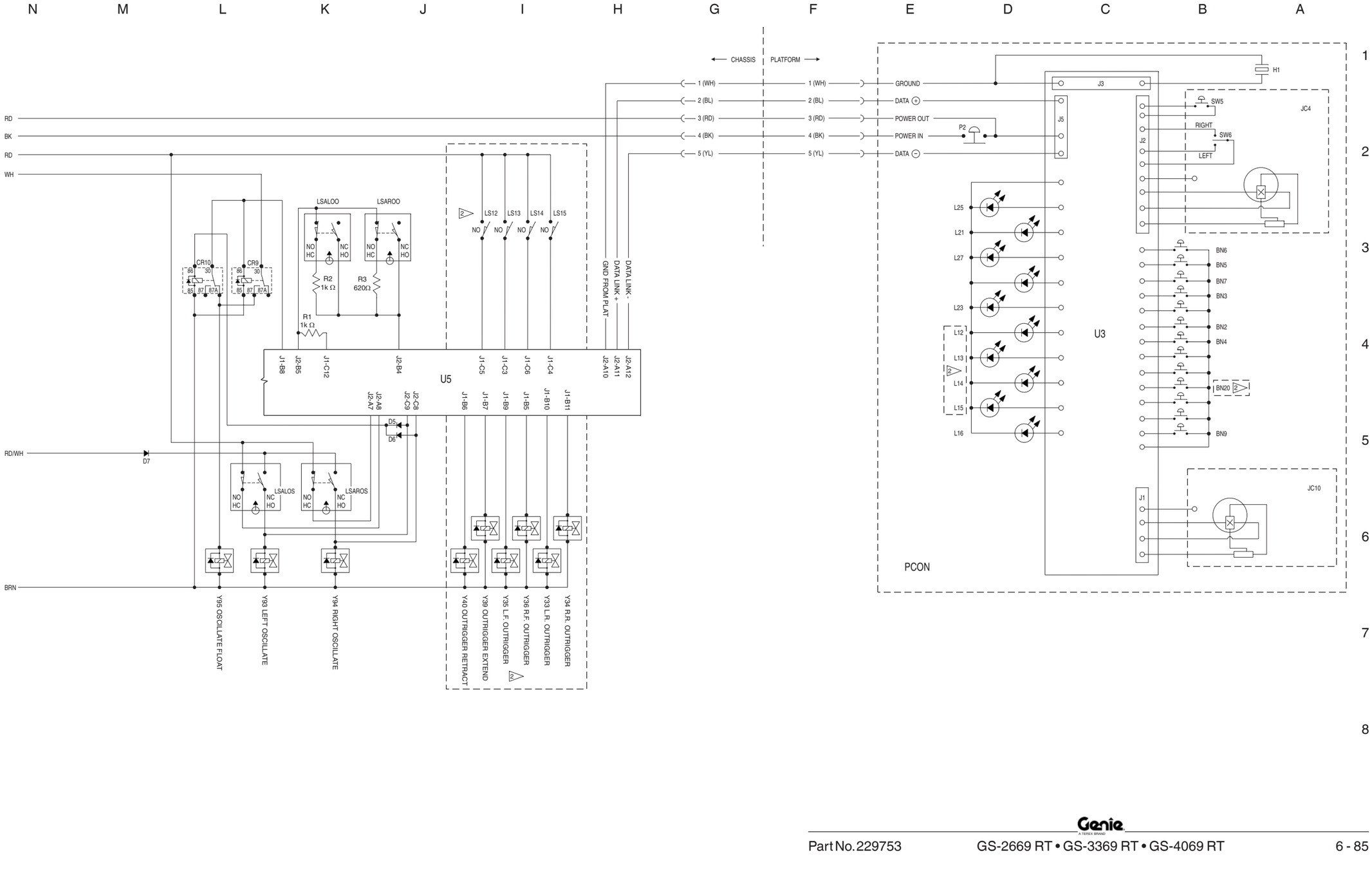
Electrical Schematic, GS-4069 RT,
Diesel Models (AS)

Electrical Schematic, GS-4069 RT,

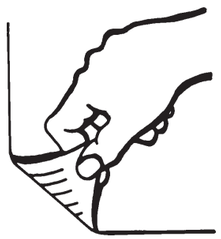
Diesel Models (AS)



Electrical Schematic, GS-4069 RT,
Diesel Models (AS)

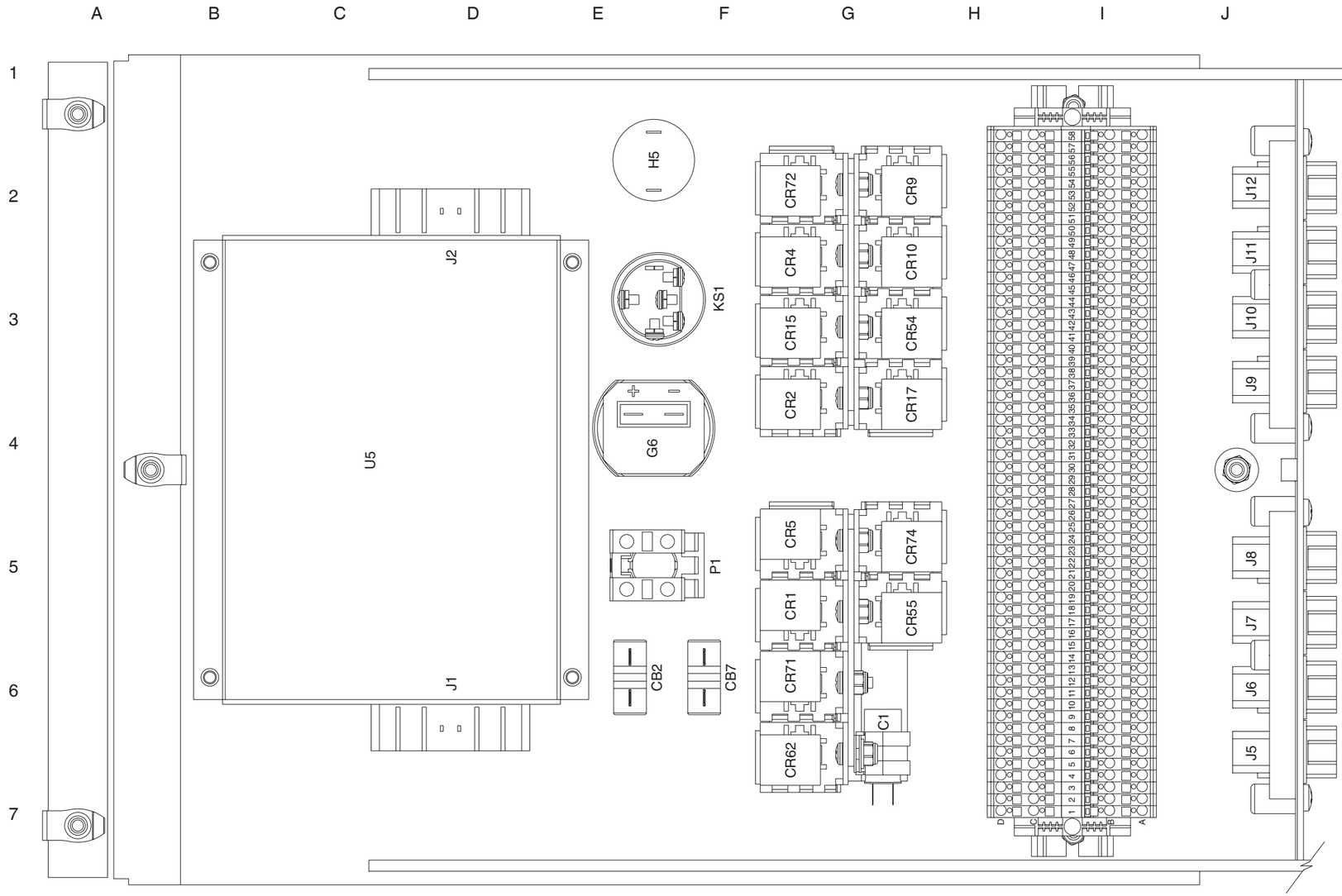


Electrical Schematic, GS-4069 RT,
Diesel Models (AS)

