Genie®
A TEREX BRAND

Service Manual

Serial Number Range

Z™-45/25
Z™-45/25J

DC Power

from Z452504-23236
to Z452513A-48152

from Z452512B-2245
to Z452513B-3077

Part No. 107939
Rev D
September 2015

Introduction

Important

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

This manual provides detailed scheduled maintenance information for the machine owner and user. It also provides troubleshooting fault codes and repair procedures for qualified service professionals.

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

Compliance

Machine Classification
Group B/Type 3 as defined by ISO 16368

Machine Design Life
Unrestricted with proper opeation, inspection and scheduled maintenance.

Technical Publications

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

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

Contact Us:

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

Serial Number Information

Genie offers the following Service Manuals for these models:

Title	Part No.
Z-45/25 DC and Z-45/25J DC Service Manual, Second Edition (before serial number 23236)	106726

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Revision History

Revision	Date	Section	Procedure / Schematic Page / Description
C2	11/2014	3 - Maint.	B-16
D	9/1015		Added ending serial break to front cover.

REFERENCE EXAMPLES:

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

Electronic Version

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

REVISION HISTORY, CONTINUED

Revision	Date	Section	Procedure / Schematic Page / Description

REFERENCE EXAMPLES:

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

Electronic Version

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

Serial Number Legend

Genie
A TEREX BRAND

Model: Z-45/25
Serial number: Z452512A-12345
Model year: 2005 **Manufacture date:** 04/12/05
Electrical schematic number: ESXXXX
Machine unladen weight:

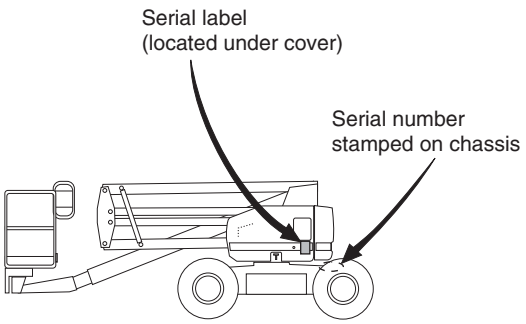
Rated work load (including occupants): XXX lb / XXX kg
Maximum number of platfrm occupants: X
Maximum allowable side force : XXX lb / XXX N
Maximum allowable inclination of the chassis:
0 deg
Maximum wind speed : XX mph/ XX m/s
Maximum platform height : XX ft / XX m
Maximum platform reach : XX ft / XX m
Gradeability: N/A
Country of manufacture: USA
This machine complies with:

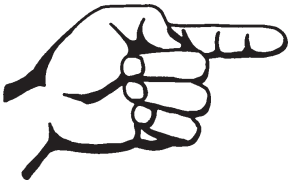
Terex South Dakota, Inc.
500 Oak Wood Road
Watertown, SD 57201
USA

PN - 77055

Z4525 05 A - 12345

Model
Model year
Facility code
Sequence number





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

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

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

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



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



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

Workplace Safety



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



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



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



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



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



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

Table of Contents

Introduction

Important Information ..... *ii*
Serial Number Information ..... *ii*
Serial Number Legend ..... *iii*

Section 1 Safety Rules

General Safety Rules ..... *v*

Section 2 Specifications

Machine Specifications ..... 2 - 1
Performance Specifications ..... 2 - 2
Hydraulic Specifications ..... 2 - 3
Manifold Component Specifications ..... 2 - 4
Machine Torque Specifications ..... 2 - 4
Hydraulic Hose and Fitting Torque Specifications ..... 2 - 5
SAE and Metric Fasteners Torque Charts ..... 2 - 6

Section 3 Scheduled Maintenance Procedures

Introduction ..... 3 - 1
Pre-delivery Preparation ..... 3 - 3
Maintenance Inspection Report ..... 3 - 5

Checklist A Procedures

A-1 Inspect the Manuals and Decals ..... 3 - 7
A-2 Perform Pre-operation Inspection ..... 3 - 8
A-3 Perform Function Tests ..... 3 - 8
A-4 Perform 30 Day Service ..... 3 - 9
A-5 Grease the Turntable Rotation Bearing and Rotate Gear ..... 3 - 9
A-6 Replace the Drive Hub Oil ..... 3 - 10

TABLE OF CONTENTS

Section 3 **Scheduled Maintenance Procedures**, continued

Checklist B Procedures

B-1 Check the Batteries ..... 3 - 11
B-2 Inspect the Electrical Wiring ..... 3 - 12
B-3 Test the Key Switch ..... 3 - 13
B-4 Check the Tires, Wheels and Lug Nut Torque ..... 3 - 14
B-5 Confirm the Proper Brake Configuration ..... 3 - 14
B-6 Check the Oil Level in the Drive Hubs and Mounting Bolt Torque ..... 3 - 15
B-7 Test the Ground Control Override ..... 3 - 16
B-8 Test the Platform Self-leveling ..... 3 - 16
B-9 Test the Drive Brakes ..... 3 - 17
B-10 Test the Drive Speed - Stowed Position ..... 3 - 17
B-11 Test the Drive Speed - Raised or Extended Position ..... 3 - 18
B-12 Test the Alarm Package (if equipped) ..... 3 - 18
B-13 Test the Turntable Rotation Stop ..... 3 - 19
B-14 Check the Electrical Contactors ..... 3 - 20
B-15 Perform Hydraulic Oil Analysis ..... 3 - 20
B-16 Test the Emergency Power System ..... 3 - 21

Checklist C Procedures

C-1 Grease the Platform Overload Mechanism (if equipped) ..... 3 - 22
C-2 Test the Platform Overload Mechanism (if equipped) ..... 3 - 23

Checklist D Procedures

D-1 Check the Primary Boom Wear Pads ..... 3 - 26
D-2 Check the Turntable Rotation Bearing Bolts ..... 3 - 26
D-3 Check the Free-wheel Configuration ..... 3 - 28
D-4 Replace the Drive Hub Oil ..... 3 - 29
D-5 Replace the Hydraulic Tank Return Filter Element ..... 3 - 30
D-6 Inspect for Turntable Bearing Wear ..... 3 - 30

Checklist E Procedures

E-1 Test or Replace the Hydraulic Oil ..... 3 - 32
E-2 Grease the Steer Axle Wheel Bearings ..... 3 - 33

TABLE OF CONTENTS

Section 4 **Repair Procedures**

Introduction ..... 4 - 1

Platform Controls

1-1 Controllers ..... 4 - 2

Platform Components

2-1 Platform Leveling Slave Cylinder ..... 4 - 4

2-2 Platform Rotator ..... 4 - 6

2-3 Platform Overload System (if equipped) ..... 4 - 8

Jib Boom Components, Z-45/25J

3-1 Jib Boom ..... 4 - 10

3-2 Jib Boom Lift Cylinder ..... 4 - 12

Primary Boom Components

4-1 Cable Track ..... 4 - 13

4-2 Primary Boom ..... 4 - 17

4-3 Primary Boom Lift Cylinder ..... 4 - 20

4-4 Primary Boom Extension Cylinder ..... 4 - 21

4-5 Platform Leveling Master Cylinder ..... 4 - 22

Secondary Boom Components

5-1 Secondary Boom ..... 4 - 23

5-2 Secondary Boom Lift Cylinders ..... 4 - 28

Hydraulic Pumps

6-1 Auxiliary and Function Pump ..... 4 - 29

TABLE OF CONTENTS

Section 4 **Repair Procedures,** continued

Manifolds

7-1 Function Manifold Components ..... 4 - 30

7-2 Valve Adjustments - Function Manifold ..... 4 - 32

7-3 Jib Boom / Platform Rotate Manifold Components ..... 4 - 33

7-4 Turntable Rotation Manifold Components ..... 4 - 34

7-5 Valve Coils ..... 4 - 35

Turntable Rotation Components

8-1 Turntable Rotation Assembly ..... 4 - 37

Motor Controller

9-1 Motor Controller ..... 4 - 38

Section 5 **Fault Codes**

Introduction ..... 5 - 1

Fault Code Chart ..... 5 - 3

Section 6 **Schematics**

Introduction ..... 6 - 1

Electrical Symbols Legend ..... 6 - 2

Hydraulic Symbols Legend ..... 6 - 3

Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015) ..... 6 - 6

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015) ..... 6 - 10

Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015) ..... 6 - 11

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015) ..... 6 - 13

TABLE OF CONTENTS

Section 6 **Schematics,** continued

Electrical Schematic, Z-45/25 and Z-45/25J, CE (before serial number 31015) ..... 6 - 16

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, CE (before serial number 31015) ..... 6 - 20

Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, CE (before serial number 31015) ..... 6 - 21

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, CE (before serial number 31015) ..... 6 - 23

Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313) ..... 6 - 26

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313) ..... 6 - 30

Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, ANSI •CSA • AS (from serial number 31015 to 39313) ..... 6 - 31

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313) ..... 6 - 33

Electrical Schematic, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313) ..... 6 - 36

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313) ..... 6 - 40

Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313) ..... 6 - 41

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313) ..... 6 - 43

Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313) ..... 6 - 46

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313) ..... 6 - 50

Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, ANSI •CSA • AS (after serial number 39313) ..... 6 - 51

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313) ..... 6 - 53

TABLE OF CONTENTS

Section 6 **Schematics,** continued

Electrical Schematic, Z-45/25 and Z-45/25J, CE (after serial number 39313) ..... 6 - 56

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, CE (after serial number 39313) ..... 6 - 60

Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, CE (after serial number 39313) ..... 6 - 61

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, CE (after serial number 39313) ..... 6 - 64

Power Cable Wiring Diagram ..... 6 - 65

CTE Option, CE ..... 6 - 68

Charger Interlock Option ..... 6 - 69

Platform Control Box LVI / BCI Option Wiring Diagram (before serial number 31015) ..... 6 - 72

Platform Control Box LVI / BCI Option Wiring Diagram (after serial number 31014) ..... 6 - 73

Hydraulic Schematic ..... 6 - 75

Specifications

Machine Specifications

Tires and wheels	
Wheel diameter	14.5 inches
Wheel width	7 inches
Wheel lugs	9 @ 5/8 -18
Lug nut torque, lubricated	94 ft-lbs 127.5 Nm
Lug nut torque, dry	125 ft-lbs 169.5 Nm
Tire size	9-14.5 LT
Tire ply rating	Tread 8 Sidewall 6
Tire weight, new foam-filled (minimum)	175 lbs 79 kg
Tire contact area	43.5 sq in 280 sq cm
Overall tire diameter	28 in 71 cm

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

Fluid capacities	
Hydraulic tank	8 gallons 30.3 liters
Hydraulic system (including tank)	11 gallons 41.6 liters
Drive hubs (refer to tag on drive hub to determine type)	
EW1 type	17 fl oz 0.51 liter
W1 type	23 fl oz 0.68 liter
Drive hub oil type:	EP 80-90W gear oil API service classification GL5

Batteries	
Type	6V DC
Quantity	8
Capacity	350 AH
Reserve capacity @ 25A rate	750 minutes
Weight, each	106 lbs 48 kg

SPECIFICATIONS

Performance Specifications

Drive speeds, maximum	
Drive speed, stowed All models	3 mph 4.8 km/h 40 ft/9 sec 12.2 m/9 sec
Drive speed, boom raised or extended, all models	0.6 mph 1 km/h 40 ft/45 sec 12.2 m/45 sec
Braking distance, maximum	
High range on paved surface	5 to 7 ft 1.5 to 2 m
Gradeability	See Operator's Manual

Boom function speeds, maximum from platform controls	
Jib boom up, Z-45/25J	26 to 40 seconds
Jib boom down, Z-45/25J	22 to 28 seconds
Primary boom up	32 to 40 seconds
Primary boom down	26 to 30 seconds
Secondary boom up	38 to 46 seconds
Secondary boom down	38 to 46 seconds
Primary boom extend	14 to 18 seconds
Primary boom retract	17 to 21 seconds
Turntable rotate, 355° primary boom retracted	95 to 125 seconds
Platform rotate, 180°, Z-45/25	6 to 10 seconds
Platform rotate, 160°, Z-45/25J	6 to 10 seconds

Hydraulic Specifications

Hydraulic Oil Specifications	
Hydraulic oil type	Chevron Rykon MV equivalent
Approximate SAE grade	5W-20
Viscosity index rating	200
Cleanliness level, minimum	15/13
Water content, maximum	200 ppm

Chevron Rando HD MV oil is fully compatible and mixable with Shell Donax TG (Dexron III) oils.
Genie specifications require hydraulic oils which are designed to give maximum protection to hydraulic systems, have the ability to perform over a wide temperature range, and the viscosity index should exceed 140. They should provide excellent antiwear, oxidation, corrosion inhibition, seal conditioning, and foam and aeration suppression properties.

Optional fluids	
Biodegradable	Petro Canada Environ MV46 Statoil Hydra Way Bio Pa 32 BP Biohyd SE-S
Fire resistant	UCON Hydrolube HP-5046 Quintolubric 822
Mineral based	Shell Tellus T32 Shell Tellus T46 Chevron Aviation A

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

Note: Use Chevron Aviation A hydraulic oil when ambient temperatures consistently below 0°F / -18°C.

Note: Use Shell Tellus T46 hydraulic oil when oil temperatures consistently exceed 205°F / 96°C.

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

Function pump	
Type:	Fixed displacement gear pump
Displacement	0.183 cu in 3 cc
Flow rate	2.1 gpm 7.9 L/min
Hydraulic tank return filter	10 micron with 25 psi / 1.7 bar bypass

Function manifold	
Function relief valve pressure	3200 psi 220.6 bar
Secondary boom down relief valve pressure	2100 psi 145 bar
Platform level flow regulator	0.6 gpm 2.27 L/min
Jib boom/platform rotate flow regulator	0.4 gpm 1.5 L/min

Auxiliary pump	
Type:	Fixed displacement gear pump
Displacement	0.5 gpm 1.9 L/min

SPECIFICATIONS

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

Valve Coil Resistance Specification	
Solenoid valve, 3 position 4 way, 20V DC (schematic items B, C, D, E, F and H)	25 to 29 Ω
Solenoid valve, 2 position 3 way, 20V DC (schematic items A, K, S and AA)	25 to 29 Ω
Proportional solenoid valve, 24V DC (schematic item I)	17 to 21 Ω

Machine Torque Specifications

Platform rotator	
3/4 -10 center bolt, GR 8	380 ft-lbs 515 Nm
3/8 -16 bolts, GR 8	44 ft-lbs 60 Nm

Turntable rotate assembly	
Rotate bearing mounting bolts, lubricated	180 ft-lbs 244 Nm
Drive motor/brake mounting bolts, dry	110 ft-lbs 149 Nm
Drive motor/brake mounting bolts, lubricated	80 ft-lbs 108 Nm

Drive motor and hubs	
Drive hub mounting bolts, lubricated	180 ft-lbs 244 Nm
Drive motor mounting bolts, lubricated	55 ft-lbs 75 Nm

Hydraulic Hose and Fitting Torque Specifications

Your machine is equipped with Parker Seal-Lok® 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.

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

SAE Dash size	Torque
-4	11 ft-lbs / 14.9 Nm
-6	23 ft-lbs / 31.2 Nm
-8	40 ft-lbs / 54.2 Nm
-10	69 ft-lbs / 93.6 Nm
-12	93 ft-lbs / 126.1 Nm
-16	139 ft-lbs / 188.5 Nm
-20	172 ft-lbs / 233.2 Nm
-24	208 ft-lbs / 282 Nm

Seal-Lok® fittings

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

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

2 Lubricate the O-ring before installation.

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

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

5 Tighten the nut or fitting to the appropriate torque per given size as shown in the table.

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

SAE O-ring Boss Port
(tube fitting - installed into Steel)

SAE Dash size	Torque
-4	16 ft-lbs / 21.7 Nm
-6	35 ft-lbs / 47.5 Nm
-8	60 ft-lbs / 81.3 Nm
-10	105 ft-lbs / 142.4 Nm
-12	140 ft-lbs / 190 Nm
-16	210 ft-lbs / 284.7 Nm
-20	260 ft-lbs / 352.5 Nm
-24	315 ft-lbs / 427.1 Nm

Seal-Lok® Fittings
(hose end)

SAE Dash size	Torque
-4	18 ft-lbs / 25 Nm
-6	30 ft-lbs / 40 Nm
-8	40 ft-lbs / 55 Nm
-10	60 ft-lbs / 80 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

SPECIFICATIONS

SAE FASTENER TORQUE CHART

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

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

METRIC FASTENER TORQUE CHART

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

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

Scheduled Maintenance Procedures



Observe and Obey:

- ☑ Maintenance inspections shall be completed by a person trained and qualified on the maintenance of this machine.
- ☑ Scheduled maintenance inspections shall be completed daily, quarterly, semi-annually, annually and every 2 years as specified on the *Maintenance Inspection Report.* The frequency and extent of periodic examinations and tests may also depend on national regulations.

⚠WARNING Failure to properly complete each inspection when required may cause death, serious injury or substantial machine damage.

- ☑ 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
  - Boom in the stowed position
  - Turntable rotated with the boom between the non-steer wheels
  - Turntable secured with the turntable rotation lock
  - Key switch in the off position with the key removed
  - Wheels chocked
  - All external AC power supply disconnected from the machine

About This Section

This section contains detailed procedures for each scheduled maintenance inspection.

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

Symbols Legend



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

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

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

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

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

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

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

SCHEDULED MAINTENANCE PROCEDURES

Maintenance Symbols Legend

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



Indicates that tools will be required to perform this procedure.



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



Indicates that a cold motor or pump will be required to perform this procedure.



Indicates that a warm motor or pump will be required to perform this procedure.



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

Maintenance Schedule

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

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

Maintenance Inspection Report

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

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

Pre-Delivery Preparation

Fundamentals

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

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

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

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

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

Instructions

Use the operator's manual on your machine.

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

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

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

Legend

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

Comments

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

Model

Serial number

Date

Machine owner

Inspected by (print)

Inspector signature

Inspector title

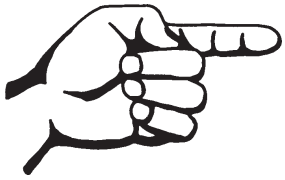
Inspector company

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Rev B



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Maintenance Inspection Report

Model

Serial number

Date

Hour meter

Machine owner

Inspected by (print)

Inspector signature

Inspector title

Inspector company

Instructions

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

☐	**Daily or 8 hour Inspection: A**
☐	**Quarterly or 250 hour Inspection: A+B**
☐	**Semi-annual or 500 hour Inspection: A+B+C**
☐	**Annual or 1000 hours Inspection: A+B+C+D**
☐	**2 Year or 2000 hour Inspection: A+B+C+D+E**

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

Legend

Y = yes, acceptable

N = no, remove from service

R = repaired

Checklist A	Y	N	R
A-1 Manuals and Decals			
A-2 Pre-operation inspection			
A-3 Function tests			
Perform after 40 hours:			
A-4 30 Day Service			
Perform every 100 hours:			
A-5 Grease rotation bearing			
Perform after 150 hours:			
A-6 Replace drive hub oil			

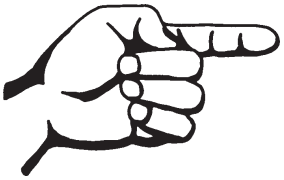
Checklist B	Y	N	R
B-1 Batteries			
B-2 Electrical wiring			
B-3 Key Switch			
B-4 Tires and wheels			
B-5 Brake configuration			
B-6 Drive hub oil level			
B-7 Ground control override			
B-8 Platform leveling			
B-9 Drive brakes			
B-10 Drive speed - stowed			
B-11 Drive speed - raised			
B-12 Alarm package (if equipped)			
B-13 Turntable rotation stop			
B-14 Electrical contactors			
B-15 Hydraulic oil analysis			
B-16 Emergency power			

Checklist C	Y	N	R
C-1 Grease platform overload (if equipped)			
C-2 Test platform overload (if equipped)			

Checklist D	Y	N	R
D-1 Boom wear pads			
D-2 Turntable bearing bolts			
D-3 Free-wheel configuration			
D-4 Drive hub oil			
D-5 Hydraulic return filter			
D-6 Turntable bearing wear			

Checklist E	Y	N	R
E-1 Hydraulic oil			
E-2 Wheel bearings			

Comments



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Checklist A Procedures

A-1
Inspect the Manuals and Decals

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

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

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

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

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

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

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

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

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

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

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

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

CHECKLIST A PROCEDURES

A-2
Perform Pre-operation Inspection

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

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

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

A-3
Perform Function Tests

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

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

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

CHECKLIST A PROCEDURES

A-4
Perform 30 Day Service



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

1 Perform the following maintenance procedures:

- A-5 Grease the Turntable Rotation Bearing and Worm Drive Gear
- B-4 Check the Tires, Wheels and Lug Nut Torque
- D-2 Check the Turnable Rotation Bearing Bolts
- D-5 Replace the Hydraulic Tank Return Filter Element

A-5
Grease the Turntable Rotation Bearing and Rotate Gear



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

Frequent application of lubrication to the turntable bearing and rotate drive gear is essential to good machine performance and service life. Continued use of an insufficently greased gear will result in component damage.

1 **Before serial number 27001:** Locate the grease fitting on the front turntable cover.

After serial number 27000: Locate the grease fitting near the ground control box.

2 Pump grease into the turntable rotation bearing. Rotate the turntable in increments of 4 to 5 inches / 10 to 13 cm at a time and repeat this step until the entire bearing has been greased.

3 Apply grease to each tooth of the drive gear, located under the turntable.

Grease Specification
Chevron Ultra-duty grease, EP NLGI 2 (lithium based) or equivalent

CHECKLIST A PROCEDURES

A-6
Replace the Drive Hub Oil

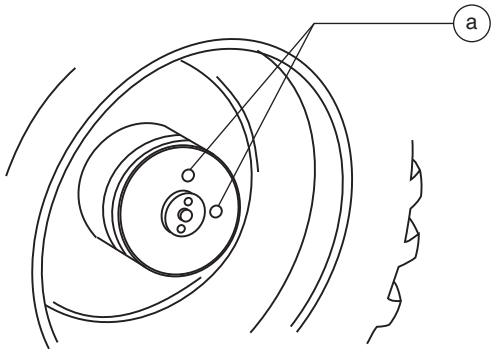
Manufacturer drive hub specifications require that this one-time procedure be performed after the first 150 hours.

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

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

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

3 Drive the machine until one plug is at the top and the other is at 90 degrees.



a drive hub plugs

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

5 Install the plugs into the drive hub.

6 Repeat this procedure for the other drive hub.

Checklist B Procedures

B-1
Check the Batteries



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

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

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

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

1 Disconnect each battery pack from the machine.

2 Release the battery pack latches and rotate each battery pack out and away from the chassis.

3 Remove the cover from each battery box.

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

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

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

6 Fully charge the batteries. Allow the batteries to rest 24 hours before continuing this procedure to allow the battery cells to equalize.

7 Put on protective clothing and eye wear.

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

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

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

⊙ Result: All battery cells display an adjusted specific gravity of 1.277 or higher. The battery is fully charged. Proceed to step 13.

⊠ Result: One or more battery cells display a specific gravity of 1.217 or below. Proceed to step 10.

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

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

CHECKLIST B PROCEDURES

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

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

⊙ Result: All battery cells display a specific gravity of 1.277 or greater. The battery is fully charged. Proceed to step 13.

⊗ Result: The difference in specific gravity readings between cells is greater than 0.1 OR the specific gravity of one or more cells is less than 1.217. Replace the battery.

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

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

B-2
Inspect the Electrical Wiring



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

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

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

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

- Power units
- Inside of the ground control box
- Turntable manifold wiring

2 Inspect for a liberal coating of dielectric grease at the following location:

- All wire harness connectors to the ground control box

3 Raise the secondary boom until the mid-pivot is approximately 10 feet / 3 m off the ground.

4 Remove the center turntable cover.

5 Inspect the turntable center area for burnt, chafed and pinched cables.

6 Install the center turntable cover.

7 Lower the boom to the stowed position and turn the machine off.

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

- Cable track on the primary, jib and secondary booms
- Jib boom to platform cable harness
- Inside of the platform control box

9 Inspect for a liberal coating of dielectric grease at the following location:

- All wire harness connectors to the platform control box

B-3
Test the Key Switch

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

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

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

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

3 Check the machine functions from the **ground controls**.

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

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

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

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

6 Turn the key switch to the off position.

⊙ Result: No function should operate.

CHECKLIST B PROCEDURES

B-4
Check the Tires, Wheels and Lug Nut Torque

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

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

1 Check all tire treads and sidewalls for cuts, cracks, punctures and unusual wear.

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

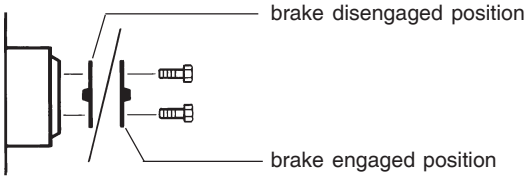
3 Check each lug nut for proper torque. Refer to Section 2, *Specifications*.

B-5
Confirm the Proper Brake Configuration

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

Proper brake configuration is essential to safe operation and good machine performance. Hydraulically released, spring-applied individual wheel brakes can appear to operate normally when they are actually not fully operational.

1 Check each drive hub disconnect cap to be sure it is in the engaged position.

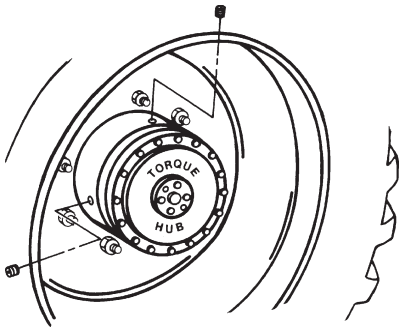


B-6
Check the Oil Level in the Drive Hubs and Mounting Bolt Torque

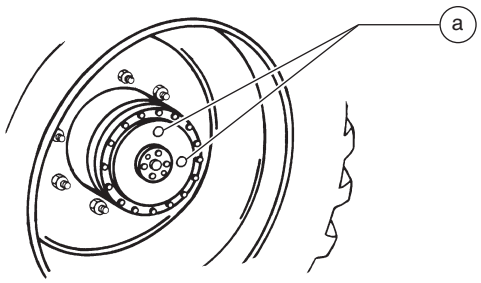
Genie specifications require that this procedure be performed every 250 hours or quarterly, whichever comes first.

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

1 Drive the machine to rotate the hub until one of the plugs is located on top and the other is at 90 degrees.



models with pipe plugs



a models with o-ring plugs

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

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

3 If necessary, remove the top plug and add oil until the oil level is even with the bottom of the plug hole. Refer to Section 2, *Specifications*.

4 **Models with pipe plugs:** Apply pipe thread saelant to the plugs and install the plugs into the drive hub.

5 **Models with O-ring plugs:** Install the plugs into the drive hub.

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

7 Repeat this procedure for each drive hub.

CHECKLIST B PROCEDURES

B-7
Test the Ground Control Override

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

A properly functioning ground control override is essential to safe machine operation. The ground control override function is intended to allow ground personnel to operate the machine from the ground controls whether or not the red Emergency Stop button on the platform controls is in the on or off position. This function is particularly useful if the operator at the platform controls cannot return the boom to the stowed position.

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

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

3 Operate each boom function through a partial cycle at the ground controls.

⊙ Result: All boom functions should operate.

B-8
Test the Platform Self-leveling



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

Automatic platform self-leveling throughout the full cycle of boom raising and lowering is essential for safe machine operation. The platform is maintained level by the platform leveling slave cylinder which is controlled by the platform leveling master cylinder located at the base of the primary boom. A platform self-leveling failure creates an unsafe working condition for platform and ground personnel.

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

2 Lower the boom to the stowed position.

3 Hold the function enable toggle switch to either side and adjust the platform to a level position using the platform level toggle switch.

4 Raise and lower the primary boom through a full cycle.

⊙ Result: The platform should remain level at all times to within ±5 degrees.

B-9
Test the Drive Brakes

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

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

⚠WARNING Collision hazard. Be sure that the machine is not in free-wheel or partial free-wheel configuration. Refer to B-5, *Confirm the Proper Brake Configuration*.

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

2 Mark a test line on the ground for reference.

3 Lower the boom to the stowed position.

4 Turn the key switch to platform controls.

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

6 Bring the machine to top drive speed before reaching the test line. Release the drive joystick when your reference point on the machine crosses the test line.

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

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

B-10
Test the Drive Speed - Stowed Position

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

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

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

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

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

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

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

CHECKLIST B PROCEDURES

B-11
Test the Drive Speed - Raised or Extended Position

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

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

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

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

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 Raise the primary boom more than 5 feet / 1.5 m.

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

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

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

B-12
Test the Alarm Package (if equipped)

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

The alarm package includes:

- Travel alarm
- Descent alarm
- Flashing beacon

Alarms and a beacon are installed to alert operators and ground personnel of machine proximity and motion. The alarm package is installed on the ground controls side turntable cover.

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

⊙ Result: The flashing beacon should be on and flashing.

2 Move the function enable switch to either side and activate the primary boom toggle switch in the down position, hold for a moment and then release it.

⊙ Result: The descent alarm should sound when the switch is held down.

3 Move the function enable switch to either side and activate the secondary boom toggle switch in the down position, hold for a moment and then release it.

⊙ Result: The descent alarm should sound when the switch is held down.

4 **Z-45/25J:** Move the function enable toggle switch to either side and activate the jib boom toggle switch in the down position, hold for a moment and then release it.

⊙ Result: The descent alarm should sound when the switch is held down.

5 Turn the key switch to platform control.

⊙ Result: The flashing beacon should be on and flashing.

6 Press down the foot switch. Activate the primary boom toggle switch in the down position, hold for a moment and then release it.

⊙ Result: The descent alarm should sound when the control handle is held down.

7 Press down the foot switch. Activate the secondary boom toggle switch in the down position, hold for a moment and then release it.

⊙ Result: The descent alarm should sound when the control handle is held down.

8 **Z-45/25J:** Press down the foot switch. Activate the jib boom toggle switch in the down position, hold for a moment and then release it.

⊙ Result: The descent alarm should sound when the switch is held down.

9 Press down the foot switch. Move the drive control handle off center, hold for a moment and then release it. Move the drive control handle off center in the opposite direction, hold for a moment and then release it.

⊙ Result: The travel alarm should sound when the drive control handle is moved off center in either direction.

B-13
Test the Turntable Rotation Stop

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

The turntable is capable of rotating the boom 359 degrees and is stopped midpoint between the steer wheels by the rotation stop. Detecting a rotation stop malfunction is essential to safe operation and good machine performance. If the turntable rotates past the rotation stop, component damage may result.

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 Rotate the turntable to the left as far as it will go.

⊙ Result: Movement should stop when the primary boom reaches mid-point between the steer tires.

3 Rotate the turntable to the right full circle as far as it will go.

⊙ Result: Movement should stop when the primary boom reaches mid-point between the steer tires.

CHECKLIST B PROCEDURES

B-14
Check the Electrical Contactors



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

Maintaining the electrical contactors in good condition is essential to safe machine operation. Failure to locate a worn or damaged contactor could result in an unsafe working condition and component damage.

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

1 Remove the drive chassis cover from the non-steer end of the machine and locate the electrical contactors mounted on the electrical component mounting panel.

2 Visually inspect the contact points of each contactor for the following items:

- Excessive burns
- Excessive pitting

Note: Replace the contactors if any damage is found.

B-15
Perform Hydraulic Oil Analysis



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

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

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

B-16
Test the Emergency Power System

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

Testing the emergency power system is essential to safe operation if the primary power source fails.

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

2 At the ground controls, break the security tie and lift the emergency power switch cover (if equipped).

3 Simultaneously hold the emergency power switch on and activate each boom function toggle switch.

Note: To conserve battery power, test each function through a partial cycle.

⊙ Result: All boom functions operate.

4 Close the emergency power switch cover and secure the cover with a security tie (if equipped).

5 Turn the key switch to platform controls.

6 At the platform controls, break the security tie and lift the emergency power switch cover (if equipped).

7 Simultaneously hold the emergency power switch on and activate each boom function.

Note: To conserve battery power, test each function through a partial cycle.

⊙ Result: All boom functions operate.

8 Close the emergency power switch cover and secure the cover with a security tie (if equipped).

Checklist C Procedures

C-1
Grease the Platform Overload Mechanism (if equipped)



Genie specifications require that this procedure be performed every 500 hours or 6 months, whichever comes first. Perform this procedure more often if dusty conditions exist.

Application of lubrication to the platform overload mechanism is essential to safe machine operation. Continued use of an improperly greased platform overload mechanism could result in the system not sensing an overloaded platform condition and will result in component damage.

1 Locate the grease fittings on each pivot pin of the platform overload assembly.

2 Thoroughly pump grease into each grease fitting using a multi-purpose grease.

Grease Specification
Chevron Ultra-duty grease, EP NLGI 2 (lithium based) or equivalent

C-2
Test the Platform Overload System (if equipped)



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

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

The platform overload system is designed to detect an overloaded platform and prevent machine operation anytime the machine is turned on. When activated, the system halts all normal boom operation, giving visual and audible warning to the operator.

Models equipped with the platform overload option are provided with additional machine components: an adjustable spring-loaded platform support subassembly, a limit switch, an electronic module which receives the overload signal and interrupts power, and an audio/visual warning indication to alert the operator of the overload.

The platform support subassembly utilizes two load support arms that are opposed in a full parallelogram link. This isolates platform loads into a shear or vertical state, which translates into a compressive load. A spring in the parallelogram link supports this purely compressive load regardless of where the load is placed in the platform.

As weight is added to the platform, the spring will compress until, when the platform is overloaded, the lower arm contacts a limit switch and thereby activating the overload signal. When adjusted correctly, the platform overload system will deactivate normal boom operation at platform capacity.

Note: Perform this procedure with the machine on a firm, level surface.

1 Turn the key switch to platform control. Start the engine and level the platform.

2 Determine the maximum platform capacity. Refer to the machine serial plate.

3 Remove all weight, tools and accessories from the platform.

Note: Failure to remove all weight, tools and accessories from the platform will result in an inaccurate test.

4 Using a suitable lifting device, place a test weight equal to that of the available capacity one of the locations shown. Refer to Illustration 1.

⊙ Result: The platform overload indicator lights should be off at both the ground and platform controls and the alarm should not sound.

⊠ Result: The platform overload indicator lights are on and the alarm is sounding. Calibrate the platform overload system. Refer to Repair Proceedure 2-3, *How to Calibrate the Platform Overload System (if equipped).*

CHECKLIST C PROCEDURES

5 Carefully move the test weight to each remaining location. Refer to Illustration 1.

⊙ Result: The platform overload indicator lights should be off at both the ground and platform controls and the alarm should not sound.

⊠ Result: The platform overload indicator lights are on and the alarm is sounding. Calibrate the platform overload system. Refer to Repair Proceedure 2-3, *How to Calibrate the Platform Overload System (if equipped).*

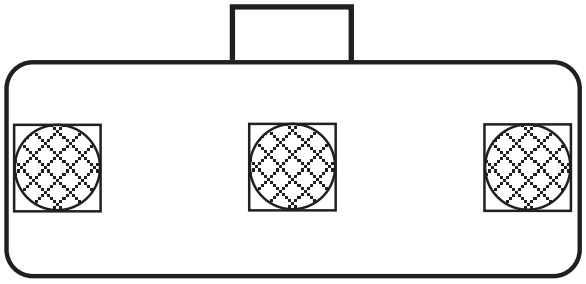


Illustration 1

6 Using a suitable lifting device, place an additional 10 lbs / 4.5 kg of weight onto the platform.

⊙ Result: The alarm should sound. The platform overload indicator lights should be flashing at both the ground and platform controls.

⊠ Result: The alarm does not sound and the platform overload indicator lights are not flashing. Calibrate the platform overload system. Refer to Repair Proceedure 2-3, *How to Calibrate the Platform Overload System (if equipped).*

Note: There may be a 2 second delay before the overload indicator lights flash and the alarm sounds.

7 Carefully move the test weights to each remaining location on the platform. Refer to Illustration 1.

⊙ Result: The alarm should sound. The platform overload indicator lights should be flashing at both the ground and platform controls.

⊠ Result: The alarm does not sound and the platform overload indicator lights are not flashing. Calibrate the platform overload system. Refer to Repair Proceedure 2-3, *How to Calibrate the Platform Overload System (if equipped).*

Note: There may be a 2 second delay before the overload indicator lights flash and the alarm sounds.

8 Test all machine functions from the platform controls.

⊙ Result: All platform control functions should not operate.

