Genie®
A TEREX BRAND

Service and Repair Manual

Serial Number Range

GS™-2669
GS™-3369
GS™-4069

from GS6911-101
from GS6916F-7897
to GS6916F-10499
from GS69F-10500

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

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

Part No. 1272219GT
Rev B
May 2018

Introduction

Important

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

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

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

Compliance

Machine Classification

Group 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:

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Find a Manual for this Model

Go to http://www.genielift.com

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

1272219GT Rev B, May 2018

First Edition, First Printing

Revision History

Revision	Date	Section	Procedure / Page / Description
A	3/2016		Initial Release
A1	6/2016	Fault Codes	Update fault codes
A2	9/2016	Introduction	Serial Number Legend
A3	5/2017	Fault Codes	Update fault codes
B	5/2018	All Sections	Add GM .998L Engine information and schematics
		Repair	11-6 Oscillating Axle

Reference Examples:	**Electronic Version** Click on any content or procedure in the Table of Contents to view the update.
Section – Repair Procedure, 4-2	
Section – Fault Codes, All charts	
Section – Schematics, Legends and schematics	

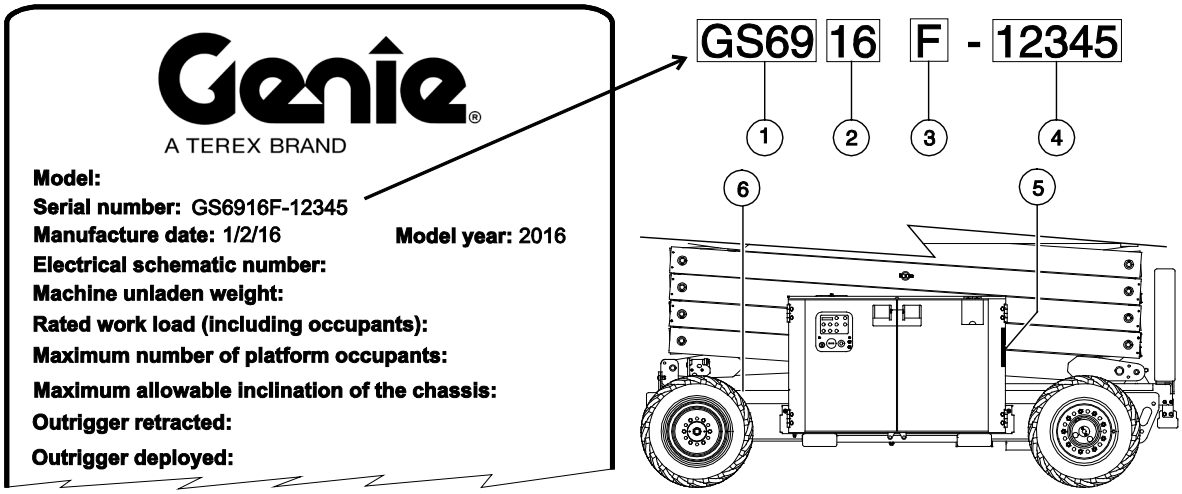
Introduction

Revision History (continued)

Revision	Date	Section	Procedure / Page / Description
Reference Examples:			**Electronic Version** Click on any content or procedure in the Table of Contents to view the update.
Section – Repair Procedure, 4-2			
Section – Fault Codes, All charts			
Section – Schematics, Legends and schematics			

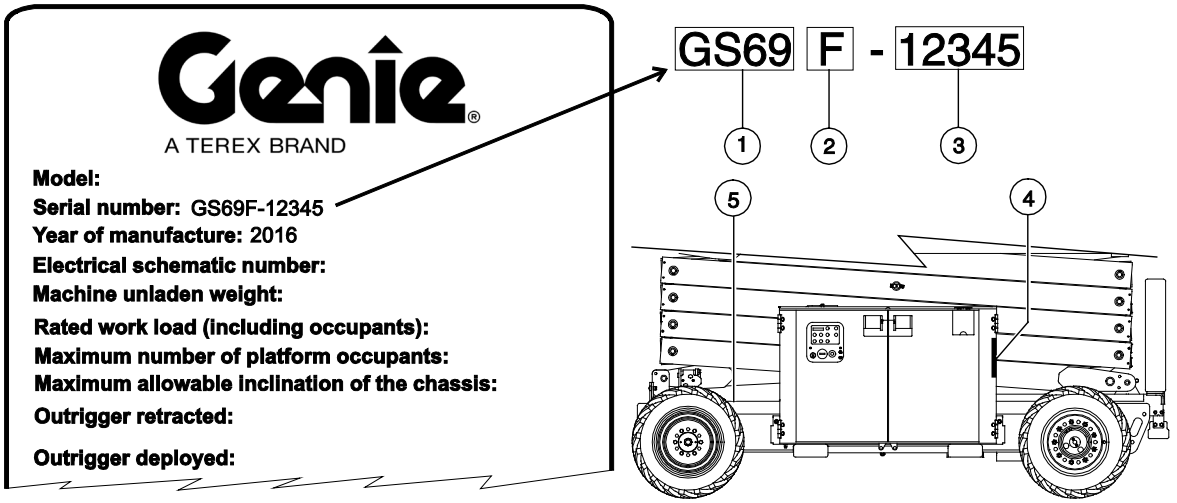
Serial Number Legend

To August 31, 2016



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

From September 1, 2016



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

Safety Rules

Danger

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

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

Do Not Perform Maintenance Unless:

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

☑ You read, understand and obey:

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

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

Safety Rules

Personal Safety

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

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

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

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

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

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

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

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

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

Workplace Safety

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

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

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

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

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

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

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

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Specifications

Machine Specifications

Fluid capacities	
Hydraulic tank (maximum fill capacity)	16.5 gallons 62.5 liters
Hydraulic system (including tank)	18 gallons 68.1 liters
Drive hub EP 90 or SAE 90 multipurpose hypoid gear oil API service classification GL5	24.5 ounces 725 cc
Fuel tank	10 gallons 38 liters
Tires and wheels	
Wheel lugs (steer end)	6 @ 1/2-20
Lug nut torque, dry Front	90 ft-lbs 122 Nm
Lug nut 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, each	177.5 lbs 80.5 kg
Non-marking, foam filled, RT	
Tire size	26 x 12D380
Tire ply rating	6
Tire diameter	26 in 66 cm
Tire width	12 in 30 cm
Weight, each	177.5 lbs 80.5 kg

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

Specifications

Performance Specifications

Drive speed, maximum	
Platform stowed High speed	3.5 mph 5.6 km/h 40 ft / 7.8 sec 12.2 m / 7.8 sec
Platform stowed High torque	0.9 mph 1.4 km/h 40 ft / 30 sec 12.2 m / 30 sec
Platform raised	0.3 mph 0.48 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 Platform down	29 to 39 seconds 26 to 36 seconds
GS-3369 RT	
Platform up Platform down	34 to 44 seconds 24 to 34 seconds
GS-4069 RT	
Platform up Platform down	56 to 66 seconds 26 to 36 seconds
Outrigger leveling, maximum	
Front Back Side to side	5.3° 4.2° 11.7°

Hydraulic Oil Specifications

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

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

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

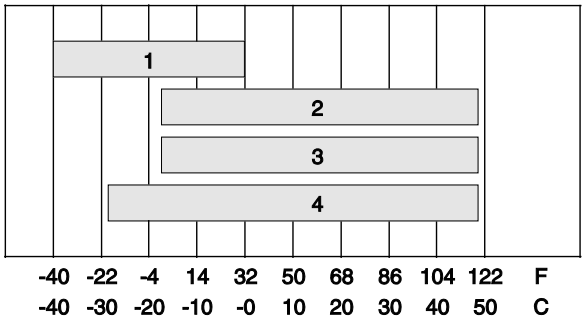
Note: Extended machine operation can cause the hydraulic fluid temperature to increase beyond it's maximum allowable range. If the hydraulic fluid temperature consistently exceeds 200°F / 90°C an optional oil cooler may be required.

NOTICE

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

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

Hydraulic Fluid Temperature Range



Ambient air temperature

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

Chevron Rando HD Premium Oil MV Fluid Properties

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

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

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

Specifications

Chevron 5606A Hydraulic Oil Fluid Properties

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

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

NOTICE

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

Petro-Canada Environ MV 46 Fluid Properties

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

Shell Tellus S4 VX Fluid Properties

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

Specifications

UCON Hydrolube HP-5046 Fluid Properties

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

Specifications

Hydraulic Component Specifications

Drive Pump	
Type	gear pump
Displacement per revolution	1.0 cu in 16 cc
Flow rate @ 3100 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, maximum	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)	0.54 - 1.53 cu in 8.8 - 25 cc

Manifold Component Specifications

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

GM Engine Models

.998L	
Low idle	1100 rpm 36.6 Hz
High idle	3000 rpm 100 Hz
Oil capacity (including filter)	3.2 quarts 3.0 liters
Engine coolant capacity	5 quarts 4.7 liters
Spark plug gap	0.039 to 0.047 inches 1.0 to 1.2 mm

Unit ships with 15W-40. Extreme operating temperatures may require the use of alternative engine oils. For oil requirements, refer to the Engine Operator Manual for your engine.

Specifications

Kubota D1105-E3B 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 @ 3000 rpm
Firing order	1 - 2 - 3
Low idle	1500 rpm 250 Hz
High idle	3000 rpm 500 Hz
Compression ratio	24:1
Compression pressure	412 to 469 psi 28.4 to 32.3 bar
Governor	centrifugal mechanical
Valve Clearance, cold	0.0057 to 0.0072 in 0.145 to 0.185 mm
Lubrication system	
Oil pressure	28 to 64 psi 1.9 to 4.4 bar
Oil capacity (including filter)	5.4 quarts 5.1 liters
Oil viscosity requirements	
-22° F to 86° F/ -30° C to 30° C	5W-30 (synthetic)
-4° F to 90° F / -20° C to 32° C	10W-40
Above 23° F / -5° C	20W-50
Unit ships with 15W-40. Extreme operating temperatures may require the use of alternative engine oils. For oil requirements, refer to the Engine Operator Manual for your engine.	
Engine coolant	
Capacity	3.3 quarts 3.1 liters
Fuel injection system	
Injection pump make	Bosch MD
Injection pump pressure, maximum	1991 psi 137 bar
Injection timing	18° BTDC
Fuel requirement	
For fuel requirements, refer to the engine Operator Manual for your engine.	
Starter motor	
Cranking speed	200 - 300 RPM
Current draw, normal load	155A
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	0.28 to 0.35 inch 7 to 9 mm

Specifications

Kubota WG-972 Engine

Displacement	57.8 cu in 0.96 liters
Number of cylinders	3
Bore and Stroke	2.93 x 2.90 inches 74.5 x 73.6 mm
Horsepower, Gross intermittent	29 @ 3200 rpm 21.6 kW @ 3200 rpm
Firing order	1 - 2 - 3
Low idle	1500 rpm 250 Hz
High idle	3000 rpm 500 Hz
Compression ratio	9.2:1
Compression pressure	128 to 185 psi 8.8 to 12.76 bar
Governor	centrifugal mechanical
Valve Clearance, cold	0.0057 to 0.0072 in 0.145 to 0.183 mm
Lubrication system	
Oil pressure	28 to 64 psi 1.9 to 4.4 bar
Oil capacity (including filter)	3.6 quarts 3.4 liters
Oil viscosity requirements	
Below 86°F / 30°C	5W-20
-4°F to 104°F / -20°C to 40°C	10W-30
Above 14°F / -10°C	15W-40
Unit ships with 15W-40. Extreme operating temperatures may require the use of alternative engine oils. For oil requirements, refer to the Engine Operator Manual for your engine.	
Fuel Pump	
Fuel pressure, static	2.84 psi 0.19 bar
Fuel flow rate	0.125 gpm 0.47 L/min
Fuel requirement	
For fuel requirements, refer to the engine Operator Manual for your engine.	

Alternator output	40A @ 12V DC
Fan belt deflection	0.28 to 0.35 in 7 to 9 mm
Starter motor	
Brush length, new	0.551 in 14 mm
Brush length, minimum	0.437 in 11.1 mm
Battery	
Type	12V DC
Group	34/78
Quantity	1
Ampere hour	75AH
Cold cranking ampere	900A
Reserve capacity @ 25A rate	120 minutes
Engine coolant	
Capacity	2.4 quarts 2.3 liters
Ignition system	
Ignition spark advance	21° BTDC
Ignition coil primary resistance	1.87 to 2.53 Ω @ 68°F / 20°C
Ignition coil secondary resistance	10.4 to 15.6 kΩ @ 68°F / 20°C
#1 Spark plug wire resistance	2.81 to 4.79 kΩ
#2 Spark plug wire resistance	3.4 to 5.8 kΩ
#3 Spark plug wire resistance	3.57 to 6.09 kΩ
Spark plug type	NGK BKR4E-11
Spark plug gap	0.024 to 0.028 in 0.6 to 0.7 mm

Specifications

Perkins 403D-11 Engine

Displacement	69 cu in 1.13 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 @ 3000 rpm
Firing order	1 - 2 - 3
Low idle	1500 rpm 150 Hz
High idle	3000 rpm 300 Hz
Compression ratio	23:1
Compression pressure	425 psi 29.3 bar
Pressure (psi) of lowest cylinder must be within 50 psi / 3.45 bar of highest cylinder	
Governor	mechanical, all speed
Valve Clearance, cold	0.008 in 0.2 mm
Lubrication system	
Oil pressure	40 to 60 psi 2.76 to 4.1 bar
Oil capacity (including filter)	4.6 quarts 4.4 liters
Oil viscosity requirements	
Below 86°F / 30°C	5W-20
-4°F to 104°F / -20°C to 40°C	10W-30
Above 14°F / -10°C	15W-40
Unit ships with 15W-40. Extreme operating temperatures may require the use of alternative engine oils. For oil requirements, refer to the Engine Operator Manual for your engine.	
Fuel injection system	
Injection pump make	Bosch
Injection timing	23° BTDC @ 3000 rpm
Injection pressure	2133 psi 147 bar
Fuel requirement	
For fuel requirements, refer to the engine Operator Manual for your engine.	
Alternator output	40A @ 12V DC
Fan belt deflection	3/16 in 5 mm
Starter motor	
Current draw, normal load	100 - 150A
Battery	
Type	12V DC, Group 34/78
Quantity	1
Ampere hour	75AH
Cold cranking ampere	900A
Reserve capacity @ 25A rate	120 minutes
Engine coolant	
Capacity	2 quarts 1.9 liters

Hydraulic Hose and Fitting Torque Specifications

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

Seal-Lok™ Fittings

(hose end - ORFS)

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

JIC 37° Fittings

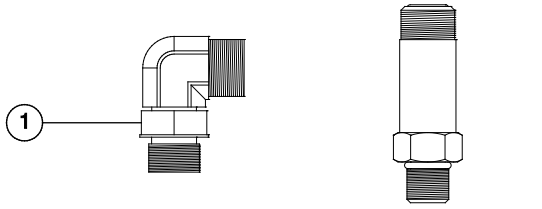
(swivel nut or hose connection)

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

SAE O-ring Boss Port

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

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



Adjustable Fitting

Non-adjustable fitting

1 jam nut

SAE O-ring Boss Port

(tube fitting - installed into Steel)

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

Specifications

Torque Procedure

Seal-Lok™ fittings

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

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

2 Lubricate the O-ring before installation.

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

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

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

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

JIC 37° fittings

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

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

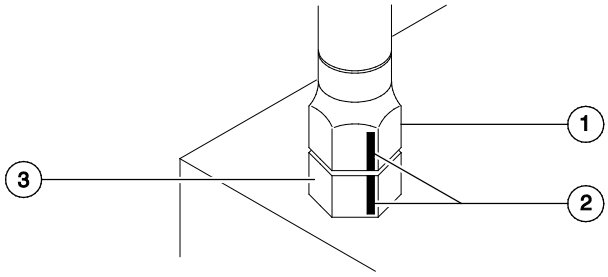


Illustration 1

1 hex nut
2 reference mark
3 body hex fitting

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

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

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

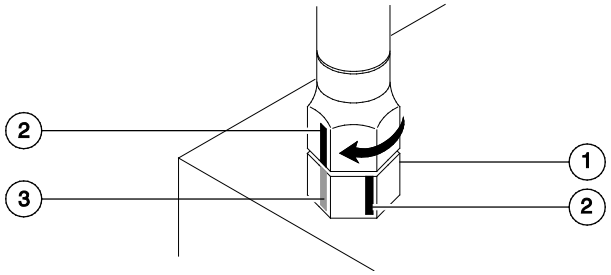


Illustration 2

1 body hex fitting
2 reference mark
3 second mark

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

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

Repair Procedures

Observe and Obey:

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

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

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

Before Repairs Start:

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

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

☑ Use only Genie approved replacement parts.

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

Machine Configuration:

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

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

Repair Procedures

About This Section

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

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

Symbols Legend

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

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

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

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

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

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

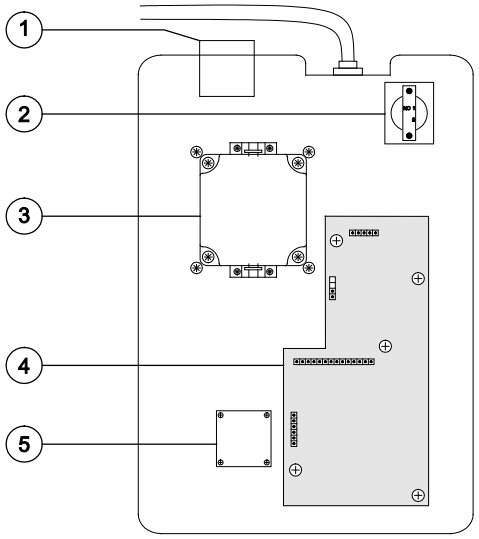
☒ Indicates that an incorrect result has occurred after performing a series of steps.

Platform Controls

Platform controls

The platform controls, 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 Genie Product Support.



1 alarm H1
2 red Emergency Stop button P2
3 joystick controller JC4
4 circuit board U3
5 platform up/down and outrigger up/down switch JC10

1-1 Circuit Board

How to Remove the Platform Controls Circuit Board

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

2 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.

2-1 Platform

How to Remove the Platform

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

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

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

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

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

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

4 Remove the platform controls from the platform.

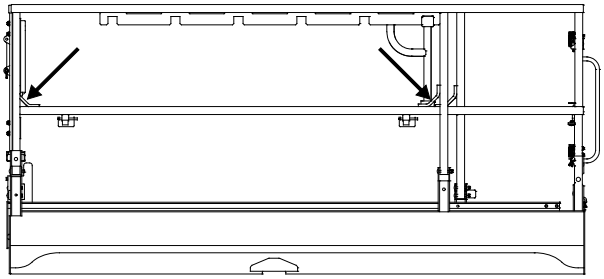
NOTICE Component damage hazard. The platform controls wiring can be damaged if it is kinked or pinched.

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

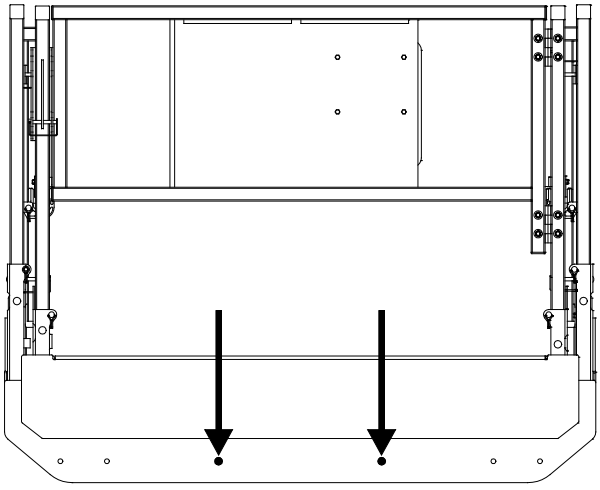
⚠WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

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

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



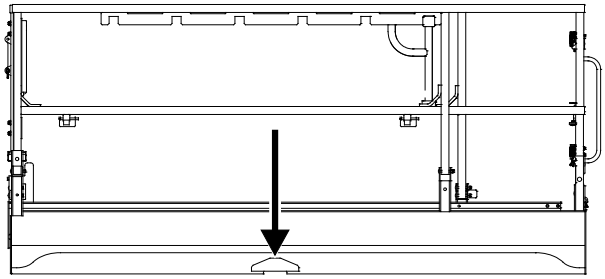
8 Remove the two carriage bolts that secure the platform to the platform pivot at the steer end of the machine.



Platform Components

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

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



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

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

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

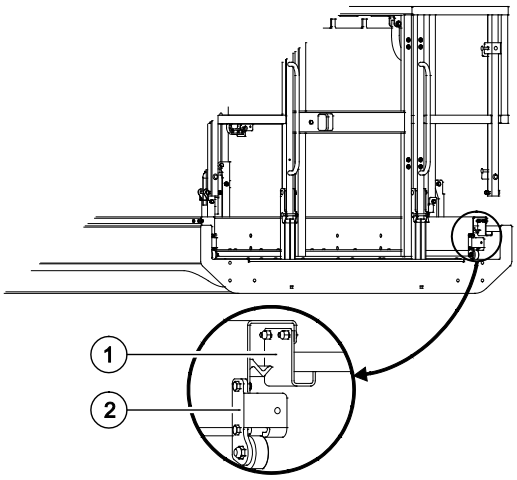
2-2 Platform Extension Deck

How to Remove the Platform Extension Deck

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

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

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

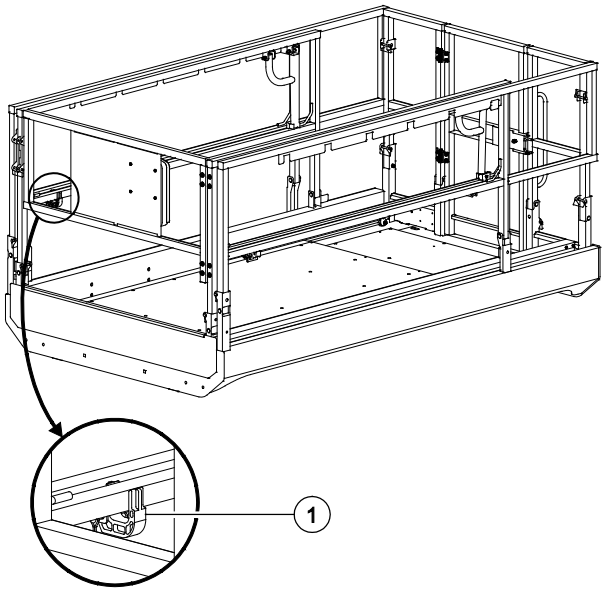


1 deck catch
2 deck stop

4 Remove the platform controls from the platform.

Platform Components

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



1 rail spacer

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

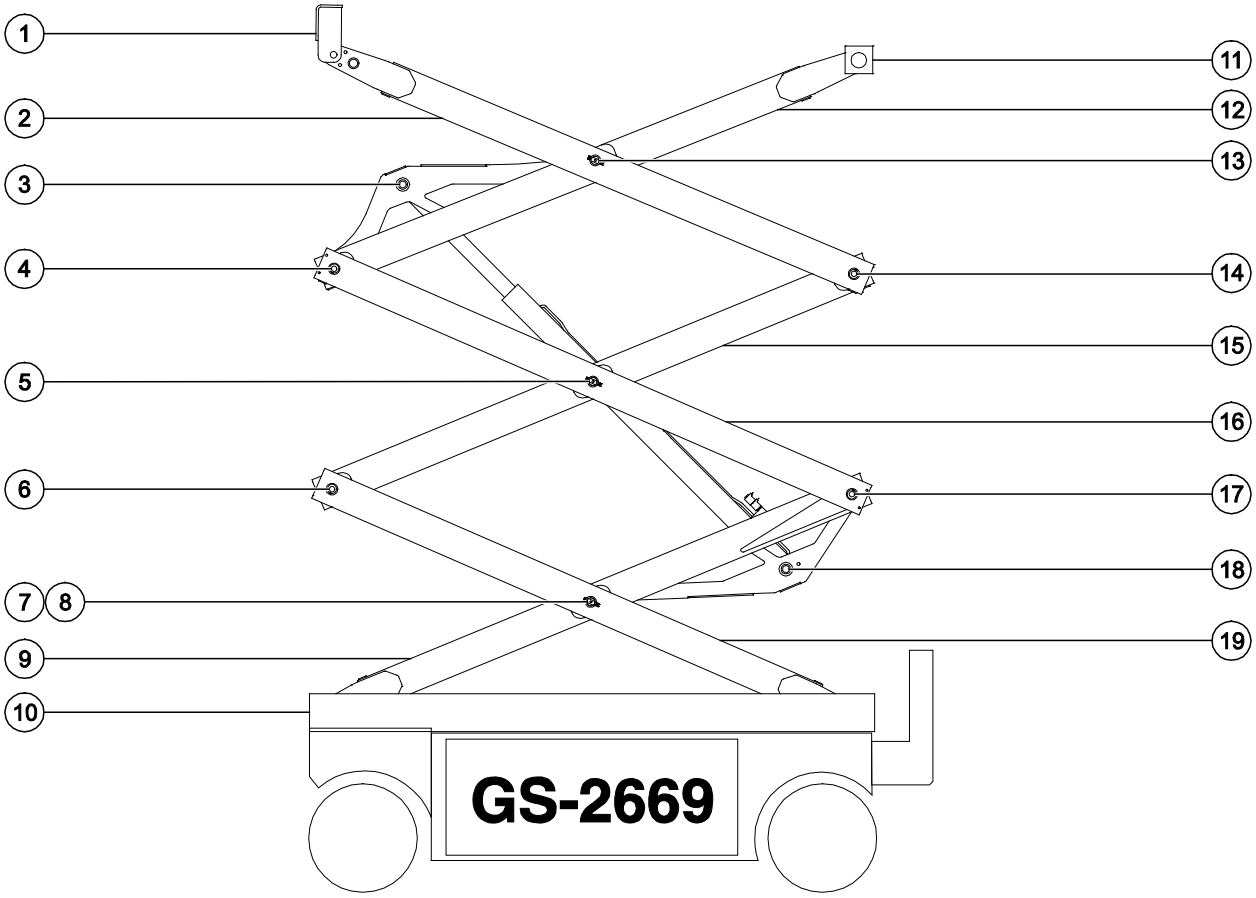
7 Carefully slide the platform extension out until the platform extension makes contact with the carriage on the forklift.

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

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

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

Scissor Components



Steer End

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

Non-steer End

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

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 strongly recommended.

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

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

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

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

3 Remove the cables from the linkage assembly.

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

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

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

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

7 Lower the lift cylinder and remove the strap.

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

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

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

Note: Do not remove the external snap ring.

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

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

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

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

Scissor Components

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

Note: Do not remove the external snap ring.

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

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

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

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

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

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

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

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

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

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

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

Separate the link sets:

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

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

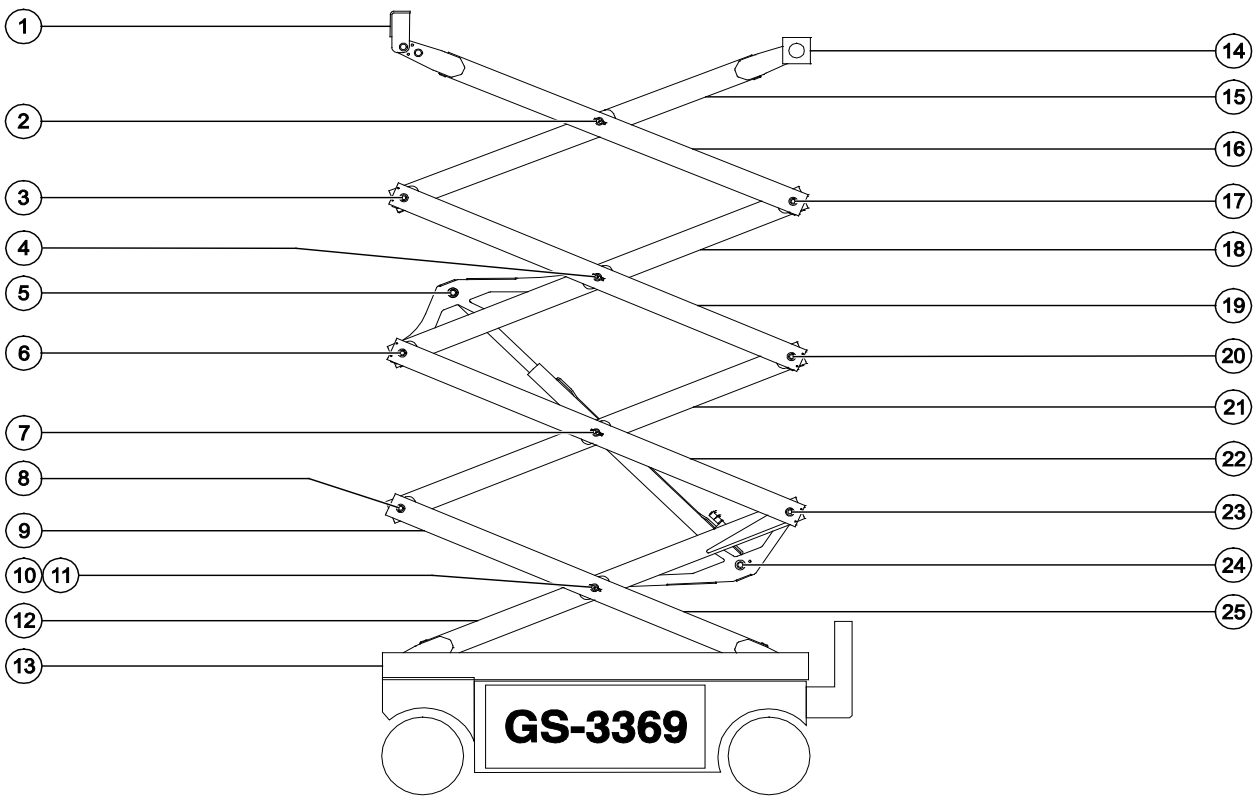
2 Remove the retaining fasteners from the center pivot pins.

Note: Do not remove the external snap ring.

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

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

Scissor Components



Steer End

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

Non-steer End

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

Scissor Components

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 strongly recommended.

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

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

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

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

3 Remove the cables from the linkage assembly.

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

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

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

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

Note: Do not remove the external snap ring.

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

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

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

9 Remove the lift cylinder rod end pivot pin retaining fasteners

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

11 Lower the lift cylinder and remove the strap.

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

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

Scissor Components

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

Note: Do not remove the external snap ring.

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

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

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

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

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

Note: Do not remove the external snap ring.

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

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

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

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

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

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

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

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

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

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

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

Scissor Components

Separate the link sets:

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

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

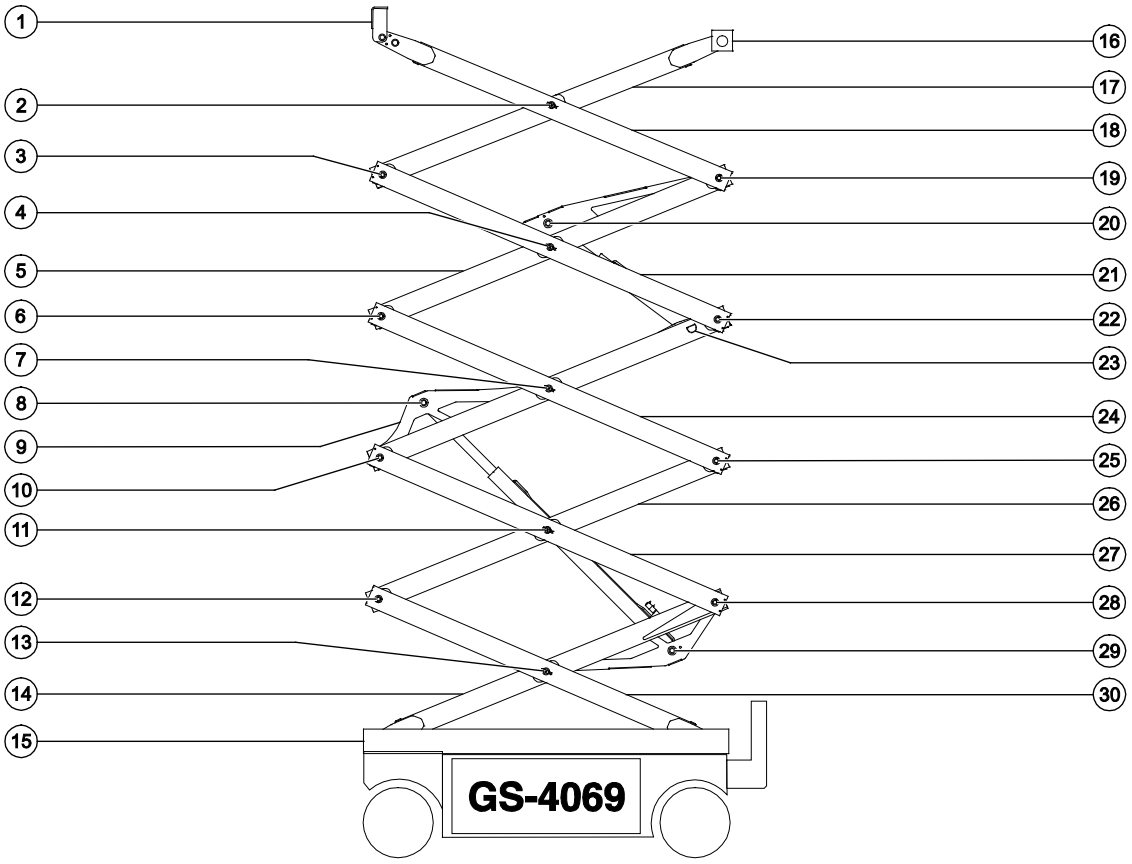
2 Remove the retaining fasteners from the center pivot pins.

Note: Do not remove the external snap ring.

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

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

Scissor Components



Steer End

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

Non-steer End

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

Scissor Components

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 strongly recommended.

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

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

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

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

3 Remove the cables from the linkage assembly.

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

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

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

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

Note: Do not remove the external snap ring.

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

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

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

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

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

11 Lower the lift cylinder and remove the strap.

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

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

Scissor Components

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

Note: Do not remove the external snap ring.

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

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

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

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

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

18 Remove the cables and hoses from the linkage assembly.

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

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

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

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

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

23 Lower the lift cylinder and remove the strap.

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

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

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

Note: Do not remove the external snap ring.

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

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

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

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

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

Note: Do not remove the external snap ring.

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

Scissor Components

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

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

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

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

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

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

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

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

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

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

Separate the link sets:

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

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

2 Remove the retaining fasteners from the center pivot pins.

Note: Do not remove the external snap ring.

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

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

3-4
Wear Pads

How to Replace the Scissor Arm Wear Pad

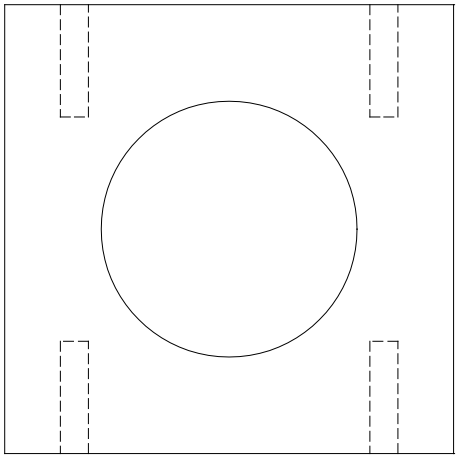
Platform Scissor Arm Slider Blocks:

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

2 Remove the slider blocks and discard.

3 Install the slider blocks.

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



4 Install the platform.

Chassis Scissor Arm Wear Pads:

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

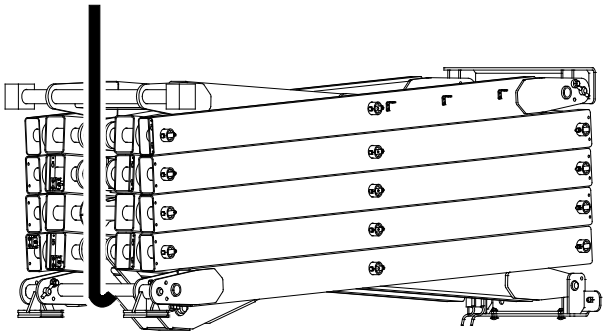
2 Remove the fasteners securing the ladder to the chassis. Remove the ladder from the machine and set aside.

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

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

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

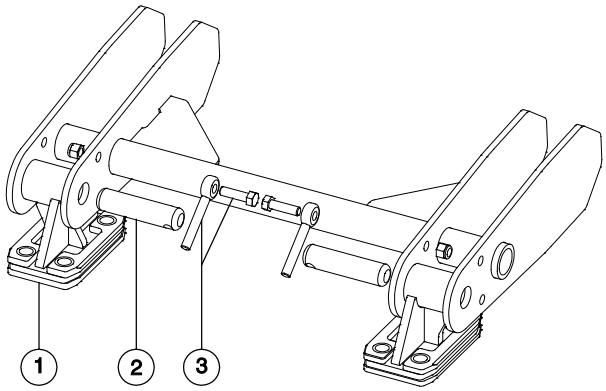
⚠WARNING Crushing hazard. The linkage assembly could become unbalanced and fall if not properly supported.



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

Scissor Components

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



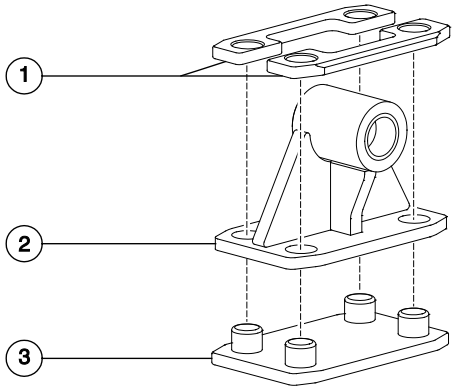
1 Slider foot assembly
2 pivot pin
3 retaining fasteners

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

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

8 Remove the upper and lower wear pads and discard.

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



1 upper wear pads
2 slider foot
3 lower wear pad

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

11 Securely tighten the pivot pin retaining fasteners.

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

3-5
Lift Cylinders

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

How to Remove the Lift Cylinder

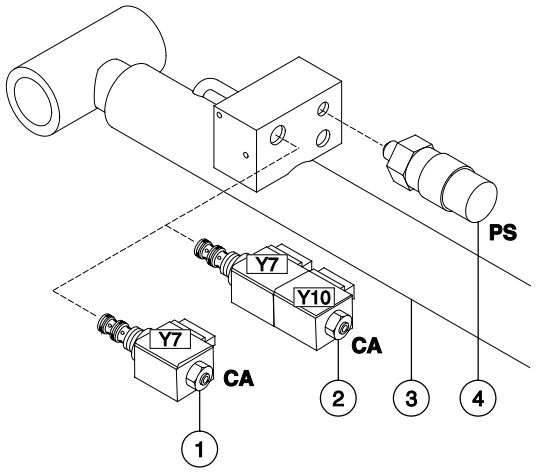
GS-2669 RT and GS-3369 RT:

⚠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 (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

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

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



GS-2669 RT and GS-3369 RT

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

Scissor Components

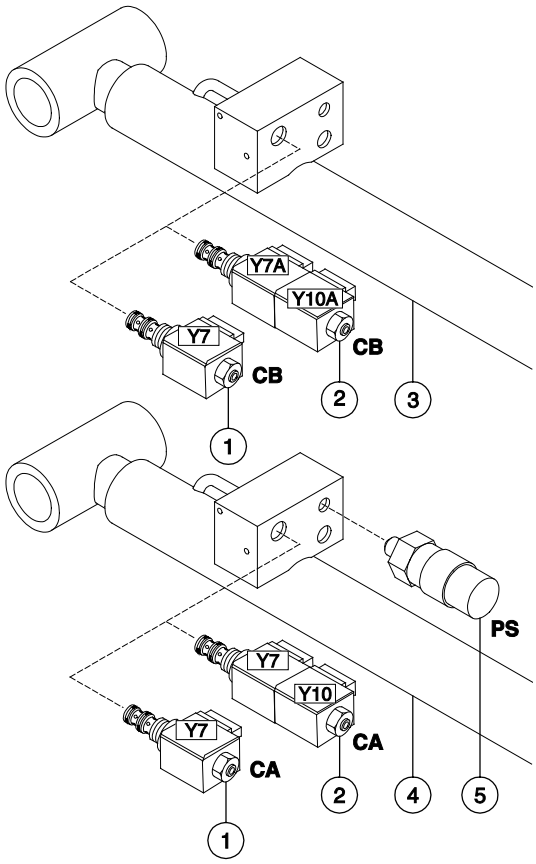
GS-4069 RT:

⚠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 (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

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

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



GS-4069 RT

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

Kubota D1105 Engine

4-1
Timing Adjustment

Complete information to perform this procedure is available in the Kubota Workshop Manual.

Kubota - D1105	
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

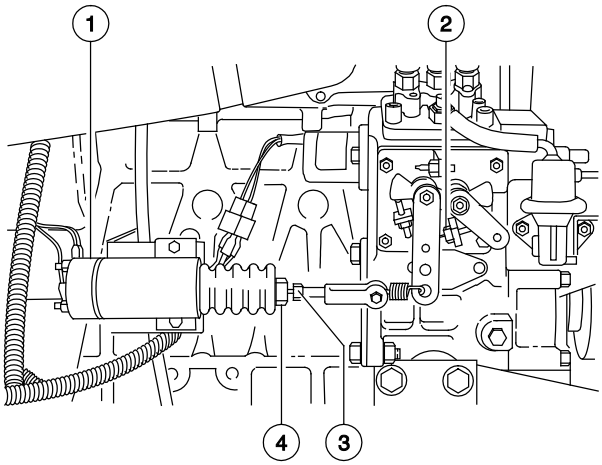
4-3
Engine RPM

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 Specifications, *Engine 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.



1 high idle solenoid
2 low idle adjustment screw
3 lock nut
4 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 Specifications, *Engine 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.

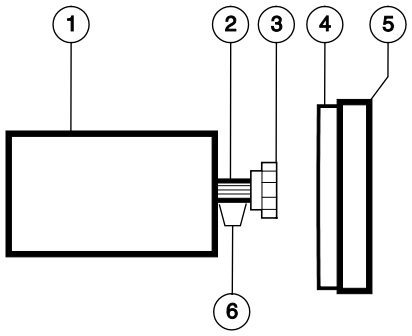
How to Install the Flex Plate

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

2 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.

3 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 teeth may become damaged.



1 pump
2 pump shaft
3 pump coupler
4 flex plate
5 flywheel
6 1/8 inch / 3.175 mm gap

Kubota D1105 Engine

4-5
Coolant Temperature and Oil Pressure Switches

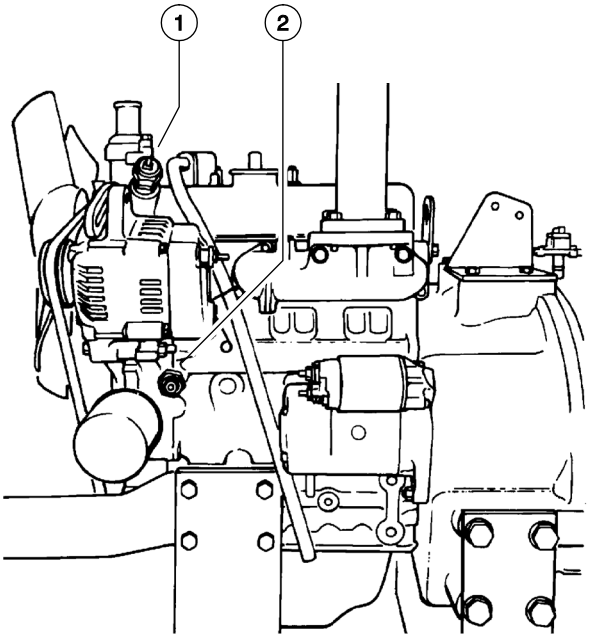
The engine coolant temperature switch is a normally open switch. The switch contacts close at approximately 225°F / 107°C. If the coolant temperature rises above the switch point, the switch contacts close and the engine will shut off to prevent damage. The engine will not start until the temperature 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.

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



1 Coolant temperature switch
2 Oil Pressure switch

⚠ 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.

4-6
How to Repair the Kubota D1105 Engine

Repair procedures and additional engine information are available in the Kubota Operator's and Workshop Manuals.

