

Genie®

Service Manual

Refer to inside cover for additional serial number information

Part No. 106488
Rev B
June 2005

Z™-45/25
Z™-45/25J

Bi-Energy Power

(from serial number 9996 to 23235)

Introduction

Important

Read, understand and obey the safety rules and operating instructions in the *Genie Z-45/25 Bi-Energy and Genie Z-45/25J Bi-Energy Operator's Manual* 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.

Technical Publications

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

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

Contact Us:

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Serial Number Information

Genie Industries offers the following Service Manuals for these models:

Title	Part No.
Z-45/25 Bi-Energy and Z-45/25J Bi-Energy Service Manual (after serial number 23235)	110188

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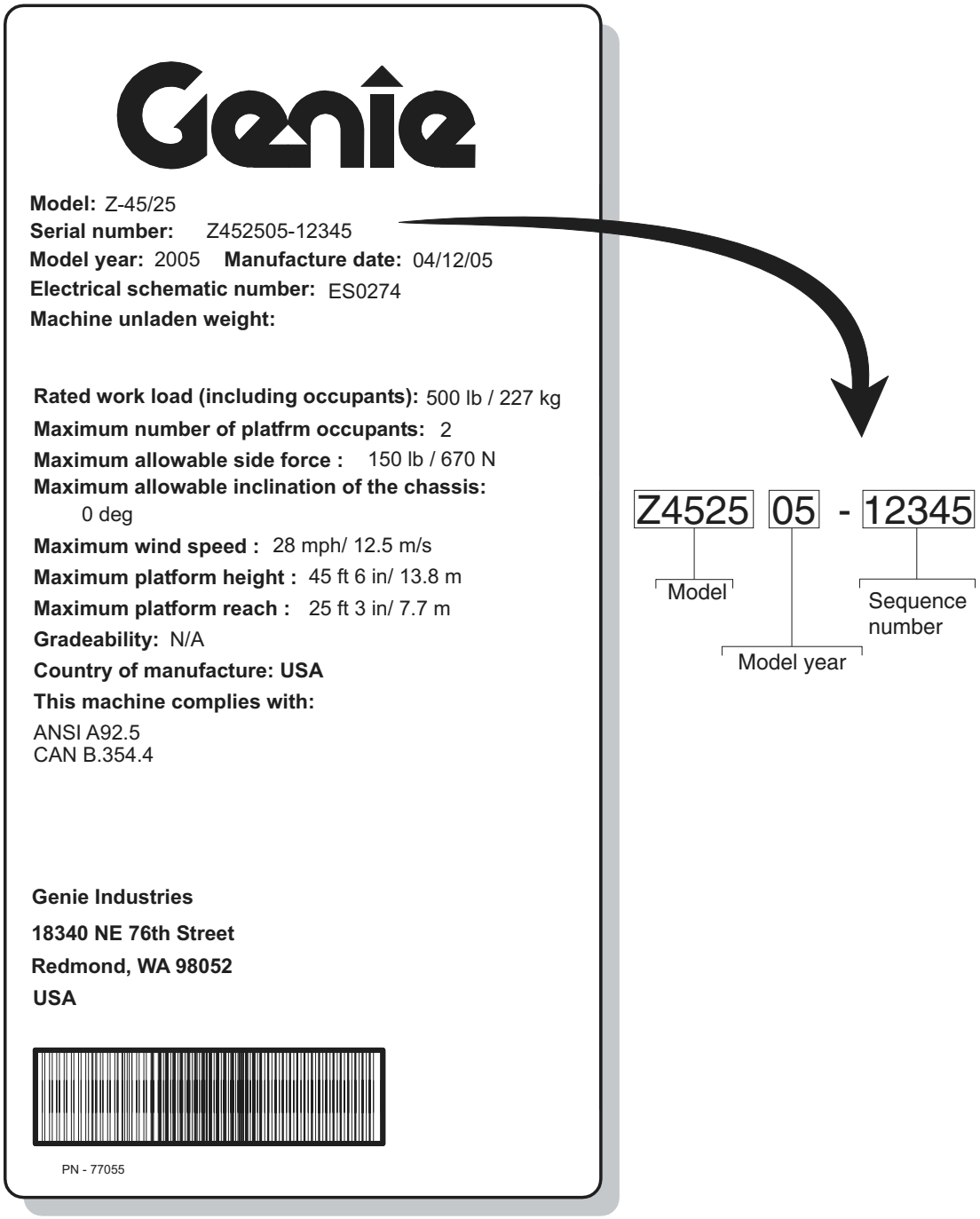
106488 Rev B June 2005
Second Edition, Second Printing