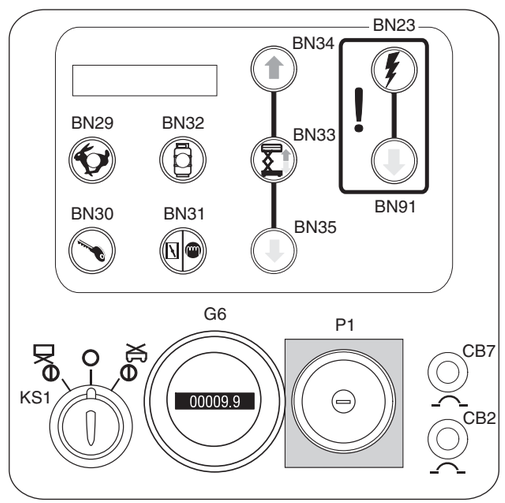


Ground Control Box Layout, GS-4069 RT,
Diesel Models (AS)

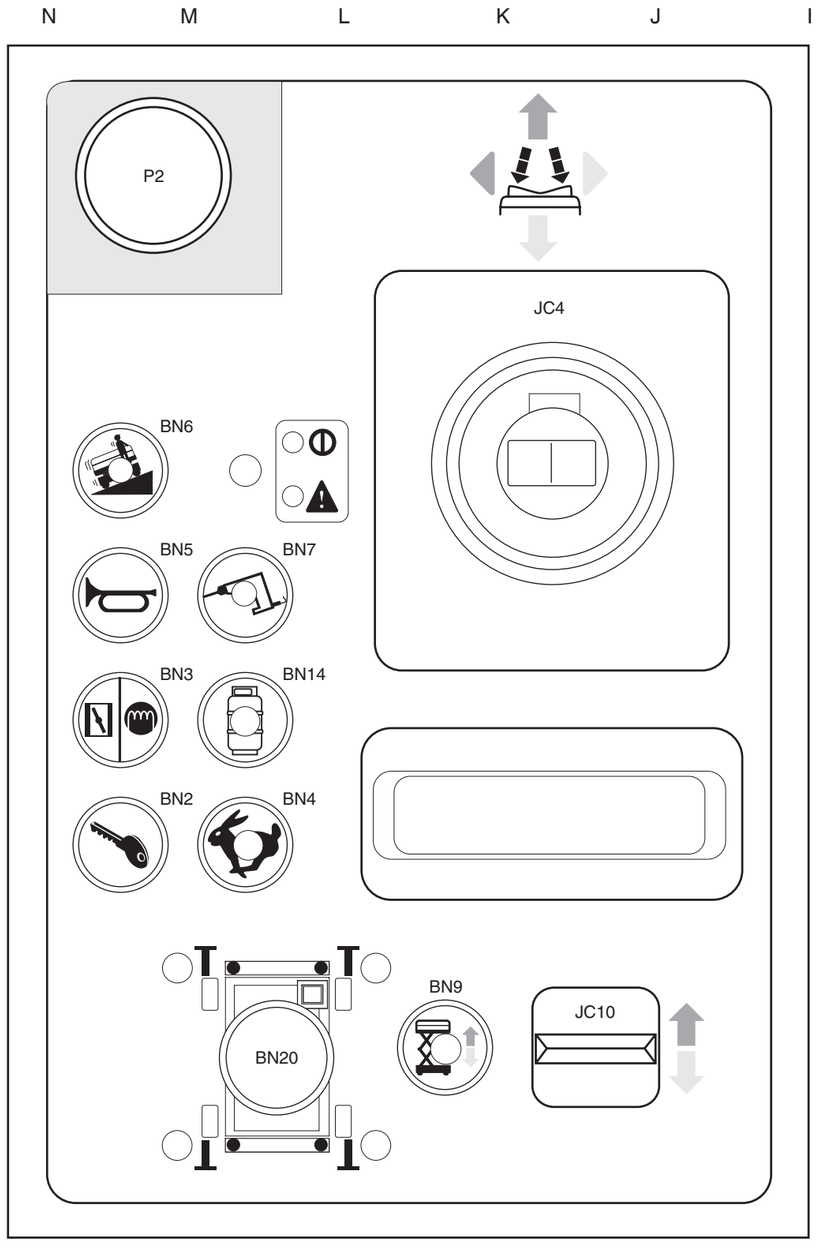
Ground Control Box Layout, GS-4069 RT,
Diesel Models (AS)



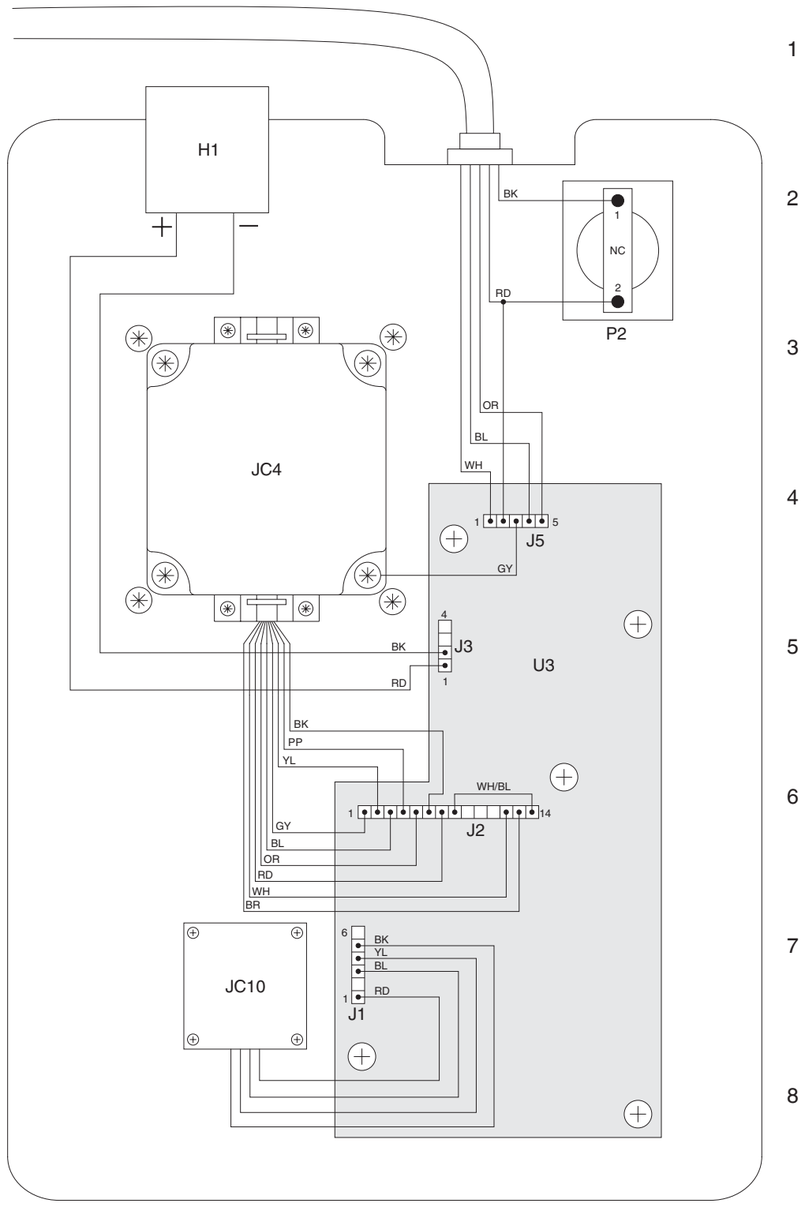
LABEL	DESCRIPTION
BN23	AUXILIARY PLATFORM DOWN ENABLE BUTTON
BN29	HIGH RPM BUTTON
BN30	ENGINE START BUTTON
BN31	ENGINE GLOW PLUG BUTTON
BN32	NOT USED
BN33	FUNCTION ENABLE BUTTON
BN34	PLATFORM UP BUTTON
BN35	PLATFORM DOWN BUTTON
BN91	AUXILIARY PLATFORM DOWN BUTTON
C1	CAPACITOR, 4700µf, 25V DC
CB2	CONTROLS / ENGINE CIRCUIT BREAKER, 20A
CB7	HIGH IDLE CIRCUIT BREAKER, 15A
CR1	ENGINE START RELAY
CR2	IGNITION RELAY
CR4	HIGH IDLE RELAY
CR5	HORN RELAY
CR9	OSCILLATE FLOAT ENABLE RELAY
CR10	OSCILLATE FLOAT DISABLE RELAY
CR15	ENGINE GLOW PLUG RELAY
CR17	OIL COOLER RELAY (OPTION)
CR55	#1 PLATFORM OVERLOAD RELAY
CR62	EMERGENCY STOP CONTROL RELAY
CR71	EMERGENCY STOP POWER RELAY
CR72	AUXILIARY PLATFORM DOWN RELAY
CR74	#2 PLATFORM OVERLOAD RELAY
G6	HOUR METER
H5	ALARM
KS1	KEY SWITCH
P1	EMERGENCY STOP BUTTON
U5	ECU