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

Kubota WG972 Engine

5-1 Timing Adjustment

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

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 Repair Procedure, *Flex Plate - Kubota D1105 Engine.*

5-5 Coolant Temperature and Oil Pressure Switches

See Repair Procedure, *Coolant Temperature and Oil Pressure Switches - Kubota D1105 Engine.*

5-6
Engine RPM

How to Adjust the RPM

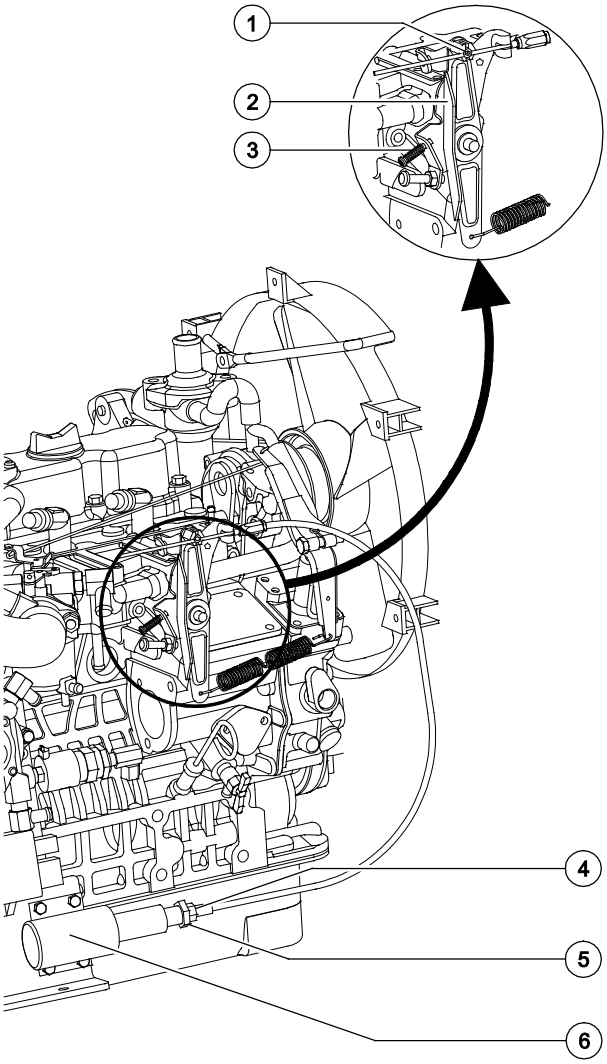
Note: The on-board self diagnostics incorporate a built-in engine tachometer. The engine rpm is displayed on the diagnostic display when the start button is held to the start position with the engine running.

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 toggle switch to the start position and check the engine RPM on the diagnostic display. Refer to Specifications, *Engine 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.



1 core clamp screw
2 throttle lever
3 low idle adjustment screw
4 lock nut
5 high idle adjustment nut
6 high idle solenoid

Kubota WG972 Engine

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 toggle switch to the start position and check the engine RPM on the diagnostic display. Refer to Specifications, *Engine 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.

5-7 How to Repair the Kubota WG972 Engine

Repair procedures and additional engine information are available in the Kubota Operator's and Workshop Manuals.

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

6-1
Timing Adjustment

Complete information to perform this procedure is available in the Perkins Workshop Manual.

Perkins 403D-11 Workshop Manual	
Genie part number	131662

6-2
Flex Plate

See Repair Procedure, *Flex Plate - Kubota D1105 Engine.*

6-3
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.

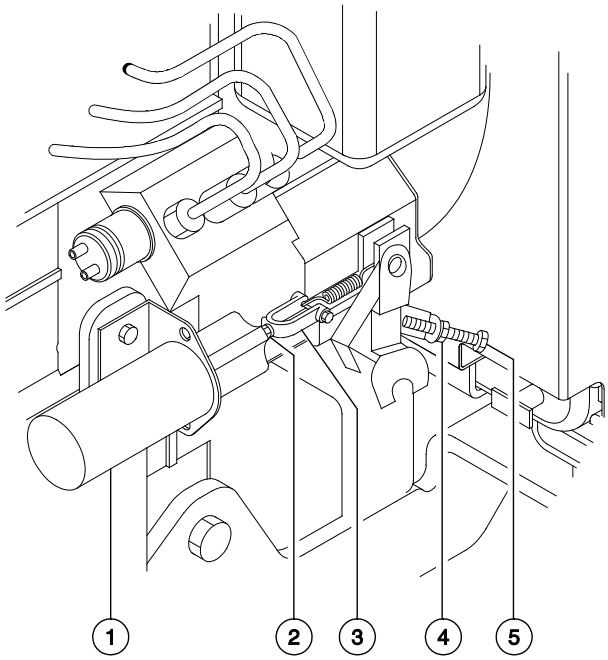
6-4 Engine RPM

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 Specifications, *Engine 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.



1 solenoid
2 yoke locknut
3 yoke
4 low idle lock nut
5 low idle adjustment screw

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 Specifications, *Engine 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.

6-5 How to Repair the Perkins 403D-11 Engine

Repair procedures and additional engine information are available in the Perkins Operator's and Workshop Manuals.

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

GM .998L Engine

7-1 Timing Adjustment

Complete information to perform this procedure is available in the GM .998L Workshop Manual.

GM .998L Workshop Manual	
Genie part number	1280320GT

7-2 Flex Plate

The flex plate acts as *a coupler between the engine and the pump. It is bolted to the engine flywheel and has a splined center to drive the pump.*

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.

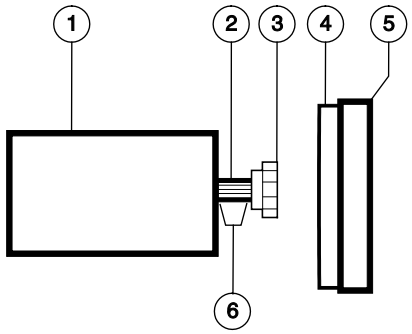
3 Carefully pull the pump assembly away from the engine and secure it from moving.

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 away from the flywheel.



1 pump
2 pump shaft
3 pump coupler
4 flex plate
5 flywheel
6 1/32 inch / 0.8 mm gap

2 Apply removable Loctite® thread sealant to the flex plate mounting fasteners. Torque the flex plate mounting fasteners to 36 ft-lbs / 49 Nm.

3 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.

4 Apply removable Loctite® thread sealant to the coupler set screw. Torque the set screw to 65-70 ft-lbs / 88-95 Nm.

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

7-1
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, contact Genie Product Support.

⚠ 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 could result in death or serious injury.

Ground Controls

How to Determine the Revision Level

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

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

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 ground controls red Emergency Stop button to the off position.

3 Turn the key switch to ground controls.

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.

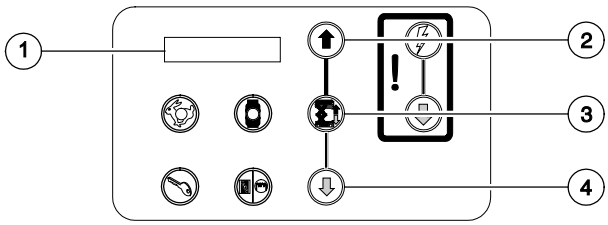
5 Press the lift function enable button.

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 Specifications, *Performance Specifications.*



1 diagnostic display
2 blue platform up button
3 lift function enable button
4 yellow platform down button

9 Press the lift function enable button.

⊙ Result: TUNE SPEEDS 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 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 Specifications, *Performance Specifications.*

13 Press the lift function enable button.

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

15 Check the stowed drive speed of the machine. Refer to the Maintenance procedure, *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 ground controls red Emergency Stop button to the off position.

3 Turn the key switch to ground controls.

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.

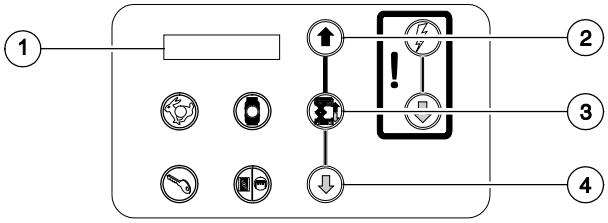
5 Press the lift function enable button.

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 Specifications, *Performance Specifications.*



1 diagnostic display
2 blue platform up button
3 lift function enable button
4 yellow platform down button

9 Press the lift function enable button.

⊙ Result: TUNE SPEEDS 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 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 Specifications, *Performance Specifications.*

13 Press the lift function enable button.

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

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 ground controls red Emergency Stop button to the off position.

3 Turn the key switch to ground controls.

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.

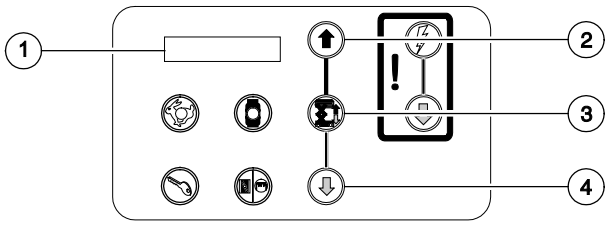
5 Press the lift function enable button.

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

⊙ 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 Specifications, *Performance Specifications.*



1 diagnostic display
2 blue platform up button
3 lift function enable button
4 yellow platform down button

9 Press the lift function enable button.

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

⊙ 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 Specifications, *Performance Specifications.*

13 Press the lift function enable button.

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

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

How to Adjust the Lift 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 ground controls red Emergency Stop button to the off position.

3 Turn the key switch to ground controls.

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.

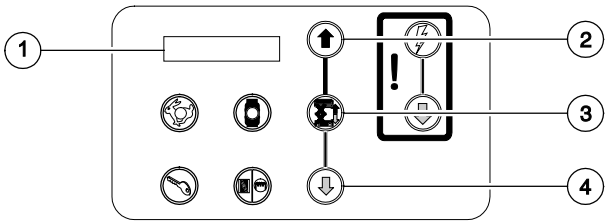
⊙ Result: TUNE SPEEDS is showing in the diagnostic display window. The ECM is now in programming mode.

5 Press the lift function enable button.

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

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

7 Press the lift function enable button.



1 diagnostic display
2 blue platform up button
3 lift function enable button
4 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 Specifications, *Performance Specifications*.

Note: The performance achieved should always be within specifications.

9 Press the lift function enable button.

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

11 Check the lift speed of the machine. Refer to Specifications, *Performance 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 Repair Procedure, *How to Determine the Revision Level.*

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 AS and CE models.

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 AS and CE models.

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.

ANSI and CSA models:

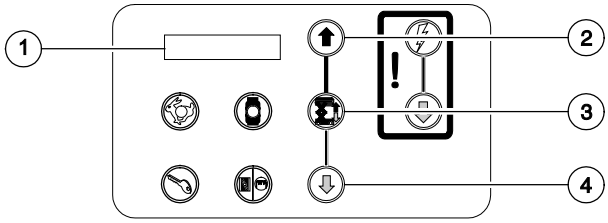
1 Turn the key switch to ground control and pull out the red Emergency Stop button to the on position at both ground and platform controls.

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

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

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.



1 diagnostic display
2 blue platform up button
3 lift function enable button
4 yellow platform down button

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.

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 ground controls red Emergency Stop button to the off position.

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

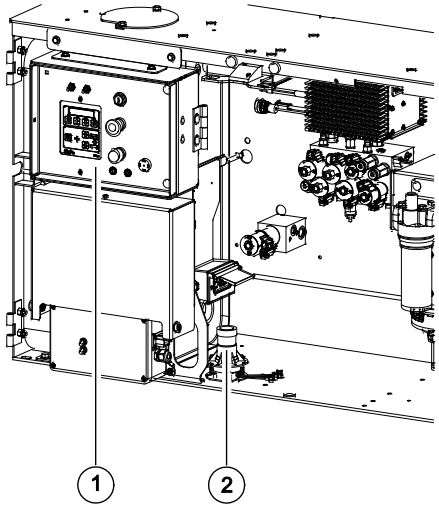
⚠ DANGER Tip-over hazard. Failure to install or calibrate the level sensor as instructed will compromise machine stability and cause the machine to tip over, resulting in death or serious injury. Do not install or calibrate the level sensor other than specified in this procedure.

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

1 Remove the platform controls from the platform.

Note: If you are not installing a new level sensor, or you have installed an outrigger level sensor, proceed to step 9.

2 Locate the level sensor in the ground controls compartment.



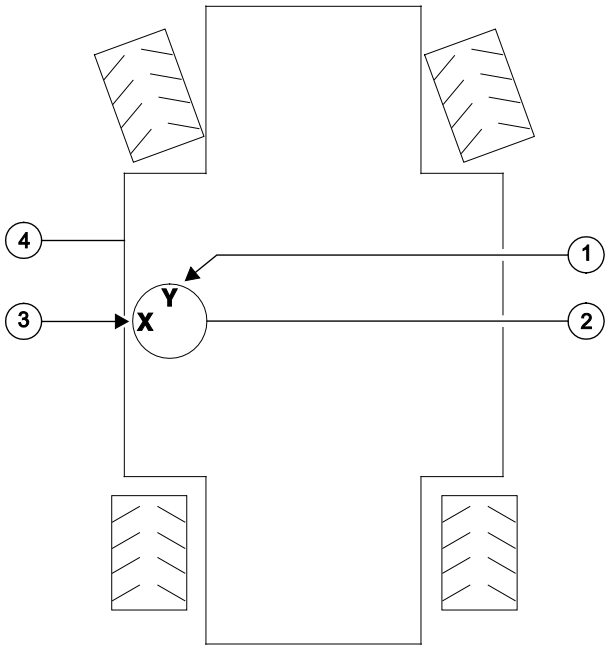
1 ground control box
2 level sensor

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.



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

6 Connect the wire harness to the level sensor.

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

Ground Controls

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

10 Raise the machine approximately 4 inches / 10 cm.

11 **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 approximately 12 feet / 3.6 m.

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

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

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

15 Lower the platform to the stowed position.

16 Raise the machine approximately 4 inches / 10 cm.

17 Remove the blocks from under both wheels.

18 Lower the machine and remove the jack.

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

20 Raise the machine approximately 4 inches / 10 cm.

21 **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

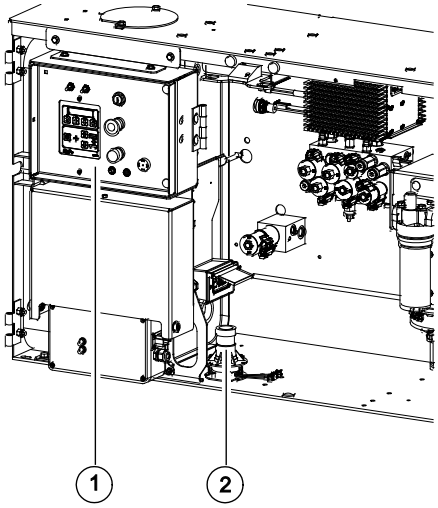
⚠ DANGER Tip-over hazard. Failure to install or calibrate the level sensor as instructed will compromise machine stability and cause the machine to tip over, resulting in death or serious injury. Do not install or calibrate the level sensor other than specified in this procedure.

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

1 Remove the platform controls from the platform.

If you are not installing a new level sensor, proceed to step 7.

2 Locate the level sensor in the ground controls compartment.



1 ground control box
2 level sensor

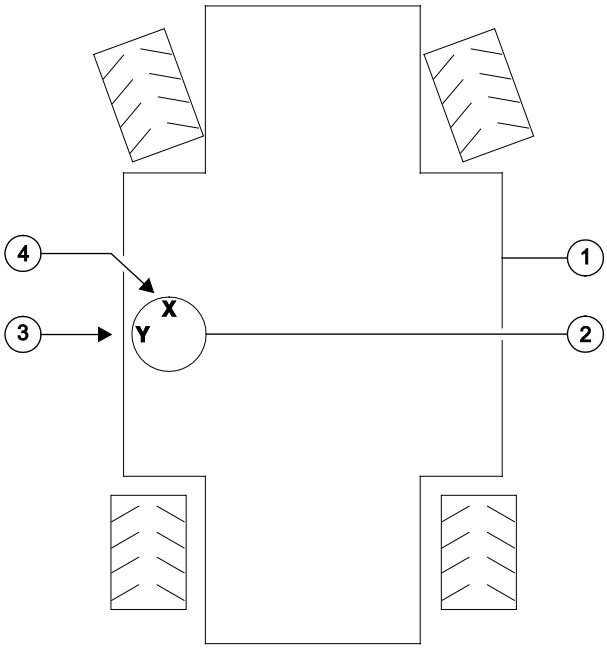
3 Tag and disconnect the wire harness from the level sensor.

4 Remove the retaining fasteners securing the level sensor to the compartment. Remove the level sensor from the machine.

Ground Controls

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

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



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

6 Connect the wire harness to the level sensor.

7 Turn the key switch to platform controls and pull out the red Emergency Stop button to the on position at both 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 the adjusting fasteners.

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 the adjusting fasteners.

15 Disconnect the positive and negative leads.

16 Apply Sentry Seal to the adjusting nuts.

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

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 platform red Emergency Stop button to the off position.

Confirm the side-to-side level sensor setting:

20 Center a lifting jack under the drive chassis at the ground controls 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 approximately 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.

Ground Controls

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 approximately 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 approximately 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 approximately 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 (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

How to Test the Hydraulic Pump

1 Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to test port #1 (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 reading on the pressure gauge. Refer to Specifications, *Hydraulic Specifications*.

How to Remove the Hydraulic Pump

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

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

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

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

How to Prime the Pump

NOTICE Component damage hazard. Be sure that the hydraulic tank shutoff valves are in the open position before priming the pump. The engine must not be started with the hydraulic tank shutoff 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 platform and ground 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. Check for hydraulic leaks.

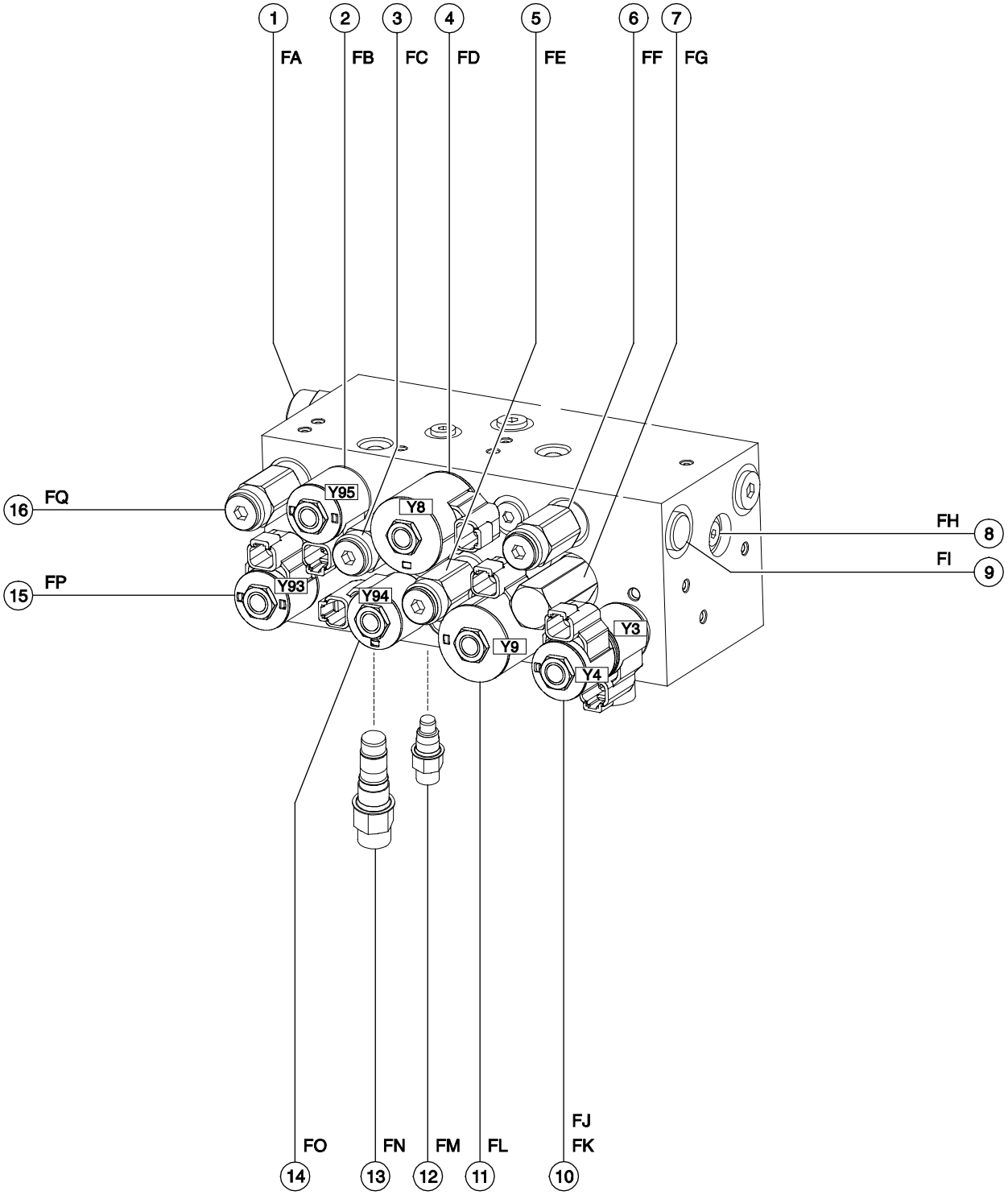
Manifolds

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 compensator 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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FJ
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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.

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

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

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

3 Start the engine from the platform controls.

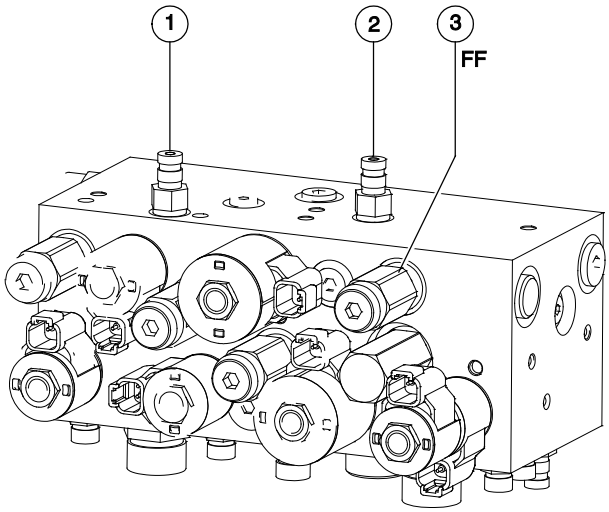
4 Steer the machine fully to the right or left and hold. Note the pressure readings on the pressure gauge. Refer to Specifications, *Hydraulic Component Specifications*.

5 Turn the engine off. Use a wrench to hold the system relief valve and remove the cap.

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

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

7 Remove the pressure gauge.



1 test port #2
2 test port #1
3 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 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 Specifications, *Hydraulic Component Specifications*.

Note: The machine will not drive and a fault will appear on the ground control display.

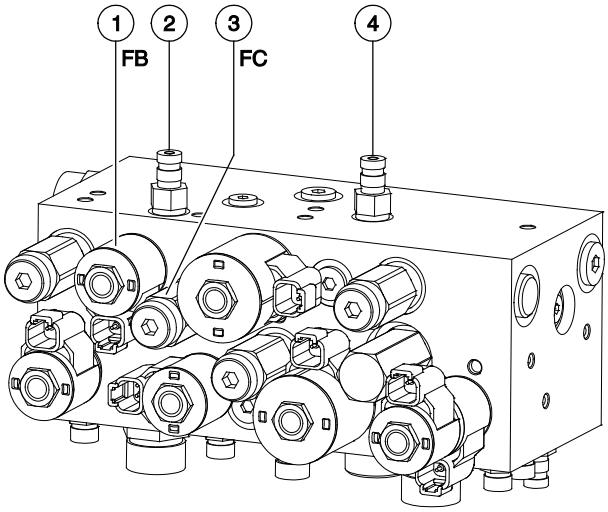
6 Turn the engine off. Use a wrench to hold the oscillate relief valve and remove the cap.

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

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

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

9 Remove the pressure gauge.



1 oscillate float valve
2 test port #2
3 oscillate relief valve
4 test port #1

Manifolds

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

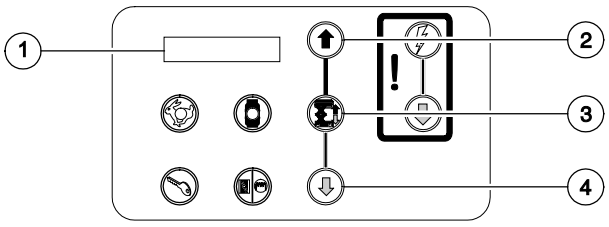
Note: Be sure that the hydraulic oil level is within the top 2 inches / 5 cm of the sight gauge.

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.



1 diagnostic display
2 blue platform up button
3 lift function enable button
4 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 ground controls red Emergency Stop button to the off position.

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

12 Start the engine from the ground controls.

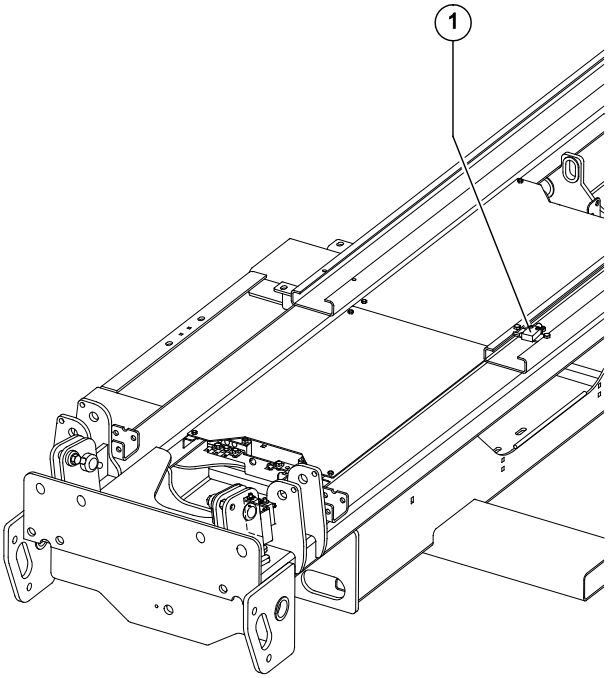
13 Raise the platform approximately 10 feet / 3 m.

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.

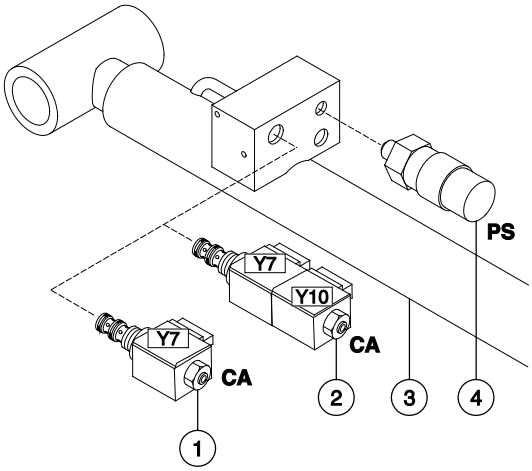
16 Locate and remove the maximum height limit switch from the lower slider channel and set aside.

Note: Do not disconnect the limit switch harness.



1 maximum height limit switch

17 Locate and disconnect the lift cylinder pressure switch harness.



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

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 Specifications, *Machine Specifications.*

23 Start the engine from the ground controls.

Manifolds

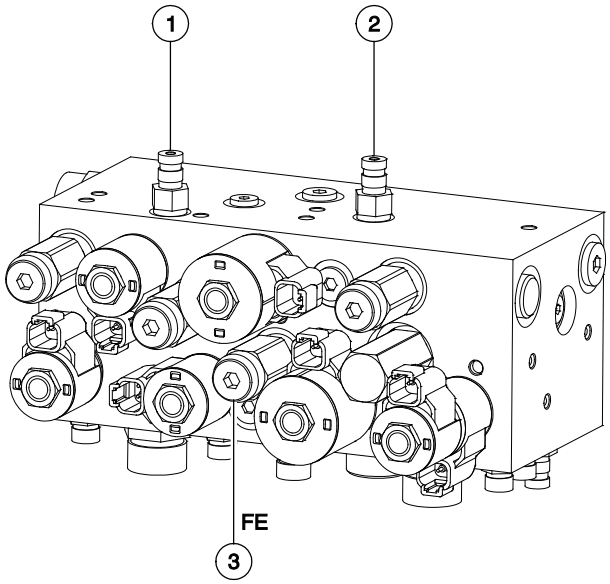
24 Press and hold the lift function enable button and press and hold the blue platform up button. Allow the platform to raise completely, then continue activating the lift function while observing the pressure reading on the pressure gauge. Note the pressure. Refer to Specifications, *Hydraulic Component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

25 Turn the engine off. Hold the lift relief valve 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.



1 test port #2
2 test port #1
3 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 ground controls red Emergency Stop button to the off position.

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 Specifications, *Machine Specifications.*

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

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 Specifications, *Hydraulic Component Specifications*.

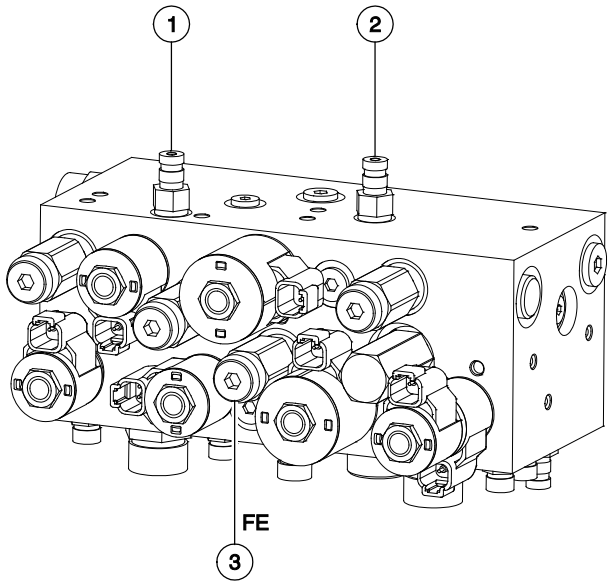
6 Turn the engine off. Hold the lift relief valve with a wrench and remove the cap.

Manifolds

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.

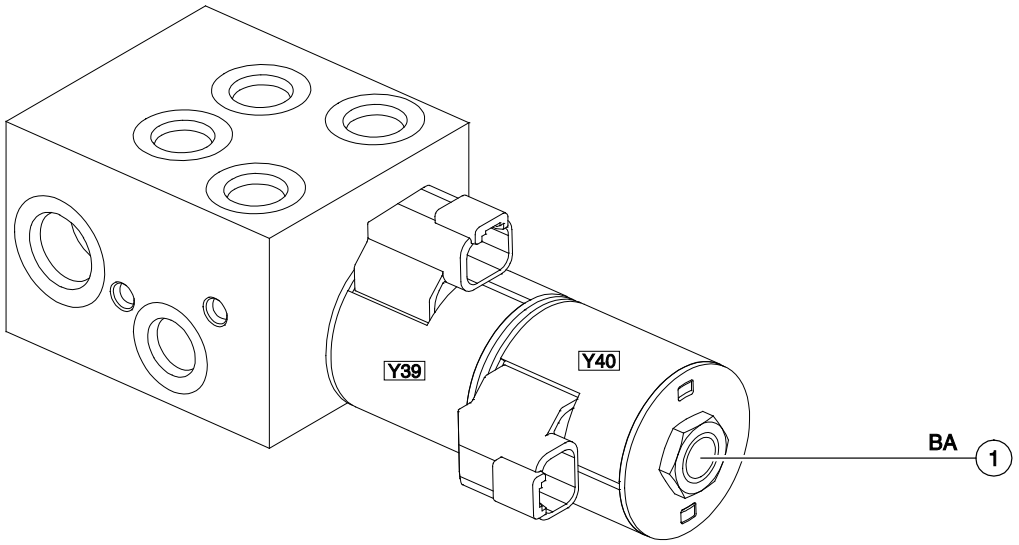


1 test port #2
2 test port #1
3 platform up relief valve

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	40 ft-lbs / 54 Nm



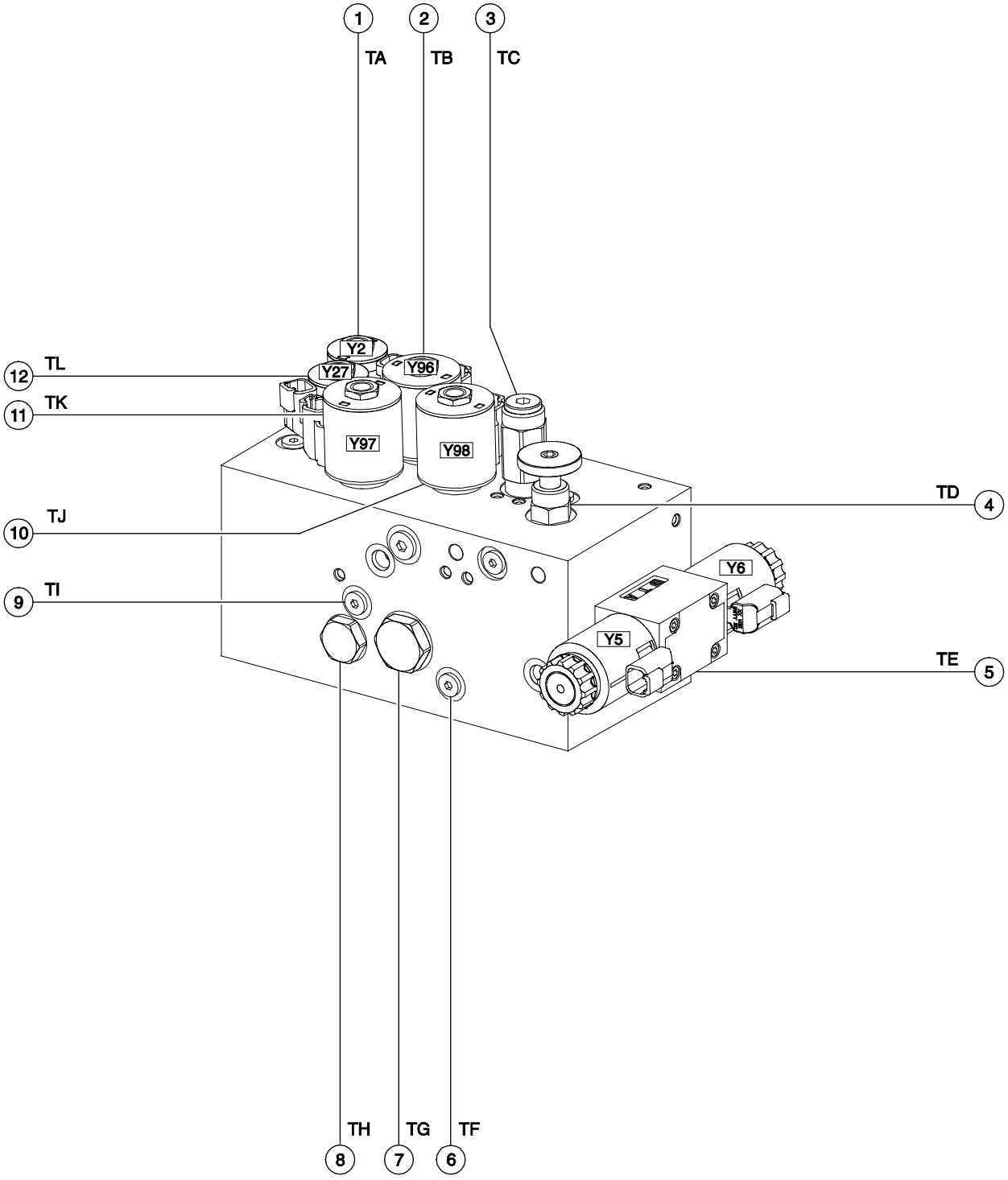
Manifolds

9-4
Traction Manifold Components - View 1

The traction manifold is located inside the hydraulic tray.

Index No.	Description	Schematic Item	Function	Torque
1	Solenoid Valve, 2 position 3 way	TA	Brake release	40 ft-lbs / 54 Nm
2	Solenoid valve, 2 position 4 way	TB	Front motor isolate	50 ft-lbs / 68 Nm
3	Relief valve, 2500 psi / 172.4 bar	TC	Drive pressure circuit	35 ft-lbs / 47 Nm
4	Needle valve N.C.	TD	Enables towing ability	35 - 37 ft-lbs 47 - 50 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 divider/combiner valve 17	
7	Flow divider/combiner valve	TG	Controls flow to 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 divider/combiner valve 8	
10	Solenoid valve, 2 position 2 way	TJ	Allows flow to bypass divider/combiner valve 7 in high drive	45 ft-lbs / 61 Nm
11	Solenoid valve, 2 position 2 way	TK	Allows flow to loop the steer end motors in high drive	45 ft-lbs / 61 Nm
12	Solenoid Valve, 2 position 3 way	TL	Two speed circuit	40 ft-lbs / 54 Nm

Manifolds


1
TA
2
TB
3
TC
12
TL
11
TK
10
TJ
9
TI
Y2
Y27
Y96
Y97
Y98
TD
4
Y6
Y5
TE
5
TH
8
TG
7
TF
6

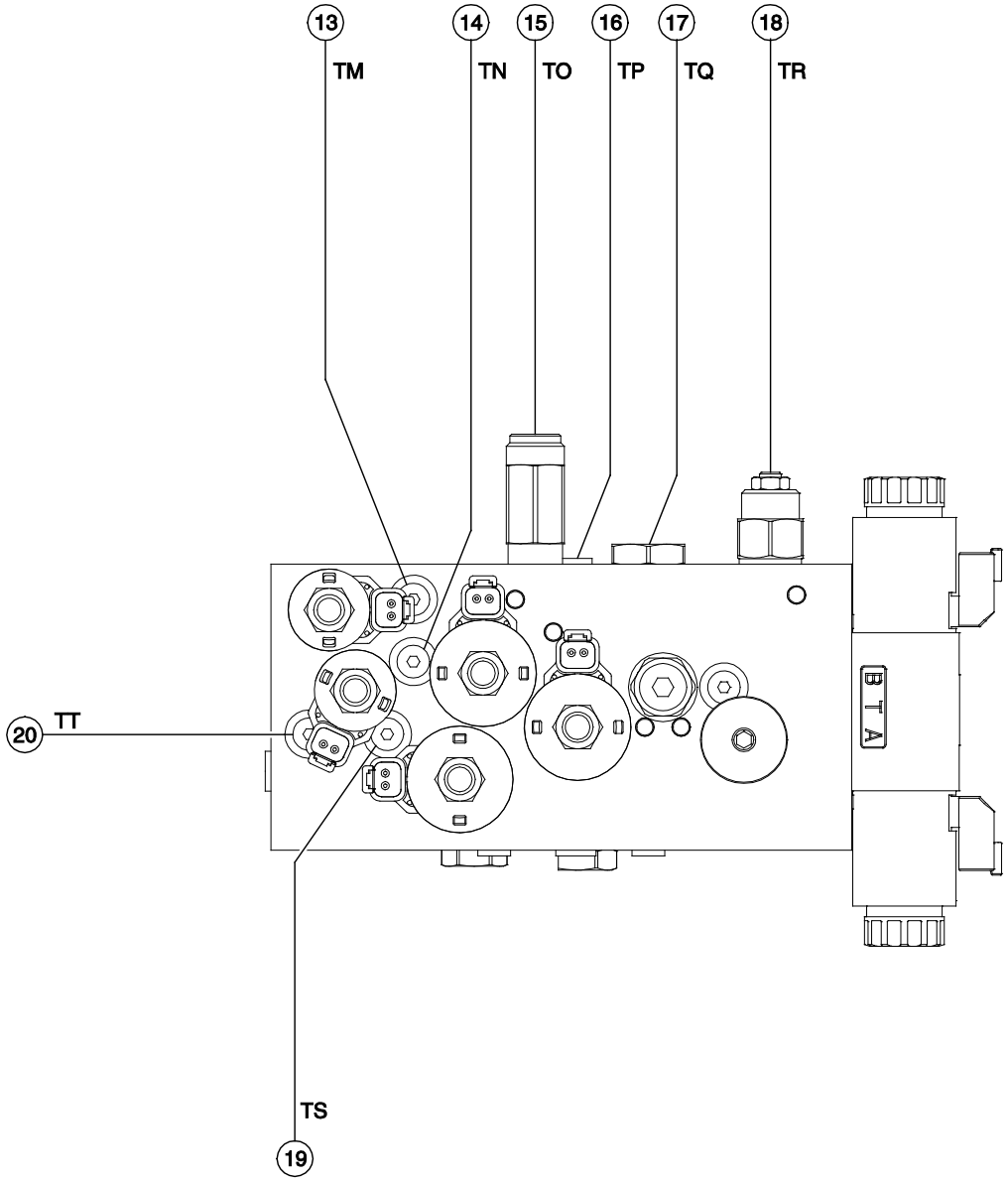
Manifolds

9-4
Traction Manifold Components - View 2

The traction manifold is located inside the hydraulic tray.

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	25 - 30 ft-lbs 34 - 40 Nm
16	Orifice, 0.035 inch / .9 mm	TP	Equalizes pressure on both sides of 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	20 ft-lbs / 27 Nm
20	Check valve	TT	Brake circuit	20 ft-lbs / 27 Nm

Manifolds

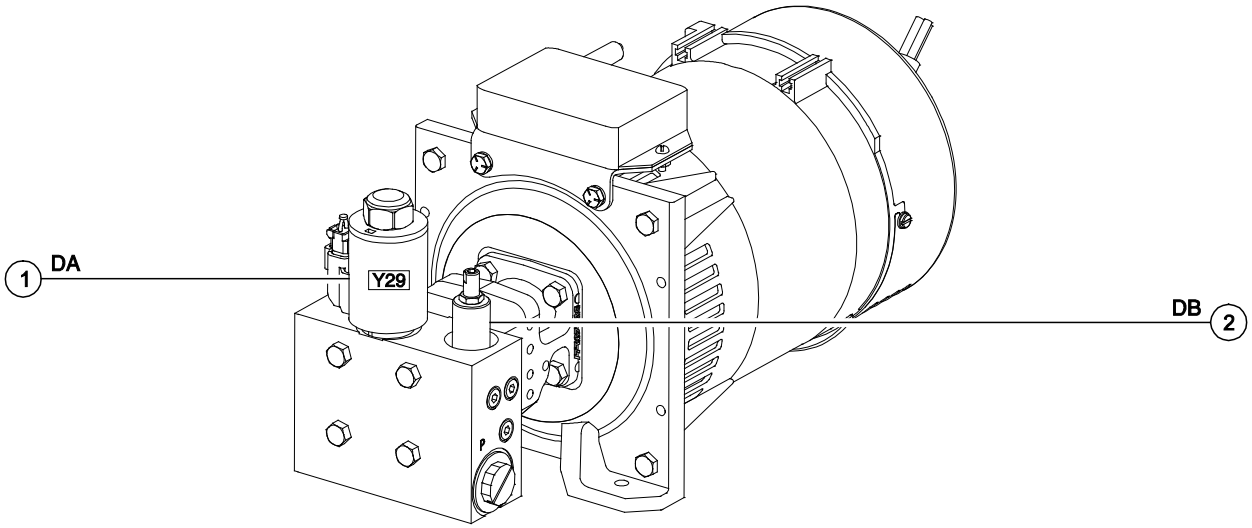


Manifolds

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 electromotive force which operates the solenoid valve. Critical to normal operation is continuity within the coil that provides this force field. 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 / 10°C that your air temperature increases or decreases from 68°F / 20°C.

Description	Specification
Proportional solenoid 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
Solenoid valve, 2 position 2 way 12V DC with diode (schematic item CA, CB)	9Ω

Manifolds

How to Test a Coil Diode

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

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

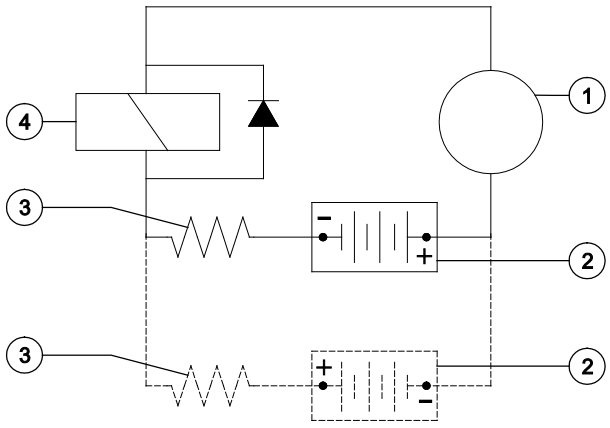
1 Test the coil for resistance. Refer to Repair Procedure, *How to Test a Coil*.

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

Resistor 10Ω

Genie part number 27287

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



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

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

3 Set a multimeter to read DC current.

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

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

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

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

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

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

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 firm, level surface with the machine in the stowed position.

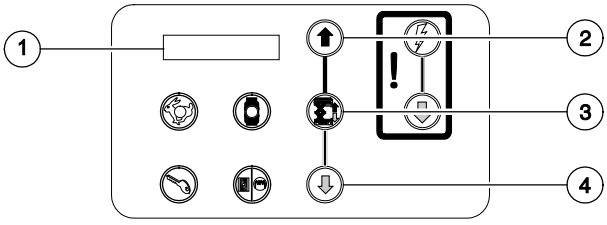
1 Pull out the red Emergency stop button to the on position at the platform controls.

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

3 Turn the key switch to ground controls.

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.



1 diagnostic display
2 blue platform up button
3 lift function enable button
4 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 Fault Codes Section.

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

Fuel and Hydraulic Tanks

10-1
Fuel Tank

How to Remove the Fuel Tank

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

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

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

1 Remove the fuel filler cap from the tank.

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

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

3 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 is to cool, clean and deaerate the hydraulic fluid during operation. It utilizes internal suction strainer for the pump supply line.