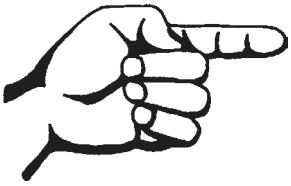
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Serial Number Legend





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Safety Rules



Danger

Failure to obey the instructions and safety rules in this manual and the *Genie Z-45/25 Bi-Energy and Genie Z-45/25J Bi-Energy Operator's Manual* will result in death or serious injury.

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

Do Not Perform Maintenance Unless:

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

Personal Safety

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



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



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

⚠DANGER Used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING Used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION With safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

CAUTION Without safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE Used to indicate operation or maintenance information.



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.

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Specifications

REV A

Machine Specifications

Tires and wheels	
Wheel diameter	14.5 inches
Wheel width	7 inches
Wheel lugs (before serial number 16128)	
Front	8 @ 5/8 -18
Rear	9 @ 5/8 -18
Wheel lugs (from serial number 16127 to 23235)	
Front	9 @ 5/8 -18
Rear	9 @ 5/8 -18
Lug nut torque	125 ft-lbs 169.5 Nm
Tire size	9-14.5 LT
Tire ply rating	Tread 8 Sidewall 6
Tire contact area	43.5 sq in 280 sq cm
Overall tire diameter	28 in 71 cm
Tire pressure	100 psi 6.89 bar

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

Fluid capacities	
Fuel tank	9 gallons 34.1 liters
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:	SAE 90 multipurpose hypoid gear oil API service classification GL5

Batteries	
Type	6V DC
Quantity	8
Capacity	350 AH
Reserve capacity @ 25A rate	750 minutes

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

SPECIFICATIONS REV B

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 (boom stowed)	30%

Boom function speeds, maximum from platform controls	
Jib boom up, Z-45/25J	30 to 40 seconds
Jib boom down, Z-45/25J	18 to 23 seconds
Primary boom up	30 to 36 seconds
Primary boom down	26 to 32 seconds
Secondary boom up	38 to 42 seconds
Secondary boom down	32 to 36 seconds
Primary boom extend, Z-45/25	25 to 30 seconds
Primary boom extend, Z-45/25J	16 to 24 seconds
Primary boom retract, Z-45/25	21 to 30 seconds
Primary boom retract, Z-45/25J	13 to 23 seconds
Turntable rotate, 359° primary boom retracted	76 to 82 seconds
Platform rotate, 180°, Z-45/25	6 to 10 seconds
Platform rotate, 160°, Z-45/25J	6 to 10 seconds

Hydraulic Specifications

Before serial number 20926	
Hydraulic oil type	Shell Donax TG (Dexron III)
After serial number 20925	
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 Rykon 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 have a minimum viscosity index rating of 150. They should provide excellent antiwear, oxidation, corrosion inhibition, seal conditioning, and foam and aeration suppression properties.

Optional fluids	
Biodegradable	Petro Canada Premium ECO 46 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 Use Chevron Aviation A hydraulic oil when in ambient temperatures consistently below 0°F / -18°C.