9 Turn the key switch to ground control.

10 Test all machine functions from the ground controls.

⊙ Result: All ground control functions should not operate.

11 Using auxiliary power, test all machine functions from the ground controls.

⊙ Result: All ground control functions should operate.

12 Using a suitable lifting device, lift the additional test weight from the platform.

⊙ Result: The platform overload indicator lights should turn off at both the ground and platform controls and the alarm should not sound.

Note: There may be an 2 second delay before the overload indicator lights and alarm turn off.

13 Start the engine and test all machine functions from the ground controls.

⊙ Result: All ground control functions should operate normally.

14 Turn the key switch to platform control.

15 Test all machine functions from the platform controls.

⊙ Result: All platform control functions should operate.

Note: If the platform overload system is not operating properly, Refer to Repair Procedure 2-3, *How to Calibrate the Platform Overload System (if equipped).*

16 Using a suitable lifting device, remove the remaining test weights from the platform.

Checklist D Procedures

D-1
Check the Primary Boom Wear Pads



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

Maintaining the primary boom wear pads in good condition is essential to safe machine operation. Wear pads are placed on boom tube surfaces to provide a low friction, replaceable wear pad between moving parts. Improperly shimmed wear pads or continued use of worn out wear pads may result in component damage and unsafe operating conditions.

1 Measure each wear pad. Replace the wear pad once it reaches the minimum allowable thickness. If the wear pad is still within specifications, shim as necessary to obtain minimum clearance with zero binding.

2 Extend and retract the primary boom through the entire range of motion to check for tight spots that could cause binding or scraping.

Note: Always maintain squareness between the primary boom outer and inner tubes.

Primary boom wear pad specifications	Minimum
Top, bottom and side wear pads (platform end of boom)	5/8 inch 15.9 mm
Side and bottom wear pads (pivot end of boom)	1/2 inch 12.7 mm
Top wear pads (pivot end of boom)	5/8 inch 15.9 mm

D-2
Check the Turntable Rotation Bearing Bolts



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

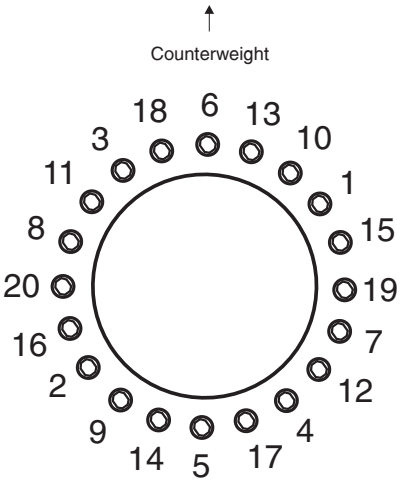
Maintaining proper torque on the turntable bearing bolts is essential to safe machine operation. Improper bolt torque could result in an unsafe operating condition and component damage

1 Raise the primary boom and place a safety chock on the lift cylinder rod. Carefully lower the boom onto the lift cylinder safety chock.

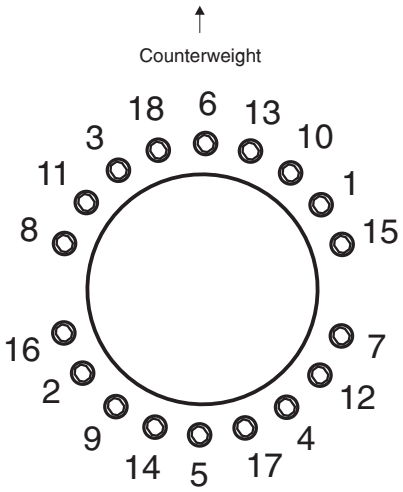
⚠WARNING Crushing hazard. Keep hands away from cylinder and all moving parts when lowering the boom.

Note: A lift cylinder safety chock is available through Genie Service Parts (Genie part no. 36555).

2 Check to be sure that each turntable mounting bolt is torqued in sequence to specification. Refer to Section 2, *Specifications*.



Bolt torque sequence
(from serial number 23332 to 26999)

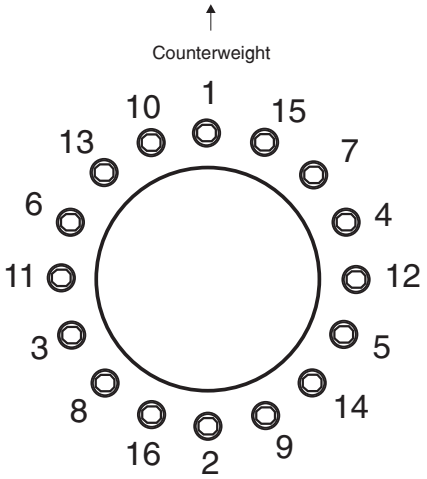


Bolt torque sequence
(after serial number 26999)

3 Lower the boom to the stowed position.

4 Remove drive chassis covers from both the steer end and the non-steer end of the machine.

5 Check to be sure that each bearing mounting bolt under the drive chassis is torqued in sequence to specification. Refer to Section 2, *Specifications*.



Bolt torque sequence
(after serial number 23332)

CHECKLIST D PROCEDURES

D-3
Check the Free-wheel Configuration

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

Proper use of the free-wheel configuration is essential to safe machine operation. The free-wheel configuration is used primarily for towing. A machine configured to free-wheel without operator knowledge may cause death or serious injury and property damage.

⚠WARNING Collision hazard. Select a work site that is firm and level.

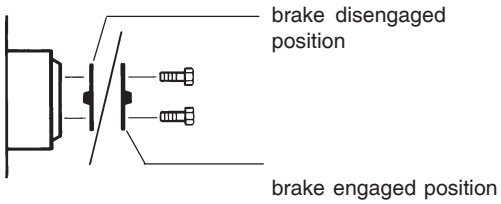
NOTICE Component damage hazard. If the machine must be towed, do not exceed 2 mph / 3.2 km/h.

1 Chock the steer wheels to prevent the machine from rolling.

2 Center a lifting jack of ample capacity (15,000 lbs / 7000 kg) under the drive chassis4 Disengage the drive hubs by turning over the drive hub disconnect caps on each non-steer wheel hub.

3 Lift the wheels off the ground and place jack stands under the drive chassis for support.

4 Disengage the drive hubs by turning over the drive hub disconnect caps on each non-steer wheel hub.



5 Manually rotate each non-steer wheel.

⊙ Result: Each non-steer wheel should rotate with minimum effort.

6 Engage the drive hubs by turning over the drive hub disconnect caps.

7 Carefully remove the blocks, lower the machine and remove the jack.

⚠WARNING Collision hazard. Failure to engage the drive hubs could result in death or serious injury and property damage.

D-4
Replace the Drive Hub Oil

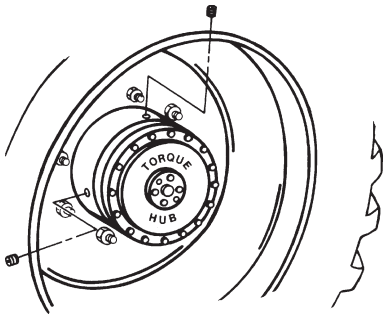
Genie specifications require that this procedure be performed every 1000 hours or annually, whichever comes first.

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

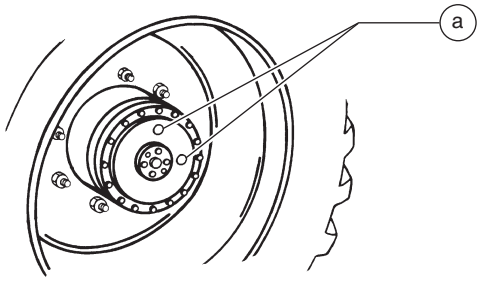
1 Select the drive hub to be serviced. Drive the machine until one of the two plugs is at the lowest point.

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

3 Drive the machine until one plug is at the top and the other is at 90 degrees.



models with pipe plugs



models with o-ring plugs

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

5 **Models with pipe plugs:** Apply pipe thread sealant to the plugs and install the plugs.

Models with O-ring plugs: Install the plugs into the drive hub.

6 Repeat this procedure for each drive hub.

CHECKLIST D PROCEDURES

D-5
Replace the Hydraulic Tank Return Filter Element



Genie specifications require that this procedure be performed every 1000 hours or annually, whichever comes first. Perform this procedure more often if dusty conditions exist.

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

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

1 Locate the hydraulic return filter next to the hydraulic tank.

2 Place a suitable container under the hydraulic filter.

3 Remove the filter with an oil filter wrench.

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

5 Install the new filter and tighten it securely by hand. Clean up any oil that may have spilled during the installation procedure.

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

7 Activate any boom function and inspect the filter and related components to be sure that there are no leaks.

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

D-6
Inspect for Turntable Bearing Wear



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

Periodic inspection of turntable bearing wear is essential to safe machine operation, good machine performance and service life. Continued use of a worn turntable bearing could create an unsafe operating condition, resulting in death or serious injury and component damage.

1 Grease the turntable bearing. See A-5, *Grease the Turntable Bearing and Rotate Gear.*

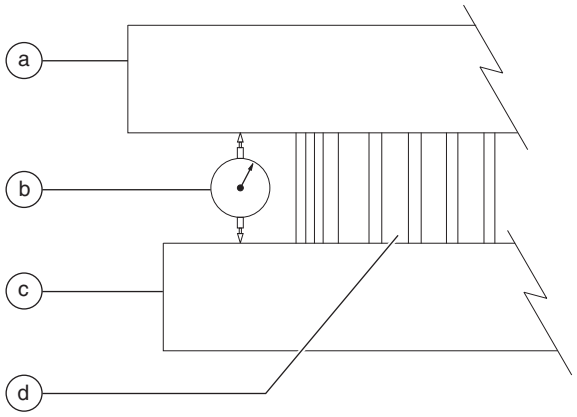
2 Torque the turntable bearing bolts to specification. See D-3, *Check the Turntable Rotation Bearing Bolts.*

3 Raise the primary and secondary booms to full height using the ground controls. Do not extend the primary boom.

CHECKLIST D PROCEDURES

4 Place a dial indicator between the drive chassis and the turntable at a point that is directly under, or in line with, the boom and no more than 1 inch / 2.5 cm from the bearing.

Note: To obtain an accurate measurement, place the dial indicator no more than 1 inch / 2.5 cm from the turntable rotation bearing.



a turntable
b dial indicator
c drive chassis
d turntable rotation bearing

5 Adjust the dial indicator to "0".

6 Lower the secondary boom to the stowed position and lower the primary boom to a horizontal position. Fully extend the primary boom.

7 Note the reading on the dial indicator.

⊙ Result: The measurement is less than 0.055 inch / 1.4 mm. The bearing is good.

⊠ Result: The measurement is more than 0.055 inch / 1.4 mm. The bearing is worn and needs to be replaced.

8 Fully retract the primary boom. Raise the primary and secondary booms to full height. Visually inspect the the dial indicator to be sure the needle returns to the "0" position.

9 Remove the dial indicator and rotate the turntable 90°.

10 Repeat steps 4 through 9 until the rotation bearing has been checked in at least four equally spaced areas 90° apart.

11 Lower the primary and secondary booms to the stowed position and turn the machine off.

12 Remove the dial indicator from the machine.

Checklist E Procedures

E-1
Test or Replace the Hydraulic Oil



Genie specifications require that this procedure be performed every 2000 hours or every two years, whichever comes first. Perform this procedure more often if dusty conditions exist.

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

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

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

1 Place a suitable container under the hydraulic tank. See capacity specifications.

2 Remove the drain plug from the hydraulic tank.

3 Completely drain the tank into a container of suitable capacity. Refer to Section 2, *Specifications*.

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

4 Tag, disconnect and plug the hydraulic hose from the hydraulic tank filter at the tank.

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

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

5 Remove the hydraulic tank mounting fasteners.

6 Pull the hydraulic tank out slightly to access the two suction hoses.

7 Tag, disconnect and plug the two suction hoses on the back of the hydraulic tank.

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

8 Remove the hydraulic tank from the machine.

NOTICE Component damage hazard. The hydraulic tank is plastic and may become damaged if allowed to fall.

9 Remove the suction strainer from the tank and clean it using a mild solvent.

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

11 Install the suction strainer and drain plug using a thread sealer on the threads.

12 Place the hydraulic tank onto the machine.

13 Install the hydraulic hoses.

14 Install the hydraulic tank retaining strap.

NOTICE Component damage hazard. The hydraulic tank may become damaged if the tank strap fasteners are over tightened.

15 Fill the tank with hydraulic oil until the fluid is within the FULL and ADD marks on the hydraulic tank. Do not overfill.

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

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

E-2
Grease the Steer Axle Wheel Bearings



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

Maintaining the steer axle wheel bearings is essential for safe machine operation and service life. Operating the machine with loose or worn wheel bearings may cause an unsafe operating condition and continued use may result in component damage. Extremely wet or dirty conditions or regular steam cleaning and pressure washing of the machine may require that this procedure be performed more often.

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

2 Block the non-steer wheels and center a lifting jack under the steer axle.

3 Raise the machine 6 inches / 15 cm and place blocks under the drive chassis for support.

4 Remove the lug nuts. Remove the tire and wheel assembly.

5 Check for wheel bearing wear by attempting to move the wheel hub side to side, then up and down.

⊙ Result: There should be no side to side or up and down movement.

Skip to step 10 if there is no movement.

CHECKLIST E PROCEDURES

6 Remove the dust cap from the hub. Remove the cotter pin from the castle nut.

7 Tighten the castle nut to 158 ft-lbs / 214 Nm to seat the bearings.

Note: Rotate the hub by hand while torquing the castle nut to make sure the bearings seat properly.

8 Loosen the castle nut one full turn and then torque to 35 ft-lbs / 47 Nm.

9 Check for wheel bearing wear by attempting to move the wheel hub side to side, then up and down.

⊙ Result: If there is no side to side or up and down movement, continue with step 10 to grease the wheel bearings.

⊠ Result: If there is side to side or up and down movement, continue to step 10 and replace the wheel bearings with new ones.

Note: When replacing a wheel bearing, both the inner and outer bearings, including the pressed-in races, must be replaced.

10 Remove the castle nut.

11 Pull the hub off of the spindle. The washer and outer bearing should fall loose from the hub.

12 Place the hub on a flat surface and gently pry the bearing seal out of the hub. Remove the rear bearing.

13 Pack both bearings with clean, fresh grease.

Grease Specification
Chevron Ultra-duty grease, EP NLGI 2 (lithium based) or equivalent

14 Place the large inner bearing into the rear of the hub.

15 Install a new bearing grease seal into the hub by pressing it evenly into the hub until it is flush.

Note: Always replace the bearing grease seal when the hub has been removed.

16 Slide the hub onto the yoke spindle.

NOTICE Component damage hazard. Do not apply excessive force or damage to the lip of the seal may occur.

17 Fill the hub cavity with clean, fresh grease.

18 Place the outer bearing into the hub.

19 Install the washer and castle nut.

20 Tighten the castle nut to 158 ft-lbs / 214 Nm to seat the bearings.

Note: Rotate the hub by hand while torquing the castle nut to make sure the bearings seat properly.

21 Loosen the castle nut one full turn and then torque to 35 ft-lbs / 47 Nm.

22 Install a new cotter pin. Bend the cotter pin to lock it in.

Note: Always use a new cotter pin when installing a castle nut.

23 Install the dust cap, then the tire and wheel assembly. Torque the wheel lug nuts to specification. Refer to Section 2, *Specifications.*

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.
- ☑ Read each procedure completely and adhere to the instructions. Attempting shortcuts may produce hazardous conditions.
- ☑ Unless otherwise specified, perform each repair procedure with the machine in the following configuration:
  - Machine parked on a firm, level surface
  - Boom in stowed position
  - Turntable rotated with the boom between the non-steer wheels
  - Turntable secured with the turntable rotation lock
  - Key switch in the off position with the key removed
  - Wheels chocked
  - All external AC power supply disconnected from the machine

About This Section

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

Perform disassembly procedures to the point where repairs can be completed. Then to 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 an imminently hazardous situation which, if not avoided, will result in death or serious injury.

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

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

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

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

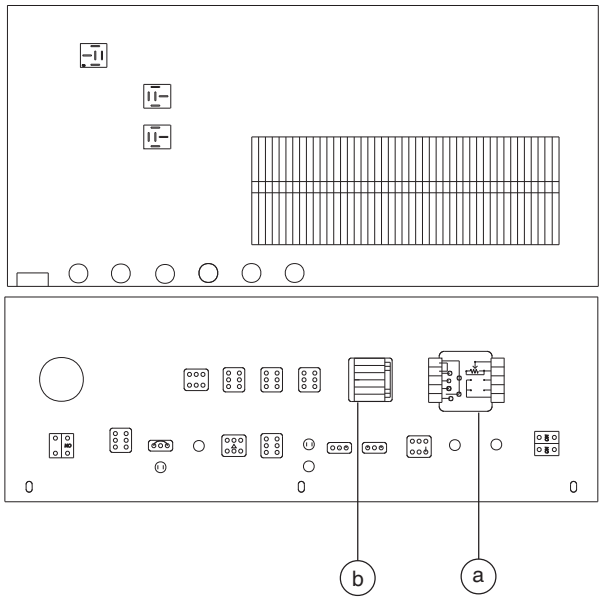
⊠ Indicates that an incorrect result has occurred after performing a series of steps.

Platform Controls

1-1 Controllers

Platform Controls

The drive joystick is connected to the drive motor controller located under the non-steer end drive chassis cover. The drive motor controller can also recognize machine drive malfunctions and display controller fault codes by flashing an LED at the ground controls. Refer to Section 5, *Fault Codes* for a list of fault codes and additional information. There are no adjustments needed on the drive joystick controller. For further information or assistance, consult the Genie Industries Service Department.



a boom function speed controller
b drive joystick

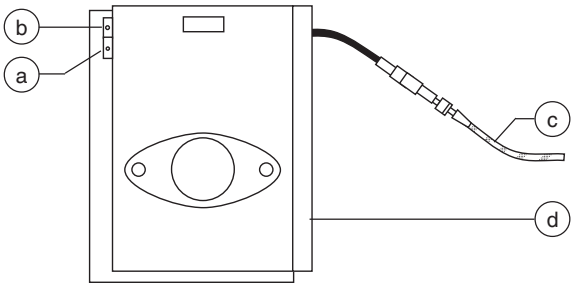
Boom Function Speed Controller Adjustments

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

Note: Do not adjust the boom function speed controller unless the static battery supply voltage is above 24V DC.

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 Open the platform control box lid and locate the boom function speed controller.



a threshold adjustable trimpot
b max-out adjustable trimpot
c white/red wire to TP6
d boom function speed controller

3 Disconnect the blk/red wire of the boom function speed controller from the wht/red wire.

4 Connect the red (+) lead from an amp meter to the blk/red wire. Connect the black (-) lead to the wht/red wire.

5 Turn the boom function speed controller to the CREEP position.

6 Set the threshold: With the boom in the stowed position, press down the foot switch and move the primary boom toggle switch in the down position until the amperage reading appears. Adjust the amperage to 0.17 to 0.18A. Turn the threshold trimpot adjustment screw clockwise to increase the amperage or counterclockwise to decrease the amperage.

7 Turn the boom function speed controller to the 9 position.

8 Set the max-out: Press down the foot switch, then move the primary boom toggle switch in the down position. Adjust the amperage to 0.54 to 0.55A. Turn the max-out trimpot adjustment screw clockwise to increase the amperage or counterclockwise to decrease the amperage.

Boom function speed controller specifications	
Threshold	0.17 to 0.18A
Max-out	0.45 to 0.46A

Platform Components

2-1 Platform Leveling Slave Cylinder

The slave cylinder and the rotator pivot are the two primary supports for the platform. The slave cylinder keeps the platform level through the entire range of boom motion. It operates in a closed-circuit hydraulic loop with the master cylinder. The slave cylinder is equipped with counterbalance valves to prevent movement in the event of a hydraulic line failure.

How to Remove the Slave Cylinder

Note: Before cylinder removal is considered, bleed the slave cylinder to be sure there is no air in the closed loop hydraulic circuit.

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

1 **Z-45/25J:** Extend the primary boom until the slave cylinder barrel-end pivot pin is accessible.

2 Raise the primary boom slightly and place blocks under the platform for support.

3 Lower the primary boom until the platform is resting on the blocks just enough to support the platform.

Note: Do not rest the entire weight of the boom on the blocks.

4 Tag, disconnect and plug the hydraulic hoses from the slave cylinder at the unions and connect them together using a connector. Connect the hoses from the cylinder together using a connector.

⚠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.

5 Remove the pin retaining fastener from the slave cylinder rod-end pivot pin. Do not remove the pin.

6 **Z-45/25J:** Remove the external snap rings from the slave cylinder barrel-end pivot pin. Do not remove the pin.

Z-45/25: Remove the pin retaining fastener from the slave cylinder barrel-end pivot pin. Do not remove the pin.

7 Place a block under the slave cylinder for support. Protect the cylinder rod from damage.

8 Use a soft metal drift to drive the rod-end pivot pin out.

⚠WARNING Crushing hazard. The platform could fall when the slave cylinder rod-end pivot pin is removed if not properly supported.

NOTICE Component damage hazard. The slave cylinder rod may become damaged if it is allowed to fall if not properly supported by the lifting device.

9 Use a soft metal drift and drive the barrel-end pin out.

10 Carefully pull the cylinder out of the primary boom.

How to Bleed the Slave Cylinder

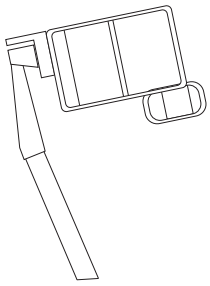
Note: This procedure will have to be preformed outside.

1 **Z45/25J:** Raise the jib to a horizontal postion and raise the secondary boom 3 feet.

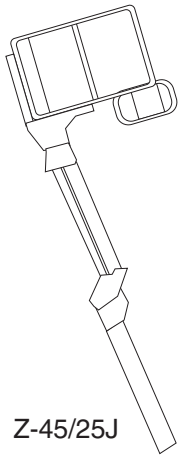
Z45/25: Raise the secondary boom 4 feet.

2 Move the function enable toggle switch to either side. Simultaneously activate and hold the primary boom up and platform level up toggle switches until the primary boom is fully raised.

⊙ The platform should be facing in an upward position. As shown.



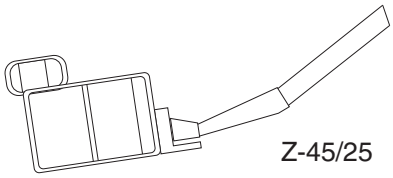
Z-45/25



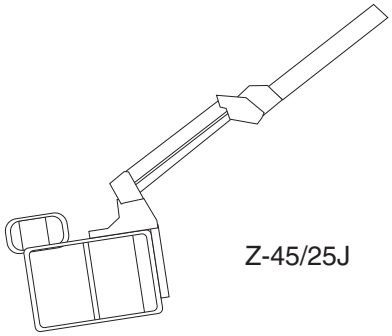
Z-45/25J

3 While still holding the function enable toggle switch, simultaneously activate the primary boom down and platform level down toggle switches until the primary boom is fully lowered.

⊙ The platform should be facing in a down position. As shown.



Z-45/25



Z-45/25J

4 Level the platform and return the boom to the stowed position.

PLATFORM COMPONENTS

2-2
Platform Rotator

How to Bleed the Platform Rotator

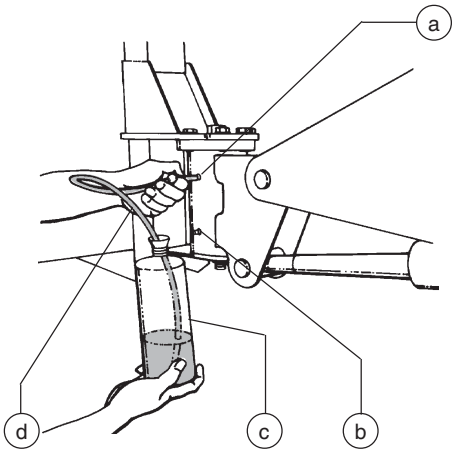
Note: This procedure will require two people.

1 Move the function enable toggle switch to either side. Activate the platform rotate toggle switch to the right, then the left through two platform rotation cycles, then hold the switch to the right position until the platform is fully rotated to the right.

Before serial number 24304:

2 Connect a clear hose to the top bleed valve. Place the other end of the hose in a container to collect any drainage. Secure the container to the boom.

3 Open the top bleed valve on the rotator, but do not remove it.



a top bleed valve
b bottom bleed valve
c container
d clear hose

4 Move the function enable toggle switch to either side and hold the platform rotate toggle switch to the left position until the platform is fully rotated to the left. Continue holding the toggle switch until air stops coming out of the bleed valve. Close the bleed valve.

⚠WARNING Crushing hazard. Keep clear of the platform during rotation.

5 Connect the clear hose to the bottom bleed valve and open the valve. Do not remove the bleed valve.

6 Move the function enable toggle switch to either side and hold the platform rotate toggle switch to the right position until the platform is fully rotated to the right. Continue holding the toggle switch until air stops coming out of the bleed valve. Close the bleed valve.

⚠WARNING Crushing hazard. Keep clear of the platform during rotation.

7 Remove the hose from the bleed valve and clean up any hydraulic oil that may have spilled.

8 Rotate the platform fully in both directions and inspect the bleed valves for leaks.

After serial number 24303:

2 Place a suitable container underneath the platform rotator.

3 Open the top bleed screw on the rotator, but do not remove it.

⚠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.

4 Move the function enable toggle switch to either side and hold the platform rotate toggle switch to the left position until the platform is fully rotated to the left. Continue holding the toggle switch until air stops coming out of the bleed screw. Close the bleed screw.

⚠WARNING Crushing hazard. Keep clear of the platform during rotation.

5 Open the bottom bleed screw on the rotator, but do not remove it.

⚠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 Move the function enable toggle switch to either side and hold the platform rotate toggle switch to the right position until the platform is fully rotated to the right. Continue holding the toggle switch until air stops coming out of the bleed screw. Close the bleed screw.

⚠WARNING Crushing hazard. Keep clear of the platform during rotation.

7 Clean up any hydraulic oil that may have spilled.

8 Rotate the platform fully in both directions and inspect the bleed screws for leaks.

PLATFORM COMPONENTS

2-3 Platform Overload System (if equipped)

How to Calibrate the Platform Overload System

Calibration of the platform overload system is essential to safe machine operation. Continued use of an improperly calibrated platform overload system could result in the system failing to sense an overloaded platform. The stability of the machine is compromised and it could tip over.

Note: Perform this procedure with the machine on a firm, level surface.

1 Turn the key switch to platform control.

2 Determine the maximum platform capacity. Refer to the machine serial plate.

3 Remove all weight, tools and accessories from the platform.

Note: Failure to remove all weight, tools and accessories from the platform will result in an incorrect calibration.

4 Using a suitable lifting device, place a test weight equal to the maximum platform capacity at the center of the platform floor.

5 Move the platform up and down by hand, so it bounces approximately 2.5 to 5 cm / 1 to 2 inches. Allow the platform to settle.

⊙ Result: The overload indicator lights are off and the alarm does not sound. Proceed to step 6.

⊠ Result: The overload indicator lights are flashing at the platform and ground controls, and the alarm is sounding. Slowly tighten the load spring adjustment nut in a clockwise direction in 10° increments until the overload indicator light turns off, and the alarm does not sound. Proceed to step 8.

Note: The platform will need to be moved up and down and allowed to settle between each adjustment.

Note: There may be a 2 second delay before the platform overload indicator light and alarm responds.

6 Move the platform up and down by hand, so it bounces approximately 2.5 to 5 cm / 1 to 2 inches. Allow the platform to settle.

⊙ Result: The overload indicator lights are off at the platform and ground controls, and the alarm does not sound. Slowly loosen the load spring adjustment nut in a counterclockwise direction in 10° increments until the overload indicator light flashes at both the platform and ground controls, and the alarm sounds. Proceed to step 7.

⊠ Result: The overload indicator lights are flashing at the platform and ground controls, and the alarm is sounding. Repeat this procedure beginning with step 5.

Note: The platform will need to be moved up and down and allowed to settle between each adjustment.

Note: There may be a 2 second delay before the platform overload indicator lights and alarm responds.

7 Move the platform up and down by hand, so it bounces approximately 2.5 to 5 cm / 1 to 2 inches. Allow the platform to settle.

⊙ Result: The overload indicator lights are off and the alarm does not sound. Proceed to step 8.

⊠ Result: The overload indicator lights are flashing at the platform and ground controls, and the alarm is sounding. Repeat this procedure beginning with step 5.

Note: There may be a 2 second delay before the platform overload indicator light and alarm responds.

8 Add an additional 10 lb / 4.5 kg test weight to the platform.

⊙ Result: The overload indicator light is flashing at both the ground and platform controls, and the alarm is sounding. Proceed to step 9.

⊠ Result: The overload indicator light is off at both the ground and platform controls, and the alarm does not sound. Remove the additional 10 lb / 4.5 kg test weight. Repeat this procedure beginning with step 6.

Note: There may be a 2 second delay before the platform overload indicator light and alarm responds.

9 Test all machine functions from the platform controls.

⊙ Result: All platform control functions should not operate.

10 Turn the key switch to ground control.

11 Test all machine functions from the ground controls.

⊙ Result: All ground control functions should not operate.

12 Using a suitable lifting device, lift the test weight off the platform floor.

⊙ Result: The platform overload indicator light should be off at both the ground and platform controls and the alarm should not sound.

Note: There may be a 2 second delay before the overload indicator lights and alarm turn off.

13 Test all machine functions from the ground controls.

⊙ Result: All ground control functions should operate normally.

14 Turn the key switch to platform control.

15 Test all machine functions from the platform controls.

⊙ Result: All platform control functions should operate normally.

Jib Boom Components, Z-45/25J

3-1
Jib Boom

How to Remove the Jib Boom

⚠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: Perform this procedure with the boom in the stowed position.

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

1 Remove the platform.

2 Tag and disconnect the electrical connectors from the jib boom/platform rotate select manifold mounted to the platform support.

3 Tag, disconnect and plug all of the hydraulic hoses from the jib boom/platform rotate select valve manifold. Cap the fittings on the manifold and pull the hoses out through the platform rotator.

⚠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.

4 Remove the platform mounting weldment.

5 Attach a lifting strap from an overhead crane to the platform rotator for support.

6 Remove the pin retaining fastener from the jib boom lift cylinder rod-end pivot pin. Do not remove the pin.

7 Remove the pin retaining fasteners from both platform rotator pivot pins. Do not remove the pins.

8 Use a soft metal drift to remove the leveling arm pivot pin. Let the leveling arms hang down.

9 Use a soft metal drift to remove the platform rotator pivot pin and remove the platform rotator from the machine.

10 Slide both of the jib boom leveling arms off of the jib boom cylinder rod-end pivot pin.

11 Remove the hose and cable cover from the side of the jib boom. Remove the hose and cable separators.

12 Attach a lifting strap from an overhead crane to the jib boom.

13 Support the barrel end of the jib boom lift cylinder with a suitable lifting device.

14 Tag, disconnect and plug the jib boom lift cylinder hydraulic hoses. 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.

15 Remove the pin retaining fastener from the jib boom lift cylinder barrel-end pivot pin.

16 Use a soft metal drift to remove the pin. Let the cylinder hang down.

⚠WARNING Crushing hazard. The jib boom could fall when when the barrel-end pivot pin is removed if not properly supported by the overhead crane.

17 Remove the pin retaining fastener from the jib boom pivot pin. Use a soft metal drift to remove the pin, then remove the jib boom from the bellcrank.

⚠WARNING Crushing hazard. The jib boom could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

18 Attach a lifting strap from an overhead crane to the lug on the rod end of the jib boom lift cylinder.

19 Use a soft metal drift to remove the jib boom lift cylinder rod-end pivot pin, then remove the jib boom lift cylinder from the bellcrank.

⚠WARNING Crushing hazard. The jib boom lift cylinder could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

JIB BOOM COMPONENTS, Z-45/25J

3-2
Jib Boom Lift Cylinder

How to Remove the Jib Boom Lift Cylinder

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

1 Raise the jib boom slightly and place blocks under the platform mounting weldment. Then lower the jib boom until the platform is resting on the blocks just enough to support the platform.

Note: Do not rest the entire weight of the boom on the blocks.

2 Tag, disconnect and plug the jib boom lift cylinder hydraulic hoses. 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.

3 Remove the pin retaining fasteners from the jib boom lift cylinder rod-end pivot pin. Do not remove the pin.

4 Use a soft metal drift to tap the jib boom lift cylinder rod-end pivot pin halfway out. Lower one of the leveling arms to the ground. Tap the pin the other direction and lower the opposite leveling arm. Do not remove the pin.

5 Support the jib boom lift cylinder with a suitable lifting device.

6 Remove the pin retaining fastener from the jib boom lift cylinder barrel-end pivot pin. Use a soft metal drift to remove the barrel-end pin. Let the cylinder hang down.

⚠WARNING Crushing hazard. The jib boom could fall when the barrel-end pivot pin is removed if not properly supported by the overhead crane.

7 Attach a lifting strap from an overhead crane to the lug on the rod end of the jib boom lift cylinder.

8 Use a soft metal drift to remove the jib boom lift cylinder rod-end pin. Remove the jib boom lift cylinder from the machine.

⚠WARNING Crushing hazard. The jib boom lift cylinder could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

Primary Boom Components

4-1
Cable Track

The primary boom cable track guides the cables and hoses running up the boom. It can be repaired link by link without removing the cables and hoses that run through it. Removing the entire primary boom cable track is only necessary when performing major repairs that involve removing the primary boom.

How to Remove the Cable Track, Z-45/25

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

1 Locate the cables from the primary boom cable track to the platform control box. Tag each cable and its entry location at the platform control box.

2 Disconnect the cables from the platform control box.

3 Pull all of the electrical cables out of the plastic cable track. Do not pull out the hydraulic hoses.

4 Raise the primary boom to a horizontal position.

5 Tag, disconnect and plug the platform rotator hydraulic hoses at the union located above the primary boom lift cylinder. Cap the fittings on the unions.

⚠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 Tag, disconnect and plug the hydraulic hoses from the V1 and V2 ports on the counterbalance valve manifold at the platform rotator. Cap the fittings on the manifold.

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

7 Tag, disconnect and plug the hydraulic hoses from the platform leveling master 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.

PRIMARY BOOM COMPONENTS

8 Tag and disconnect the hydraulic hoses from the platform leveling slave cylinder and connect them together using a connector. 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.

9 Pull the four hydraulic hoses toward the platform to clear the rod end of the primary boom lift cylinder.

10 Place blocks between the upper and lower cable tracks and secure the upper and lower tracks together.

⚠WARNING Crushing hazard. If the upper and lower cable tracks are not properly secured together, the cable track could become unbalanced and fall when removed from the machine.

11 Remove all hose and cable clamps from the underside of the primary boom.

12 Attach a strap from an overhead crane to the cable track.

13 Remove the mounting fasteners from the upper cable track at the platform end of the extension boom.

14 Remove the cable track mounting fasteners that attach the lower cable track to the primary boom.

15 Remove the cable track from the machine and place it on a structure capable of supporting it.

⚠WARNING Crushing hazard. The cable track could become unbalanced and fall if not properly attached to the overhead crane.

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

How to Remove the Cable Track, Z-45/25J

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

1 Locate the cables from the primary boom cable track to the platform control box. Tag each cable and its entry location at the platform control box.

2 Disconnect the cables from the platform control box.

3 Remove the hose and cable cover from the side of the jib boom. Remove the hose and cable separators.

4 Remove the hose clamp on the primary boom bellcrank.

5 Pull all of the electrical cables out of the plastic cable track. Do not pull out the hydraulic hoses.

6 Tag, disconnect and plug the hydraulic hoses from the V1 and V2 ports of the counterbalance valve manifold at the platform rotator. Cap the fittings on the manifold.

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

7 Tag and disconnect the hydraulic hoses from the platform leveling slave cylinder at the union and connect them together using a connector. Connect the hoses from the cylinder together using a connector.

⚠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.

8 Tag, disconnect and plug the hydraulic hoses from the jib boom/platform rotate manifold. Cap the fittings on the manifold.

⚠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.

9 Tag, disconnect and plug the platform rotator hydraulic hoses at the union located above the primary boom lift cylinder. Cap the fittings on the unions.

⚠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.

10 Tag, disconnect and plug the hydraulic hoses from the platform leveling master 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.