How to Remove the Hydraulic Tank

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

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

1 Remove the hydraulic tank cap.

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

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

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

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

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

6 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 (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

1 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 nuts. 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 nuts. 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 to a lifting jack.

7 **Left side yoke**: Remove the tie rod rue ring and clevis pin from the yoke and set aside.

Right side yoke: Remove the steer cylinder rue ring and clevis pin from the yoke and set aside.

8 **Left side yoke**: Remove the retaining fastener from the lower yoke king pin.

Right side yoke: Remove the tie rod rue ring and clevis pin from the yoke and set aside.

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

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

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

12 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 to the lifting jack when it is removed from the machine.

How to Remove a Drive Motor

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

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

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

1 Refer to Repair Procedure, *How to Remove the Yoke 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 (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

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

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

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

3 Remove the steer cylinder from the machine.

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 (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

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

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

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

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

4 Remove the pivot pin retaining fasteners.

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

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

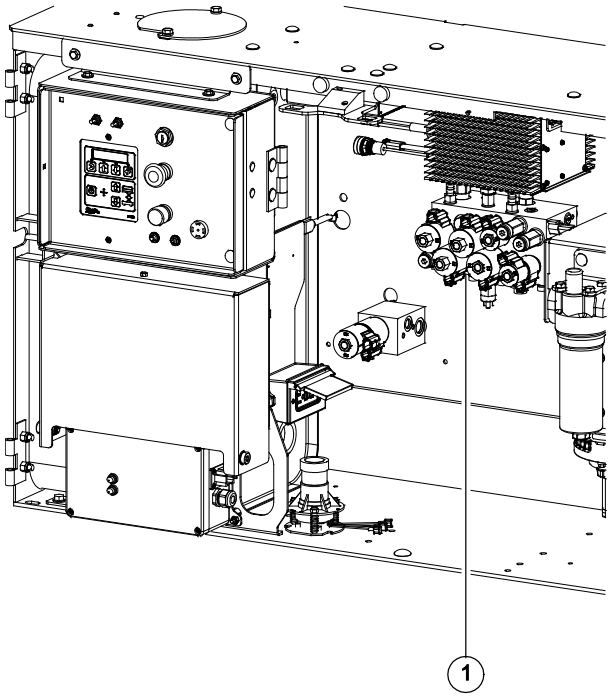
6 Remove the oscillate cylinder from the machine.

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.



1 function manifold

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.

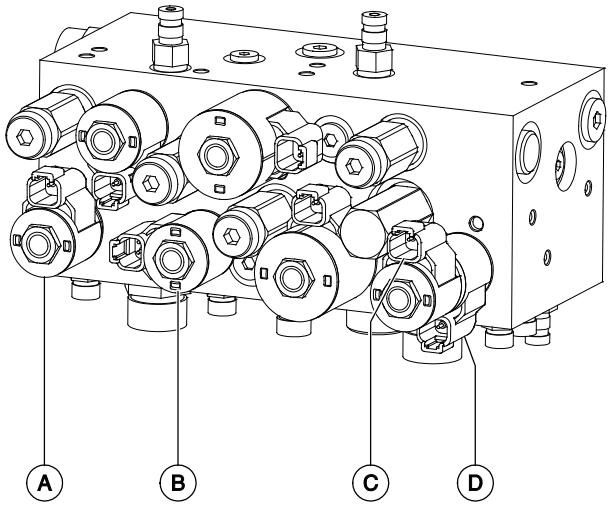


illustration 2

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

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

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

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

11-6 Oscillating Axle

How the Oscillating Axle Functions

When driving the GS-69 with the platform in the stowed position, the oscillating axle function ensures that all four wheels maintain solid contact with the ground, delivering the maximum traction available.

When driving the GS-69 with the platform raised above the down limit switch height, the oscillating axle function is limited in that the oscillating cylinders only respond to input from the oscillating axle limit switches, located on the rear axle.

Oscillate Stowed Limit Switches LS6 and LS6B

When the platform is stowed, limit switches LS6 & LS6B send 12V input power to the ECM (U5) , connector J2-A2 and relay CR9 terminal 30. 12V input power is cut to ECM (U5) , connector J2-A1.

When the platform is raised above the down limit switches, LS6 & LS6B cut power to ECM (U5), connector J2-A2 and CR9 terminal 30. 12V input power is sent to ECM (U5), connector J2-A1.

Oscillate Stowed Relays CR9 and CR10

When stowed on a flat level surface and the drive function is enabled, the ECM sends 12V input power to relay CR9-86 & CR10-30 which energies the oscillate float valve Y95 allowing the oscillate cylinders to float.

Oscillate Limit Switches LSALOS, LSALOO

When elevated and driving if load is removed from the left rear wheel, LSALOS changes state interrupting power to the ECM (U5), connector J2-A8 and sends 12V input power to the right oscillate valve Y94. 12V input power is sent to CR10-86 cutting power to the oscillate float valve Y95.

LSALOO opens changing the input voltage to TB39 from 1.38V to 2.5V.

Oscillate Limit Switches LSAROS, LSAROO

When elevated and driving if load is removed from the right rear wheel, LSALOS changes state interrupting power to the ECM (U5), connector J2-A7 and sends 12V input power to the left oscillate valve Y93. 12V input power is sent to CR10-86 cutting power to the oscillate float valve Y95.

LSAROO opens changing the input voltage to TB39 from 1.38V to 1.91V.

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.

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.

12-2
Drive Hub

How to Remove a Drive Hub

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

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

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

1 Remove the 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 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.

⚠WARNING Crushing hazard. The drive hub could become unbalanced and fall if not properly supported by an overhead crane or 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.

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 (if equipped) on the fitting and/or hose end must be replaced. All connections must be torqued to specification during installation. Refer to Specifications, *Hydraulic Hose and Fitting Torque Specifications.*

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

2 Remove the outrigger hose cover.

3 Disconnect the outrigger limit switch and cylinder valve connectors.

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

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

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

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

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

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

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

14-1
Platform Overload System (if equipped)

How to Calibrate the Platform Overload System (if equipped)

Machines with platform overload systems, proper calibration is essential to safe machine operation. An improperly calibrated platform overload system could result in the system failing to sense an overloaded platform. The stability of the machine is compromised and it could tip over.

Note: For troubleshooting information refer to Repair Procedure, *Troubleshooting the Platform Overload System*.

1 **Models with outriggers:** Deploy the outriggers and level the machine.

2 Apply a thin layer of dry film lubricant to the area of the chassis where the scissor arm wear pads make contact.

3 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 and secure the maximum rated load in the center of the platform deck.

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

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

10 Raise the platform approximately 10 feet / 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.

Platform Overload Components

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 ground controls red Emergency Stop button to the off position.

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. Proceed to step 17.

⊠ Result: 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 (or adjustment screw) to allow the platform overload system to reset.

Note: Wait a minimum of 3 seconds between each quarter turn of the nut (or adjustment screw) to allow the platform overload system to reset.

17 Remove the supporting device from under the platform.

18 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 and rotate 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	1500 lb 680 kg
GS-3369	1000 lb 454 kg
GS-4069	800 lb 363 kg

2 Raise the platform to approximately 13 ft / 4 m.

3 Rotate the safety arm away from the machine and let it hang down.

4 Raise the platform until it activates the maximum height limit switch.

⊙ Result: The platform should stop raising and the alarm does not sound. Proceed to step 7.

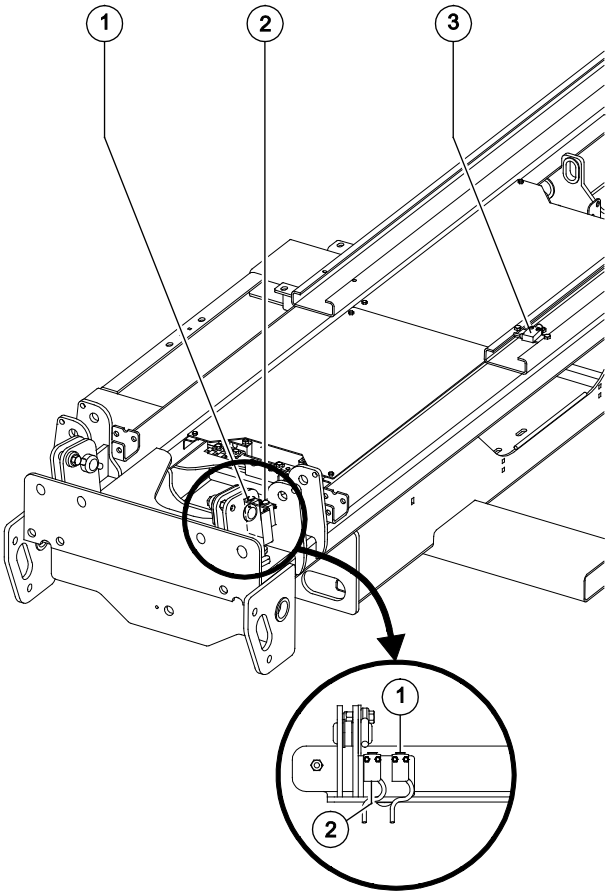
⊠ Result: The platform continues to raise OR the alarm sounds. Proceed to step 5.

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

6 Adjust the maximum height limit switch by moving it towards the non-steer end of the machine. Repeat this procedure beginning with step 2.

7 Lower the platform enough to return the safety arm to the stowed position.

8 Lower the platform to the stowed position. Remove the test weight.



Limit switch legend

1 down limit switch
2 load sense interrupt limit switch
3 maximum height limit switch

Platform Overload Components

Platform Overload System Troubleshooting

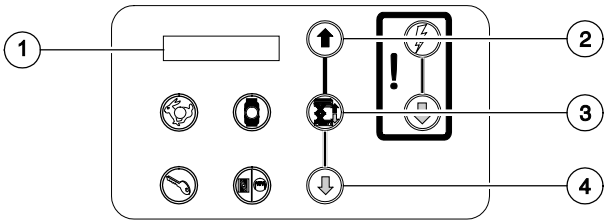
Condition	Possible Cause	Solution
Cannot lift rated load	Relief valve set too low	Increase relief valve pressure
At max. Height with rated load in platform, pressure switch alarm continues to sound	System needs to be reset	Turn off red emergency stop button, wait three seconds and turn machine back on
	Max. Height limit switch out of adjustment or faulty	Lower the up limit switch slightly or replace contacts
	Too much weight in platform	Put correct rated load in platform
	Pressure switch out of adjustment	Turn the pressure switch nut 1/4 turn into the hydraulic line
	Batteries are not fully charged	Charge batteries
	Overload system not adjusted properly	Repeat calibration procedure
	Slider channel not lubricated	Lubricate the slider channel
At down limit with rated load in platform, the pressure switch alarm continues to sound	System needs to be reset	Turn off red emergency stop button, wait three seconds and turn machine back on
	Down limit switch out of adjustment	Raise the down limit switch
	Too much weight in platform	Put correct rated load in platform
	Overload system not adjusted properly	Turn the pressure switch nut 1/4 turn into the hydraulic line or repeat calibration procedure

14-2
Platform Overload Recovery Message (software version B3 and later)

If the ground controls LCD screen displays OVRLD RECOVERY, the emergency lowering system has been used while the platform was overloaded.

Note: This message shall be cleared by a person trained and qualified on the troubleshooting and repair of this machine.

Note: Use the following illustration to identify the description of each control button used in this procedure.



1 LCD screen
2 up button
3 function enable button
4 down button

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

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

⊙ Result: TUNE SPEEDS is showing in the LCD screen.

3 Use the down button to scroll to select options.

4 Press the function enable button.

⊙ Result: DESCENT DELAY is showing in the LCD screen.

5 Use the down button to scroll to overload.

6 Press and hold the function enable button for 5 seconds.

⊙ Result: A screen will appear asking for the overload recovery passcode.

7 Press the buttons in the following sequence: **(down) (down) (up) (enable)**

⊙ Result: The LCD screen displays CLEARED and returns to the OVERLOAD SCREEN.

8 Use the down button to scroll to RETURN TO MAIN MENU.

9 Press the function enable button.

⊙ Result: SELECT OPTIONS is showing in the LCD screen.

10 Push in the red Emergency stop button at the ground controls.

Fault Codes

Observe and Obey:

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

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

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

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

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

Before Troubleshooting:

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

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

☑ Read each appropriate fault code thoroughly. Attempting short cuts may produce hazardous conditions.

☑ Be aware of the following hazards and follow generally accepted safe workshop practices.

⚠ DANGER Crushing hazard. When testing or replacing any hydraulic component, always support the structure and secure it from movement

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

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

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

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

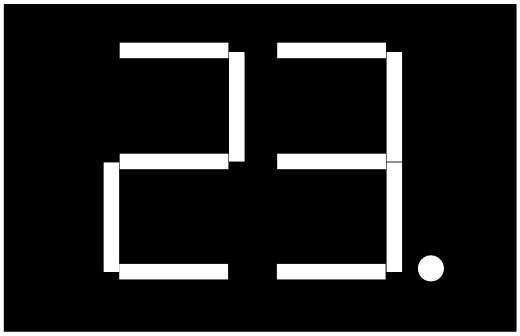
Note: Two persons will be required to safely perform some troubleshooting procedures.

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.

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 Codes

ID	System Ready	LED	Condition	Result	Solution
1	INTERNAL ECU FAULT	Red	Internal ECM error.	System shutdown.	Replace ECM.
2	PLATFORM ECU FAULT	Red	Platform/ECM communication error.	System shutdown.	Troubleshoot control cable OR troubleshoot platform controls.
20	CHASSIS START SW FAULT	Red	Engine start button fault at ground controls.	Engine will not start.	Replace ECM.
21	CHASSIS CHOKE SW FAULT	Red	Starting aid button fault at ground controls.	Starting aid disabled.	Replace ECM.
22	CHASSIS UP SW FAULT	Red	Up switch fault at ground controls.	Platform up function inhibited.	Replace ECM.
23	CHASSIS LIFT SW FAULT	Red	Platform up/down enable button fault at ground controls.	Platform up/down functions inhibited.	Replace ECM.
24	DOWN SW FAULT	Red	Down switch fault at ground controls.	Platform down function inhibited.	Replace ECM.
25	LEFT TURN SW FAULT	Red	Left turn switch fault.	Malfunctioning steer left microswitch.	Troubleshoot steer left microswitch.
26	RIGHT TURN SW FAULT	Red	Right turn switch fault.	Malfunctioning steer right microswitch.	Troubleshoot steer right microswitch.
27	DRIVE ENABLE SW FLT	Red	Function enable switch on joystick is activated when machine is turned on.	Machine functions disabled.	Release function enable switch on joystick before power up OR replace joystick.
28	OFF NEUTRAL DRIVE JOYSTICK	Red	Drive joystick off neutral when machine is turned on.	Machine functions disabled.	Release joystick before power up OR replace joystick.
29	PLATFORM LIFT SW FAULT	Red	Lift enable button fault at the platform controls.	Platform up/down functions inhibited.	Troubleshoot button OR replace printed circuit board at platform controls.
30	OFF NEUTRAL LIFT JOYSTICK	Red	Up/down switch off neutral.	Platform up/down functions inhibited.	Replace up/down switch at platform controls.
31	PLATFORM CHOKE SW FAULT	Red	Starting aid fault at the platform controls.	Starting aid disabled.	Troubleshoot button OR replace printed circuit board at platform controls.

Fault Codes

ID	System Ready	LED	Condition	Result	Solution
32	PLATFORM START SW FAULT	Red	Engine start button fault at platform controls.	Engine will not start.	Troubleshoot button OR replace printed circuit board at platform controls.
33	LEFT FRONT OUTRIG SW FLT	Red	Left front outrigger enable button fault at platform controls.	Outriggers disabled.	Troubleshoot button OR replace printed circuit board at platform controls.
34	RIGHT FRONT OUTRIG SW FLT	Red	Right front outrigger enable button fault at platform controls.	Outriggers disabled.	Troubleshoot button OR replace printed circuit board at platform controls.
35	LEFT REAR OUTRIG SW FLT	Red	Left rear outrigger enable button fault at platform controls.	Outriggers disabled.	Troubleshoot button OR replace printed circuit board at platform controls.
36	RIGHT REAR OUTRIG SW FLT	Red	Right rear outrigger enable button fault at platform controls.	Outriggers disabled.	Troubleshoot button OR replace printed circuit board at platform controls.
37	AUTO LEVEL SWITCH FAULT	Red	Outrigger auto level enable button fault at platform controls.	Outriggers disabled.	Troubleshoot button OR replace printed circuit board at platform controls.
3812	OSCILLATE LIMIT SWITCHES	Red	Value to high. Voltage above 3000 mV.	Elevated drive and platform up disabled.	Troubleshoot oscillate limit switches.
3815	OSCILLATE LIMIT SWITCHES	Red	Value to low. Voltage below 1000 mV.	Elevated drive and platform up disabled.	Troubleshoot oscillate limit switches.
3819	OSCILLATE LIMIT SWITCHES	Red	Voltage out of range.	Elevated drive and platform up disabled.	Troubleshoot oscillate limit switches.
3821	OSCILLATE LIMIT SWITCHES	Red	Voltage inconsistent.	Elevated drive and platform up disabled.	Troubleshoot oscillate limit switches.
4021	OSCILLATE OUTPUT	Red	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.
4022	OSCILLATE OUTPUT	Red	Oscillate valve output is active for more than 4 seconds.	Elevated drive and platform up disabled.	Troubleshoot oscillate limit switches or replace ECU.
49	DRIVE COIL 1 FAULT	Red	Drive coil 1 (Y1) fault.	High speed drive function will not operate.	Troubleshoot coil OR wiring.

Fault Codes

ID	System Ready	LED	Condition	Result	Solution
50	DRIVE COIL 2 FAULT	Red	Drive coil 2 (Y1A) fault.	High speed drive function will not operate.	Troubleshoot coil OR wiring.
51	DRIVE COIL 3 FAULT	Red	Drive coil 3 (Y1B) fault.	High speed drive function will not operate.	Troubleshoot coil OR wiring.
52	FUNC PROP COIL FAULT	Red	Proportional coil (Y9) fault.	Lift and outrigger functions are disabled.	Troubleshoot coil OR wiring.
54	UP COIL FAULT	Red	Up coil (Y8) fault.	Platform up function inhibited.	Troubleshoot coil OR wiring.
55	DOWN COIL FAULT	Red	Down coil (Y7) fault.	Platform down function inhibited.	Troubleshoot coil OR wiring.
56	RIGHT TURN COIL FAULT	Red	Right turn coil (Y3) fault.	Steer right function inhibited.	Troubleshoot coil OR wiring.
57	LEFT TURN COIL FAULT	Red	Left turn coil (Y4) fault.	Steer left function inhibited.	Troubleshoot coil OR wiring.
58	BRAKE COIL FAULT	Red	Brake release coil (Y2) fault.	Brakes will not release.	Troubleshoot coil OR wiring.
60	FORWARD 1 COIL FAULT	Red	Forward 1 coil (Y6) fault.	Drives slow or not at all when elevated.	Troubleshoot coil OR wiring.
61	REVERSE 1 COIL FAULT	Red	Reverse 1 coil (Y5) fault.	Drives slow or not at all when elevated.	Troubleshoot coil OR wiring.
62	FORWARD 2 COIL FAULT	Red	Forward 2 coil (Y6A) fault.	Drives slow or not at all when elevated.	Troubleshoot coil OR wiring.
63	REVERSE 2 COIL FAULT	Red	Reverse 2 coil (Y5A) fault.	Drives slow or not at all when elevated.	Troubleshoot coil OR wiring.
64	OSCILLATE LEFT COIL	Red	Value to low or Value to high.	Elevated drive and platform up disabled.	Troubleshoot oscillate left valve coil (Y93) or wiring.
65	OSCILLATE RIGHT COIL	Red	Value to low or Value to high.	Elevated drive and platform up disabled.	Troubleshoot oscillate right valve coil (Y94) or wiring.
66	LOW OIL PRESSURE	Red	Low oil pressure.	Engine stops.	Check the engine oil level OR check wiring from the oil pressure switch to ECM OR replace the oil pressure switch.

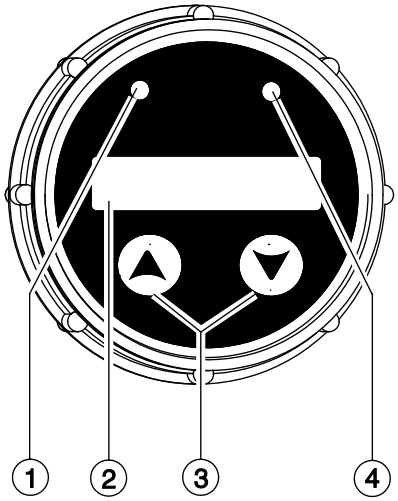
Fault Codes

ID	System Ready	LED	Condition	Result	Solution
67	HIGH COOLANT TEMPERATURE	Red	High coolant temperature.	High engine temperature OR defective engine coolant or oil temperature switch.	Gasoline/LPG models: Check the engine radiator coolant level OR check the wiring from the water temperature switch to ECM OR replace the water temperature switch. Diesel models: Check the engine oil level OR check the wiring from the oil temperature switch to ECM OR replace the oil temperature switch.
68	LOW ECU VOLTAGE	Red	Low ECM voltage.	System shutdown.	Charge battery.
69	LOW ENGINE RPM	Red	Low RPM.	Engine idle RPM too low.	Contact Genie Product Support.
70	HIGH ENGINE RPM	Red	High RPM.	Engine RPM too high.	Contact Genie Product Support.
80	LEFT FRONT OTRG COIL FLT	Red	Left front outrigger coil (Y35) fault.	Left front outrigger function inhibited.	Troubleshoot coil OR wiring.
81	LEFT REAR OTRG COIL FLT	Red	Left rear outrigger coil (Y33) fault.	Left front outrigger function inhibited.	Troubleshoot coil OR wiring.
82	RIGHT FRONT OTRG COIL FLT	Red	Right front outrigger coil (Y36) fault.	Right front outrigger function inhibited.	Troubleshoot coil OR wiring.
83	RIGHT REAR OTRG COIL FLT	Red	Right rear outrigger coil (Y34) fault.	Right rear outrigger function inhibited.	Troubleshoot coil OR wiring.
84	OUTRIGGER EXT COIL FLT	Red	Outrigger extend coil (Y40) fault.	Outrigger extend function disabled.	Troubleshoot coil OR wiring.
85	OUTRIGGER RET COIL FLT	Red	Outrigger retract coil (Y39) fault.	Outrigger retract function disabled.	Troubleshoot coil OR wiring.
86	OUTRIGGER SLOW COIL FLT	Red	Outrigger slowdown coil (Y44) fault.	Outrigger slow extend function disabled.	Troubleshoot coil OR wiring.
90	2 SPEED COIL FAULT	Red	2 speed coil (Y1) fault	High torque drive function disabled.	Troubleshoot coil OR wiring.
92	DRIVE FWD PROP COIL FAULT	Red	Drive pump forward proportional coil (Y51) fault	Drive forward function disabled.	Troubleshoot coil OR wiring.
93	DRIVE REV PROP COIL FAULT	Red	Drive pump reverse proportional coil (Y51) fault	Drive reverse function disabled.	Troubleshoot coil OR wiring.
94	MACHINE TYPE FAULT	Red	Wrong machine type selected	Machine functions disabled.	Correct selection.
102	DOWN LS CROSS-CHECK FLT	Red	Down limit switch fault	All functions inhibited except platform down.	Troubleshoot down limit switches and wiring.

Fault Codes

How to Retrieve Engine Fault Codes - GM .998L Models

The emissions control system utilizes a diagnostic display located on the ground control box. A fault condition will be displayed for one of the following: The fault caused the engine to shut down or the fault is related to the exhaust gas oxygen (EGO) sensors. In the event the diagnostic trouble code (DTC) is related to either an engine shutdown fault or an oxygen sensor fault, the following statement applies: If the machine is not serviced by a technician and the condition causing the DTC no longer exists, the DTC will no longer display after the fourth start cycle. In the event the DTC is not related to an engine shutdown or oxygen sensor fault, the DTC will no longer be shown. Use the Up and Down arrows to scroll through the list if there is more than one stored fault. To return to the main menu, press the Up and Down arrows simultaneously and release.



1 alarm amber light
2 display
3 up / down navigation arrows
4 shutdown red light

GM Fault Code Chart

Description	DTC Set 2 SPN-2/FMI-2	Description	DTC Set 2 SPN-2/FMI-2
DTC 11: Intake cam / distributor position error	520800 / 7	DTC 221: TPS1-2 higher than expected	653/6
DTC 16: Crank and/or cam no sync during start	636 / 8	DTC 222: TPS2 voltage low	520251 / 4
DTC 24: Exhaust cam position error	520801 / 7	DTC 223: TPS2 voltage high	520251 / 3
DTC 87 Fuel pressure lower than expected	94 / 1	DTC 234: Boost control overboost failure	1692 / 0
DTC 88 Fuel pressure higher than expected	94 / 0	DTC 236: TIP active	1692 / 2
DTC 91: FP low voltage	94 / 4	DTC 237: TIP low voltage	1127 / 4
DTC 92: FP high voltage	94 / 3	DTC 238: TIP high voltage	1127 / 3
DTC 107: MAP voltage low	106 / 4	DTC 261: Injector 1 open or short to ground	651 / 5
DTC 108: MAP pressure high	106 / 16	DTC 262: Injector 1 coil shorted	651 / 6
DTC 111: IAT higher than expected stage 1	105 / 15	DTC 264: Injector 2 open or short to ground	652 / 5
DTC 112: IAT voltage low	105 / 4	DTC 265: Injector 2 coil shorted	652 / 6
DTC 113: IAT voltage high	105 / 3	DTC 267: Injector 3 open or short to ground	653 / 5
DTC 116: ECT higher than expected stage 1	110 / 15	DTC 268: Injector 3 coil shorted	653/6
DTC 117: ECT voltage low	110 / 4	DTC 270: Injector 4 open or short to ground	654 / 5
DTC 118: ECT voltage high	110 / 3	DTC 271: Injector 4 coil shorted	654 / 6
DTC 121: TPS1-2 lower than expected	51 / 1	DTC 273: Injector 5 open or short to ground	655 / 5
DTC 122: TPS1 voltage low	51 / 4	DTC 274: Injector 5 coil shorted	655 / 6
DTC 123: TPS1 voltage high	51 / 3	DTC 276: Injector 6 open or short to ground	656 / 5
DTC 127: IAT higher than expected stage 2	105 / 0	DTC 277: Injector 6 coil shorted	656 / 6
DTC 129: BP pressure low	108 / 1	DTC 279: Injector 7 open or short to ground	657 / 5
DTC 134: EGO1 open / lazy	724 / 10	DTC 280: Injector 7 coil shorted	657 / 6
DTC 140: EGO3 open / lazy	520209 / 10	DTC 282: Injector 8 open or short to ground	658 / 5
DTC 154: EGO2 open / lazy	520208 / 10	DTC 283: Injector 8 coil shorted	658 / 6
DTC 160: EGO4 open / lazy	520210 / 10	DTC 285: Injector 9 open or short to ground	659 / 5
DTC 171: Adaptive-learn gasoline bank1 high	520200 / 0	DTC 308: Cylinder 8 emissions/catalyst damaging misfire	1330 / 31
DTC 172: Adaptive-learn gasoline bank1 low	520200 / 1	DTC 326: Knock1 excessive or erratic signal	731 / 2
DTC 174: Adaptive-learn gasoline bank2 high	520201 / 0	DTC 327: Knock1 sensor open or not present	731 / 4
DTC 175: Adaptive-learn gasoline bank2 low	520201 / 1	DTC 331: Knock2 excessive or erratic signal	520241 / 2
DTC 182: FT low voltage	174 / 4	DTC 332: Knock2 sensor open or not present	520241 / 4
DTC 183: FT high voltage	174 / 3	DTC 336: CRANK input signal noise	636 / 2
DTC 187: Gaseous fuel temp sender low voltage	520240 / 4	DTC 337: Crank signal loss	636 / 4
DTC 188: Gaseous fuel temp sendr high voltage	520240 / 3	DTC 341: CAM input signal noise	723 / 2
DTC 217: ECT higher than expected stage 2	110 / 0	DTC 342: Loss of CAM input signal	723 / 4
DTC 219: RPM higher than max allowed govern speed	515 / 15	DTC 359: Fuel run-out longer than expected	1239 / 7

Fault Codes

GM Fault Code Chart

Description	DTC Set 2 SPN-2 / FMI-2	Description	DTC Set 2 SPN-2 / FMI-2
DTC 420: Catalyst inactive on gasoline (Bank 1)	520211 / 10	DTC 1111: RPM above fuel rev limit level	515 / 16
DTC 430: Catalyst inactive on gasoline (Bank 2)	520212 / 10	DTC 1112: RPM above spark rev limit level	515 / 0
DTC 502: Roadspeed input loss of signal	84 / 1	DTC 1121: FPP1/2 simultaneous voltages out-of-range	91 / 31
DTC 508: IAC ground short	520252 / 6	DTC 1122: FPP1/2 do not match each other or IVS	520250 / 31
DTC 509: IAC coil open/short	520252 / 5	DTC 1131: WGP voltage high	1192 / 3
DTC 520: Oil pressure sndr low prssure stage 1	100 / 18	DTC 1132: WGP voltage low	1192 / 4
DTC 521: Oil pressure sender high pressure	100/ 0	DTC 1151: Closed-loop LPG high	520206 / 0
DTC 522: Oil pressure sender low voltage	651 / 5	DTC 1152: Closed-loop LPG low	520206 / 1
DTC 523: Oil pressure sender high voltage	100 / 3	DTC 1153: Closed-loop NG high	520207 / 0
DTC 524: Oil pressure low	100 / 1	DTC 1154: Closed-loop NG low	520207 / 1
DTC 562: Vbat voltage low	168 / 17	DTC 1155: Closed-loop gasoline bank1 high	520204 / 0
DTC 563: Vbat voltage high	168 / 15	DTC 1156: Closed-loop gasoline bank1 low	520204 /
DTC 601: Microprocessor failure - FLASH	628 / 13	DTC 1157: Closed-loop gasoline bank2 high	520205 / 0
DTC 604: Microprocessor failure - RAM	630 / 12	DTC 1158: Closed-loop gasoline bank2 low	520205 / 1
DTC 606: Microprocessor failure - COP	629 / 31	DTC 1161: Adaptive-learn LPG high	520202 / 0
DTC 615: Start relay coil open	1321 / 5	DTC 1162: Adaptive-learn LPG low	520202 / 1
DTC 616: Start relay ground short	1321 / 4	DTC 1163: Adaptive-learn NG high	520203 / 0
DTC 617: Start relay coil short to power	1321 / 3	DTC 1164: Adaptive-learn NG low	520203 / 1
DTC 627: Fuel pump relay coil open	1348 / 5	DTC 1165: Catalyst inactive on LPG	520213 / 10
DTC 628: Fuel-pump high-side open or short to ground	1347 / 5	DTC 1166: Catalyst inactive on NG	520214 / 0
DTC 628: Fuel pump relay control ground short	1348 / 4	DTC 1171: MegaJector delivery pressure higher than expected	520260 / 0
DTC 629: Fuel-pump high-side short to power	1347 / 6	DTC 1172: MegaJector delivery pressure lower than expected	520260 / 1
DTC 629: Fuel pump relay coil short to power	1348 / 3	DTC 1173: MegaJector comm lost	520260 / 31
DTC 642: Sensor supply voltage 1 low	1079 / 4	DTC 1174: MegaJector voltage supply high	520260 / 3
DTC 643: Sensor supply voltage 1 high	1079 / 3	DTC 1175: MegaJector voltage supply low	520260 / 4
DTC 650: MIL open	1213 / 5	DTC 1176: MegaJector internal actuator fault detection	520260 / 12
DTC 652: Sensor supply voltage 2 low	1080 / 4	DTC 1177: MegaJector internal circuitry fault detection	520260 / 12
DTC 653: Sensor supply voltage 2 high	1080 / 3	DTC 1178: MegaJector internal comm fault detection	520260 / 12
DTC 685: Power relay coil open	1485 / 5	DTC 1182: Fuel impurity level high	520401 / 0
DTC 686: Power relay ground short	1485 / 4	DTC 1183: MegaJector autozero / lockoff failure	520803 / 31
DTC 687: Power relay coil short to power	1485 / 3	DTC 1311: Cylinder 1 misfire detected	1323 / 11
DTC 916: Shift actuator feedback out-of-range	520226 / 3	DTC 1312: Cylinder 2 misfire detected	1324 / 11
DTC 919: Shift unable to reach desired gear	520226 / 7	DTC 1313: Cylinder 3 misfire detected	1325 / 11
DTC 920: Shift actuator or drive circuit failed	520226 / 31	DTC 1314: Cylinder 4 misfire detected	1326 / 11

GM Fault Code Chart

Description	DTC Set 2 SPN-2 / FMI-2	Description	DTC Set 2 SPN-2 / FMI-2
DTC 1315: Cylinder 5 misfire detected	1327 / 11	DTC 1543: AUX analog Pull-Up/Down 2 high voltage	520220 / 3
DTC 1316: Cylinder 6 misfire detected	1328 / 11	DTC 1544: AUX analog Pull-Up/Down 2 low voltage	520220 / 4
DTC 1317: Cylinder 7 misfire detected	1329 / 11	DTC 1545: AUX analog Pull-Up/Down 3 high voltage	520221 / 3
DTC 1318: Cylinder 8 misfire detected	1330 / 11	DTC 1546: AUX analog Pull-Up/Down 3 low voltage	520221 / 4
DTC 1411: EMWT1 voltage high	441 / 3	DTC 1547: AUX analog Pull-Up/Down 4 high voltage	713 / 3
DTC 1412: EMWT2 voltage high	442 / 3	DTC 1548: AUX analog Pull-Up/Down 4 low voltage	713 / 4
DTC 1413: EMWT1 voltage low	441 / 4	DTC 1551: AUX digital 1 high voltage	520222 / 3
DTC 1414: EMWT2 voltage low	442 / 4	DTC 1552: AUX digital 1 low voltage	520222 / 4
DTC 1415: EMWT1 higher than expected stage 1	441 / 15	DTC 1553: AUX digital 2 high voltage	520223 / 3
DTC 1416: EMWT2 higher than expected stage 1	442 / 15	DTC 1554: AUX digital 2 low voltage	520223 / 4
DTC 1417: EMWT1 higher than expected stage 2	441 / 0	DTC 1555: AUX digital 3 high voltage	520224 / 3
DTC 1418: EMWT2 higher than expected stage 2	442 / 0	DTC 1555: Water Intrusion Detection	520224 / 3
DTC 1419: ERWT1 voltage high	443 / 3	DTC 1556: AUX digital 3 low voltage	520224 / 4
DTC 1420: ERWT2 voltage high	444 / 3	DTC 1561: AUX analog Pull-Down 2 high voltage	0 / 3
DTC 1421: ERWT1 voltage low	443 / 4	DTC 1561: AUX analog Pull-Down 3 high voltage	0 / 4
DTC 1422: ERWT2 voltage low	444 / 4	DTC 1561: AUX analog Pull-Down 2 low voltage	0 / 4
DTC 1423: ERWT1 higher than expected stage 1	443 / 15	DTC 1611: Sensor supply voltage 1 and 2 out-of-range	1079 / 31
DTC 1424: ERWT2 higher than expected stage 1	444 / 15	DTC 1612: Microprocessor failure - RTI 1	629 / 31
DTC 1425: ERWT1 higher than expected stage 2	443 / 0	DTC 1613: Microprocessor failure - RTI 2	629 / 31
DTC 1426: ERWT2 higher than expected stage 2	444 / 0	DTC 1614: Microprocessor failure - RTI 3	629 / 31
DTC 1511: AUX analog Pull-Up 1 high voltage	520216 / 3	DTC 1615: Microprocessor failure - A/D	629 / 31
DTC 1511: AUX analog Pull-Up 1 high voltage	520216 / 3	DTC 1616: Microprocessor failure - Interrupt	629 / 31
DTC 1512: AUX analog Pull-Up 1 low voltage	520216 / 4	DTC 1621: RS-485 Rx inactive	0 / 31
DTC 1513: AUX analog Pull-Up 2 high voltage	520217 / 3	DTC 1622: RS-485 Rx noise	0 / 31
DTC 1514: AUX analog Pull-Up 2 low voltage	520217 / 4	DTC 1623: RS-485 Rx bad packet format	0 / 31
DTC 1515: AUX analog Pull-Down 1 high voltage	520215 / 3	DTC 1624: RS-485 remote shutdown request	0 / 31
DTC 1516: AUX analog Pull-Down 1 low voltagee	520215 / 4	DTC 1625: J1939 shutdown request	1384 / 31
DTC 1517: AUX analog Pull-Up 3 high voltage	520218 / 3	DTC 1626: CAN-J1939 Tx fault	639 / 12
DTC 1518: AUX analog Pull-Up 3 low voltage	520218 / 4	DTC 1627: CAN-J1939 Rx fault	639 / 12
DTC 1521: CHT higher than expected stage 1	110 / 16	DTC 1628: J1939 CAN address / engine-number conflict	639 /13
DTC 1522: CHT higher than expected stage 2	110 / 0	DTC 1629: J1939 TSC1 message receipt loss	639 / 9
DTC 1531: Gov1/2/3 interlock failure	520270 / 31	DTC 1630: J1939 ETC message receipt loss	91 / 2

Fault Codes

GM Fault Code Chart

Description	DTC Set 2 SPN-2 / FMI-2	Description	DTC Set 2 SPN-2 / FMI-2
DTC 1541: AUX analog Pull-Up/Down 1 high voltage	520219 / 3	DTC 1632: PWM1-Gauge1 short to power	697 / 6
DTC 1542: AUX analog Pull-Up/Down 1 low voltage	520219 / 4	DTC 1633: PWM2-Gauge2 open / ground short	698 / 5
DTC 1634: PWM2-Gauge2 short to power	698 / 6	DTC 2126: FPP1-2 higher than expected	91 / 16
DTC 1635: PWM3-Gauge3 open / ground short	699 / 6	DTC 2127: FPP2 voltage low	29 / 4
DTC 1636: PWM3-Gauge3 short to power	700 / 5	DTC 2128: FPP2 voltage high	29 / 3
DTC 1637: PWM4 open / ground short	700 / 6	DTC 2130: IVS stuck at-idle, FPP1/2 match	558 / 5
DTC 1638: PWM4 short to power	520230 / 5	DTC 2131: IVS stuck off-idle, FPP1/2 match	558 / 6
DTC 1639: PWM5 open / ground short	520230 / 5	DTC 2135: TPS1/2 simultaneous voltages out-of-range	51 / 31
DTC 1640: PWM5 short to power	520230 / 6	DTC 2139: FPP1 lower than IVS	91 / 1
DTC 1641: Buzzer control ground short	920 / 4	DTC 2140: FPP2 lower than IVS	29 / 1
DTC 1642: Buzzer open	920 / 5	DTC 2229: BP pressure high	108 / 0
DTC 1643: Buzzer control short to power	920 / 3	DTC 2300: Spark coil 1 primary open or short to ground	1268 / 5
DTC 1644: MIL control ground short	1213 / 4	DTC 2301: Spark coil 1 primary shorted	1268 / 6
DTC 1645: MIL control short to power	1213 / 3	DTC 2303: Spark coil 2 primary open or short to ground	1269 / 5
DTC 1651: J1939 ETC message receipt loss while in-gear	91 / 9	DTC 2304: Spark coil 2 primary shorted	1269 / 6
DTC 1661: PWM6 open / ground short	925 / 5	DTC 2306: Spark coil 3 primary open or short to ground	1270 / 5
DTC 1662: PWM6 short to power	925 / 3	DTC 2307: Spark coil 3 primary shorted	1270 / 6
DTC 1663: PWM7 open / ground short	926 / 5	DTC 2309: Spark coil 4 primary open or short to ground	1271 / 5
DTC 1664: PWM7 short to power	926 / 3	DTC 2310: Spark coil 4 primary shorted	1271 / 6
DTC 1665: PWM8 open / ground short	2646 / 5	DTC 2312: Spark coil 5 primary open or short to ground	1272 / 5
DTC 1666: PWM8 short to power	2646 / 3	DTC 2313: Spark coil 5 primary shorted	1272 / 6
DTC 1669: PWM9 open / ground short	2647 / 5	DTC 2315: Spark coil 6 primary open or short to ground	1273 / 5
DTC 1670: PWM9 short to power	2647 / 3	DTC 2316: Spark coil 6 primary shorted	1273 / 6
DTC 2111: Unable to reach lower TPS	51 / 7	DTC 2318: Spark coil 7 primary open or short to ground	1274 / 5
DTC 2112: Unable to reach higher TPS	51 / 7	DTC 2319: Spark coil 7 primary shorted	1274 / 6
DTC 2115: FPP1 higher than IVS	91 / 0	DTC 2321: Spark coil 8 primary open or short to ground	1275 / 5
DTC 2116: FPP2 higher than IVS	29 / 0	DTC 2322: Spark coil 8 primary shorted	1275 / 6
DTC 2120: FPP1 invalid voltage and FPP2 disagrees with IVS	520250 / 31	DTC 2324: Spark coil 9 primary open or short to ground	1276 / 5
DTC 2121: FPP1-2 lower than expected	91 / 18	DTC 2325: Spark coil 9 primary shorted	1276 / 6
DTC 2122: FPP1 voltage high	91 / 3	DTC 2327: Spark coil 10 primary open or short to ground	1277 / 5

GM Fault Code Chart

Description	DTC Set 2 SPN-2 / FMI-2	Description	DTC Set 2 SPN-2 / FMI-2
DTC 2123: FPP1 voltage low	91 / 4	DTC 2328: Spark coil 10 primary shorted	1277 / 6
DTC 2125: FPP2 invalid voltage and FPP1 disagrees with IVS	520250 / 31	DTC 2428: EGT temperature high	173 / 0
DTC 2618: Tach output ground short	645 / 4	DTC 8909: UEGO pump voltage shorted low	3218 / 3
DTC 2619: Tach output short to power	645 / 3	DTC 8910: UEGO sense cell voltage high	3218 / 3
DTC 8901: UEGO microprocessor internal fault	3221 / 1	DTC 8911: UEGO sense cell voltage low	3218 / 4
DTC 8902: UEGO heater supply high voltage	3222 / 3	DTC 8912: UEGO pump voltage at high drive limi	3217 / 3
DTC 8903: UEGO heater supply low voltage	3222 / 4	DTC 8913: UEGO pump voltage at low drive limit	3217 / 3
DTC 8904: UEGO cal resistor voltage high	3221 / 3	DTC 8914: UEGO sense cell slow to warm up	3225 / 4
DTC 8905: UEGO cal resistor voltage low	3221 / 4	DTC 8915: UEGO pump cell slow to warm up	3222 / 4
DTC 8906: UEGO return voltage shorted high	3056 / 3	DTC 8916: UEGO sense cell impedance high	3225 / 10
DTC 8907: UEGO return voltage shorted low	3056 / 4	DTC 8917: UEGO pump cell impedance high	3225 / 0
DTC 8908: UEGO pump voltage shorted high	3218 / 3	DTC 8918: UEGO pump cell impedance low	3225 / 1

Schematics

Observe and Obey:

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

Before Troubleshooting:

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

About This Section

There are two groups of schematics in this section.