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

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

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
Primary boom down relief valve pressure (before serial number 11819)	2300 psi 158.6 bar
Secondary boom down relief valve pressure (before serial number 22566)	1800 psi 124 bar
Secondary boom down relief valve pressure (from serial number 22566 to 23235)	2000 psi 138 bar
Platform level flow regulator (before serial number 20380)	0.1 gpm 0.38 L/min
Platform level flow regulator (from serial number 20380 to 23235)	0.6 gpm 2.27 L/min
Jib boom/platform rotate flow regulator (before serial number 22566)	0.6 gpm 2.27 L/min
Jib boom/platform rotate flow regulator (from serial number 22566 to 23235)	0.4 gpm 1.5 L/min

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

SPECIFICATIONS REV B

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

Description	Specification
Solenoid valve, 3 position 4 way, 20V DC (schematic items E, H, J, K, L, M, CC, DD, EE, FF, HH, II, BB, BC, BD, BE, BF, BG, CB, CD, CE, CF and CH)	25 to 29 Ω
Solenoid valve, 2 position 3 way, 20V DC (schematic items N, P, AA, BB, BA, BJ, CA, CK and CR)	25 to 29 Ω
Solenoid valve, 2 position 3 way, 20V DC (schematic item CR)	17 to 21 Ω
Solenoid valve, 2 position 3 way, 20V DC (schematic item DC)	25 to 28 Ω
Solenoid valve, 2 position 2 way, 20V DC (schematic items DA and DB)	22 to 26 Ω
Proportional solenoid valve, 24V DC (schematic items G, JJ, BH and CI)	17 to 21 Ω
Solenoid valve, N.C. poppet, 20V DC (schematic items F, LL and BI)	25 to 28 Ω
Solenoid valve, N.O. poppet, 20V DC (schematic items B, VV and BT)	25 to 28 Ω

Machine Torque Specifications

Platform rotator	
1 -8 center bolt (grade 2)	200 ft-lbs 271 Nm
1 -8 center bolt (grade 8)	480 ft-lbs 651 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

REV A SPECIFICATIONS

Kubota Z482-E Engine

Displacement	29.23 cu in 0.48 liters
Number of cylinders	2
Bore and stroke	2.64 x 2.68 inches 67 x 68 mm
Horsepower Gross intermitent	12.5 @ 3600 rpm
Firing order	1 - 2
Compression ratio	23:1
Compression pressure	412 to 469 psi 28.4 to 32.3 bar
Low idle	2000 rpm
High idle	3000 rpm
Governor	centrifugal mechanical
Valve clearance, cold	0.0057 to 0.0072 in 0.145 to 0.185 mm

Engine coolant	
Capacity	2.9 quarts 2.8 liters

Lubrication system	
Oil pressure	36 to 64 psi 2.48 to 4.41 bar
Oil capacity (including filter)	2.6 quarts 2.5 liters
Oil viscosity requirements	10W-30

Engine oil should have properties of API classification CC/SE, CD/SE, CC/SF or CD/SF grades.

Injection system	
Injection pump make	Bosch MD
Injection timing	21° BTDC
Injection pump pressure	1991 psi 137 bar
Fuel requirement	diesel number 2-D

Starter motor	
Brush length, new	0.5188 in 13 mm
Brush length, minimum	0.3346 in 8.5 mm

Battery	
Type	12V DC, Group 70
Quantity	1
Cold cranking ampere	450A
Reserve capacity @ 25A rate	125 minutes
Alternator Output	12V DC, 150 watts
Fan belt deflection	1/4 to 3/8 inch 7 to 9 mm

SPECIFICATIONS REV A

Generator

Generator output with engine @ 3000 rpm	54V DC, 100A
Generator pulley to engine pulley offset, maximum	1/16 inch 1.6 mm
Belt deflection, maximum	1/4 inch 6.5 mm

Generator Torque Specifications

Generator pulley retaining nut torque	80-90 ft-lbs 108-122 Nm
Engine pulley retaining bolts	108 in-lbs 12.2 Nm
#10 screw	25 in-lbs 2.8 Nm
#10 nut	25 in-lbs 2.8 Nm
#4 nut	8-10 in-lbs 0.9-1.1 Nm
Voltage regulator mounting fasteners	25 in-lbs 2.8 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.