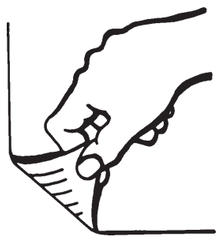
Platform Control Box Layout, GS-4069 RT, Diesel Models (AS)



LABEL	DESCRIPTION
BN2	ENGINE START BUTTON
BN3	ENGINE GLOW PLUG BUTTON
BN4	HIGH RPM BUTTON
BN5	HORN BUTTON
BN6	DRIVE SPEED BUTTON
BN7	GENERATOR BUTTON (OPTION)
BN9	PLATFORM UP/DOWN ENABLE BUTTON
BN14	NOT USED
BN20	AUTO LEVEL ENABLE BUTTON (OPTION)
H1	ALARM
JC4	DRIVE / STEER CONTROLLER
JC10	PLATFORM UP/DOWN - OUTRIGGER UP/DOWN SWITCH
P2	EMERGENCY STOP BUTTON
SW5	FUNCTION ENABLE SWITCH
SW6	STEER RIGHT / LEFT SWITCH
U3	PLATFORM CONTROLS CIRCUIT BOARD



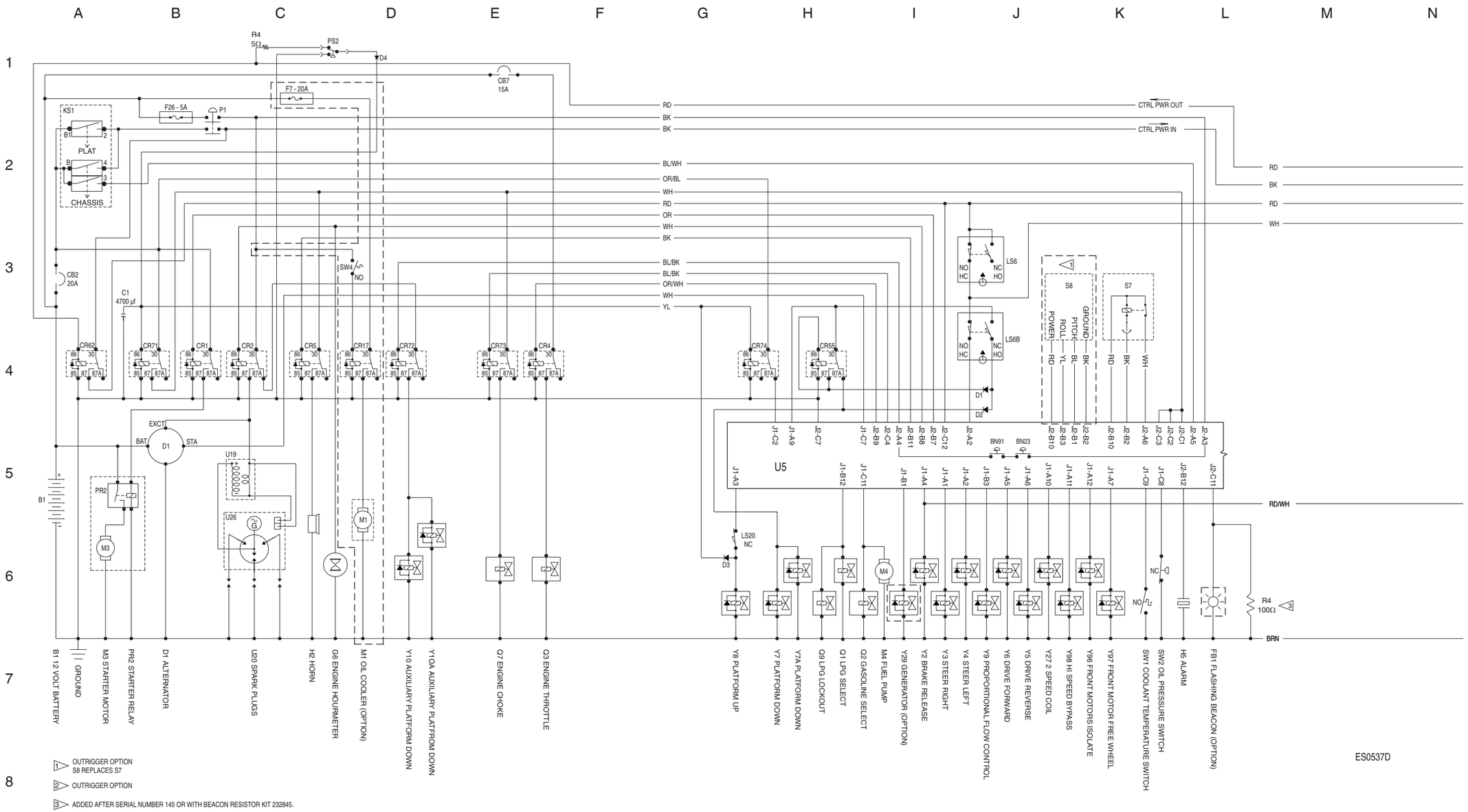
Platform Control Box Layout, GS-4069 RT,
Diesel Models (AS)



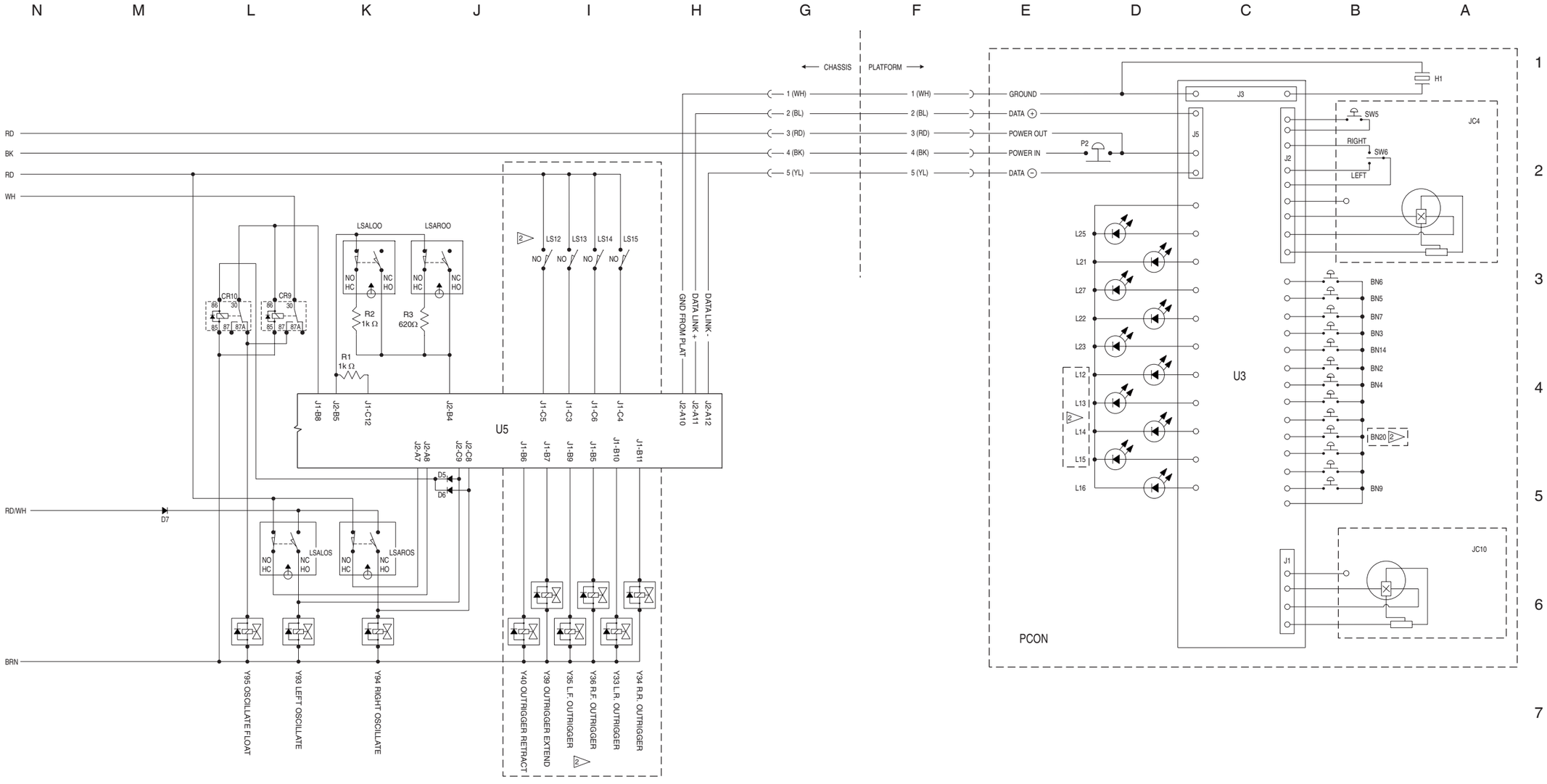
Electrical Schematic, GS-4069 RT,
Gas / LPG Models (CE)