Electrical Schematics

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

Hydraulic Schematics

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

Electrical Component and Wire Color Legends

Item	Description
B	**Battery**
BN	Button
B1	Engine start
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)

Item	Description
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

Electrical Component and Wire Color Legends

Item	Description
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
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)

Item	Description
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)

Electrical Component and Wire Color Legends

Item	Description
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)
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

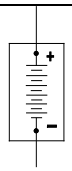
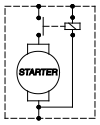
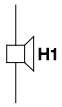
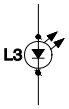
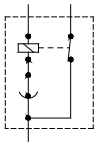
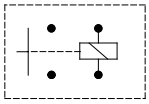
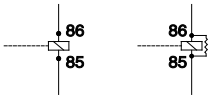
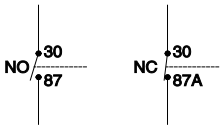
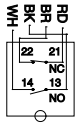
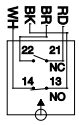
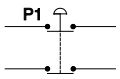
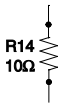
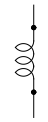
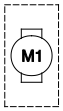
Color	Description
BL	Blue
BK	Black
BR	Brown
GR	Green
OR	Orange
PP	Purple
RD	Red
WH	White
YL	Yellow
BL/RD	Blue/Red
BL/WH	Blue/White
BK/RD	Black/Red
OR/WH	Orange/White
RD/BK	Red/Black
RD/WH	Red/White
WH/BL	White Blue
WH/BK	White/Black
WH/RD	White/Red
WH/YL	White/Yellow
YL/BK	Yellow/Black

Hydraulic Component Legend

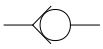
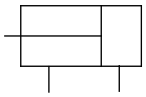
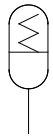
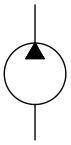
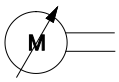
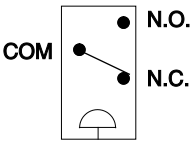
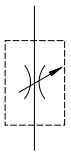
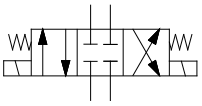
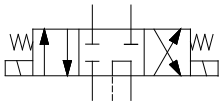
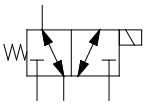
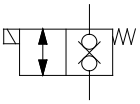
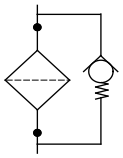
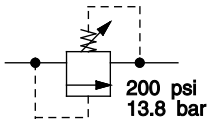
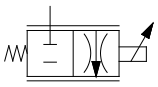
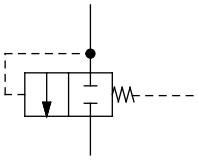
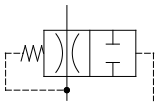
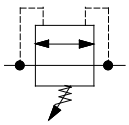
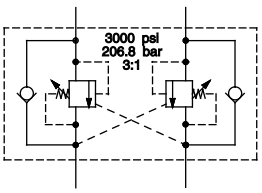
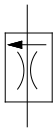
Item	Function
BA	3 position, 4 way directional valve - outrigger cylinders extend/retract
DA	Proportional valve - controls flow to the generator (option)
DB	Relief valve - reduces high pressure in the generator (option)
FA	Flow regulator valve - controls flow to oscillate circuit
FB	2 position, 2 way 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

Item	Function
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

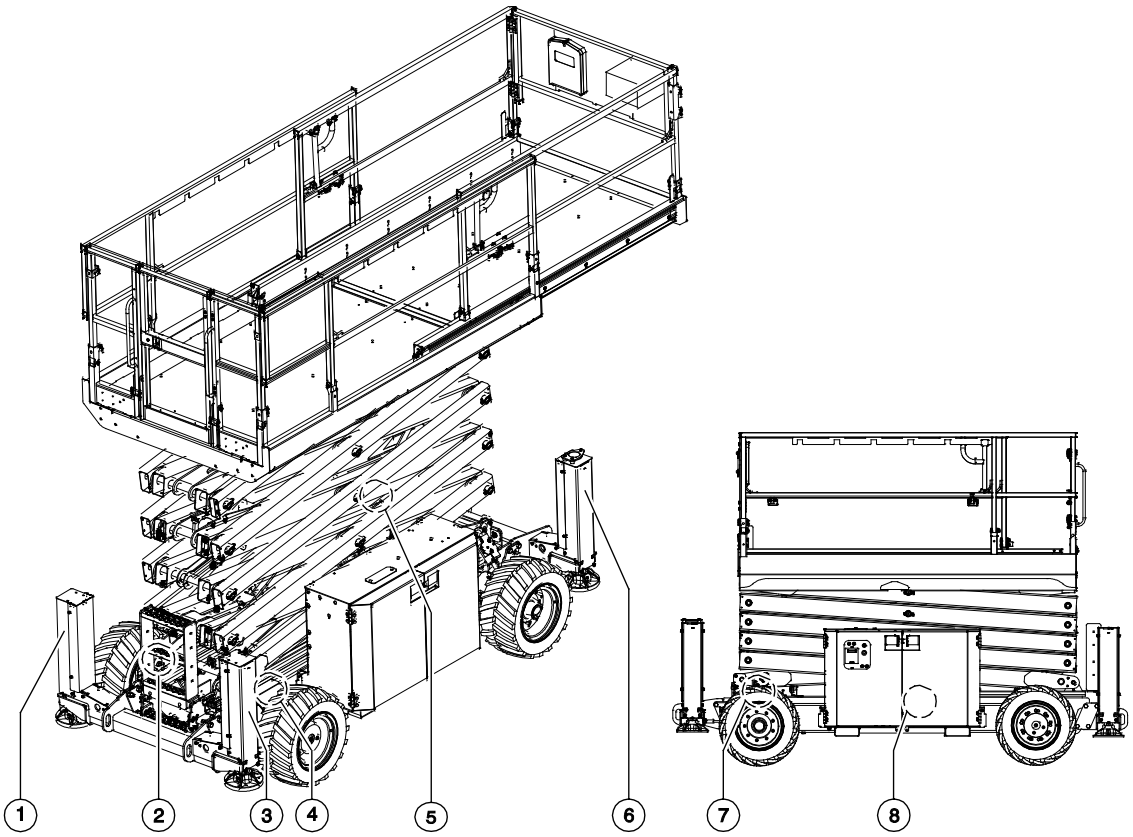
Electrical Symbols Legend

 Battery	 Motor	 Horn or alarm	 Flashing beacon	 Gauge
 Diode	 Coil with suppression	 LED	 Fuse with amperage	 Circuit breaker with amperage
 Connection - no terminal	 Circuits crossing no connection	 Quick disconnect terminal	 Level sensor without outriggers	 Power relay
 Coil solenoid or relay	 Contact solenoid or relay	 Button normally open	 Limit Switch not held	 Limit Switch held
 Red emergency stop button normally closed	 Resistor with ohm value	 Starting aid or glow plug	 Electric motor	

Hydraulic Symbols Legend

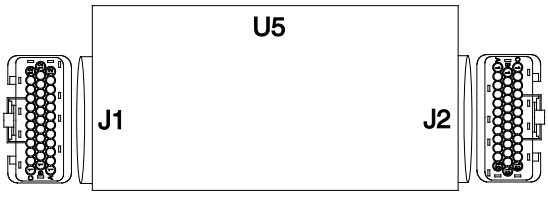
 Orifice with size	 Check valve	 Cylinder, double acting	 Accumulator
 Pump, fixed displacement	 Pump, prime mover (engine or motor)	 Pressure switch	 Needle valve
 Solenoid operated 3 position 4 way directional valve	 Solenoid operated 3 position 5 way directional valve	 Solenoid operated 2 position, 3 way directional valve	 Solenoid operated 2 position 2 way directional valve
 Filter with bypass relief valve	 Relief valve with pressure setting	 Solenoid operated proportional valve	 Differential sensing valve
 Pilot operated flow regulator valve	 Dual piloted relief valve	 Counterbalance valve with pressure and pilot ratio	 Priority flow regulator

Limit Switch Legend

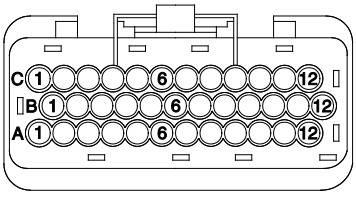


1 left rear outrigger limit switch, LS14
2 left axle oscillate limit switches, LSA10S and LSA10SS
3 right rear outrigger limit switch, LS15
4 right axle oscillate limit switches, LSA20S and LSA20SS
5 platform overload pressure switch, S25
6 right front outrigger limit switch, LS13
left front outrigger limit switch, LS12 (not shown)
7 platform down limit switches, LS6 and LS6B
8 platform up limit switch, LS16

Electronic Control Module Pin-Out Legend



Electronic Control Unit



Pin Numbering - 36 pin connector

Electronic Control Module Pin-Out Legend

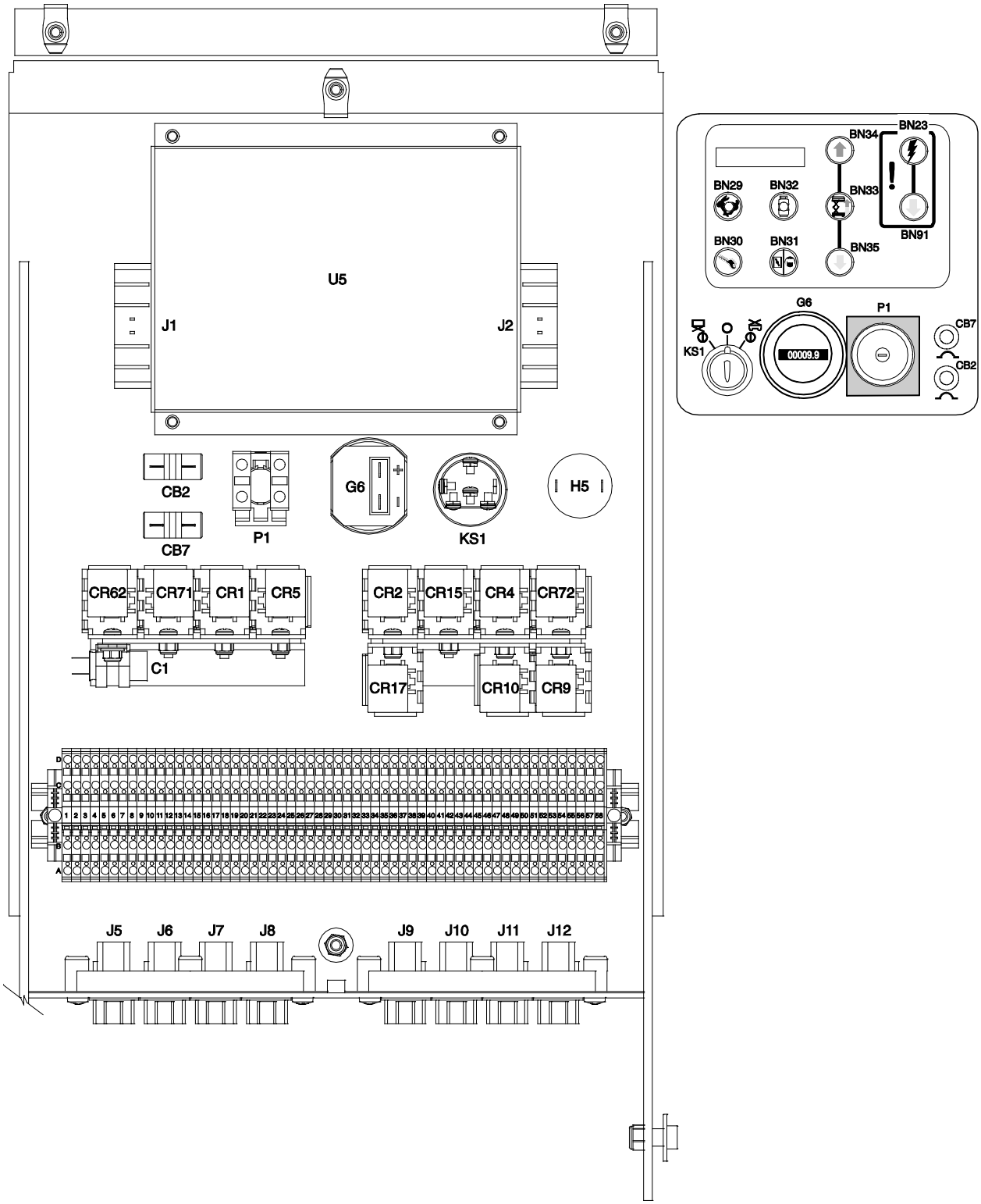
J1 Connector

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) (models with 2 speed lift)
A9	Platform overload CR55/LS6B (output) (AS / CE) (models with 2 speed lift)
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	Platform down Y7 (output) (ANSI / CSA) (models with proportional lift)
B4	Platform overload CR55/LS6B (output) (AS / CE) (models with proportional lift)
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)

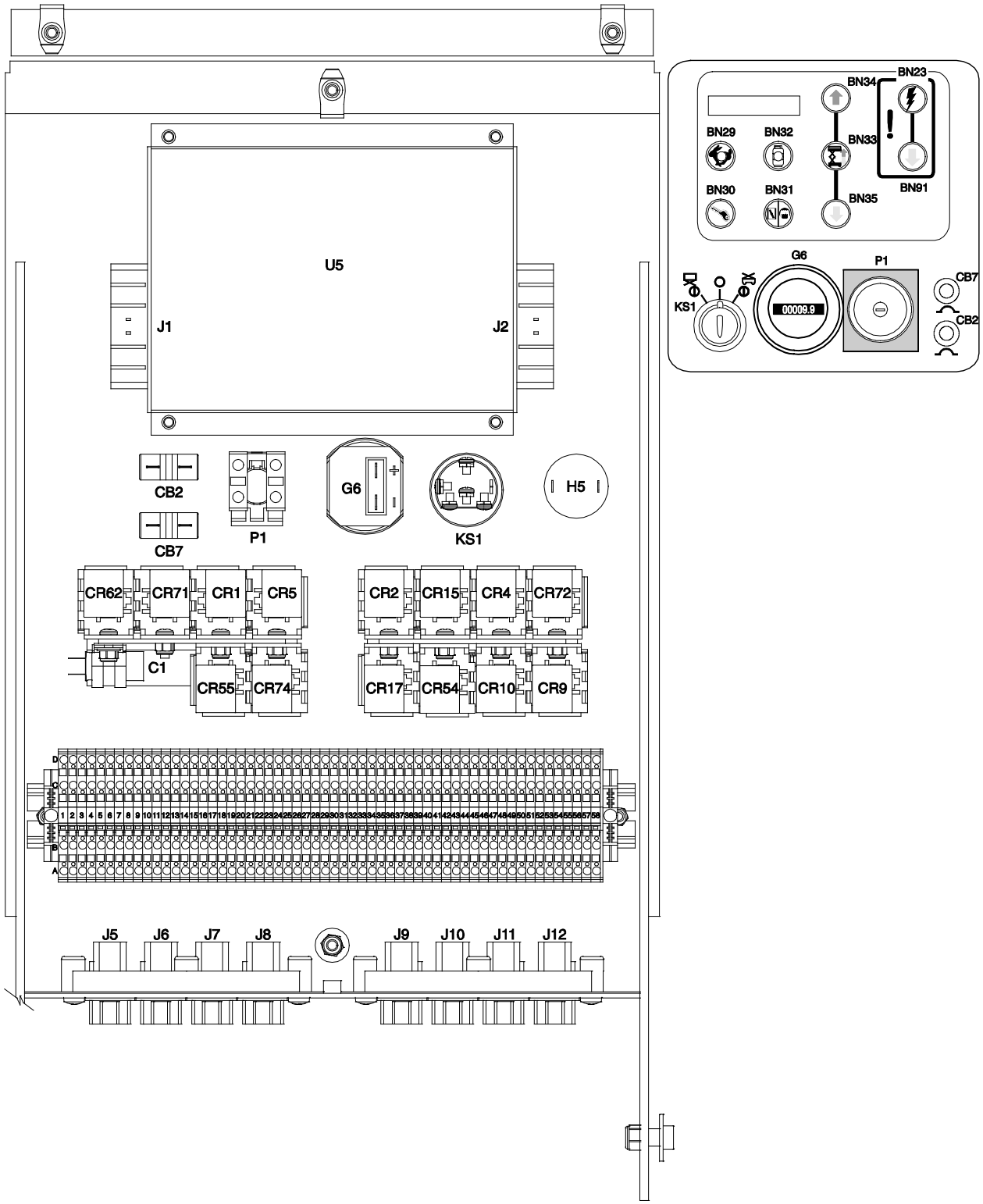
J2 Connector

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)

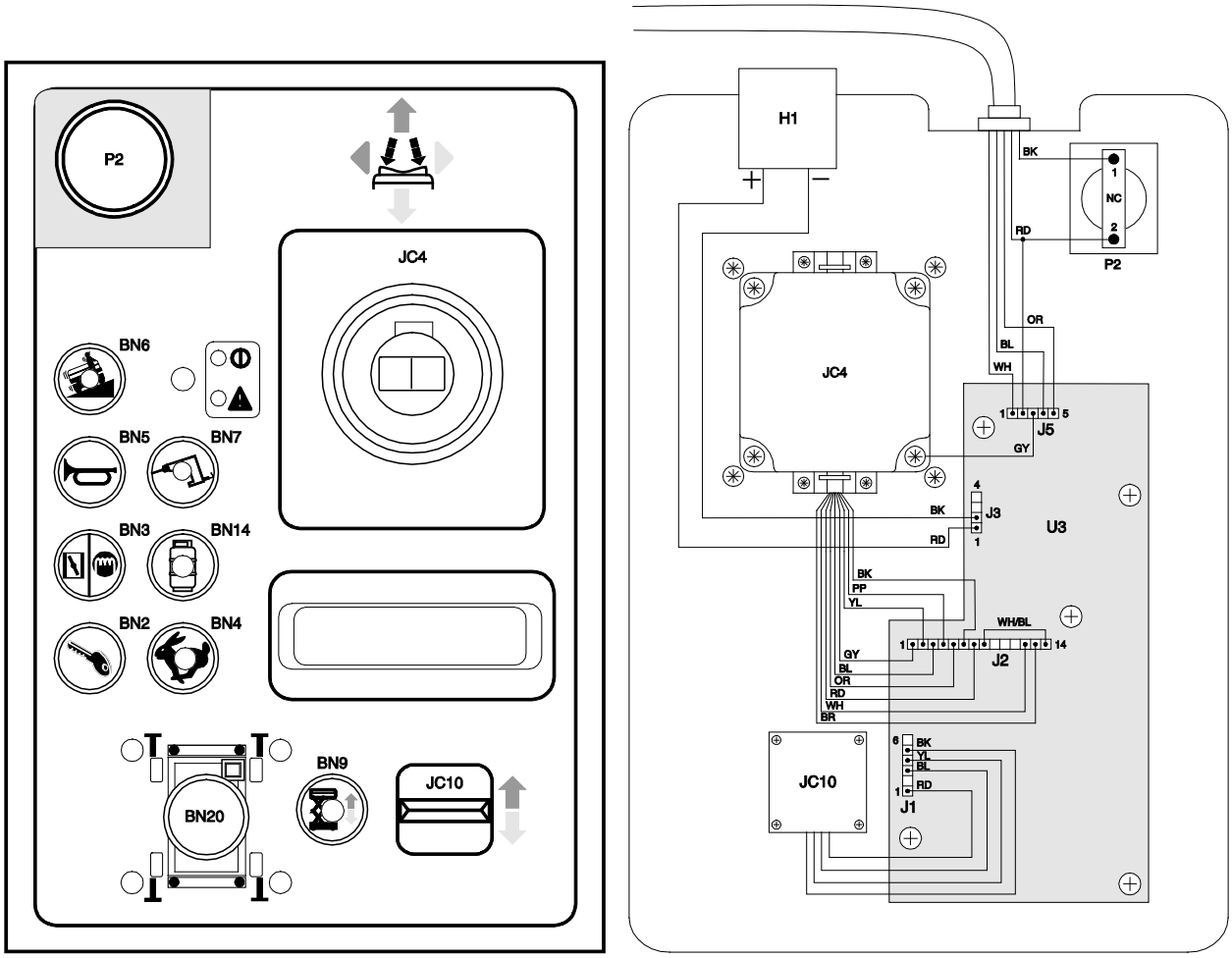
Ground Control Box - ANSI / CSA Models



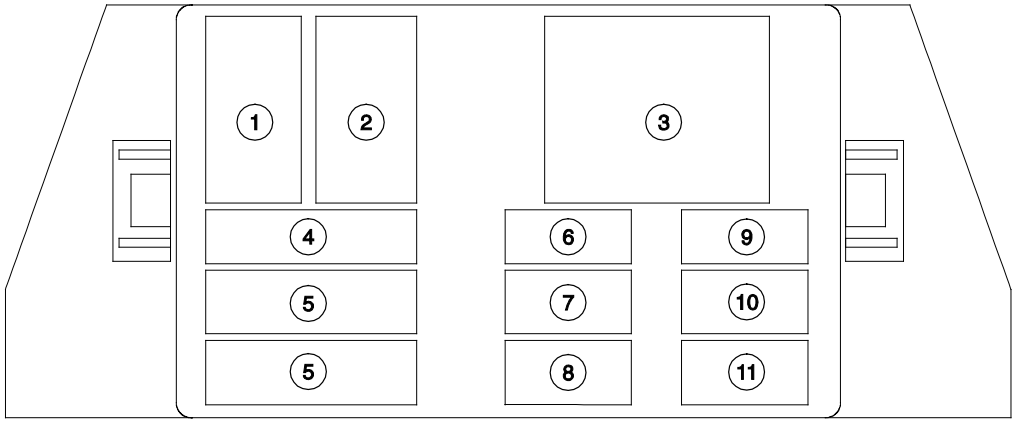
Ground Control Box - AS /CE Models



Platform Control Box - All Models



GM .998L Engine Fuse and Relay Layout



1	Power Relay	7	Fuel Pump, Fuse - 15A
2	Fuel Pump Relay	8	DEPR, Fuse - 5A
3	Starter Relay	9	ECM, Fuse - 10A
4	Alternator, Fuse - 60A	10	Ignition, Fuse - 20A
5	Empty	11	Starter, Fuse - 25A
6	VSW, Fuse - 5A		

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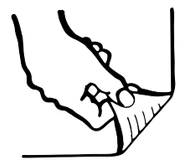
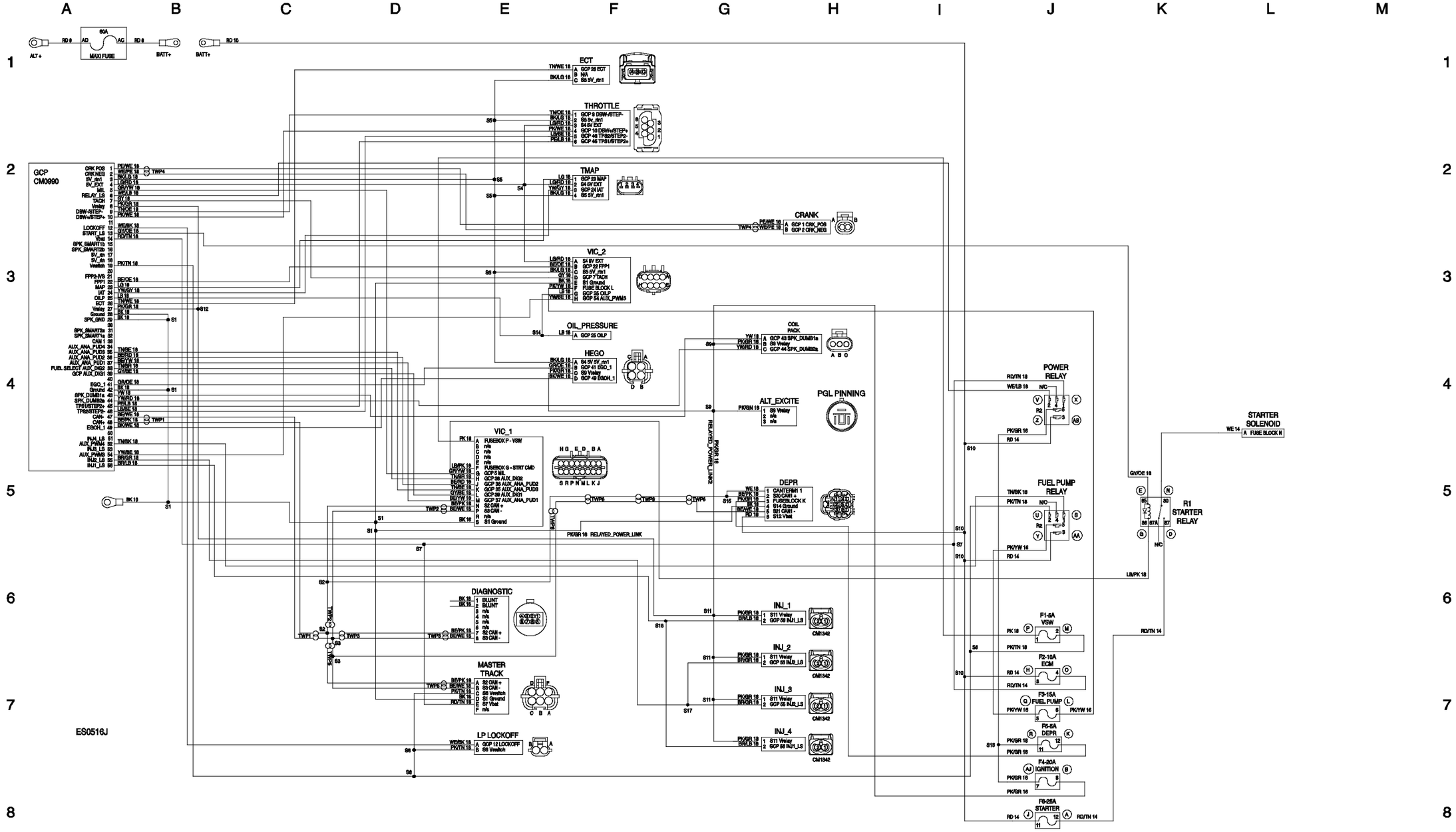
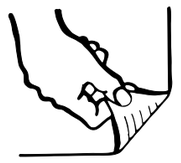
GM .998L Engine Wire Harness



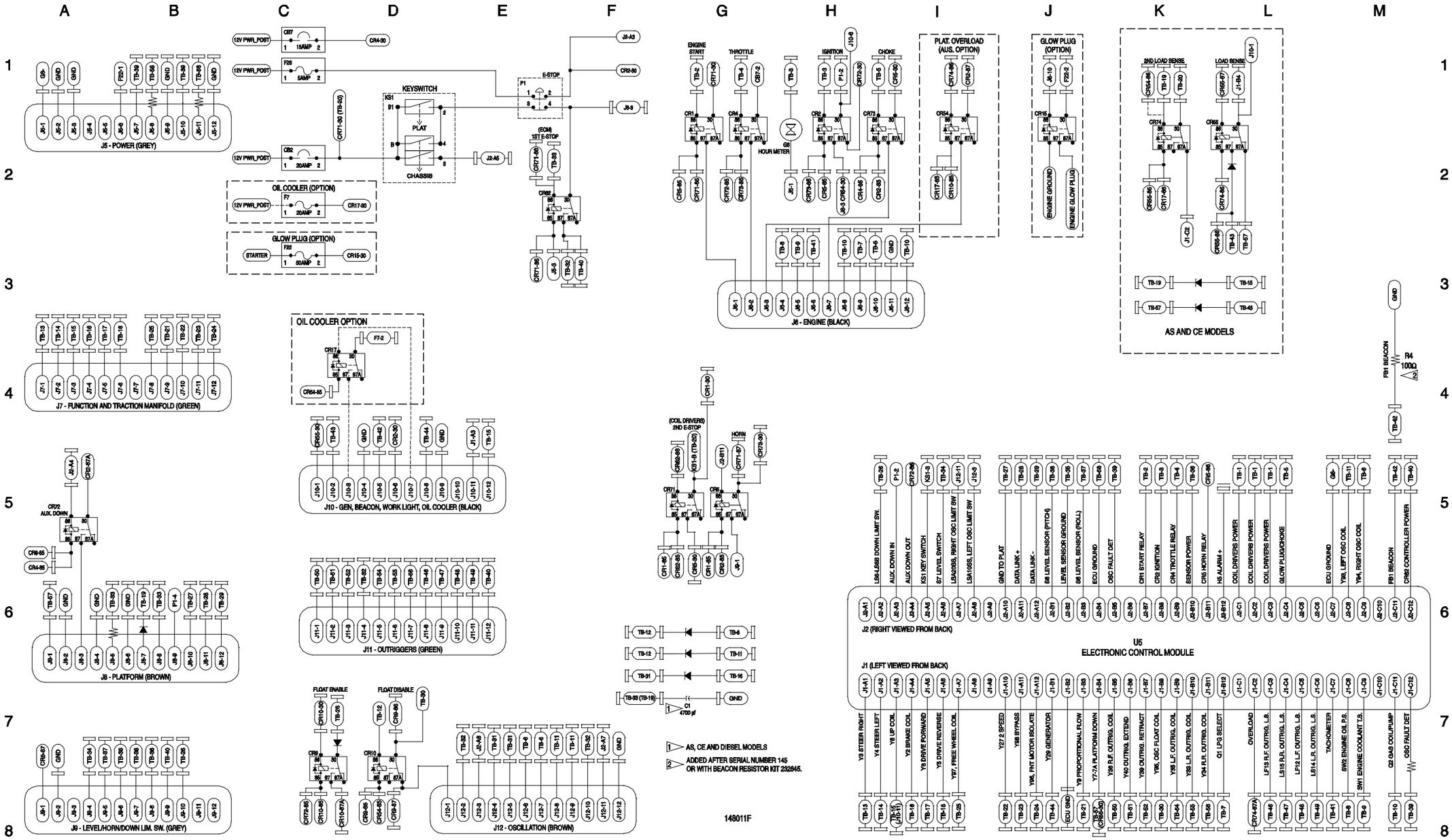
GM .998L Engine Wire Harness



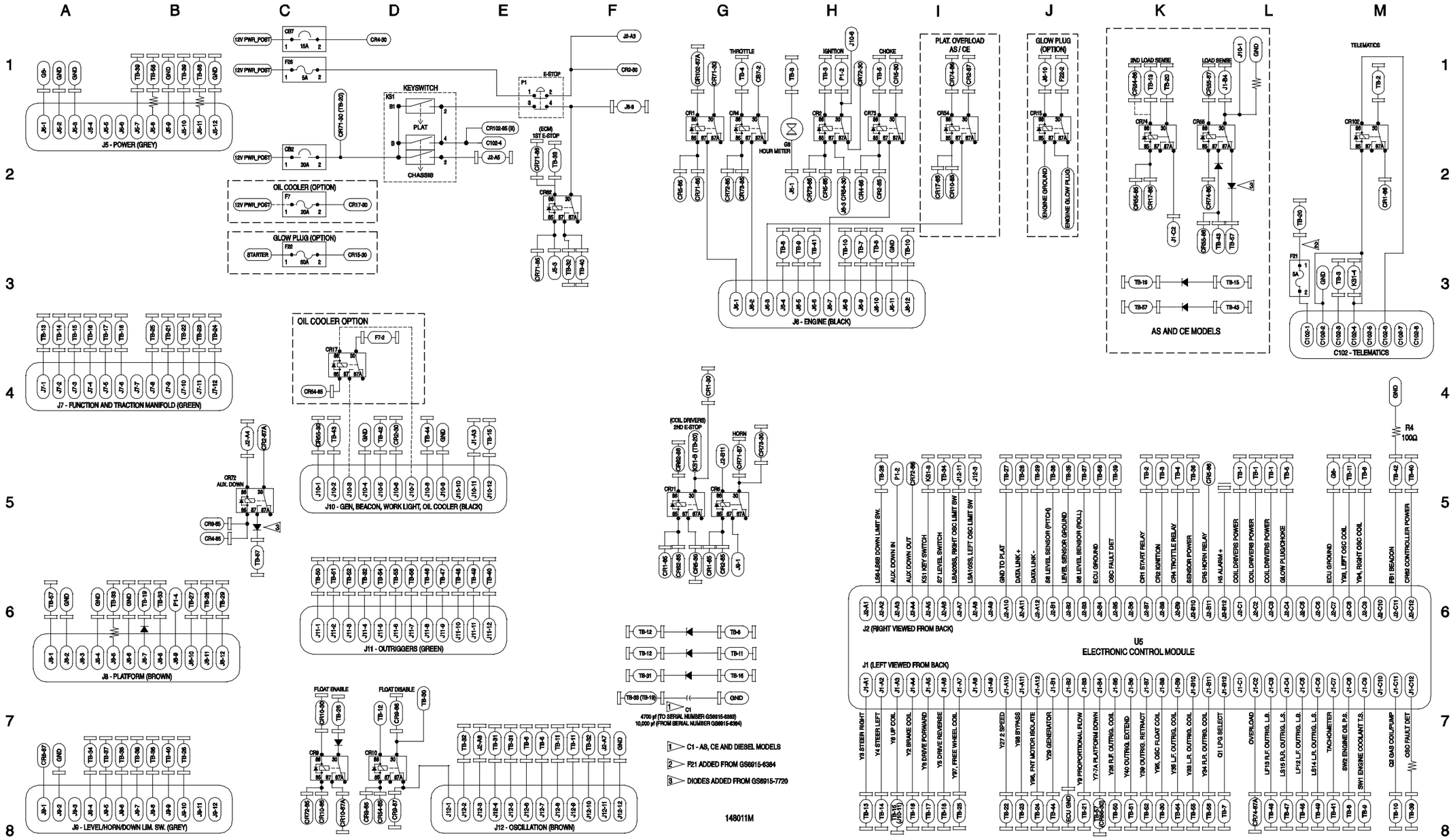
Control Panel Circuit Diagram
(to serial number GS6914-6018)



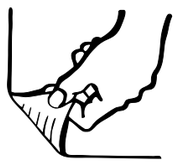
Control Panel Circuit Diagram (to serial number GS6914-6018)



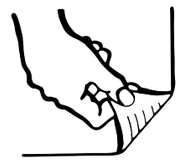
Control Panel Circuit Diagram (from serial number GS6914-6019)



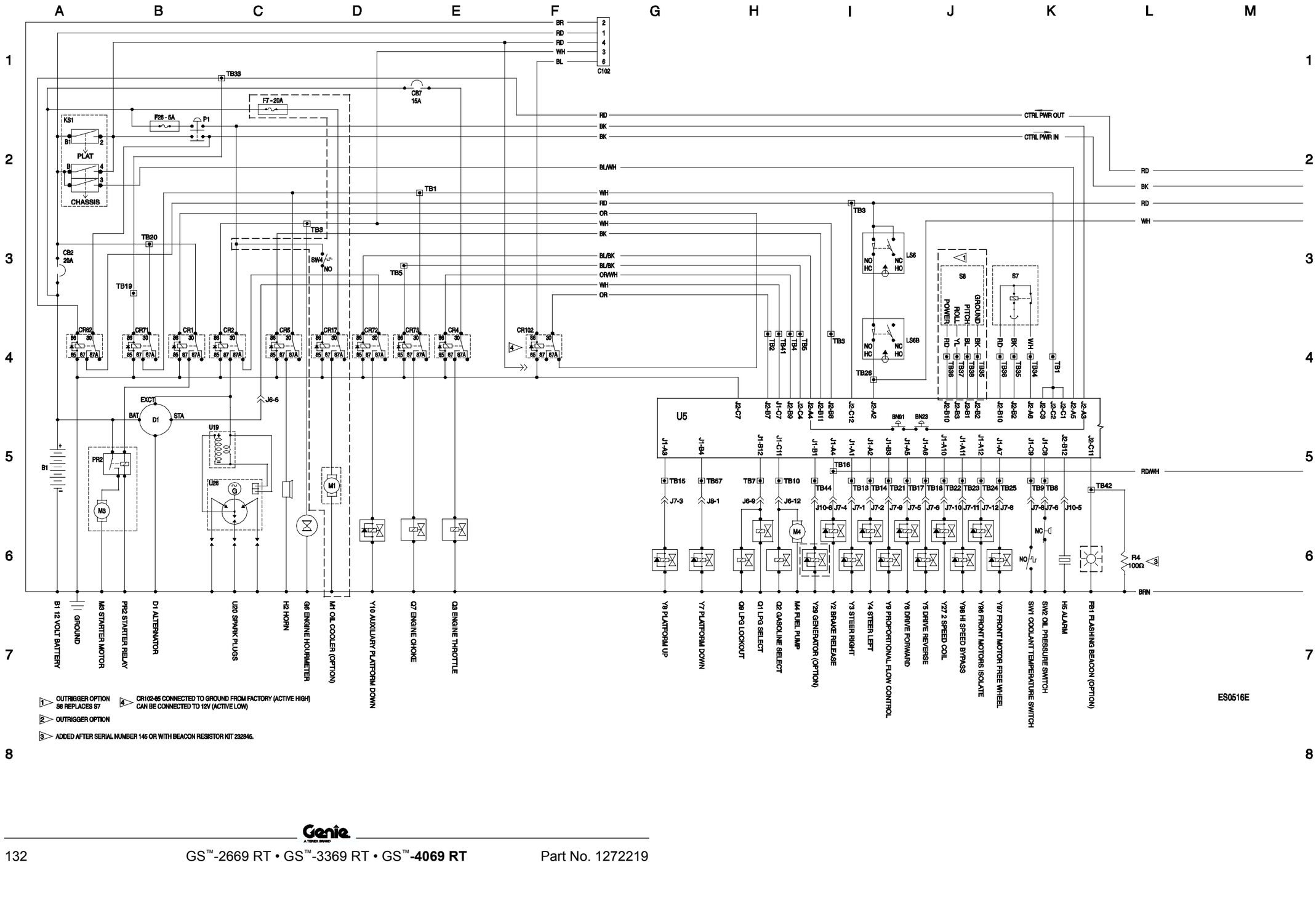
Control Panel Circuit Diagram (from serial number GS6914-6019)



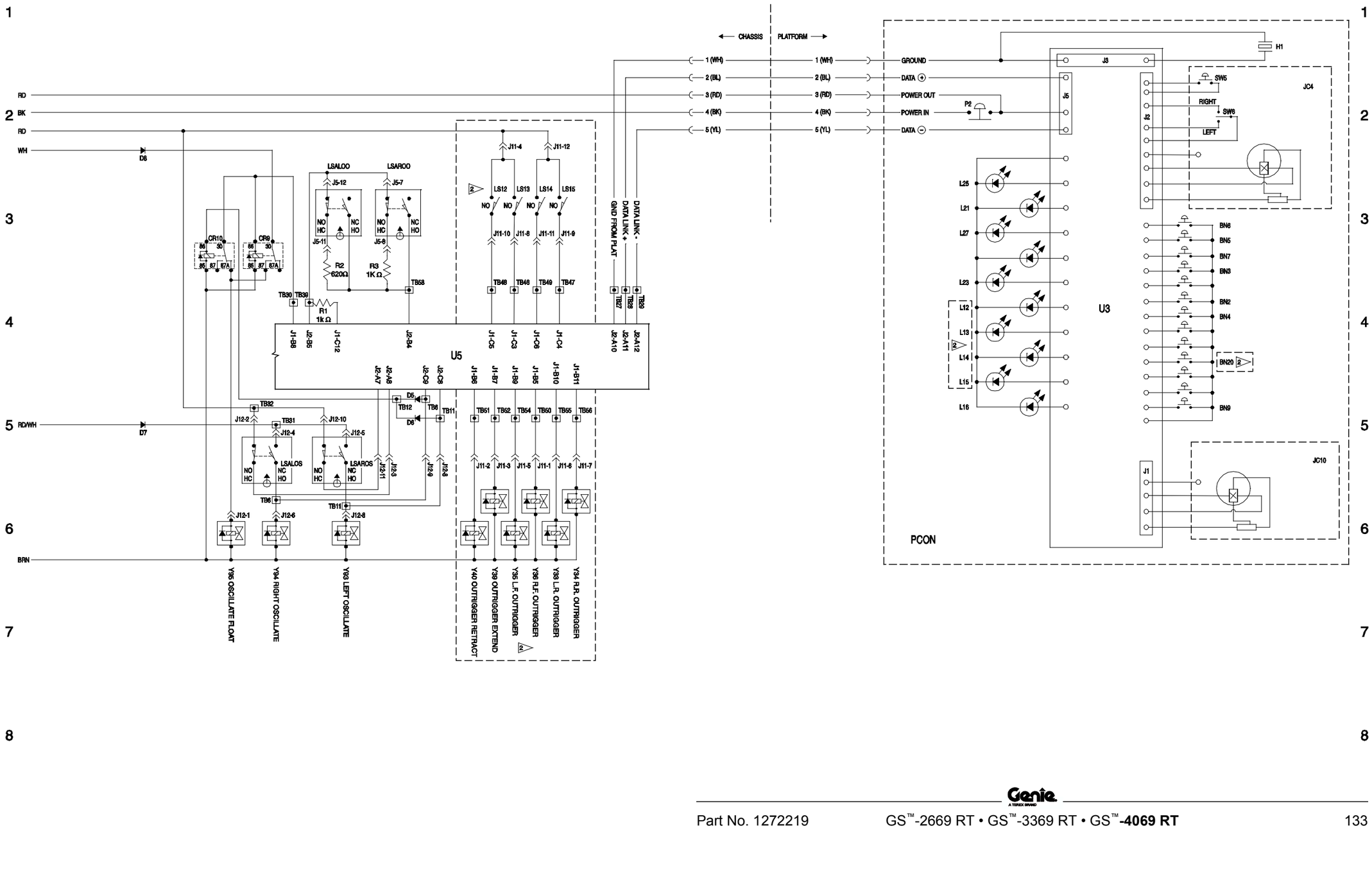
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (to serial number GS6915-6383)



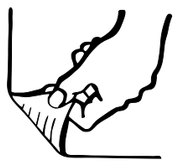
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (to serial number GS6915-6383)



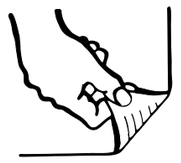
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (to serial number GS6915-6383)



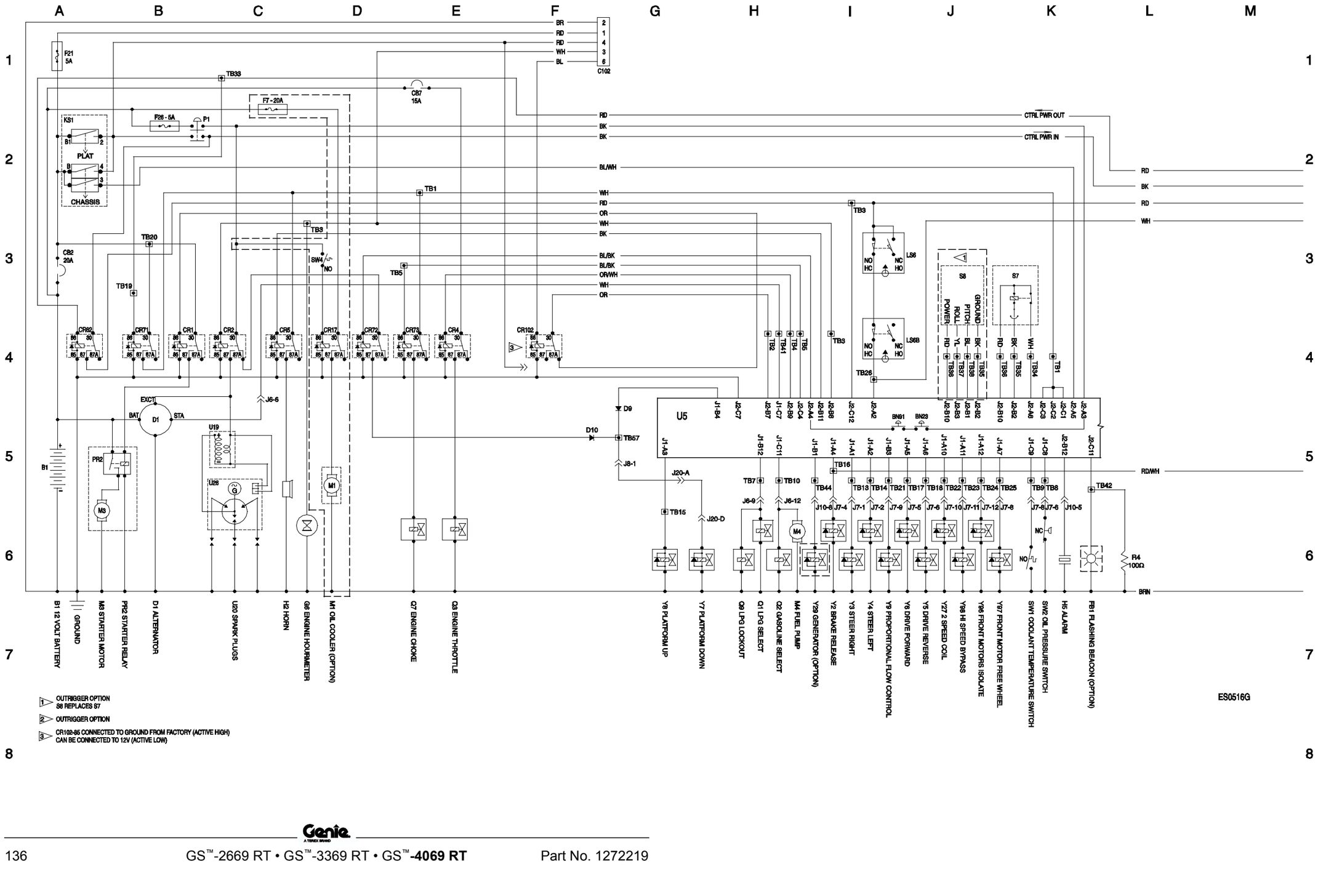
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (to serial number GS6915-6383)