NOTICE 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 / 24.4 Nm
-6	27 ft-lbs / 36.6 Nm
-8	40 ft-lbs / 54.2 Nm
-10	63 ft-lbs / 85.4 Nm
-12	90 ft-lbs / 122 Nm
-16	120 ft-lbs / 162.7 Nm
-20	140 ft-lbs / 190 Nm
-24	165 ft-lbs / 223.7 Nm

SPECIFICATIONS REV A

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	100	11.3	80	9	140	15.8	110	12.4	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, six months, annually and every 2 years as specified on the *Maintenance Inspection Report.*

⚠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 machine.
- ☑ Keep records on all inspections for three years.
- ☑ 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 Used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING Used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION With safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

CAUTION Without safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE Used to indicate operation or maintenance information.

- ⊙ 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

NOTICE 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, pump or engine 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. Store completed forms for three years.

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

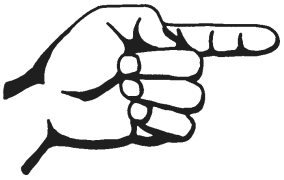
Inspector company

Genie®
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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**
☐	**Six Month 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.
- 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

Comments

Checklist A - Rev B		**Y**	**N**	**R**
A-1	Pre-operation inspection			
A-2	Function tests			
A-3	Generator belts and pulleys			
Perform after 50 hours:				
A-4	30 Day Service			
Perform every 50 hours:				
A-5	Perform engine maintenance			
Perform every 75 hours:				
A-6	Perform engine maintenance			
Perform every 100 hours:				
A-7	Grease rotation bearing			
A-8	Perform engine maintenance			
Perform every 150 hours:				
A-9	Perform engine maintenance			
Perform every 200 hours:				
A-10	Perform engine maintenance			

Checklist B - Rev B		**Y**	**N**	**R**
B-1	Radiator			
B-2	Exhaust system			
B-3	Batteries			
B-4	Electrical wiring			
B-5	Lug nut torque			
B-6	Brake configuration			
B-7	Drive hub oil level			
B-8	Engine RPM			
B-9	Ground control override			
B-10	Platform leveling			
B-11	Engine idle select			
B-12	Drive brakes			
B-13	Drive speed - stowed			
B-14	Drive speed - raised			
B-15	Alarm package (if equipped)			
B-16	Turntable rotation stop			
B-17	Electrical contactors			
B-18	Hydraulic oil analysis			

Checklist C - Rev B		**Y**	**N**	**R**
C-1	Perform engine maintenance			
C-2	Grease platform overload (if equipped)			
C-3	Test platform overload (if equipped)			
Perform every 800 hours:				
C-4	Perform engine maintenance			

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**
☐	**Six Month 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.
- 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

Comments

Checklist D - Rev B		**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			
D-7	Calibrate platform overload system (if equipped)			
Perform every 1000 hours:				
D-8	Perform engine maintenance			
Perform every 1500 hours:				
D-9	Perform engine maintenance			

Checklist E - Rev B		**Y**	**N**	**R**
E-1	Hydraulic oil			
E-2	Wheel bearings			
E-3	Perform engine maintenance			

Checklist A Procedures

REV B

A-1
Perform Pre-operation Inspection

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 *Genie Z-45/25 Bi-Energy and Genie Z-45/25J Bi-Energy Operator's Manual* on your machine.

A-2
Perform Function Tests

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 *Genie Z-45/25 Bi-Energy and Genie Z-45/25J Bi-Energy Operator's Manual* on your machine.

CHECKLIST A PROCEDURES REV B

A-3
Check the Generator Belts and Pulleys

Maintaining the generator belts and the pulleys is essential to good engine performance and service life. The generator will not operate properly with loose or defective belts and continued use may cause component damage.

⚠WARNING Bodily injury hazard. Do not inspect while the engine is running. Remove the key to secure from operation.