Electrical Schematic, GS-4069 RT,

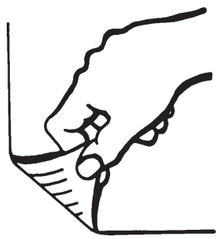
Gas / LPG Models (CE)



Electrical Schematic, GS-4069 RT,
Gas / LPG Models (CE)

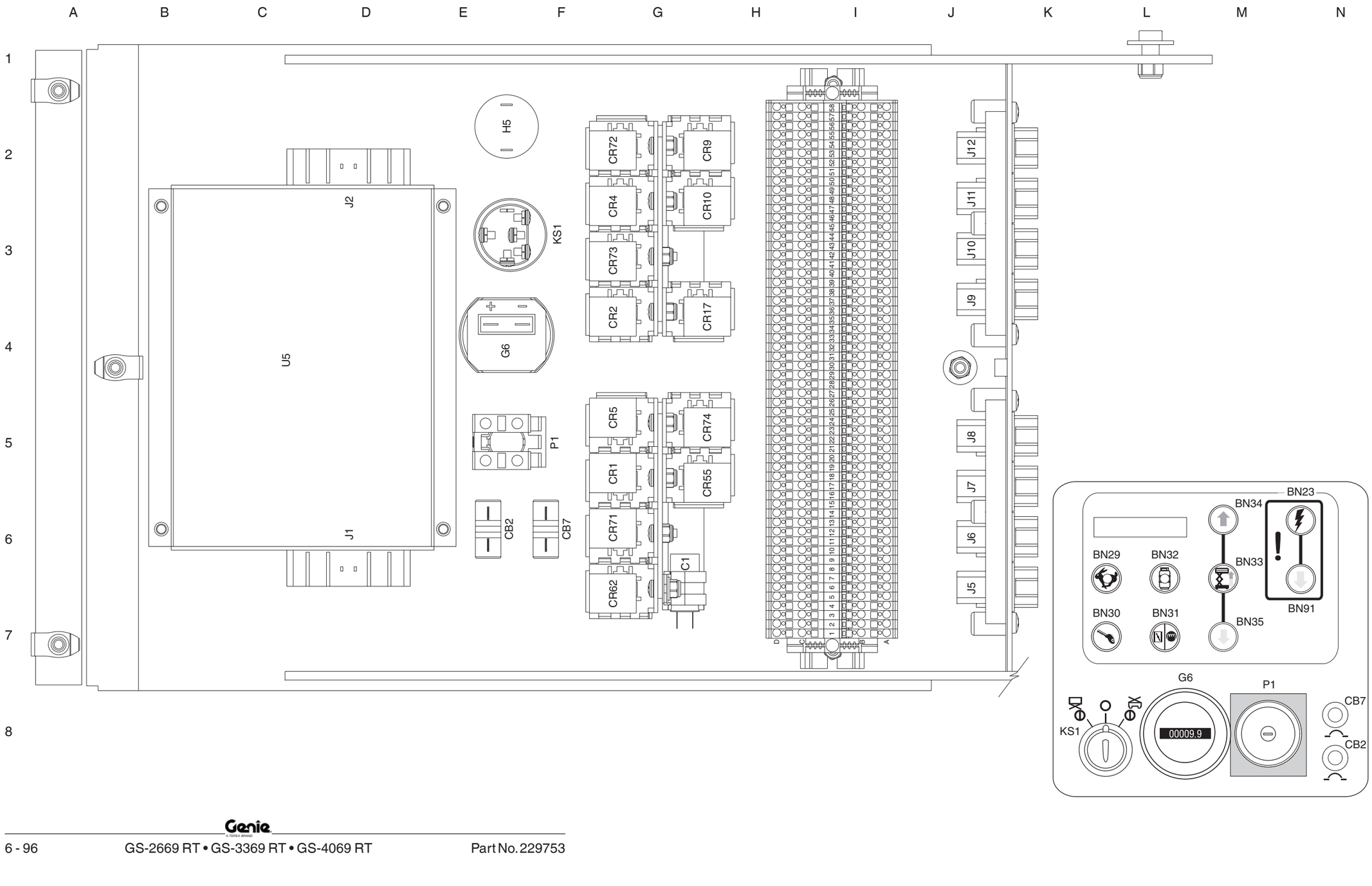


Electrical Schematic, GS-4069 RT,
Gas / LPG Models (CE)