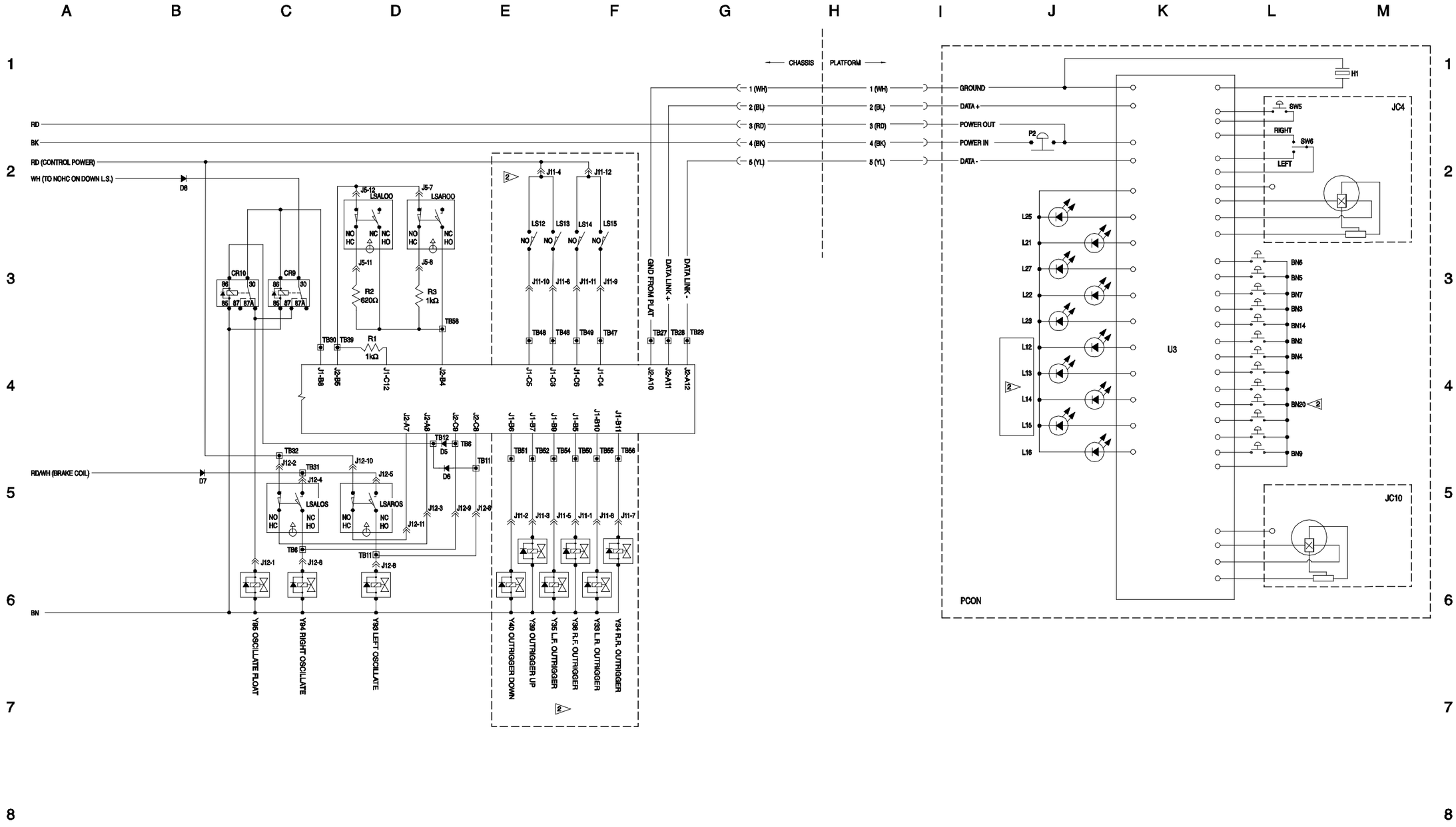
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



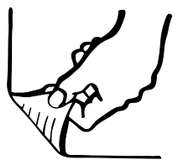
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



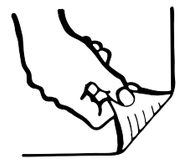
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6915-6384 to GS-6916F-9067)



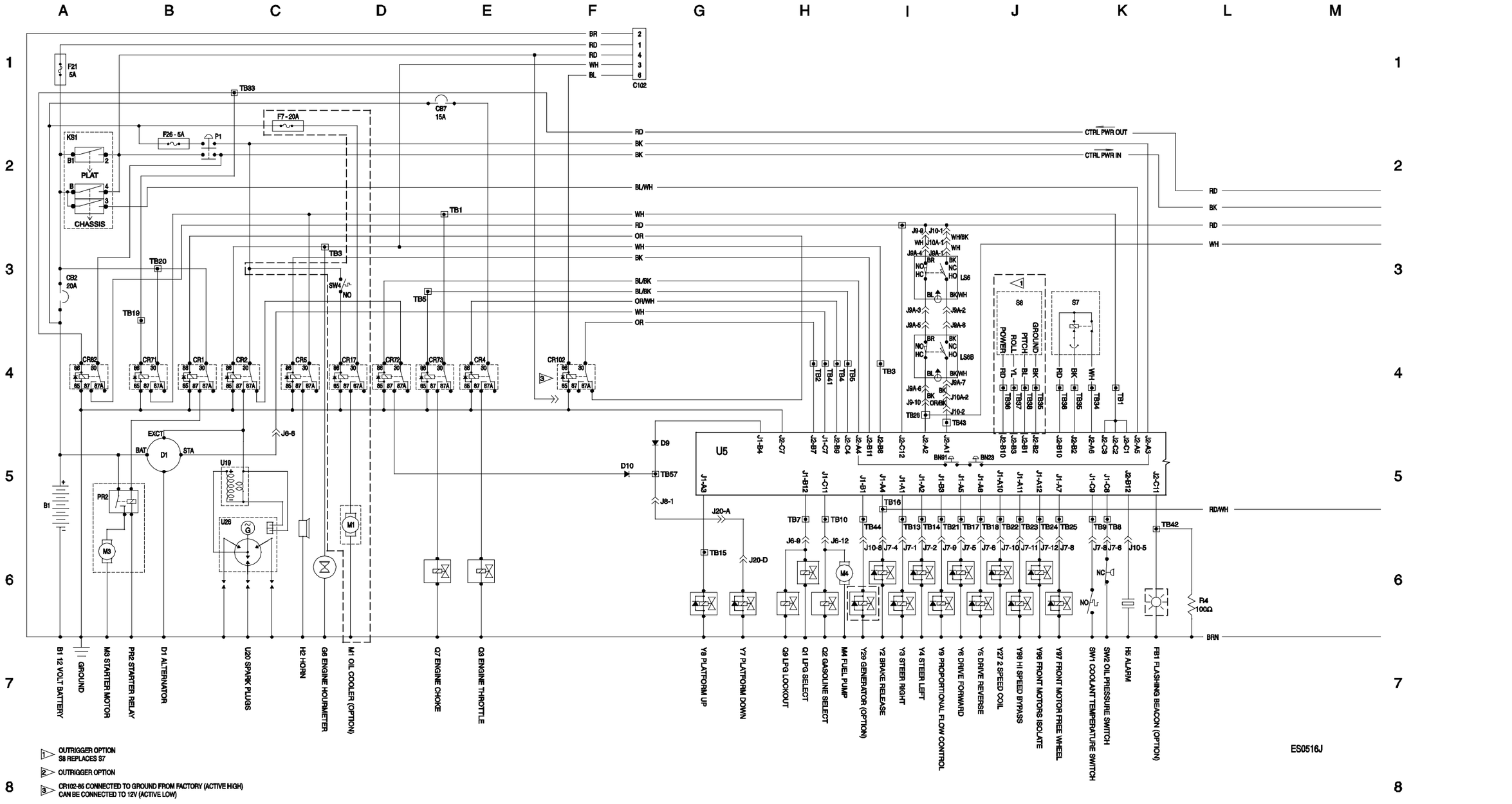
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



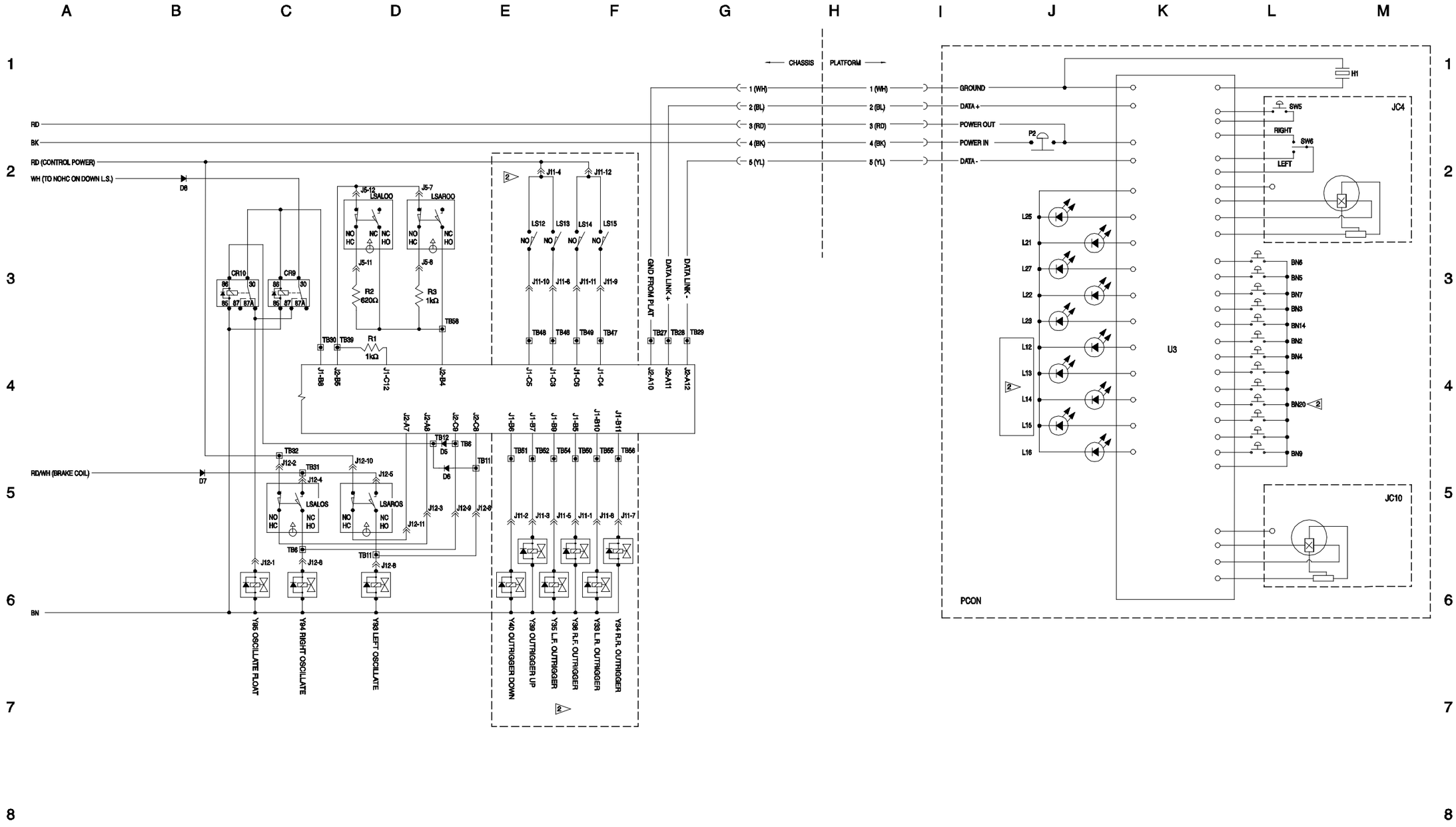
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



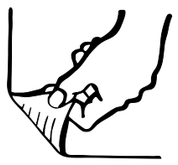
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



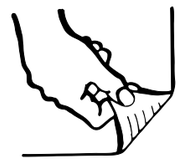
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS-6916F-9068 to GS6916F-9100)



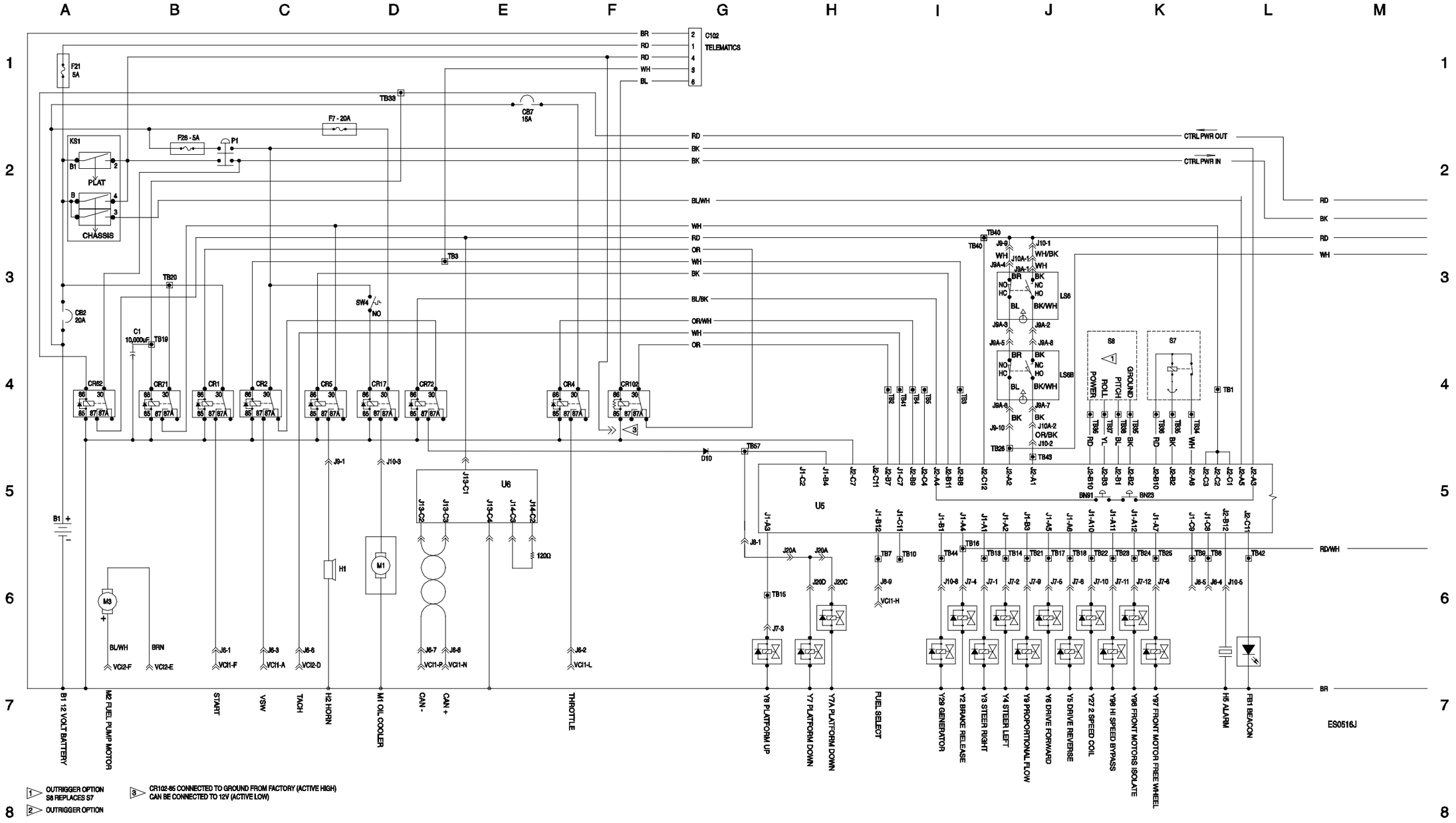
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



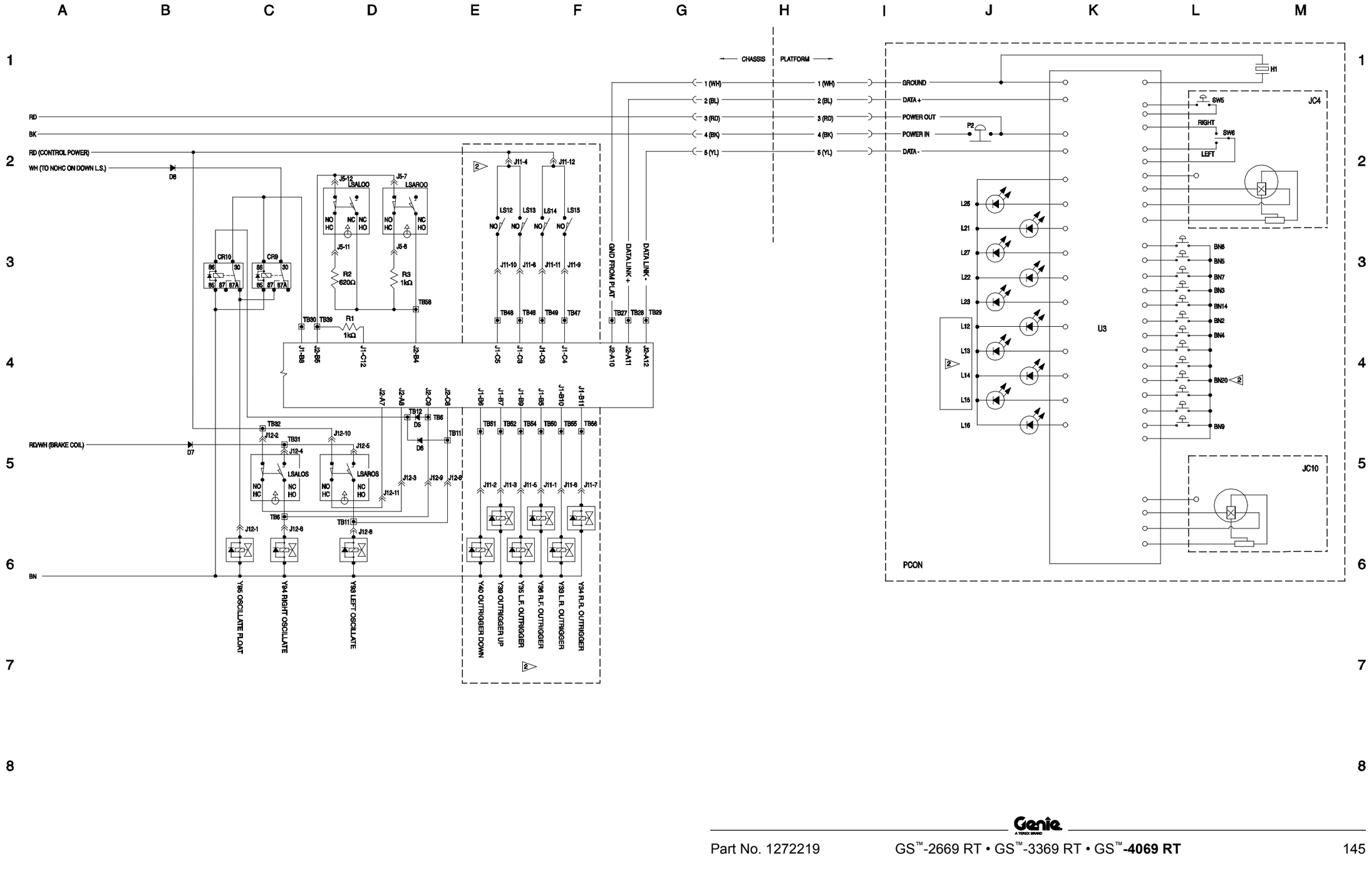
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
GM .998L Models (from serial number GS6916F-9101)



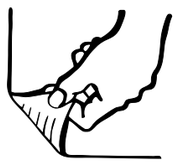
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
GM .998L Models (from serial number GS6916F-9101)



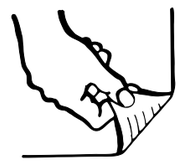
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
GM .998L Models (from serial number GS6916F-9101)



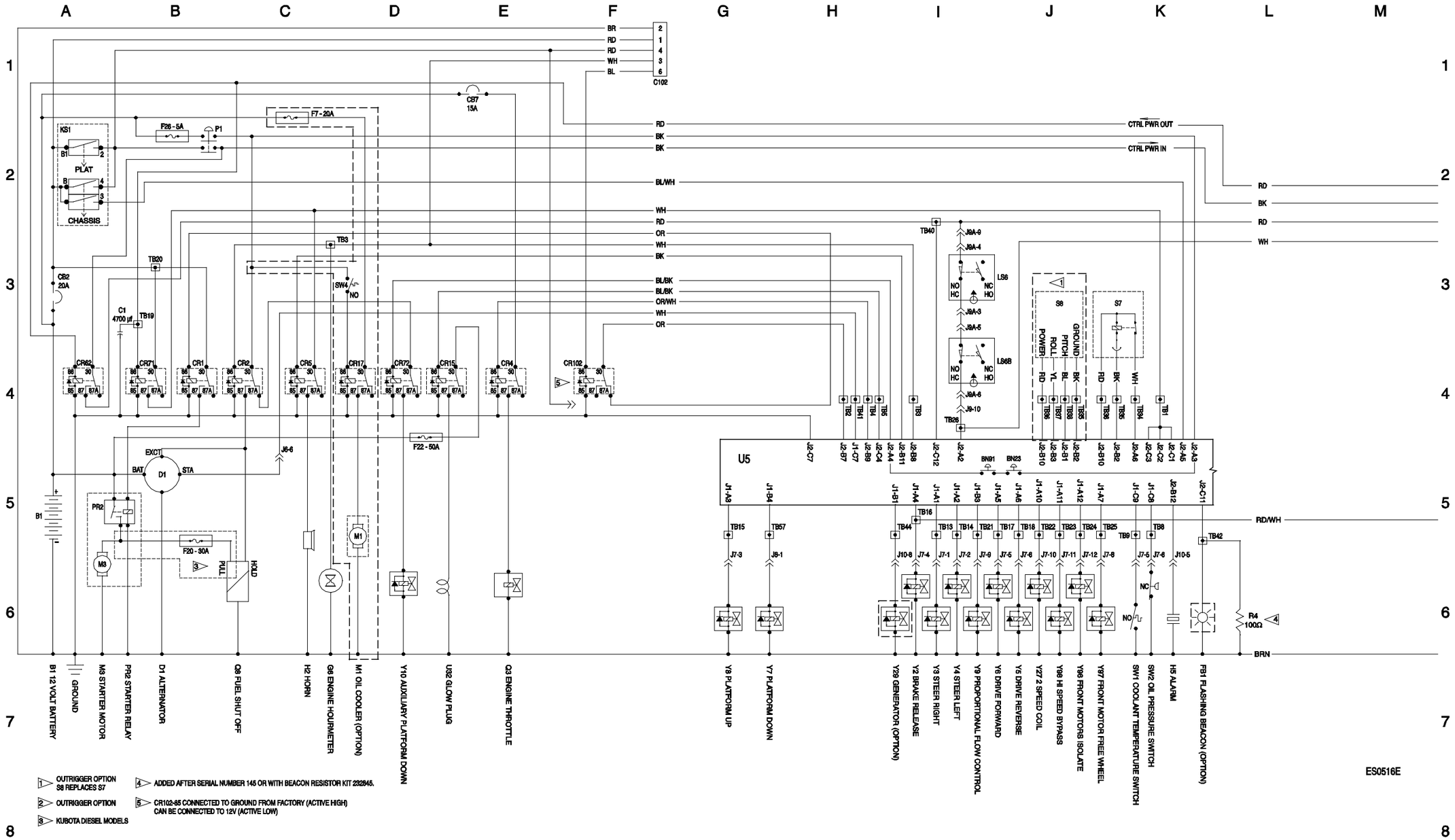
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
GM .998L Models (from serial number GS6916F-9101)



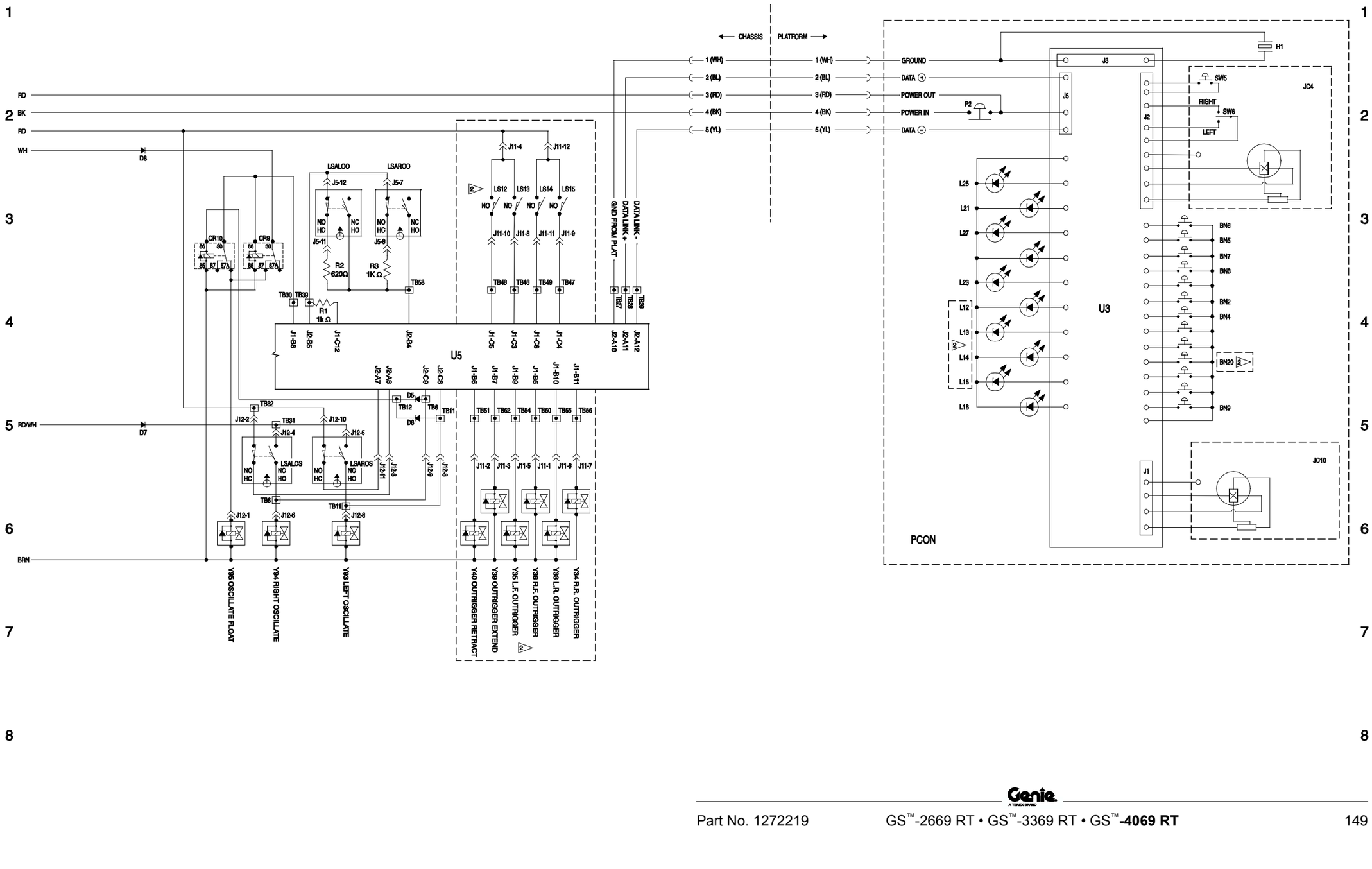
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA) Diesel Models (to serial number GS6915-6383)



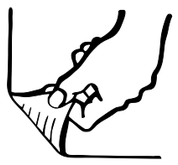
Electrical Schematic, (ANSI / CSA) GS-2669 RT and GS-3369 RT, Diesel Models (to serial number GS6915-6383)



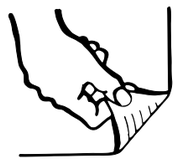
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Diesel Models (to serial number GS6915-6383)



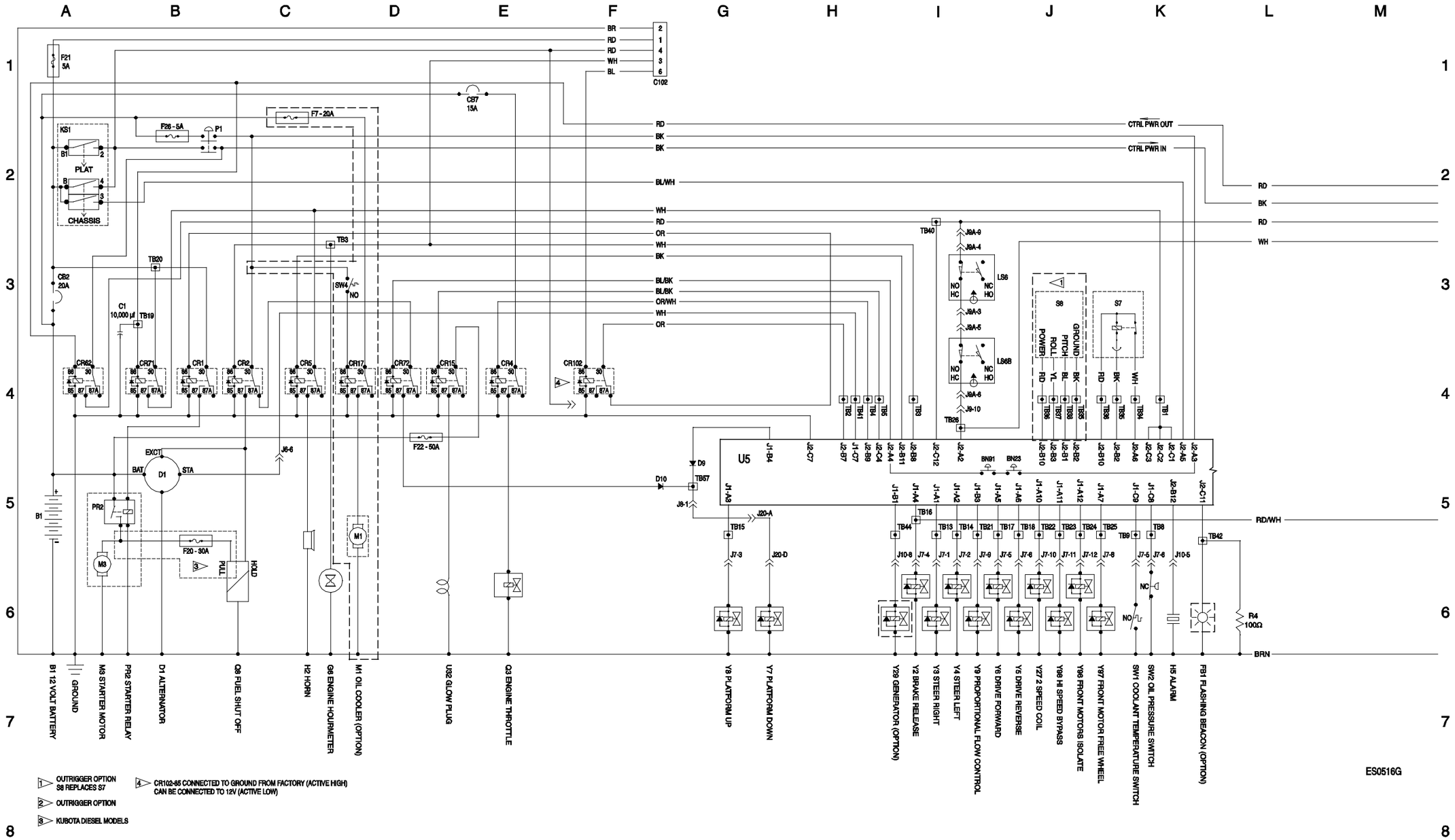
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA) Diesel Models (to serial number GS6915-6383)



Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA) Diesel Models (from serial number GS6915-6384 to GS6916F-9067)

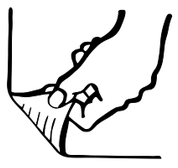


Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)

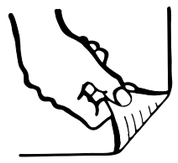


Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)

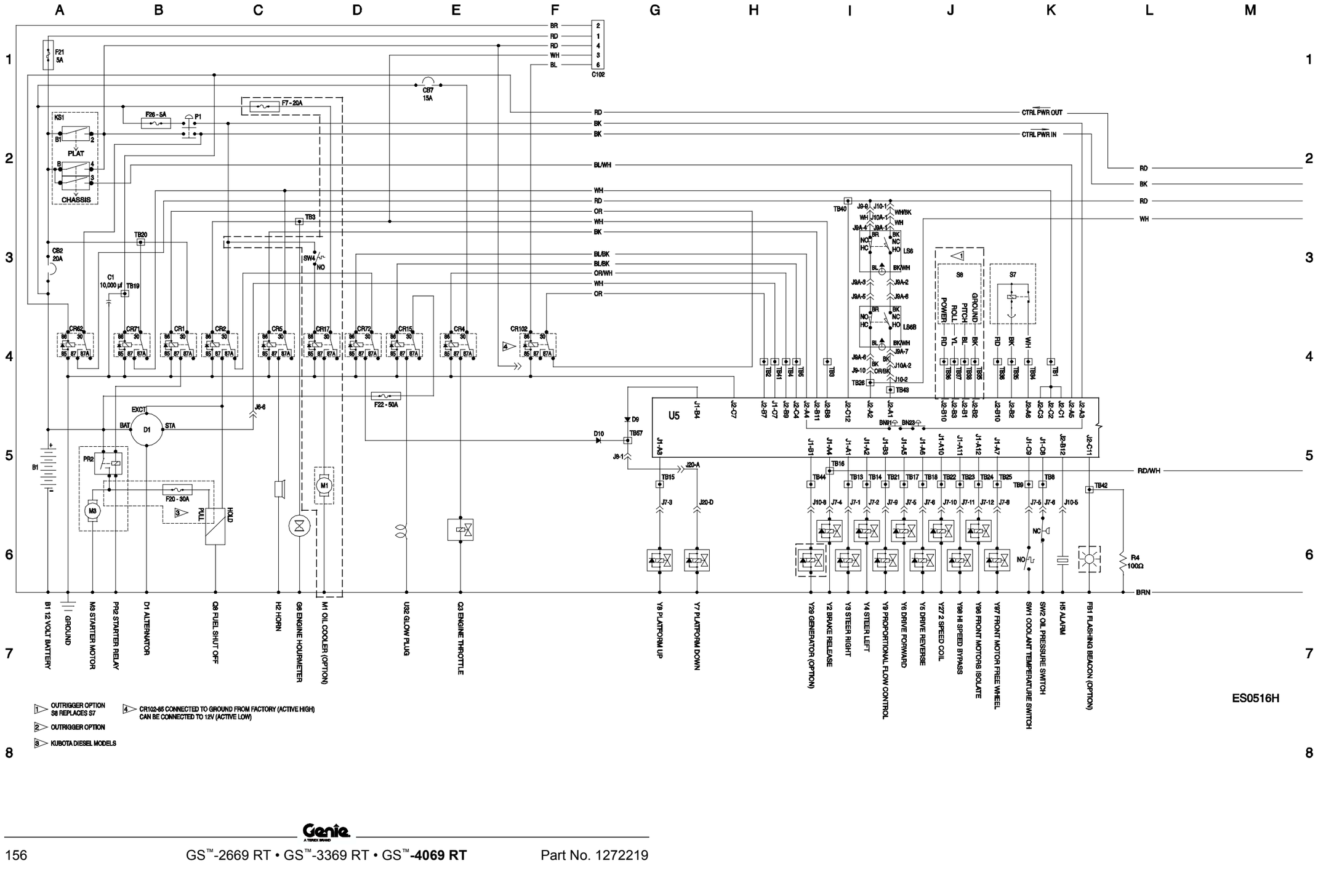
Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA) Diesel Models (from serial number GS6915-6384 to GS6916F-9067)



Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA) Diesel Models (from serial number GS6916F-9068)

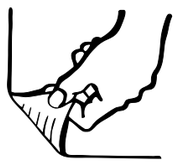


Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Diesel Models (from serial number GS6916F-9068)

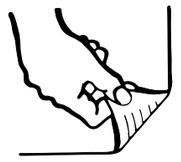


Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA)
Diesel Models (from serial number GS6916F-9068)

Electrical Schematic, GS-2669 RT and GS-3369 RT, (ANSI / CSA) Diesel Models (from serial number GS6916F-9068)

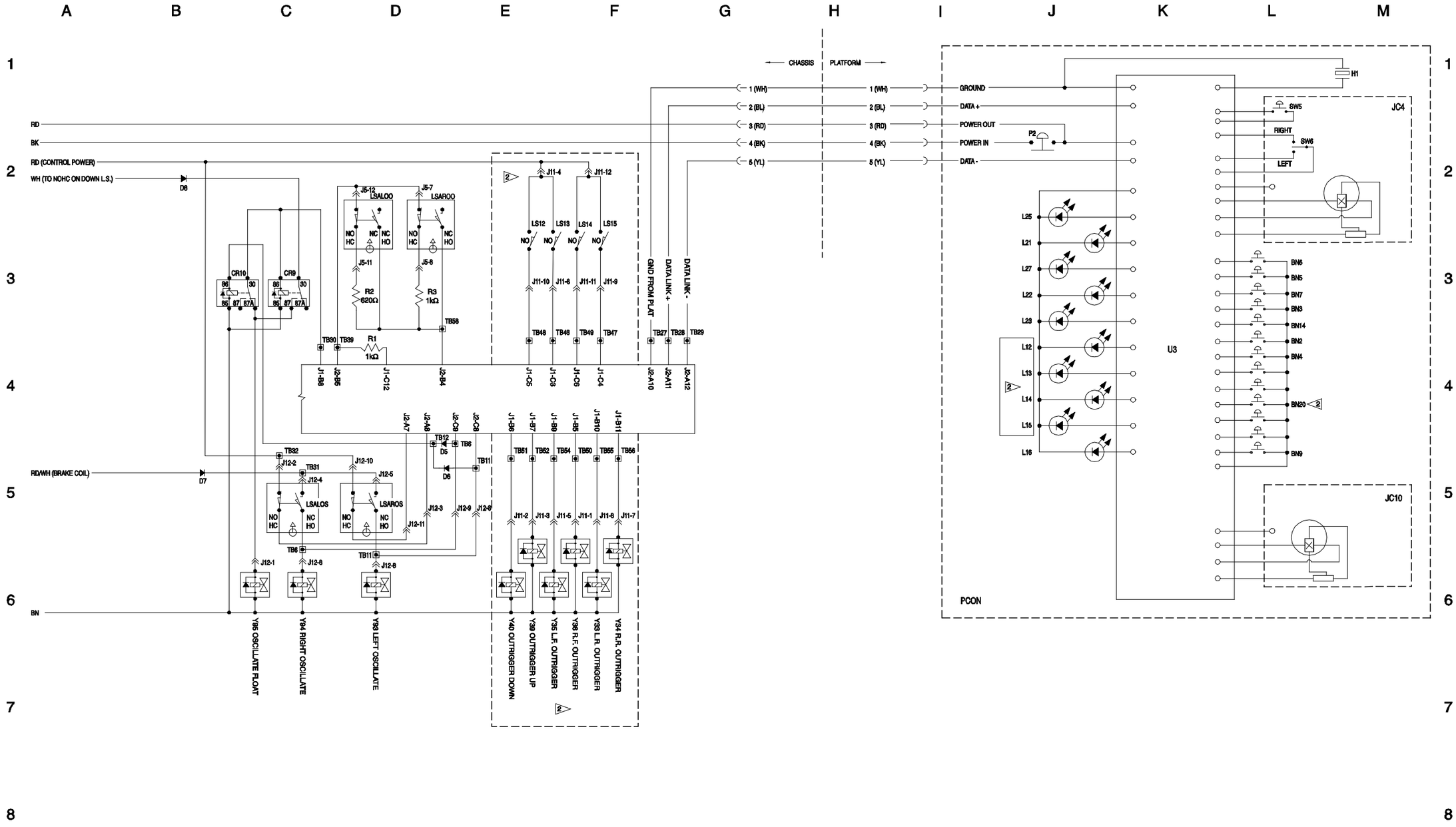


Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6915-6383)

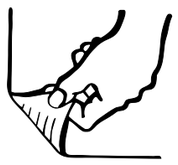


Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6915-6383)

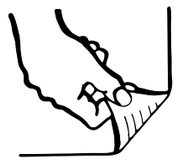
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6915-6383)



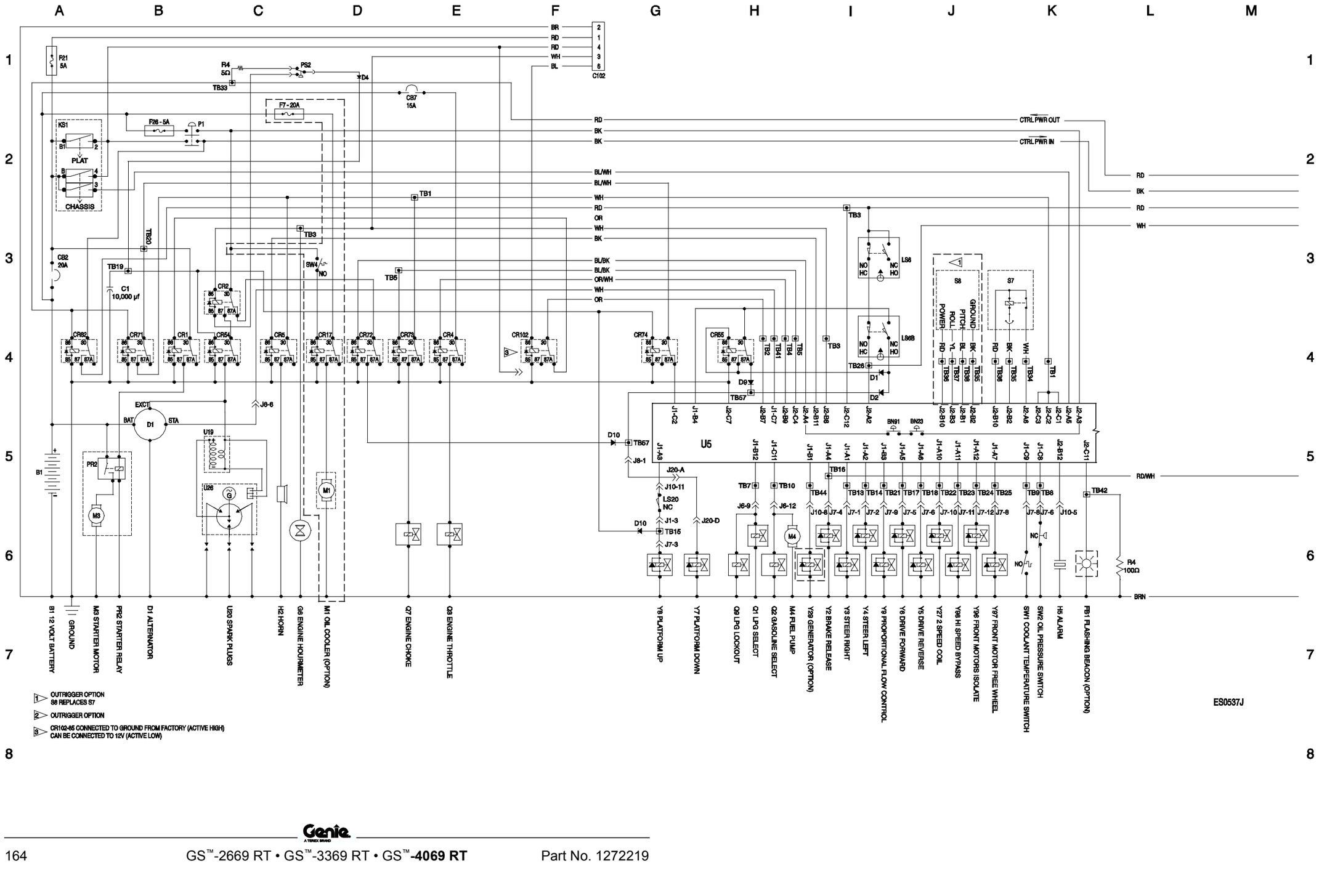
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6915-6383)



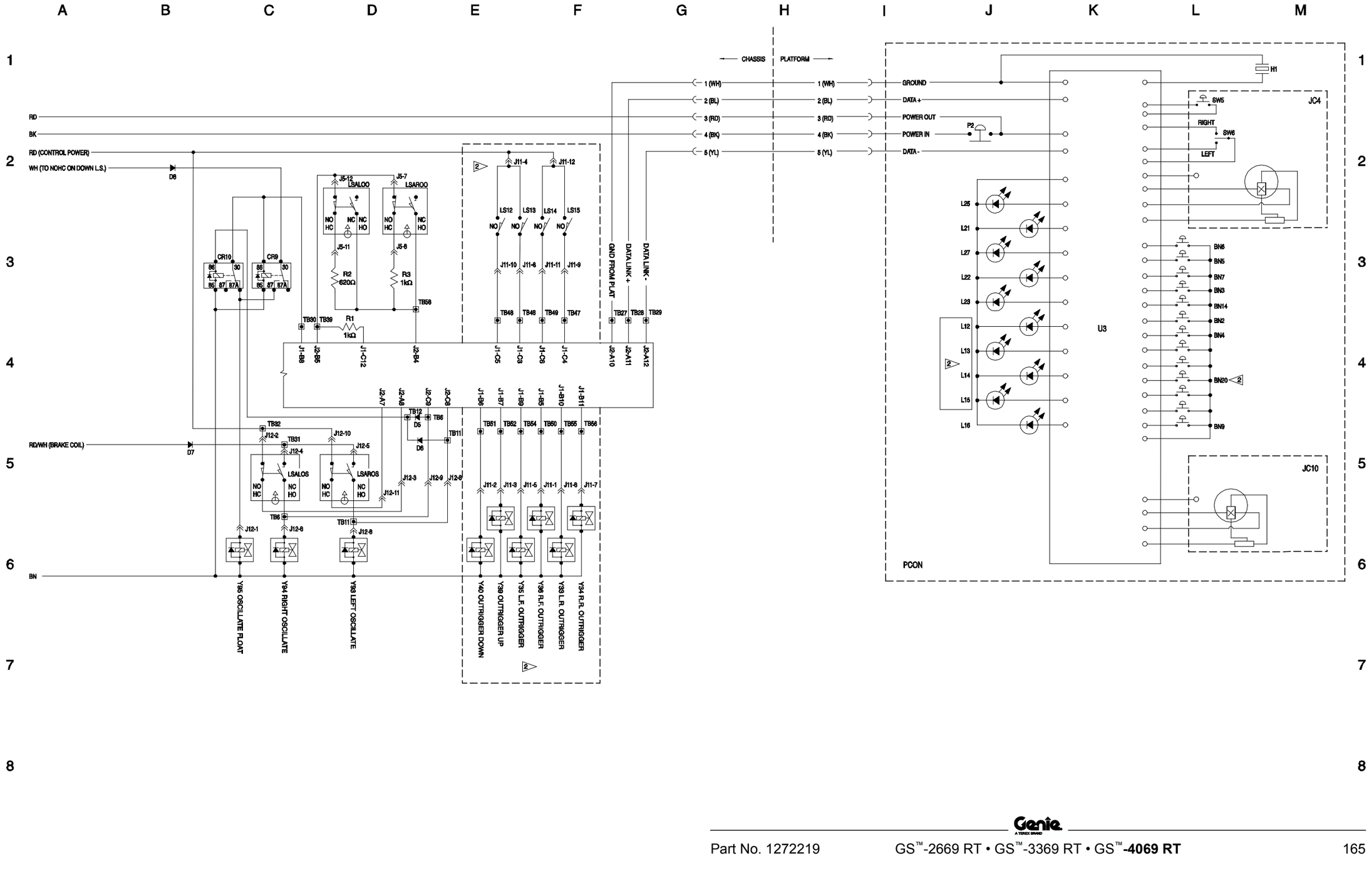
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