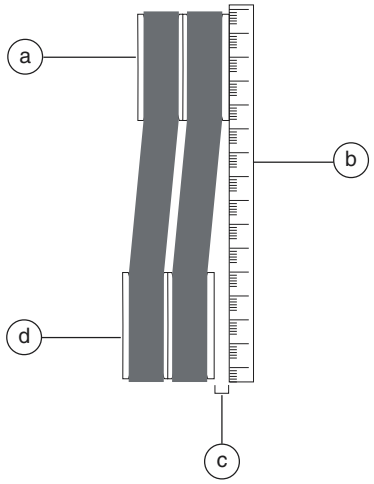
⚠CAUTION Bodily injury hazard. Beware of hot engine components. Contact with hot engine components may cause severe burns.

NOTICE Charging the batteries with the engine does not fully charge the batteries. Periodically, use the AC battery charger to fully charge the batteries.

1 Be sure that all fasteners and cables on the generator are tight.

2 Be sure that the pulley mounting fasteners are tight and that the pulleys show no signs of damage or unusual wear.

3 Check to be sure the engine pulley and the generator pulley are aligned within specification using a straightedge. Refer to Section 2, *Specifications*.



a engine pulley
b straightedge
c maximum pulley offset
d generator pulley

NOTICE If alignment does not meet specification, refer to Repair Procedure 6-3, *How to Install the Engine Drive Pulley* to adjust the pulley alignment.

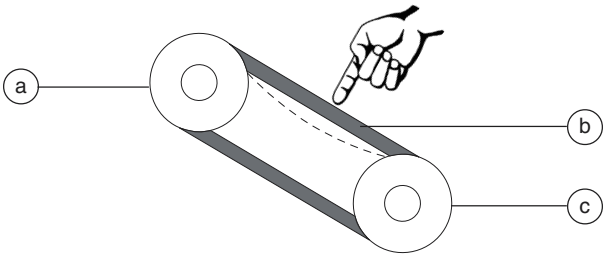
4 Inspect the generator belts for:

- Cracking
- Glazing
- Separation
- Breaks

5 Replace both belts if any damage is found.

6 Check the generator belts for proper tension. Refer to Section 2, *Specifications*.

NOTICE If the belt deflection is not within specification, see repair procedure 7-2, *How to Adjust the Generator Belts.*



a engine pulley
b generator belts
c generator pulley

7 Check the torque of the pulley retaining nut on the generator. Refer to Section 2, S*pecifications*.

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 50 hours of usage. After this interval, refer to the maintenance tables for continued scheduled maintenance.

1 Perform the following maintenance procedures:

- B-5 Check the Lug Nut Torque (including tires and wheels)
- D-2 Check the Turnable Rotation Bearing Bolts
- D-5 Replace the Hydraulic Tank Return Filter

CHECKLIST A PROCEDURES REV B

A-5
Perform Engine Maintenance



NOTICE Engine specifications require that this procedure be performed every 50 hours.

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

A-6
Perform Engine Maintenance



NOTICE Engine specifications require that this procedure be performed every 75 hours.

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

REV B CHECKLIST A PROCEDURES

A-7
Grease the Turntable Rotation Bearing and Rotate Gear

NOTICE Genie specifications require that this procedure be performed every 100 hours of operation. Perform this procedure more often if dusty conditions exist.

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

1 Locate the grease fitting on the front turntable cover.

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

A-8
Perform Engine Maintenance

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

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

CHECKLIST A PROCEDURES REV B

A-9
Perform Engine Maintenance

NOTICE Engine specifications require that this procedure be performed every 150 hours.

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

A-10
Perform Engine Maintenance

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

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

Checklist B Procedures

REV B

B-1
Check the Radiator



Maintaining the radiator in good condition is essential for good engine performance. Operating a machine with a damaged or leaking radiator may result in engine damage. Also, restricting air flow through the radiator (i.e., dirt or debris) will affect the performance of the cooling system. A frequent check allows the inspector to identify changes in the condition of the radiator that might indicate cooling system problems.