PRIMARY BOOM COMPONENTS

11 Raise the boom to a horizontal position.

12 Place blocks between the upper and lower cable tracks and secure the upper and lower tracks together.

⚠WARNING Crushing hazard. If the upper and lower cable tracks are not properly secured together, the cable track could become unbalanced and fall when removed from the machine.

13 Attach a lifting strap from an overhead 5 ton / 5,000 kg capacity crane to the platform end of the primary boom for support. Do not lift it.

14 Remove all hose and cable clamps from the underside of the primary boom.

15 Support the rod end of the primary boom lift cylinder with a suitable lifting device.

16 Remove the pin retaining fasteners from the primary boom lift cylinder rod-end pivot pin. Do not remove the pin.

17 Raise the primary boom slightly with the overhead crane to relieve the pressure on the primary boom lift cylinder rod-end pivot pin.

18 Use a soft metal drift to remove the primary boom lift cylinder rod-end pivot pin.

⚠WARNING Crushing hazard. The primary boom lift cylinder could become unbalanced and fall if not properly supported by the lifting device.

19 Lower the rod end of the primary boom lift cylinder approximately 12 inches / 30 cm.

20 Pull all of the hoses and cables out and away from the mounting ears for the rod end of the primary boom lift cylinder.

21 Raise the rod end of the primary boom lift cylinder back into position and install the rod-end pivot pin. Install the pin retaining fasteners.

22 Attach a strap from an overhead crane to the cable track.

23 Remove the mounting fasteners from the upper cable track at the platform end of the extension boom.

24 Remove the cable track mounting fasteners that attach the lower cable track to the primary boom.

25 Remove the cable track from the machine and place it on a structure capable of supporting it.

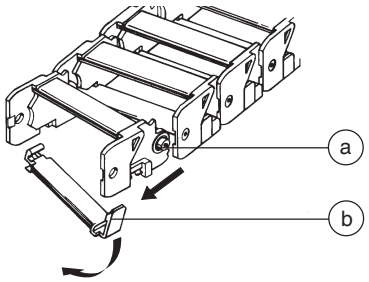
⚠WARNING Crushing hazard. The cable track could become unbalanced and fall if not properly attached to the overhead crane.

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

How to Repair the Primary Boom Cable Track

NOTICE Component damage hazard. The primary boom cable track can be damaged if it is twisted.

Note: A 7 link repair section of cable track is available through the Genie Industries Service Parts Department.



a link separation point
b lower clip

1 Use a slotted screwdriver to pry down on the lower clip.

2 To remove a single link, open the lower clip and then use a screw driver to pry the link to the side.

3 Repeat steps 1 and 2 for each link to be removed.

4-2 Primary Boom

How to Remove the Primary Boom

⚠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:Perform this procedure with the boom in the stowed position.

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

1 Remove the platform.

2 **Z-45/25:** Remove the platform rotator and platform mounting weldment.

Z-45/25J: Remove the jib boom.
See 3-1, *How to Remove the Jib Boom.*

3 Remove the cable track. See 4-1, *How to Remove the Cable Track.*

4 Raise the primary boom to a horizontal position.

PRIMARY BOOM COMPONENTS

5 Remove the hose and cable cover from the upper pivot.

6 Remove the pin retaining fastener from the master cylinder barrel-end pivot pin. Use a soft metal drift to remove the pin. Lower the cylinder and let it hang down.

NOTICE Component damage hazard. When lowering the master cylinder down, be sure not to damage the master cylinder hoses or fittings.

7 Locate the primary boom drive speed limit switch inside of the upper pivot.

8 Remove the primary boom drive speed limit switch mounting fasteners. Do not disconnect the wiring.

9 Locate the primary extension boom drive speed limit switch inside of the extension boom.

10 Remove the primary extension boom drive speed limit switch mounting fasteners. Do not disconnect the wiring.

11 Pull the limit switch and the wiring out of the extension tube and move it out of the way.

12 Tag, disconnect and plug the primary boom extension cylinder hydraulic hoses. 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.

13 Remove the hose clamp at the pivot end of the boom.

14 Attach a 5 ton / 5,000 kg overhead crane to the center point of the primary boom.

15 Attach a similar lifting device to the primary boom lift cylinder.

16 Place support blocks under the primary boom lift cylinder.

17 Remove the pin retaining fasteners from the primary boom lift cylinder rod-end pivot pin. Use a soft metal drift to remove the pin.

⚠WARNING Crushing hazard. The boom lift cylinder and primary boom will fall if not properly supported.

18 Lower the rod end of the primary boom lift cylinder onto support blocks. Protect the cylinder rod from damage.

19 Remove the pin retaining fasteners from the primary boom pivot pin.

20 Remove the primary boom pivot pin with a soft metal drift. Carefully remove the primary boom from the machine and place it on a structure capable of supporting it.

⚠WARNING Crushing hazard. The primary boom could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

How to Disassemble the Primary Boom

Note: Complete disassembly of the boom is only necessary if the outer or inner boom tube must be replaced. The extension cylinder can be removed without completely disassembling the boom. See 4-4, *How to Remove the Primary Boom Extension Cylinder*.

1 Remove the primary boom. See *How to Remove the Primary Boom*.

2 Place blocks under the barrel end of the primary boom extension cylinder for support.

3 Remove the pin retaining fastener from the extension cylinder barrel-end pivot pin at the pivot end of the primary boom. Use a soft metal drift to remove the pin.

4 Remove and label the location of the wear pads from the platform end of the primary boom.

Note: Pay careful attention to the location and amount of shims used with each wear pad.

5 Support and slide the extension tube and extension cylinder assembly out of the boom tube.

⚠WARNING Crushing hazard. The primary boom extension tube could become unbalanced and fall when removed from the primary boom tube if not properly supported.

Note: During removal, the overhead crane strap will need to be carefully adjusted for proper balancing.

6 Remove the external snap rings from the extension cylinder rod-end pivot pin at the platform end of the extension tube. Use a soft metal drift to remove the pin.

7 Support and slide the extension cylinder out of the base end of the extension tube. Place the extension cylinder on blocks for support.

⚠WARNING Crushing hazard. The extension cylinder could become unbalanced and fall when removed from primary boom extension tube if not properly supported.

Note: During removal, the overhead crane strap will need to be carefully adjusted for proper balancing.

PRIMARY BOOM COMPONENTS

4-3 Primary Boom Lift Cylinder

The primary boom lift cylinder raises and lowers the primary boom. The primary boom lift cylinder is equipped with a counterbalance valve to prevent movement in the event of a hydraulic line failure.

How to Remove the Primary Boom Lift Cylinder

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

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

1 Raise the primary boom to a horizontal position.

2 Raise the secondary boom until the primary boom lift cylinder barrel-end pivot pin is above the turntable covers.

3 Attach a 5 ton / 5000 kg overhead crane to the primary boom for support.

4 Raise the primary boom with the overhead crane slightly to take the pressure off the primary boom lift cylinder pivot pins.

5 Support the rod end and the barrel end of the primary boom lift cylinder with a second overhead crane or similar lifting device.

6 Tag, disconnect and plug the primary boom lift cylinder hydraulic hoses. 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.

7 Remove the pin retaining fasteners from the primary boom lift cylinder rod-end pivot pin. Use a soft metal drift to remove the pin.

⚠WARNING Crushing hazard. The primary boom will fall if not properly supported when the primary boom rod-end pivot pin is removed.

8 Place a support block across both turntable covers under the primary boom lift cylinder.

9 Lower the rod end of the lift cylinder onto the block. Protect the cylinder rod from damage.

⚠WARNING Crushing hazard. The primary boom lift cylinder could fall if not properly supported.

10 Support the barrel end of the primary boom lift cylinder with an overhead crane or similar lifting device.

11 Remove the primary boom lift cylinder barrel-end pivot pin retaining fasteners. Use a slide hammer to remove the barrel-end pivot pin. Carefully remove the primary boom lift cylinder from the machine.

⚠WARNING Crushing hazard. The lift cylinder could become unbalanced and fall if not properly supported and secured to the lifting device.

4-4 Primary Boom Extension Cylinder

The primary boom extension cylinder extends and retracts the primary boom extension tube.The primary boom extension cylinder is equipped with counterbalance valves to prevent movement in the event of a hydraulic line failure.

How to Remove the Primary Boom Extension Cylinder

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

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

1 Raise the primary boom to a horizontal position.

2 Extend the primary boom until the primary boom extension cylinder rod-end pivot pin is accessible in the primary boom extension tube.

3 Remove the hose and cable guard from the upper pivot.

4 Tag, disconnect and plug the primary boom extension cylinder hydraulic hoses. 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.

5 At the platform end of the boom, remove the external snap rings from the extension cylinder rod-end pivot pin. Use a soft metal drift to remove the pin.

6 Remove the barrel-end pivot pin retaining fasteners.

7 Place a rod through the barrel-end pivot pin and twist to remove the pin.

8 Support and slide the extension cylinder out of the upper pivot.

⚠WARNING Crushing hazard. The extension cylinder could fall when removed from the extension boom if not properly supported.

NOTICE Component damage hazard. Be careful not to damage the counterbalance valves on the primary boom extension cylinder when removing the cylinder from the primary boom.

NOTICE Component damage hazard. Hoses and cables can be damaged if the primary boom extension cylinder is dragged across them.

Note: Be sure to note the length of the cylinder after removal. The cylinder must be at the same length for installation.

PRIMARY BOOM COMPONENTS

4-5 Platform Leveling Master Cylinder

The master cylinder acts as a pump for the slave cylinder. It is part of the closed circuit hydraulic loop that keeps the platform level through the entire range of boom motion. The master cylinder is located at the base of the primary boom.

How to Remove the Platform Leveling Master Cylinder

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

1 Raise the secondary boom until both the rod-end and barrel-end pivot pins on the master cylinder are accessible.

2 Tag, disconnect and plug the master cylinder hydraulic hoses. 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.

3 Attach an overhead crane or similar lifting device to the master cylinder.

4 Remove the pin retaining fasteners from the master cylinder barrel-end pivot pin.

5 Place a rod through the barrel-end pivot pin and twist to remove the pin.

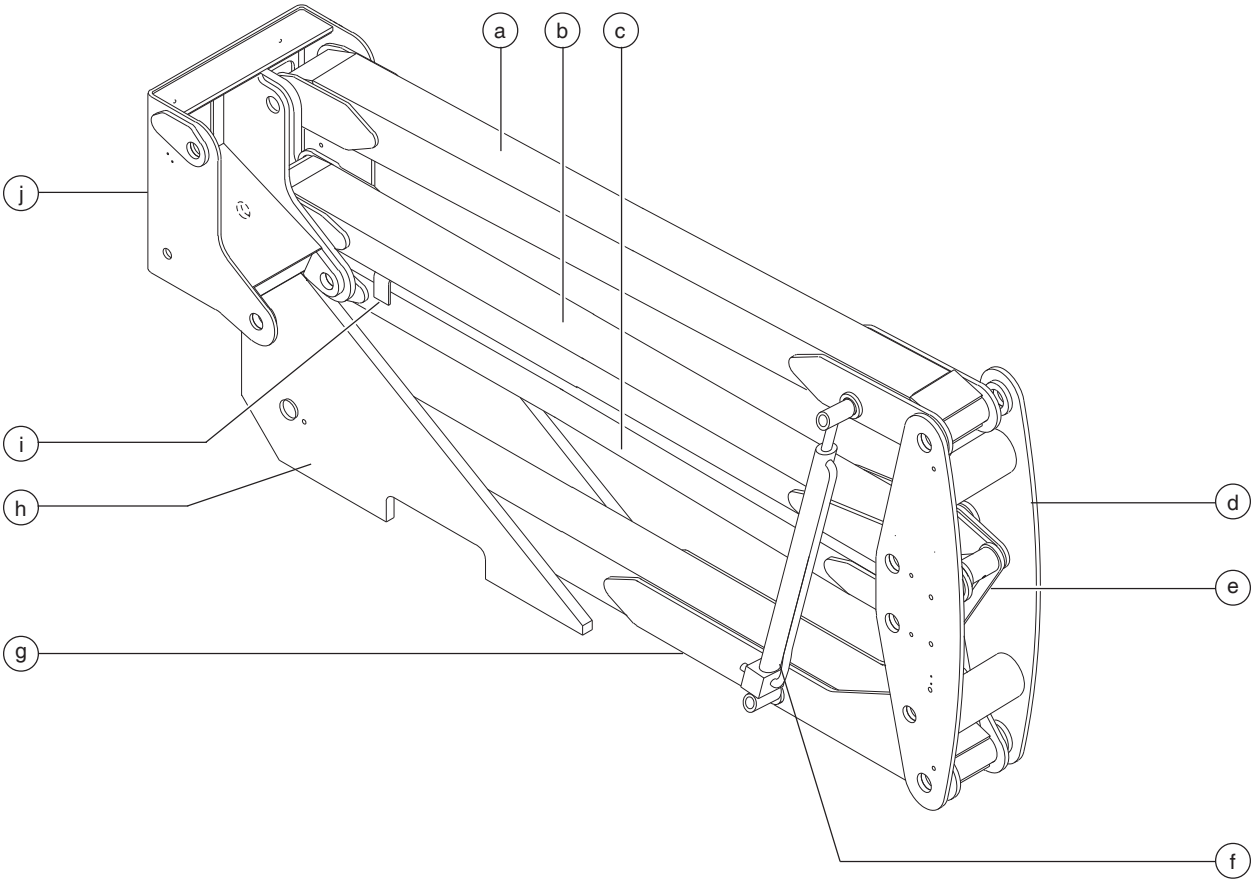
6 Remove the pin retaining fastener from the rod-end pivot pin.

7 Place a rod through the rod-end pivot pin and twist to remove the pin.

8 Remove the master cylinder from the machine.

⚠WARNING Crushing hazard. The master cylinder could become unbalanced and fall if not properly attached to the overhead crane.

Secondary Boom Components



Secondary Boom components

a upper secondary boom (number 1 arm)
b upper tension link (number 2 arm)
c lower tension link (number 3 arm)
d mid-pivot
e compression link
f secondary boom lift cylinder (2)
g lower secondary boom (number 4 arm)
h turntable pivot
i boom rest
j upper pivot

SECONDARY BOOM COMPONENTS

5-1
Secondary Boom

How to Disassemble the Secondary Boom

⚠WARNING Bodily injury hazard. The procedures in this section require specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is required.

Follow the disassembly steps to the point required to complete the repair. Then re-assemble the secondary boom by following the disassembly steps in reverse order.

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

1 Remove the platform.

2 **Z-45/25J:** Remove the jib boom. See 3-1, *How to Remove the Jib Boom.*

3 Remove the primary boom. See 4-2, *How to Remove the Primary Boom*.

4 Remove the master cylinder. See 4-5, *How to Remove the Platform Leveling Master Cylinder*.

5 Attach a lifting strap from an overhead crane to to the lug on the rod end of the primary boom lift cylinder. Raise the primary boom lift cylinder with the crane, to a vertical position.

6 Tag, disconnect and plug the hydraulic hoses at the primary boom lift 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.

7 Remove the pin retaining fastener from the primary boom lift cylinder barrel-end pivot pin.

8 Use a slide hammer to remove the pin. Remove the primary boom lift cylinder from the machine.

⚠WARNING Crushing hazard. The primary boom lift cylinder could become unbalanced and fall if not properly supported by the overhead crane.

9 Tag, disconnect and plug the hydraulic hoses on both of the secondary boom lift cylinders. Cap the fittings on the cylinders.

⚠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.

10 Remove the pin retaining fasteners from both sides of the secondary boom lift cylinder rod-end pivot pin and barrel-end pivot pin. Do not remove the pins.

11 Attach a strap from an overhead crane to the lug on the rod end of one of the secondary boom lift cylinders for support. Do not apply any lifting pressure.

12 Use a soft metal drift to drive the barrel-end pivot pin half way out. Lower the barrel end of the secondary boom lift cylinder and let it hang down.

13 Use a soft metal drift to drive the rod-end pivot pin half way out.

14 Remove the secondary boom lift cylinder from the machine.

15 Repeat steps 11 through 14 for the other secondary boom lift cylinder.

⚠WARNING Crushing hazard. The secondary boom lift cylinder could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

NOTICE Component damage hazard. When removing a secondary boom lift cylinder from the machine, be careful not to damage the counterbalance valve at the barrel end of the cylinder.

16 Attach a lifting strap from an overhead crane to the upper pivot for support. Do not lift it.

17 Attach a lifting strap from a second overhead crane to the number 1 arm at the mid-point between the upper pivot and mid-pivot.

18 Remove the pin retaining fasteners from the number 1 arm pivot pins at the mid-pivot and the upper pivot. Do not remove the pins.

19 Use a soft metal drift to drive both pins out.

20 Remove the number 1 arm from the machine.

⚠WARNING Crushing hazard. The number 1 arm could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

⚠CAUTION Crushing hazard. The upper pivot could fall when the number 1 arm is removed from the machine if not properly supported by the overhead crane.

21 Using the overhead crane attached to the upper pivot, raise the secondary boom assembly approximately 30 inches / 76 cm.

22 Insert a 4 x 4 x 11 inch / 10 x 10 x 28 cm block between the number 2 arm and the boom rest. Lower the secondary boom assembly onto the block.

⚠WARNING Crushing hazard. The secondary boom assembly could fall if not properly supported by the block.

SECONDARY BOOM COMPONENTS

23 Pull all of the cables and hoses out through the upper pivot.

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

24 Remove the hose and cable covers from the top of the number 2 arm.

25 Pull all of the hoses and cables out of the upper pivot and out through the mid-pivot. Lay the hoses and cables on the ground.

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

26 Remove the pin retaining fastener from the number 2 arm pivot pin at the upper pivot. Use a soft metal drift to remove the pin.

27 Remove the upper pivot from the machine.

⚠WARNING Crushing hazard. The upper pivot could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

28 Attach the lifting strap from an overhead crane to the number 2 arm at the upper pivot end.

29 Raise the number 2 arm slightly and remove the 4 x 4 x 11 inch / 10 x 10 x 28 cm block.

30 Lower the number 2 arm onto the boom rest pad.

31 Insert a 4 x 4 x 8 1/2 inch / 10 x 10 x 22 cm block between the number 3 arm and the number 4 arm at the mid-pivot end.

32 Attach a lifting strap from the overhead crane to the mid-pivot for support. Do not lift it.

33 Remove the pin retaining fasteners from the number 2, 3 and 4 arm pivot pins at the mid-pivot. Do not remove the pins.

34 Use a soft metal drift to drive each pin out. Remove the mid-pivot from the secondary boom assembly.

⚠WARNING Crushing hazard. The mid-pivot could become unbalanced and fall when removed from the secondary boom assembly if not properly supported by the overhead crane.

35 Attach the lifting strap from an overhead crane to the center point of the number 2 arm for support. Do not lift it.

36 Remove the pin retaining fasteners from both compression link pivot pins. Do not remove the pins.

37 Use a soft metal drift to remove the lower compression link pivot pin at the number 3 arm.

38 Support the compression link with an appropriate lifting device.

39 Use a soft metal drift to remove the upper compression link pivot pin from the number 2 arm. Remove the compression link from the machine.

⚠WARNING Crushing hazard. The number 2 arm could fall when the compression link is disconnected from the number 2 arm if not properly supported by the overhead crane.

⚠CAUTION Crushing hazard. The compression link may fall if not properly supported when removed from the secondary boom assembly.

40 Remove the number 2 arm from the machine.

⚠WARNING Crushing hazard. The number 2 arm could become unbalanced and fall when removed from the secondary boom assembly if not properly supported by the overhead crane.

41 Remove the upper and lower hose and cable covers from the number 3 arm.

42 Pull all of the cables and hoses from the number 3 arm and lay them over the turntable counterweight.

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

43 Open the ground controls side turntable cover.

44 Remove the retaining fastener from the ground control box and function manifold pivot plate.

45 Lower the ground control box and function manifold pivot plate to access the number 3 arm pivot pin.

46 Attach the lifting strap from the overhead crane to the centerpoint of the number 3 arm for support. Do not lift it.

47 Remove the mounting fasteners from the cover located in the boom storage area to access the number 3 and number 4 arm pivot pin retaining fasteners at the turntable riser.

48 Remove the pin retaining fasteners from the number 3 arm at the turntable riser. Do not remove the pin.

49 Use a slide hammer to remove the number 3 arm pivot pin from the turntable pivot through the access hole behind the ground control box.

50 Remove the number 3 arm from the machine.

⚠WARNING Crushing hazard. The number 3 arm could become unbalanced and fall when removed from the machine if not properly supported by the overhead crane.

51 Remove the upper and lower hose and cable covers from the number 3 arm.

52 Remove the secondary boom drive speed limit switch mounting fasteners from the number 4 arm at the mid-pivot end. Do not disconnect the wiring.

53 Remove the pin retaining fasteners from the number 4 arm at the turntable riser. Do not remove the pin.

54 Attach a lifting strap from the overhead crane to the center point of the number 4 arm. Do not lift it.

55 Use a slide hammer to remove the number 4 arm from the turntable riser through the ground controls side bulkhead.

56 Remove the number 4 arm from the machine.

⚠WARNING Crushing hazard. The number 4 arm could become unbalanced and fall when removed from the machine if not properly supported by the overhead crane.

SECONDARY BOOM COMPONENTS

5-2 Secondary Boom Lift Cylinders

There are two secondary boom lift cylinders incorporated in the structure of the secondary boom assembly. These cylinders operate in parallel and require hydraulic pressure to extend and retract. Each secondary boom lift cylinder is equipped with a counterbalance valve to prevent movement in the event of a hydraulic line failure.

How to Remove a Secondary Boom Lift Cylinder

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

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

1 Lower the secondary boom to the stowed position.

2 Raise the primary boom so that it is above the secondary boom lift cylinder rod-end pivot pin.

3 Tag, disconnect and plug the hydraulic hoses on the secondary boom lift 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.

4 Remove the pin retaining fasteners from the secondary boom lift cylinder rod-end pivot pin and barrel-end pivot pin. Do not remove the pins.

5 Attach a strap from an overhead crane to the lug on the rod end of the secondary boom lift cylinder for support. Do not apply any lifting pressure.

6 Use a soft metal drift to drive the barrel-end pivot pin half way out. Lower the barrel end of the secondary boom lift cylinder and let it hang down.

7 Use a soft metal drift to drive the rod-end pivot pin half way out.

8 Remove the secondary boom lift cylinder from the machine.

⚠WARNING Crushing hazard. The secondary boom lift cylinder could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

NOTICE Component damage hazard. When removing a secondary boom lift cylinder from the machine, be careful not to damage the counterbalance valve at the barrel end of the cylinder.

Hydraulic Pumps

6-1
Auxiliary and Function Pump

How to Remove the Auxiliary Pump or Function Pump

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

1 Place a suitable container under the hydraulic tank. See capacity specifications.

2 Remove the drain plug from the hydraulic tank.

3 Completely drain the hydraulic tank into a container of suitable capacity. Refer to Section 2, *Specifications*.

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

4 Tag and disconnect the cables from the auxiliary pump or function pump.

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

5 Tag, disconnect and plug the hydraulic hoses from the auxiliary pump or function 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.

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

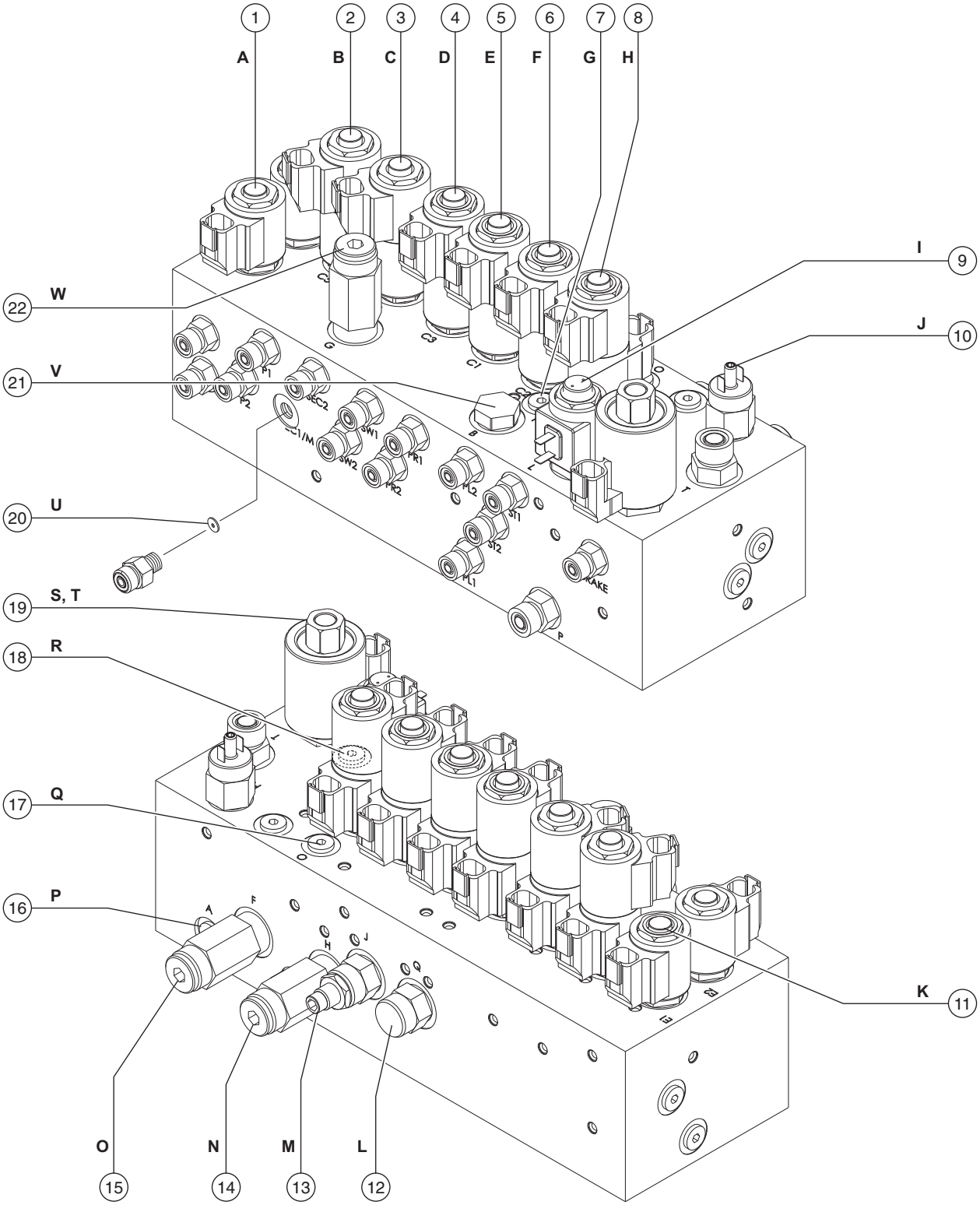
Manifolds

7-1
Function Manifold Components

The function manifold is located next to the hydraulic tank underneath the ground controls side cover.

Index No.	Description	Schematic Item	Function	Torque
1	Solenoid valve, 2 position 3 way	A	Primary boom retract	20 ft-lbs / 27 Nm
2	Solenoid valve, 3 position 4 way	B	Primary boom up/down	25 ft-lbs / 34 Nm
3	Solenoid valve, 3 position 4 way	C	Secondary boom up/down	25 ft-lbs / 34 Nm
4	Solenoid valve, 3 position 4 way	D	Turntable rotate left/right	25 ft-lbs / 34 Nm
5	Solenoid valve, 3 position 4 way	E	Platform rotate left/right and jib boom up/down (Z-45/25J)	25 ft-lbs / 34 Nm
6	Solenoid valve, 3 position 4 way	F	Platform level up/down	25 ft-lbs / 34 Nm
7	Shuttle valve	G	Platform level circuit	4-5 ft-lbs / 5.5-6.7 Nm
8	Solenoid valve, 3 position 4 way	H	Steer left/right	25 ft-lbs / 34 Nm
9	Proportional solenoid valve	I	Controls flow to functions	27 ft-lbs / 37 Nm
10	Pressure switch	J	Brake circuit	
11	Solenoid valve, 2 position 3 way	K	Primary boom extend	20 ft-lbs / 27 Nm
12	Flow regulator valve, 0.4 gpm / 1.5 L/min	L	Platform rotate and turntable rotate circuits	20 ft-lbs / 27 Nm
13	Needle valve	M	Platform level circuit	20 ft-lbs / 27 Nm
14	Relief valve, 2500 psi / 172 bar	N	Platform level circuit	20 ft-lbs / 27 Nm
15	Relief valve, 3200 psi / 220.6 bar	O	System relief	20 ft-lbs / 27 Nm
16	Check valve, 5 psi / 0.3 bar	P	Brake circuit	12-14 ft-lbs / 16-19 Nm
17	Orifice, 0.060 inch / 1.5 mm	Q	Steer circuit	
18	Orifice, 0.030 inch / 0.76 mm	R	Proportional valve circuit	
19	Solenoid valve, 2 position 3 way	S	Brake circuit	20 ft-lbs / 27 Nm
—	Orifice, 0.030 inch / 0.76 mm (from serial number 22566 to 22628 and after serial number 23235) (located under item S)	T	Brake circuit	
20	Orifice, 0.037 inch / 0.94 mm	U	Secondary boom down circuit	
21	Check valve, pilot operated	V	Platform level circuit	20 ft-lbs / 27 Nm
22	Relief valve, 2100 psi / 145 bar	W	Secondary boom down circuit	20 ft-lbs / 27 Nm

MANIFOLDS


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MANIFOLDS

7-2 Valve Adjustments - Function Manifold

How to Adjust the System Relief Valve

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

2 With the boom fully retracted, move and hold the function enable toggle switch to either side and hold the primary boom extend/retract toggle switch in the retract direction. Observe the pressure reading on the pressure gauge. Refer to Section 2, *Specifications*.

3 Turn the machine off. Hold the system relief valve with a wrench and remove the cap (item O).

4 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.

5 Repeat steps 2 through 4 and recheck relief valve pressure.

How to Adjust the Secondary Boom Down Relief Valve

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

2 With the secondary boom fully lowered, move and hold the function enable toggle switch to either side and hold the secondary boom up/down toggle switch in the down direction. Observe the pressure reading on the pressure gauge. Refer to Section 2, *Specifications*.

3 Turn the machine off. Hold the secondary boom down relief valve with a wrench and remove the cap (item W).

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

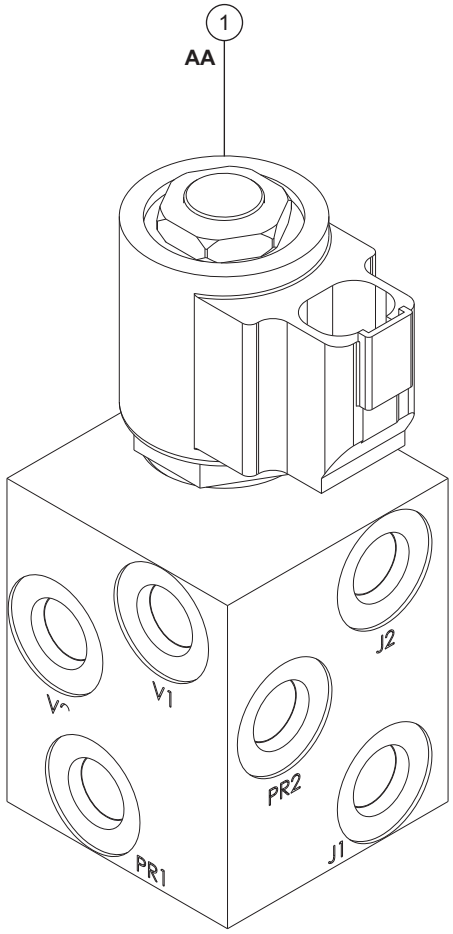
⚠WARNING Tip-over hazard. Do not adjust the relief valve higher than specified.

5 Repeat steps 2 through 4 and recheck relief valve pressure.

7-3
Jib Boom / Platform Rotate Manifold Components

The jib boom / platform rotate manifold is mounted to the platform support.

Index No.	Description	Schematic Item	Function	Torque
1	Solenoid valve, 2 position 3 way	AA	Jib boom / platform rotate select	20 ft-lbs / 27 Nm

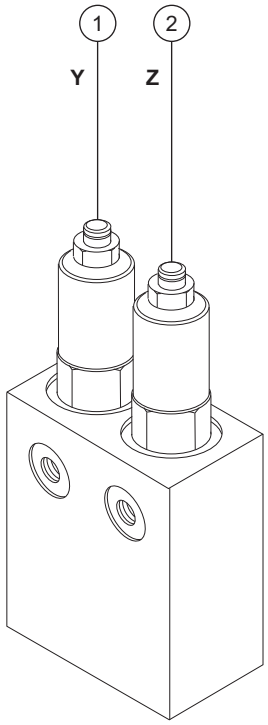


MANIFOLDS

7-4
Turntable Rotation Manifold Components

The turntable rotation manifold is mounted to the turntable rotation motor located in the boom storage compartment.

Index No.	Description	Schematic Item	Function	Torque
1	Counterbalance valve	Y	Turntable rotate right	30-35 ft-lbs / 41-47 Nm
3	Counterbalance valve	Z	Turntable rotate left	30-35 ft-lbs / 41-47 Nm



7-5
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.

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

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

2 Test the coil resistance.

⊙ Result: The resistance should be within specification, plus or minus 30%.

⊠ Result: If the resistance is not within specification, plus or minus 30%, replace the coil.

Valve Coil Resistance Specification	
Solenoid valve, 3 position 4 way, 20V DC (schematic items B, C, D, E, F and H)	25 to 29 Ω
Solenoid valve, 2 position 3 way, 20V DC (schematic items A, K, S and AA)	25 to 29 Ω
Proportional solenoid valve, 24V DC (schematic item I)	17 to 21 Ω

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.

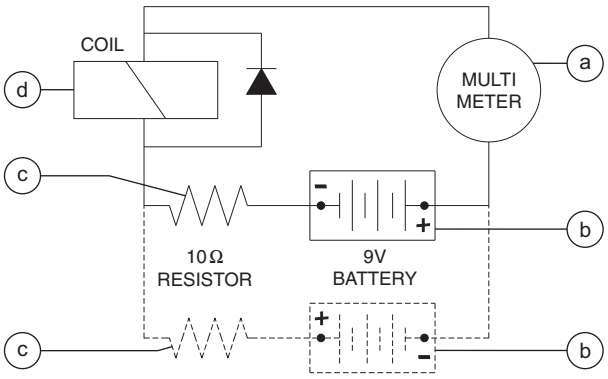
1 Test the coil for resistance. See *How to Test a Coil.*

MANIFOLDS

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

Resistor, 10Ω
Genie part number 27287

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



a multimeter
b 9V DC battery
c 10Ω resistor
d coil

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

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.

Turntable Rotation Components

8-1
Turntable Rotation Assembly

How to Remove the Turntable Rotation Assembly

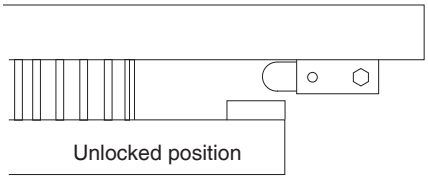
Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications.*

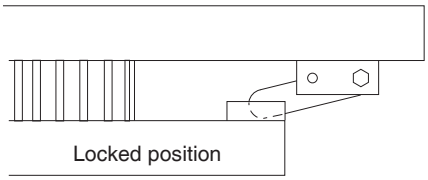
Note: Perform this procedure with the machine on a firm, level surface.

1 Raise the secondary boom until the upper pivot is above the turntable covers. Turn the machine off.

2 Secure the turntable from rotating with the turntable rotation lock pin.

⚠WARNING Crushing hazard. The machine could tip over when the turntable rotation assembly is removed if the turntable rotation lock is not in the locked position.





3 Remove the retaining fasteners from the center turntable cover. Remove the cover from the machine.

4 Disconnect the battery backs from the machine.

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

5 Tag, disconnect and plug the hydraulic hoses from the turntable rotation motor manifold. Cap the fittings on the manifold.

⚠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 or other suitable lifting device to the turntable rotation assembly.

7 Remove the turntable rotation assembly mounting fasteners.

8 Carefully remove the turntable rotation assembly from the machine.

⚠WARNING Crushing hazard. The machine could tip over when the turntable rotation assembly is removed if the turntable rotation lock is not in the locked position.

⚠WARNING Crushing hazard. The turntable rotation assembly could become unbalanced and fall when removed from the machine if not properly supported by the overhead crane.