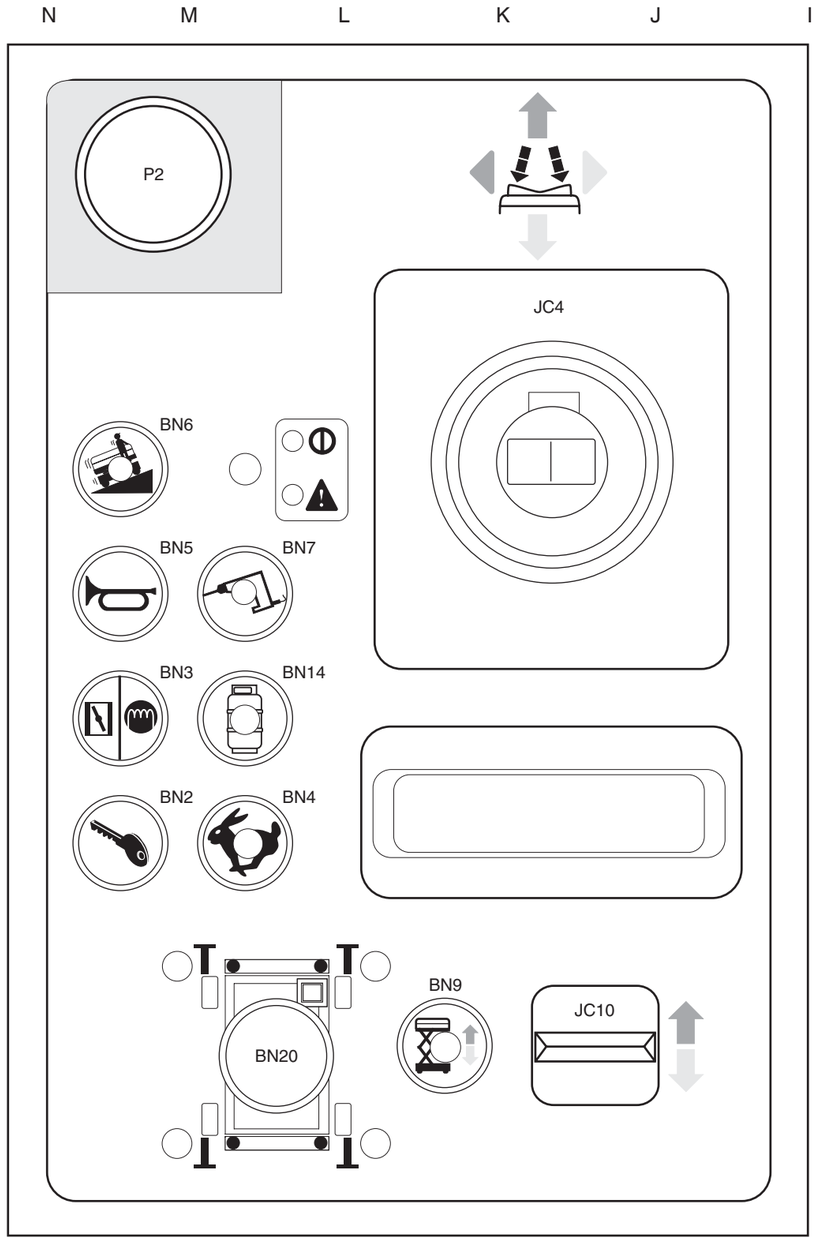


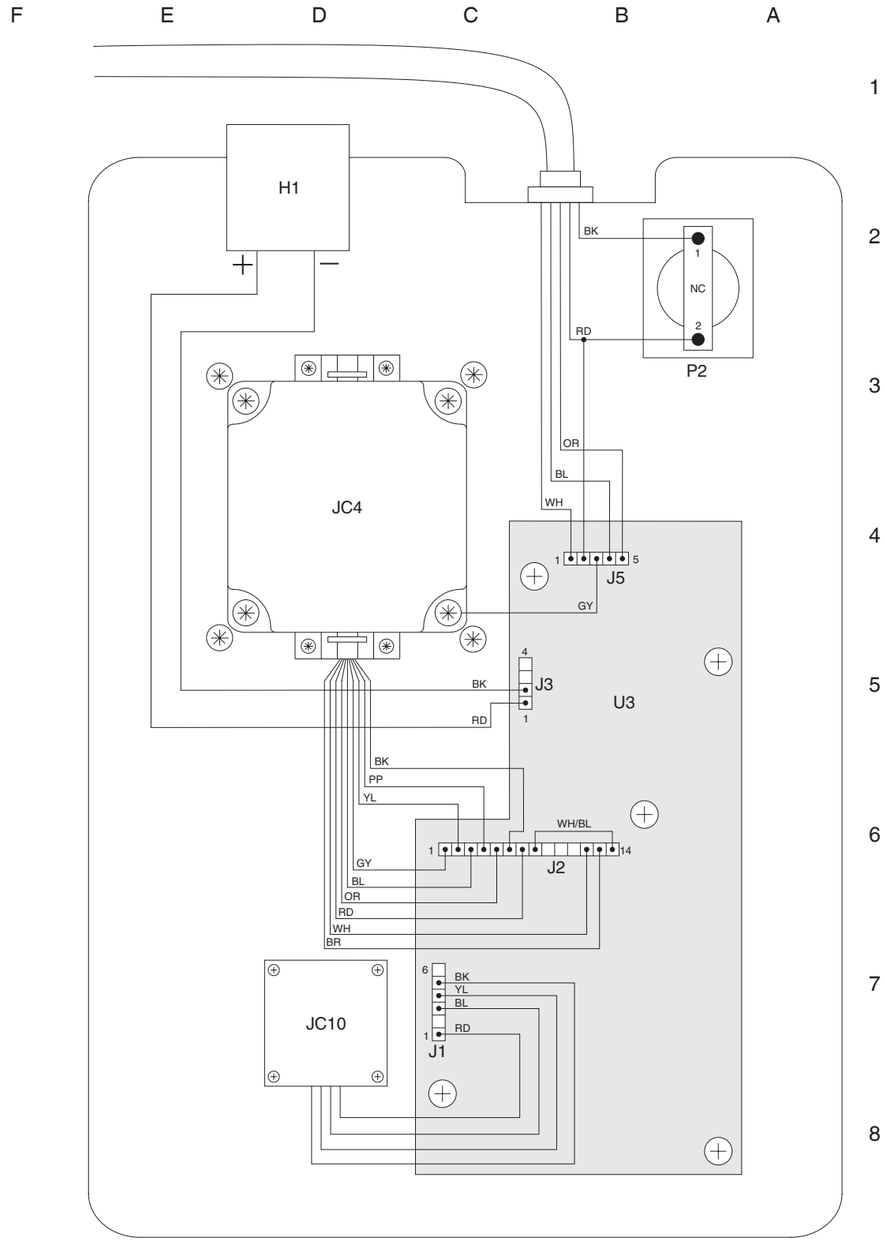
Ground Control Box Layout, GS-4069 RT,
Gas / LPG Models (CE)

Ground Control Box Layout, GS-4069 RT,
Gas / LPG Models (CE)

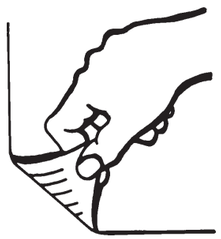


Platform Control Box Layout, GS-4069 RT,
Gas / LPG Models (CE)





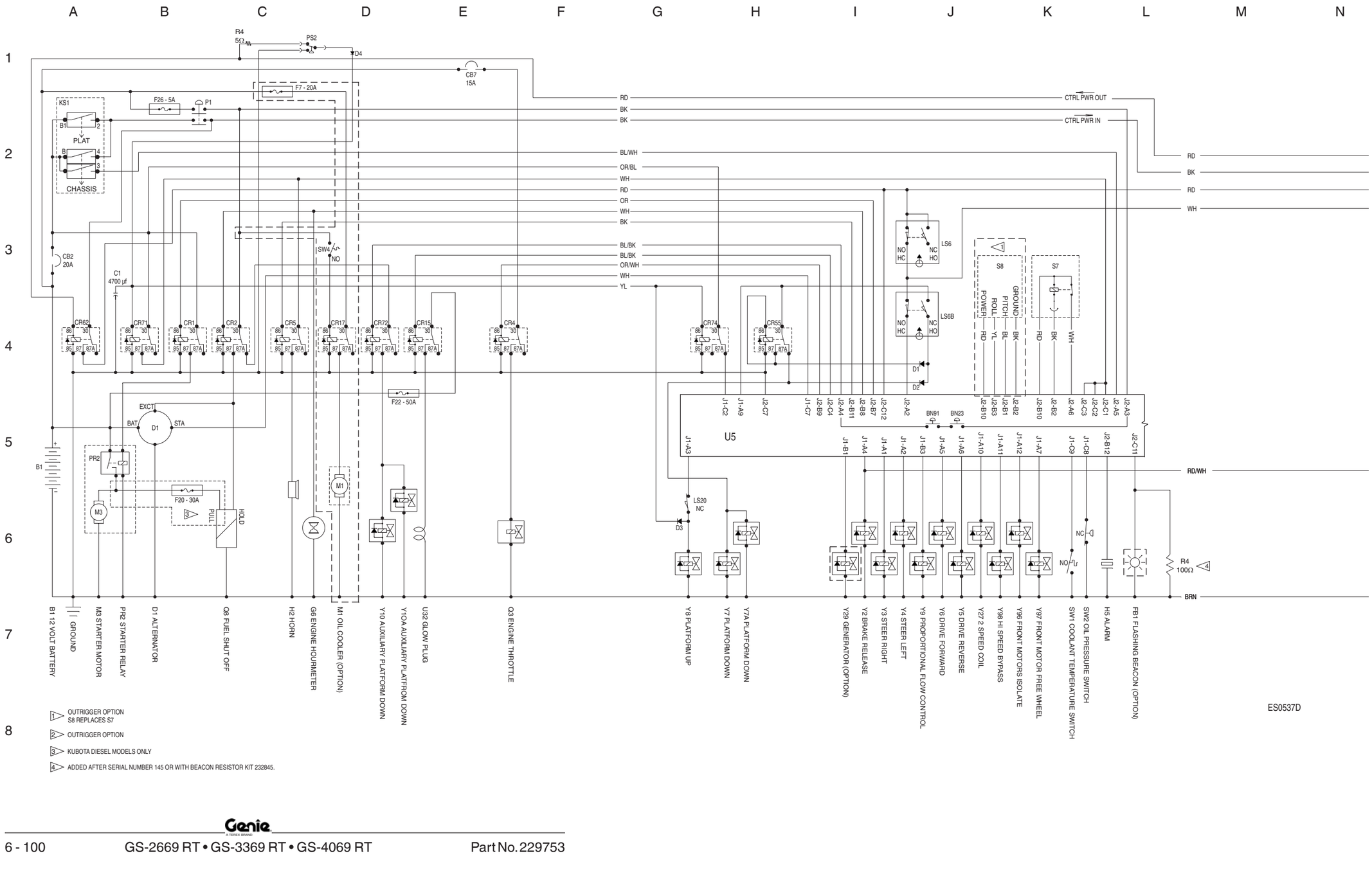
Platform Control Box Layout, GS-4069 RT,
Gas / LPG Models (CE)