⚠WARNING Bodily injury hazard. Do not inspect while the engine is running. Remove the key to secure from operation.

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

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine pivot plate out away from the machine to access the radiator.

3 Inspect the radiator for leaks and physical damage.

4 Clean the radiator fins of debris and foreign materials.

5 Swing the engine back to its original position and close the engine pivot plate latch.

6 Install the engine pivot plate latch retainer.

B-2
Check the Exhaust System



Maintaining the exhaust system is essential to good engine performance and service life. Running the engine with a damaged or leaking exhaust system can cause component damage and unsafe operating conditions.

⚠WARNING Bodily injury hazard. Do not inspect while the engine is running. Remove the key to secure from operation.

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

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine pivot plate out away from the machine to access the exhaust system.

3 Be sure that all nuts and bolts are tight.

4 Inspect all welds for cracks.

5 Inspect for exhaust leaks; i.e., carbon buildup around seams and joints.

CHECKLIST B PROCEDURES REV B

B-3
Check the Batteries

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

⚠WARNING Electrocution 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.

NOTICE Perform this procedure after fully charging the batteries.

NOTICE Charging the batteries with the engine does not fully charge the batteries. Periodically, use the AC battery charger to fully charge the batteries.

NOTICE The engine battery is a maintenance free battery and does not require the replenishing of electrolyte.

NOTICE For a more accurate determination of battery condition, fully charge the batteries and allow the batteries to rest 24 hours before performing this procedure to allow the battery cells to equalize.

1 Put on protective clothing and eye wear.

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

3 Be sure that the cable connections are tight.

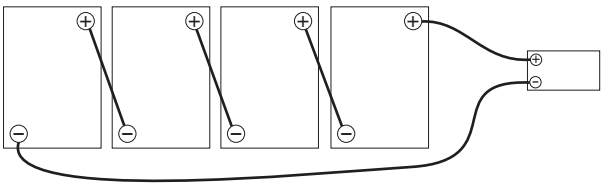
4 Remove the battery vent caps and check the specific gravity of each battery cell with a hydrometer.

⊙ Result: If any battery cell displays a specific gravity of less than 1.026, the battery must be replaced.

5 Check the battery acid level of the battery. If needed, replenish with distilled water to the bottom of the battery fill tube. Do not overfill.

6 Install the battery vent caps.

7 Be sure the battery packs are wired correctly.



B-4
Inspect the Electrical Wiring

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 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
- Generator and power units
- Engine wiring harness

2 **After serial number 21180:** 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 **After serial number 21180:** Inspect for a liberal coating of dielectric grease at the following location:

- All wire harness connectors to the platform control box

CHECKLIST B PROCEDURES REV B

B-5
Check the Lug Nut Torque (including the tires and wheels)

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

⚠DANGER Tip over hazard. An over-inflated tire can explode which will compromise machine stability and and cause the machine to tip over.

⚠WARNING Bodily injury hazard. An over-inflated tire can explode and could result in death or serious injury.

⚠WARNING Tip-over hazard. Do not use temporary flat tire repair products.

NOTICE The tires on some machines are foam-filled and do not need air added to them.

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

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

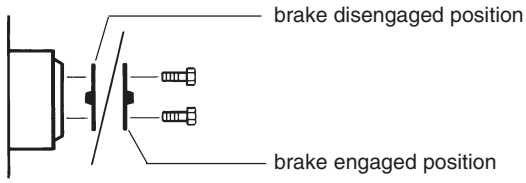
3 Check each lug nut for proper torque. Refer to Section 2, *Specifications.*

4 Check the pressure in each air-filled tire. Refer to Section 2, *Specifications.*

B-6
Confirm the Proper Brake Configuration

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.