Motor Controller

9-1 Motor Controller

The drive motor controller is located under the non-steer end drive chassis cover. The drive motor controller can recognize machine drive malfunctions and display controller fault codes by flashing a LED at the ground controls and on the motor controller. See the Fault Code section of this manual for a list of fault codes and additional information. There are no adjustments needed on the drive joystick controller. For further information or assistance, consult the Genie Industries Service Department.

How to Test the Motor Controller

Note: Use the following procedure to test the motor controller. If the motor controller is found to be faulty, note which test failed and which fault code (if any) was present at the time of failure.

1 Turn the key switch to the off position and disconnect the battery packs from the machine.

2 Tag and disconnect all power cables from the motor controller.

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

3 Press the release tab on the motor controller harness connector and remove the motor controller harness connector from the motor controller.

4 Set an ohmmeter to diode test mode.

5 Connect the leads from an ohmmeter to test each motor controller terminal combination listed below and check the forward / reverse bias (diode test).

⊙ Result: All desired results must be within the specified range. If any test has a result not within the specified range, replace the motor controller.

Forward Bias:

Test		Desired result
Positive Lead	Negative Lead	
M-	B+	0.4 to 0.45
B-	M-	0.4 to 0.45
F1	B+	0.45 to 0.5
F2	B+	0.45 to 0.5
B-	F1	0.45 to 0.5
B-	F2	0.45 to 0.5

Reverse Bias:

Test		Desired result
Positive Lead	Negative Lead	
B+	M-	Rises to .0L V
M-	B-	Rises to .0L V
B+	F1	Rises to .0L V
B+	F2	Rises to .0L V
F1	B-	Rises to .0L V
F2	B-	Rises to .0L V

Fault Codes



Observe and Obey:

- ☑ Troubleshooting and repair procedures shall be completed by a person trained and qualified on the repair of this machine.
- ☑ Immediately tag and remove from service a damaged or malfunctioning machine.
- ☑ Repair any machine damage or malfunction before operating the machine.
- ☑ Unless otherwise specified, perform each repair procedure with the machine in the following configuration:
  - Machine parked on a firm, level surface
  - Boom in stowed position
  - Turntable rotated with the boom between the non-steer wheels
  - Key switch in the off position with the key removed
  - Wheels chocked
  - All external AC power supply disconnected from the machine

Before Troubleshooting:

- ☑ Read, understand and obey the safety rules and operating instructions in the appropriate Operator's Manual on your machine.
- ☑ Be sure that all necessary tools and test equipment are available and ready for use.
- ☑ Be aware of the following hazards and follow generally accepted safe workshop practices.

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

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

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

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

FAULT CODES

⚠DANGER Tip-over hazard. When adjusting the raised drive speed settings, the maximum raised drive speed must not exceed specification. Refer to Section 2, *Specifications*. If the machine is allowed to drive faster than specification, the machine could become unstable and will tip over.

Note: Additional troubleshooting of the fault codes may be accomplished by using the hand-held pendant motor controller programmer (Genie part number 56303-S).

Note: When using the hand-held pendant motor controller programmer, the M1 MAX SPEED needs to be set to 33. If needed, adjust the M1 MAX SPEED higher or lower to achieve the maximum raised drive speed. Refer to Section 2, *Specifications*.

The controller status indicator light will flash a fault code to aid in troubleshooting. This indicator light is mounted on the left side of the ground control box.

Fault codes are two digits. The controller status indicator light will blink the first digit of a two digit code, pause for 1 second, and then blink the second digit. There will be a 2 second pause between codes.

For example: the indicator light blinks 4 consecutive times, pauses for 1 second, and then blinks 1 time. That would indicate Fault Code 41.

Fault Code Chart

Fault Code	Programmer Diagnostic Display	Condition	Possible Causes	Solution
Controller status indicator light is OFF or is ON but not blinking	COMMUNICATION ERROR	Machine will not drive.	The key switch or red Emergency Stop button(s) was cycled on and off faster than 5 seconds OR controller sensed an internal error during start up.	Push in the ground control red Emergency Stop button to the OFF position and wait for 5 seconds. Pull out the ground control red Emergency Stop button out to the ON position. If problem persists, replace the motor controller.
01		Normal operation.		
12	HW FAILSAFE 1-2-3	Machine will not drive.	The motor controller failed self test.	Replace the motor controller.
13	M- SHORTED	Machine will not drive.	The motor controller has a internal short between M- and B- terminals.	Test the motor controller, see the Repair Section.
	FIELD OPEN	Machine will not drive.	Motor wiring is loose OR motor is defective OR motor controller has an internal short.	Check for loose or open connections at the drive motors and motor controller OR replace the defective drive motor OR test the motor controller. See the Repair Section.
	ARM SENSOR	Machine will not drive.	Defective motor controller.	Replace the motor controller.
	FLD SENSOR	Machine will not drive.	Defective motor controller.	Replace the motor controller.

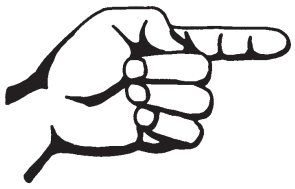
Continued on next page

FAULT CODE CHART

Fault Code	Code Scanner Display	Condition	Possible Causes	Solution
21	THROTTLE FAULT 1	Machine will not drive.	Open in wht/red wire #32 at pin 14 or red/wht wire #29 at pin 16 on the motor controller going from drive joystick to pins 14 and 16 at the motor controller OR pin 14 is internally shorted to power or ground OR the potentiometer on the drive joystick defective.	Consult Genie Industries Service Department.
	THROTTLE FAULT 2	Machine will not drive.	Pin 14 (wht/red #32) is shorted to power or ground OR the potentiometer on the drive joystick is defective.	Consult Genie Industries Service Department.
31	CONT DRVR OC	Machine will not drive.	Main contactor (PR1) coil defective OR brake release relay CR5 defective.	Replace main contactor PR1 or brake release relay CR5 OR replace the motor controller.
32	MAIN CONT WELDED	Machine will not drive.	Main contactor (PR1) contacts stuck closed OR grn wire at pin 17 on motor controller shorted to ground OR open in motor armature wiring OR motor controller has a internal short to ground.	Consult Genie Industries Service Department.
33	PRECHARGE FAULT	Machine will not drive.	External short between B+ terminal on motor controller and ground OR motor controller is defective.	Repair short between B+ terminal on motor controller and ground OR replace motor controller. Note: Short can be on any part of circuit connected to the B+ terminal on the motor controller.

FAULT CODE CHART

Fault Code	Code Scanner Display	Condition	Possible Causes	Solution
34	MISSING CONTACTOR	Machine will not drive.	Motor controller does not detect the main contactor PR1 or brake release relay CR5.	Consult Genie Industries Service Department.
	MAIN CONT DNC	Machine will not drive.	Main contactor PR1 or brake release relay CR5 did not close OR open in org/red wire to PR1 and/or CR5 OR main contactor and/or brake release relay is defective.	Consult Genie Industries Service Department.
41	LOW BATTERY VOLTAGE	Machine will not drive.	Battery supply voltage to motor controller less than 32V DC.	Completely charge batteries OR check battery cable condition OR check for corrosion or loose connections at battery terminals and motor controller.
42	OVERVOLTAGE	Machine will not drive.	Battery supply voltage to motor controller more than 55V DC OR machine is being operated with the battery charger plugged in.	Be sure the battery charger is disconnected OR check for loose battery cables or poor connections
43	THERMAL CUTBACK	Machine will not drive.	Machine being operated outside of temperature range of -13°F to 185°F / -25°C to 85°C OR machine being driven under excessive load OR motor controller is not being cooled sufficently.	Operate machine within specified temperature limits OR check for debris around motor controller preventing proper cooling of the controller OR check for mechanical restrictions causing excessive load on the machine.



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Schematics

Observe and Obey:

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

Before Troubleshooting:

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

About This Section

There are two groups of schematics in this section.

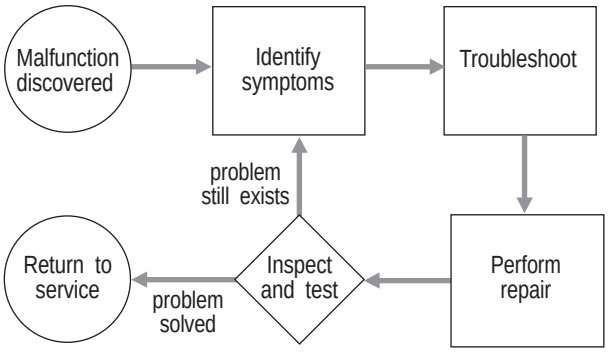
Electrical Schematics

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

Hydraulic Schematics

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

General Repair Process



Electrical Symbols Legend



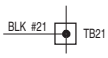
Wire color with cable number



Terminal



Quick disconnect terminal



T-circuits connect at terminal



T-circuits connect



Connection no terminal

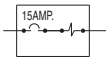


Circuits crossing no connection

Diode



Battery



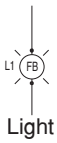
Circuit breaker



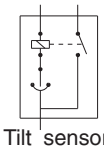
Solenoid or relay coil



Horn



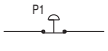
Light



Tilt sensor



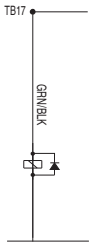
Limit switch normally closed held open



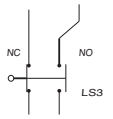
Red Emergency Stop button normally closed



Relay contact normally open



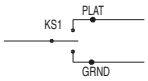
Ground supression circuit



Limit switch



Limit switch normally open held closed



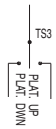
Key switch



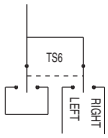
Horn button normally open



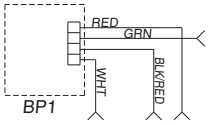
Relay panel contactor



Toggle switch SPDT



Toggle switch DPDT

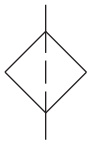


Boom function speed controller

Hydraulic Symbols Legend



Pressure gauge



Filter



Fixed displacement pump



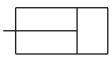
Spring applied, hydraulically released brake



Bi-directional motor



Pump prime mover (motor)



Cylinder



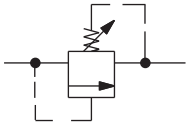
Orifice with size



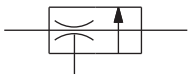
Variable orifice or shut-off valve



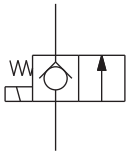
Check valve



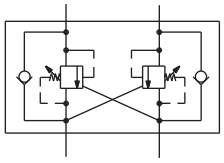
Relief valve



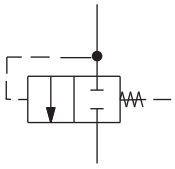
Priority flow regulator



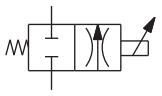
2 position 2 way solenoid valve



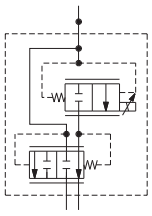
Counterbalance valve



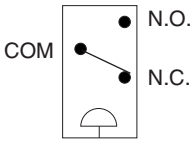
Differential sensing valve



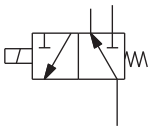
Solenoid operated proportional valve (before serial number 22566)



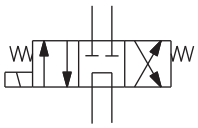
Solenoid operated proportional valve (after serial number 22565)



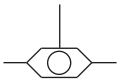
Pressure switch



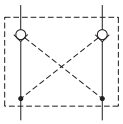
Solenoid operated 2 pos., 3 way, directional valve



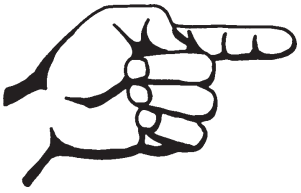
3 position 4 way directional solenoid valve



Shuttle valve

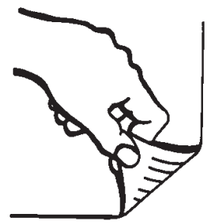


Check valve, pilot operated

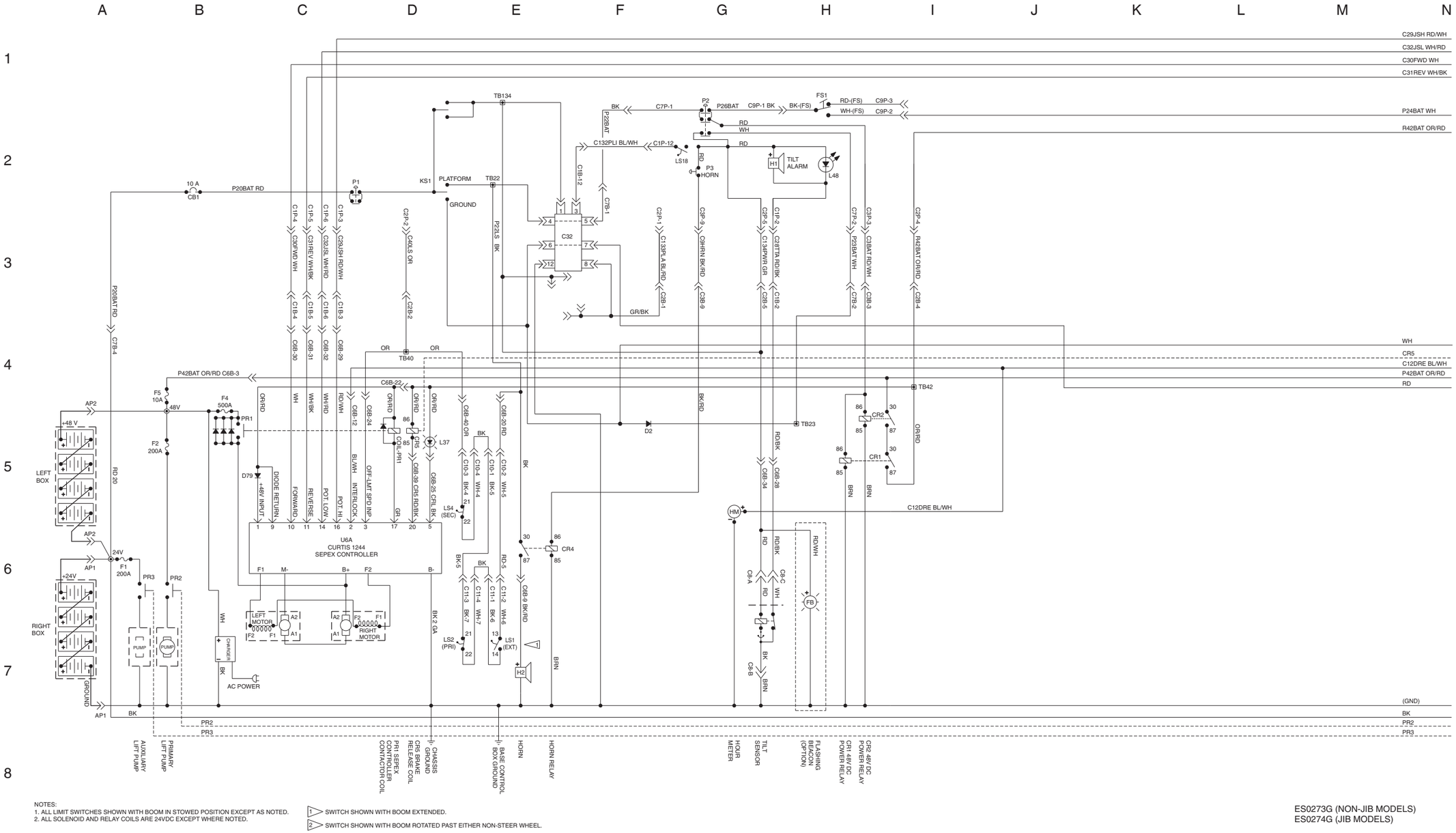




Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)



Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)

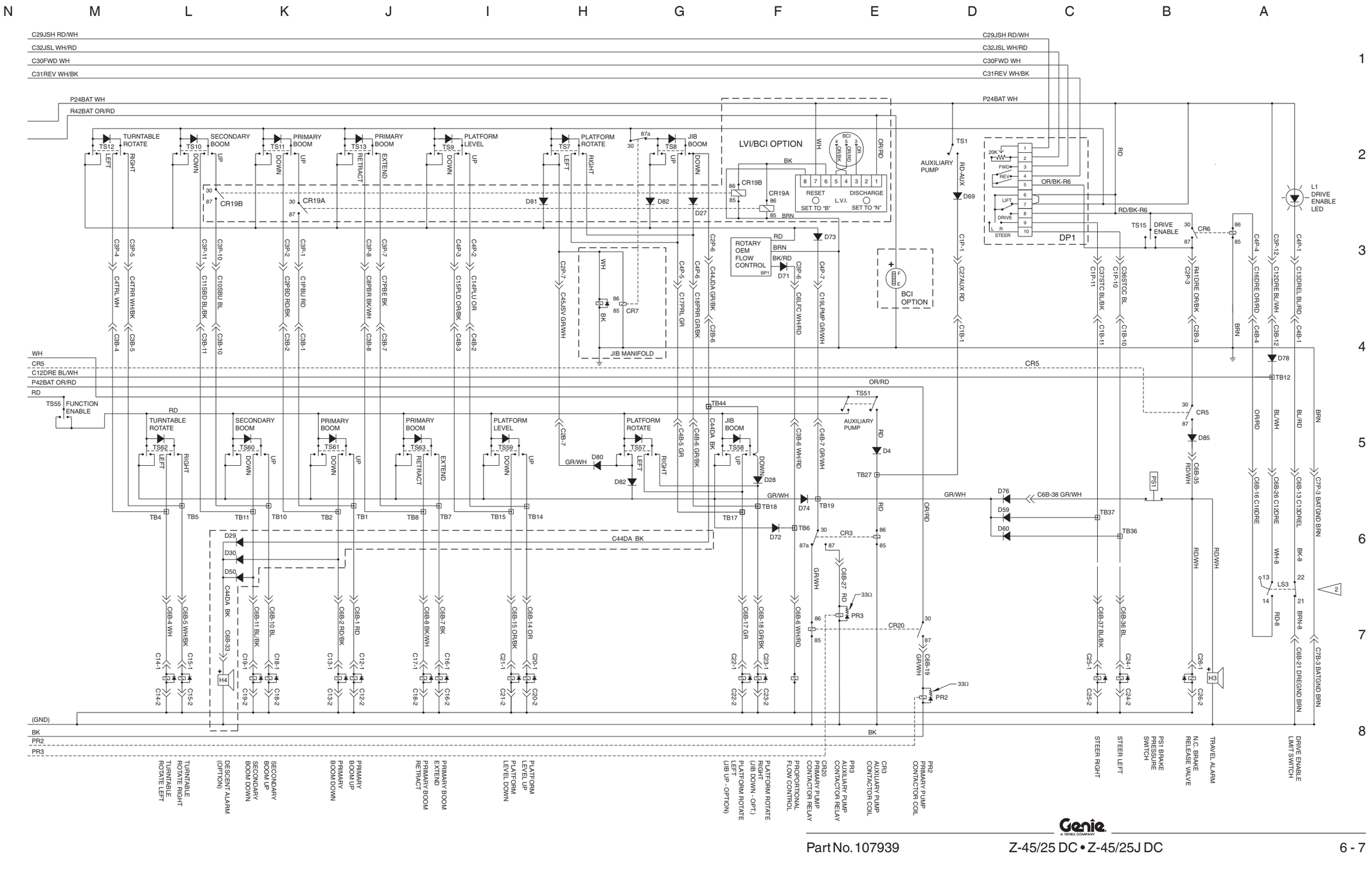


NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

1 SWITCH SHOWN WITH BOOM EXTENDED.
2 SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

ES0273G (NON-JIB MODELS)
ES0274G (JIB MODELS)

Electrical Schematic , Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)

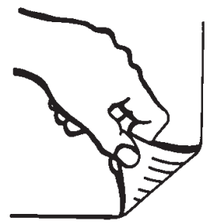


Electrical Schematic , Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)

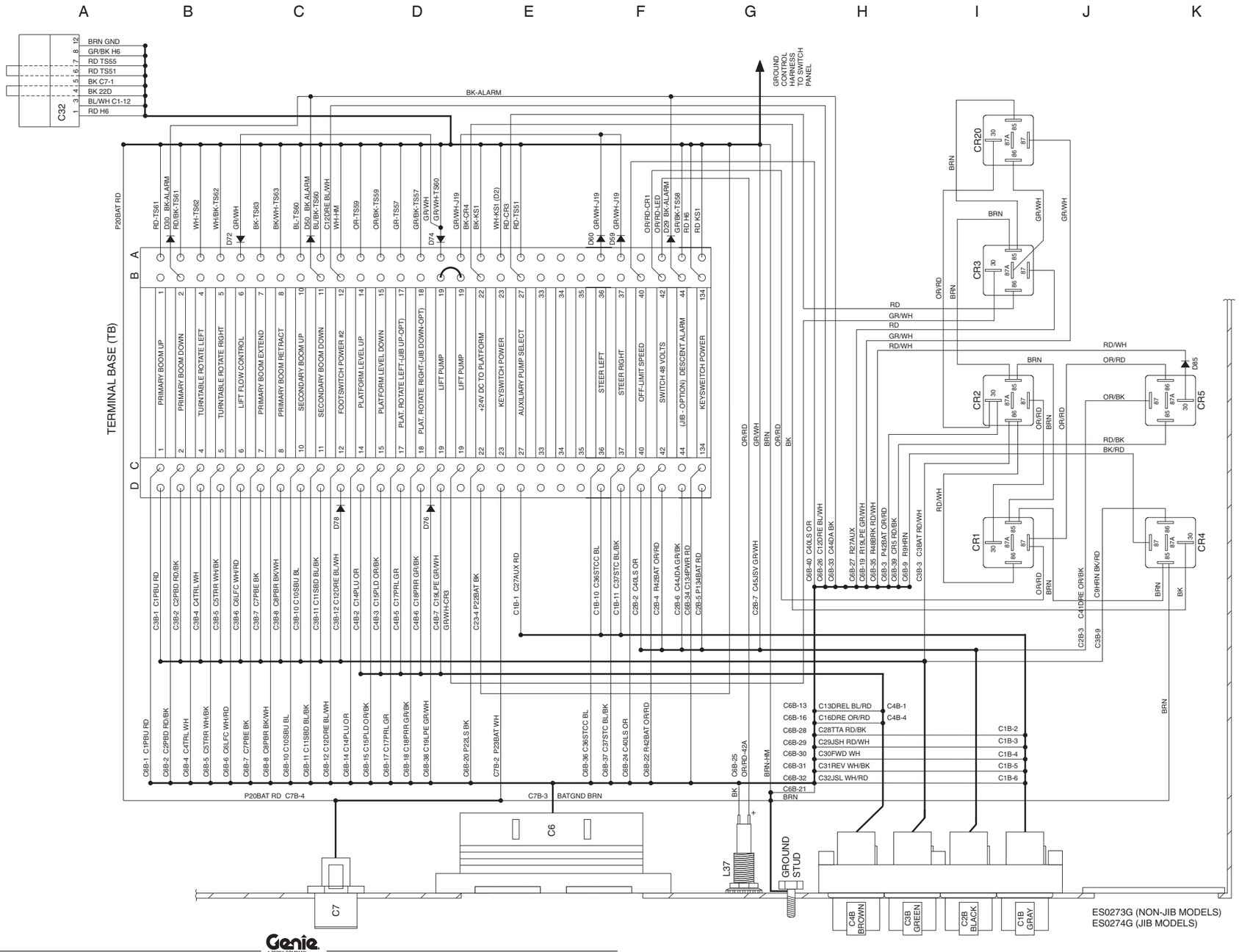


Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)





Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)



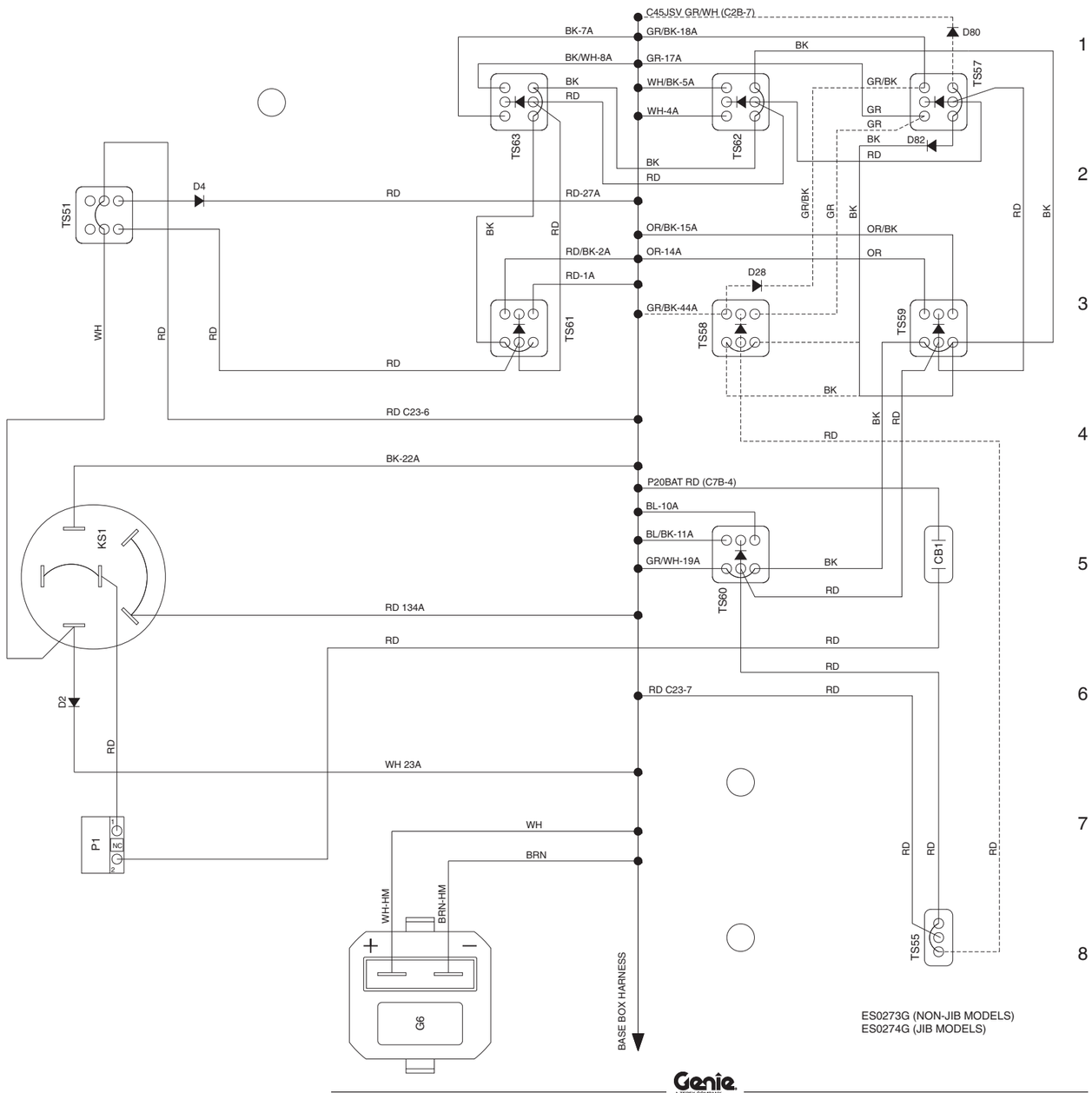
Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)

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

COMPONENT INDEX

CB1	10A CIRCUIT BREAKER
CR1	POWER RELAY, 48V
CR2	POWER RELAY, 48V
CR3	AUXILIARY PUMP RELAY
CR4	HORN RELAY
CR5	BRAKE RELEASE RELAY
CR20	PRIMARY LIFT PUMP RELAY
G6	HOUR METER
KS1	KEY SWITCH
L37	LED, DRIVE CONTROLLER FAULT STATUS
P1	EMERGENCY STOP BUTTON
TS51	AUXILIARY PUMP TOGGLE SWITCH
TS55	FUNCTION ENABLE TOGGLE SWITCH
TS57	PLATFORM ROTATE TOGGLE SWITCH
TS58	JIB UP / DOWN TOGGLE SWITCH (OPTION)
TS59	PLATFORM LEVEL UP / DOWN TOGGLE SWITCH
TS60	SECONDARY BOOM UP / DOWN TOGGLE SWITCH
TS61	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS62	TURNTABLE ROTATE TOGGLE SWITCH
TS63	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH

NOTE: DASHED LINES INDICATE OPTIONS.

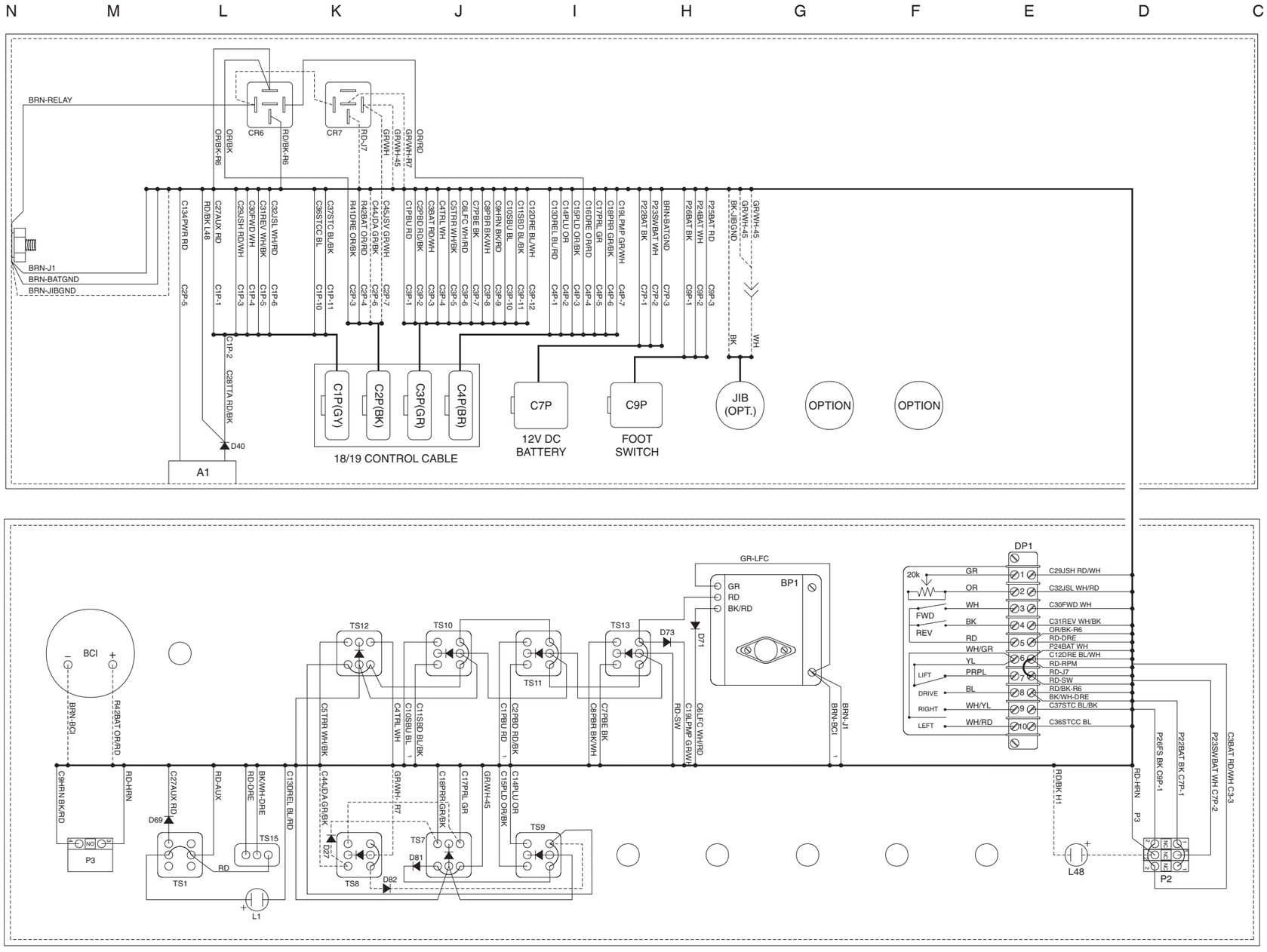


1 2 3 4 5 6 7 8

Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)



Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)



NOTES:
DASHED LINES INDICATE OPTIONS.