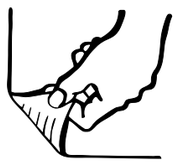
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



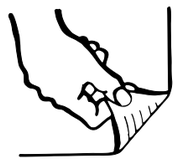
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



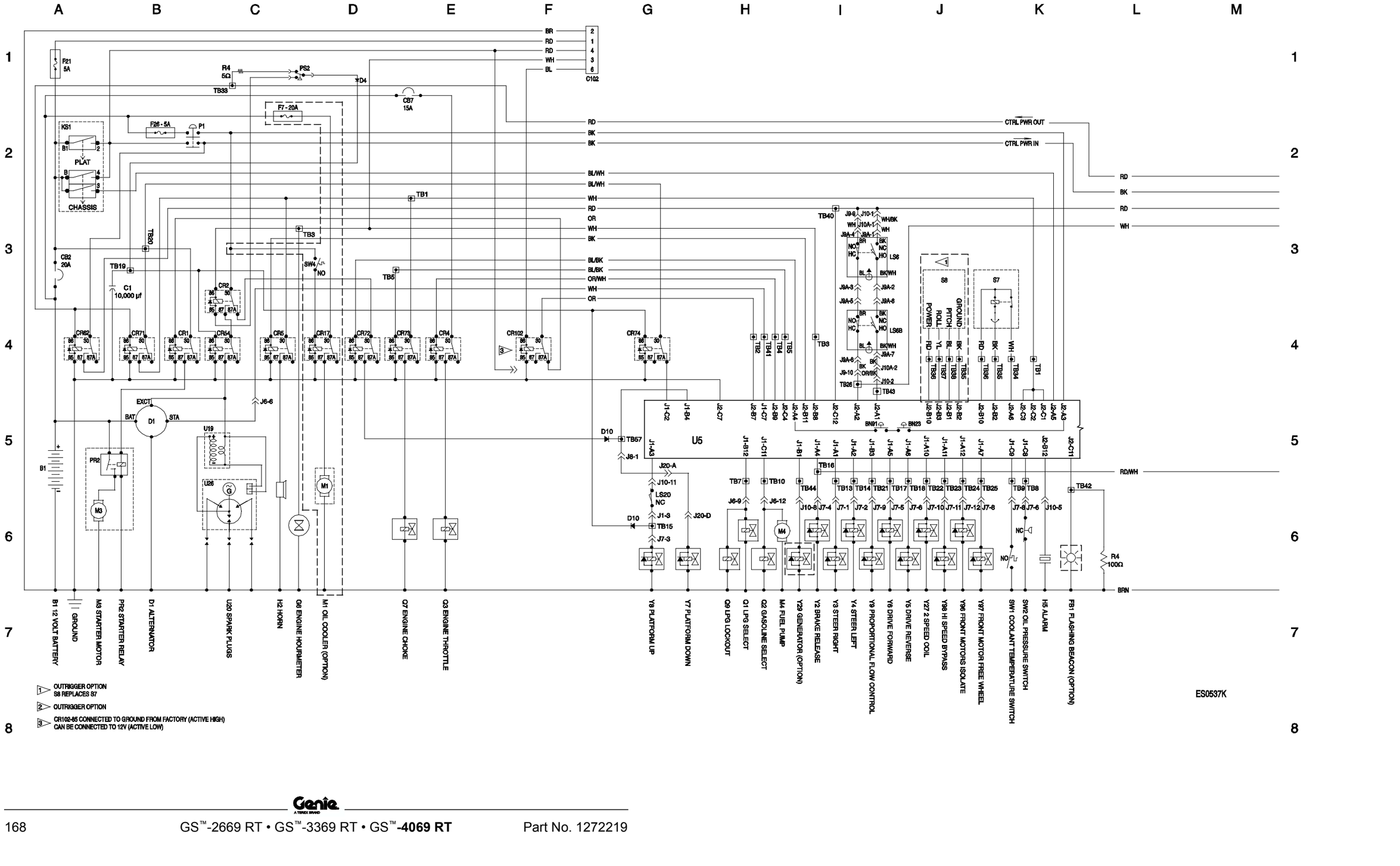
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



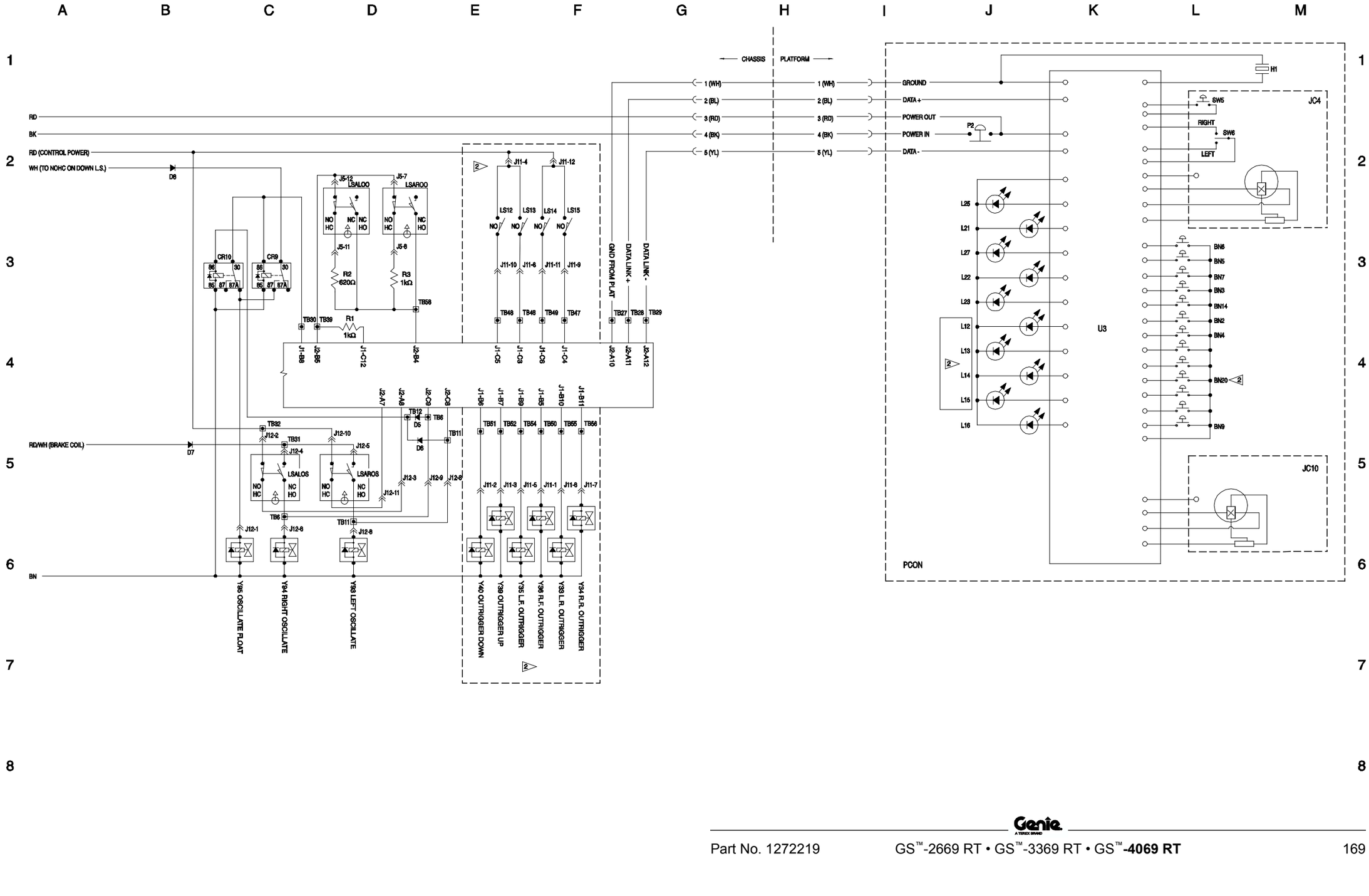
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



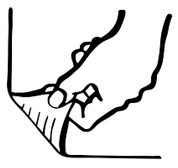
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



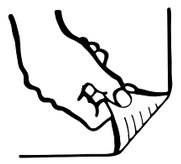
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6916F-9068 to GS6916F-9100)



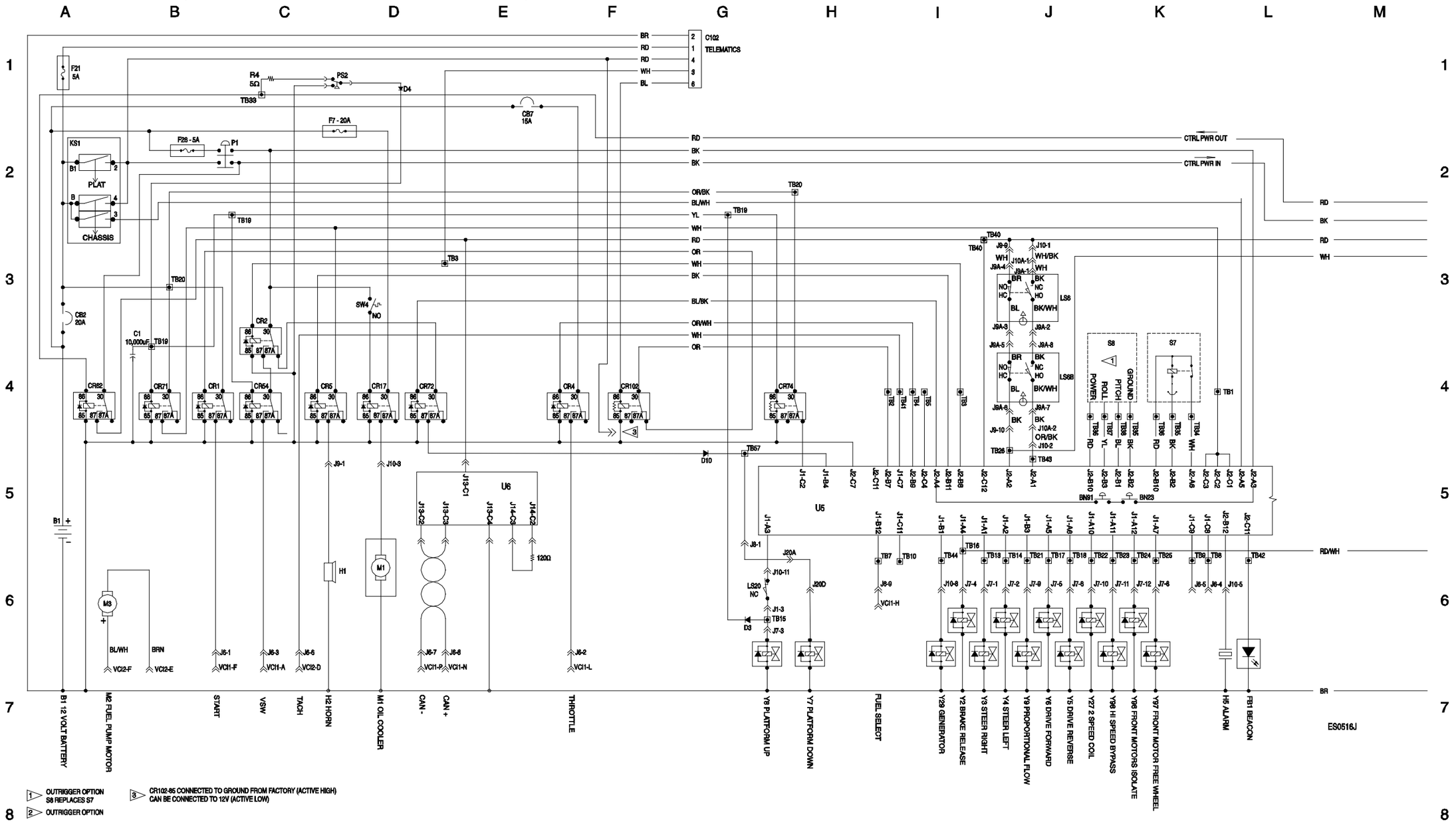
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6916F-9068 to GS6916F-9100)



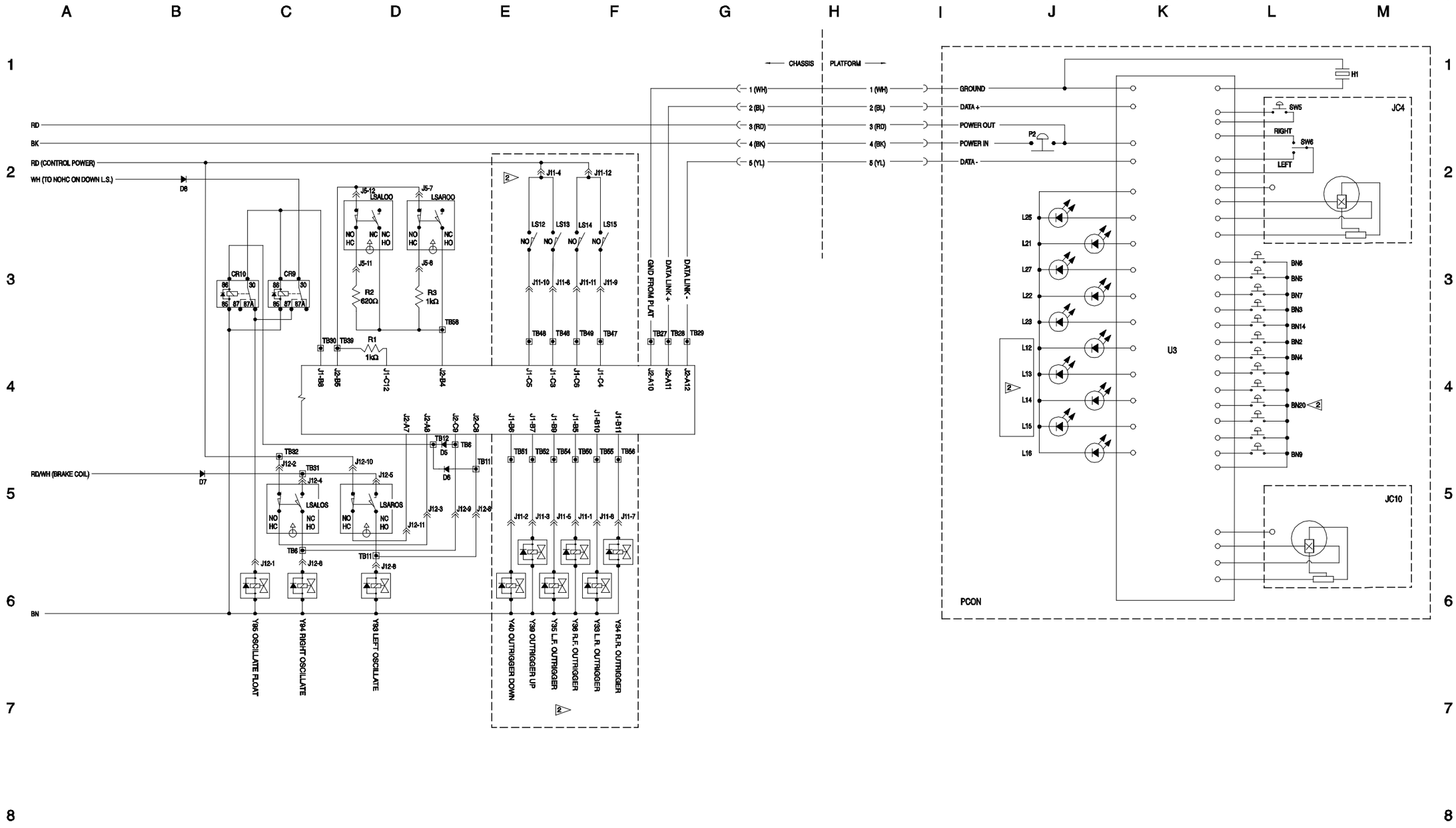
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
GM .998L Models (from serial number GS6916F-9101)



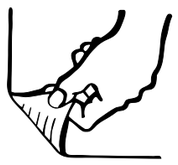
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
GM .998L Models (from serial number GS6916F-9101)



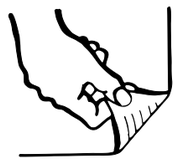
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
GM .998L Models (from serial number GS6916F-9101)



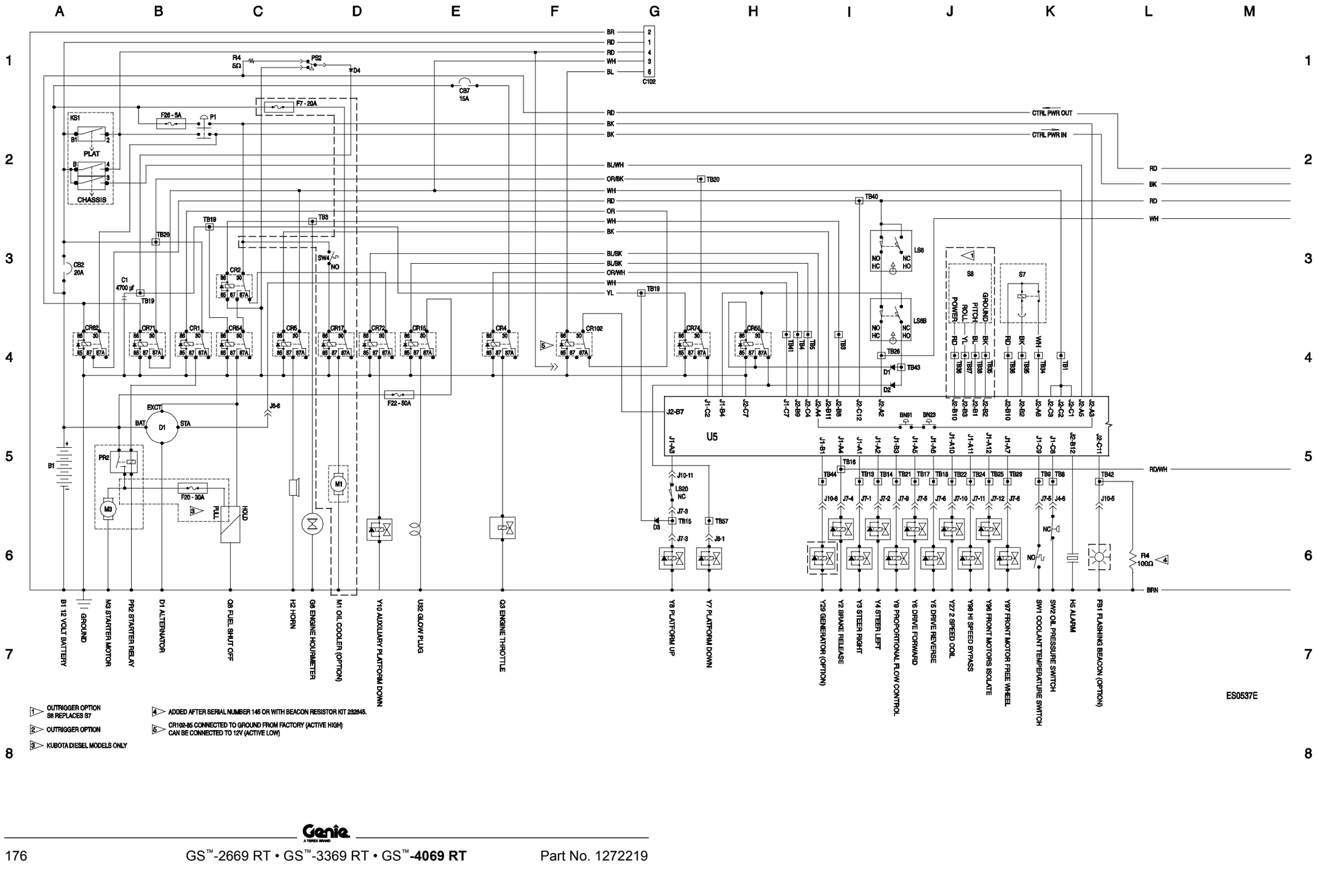
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
GM .998L Models (from serial number GS6916F-9101)



Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Diesel Models (to serial number GS6915-6383)

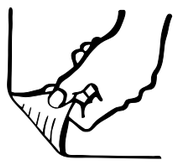


Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Diesel Models (to serial number GS6915-6383)

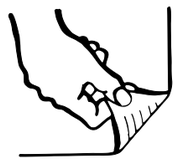


Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Diesel Models (to serial number GS6915-6383)

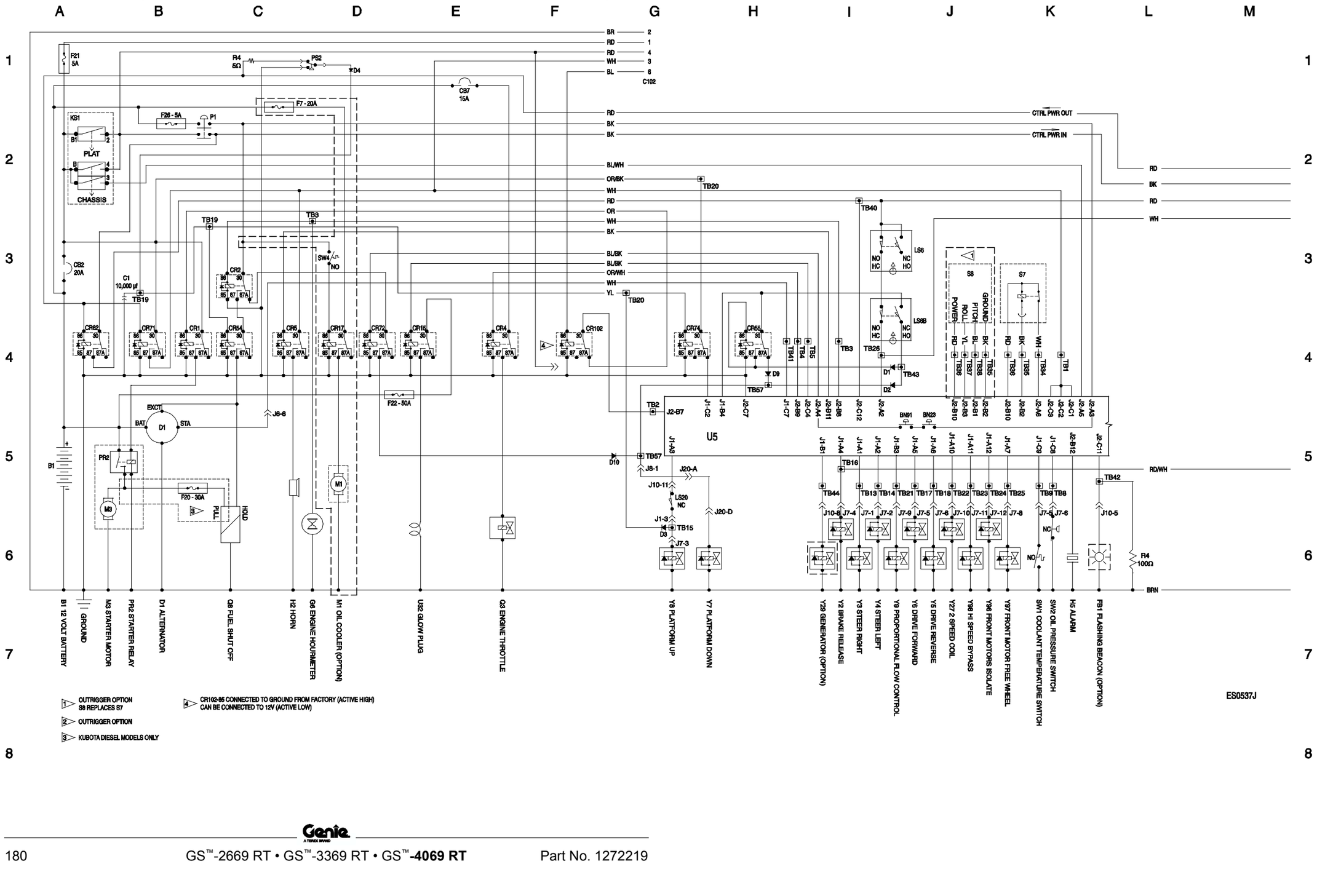
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE) Diesel Models (to serial number GS6915-6383)



Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)

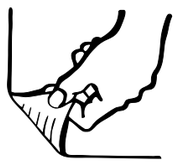


Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)

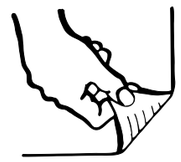


Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)

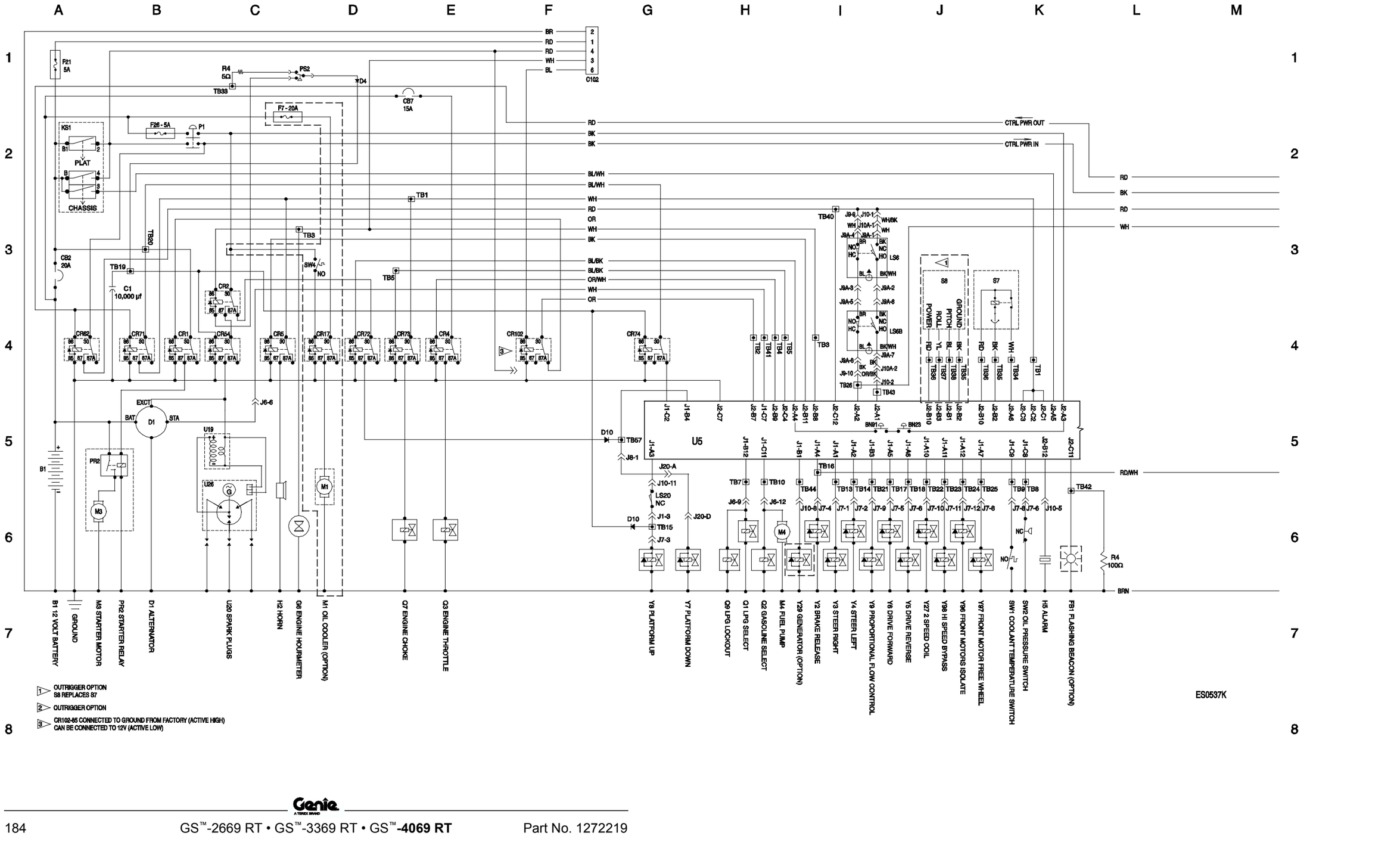
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)



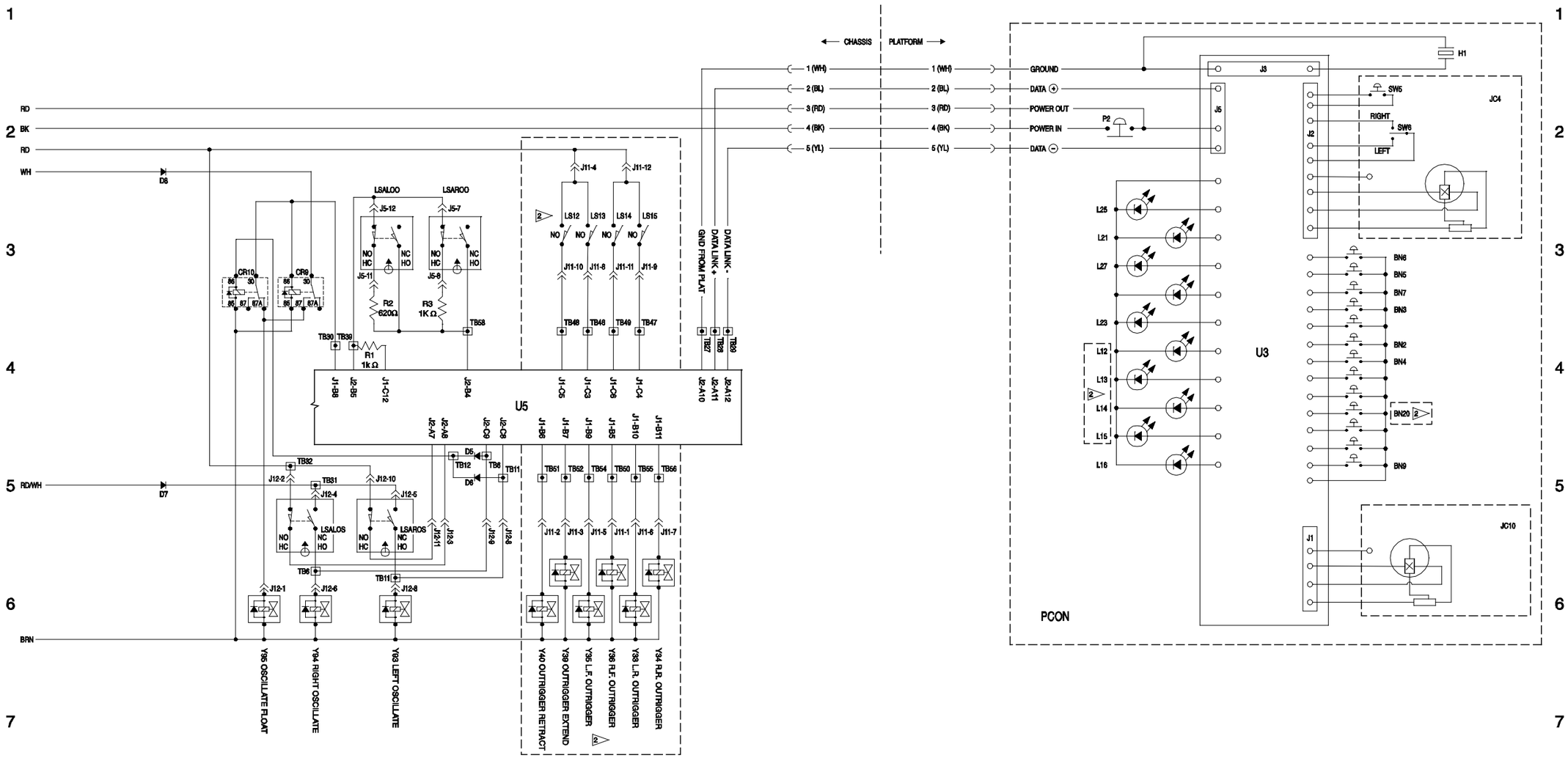
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE) Diesel Models (from serial number GS6916F-9068)



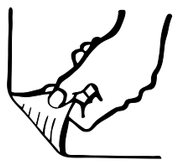
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE)
Diesel Models (from serial number GS6916F-9068)



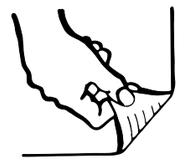
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE) Diesel Models (from serial number GS6916F-9068)



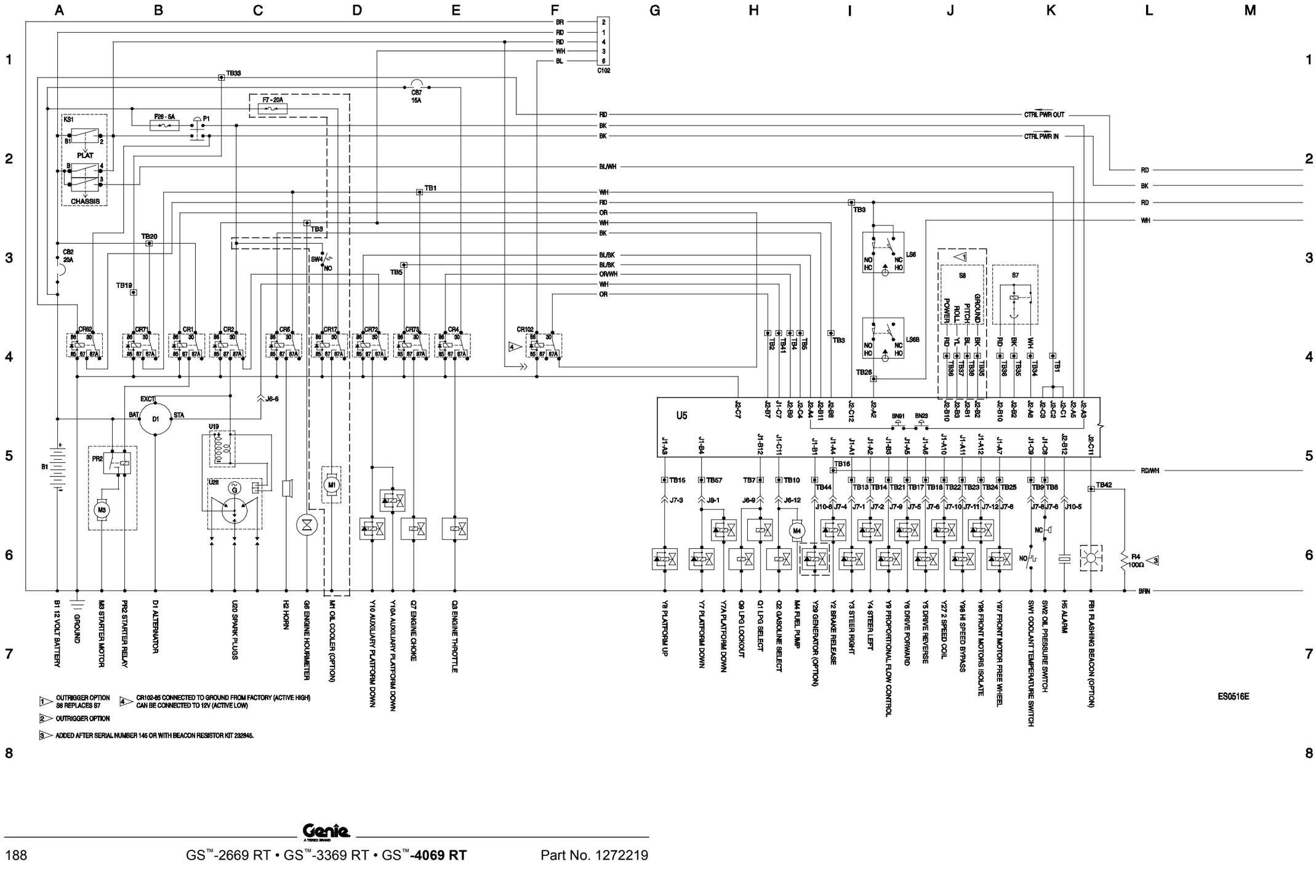
Electrical Schematic, GS-2669 RT and GS-3369 RT, (AS / CE) Diesel Models (from serial number GS6916F-9068)



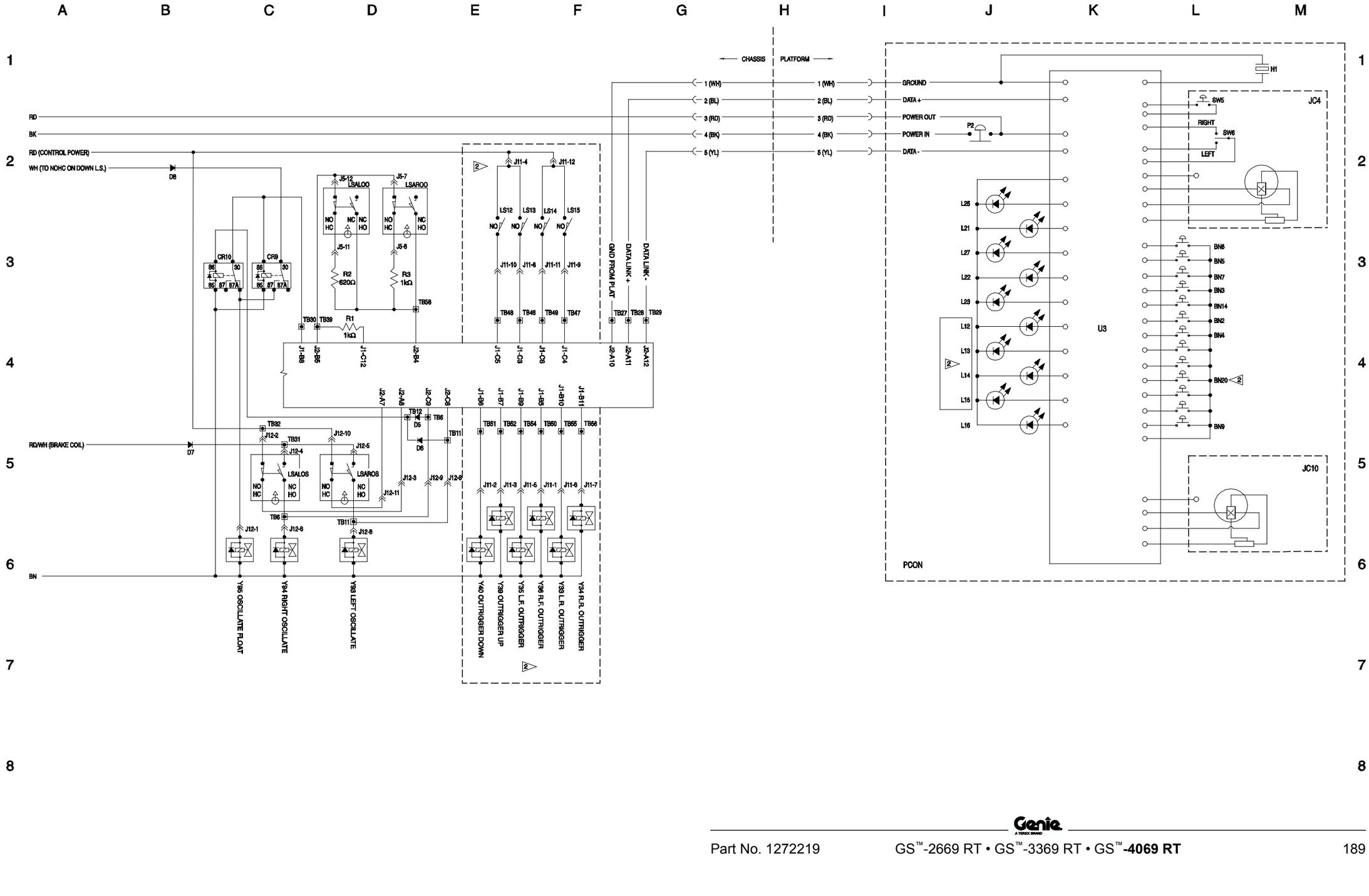
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (to serial number GS6915-6383)



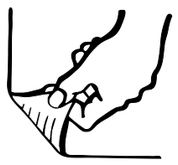
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (to serial number GS6915-6383)



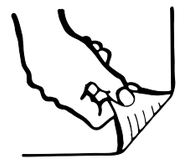
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (to serial number GS6915-6383)



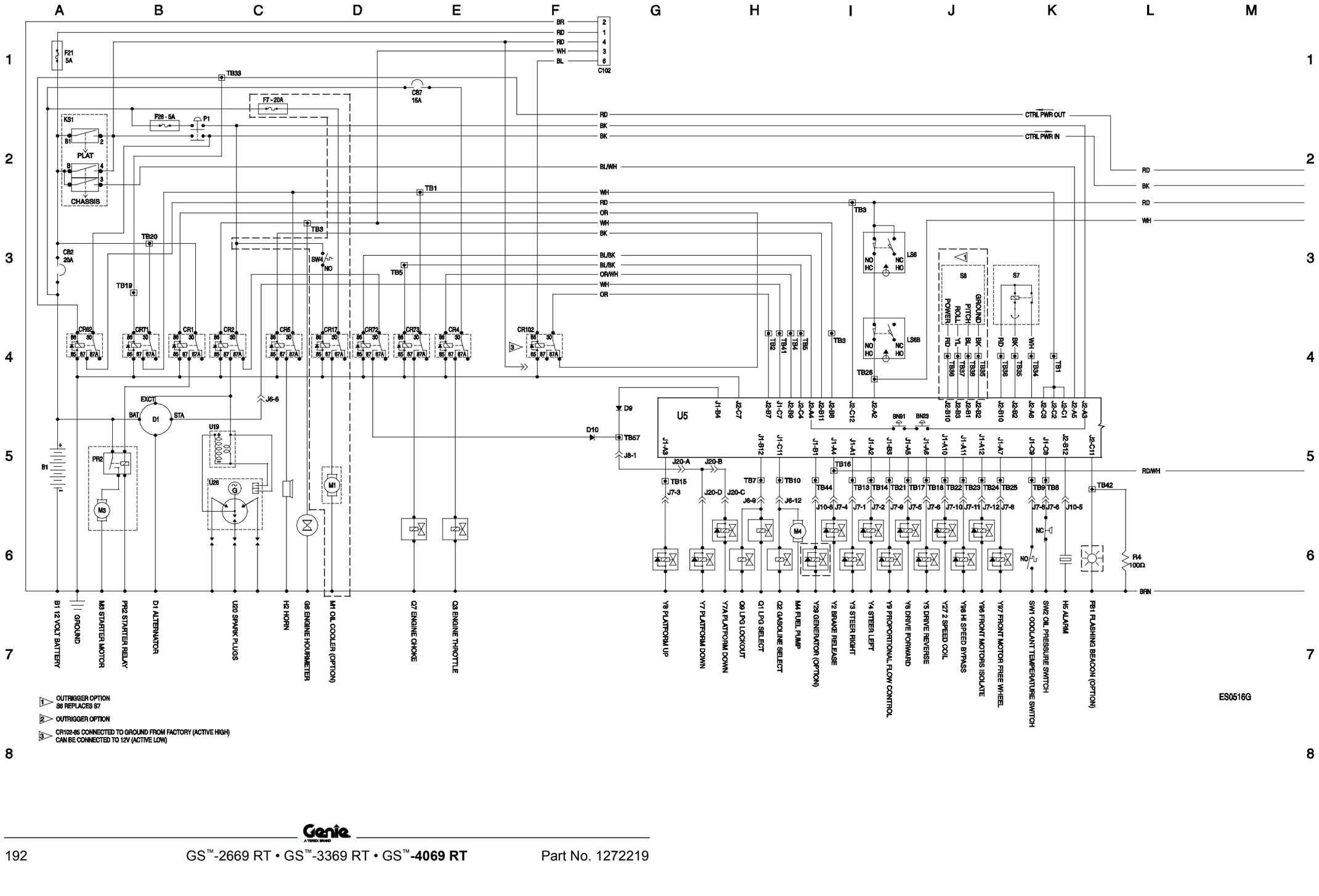
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (to serial number GS6915-6383)