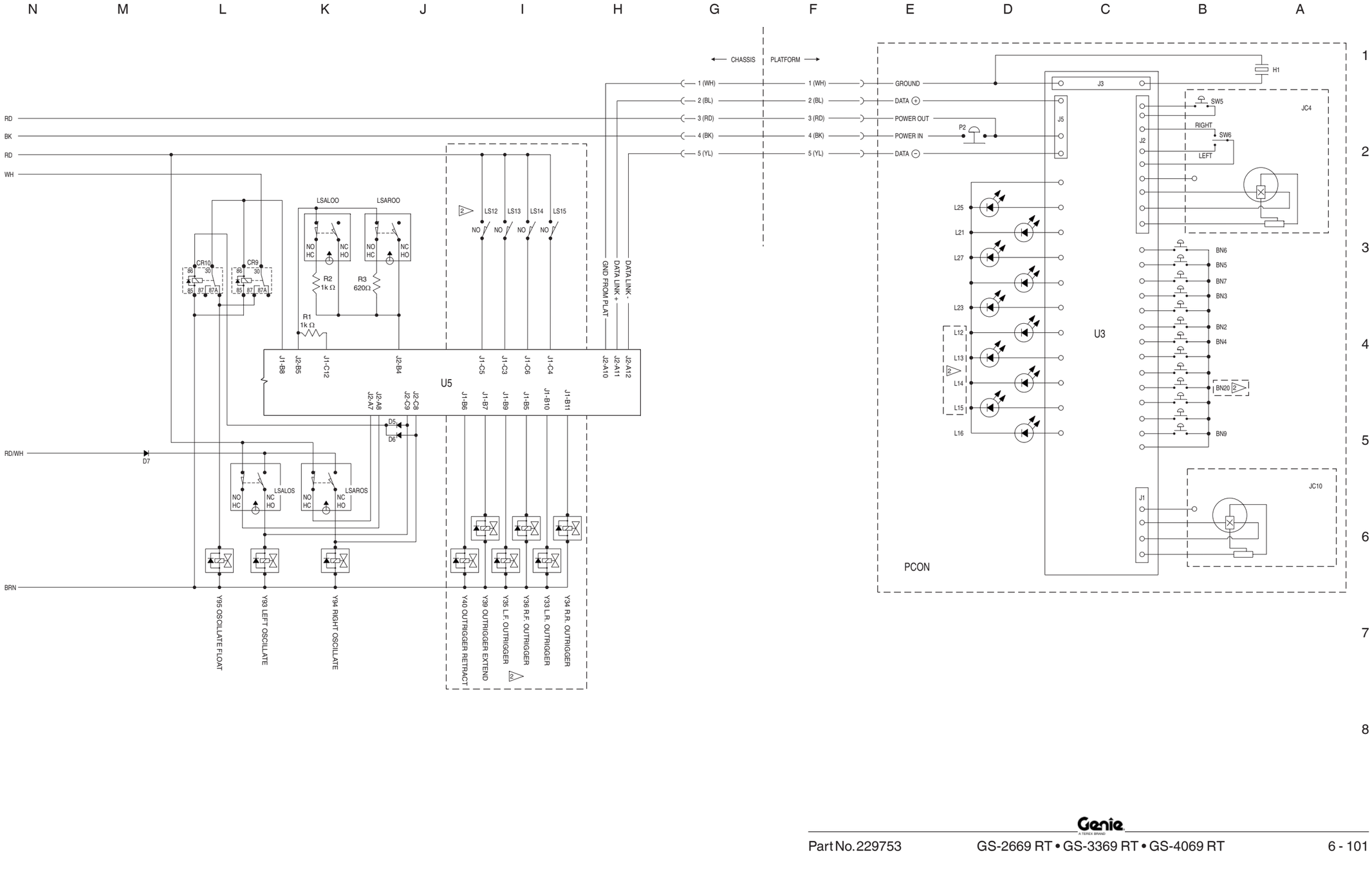
Electrical Schematic, GS-4069 RT,
Diesel Models (CE)

Electrical Schematic, GS-4069 RT,

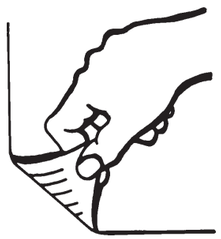
Diesel Models (CE)



Electrical Schematic, GS-4069 RT,
Diesel Models (CE)

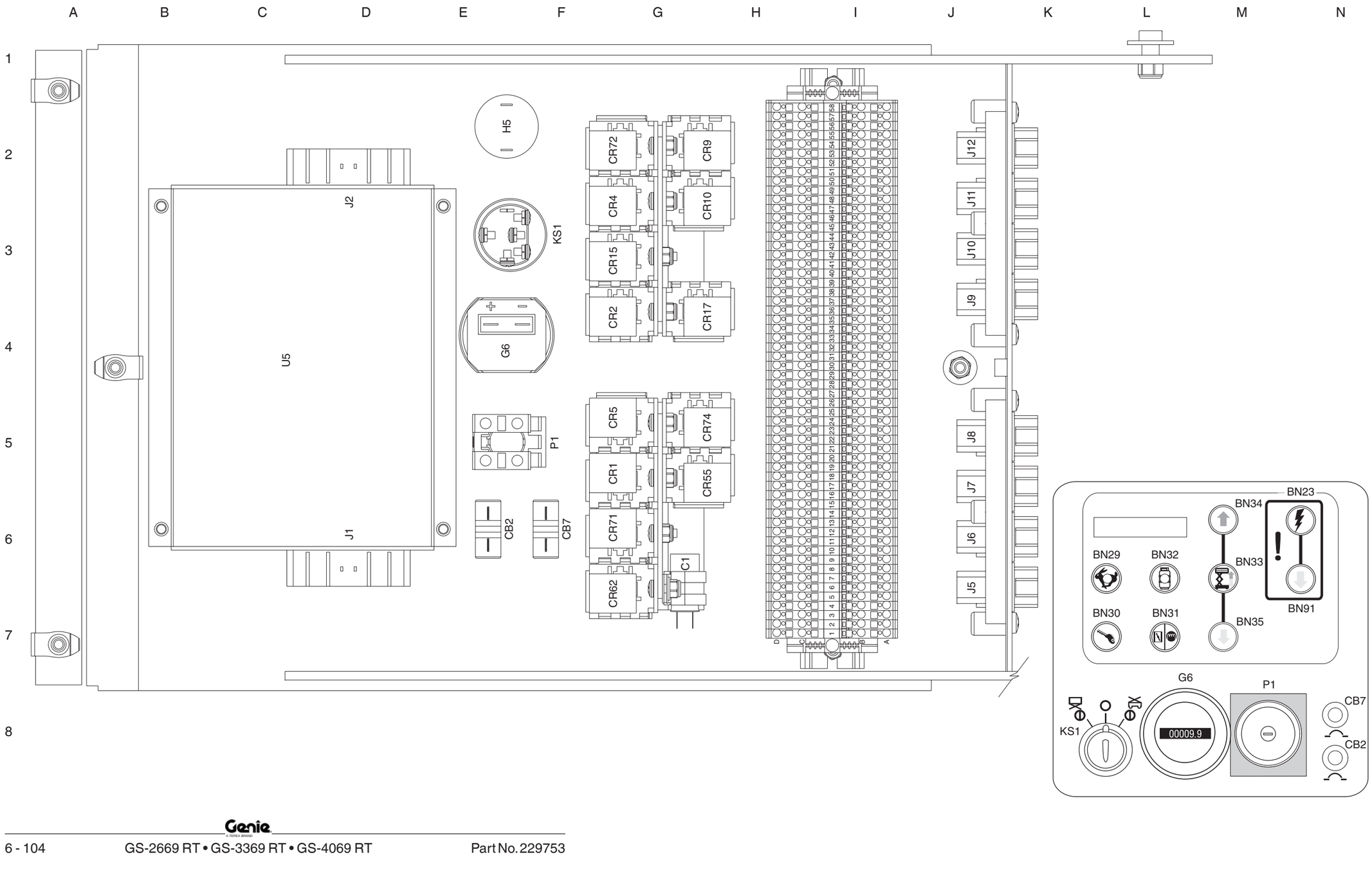


Electrical Schematic, GS-4069 RT,
Diesel Models (CE)