COMPONENT INDEX

A1	TILT ALARM
BCI	BATTERY CHARGE INDICATOR (OPTION)
BP1	ROTARY FLOW CONTROL DIAL
CR6	RELAY - DRIVE ENABLE
CR7	RELAY - JIB (OPTION)
DP1	JOYSTICK - DRIVE / STEER
H1	TITL ALARM
L1	LED - DRIVE ENABLE
L48	LED - TILT ALARM
P2	EMERGENCY STOP BUTTON
P3	HORN BUTTON
TS1	AUXILIARY PUMP TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)
TS9	PLATFORM LEVEL TOGGLE SWITCH
TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

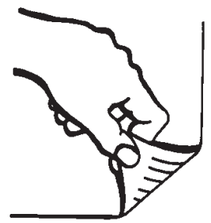
ES0273G (NON-JIB MODELS)
ES0274G (JIB MODELS)

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (before serial number 31015)

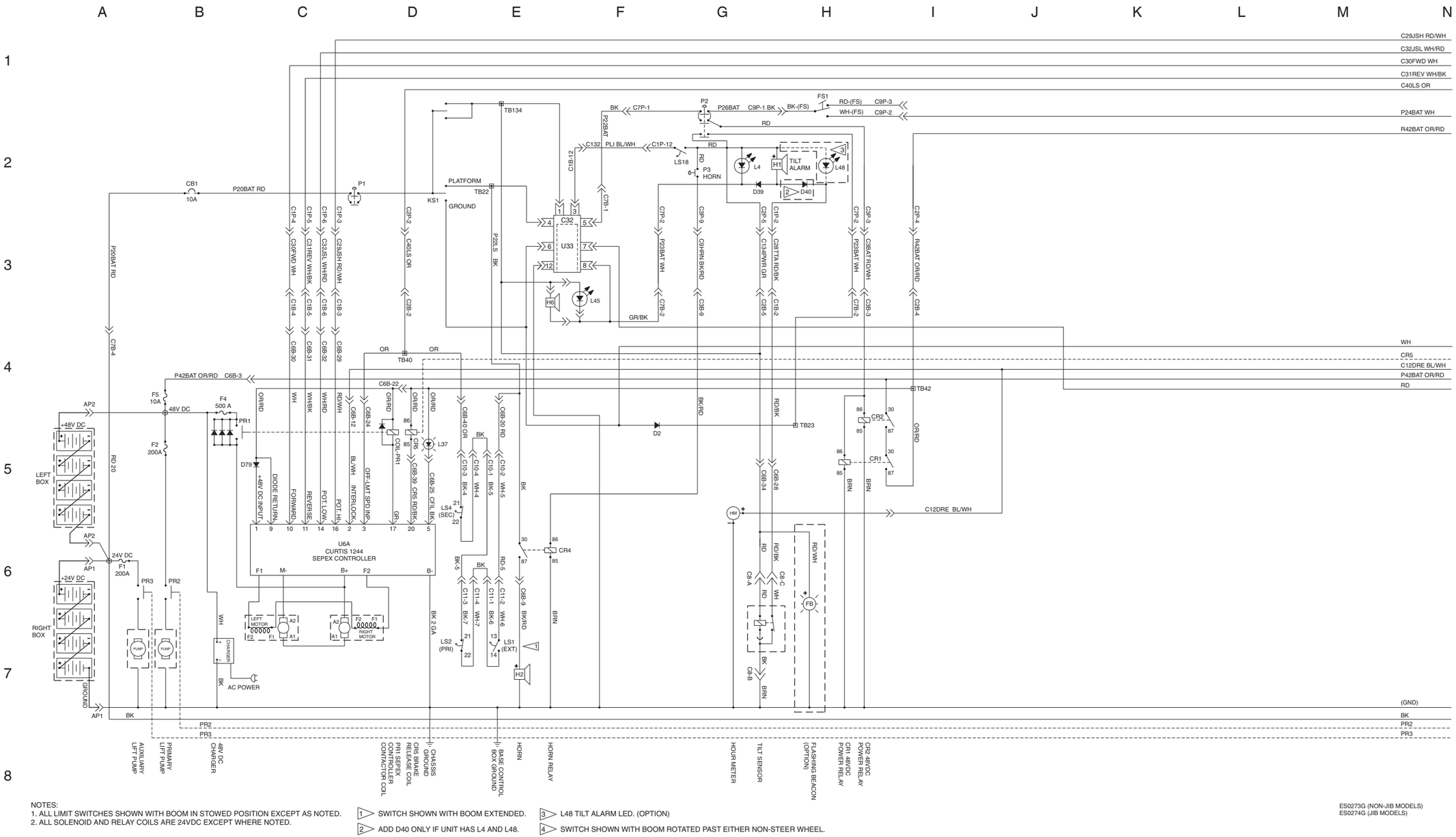


Electrical Schematic , Z-45/25 and Z-45/25J, CE (before serial number 31015)





Electrical Schematic , Z-45/25 and Z-45/25J, CE (before serial number 31015)

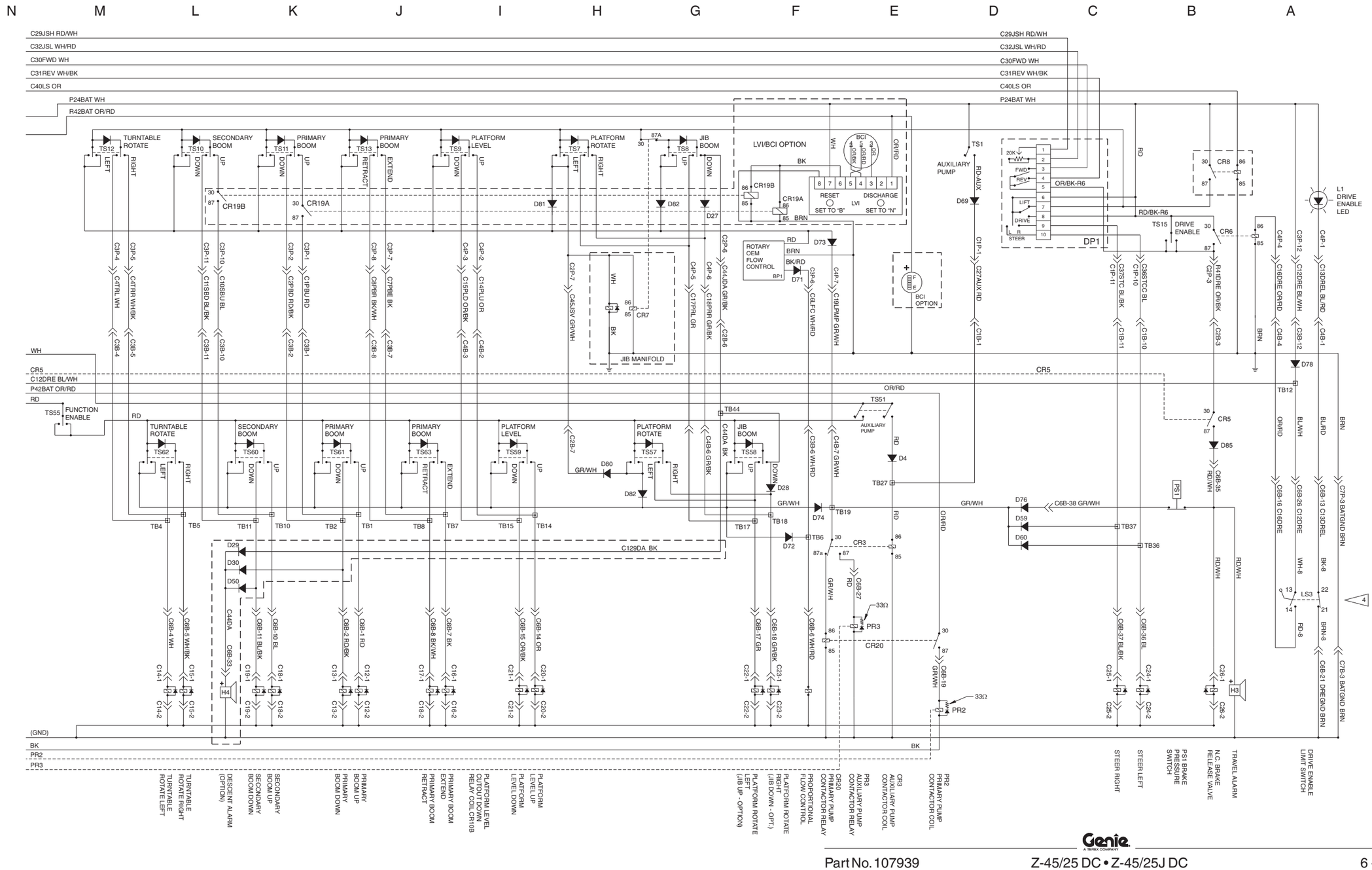


NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

1 SWITCH SHOWN WITH BOOM EXTENDED.
2 ADD D40 ONLY IF UNIT HAS L4 AND L48.
3 L48 TILT ALARM LED. (OPTION)
4 SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

ES0273G (NON-JIB MODELS)
ES0274G (JIB MODELS)

Electrical Schematic , Z-45/25 and Z-45/25J, CE (before serial number 31015)

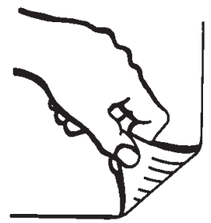


Electrical Schematic, Z-45/25 and Z-45/25J, CE (before serial number 31015)

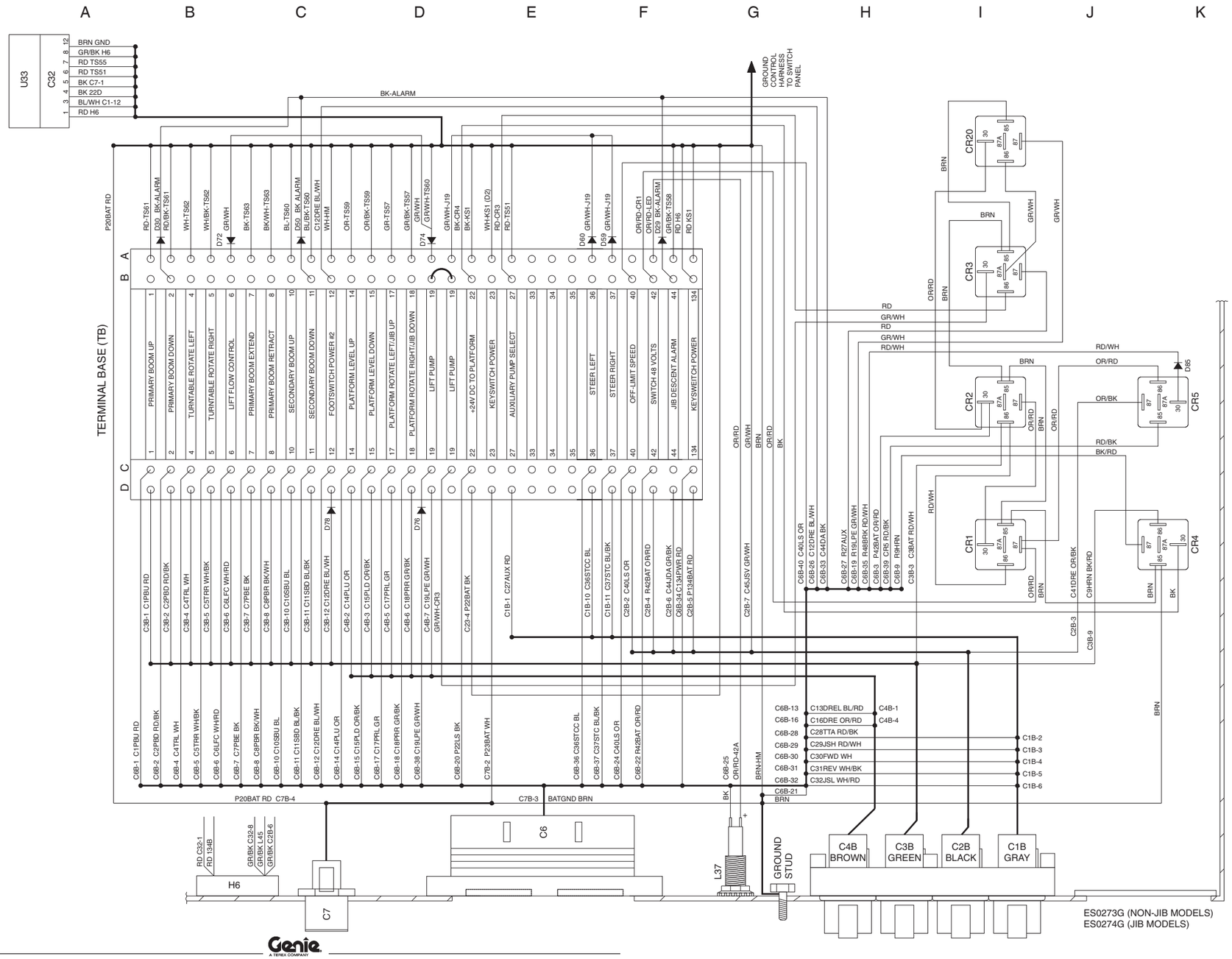


Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, CE (before serial number 31015)





Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, CE (before serial number 31015)



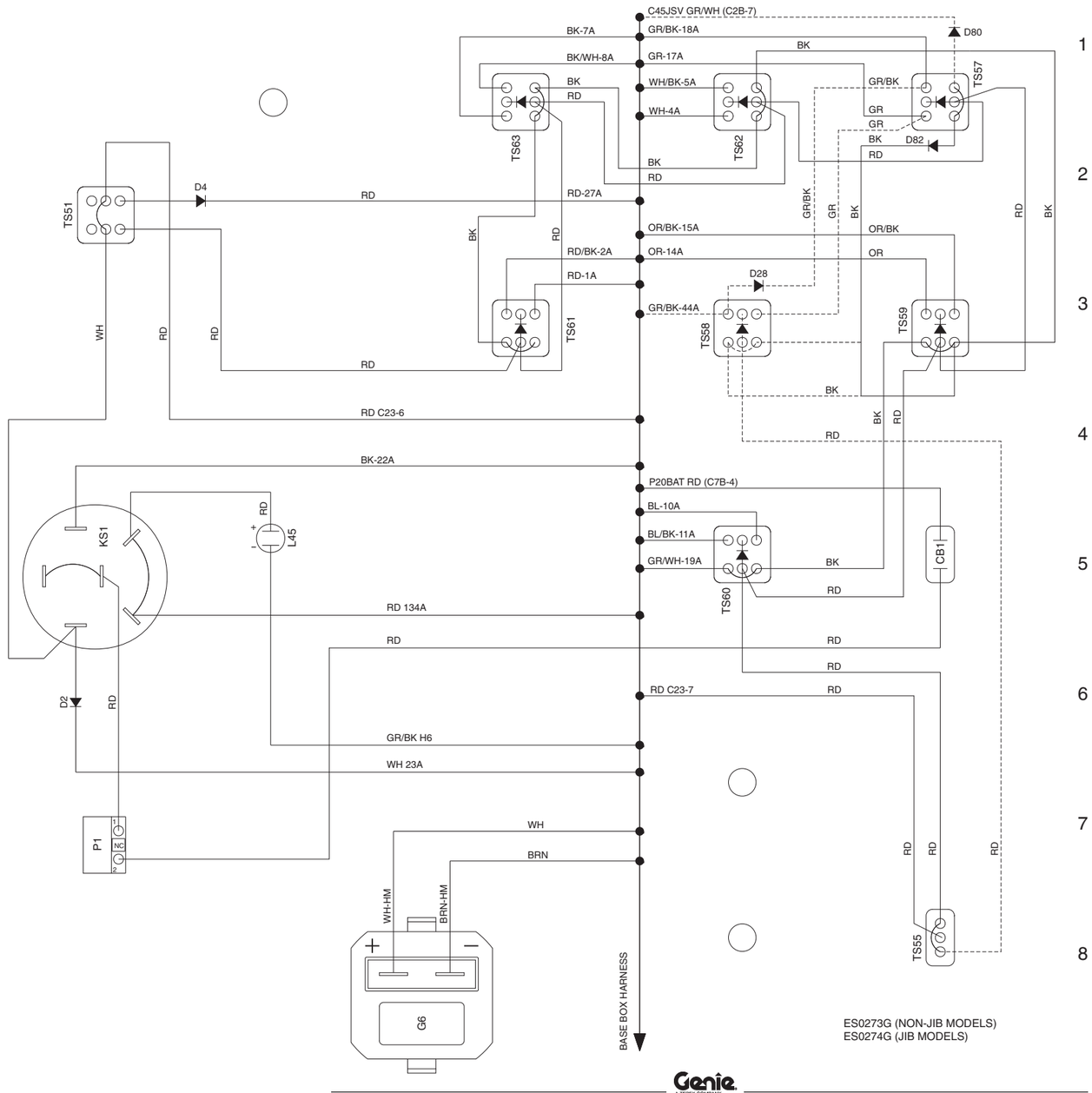
Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, CE (before serial number 31015)

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

COMPONENT INDEX

CB1	10A CIRCUIT BREAKER
CR1	POWER RELAY, 48V
CR2	POWER RELAY, 48V
CR3	AUXILIARY PUMP RELAY
CR4	HORN RELAY
CR5	BRAKE RELEASE RELAY
CR20	PRIMARY LIFT PUMP RELAY
G6	HOUR METER
H6	PLATFORM OVERLOAD ALARM
KS1	KEY SWITCH
L37	LED - DRIVE CONTROLLER FAULT STATUS
L45	LED - PLATFORM OVERLOAD
P1	EMERGENCY STOP BUTTON
TS51	AUXILIARY PUMP TOGGLE SWITCH
TS55	FUNCTION ENABLE TOGGLE SWITCH
TS57	PLATFORM ROTATE TOGGLE SWITCH
TS58	JIB UP / DOWN TOGGLE SWITCH (OPTION)
TS59	PLATFORM LEVEL UP / DOWN TOGGLE SWITCH
TS60	SECONDARY BOOM UP / DOWN TOGGLE SWITCH
TS61	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS62	TURNTABLE ROTATE TOGGLE SWITCH
TS63	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
U33	LOAD SENSE MODULE

NOTE: DASHED LINES INDICATE OPTIONS.

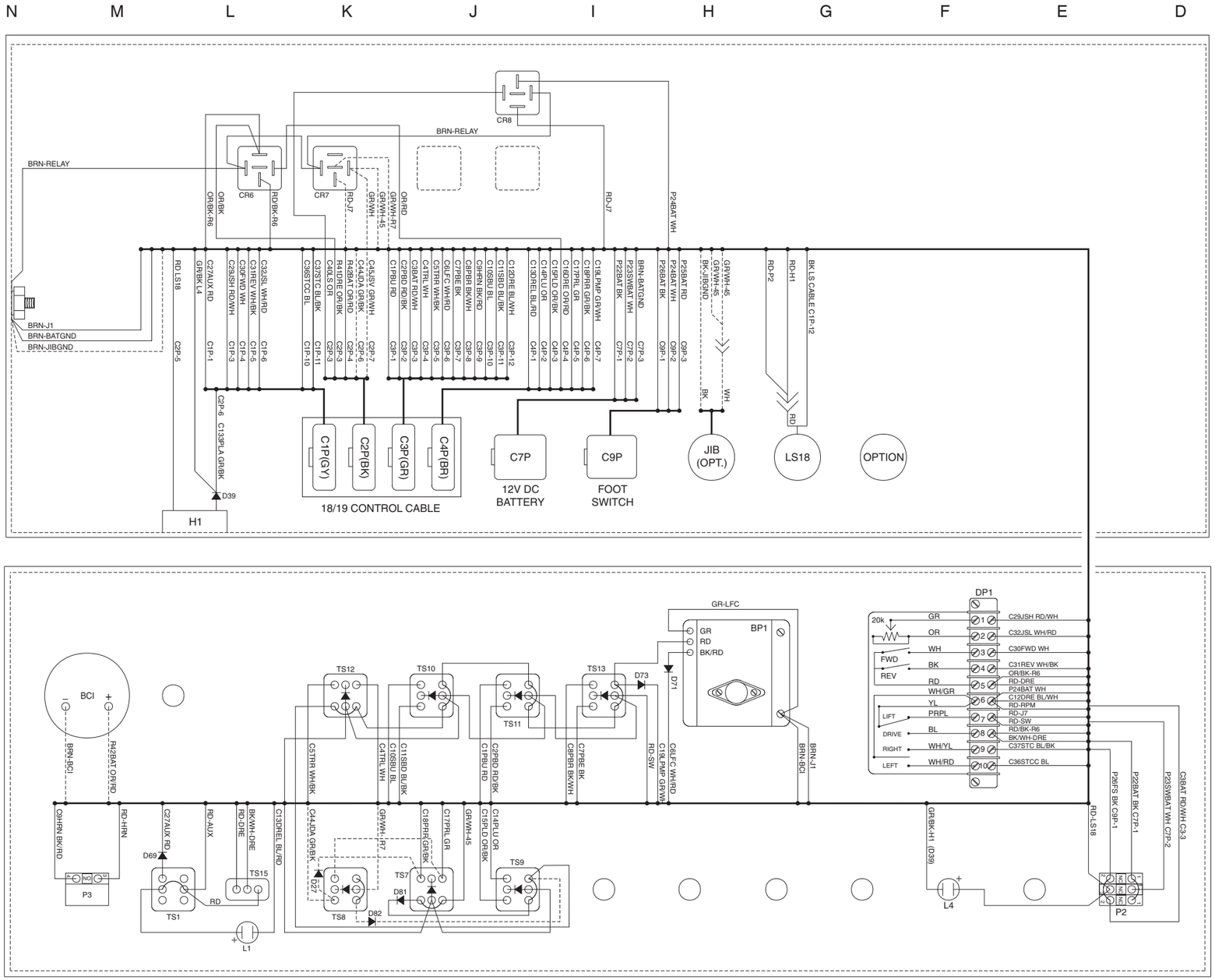


ES0273G (NON-JIB MODELS)
ES0274G (JIB MODELS)

Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, CE (before serial number 31015)



Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, CE (before serial number 31015)



NOTES:
DASHED LINES INDICATE OPTIONS.

COMPONENT INDEX

A1	TILT ALARM
BCI	BATTERY CHARGE INDICATOR (OPTION)
BP1	ROTARY FLOW CONTROL DIAL
CR6	RELAY - DRIVE ENABLE
CR7	RELAY - JIB (OPTION)
CR8	RELAY - LIMIT SWITCH
DP1	JOYSTICK - DRIVE / STEER
H1	TITL ALARM
L1	LED - DRIVE ENABLE
L4	LED - PLATFORM OVERLOAD
LS18	PLATFORM OVERLOAD LIMIT SWITCH
P2	EMERGENCY STOP BUTTON
P3	HORN BUTTON
TS1	AUXILIARY PUMP TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)
TS9	PLATFORM LEVEL TOGGLE SWITCH
TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

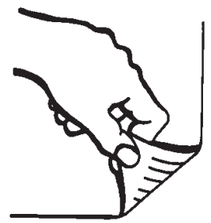
ES0273G (NON-JIB MODELS)
ES0274G (JIB MODELS)

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, CE (before serial number 31015)

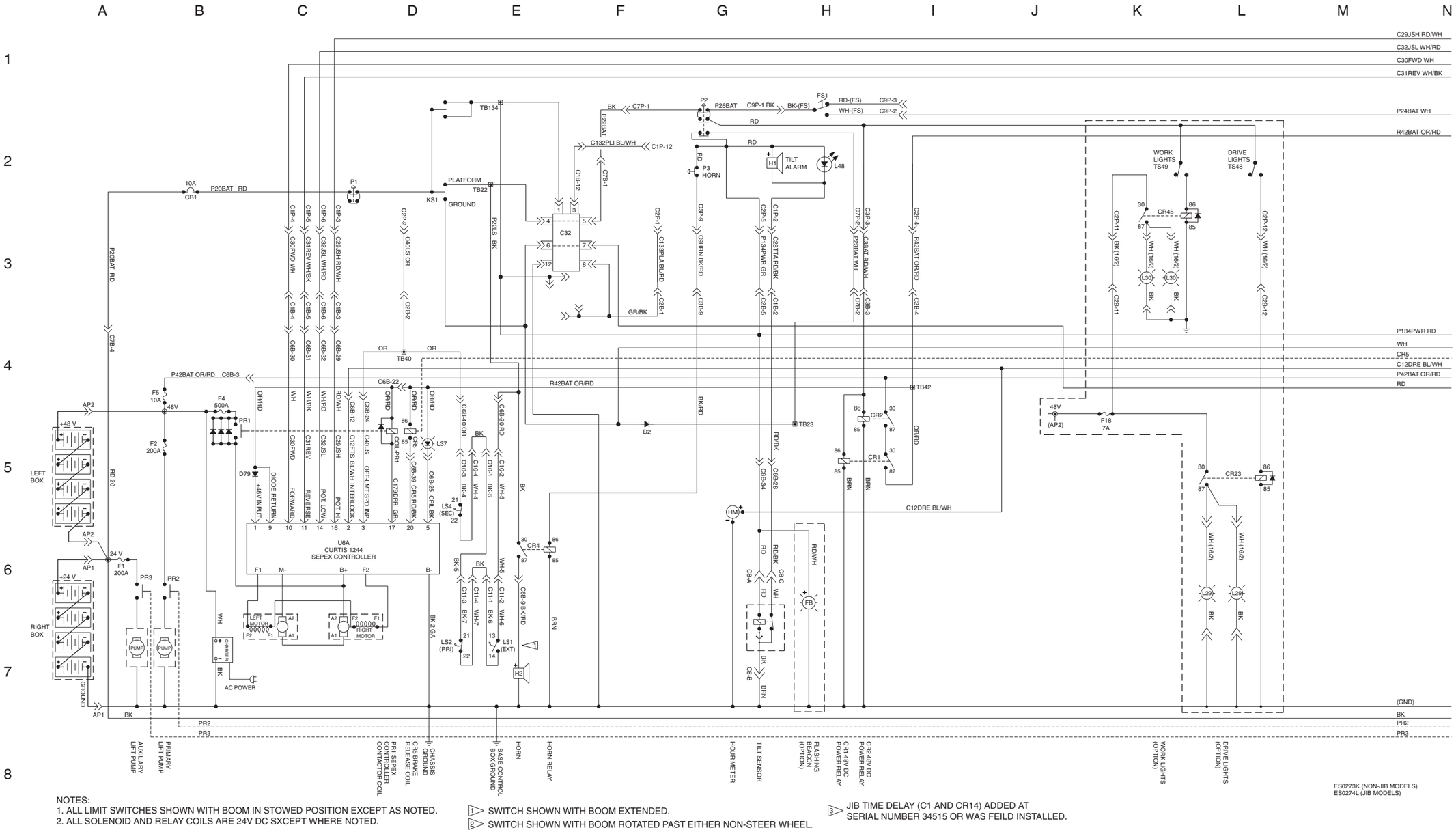


Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)





Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)

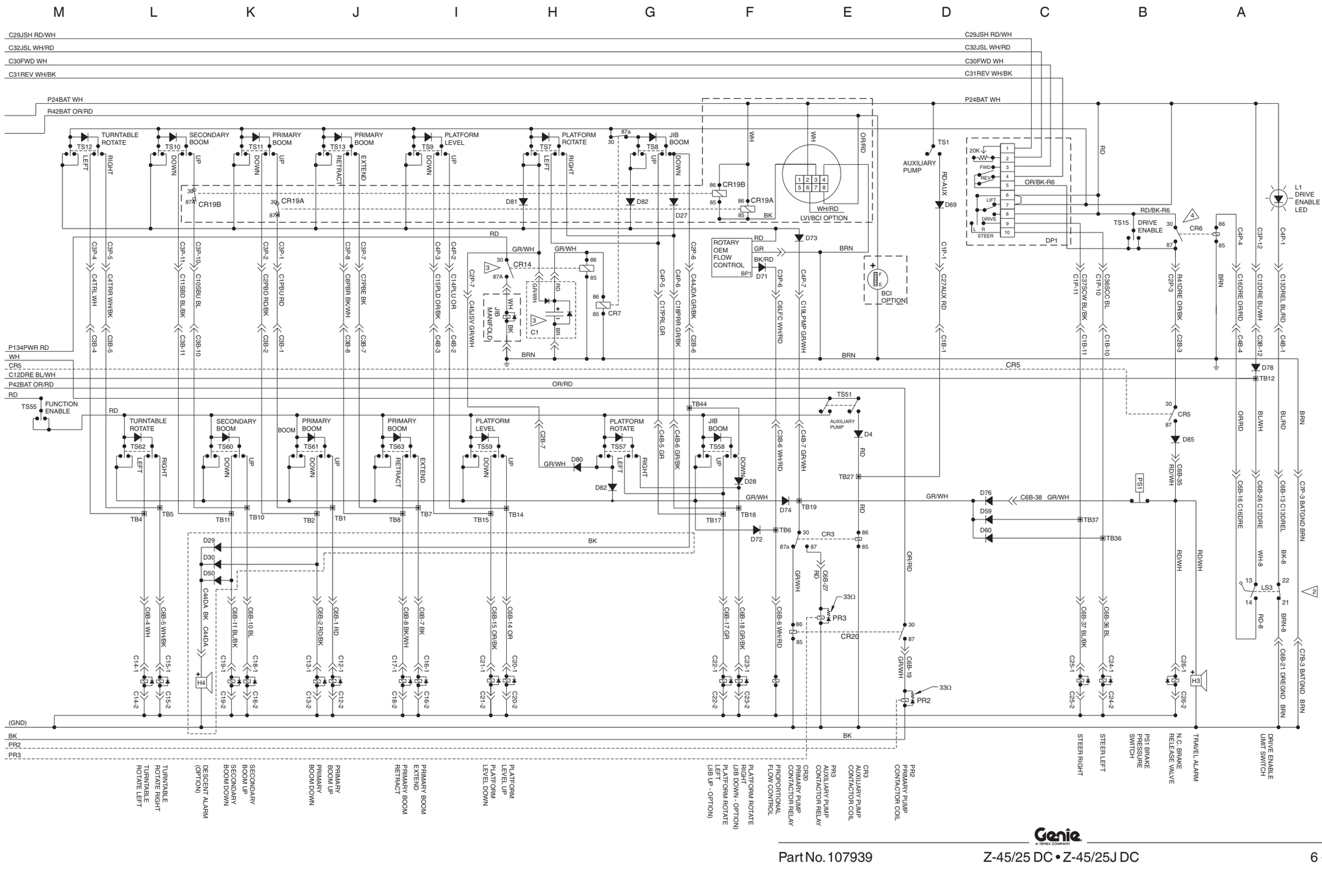


NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. ALL SOLENOID AND RELAY COILS ARE 24V DC SXCEPT WHERE NOTED.

1 SWITCH SHOWN WITH BOOM EXTENDED.
2 SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

3 JIB TIME DELAY (C1 AND CR14) ADDED AT SERIAL NUMBER 34515 OR WAS FEILD INSTALLED.

Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)

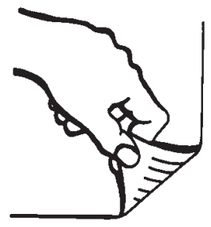


Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)

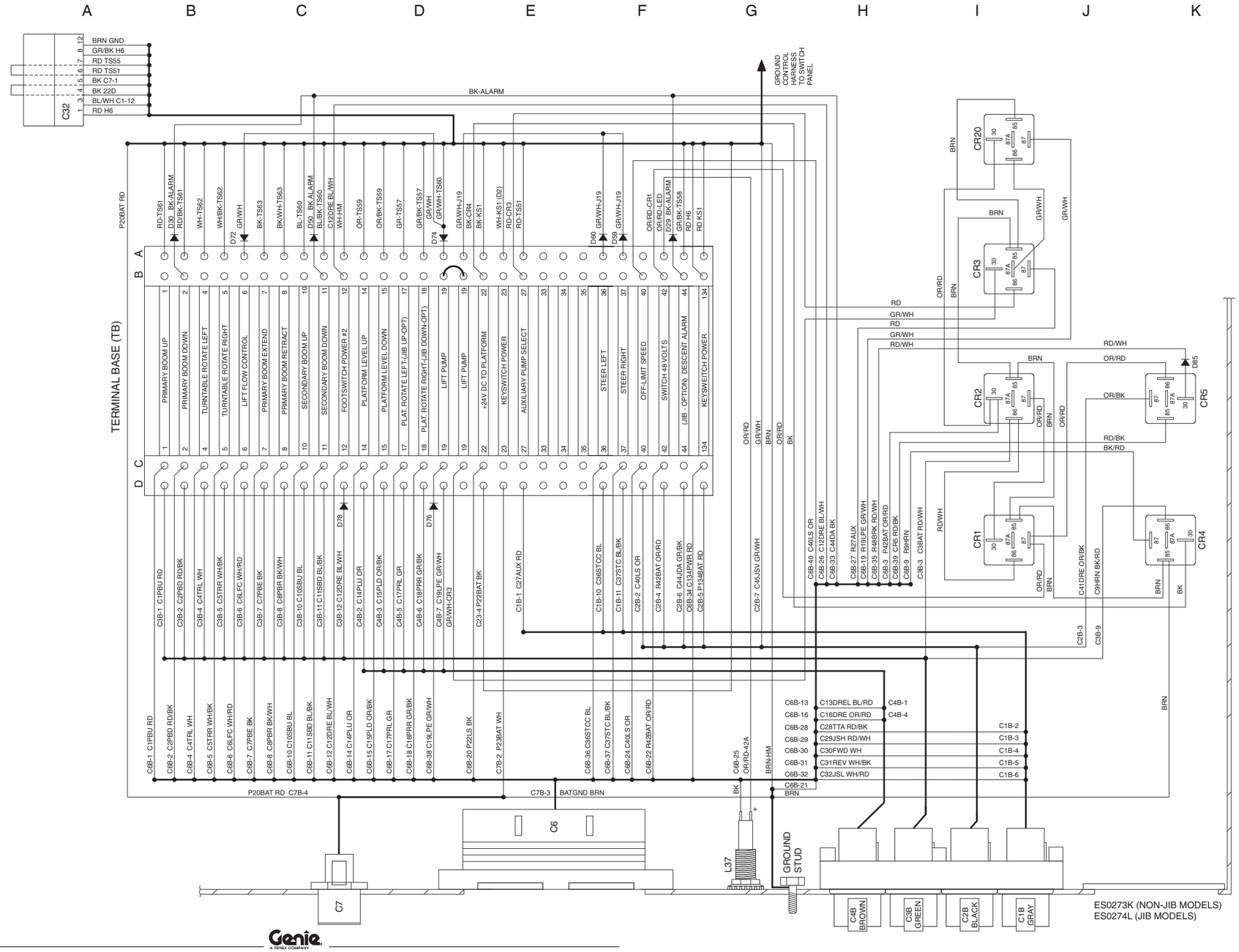




Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)



Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)



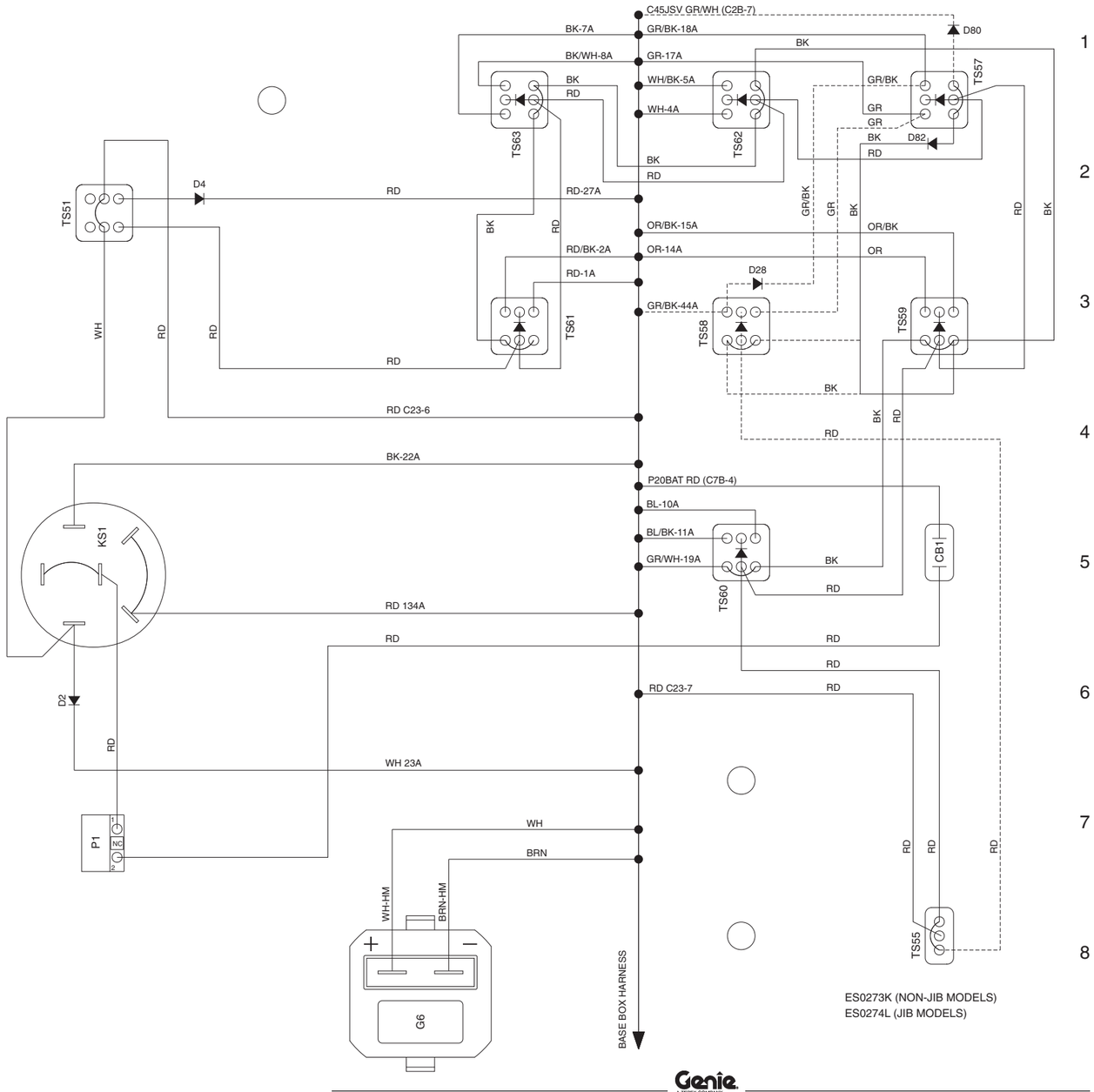
Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)

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

COMPONENT INDEX

CB1	10A CIRCUIT BREAKER
CR1	POWER RELAY, 48V
CR2	POWER RELAY, 48V
CR3	AUXILIARY PUMP RELAY
CR4	HORN RELAY
CR5	BRAKE RELEASE RELAY
CR20	PRIMARY LIFT PUMP RELAY
G6	HOUR METER
KS1	KEY SWITCH
L37	LED, DRIVE CONTROLLER FAULT STATUS
P1	EMERGENCY STOP BUTTON
TS51	AUXILIARY PUMP TOGGLE SWITCH
TS55	FUNCTION ENABLE TOGGLE SWITCH
TS57	PLATFORM ROTATE TOGGLE SWITCH
TS58	JIB UP / DOWN TOGGLE SWITCH (OPTION)
TS59	PLATFORM LEVEL UP / DOWN TOGGLE SWITCH
TS60	SECONDARY BOOM UP / DOWN TOGGLE SWITCH
TS61	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS62	TURNTABLE ROTATE TOGGLE SWITCH
TS63	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH

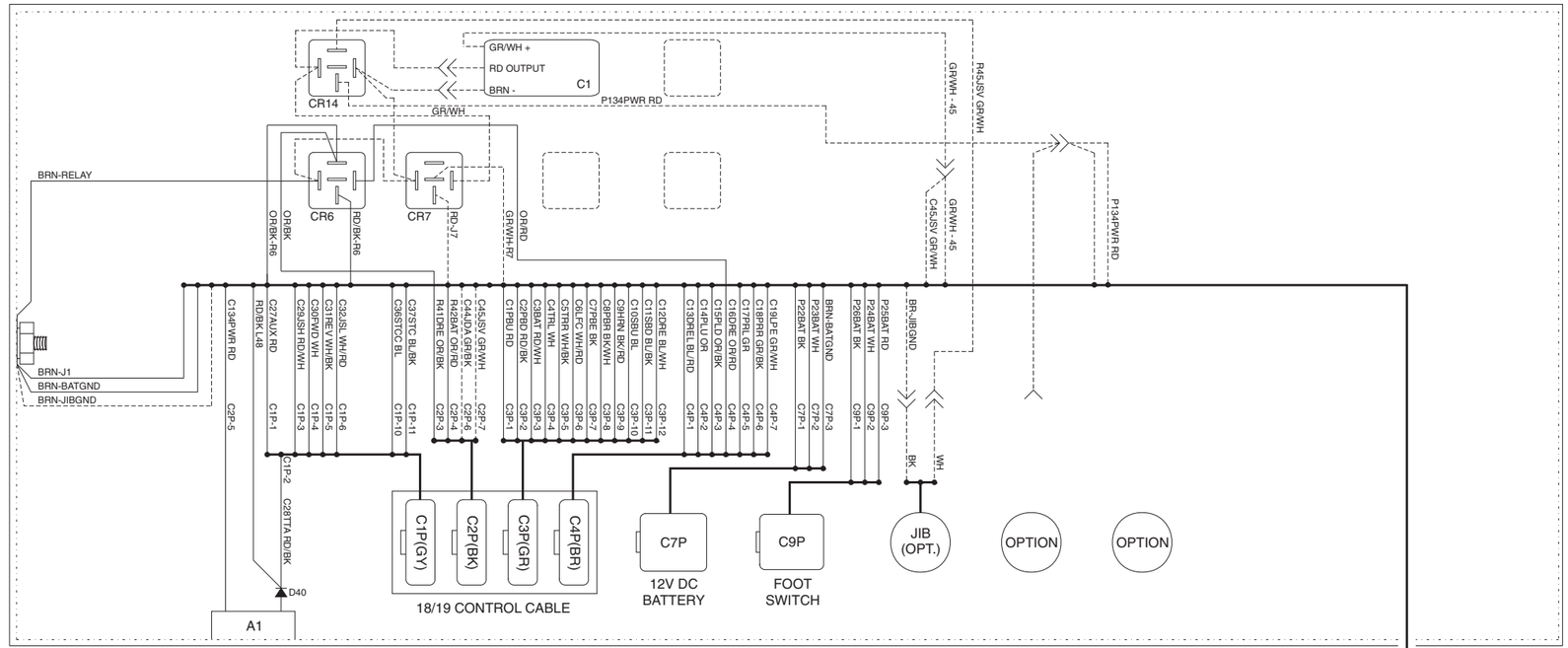
NOTE: DASHED LINES INDICATE OPTIONS.