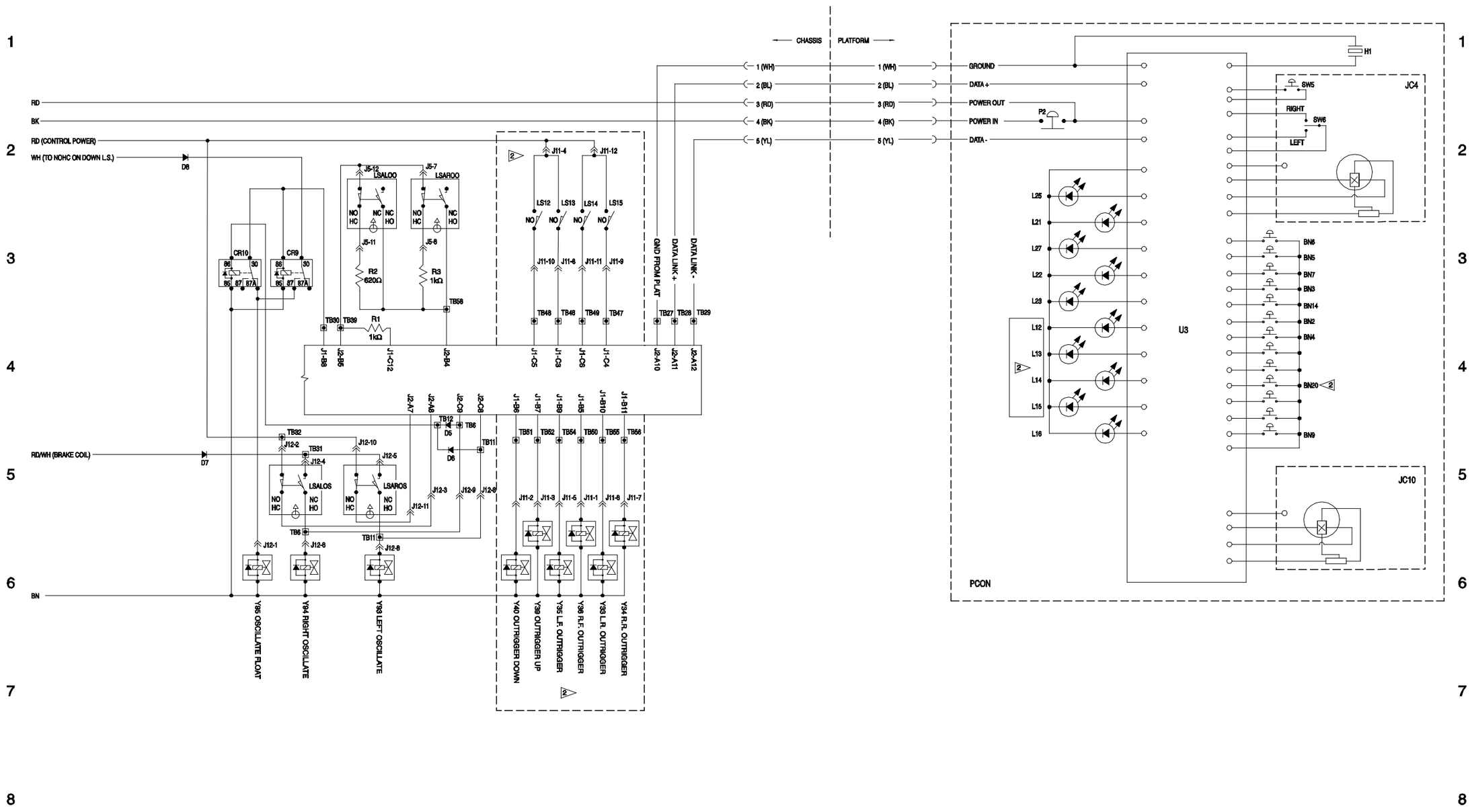
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



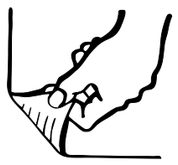
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



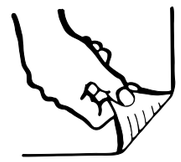
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



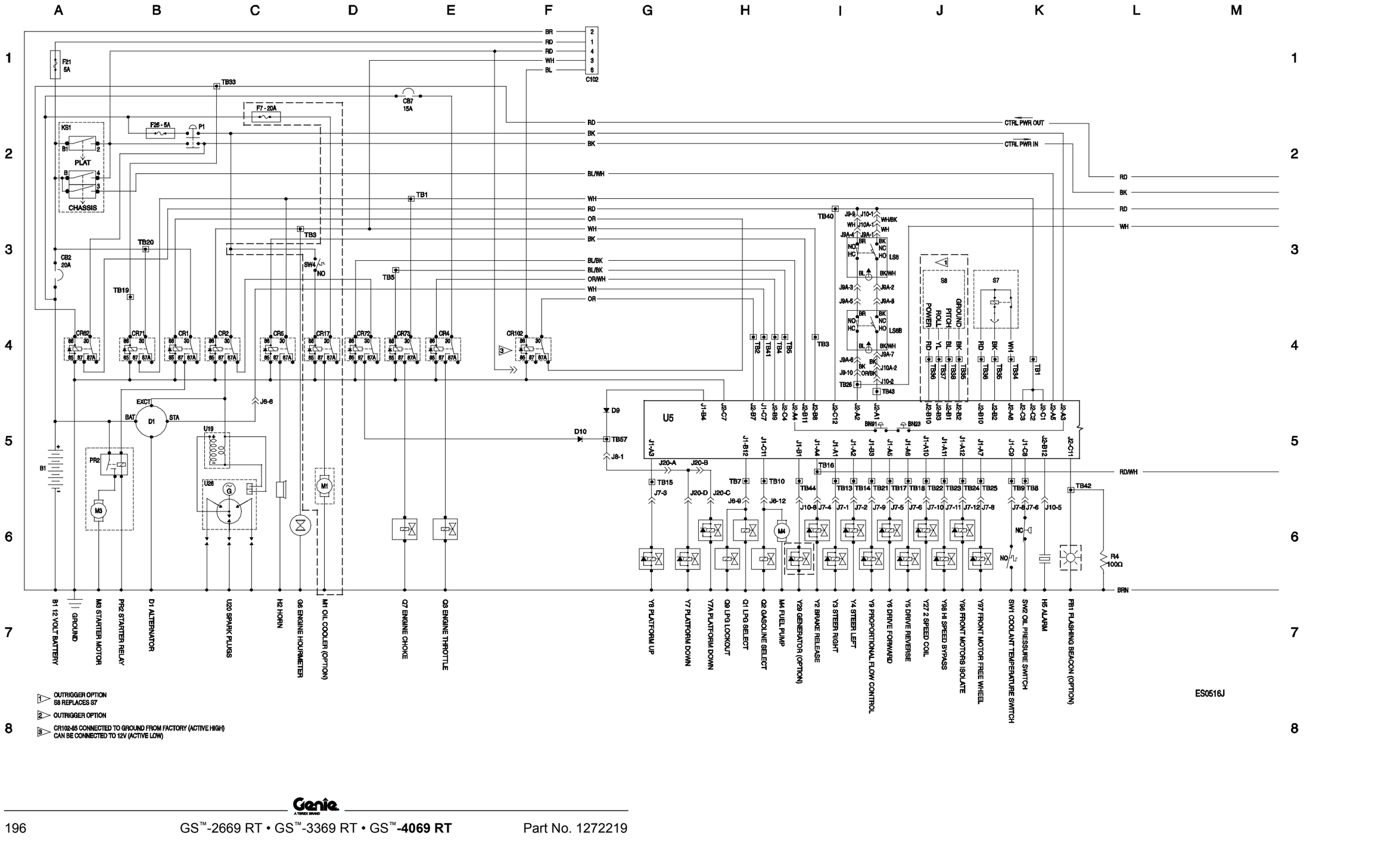
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



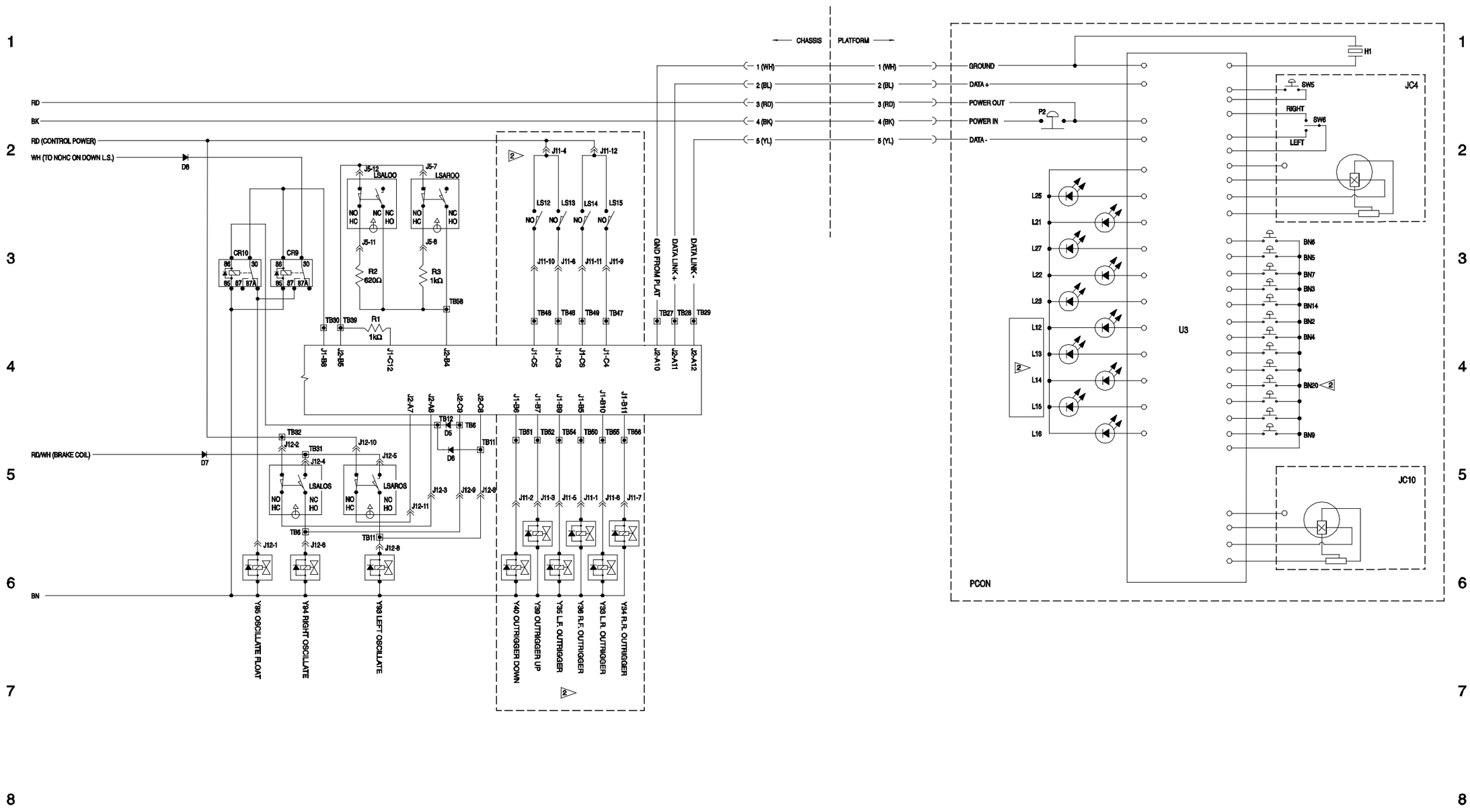
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



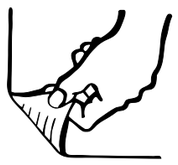
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



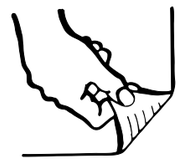
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



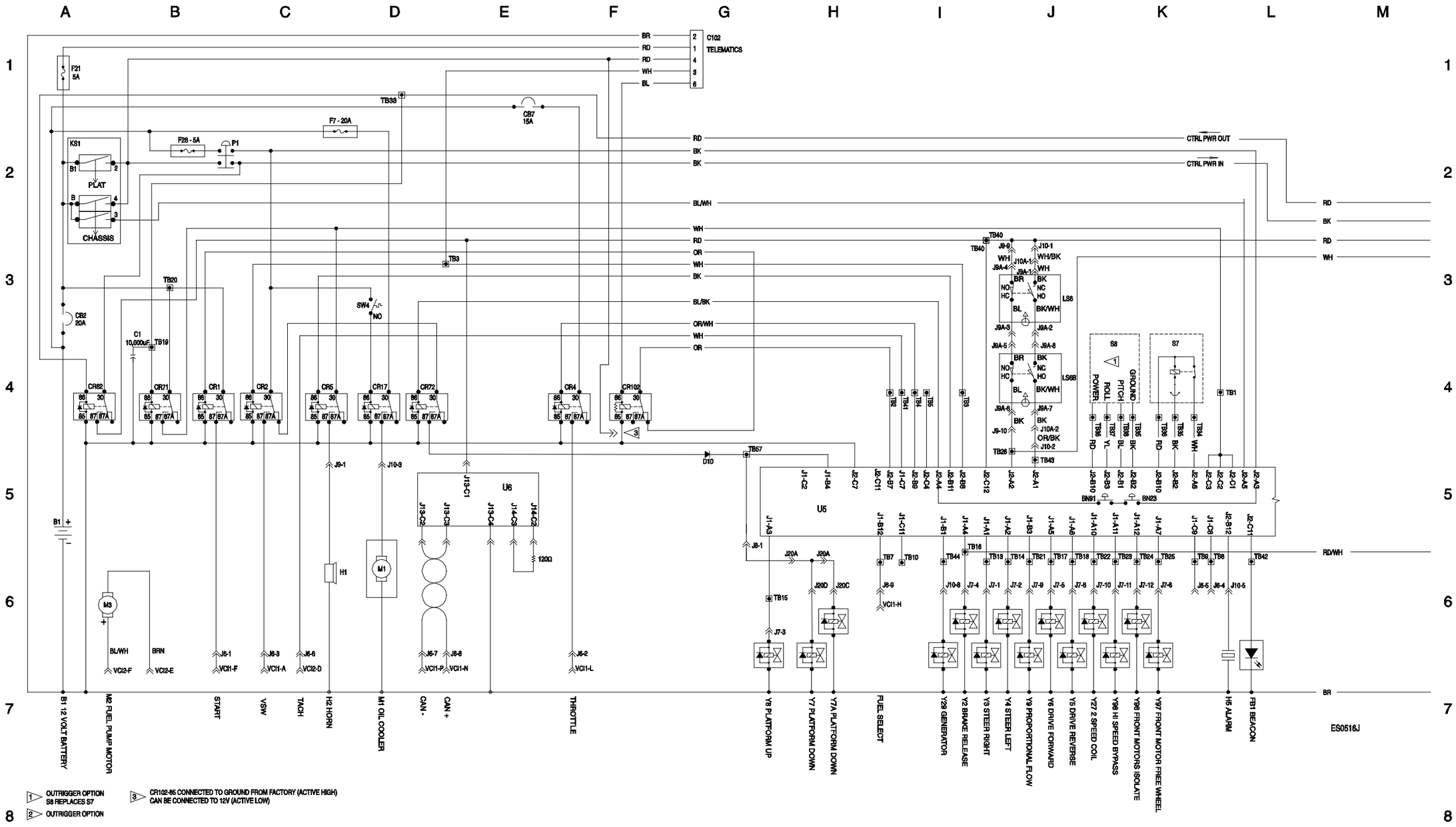
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



Electrical Schematic, GS-4069 RT, (ANSI / CSA)
GM .998L Models (from serial number GS6916F-9101)

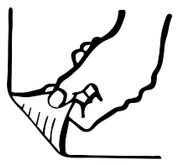


Electrical Schematic, GS-4069 RT, (ANSI / CSA)
GM .998L Models (from serial number GS6916F-9101)

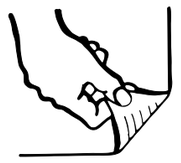


Electrical Schematic, GS-4069 RT, (ANSI / CSA)
GM .998L Models (from serial number GS6916F-9101)

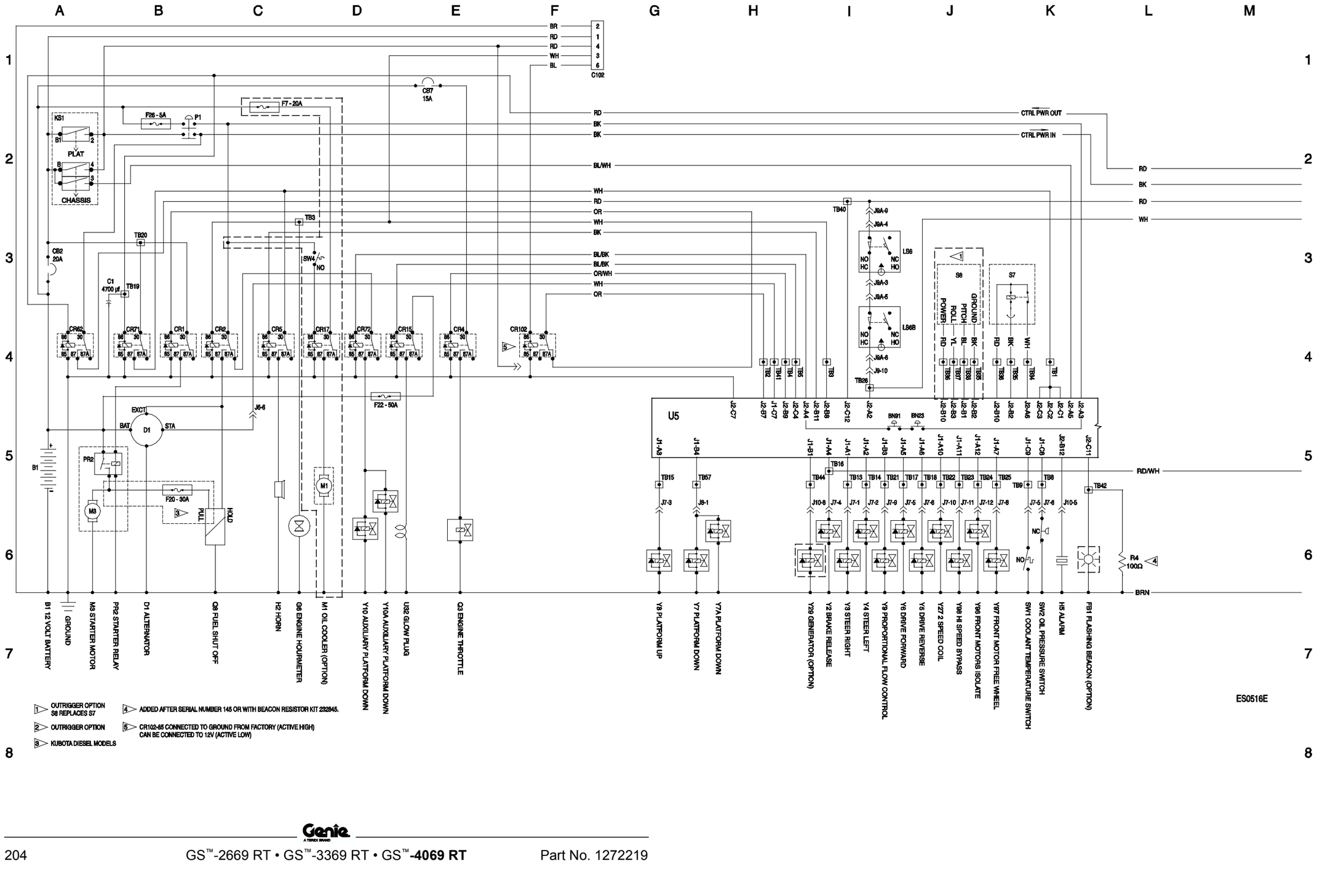
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
GM .998L Models (from serial number GS6916F-9101)



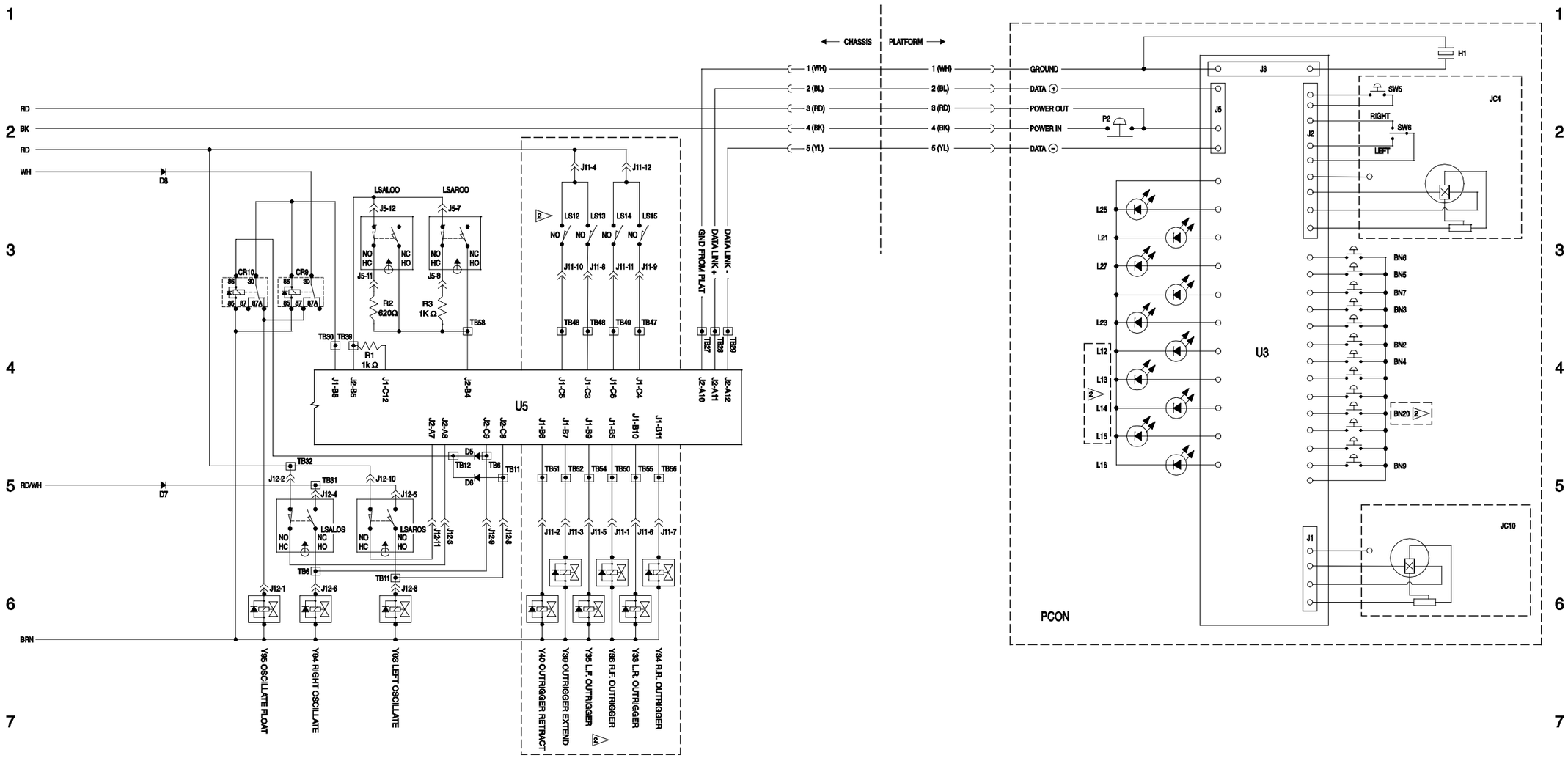
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (to serial number GS6915-6383)



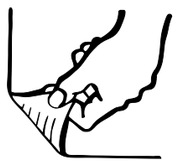
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (to serial number GS6915-6383)



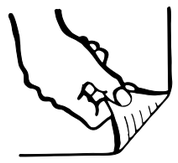
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (to serial number GS6915-6383)



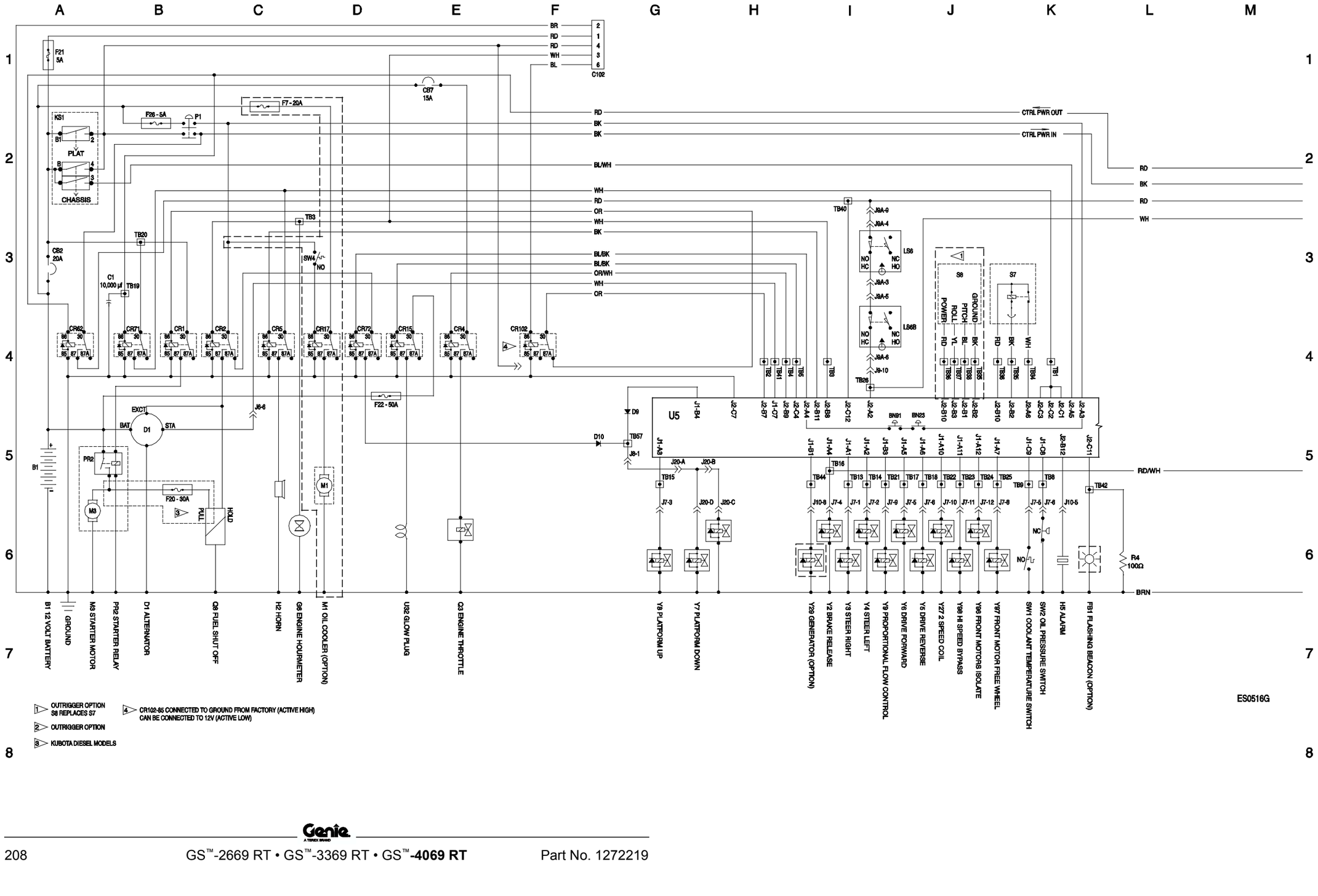
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (to serial number GS6915-6383)



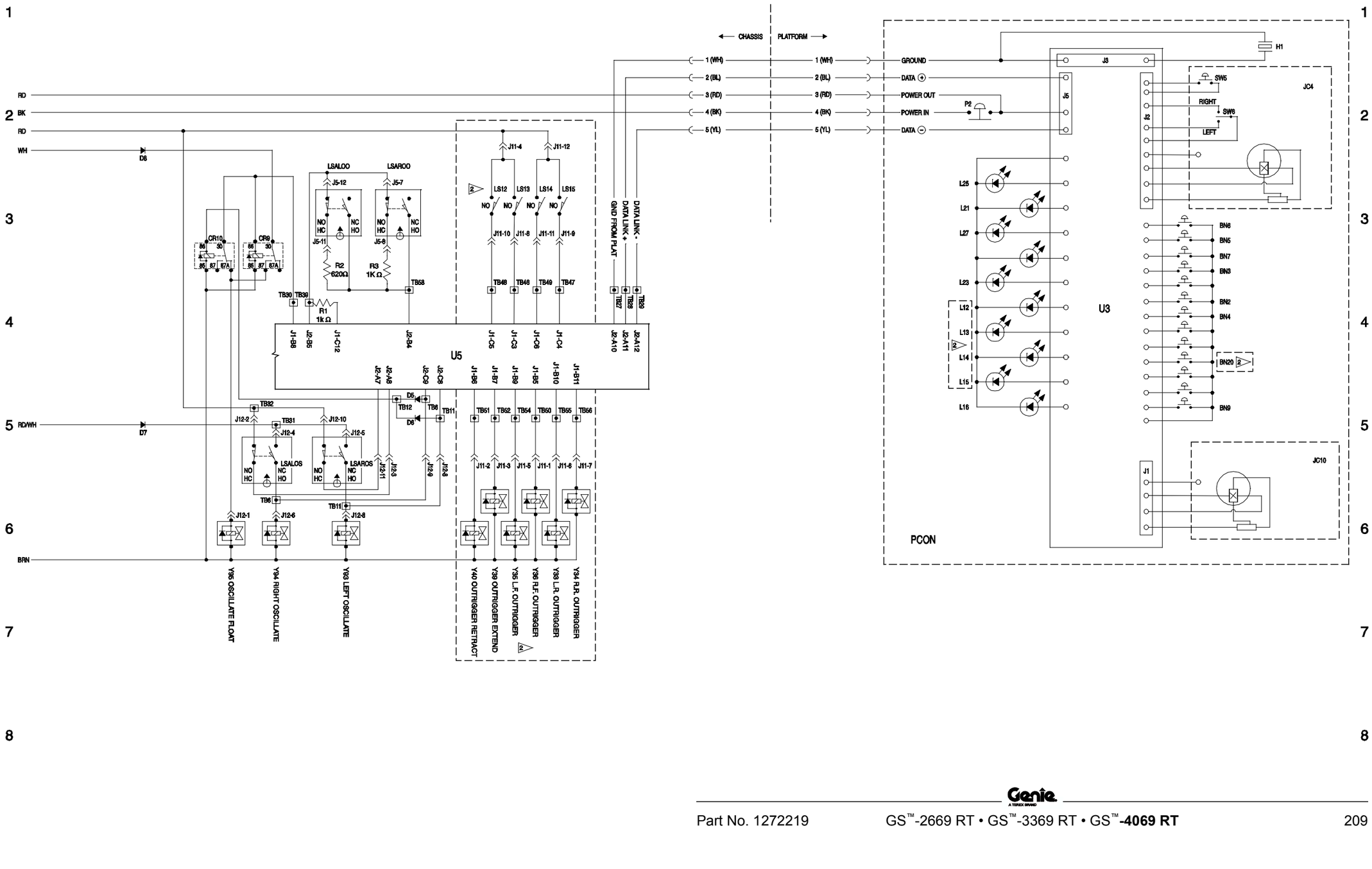
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)



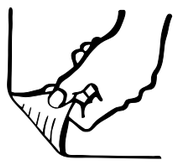
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)



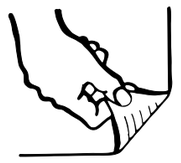
Electrical Schematic, GS-4069 RT, (ANS / CSA)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)



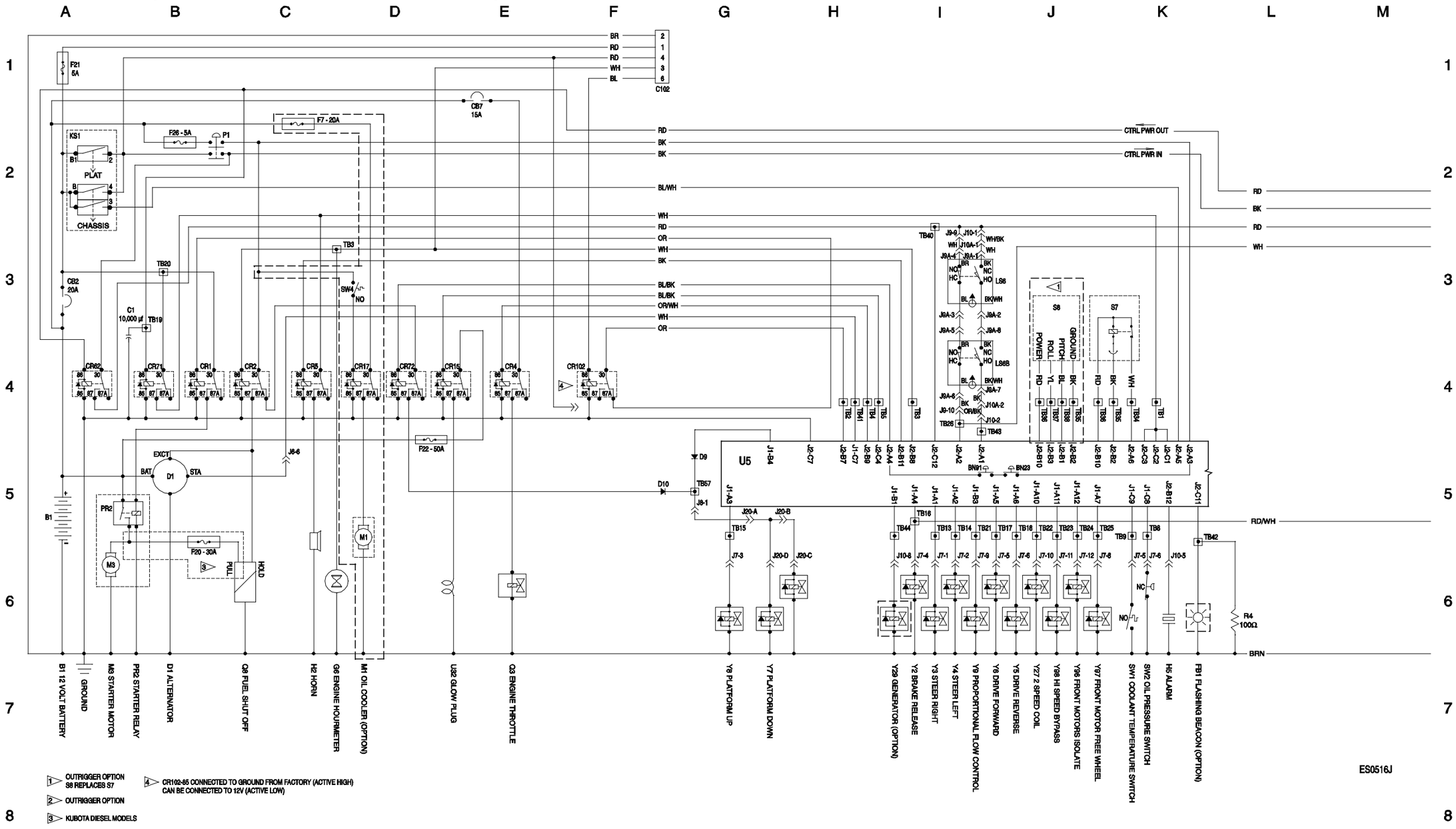
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)



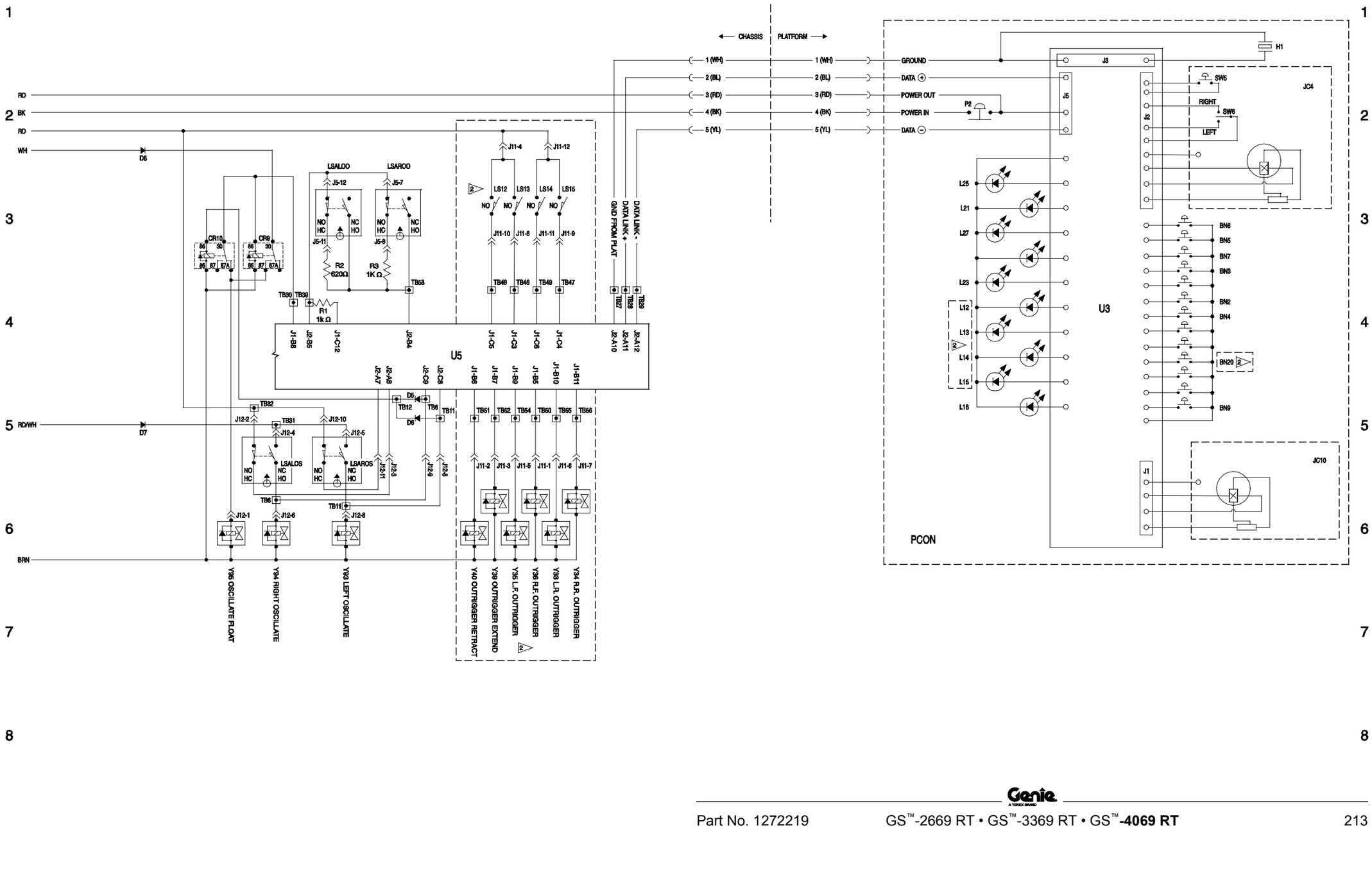
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (from serial number GS6916F-9068)



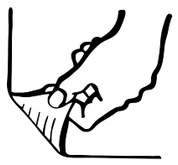
Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (from serial number GS6916F-9068)



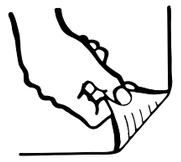
Electrical Schematic, GS-4069 RT, (ANS / CSA)
Diesel Models (from serial number GS6916F-9068)



Electrical Schematic, GS-4069 RT, (ANSI / CSA)
Diesel Models (from serial number GS6916F-9068)

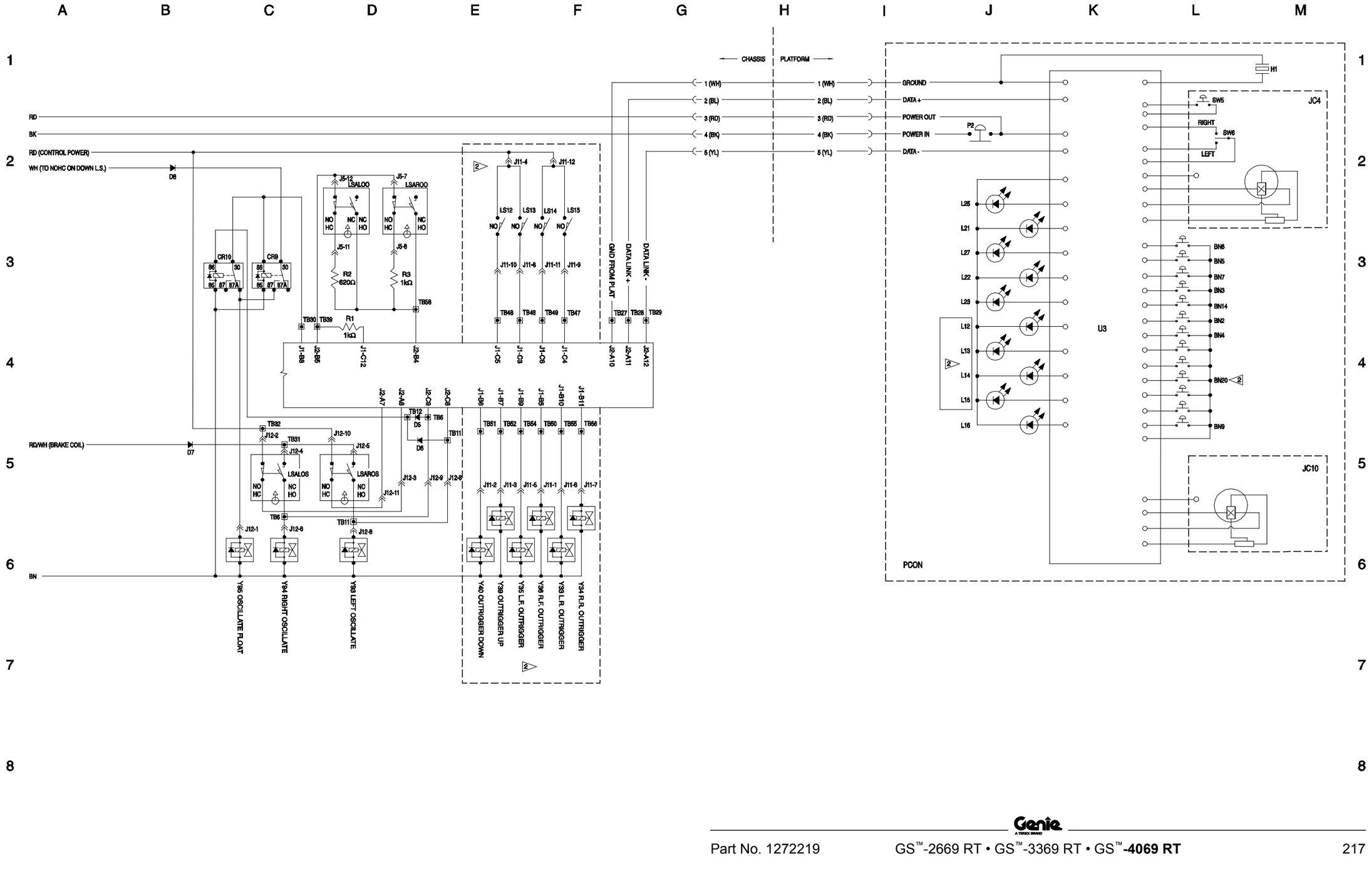


Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6915-6383)

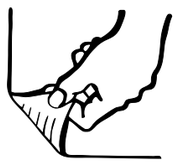


Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6915-6383)

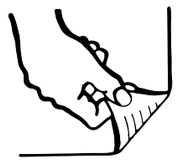
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6915-6383)