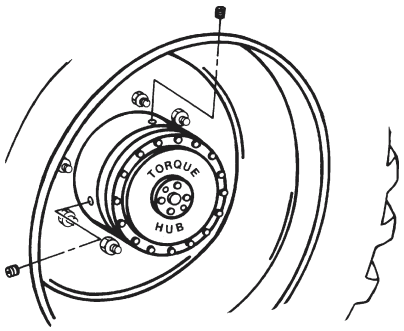


REV B CHECKLIST B PROCEDURES

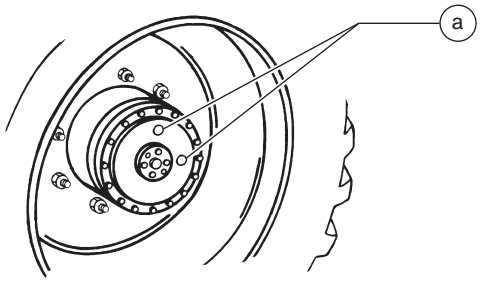
B-7
Check the Oil Level in the Drive Hubs

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

1 Drive the machine to rotate the hub until one of the plugs is located on top and the other one 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 side plug hole.

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

4 **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.

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

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

CHECKLIST B PROCEDURES REV B

B-8
Check and Adjust the Engine RPM

Maintaining the engine rpm at the proper setting for both low and high idle is essential to good engine performance and service life. The machine will not operate properly if the rpm is incorrect and continued use may cause component damage.

1 Remove the engine pivot plate latch retainer.

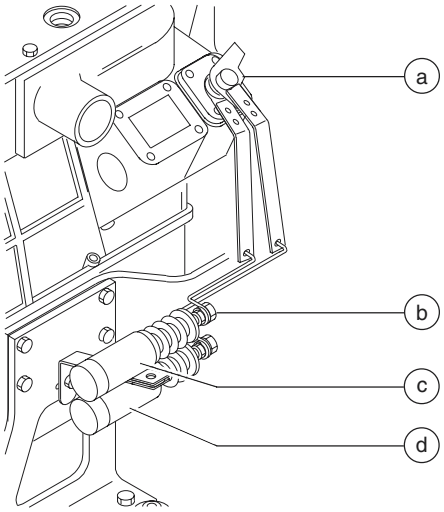
2 Open the engine pivot plate latch and swing the engine pivot plate out away from the machine.

3 Connect an rpm gauge to the engine, and then start the engine from the ground controls.

⊙ Result: Low idle should be 2000 rpm.

Skip to step 5 if the low idle rpm is correct.

4 Loosen the lock nut, then turn the low idle adjustment screw clockwise to increase the rpm or counterclockwise to decrease the rpm. Tighten the lock nut and recheck the rpm.



a low idle adjustment screw (not shown)
b high idle adjustment nut
c rpm solenoid
d fuel shut off solenoid

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

⊙ Result: High idle should be 3000 rpm.

Skip to step 7 if the high idle rpm is correct.

6 Loosen the lock nut on the solenoid, then turn the solenoid boot counterclockwise to increase the rpm or clockwise to decrease the rpm. Tighten the lock nut and recheck the rpm.

NOTICE Be sure the solenoid fully retracts when activating high idle.

7 Swing the engine back to its original position and close the engine pivot plate latch.

8 Install the engine pivot plate latch retainer.

B-9
Test the Ground Control Override

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 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.

CHECKLIST B PROCEDURES REV B

B-10
Test the Platform Self-leveling

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

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-11
Test the Engine Idle Select

A properly operating engine idle select switch is essential to good engine performance and safe machine operation. There are three settings.

Low idle (turtle symbol): Low idle and slow battery charging.

High idle (rabbit symbol): High idle and quickest battery charging.

Foot switch activated high idle (rabbit and foot switch symbols): Activates high idle only when the foot switch is pressed down.

1 Start the engine from the ground controls. Move the engine idle select toggle switch to high idle (rabbit symbol).

⊙ Result: The engine should change to high idle.

3 Release the engine idle select toggle switch.

⊙ Result: The engine should return to low idle.

4 Turn the key switch to platform controls.

5 At the platform controls, move the engine idle select toggle switch to high idle (rabbit symbol).

⊙ Result: The engine should change to high idle.