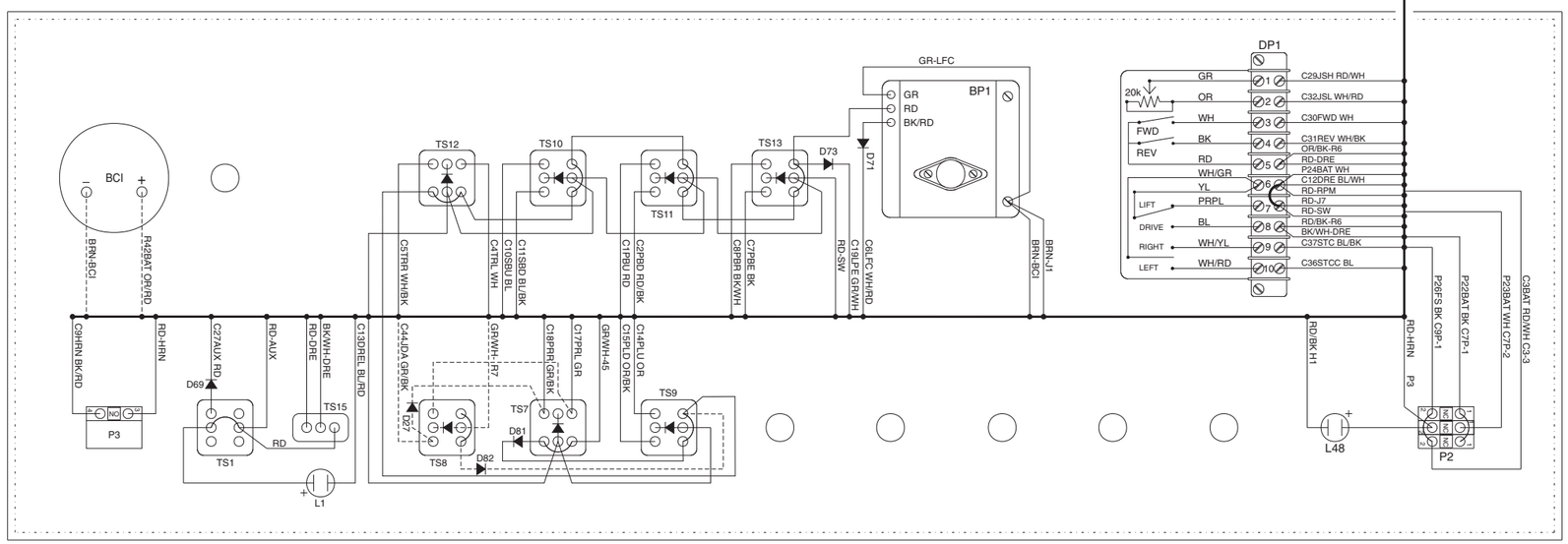


Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)



Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)





NOTES:
1. DASHED LINES INDICATE OPTIONS.

2. JIB TIME DELAY (C1 AND CR14) ADDED AT SERIAL NUMBER 34515 OR WAS FEILD INSTALLED.

COMPONENT INDEX

A1	TILT ALARM
BCI	BATTERY CHARGE INDICATOR (OPTION)
BP1	ROTARY FLOW CONTROL DIAL
C1	CAPACITOR, TIME DELAY (JIB OPTION)
CR6	RELAY - DRIVE ENABLE
CR7	RELAY - JIB (OPTION)
CR14	RELAY - JIB (OPTION)
DP1	JOYSTICK - DRIVE / STEER
H1	TITL ALARM
L1	LED - DRIVE ENABLE
L48	LED - TILT ALARM
P2	EMERGENCY STOP BUTTON
P3	HORN BUTTON
TS1	AUXILIARY PUMP TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)
TS9	PLATFORM LEVEL TOGGLE SWITCH
TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

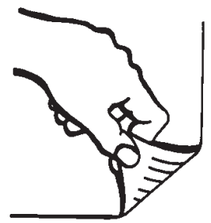
ES0273K (NON-JIB MODELS)
ES0274L (JIB MODELS)

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (from serial number 31015 to 39313)

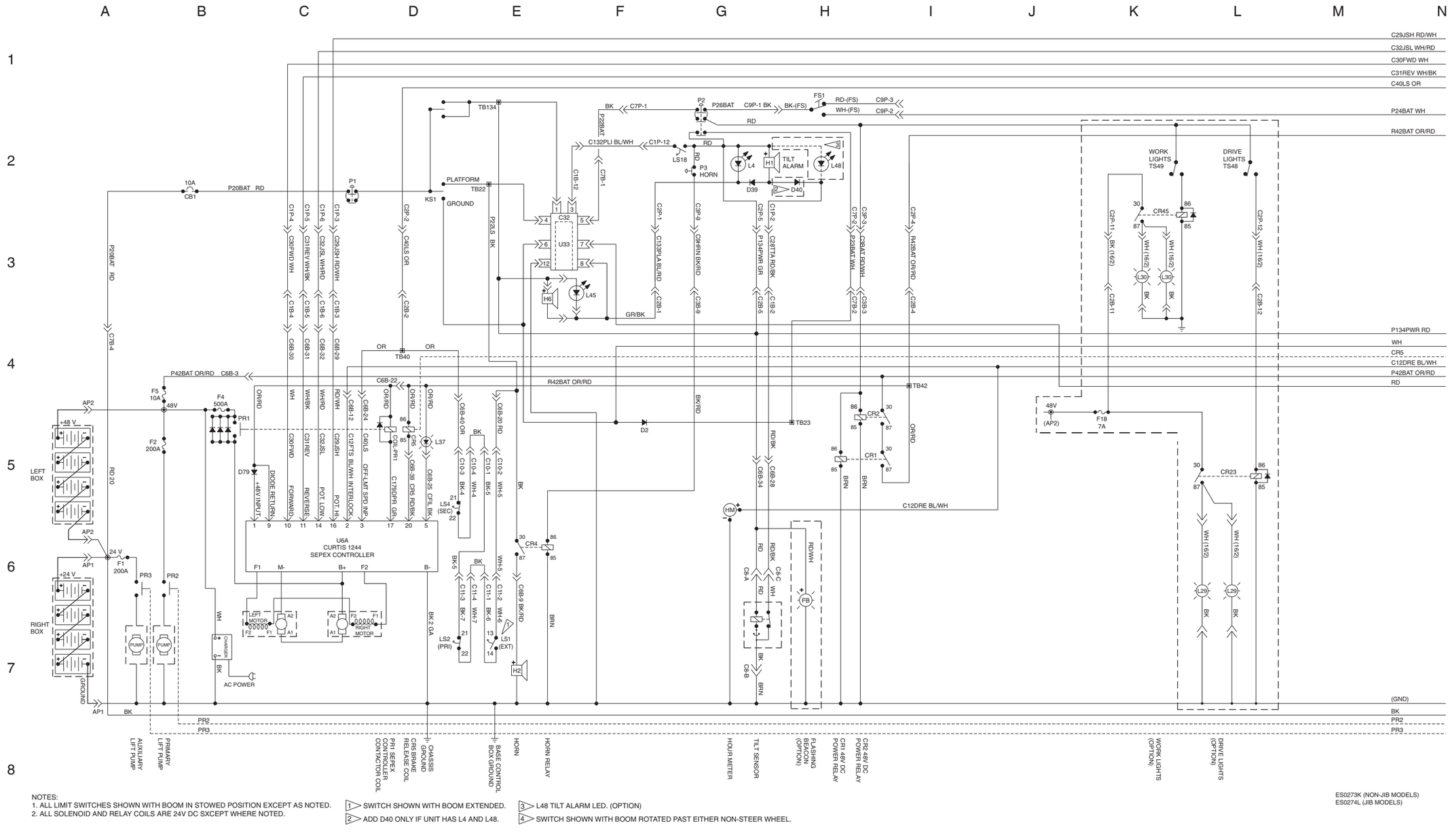




Electrical Schematic, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)



Electrical Schematic, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)

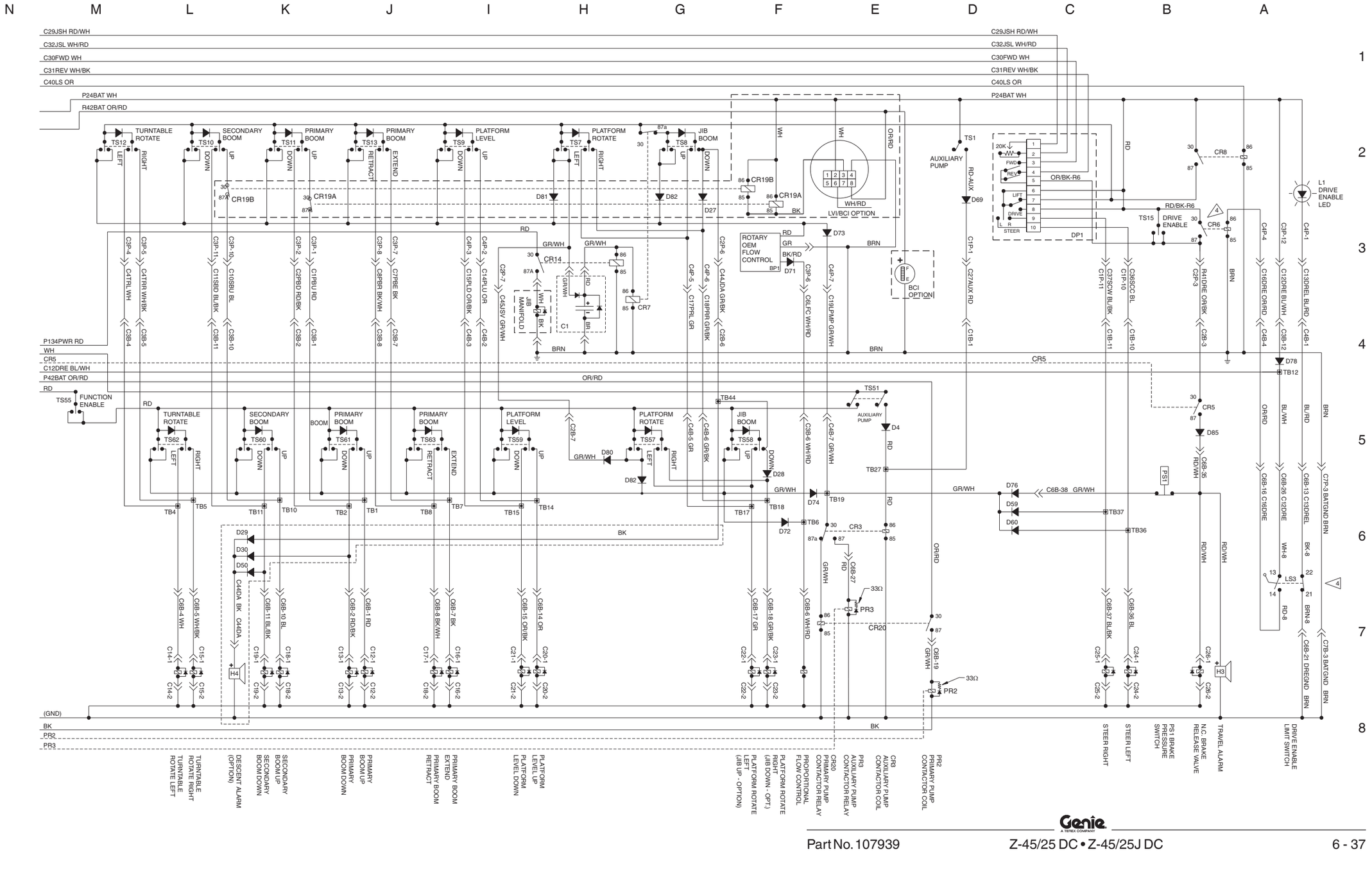


NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. ALL SOLENOID AND RELAY COILS ARE 24V DC SXCEPT WHERE NOTED.

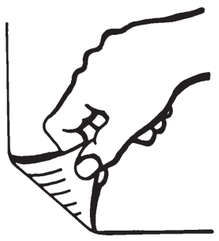
1> SWITCH SHOWN WITH BOOM EXTENDED.
2> ADD D40 ONLY IF UNIT HAS L4 AND L48.
3> L48 TILT ALARM LED. (OPTION)
4> SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

ES0273K (NON-JIB MODELS)
ES0274L (JIB MODELS)

Electrical Schematic, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)

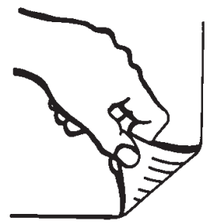


Electrical Schematic, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)

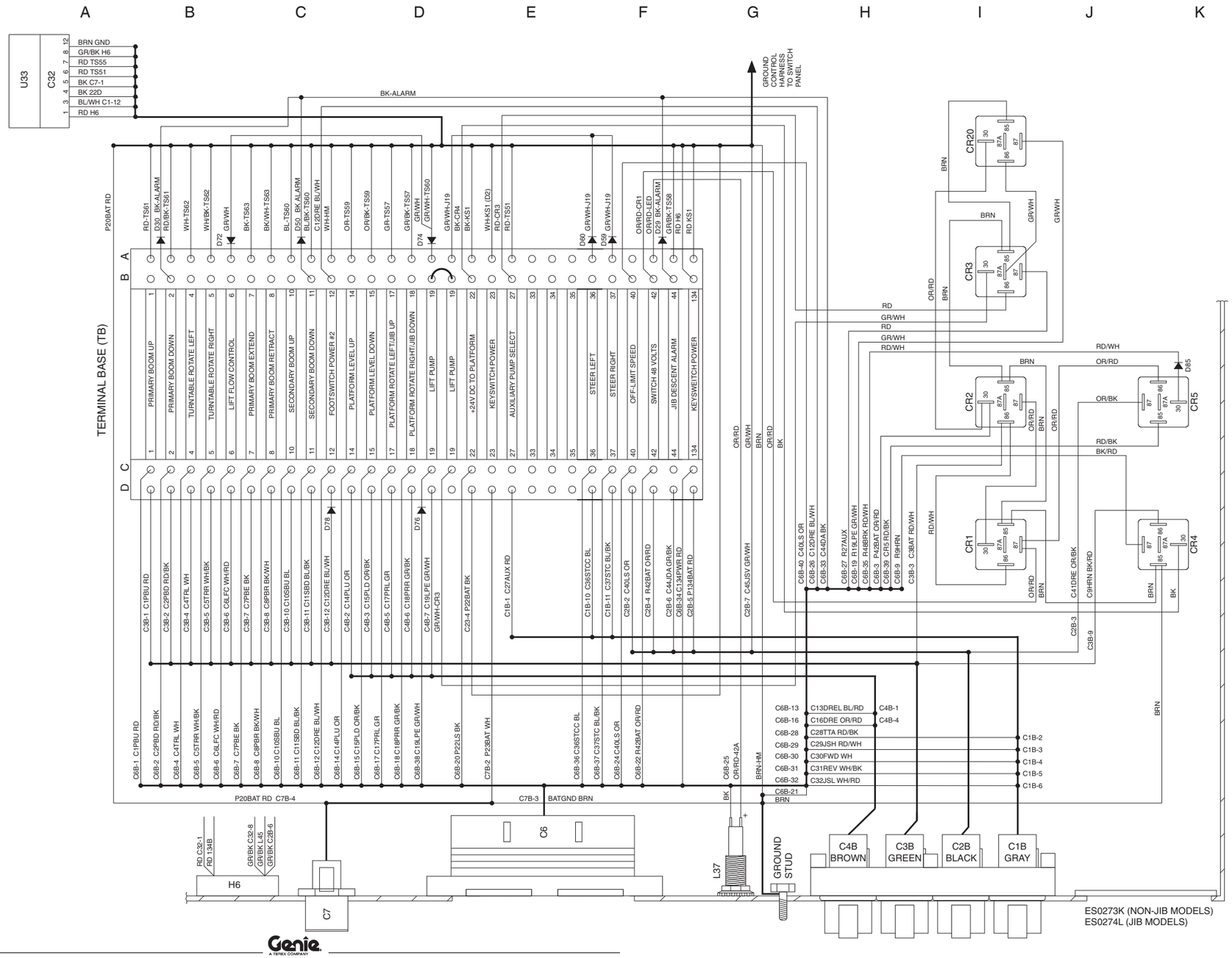


Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)





Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)

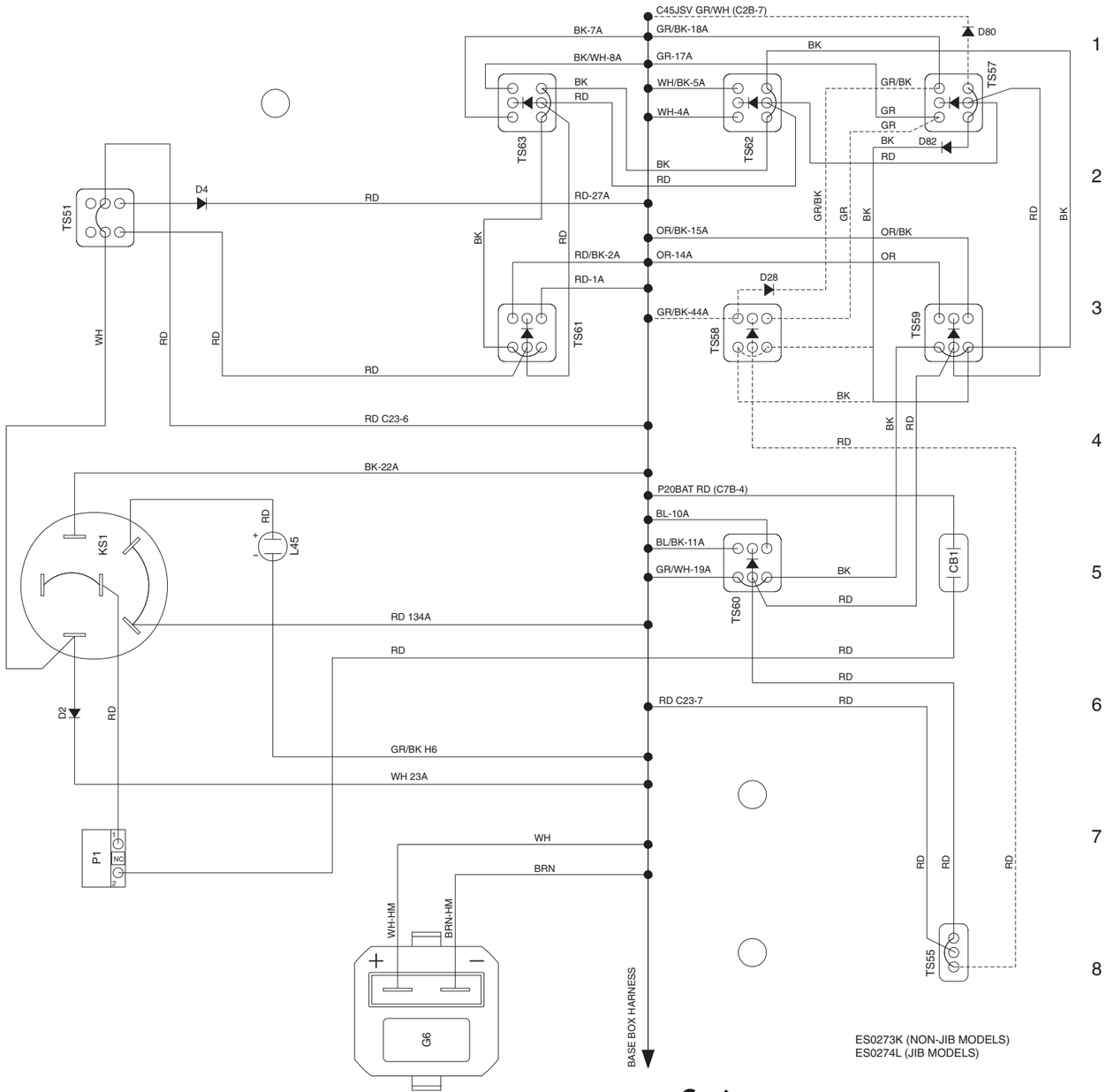


Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)

COMPONENT INDEX

CB1	10A CIRCUIT BREAKER
CR1	POWER RELAY, 48V
CR2	POWER RELAY, 48V
CR3	AUXILIARY PUMP RELAY
CR4	HORN RELAY
CR5	BRAKE RELEASE RELAY
CR20	PRIMARY LIFT PUMP RELAY
G6	HOUR METER
H6	PLATFORM OVERLOAD ALARM
KS1	KEY SWITCH
L37	LED - DRIVE CONTROLLER FAULT STATUS
L45	LED - PLATFORM OVERLOAD
P1	EMERGENCY STOP BUTTON
TS51	AUXILIARY PUMP TOGGLE SWITCH
TS55	FUNCTION ENABLE TOGGLE SWITCH
TS57	PLATFORM ROTATE TOGGLE SWITCH
TS58	JIB UP / DOWN TOGGLE SWITCH (OPTION)
TS59	PLATFORM LEVEL UP / DOWN TOGGLE SWITCH
TS60	SECONDARY BOOM UP / DOWN TOGGLE SWITCH
TS61	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS62	TURNTABLE ROTATE TOGGLE SWITCH
TS63	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
U33	LOAD SENSE MODULE

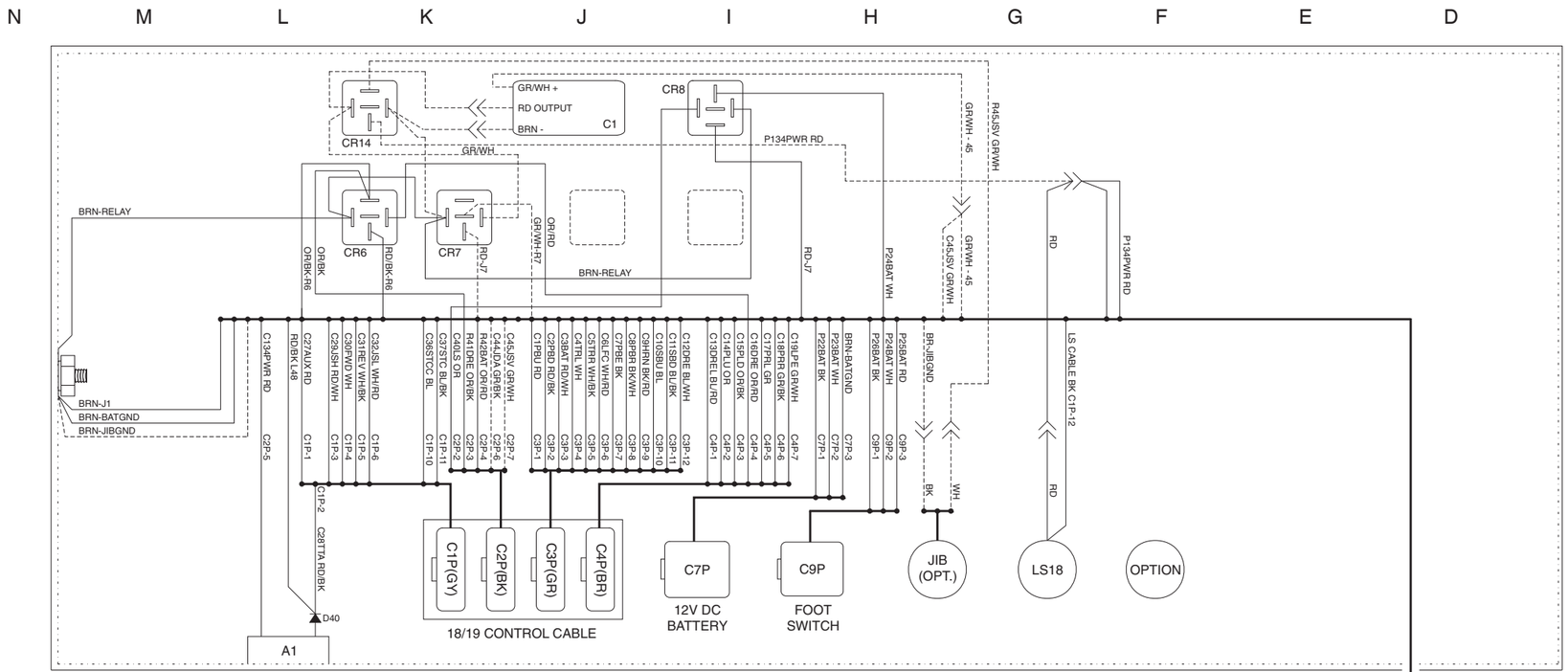
NOTE: DASHED LINES INDICATE OPTIONS.

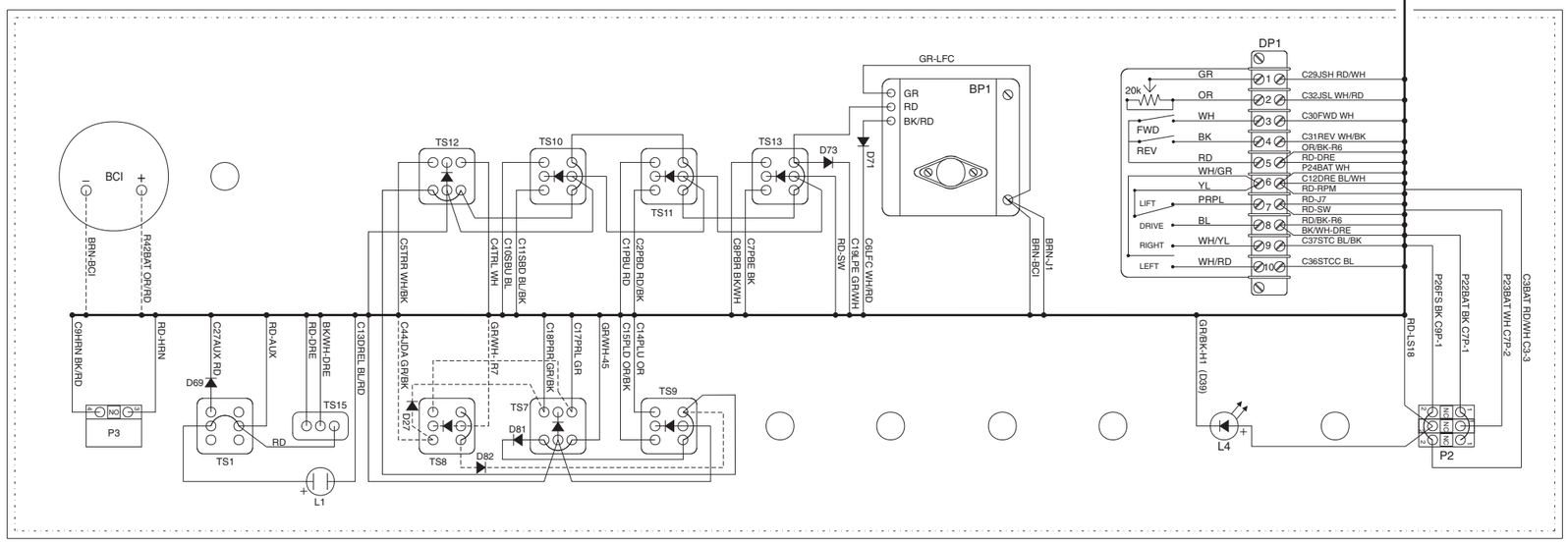


Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)



Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)





NOTES:
1. DASHED LINES INDICATE OPTIONS.

2. JIB TIME DELAY (C1 AND CR14) ADDED AT SERIAL NUMBER 34515 OR WAS FEILD INSTALLED.

COMPONENT INDEX

A1	TILT ALARM
BCI	BATTERY CHARGE INDICATOR (OPTION)
BP1	ROTARY FLOW CONTROL DIAL
C1	CAPACITOR, TIME DELAY (JIB OPTION)
CR6	RELAY - DRIVE ENABLE
CR7	RELAY - JIB (OPTION)
CR8	RELAY - LIMIT SWITCH
CR14	RELAY - JIB (OPTION)
DP1	JOYSTICK - DRIVE / STEER
H1	TITL ALARM
L1	LED - DRIVE ENABLE
L4	LED - PLATFORM OVERLOAD
LS18	PLATFORM OVERLOAD LIMIT SWITCH
P2	EMERGENCY STOP BUTTON
P3	HORN BUTTON
TS1	AUXILIARY PUMP TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)
TS9	PLATFORM LEVEL TOGGLE SWITCH
TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

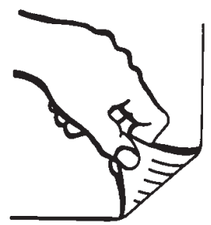
ES0273K (NON-JIB MODELS)
ES0274L (JIB MODELS)

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, CE (from serial number 31015 to 39313)

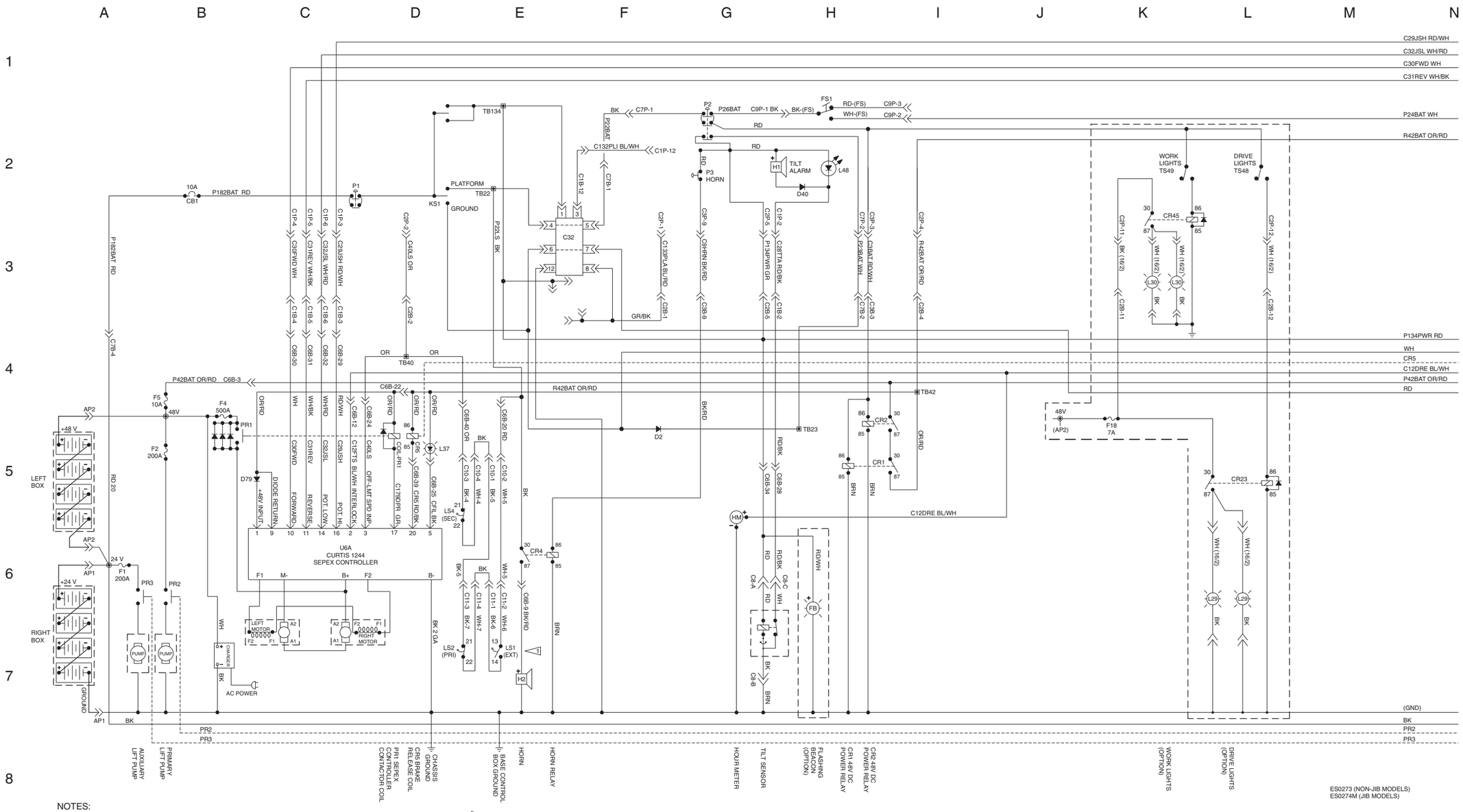




Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)



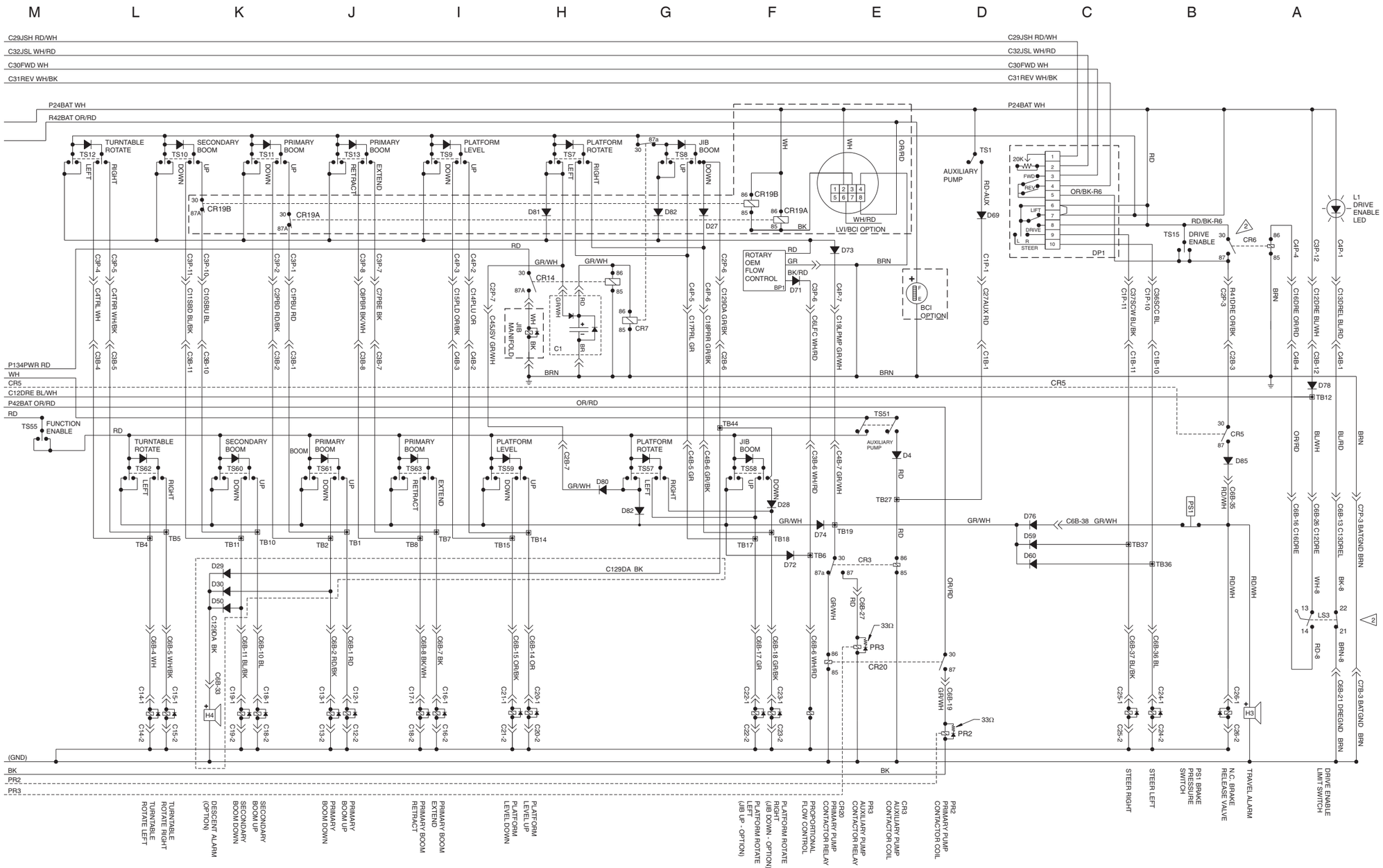
Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)



NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. ALL SOLENOID AND RELAY COILS ARE 24V DC SXCEPT WHERE NOTED.