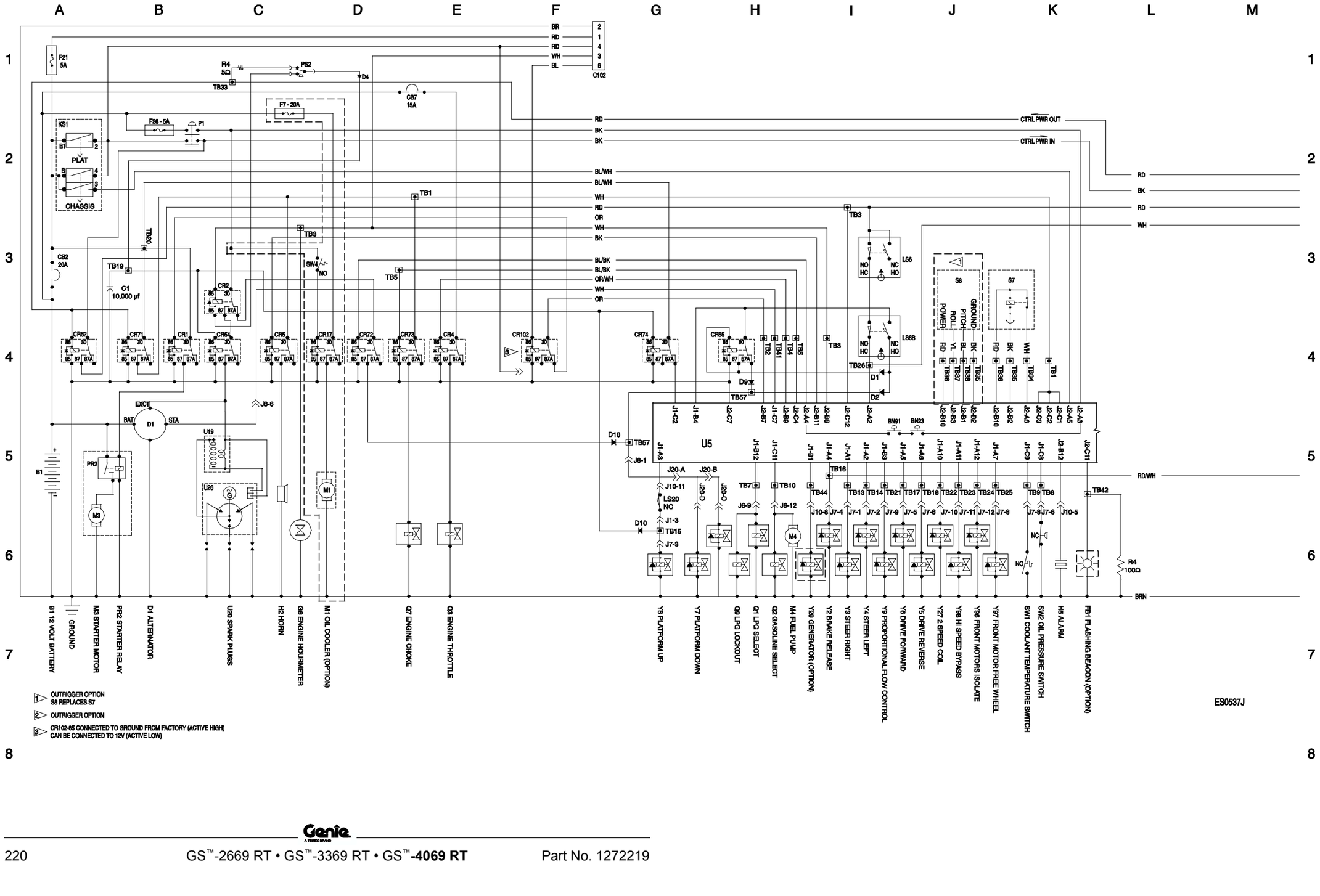
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (to serial number GS6915-6383)



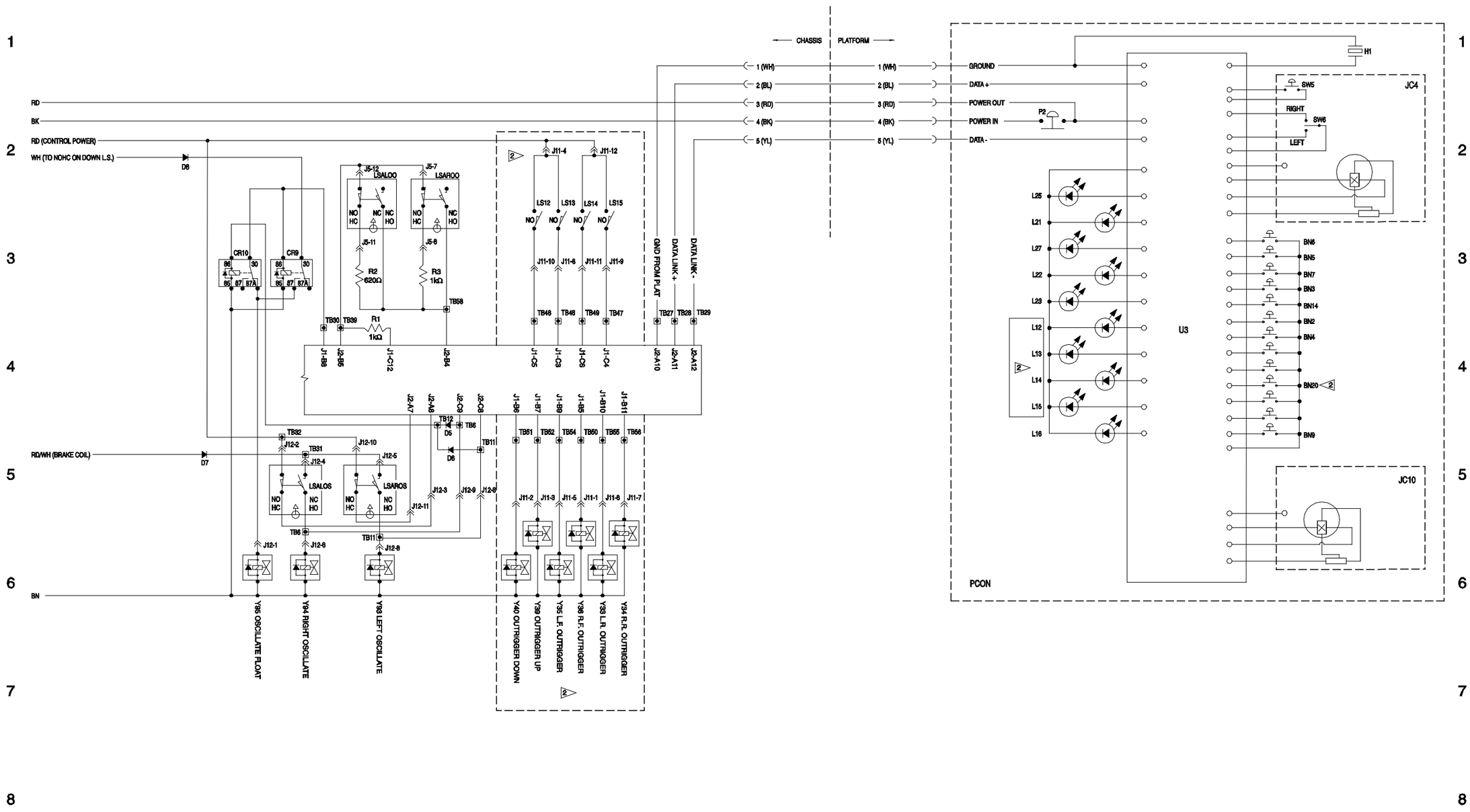
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



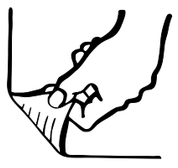
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



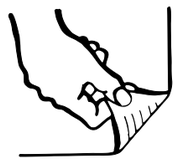
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



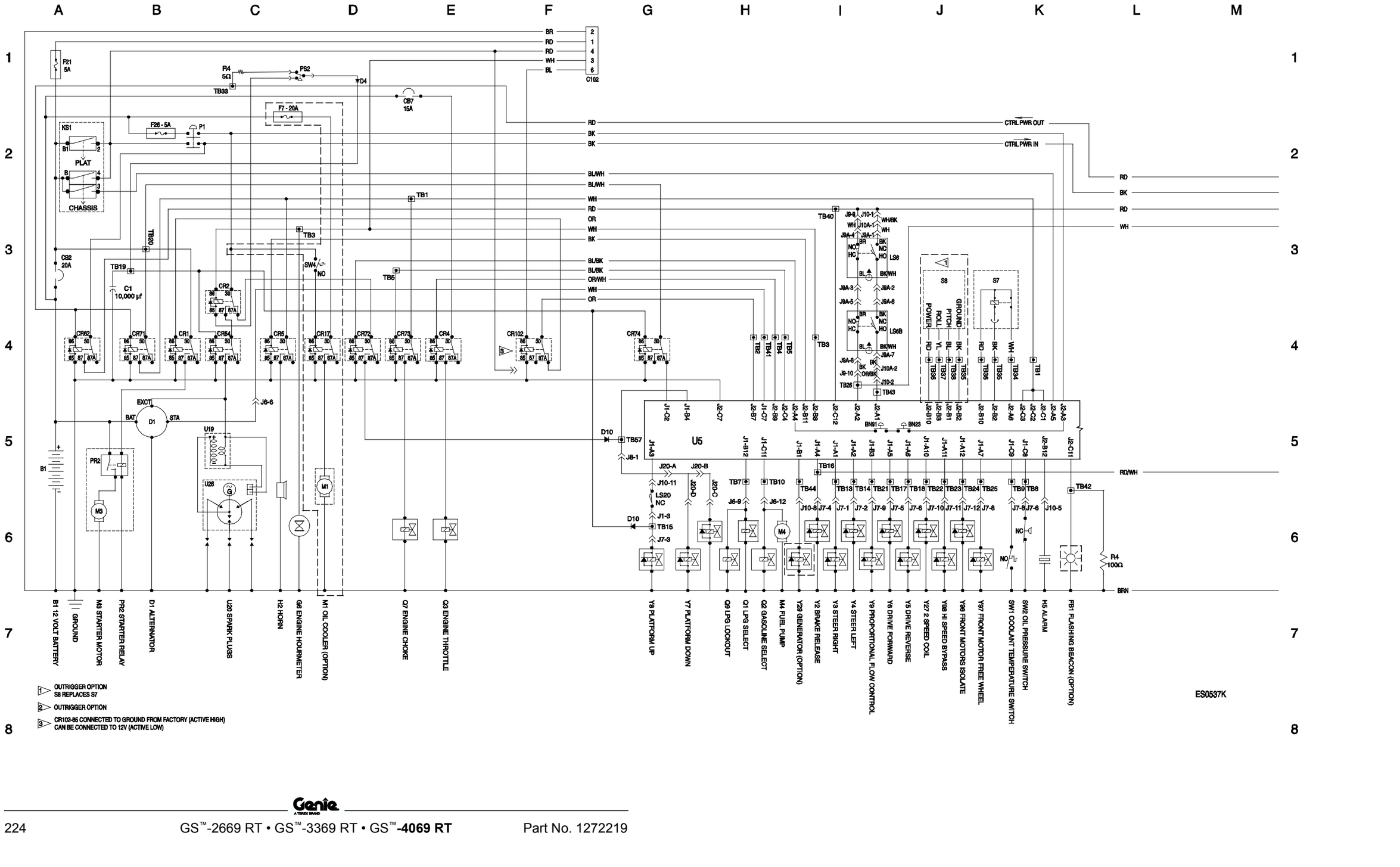
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6915-6384 to GS6916F-9067)



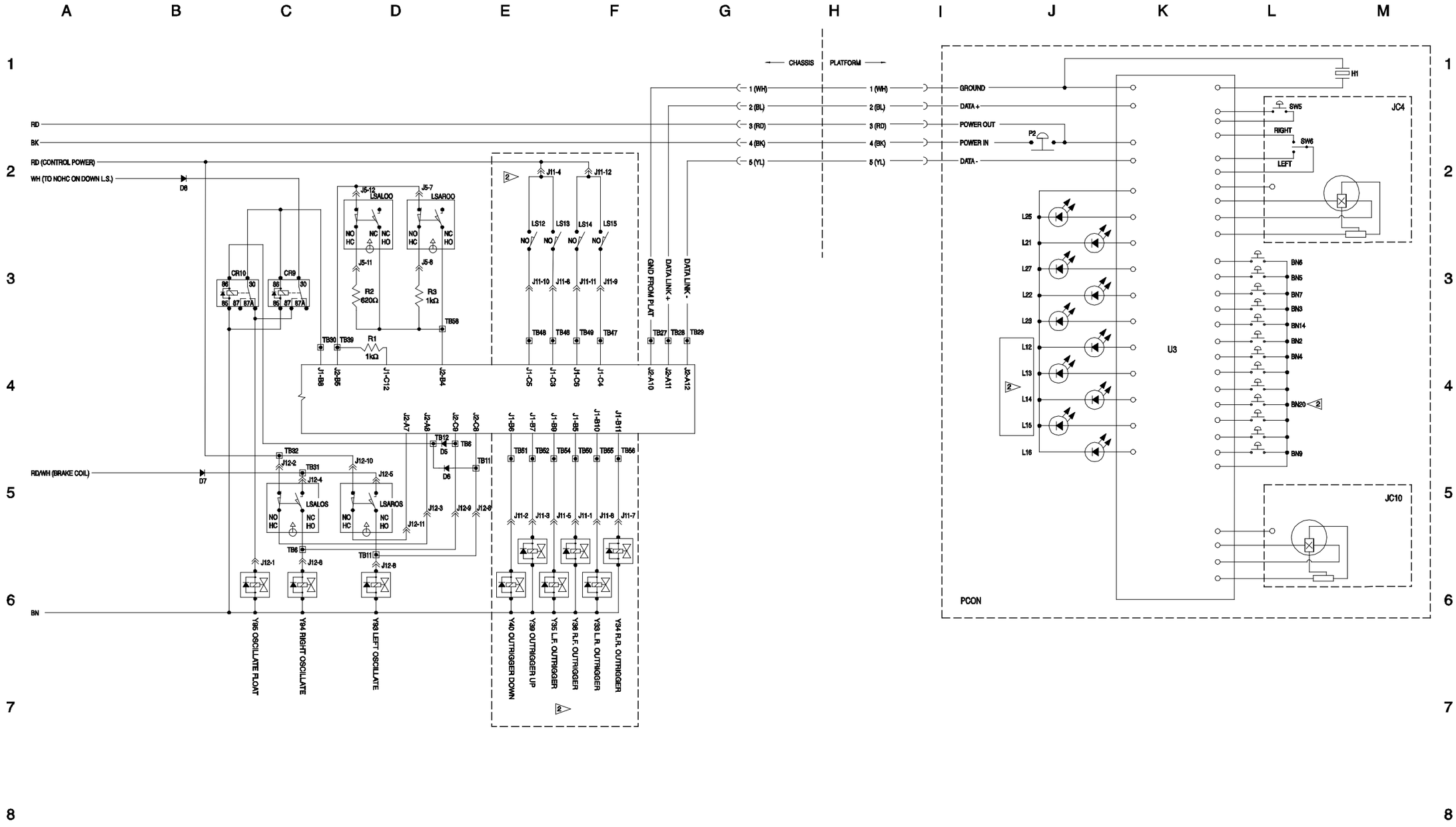
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



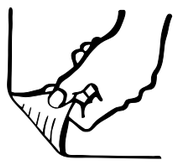
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



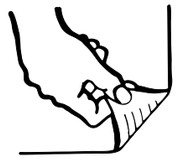
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



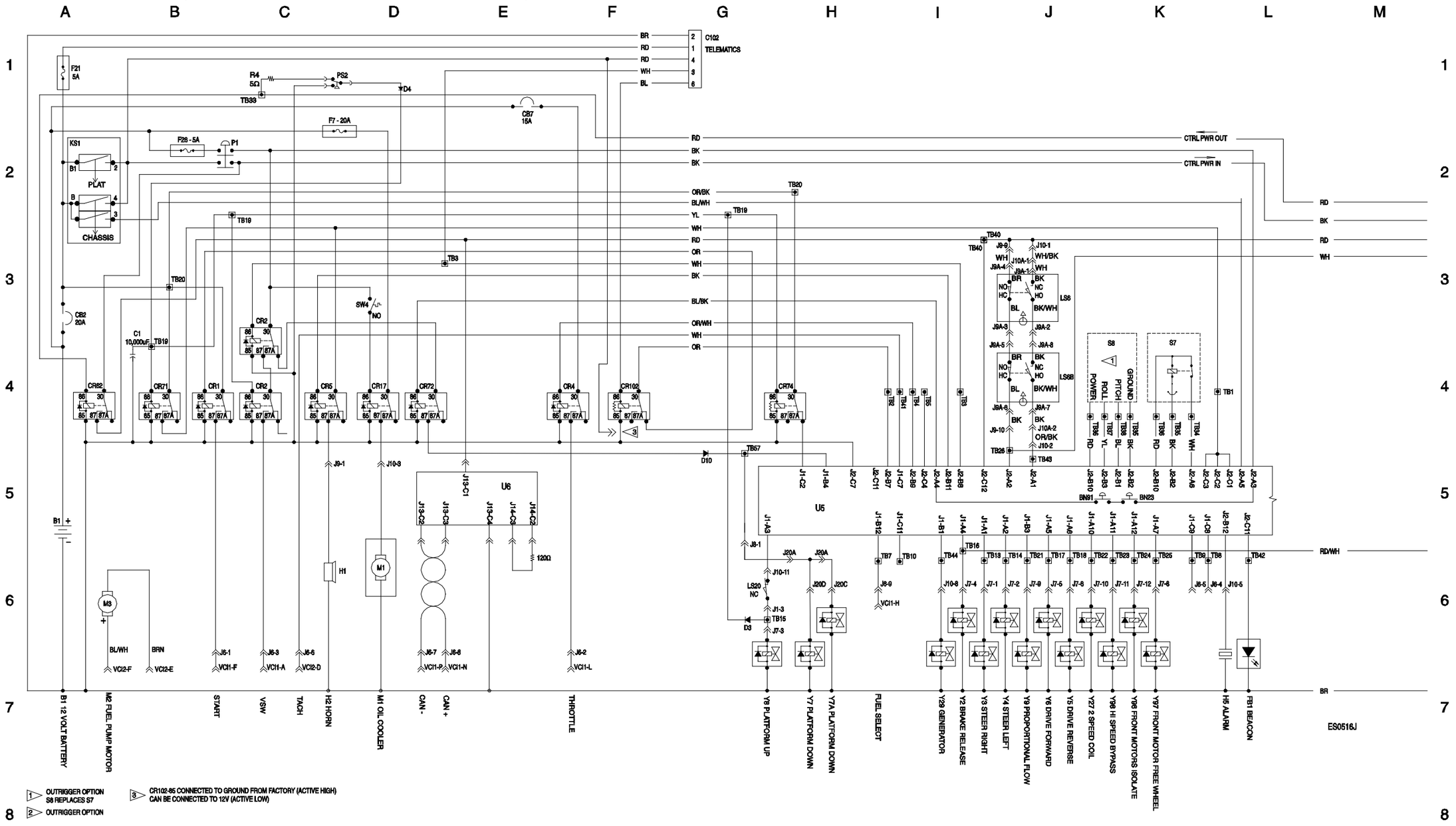
Electrical Schematic, GS-4069 RT, (AS / CE)
Kubota WG-972 Models (from serial number GS6916F-9068 to GS6916F-9100)



Electrical Schematic, GS-4069 RT, (AS / CE)
GM .998L Models (from serial number GS6916F-9101)

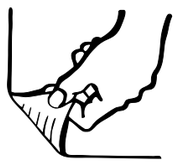


Electrical Schematic, GS-4069 RT, (AS / CE)
GM .998L Models (from serial number GS6916F-9101)

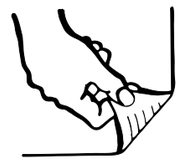


Electrical Schematic, GS-4069 RT, (AS / CE)
GM .998L Models (from serial number GS6916F-9101)

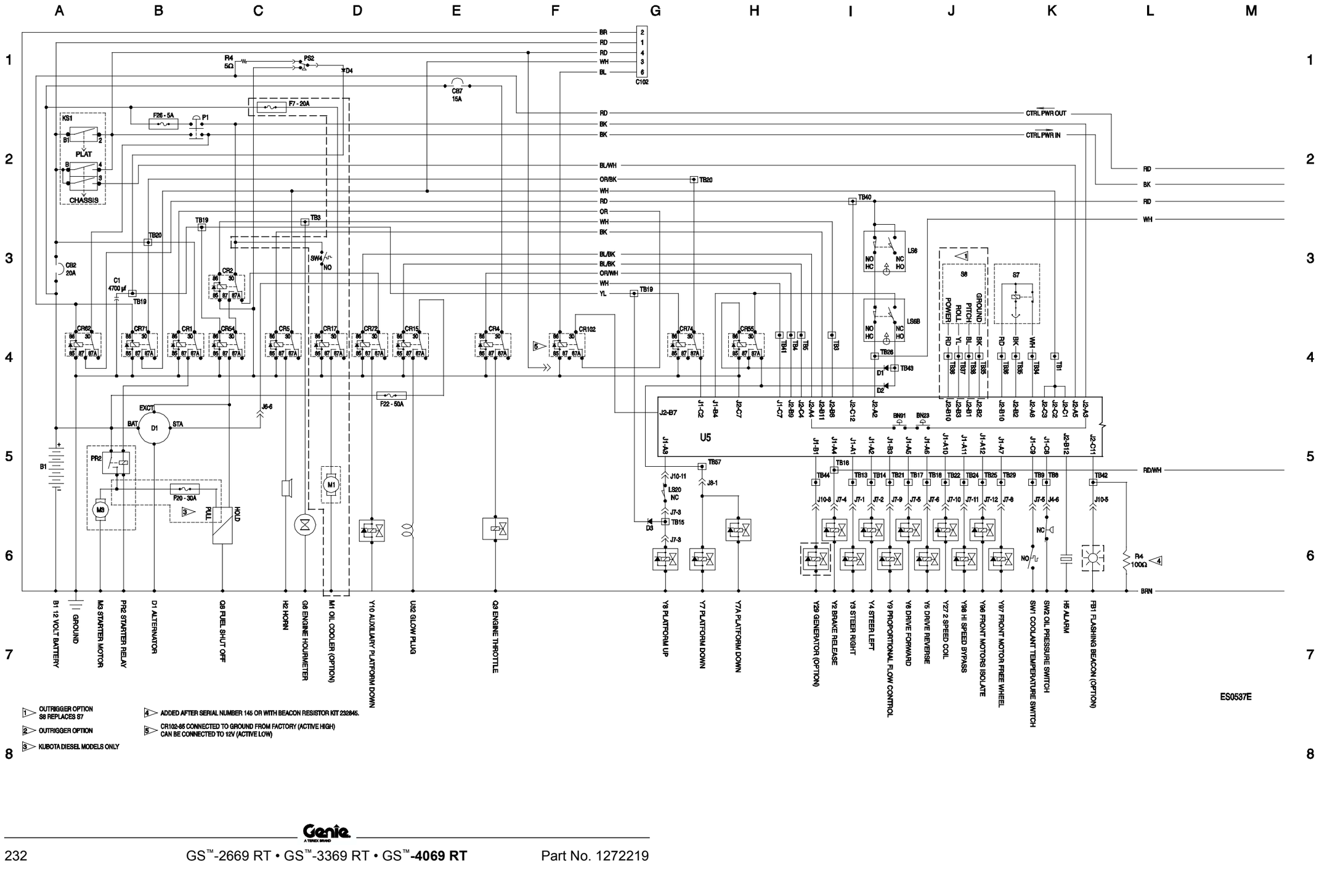
Electrical Schematic, GS-4069 RT, (AS / CE)
GM .998L Models (from serial number GS6916F-9101)



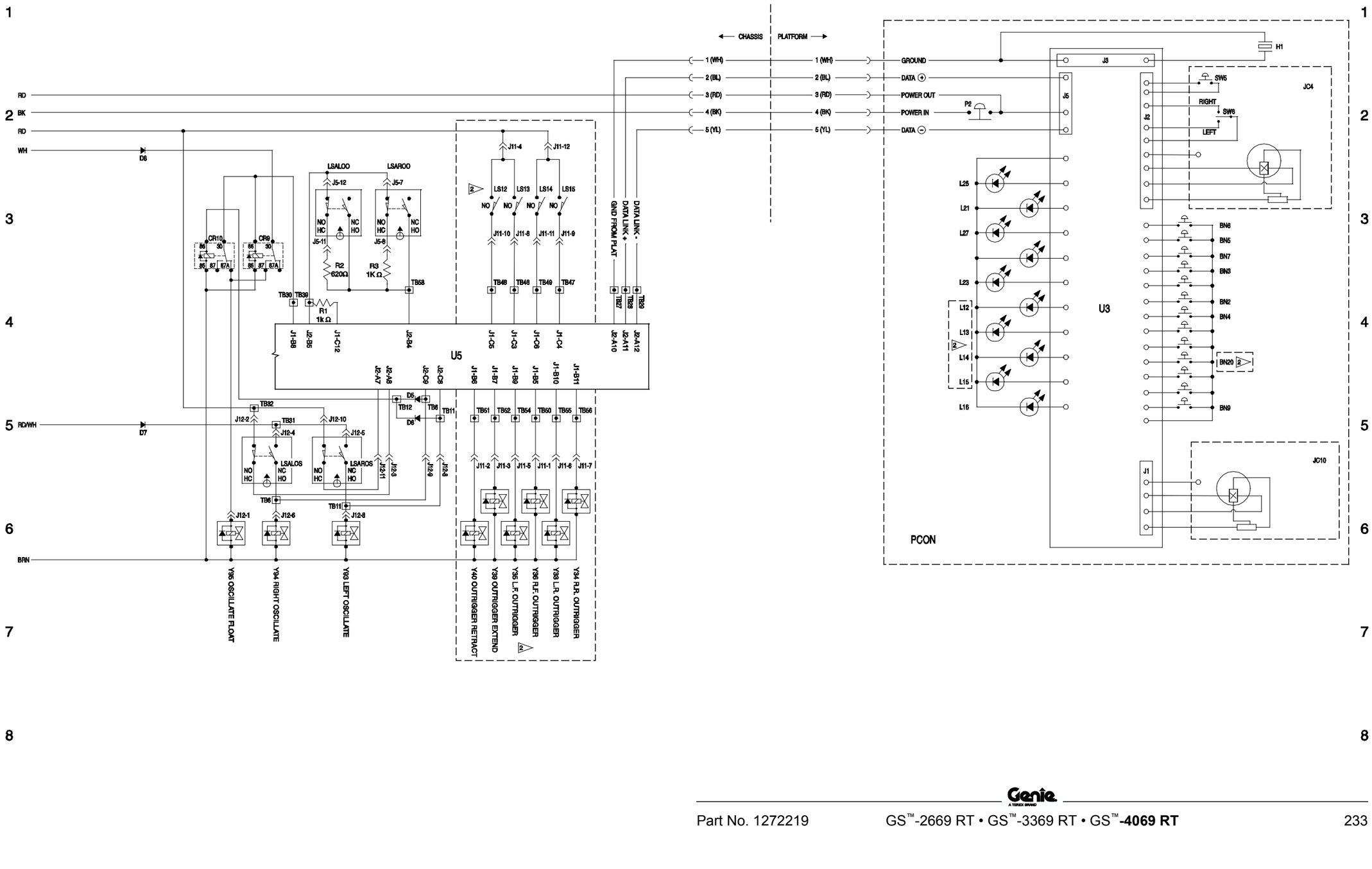
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (to serial number GS6915-6383)



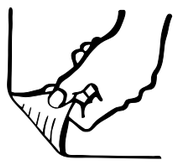
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (to serial number GS6915-6383)



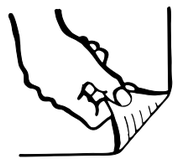
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (to serial number GS6915-6383)



Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (to serial number GS6915-6383)



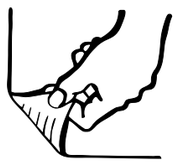
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)



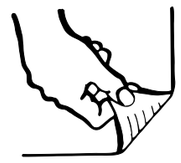
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)

Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)

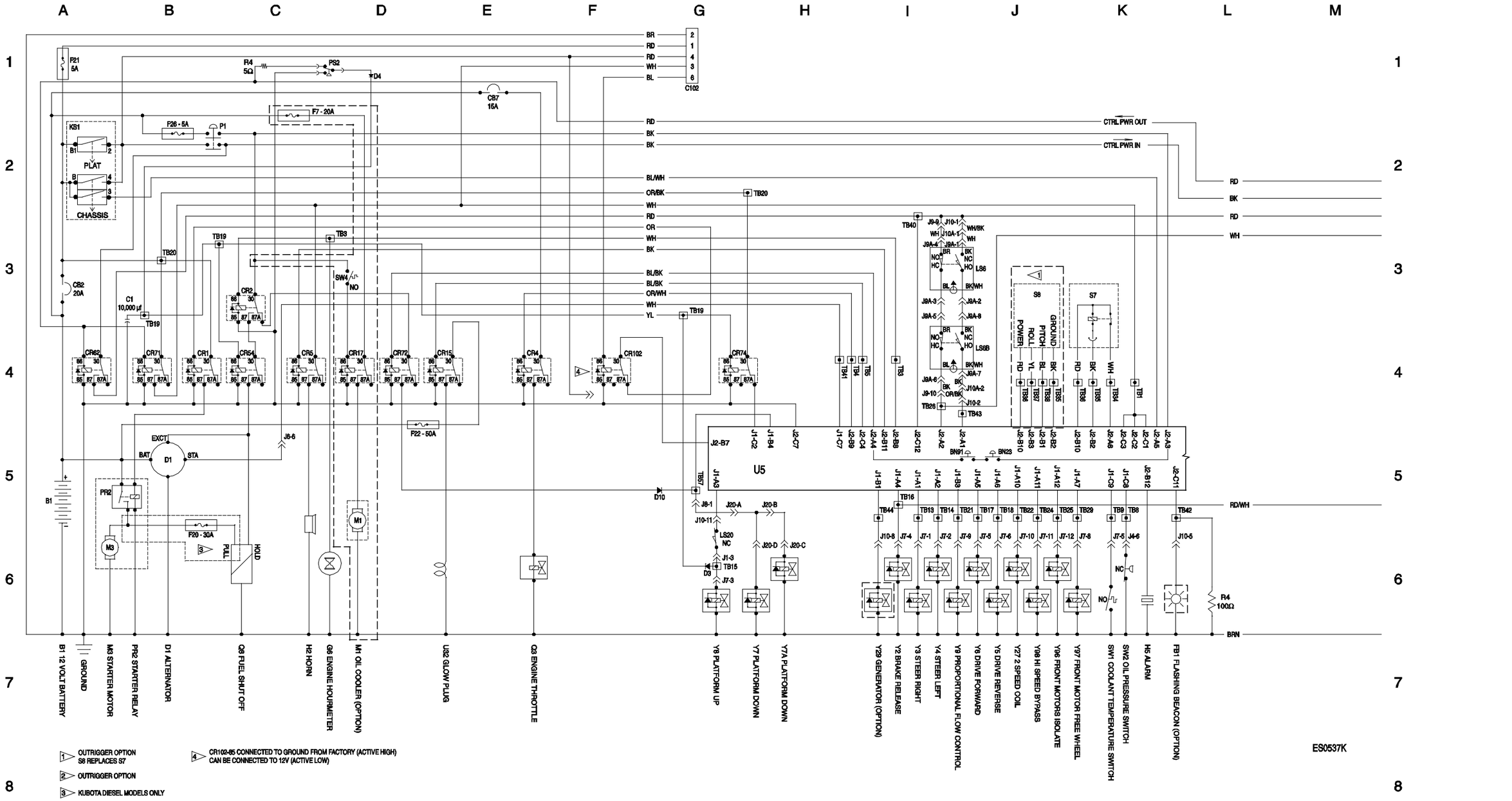
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (from serial number GS6915-6384 to GS6916F-9067)



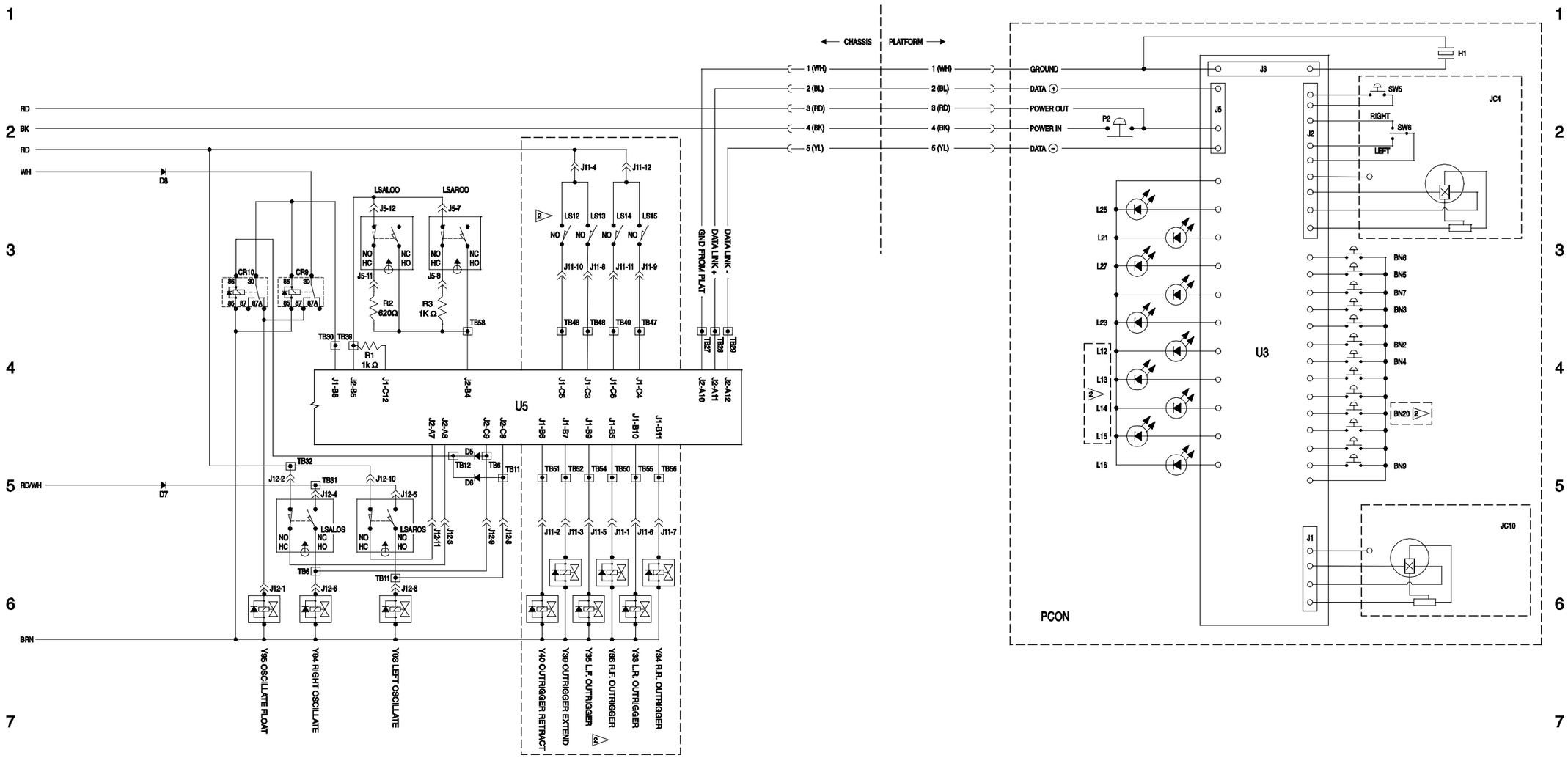
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (from serial number GS6916F-9068)



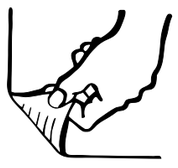
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (from serial number GS6916F-9068)



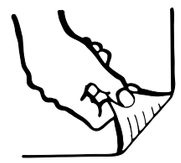
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (from serial number GS6916F-9068)



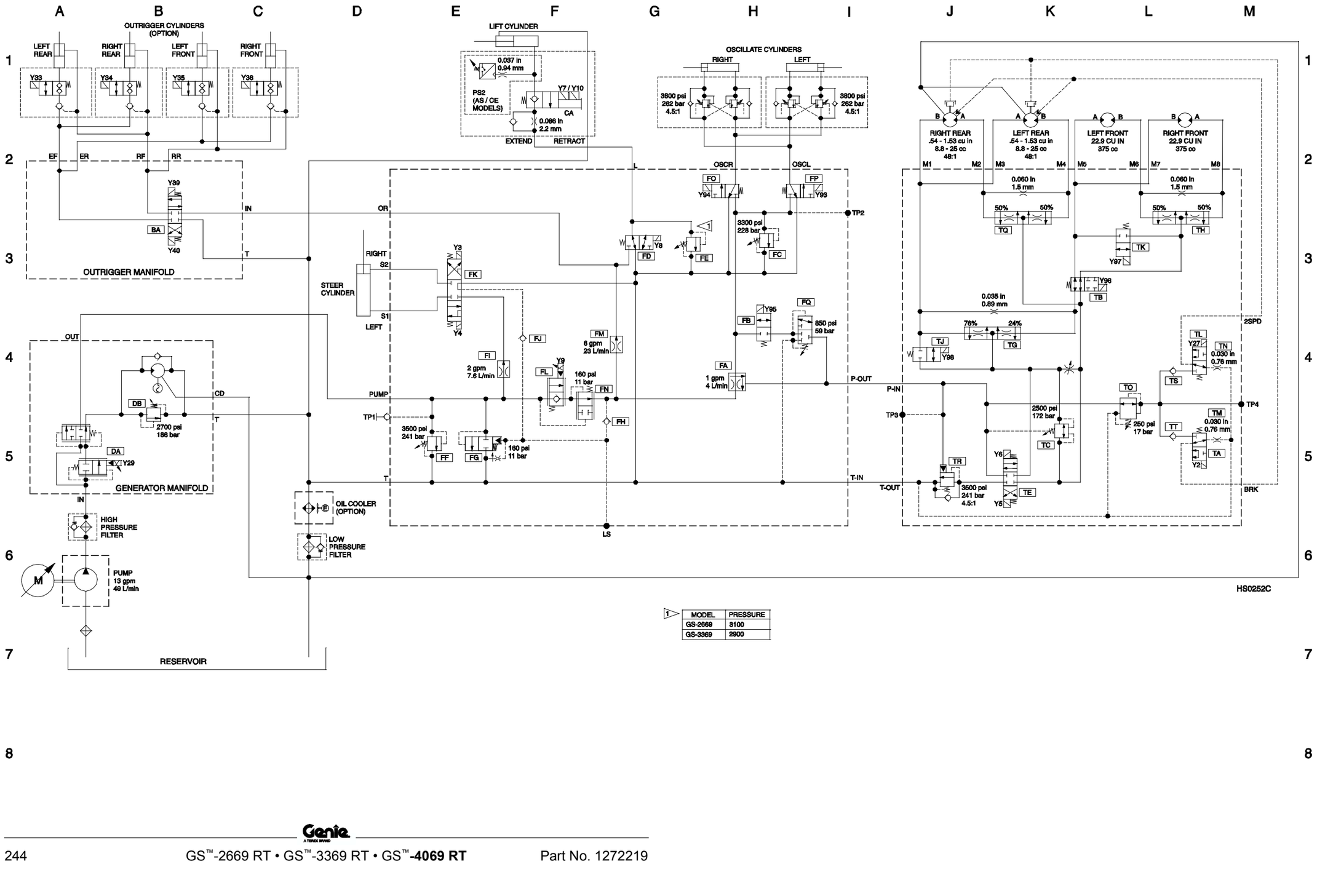
Electrical Schematic, GS-4069 RT, (AS / CE)
Diesel Models (from serial number GS6916F-9068)



Hydraulic Schematic, GS-2669 RT and GS-3369 RT (to serial number GS6915-6383)

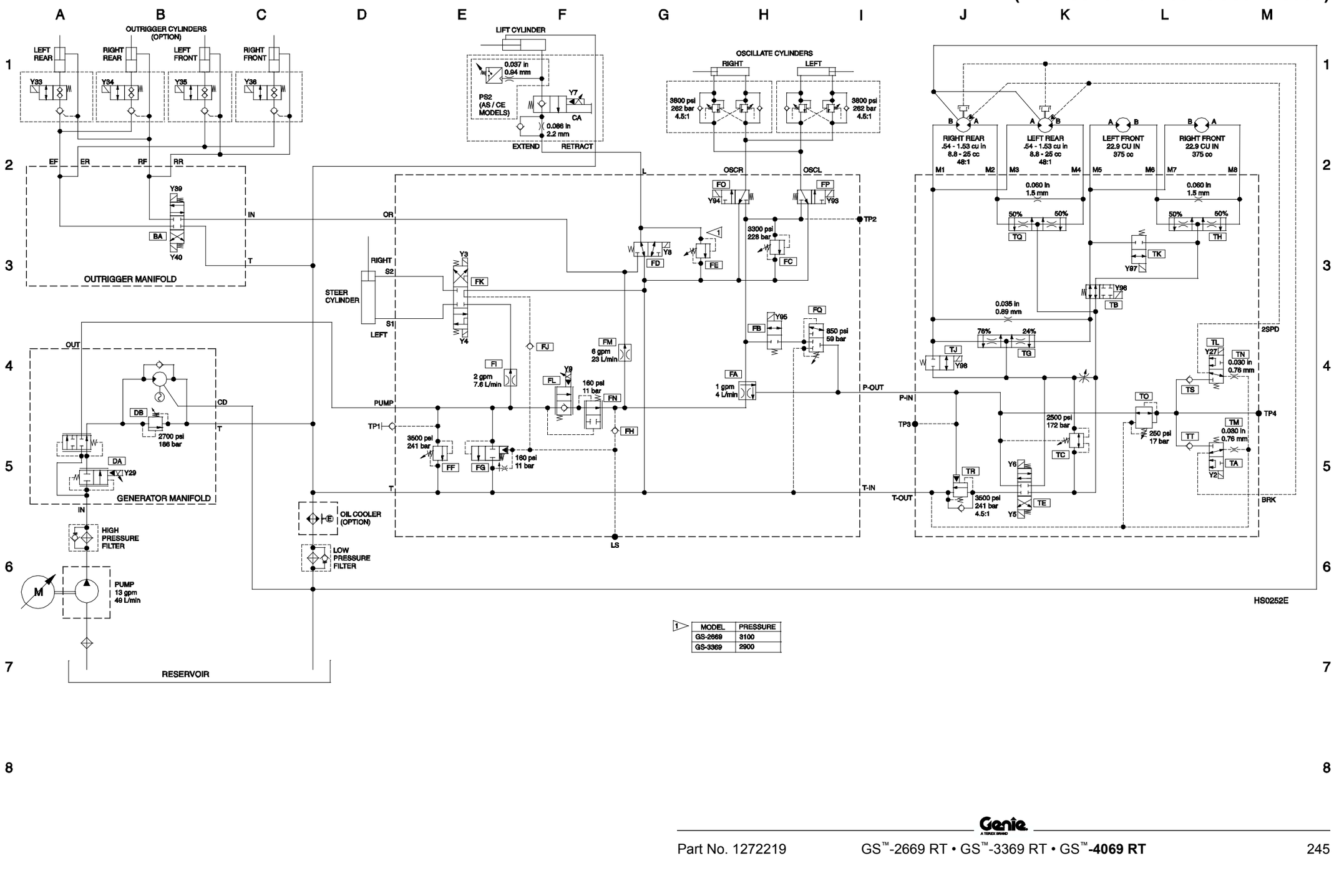


Hydraulic Schematic, GS-2669 RT and GS-3369 RT (to serial number GS6915-6383)



1	MODEL	PRESSURE
	GS-2669	3100
	GS-3369	2900

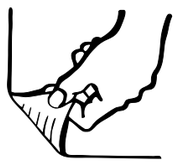
Hydraulic Schematic, GS-2669 RT and GS3369 RT (from serial number GS6915-6384)



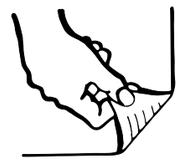
1

MODEL	PRESSURE
GS-2669	3100
GS-3369	2900

Hydraulic Schematic, GS-2669 RT and GS-3369 RT (from serial number GS6915-6384)



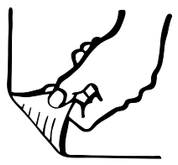
Hydraulic Schematic, GS-4069 RT (to serial number GS6915-6383)



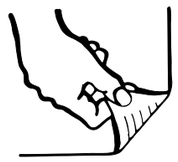
Hydraulic Schematic, GS-4069 RT (to serial number GS6915-6383)

Hydraulic Schematic, GS-4069 RT
(ANSI / CSA) - from serial number GS6915-6384)
(AS / CE) - from serial number GS6915-6384 to GS6915-6573)

Hydraulic Schematic, GS-4069 RT
(ANSI / CSA) - from serial number GS6915-6384)
(AS / CE) - from serial number GS6915-6384 to GS6915-6573)



Hydraulic Schematic, GS-4069 RT (AS / CE) - from serial number GS6915-6574)



Hydraulic Schematic, GS-4069 RT (AS / CE) - from serial number GS6915-6574)

California Proposition 65

WARNING

Operating, servicing and maintaining this equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. These chemicals can be emitted from or contained in other various parts and systems, fluids and some component wear by-products. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your equipment and vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your equipment or vehicle and after operation. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

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

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

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

www.genielift.com

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