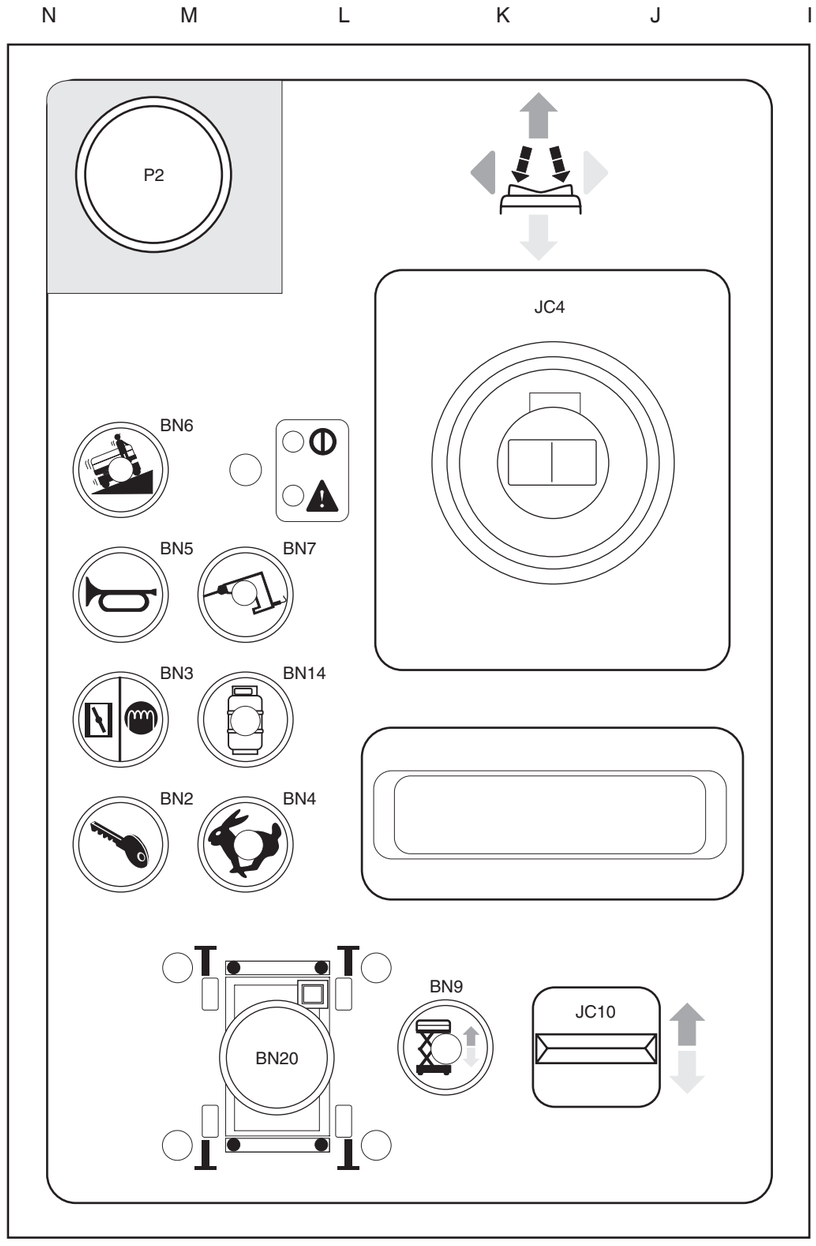


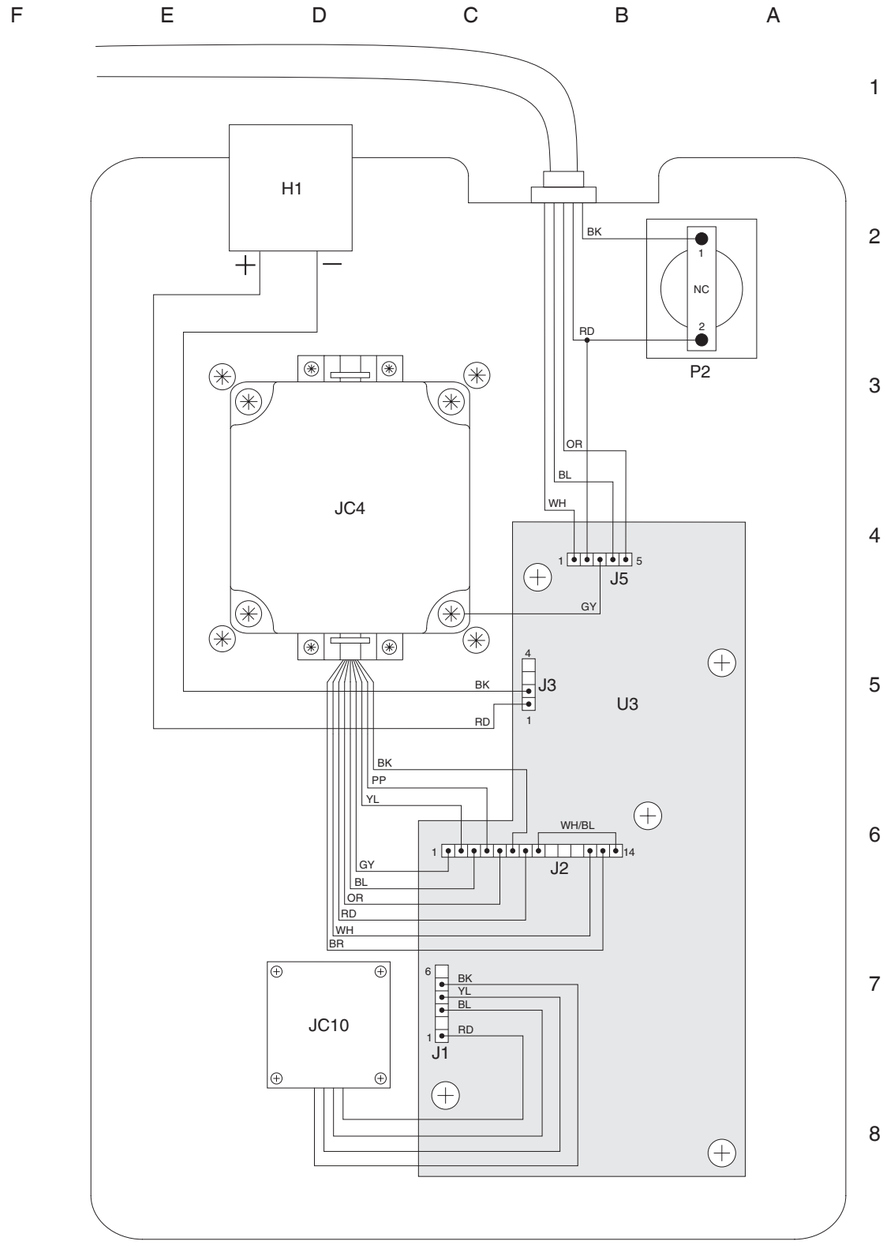
Ground Control Box Layout, GS-4069 RT,
Diesel Models (CE)

Ground Control Box Layout, GS-4069 RT,
Diesel Models (CE)

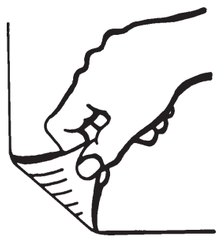


Platform Control Box Layout, GS-4069 RT, Diesel Models (CE)