1 SWITCH SHOWN WITH BOOM EXTENDED.
2 SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)

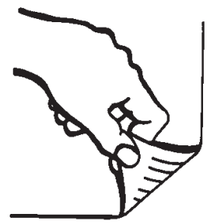


Electrical Schematic, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)

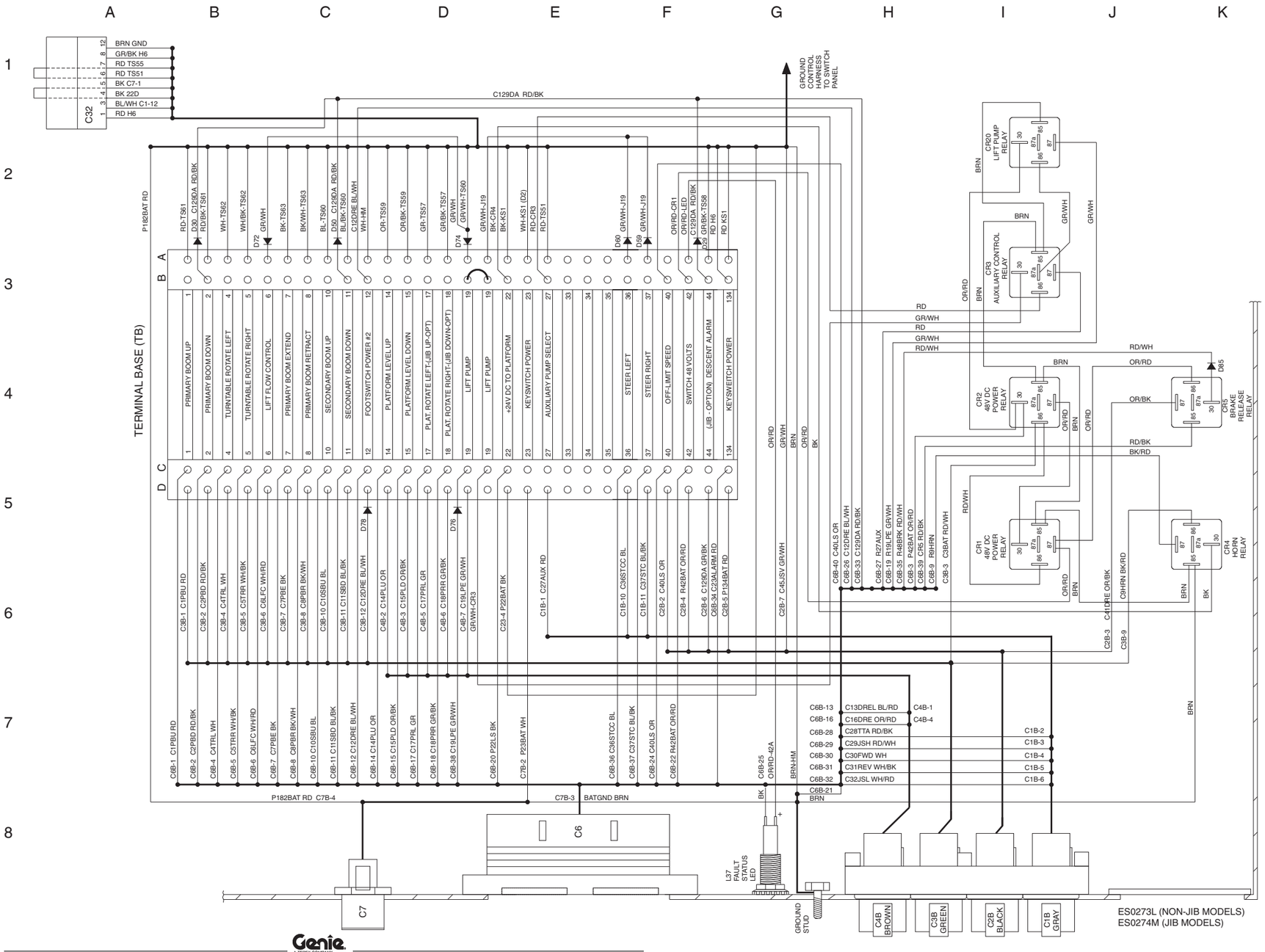


Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)





Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)



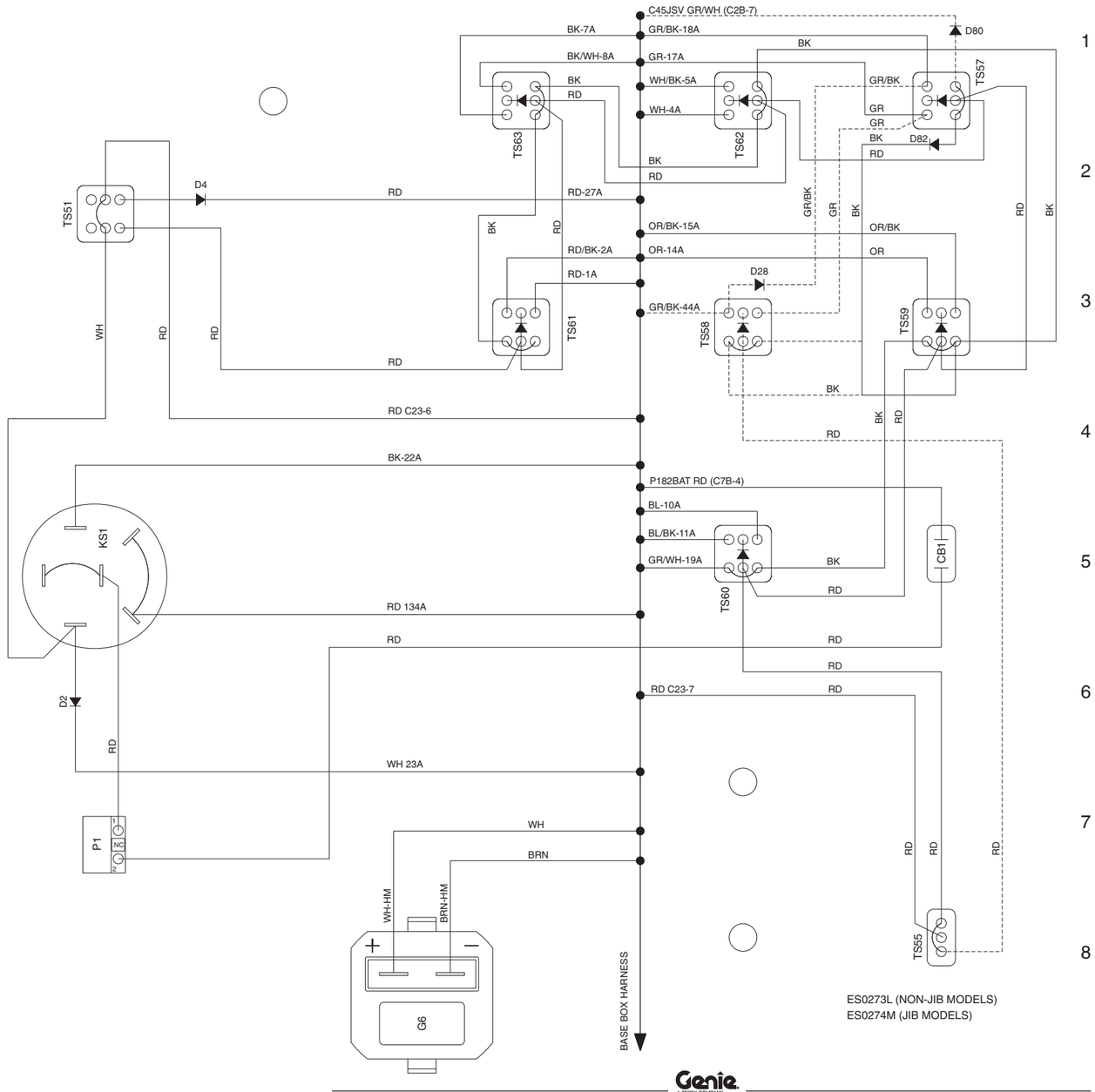
Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)

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

COMPONENT INDEX

CB1	10A CIRCUIT BREAKER
CR1	POWER RELAY, 48V
CR2	POWER RELAY, 48V
CR3	AUXILIARY PUMP RELAY
CR4	HORN RELAY
CR5	BRAKE RELEASE RELAY
CR20	PRIMARY LIFT PUMP RELAY
G6	HOUR METER
KS1	KEY SWITCH
L37	LED, DRIVE CONTROLLER FAULT STATUS
P1	EMERGENCY STOP BUTTON
TS51	AUXILIARY PUMP TOGGLE SWITCH
TS55	FUNCTION ENABLE TOGGLE SWITCH
TS57	PLATFORM ROTATE TOGGLE SWITCH
TS58	JIB UP / DOWN TOGGLE SWITCH (OPTION)
TS59	PLATFORM LEVEL UP / DOWN TOGGLE SWITCH
TS60	SECONDARY BOOM UP / DOWN TOGGLE SWITCH
TS61	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS62	TURNTABLE ROTATE TOGGLE SWITCH
TS63	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH

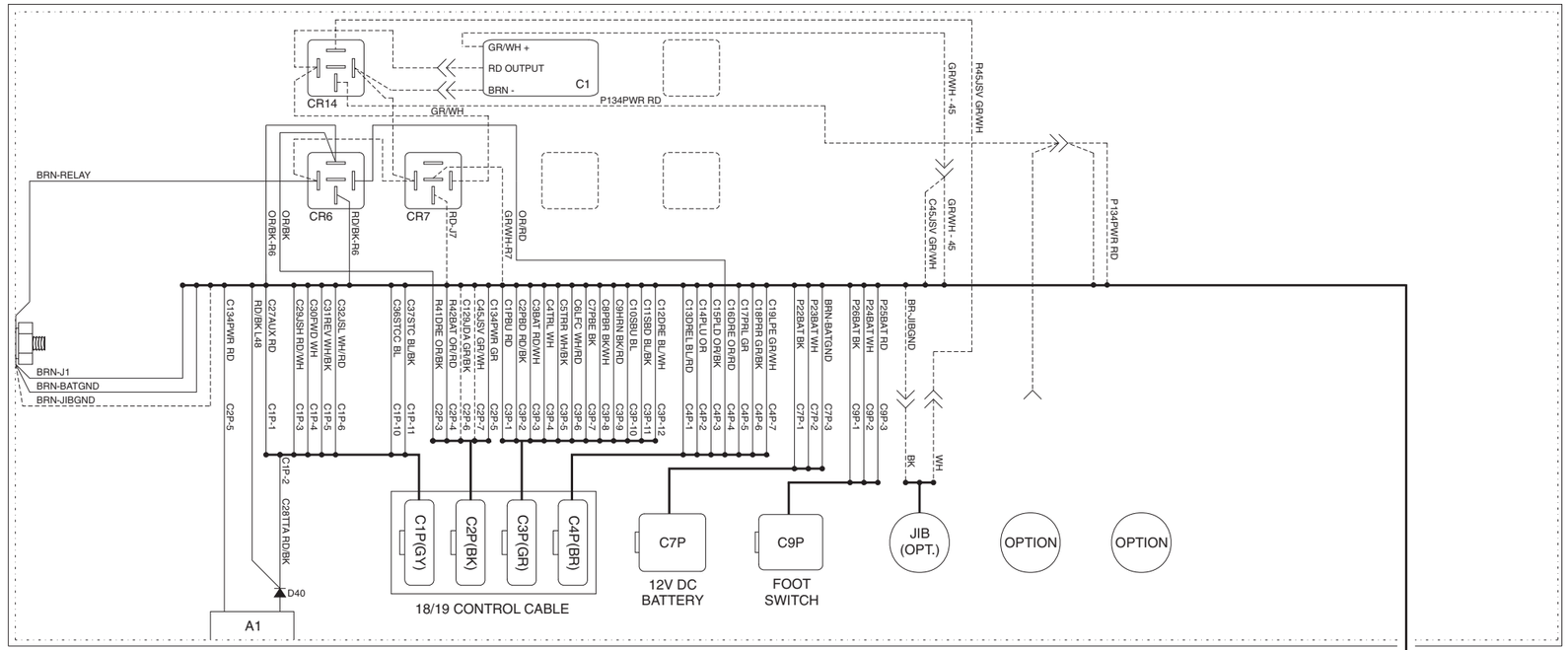
NOTE: DASHED LINES INDICATE OPTIONS.

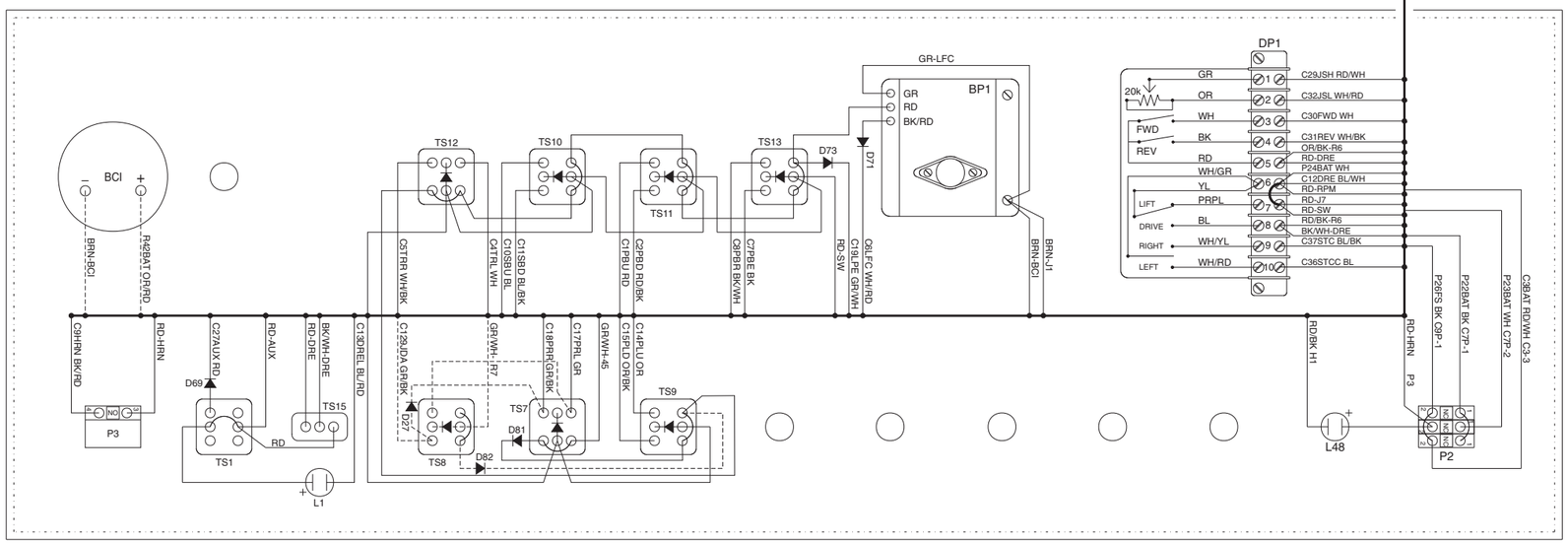


Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)



Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)





NOTES:
1. DASHED LINES INDICATE OPTIONS.

2. JIB TIME DELAY (C1 AND CR14) ADDED AT SERIAL NUMBER 34515 OR WAS FEILD INSTALLED.

COMPONENT INDEX

A1	TILT ALARM
BCI	BATTERY CHARGE INDICATOR (OPTION)
BP1	ROTARY FLOW CONTROL DIAL
C1	CAPACITOR, TIME DELAY (JIB OPTION)
CR6	RELAY - DRIVE ENABLE
CR7	RELAY - JIB (OPTION)
CR14	RELAY - JIB (OPTION)
DP1	JOYSTICK - DRIVE / STEER
H1	TITL ALARM
L1	LED - DRIVE ENABLE
L48	LED - TILT ALARM
P2	EMERGENCY STOP BUTTON
P3	HORN BUTTON
TS1	AUXILIARY PUMP TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)
TS9	PLATFORM LEVEL TOGGLE SWITCH
TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

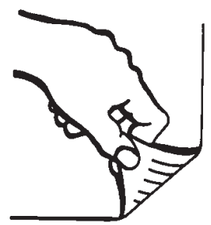
ES0273L (NON-JIB MODELS)
ES0274M (JIB MODELS)

Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, ANSI • CSA • AS (after serial number 39313)

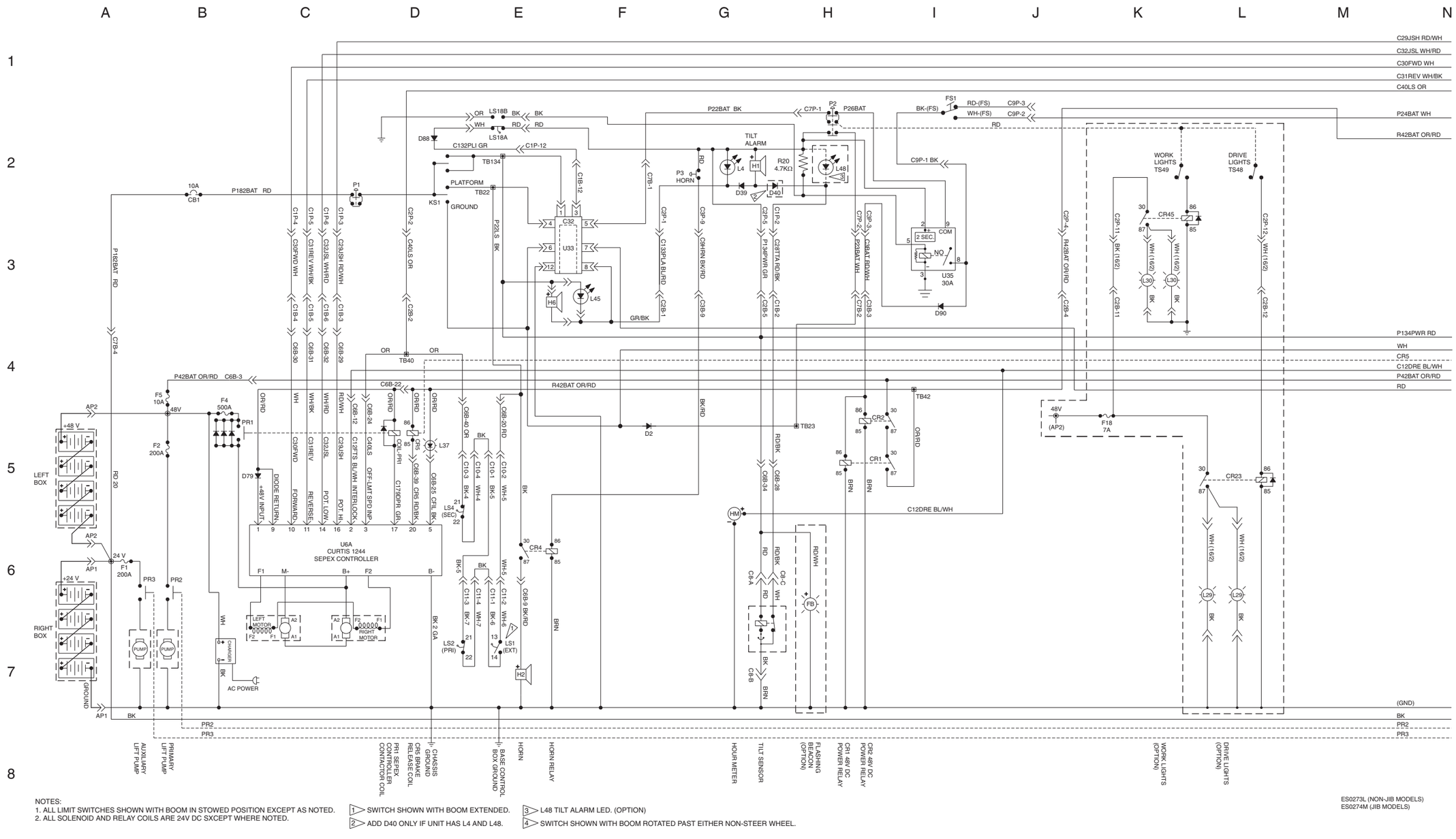




Electrical Schematic, Z-45/25 and Z-45/25J, CE (after serial number 39313)



Electrical Schematic, Z-45/25 and Z-45/25J, CE (after serial number 39313)

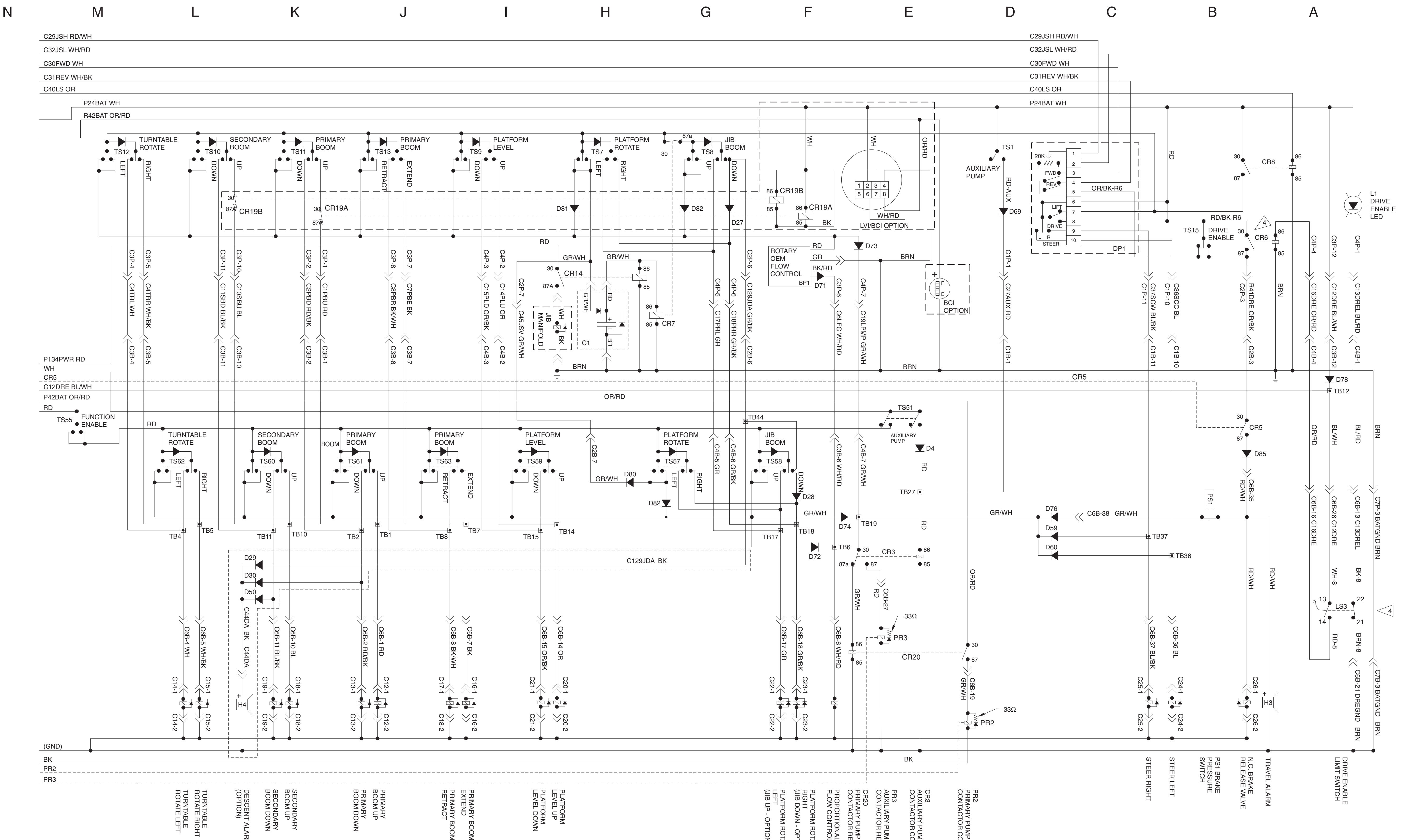


NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. ALL SOLENOID AND RELAY COILS ARE 24V DC SXCEPT WHERE NOTED.

1> SWITCH SHOWN WITH BOOM EXTENDED.
2> ADD D40 ONLY IF UNIT HAS L4 AND L48.
3> L48 TILT ALARM LED. (OPTION)
4> SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

ES0273L (NON-JIB MODELS)
ES0274M (JIB MODELS)

Electrical Schematic, Z-45/25 and Z-45/25J, CE (after serial number 39313)

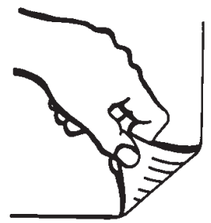


Electrical Schematic, Z-45/25 and Z-45/25J, CE (after serial number 39313)

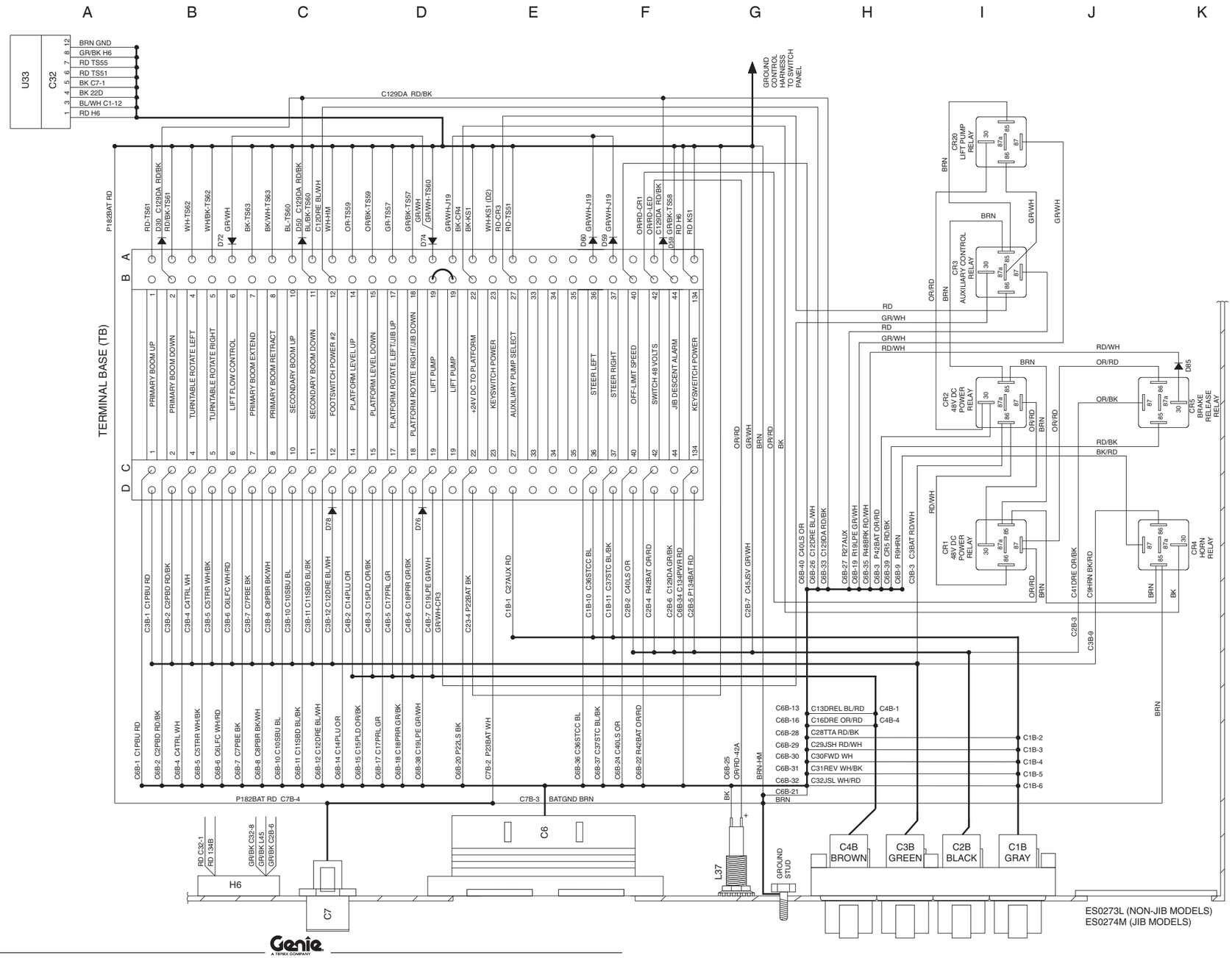


Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, CE (after serial number 39313)





Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 and Z-45/25J, CE (after serial number 39313)



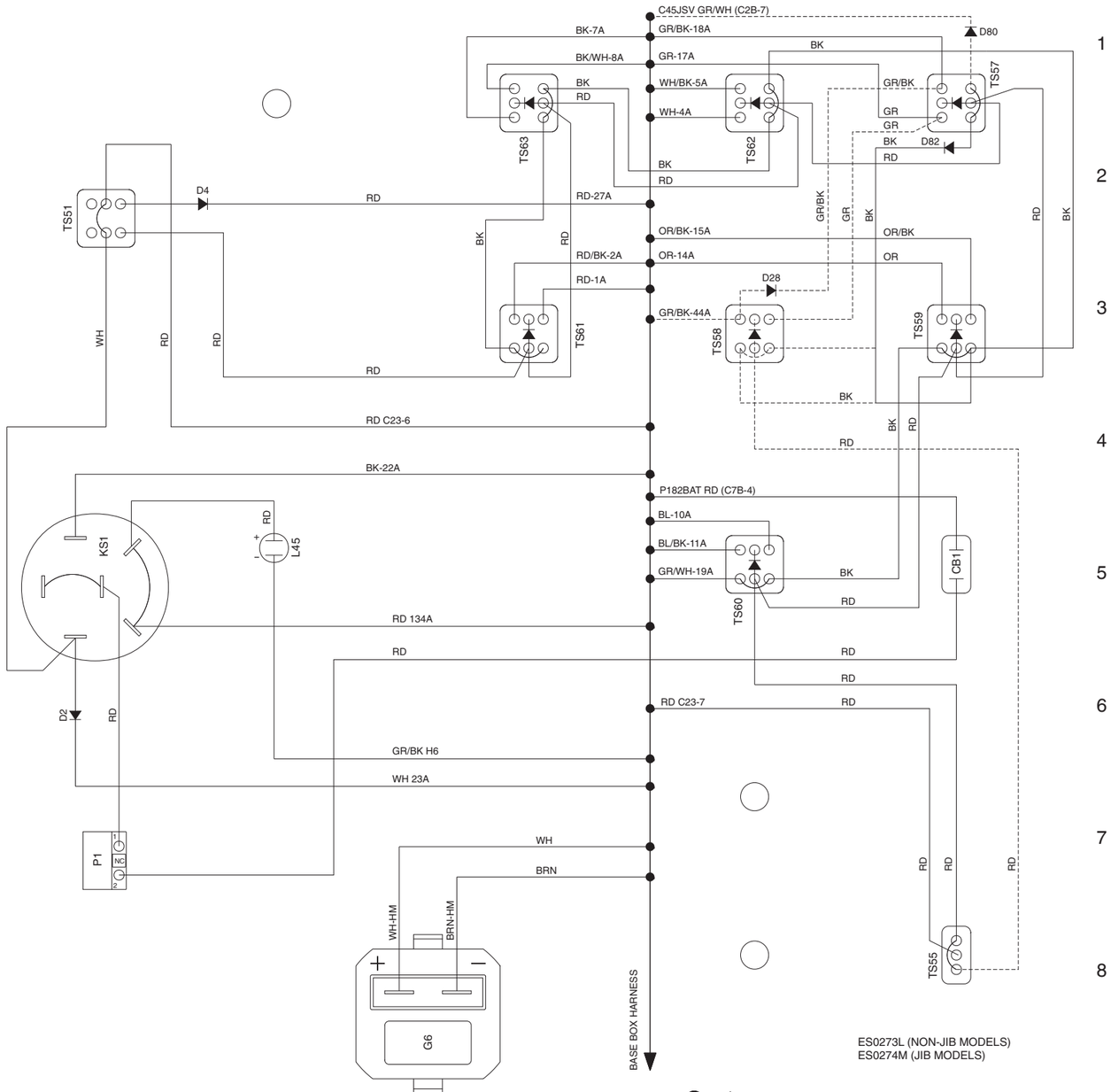
Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, CE (after serial number 39313)

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

COMPONENT INDEX

CB1	10A CIRCUIT BREAKER
CR1	POWER RELAY, 48V
CR2	POWER RELAY, 48V
CR3	AUXILIARY PUMP RELAY
CR4	HORN RELAY
CR5	BRAKE RELEASE RELAY
CR20	PRIMARY LIFT PUMP RELAY
G6	HOUR METER
H6	PLATFORM OVERLOAD ALARM
KS1	KEY SWITCH
L37	LED - DRIVE CONTROLLER FAULT STATUS
L45	LED - PLATFORM OVERLOAD
P1	EMERGENCY STOP BUTTON
TS51	AUXILIARY PUMP TOGGLE SWITCH
TS55	FUNCTION ENABLE TOGGLE SWITCH
TS57	PLATFORM ROTATE TOGGLE SWITCH
TS58	JIB UP / DOWN TOGGLE SWITCH (OPTION)
TS59	PLATFORM LEVEL UP / DOWN TOGGLE SWITCH
TS60	SECONDARY BOOM UP / DOWN TOGGLE SWITCH
TS61	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS62	TURNTABLE ROTATE TOGGLE SWITCH
TS63	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
U33	LOAD SENSE MODULE

NOTE: DASHED LINES INDICATE OPTIONS.



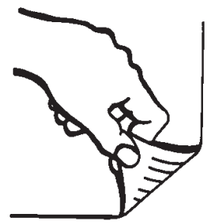
ES0273L (NON-JIB MODELS)
ES0274M (JIB MODELS)

Ground Control Box Switch Panel Wiring Diagram, Z-45/25 and Z-45/25J, CE (after serial number 39313)

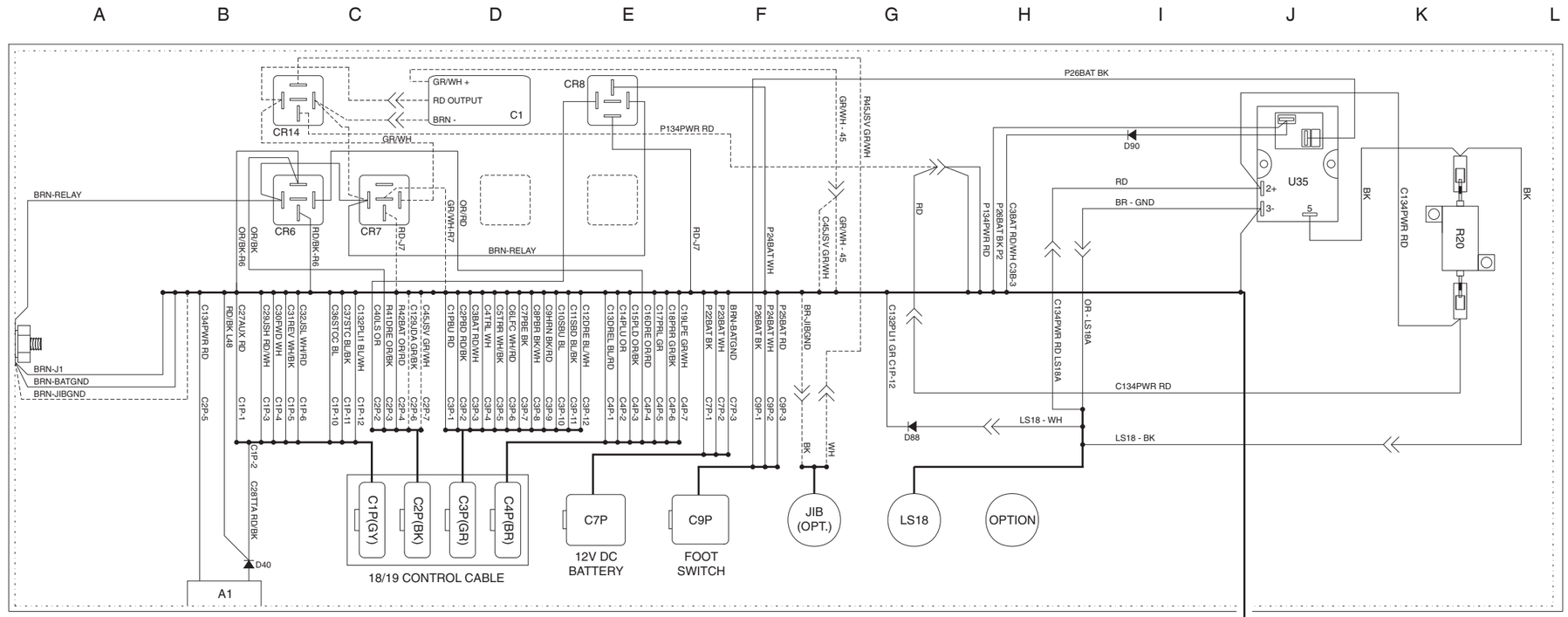


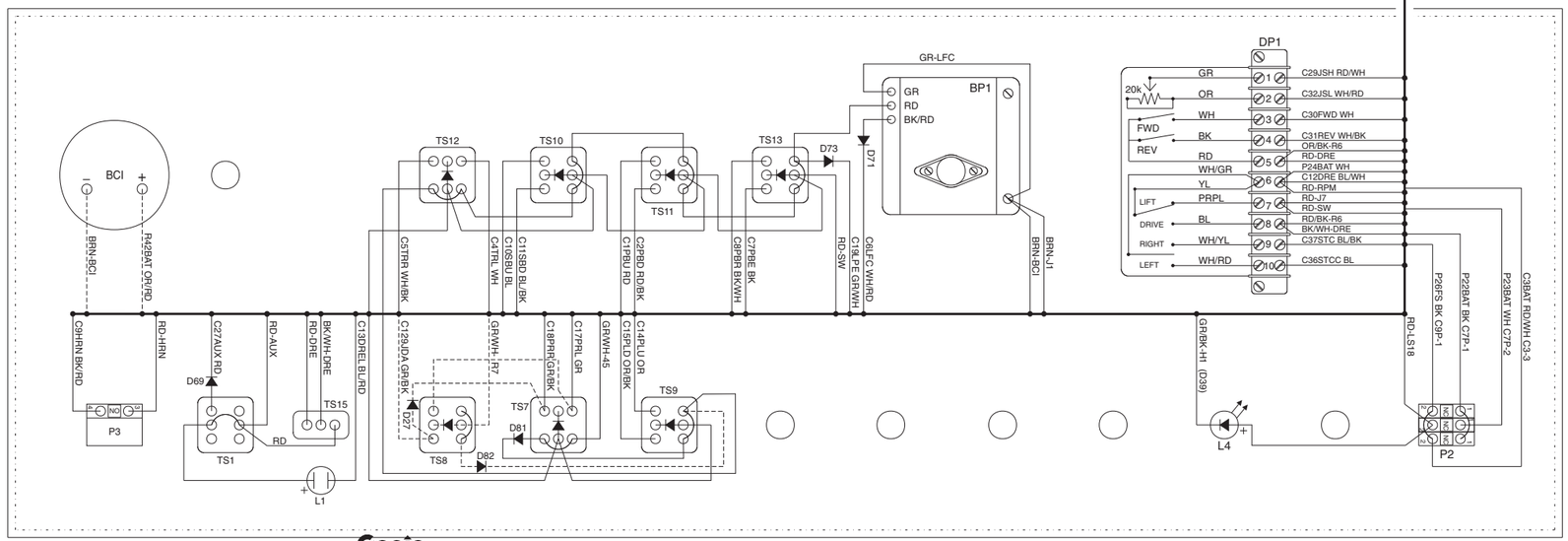
Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, CE (after serial number 39313)





Platform Control Box Wiring Diagram, Z-45/25 and Z-45/25J, CE (after serial number 39313)



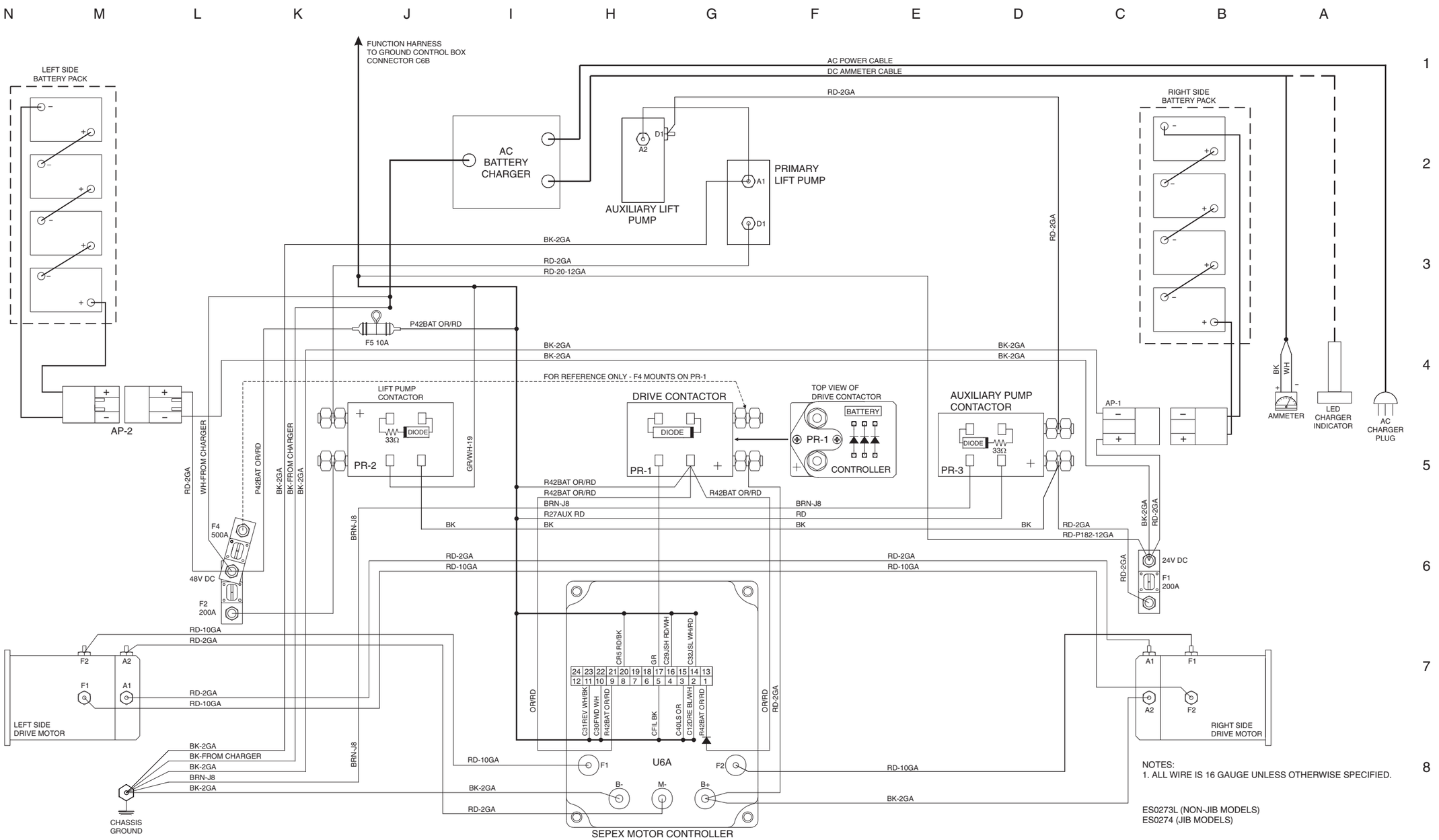


COMPONENT INDEX

A1	TILT ALARM
BCI	BATTERY CHARGE INDICATOR (OPTION)
BP1	ROTARY FLOW CONTROL DIAL
C1	CAPACITOR, TIME DELAY (JIB OPTION)
CR6	RELAY - DRIVE ENABLE
CR7	RELAY - JIB (OPTION)
CR8	RELAY - LIMIT SWITCH
CR14	RELAY - JIB (OPTION)
DP1	JOYSTICK - DRIVE / STEER
H1	TITL ALARM
L1	LED - DRIVE ENABLE
L4	LED - PLATFORM OVERLOAD
LS18	PLATFORM OVERLOAD LIMIT SWITCH
P2	EMERGENCY STOP BUTTON
P3	HORN BUTTON
R20	RESISTOR - 4700Ω
TS1	AUXILIARY PUMP TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)
TS9	PLATFORM LEVEL TOGGLE SWITCH
TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH
U35	TIME DELAY RELAY

ES0273L (NON-JIB MODELS)
ES0274M (JIB MODELS)

Power Cable Wiring Diagram

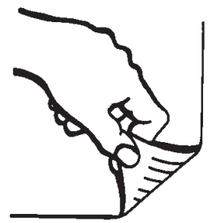


Power Cable Wiring Diagram

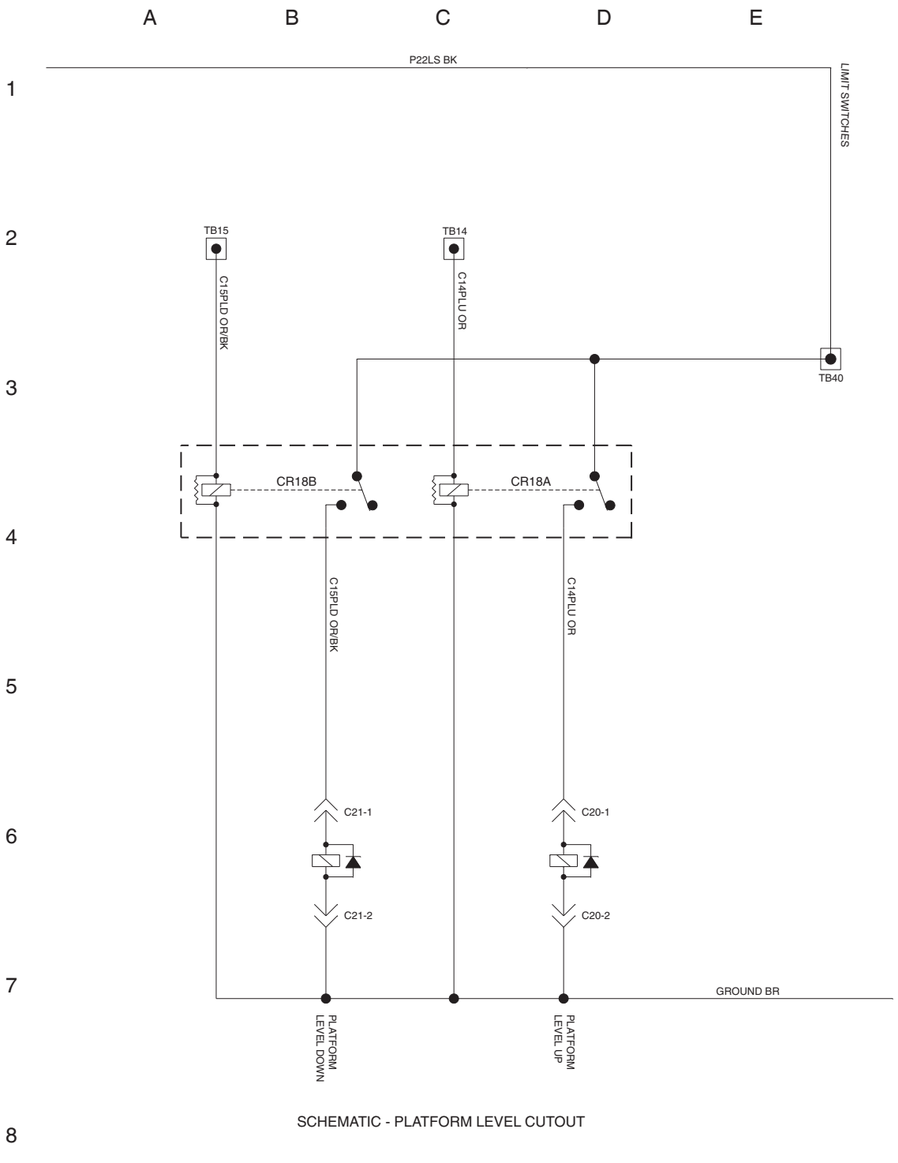


CTE Option, CE

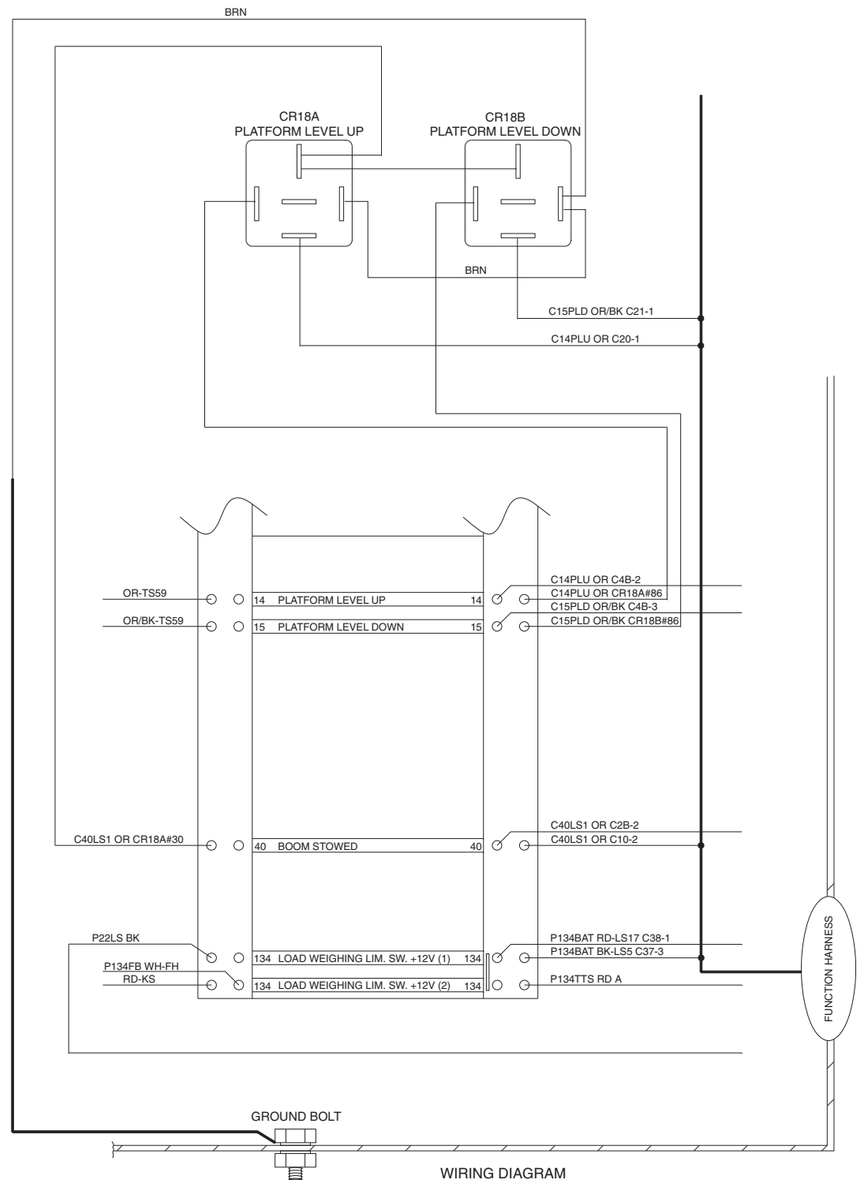




CTE Option, CE



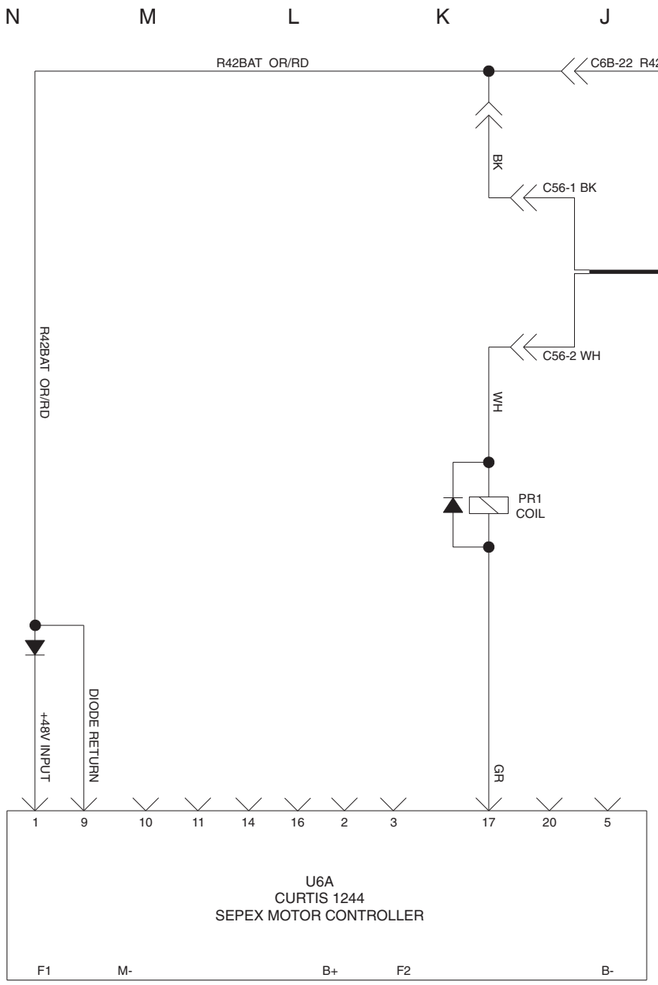
SCHEMATIC - PLATFORM LEVEL CUTOUT



WIRING DIAGRAM

ES0276N

Charger Interlock Option

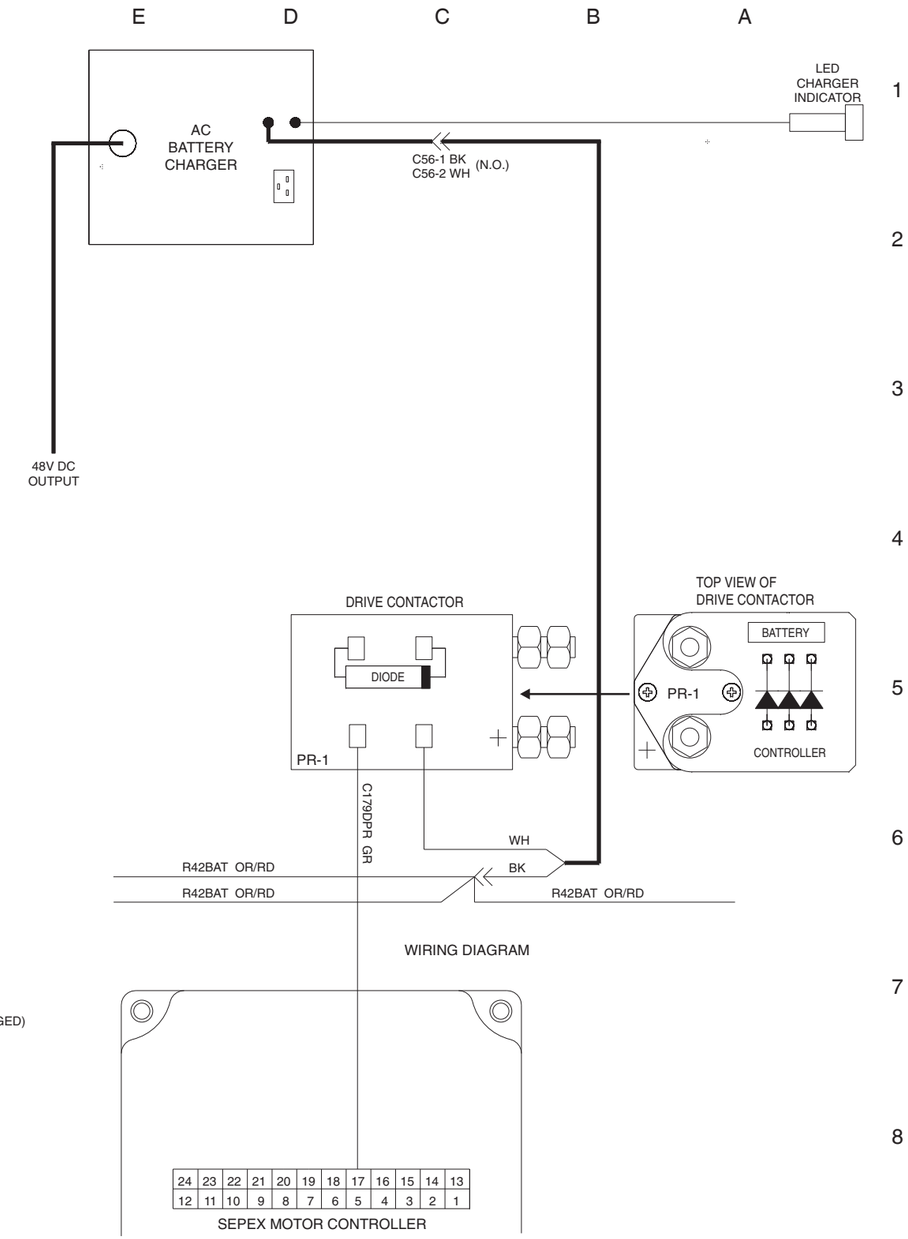


SCHEMATIC

ES0276N

BATTERY INDICATOR LED
1. THE LED IS RED DURING PHASES I1 AND P (BULK CHARGE). (20% BATTERY CHARGED)
2. THE LED IS YELLOW DURING PHASES U AND I2. (80% BATTERY CHARGED)
3. THE LED IS GREEN AT THE END OF THE CHARGE. (100% BATTERY CHARGED)
4. THE LED IS FLASHING GREEN DURING CYCLE EQUALIZATION.
5. THE LED IS OFF WHEN THE CHARGER IS NOT POWERED ON.
6. THE LED FLASHES RED. INDICATES A DEFECT.

INTERLOCK RELAY (N.O.), 10A CONTACT
1. CHARGER NOT CONNECTED TO BATTERY OR MAIN SUPPLY, CONTACT OPEN.
2. CHARGER CONNECTED TO BATTERY, CONTACT CLOSED.
3. CHARGER CONNECTED TO BATTERY AND MAIN SUPPLY, CONTACT OPEN.



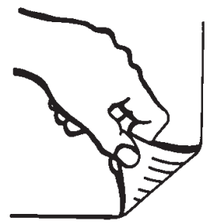
WIRING DIAGRAM

Charger Interlock Option

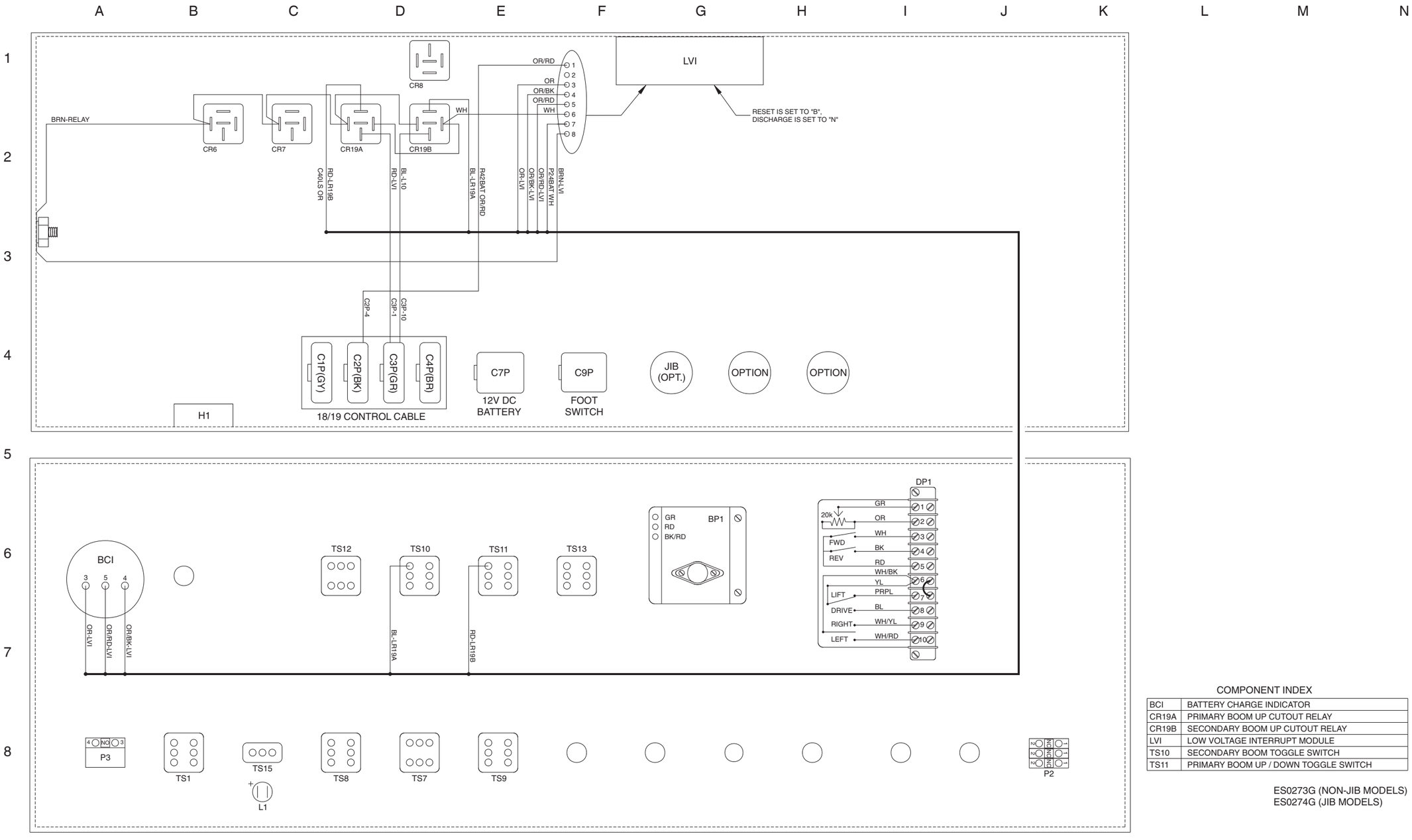


Platform Control Box LVI / BCI Option Wiring Diagram (before serial number 31015)





Platform Control Box LVI / BCI Option Wiring Diagram (before serial number 31015)

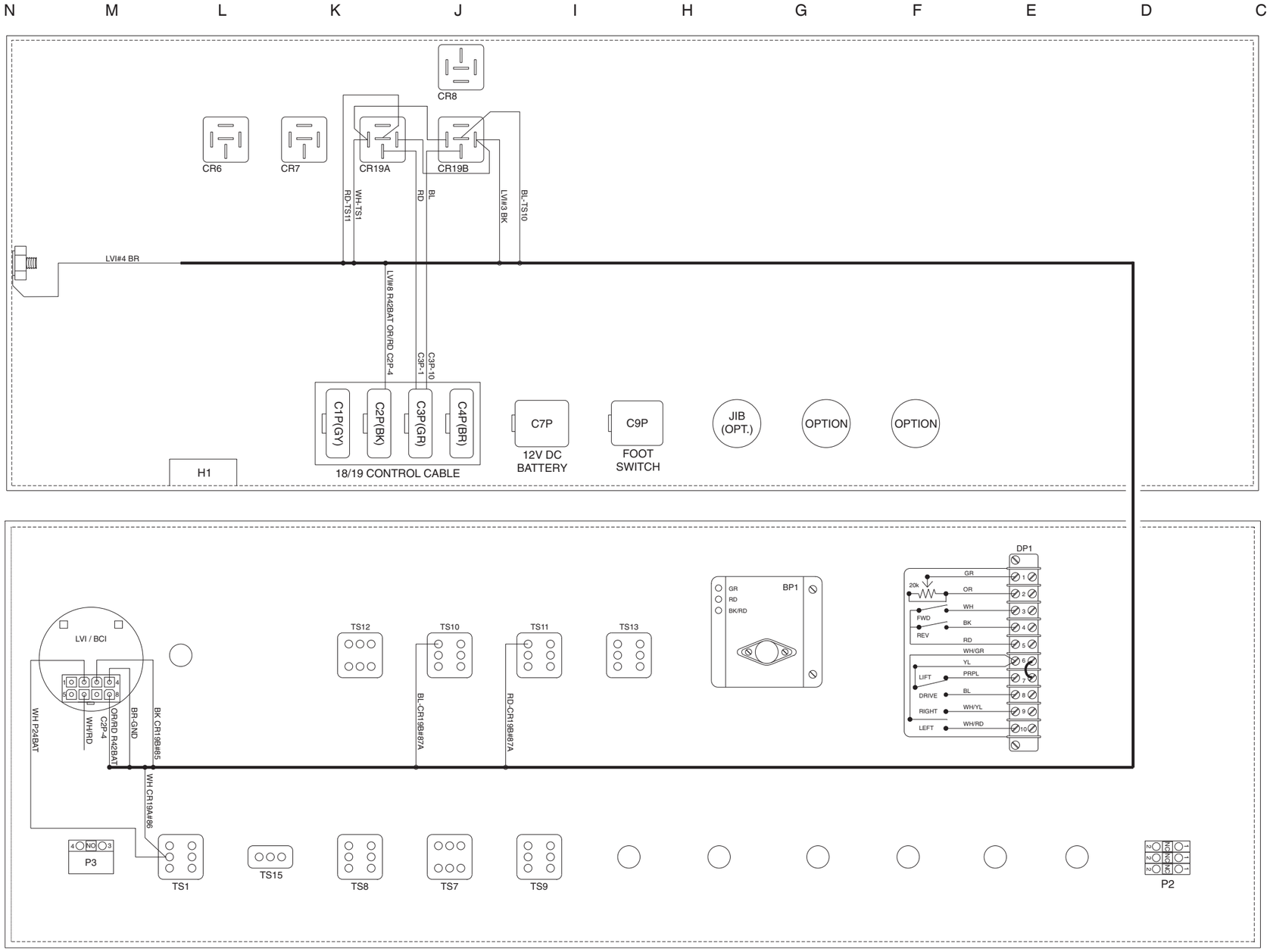


COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
CR19A	PRIMARY BOOM UP CUTOUT RELAY
CR19B	SECONDARY BOOM UP CUTOUT RELAY
LVI	LOW VOLTAGE INTERRUPT MODULE
TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH

ES0273G (NON-JIB MODELS)
ES0274G (JIB MODELS)

Platform Control Box LVI / BCI Option Wiring Diagram (after serial number 31014)



COMPONENT INDEX

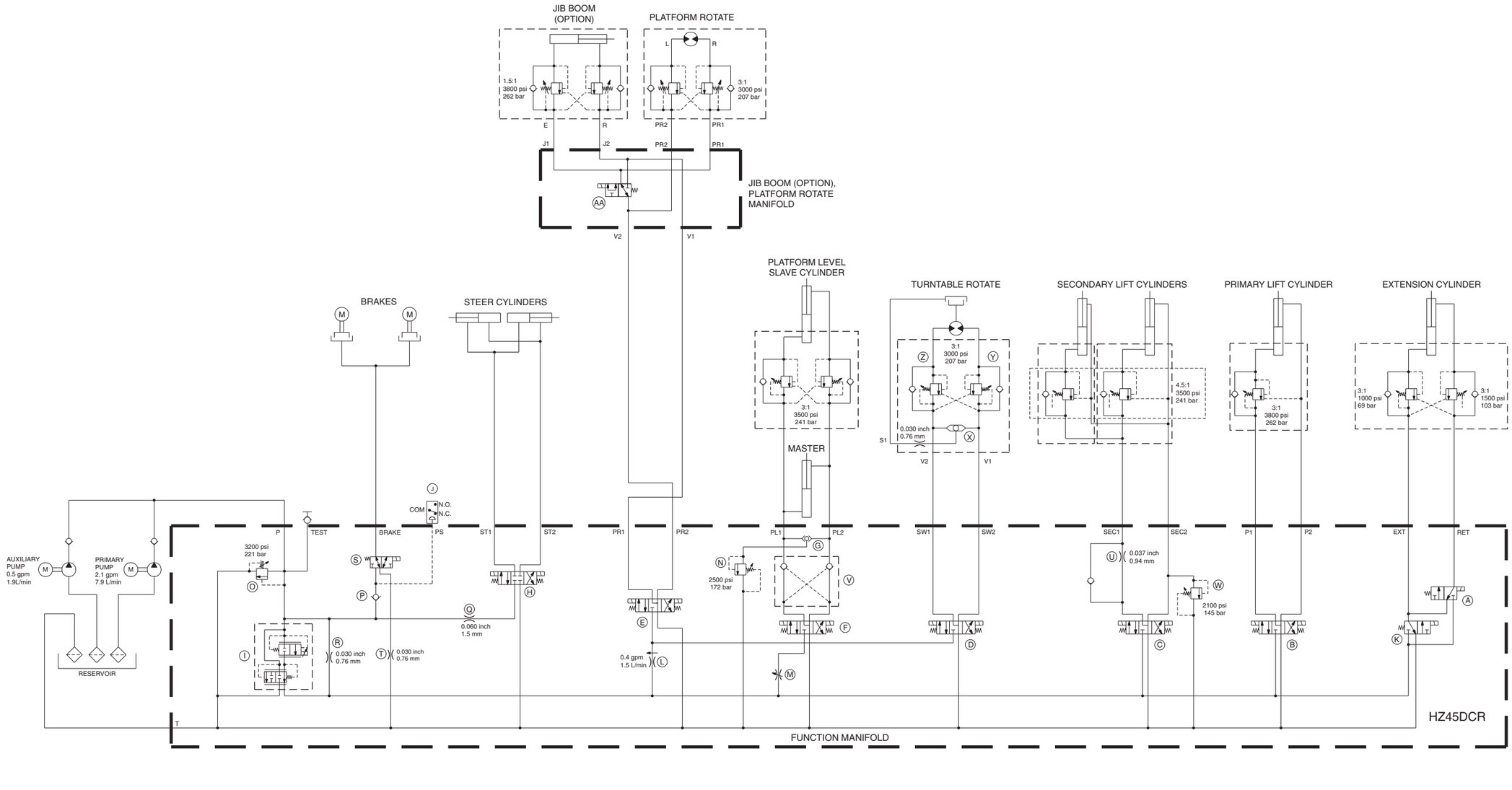
CR19A	PRIMARY BOOM UP CUTOUT RELAY
CR19B	SECONDARY BOOM UP CUTOUT RELAY
LVI / BCI	LOW VOLTAGE INTERRUPT AND BATTERY CHARGE INDICATOR
TS1	AUXILIARY PUMP TOGGLE SWITCH
TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH

ES0273L (NON-JIB MODELS)
ES0274M (JIB MODELS)

Platform Control Box LVI / BCI Option Wiring Diagram (after serial number 31014)



Hydraulic Schematic



Hydraulic Schematic



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