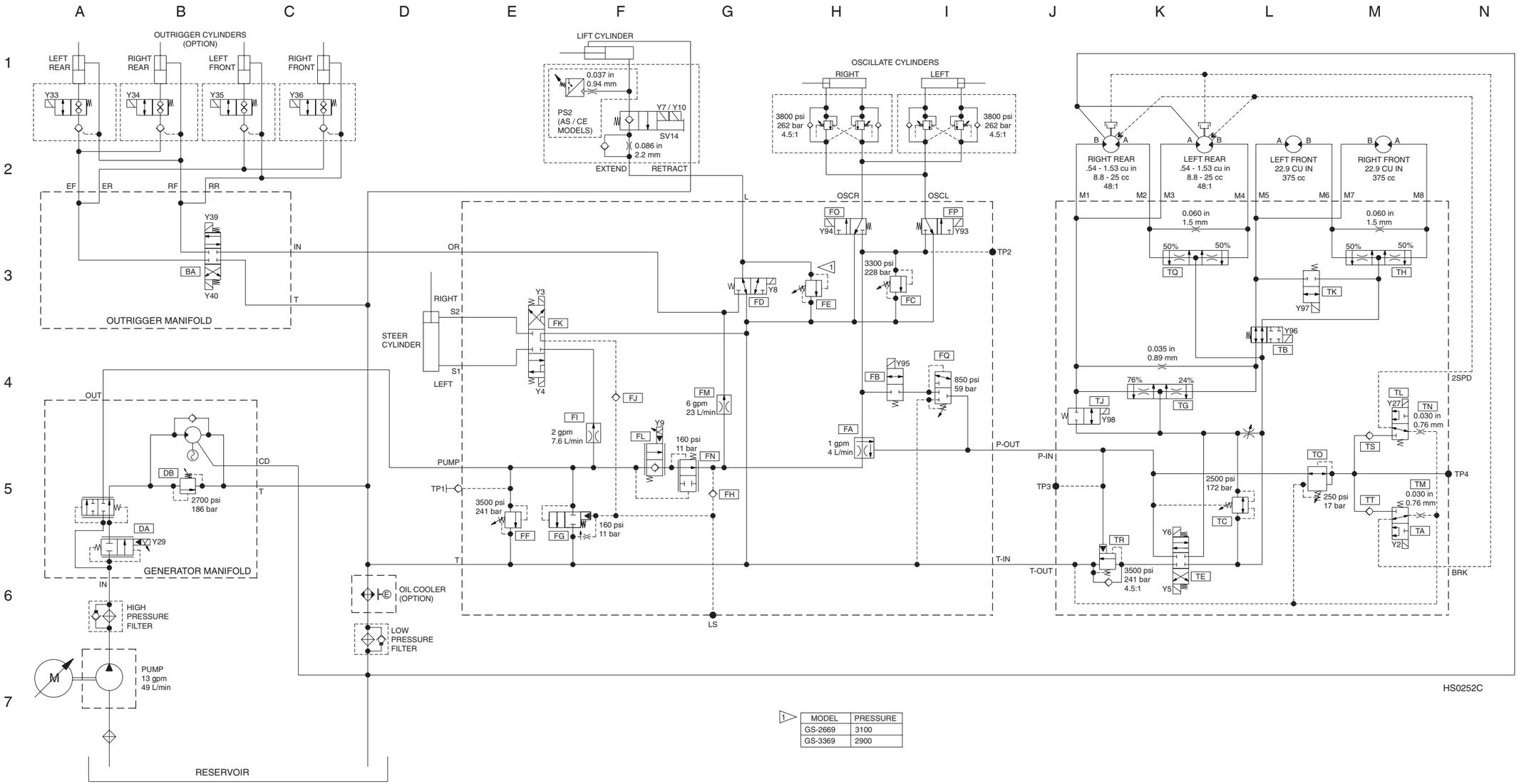


Platform Control Box Layout, GS-4069 RT,
Diesel Models (CE)



Hydraulic Schematic, GS-2669 RT and GS-3369 RT

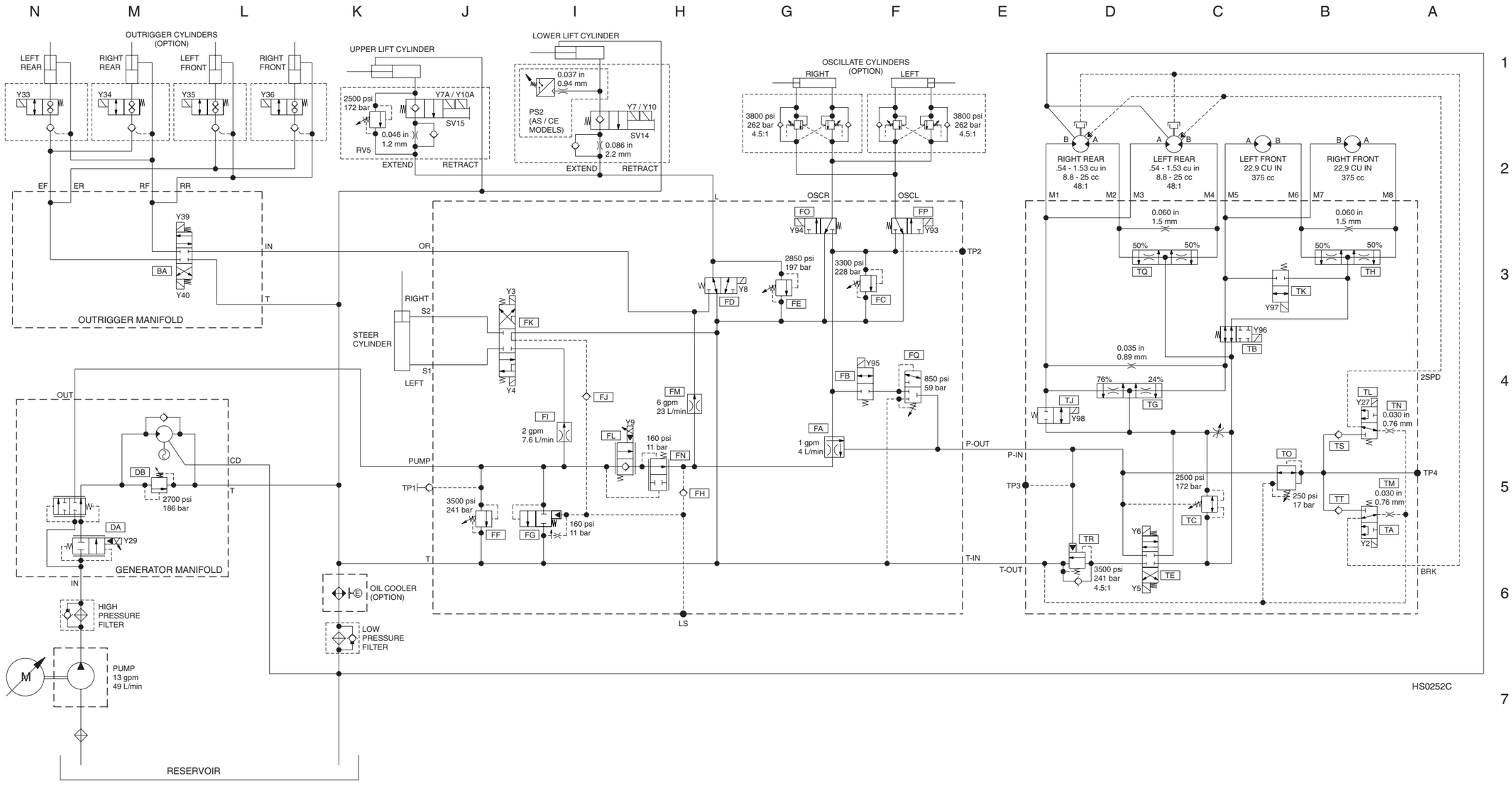
Hydraulic Schematic, GS-2669 RT and GS-3369 RT



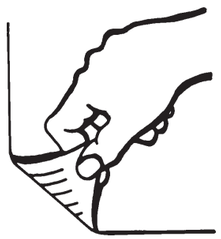
1

MODEL	PRESSURE
GS-2669	3100
GS-3369	2900

Hydraulic Schematic, GS-4069 RT



Hydraulic Schematic, GS-4069 RT



California Proposition 65

Warning

The exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Distributed By:

Genie North America
Phone 425.881.1800
Toll Free USA and Canada 800.536.1800
Fax 425.883.3475

Genie Australia Pty Ltd.
Phone +61 7 3375 1660
Fax +61 7 3375 1002

Genie China
Phone +86 21 53853768
Fax +86 21 53852569

Genie Singapore
Phone +65 67533544
Fax +65 67533544

Genie Japan
Phone +81 3 6436 2020
Fax +81 3 5445 1231

Genie Korea
Phone +82 2 558 7267
Fax +82 2 558 3910

Genie Brasil
Phone +55 11 4082 5600
Fax +55 22 4082 5630

Genie Holland
Phone +31 183 581 102
Fax +31 183 581 566

Genie Scandinavia
Phone +46 31 57 51 00
Fax +46 31 57 51 04

Genie France
Phone +33 2 37 26 09 99
Fax +33 2 37 26 09 98

Genie Iberica
Phone +34 93 572 5090
Fax +34 93 572 5091

Genie Germany
Phone 0800 180 9017
Phone +49 4221 491 810
Fax +49 4221 491 820

Genie U.K.
Phone +44 1476 584333
Fax +44 1476 584334

Genie Mexico City
Phone +52 55 5666 5242
Fax +52 55 5666 3241