6 Move the engine idle select toggle switch to low idle (turtle symbol).

⊙ Result: The engine should change to low idle.

7 Move the engine idle select toggle switch to foot switch activated high idle (rabbit and foot switch symbol).

⊙ Result: The engine should **not** change to high idle.

8 Press down the foot switch.

⊙ Result: The engine should change to high idle.

REV B CHECKLIST B PROCEDURES

B-12
Test the Drive Brakes

Proper brake action is essential to safe machine operation. The machine uses drive motor regenerative braking to stop the machine. Hydraulically-released individual wheel brakes hold the machine once it has stopped. The drive motor regenerative braking should operate smoothly, free of hesitation and jerking. Hydraulically-released individual wheel brakes can appear to operate normally when not fully operational.

⚠WARNING Collision hazard. Be sure that the machine is not in free-wheel or partial free-wheel configuration. Refer to B-4, *Confirm the Proper Brake Configuration*.

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

1 Mark a test line on the ground for reference.

2 Lower the boom into the stowed position.

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

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

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

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

B-13
Test the Drive Speed - Stowed Position

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.

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

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

2 Lower the boom into the stowed position.

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

4 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.

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

CHECKLIST B PROCEDURES REV B

B-14
Test the Drive Speed - Raised or Extended Position

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.

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

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

2 Raise the platform more than 5 feet / 1.5 m.

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

4 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.

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

B-15
Test the Alarm Package (if equipped)

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 turntable covers.

NOTICE The alarms and beacon will operate with the engine running or not running.

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-16
Test the Turntable Rotation Stop

The turntable is capable of rotating the boom 355 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 REV B

B-17
Check the Electrical Contactors



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.

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

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

- Excessive burns
- Excessive arcs
- Excessive pitting

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

NOTICE Replace the contactors if any damage is found.

B-18
Perform Hydraulic Oil Analysis



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.

NOTICE 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.*

REV B CHECKLIST B PROCEDURES

B-19
Perform Engine Maintenance



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

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

Checklist C Procedures

REV B

C-1
Perform Engine Maintenance



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

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

C-2
Grease the Platform Overload Mechanism (if equipped)



NOTICE 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.

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

C-3
Test the Platform Overload System (if equipped)

NOTICE 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.

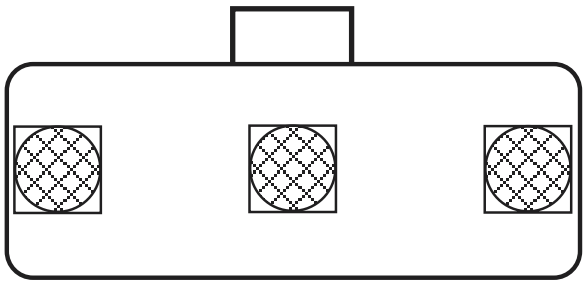
NOTICE Perform this procedure with the machine on a firm, level surface.

1 Turn the key switch to platform control.

2 Level the platform from the platform controls.

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

4 Using a suitable lifting device, place an appropriate test weight equal to that of the maximum platform capacity in one of the locations shown.



⊙ Result: The platform overload indicator light should be off at both the ground and platform controls.

5 Carefully move the test weight to each remaining location.

⊙ Result: The platform overload indicator light should be off at both the ground and platform controls.

6 Add an additional 10 lbs / 4.5 kg of weight to overload the platform.

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

⊠ Result: If the alarm does not sound and the platform overload indicator light does not come on with the test weights in any of the platform locations, the platform overload system needs to be calibrated. See D-6, *Calibrate the Platform Overload System*.

NOTICE There may be an approximate 2 second delay before the overload indicator light turns on and the alarm sounds.

CHECKLIST C PROCEDURES REV B

7 Carefully move the test weights to each remaining location in the platform.

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

⊠ Result: If the alarm does not sound and the platform overload indicator light does not come on with the test weights in any of the platform locations, the platform overload system needs to be calibrated. See D-6, *Calibrate the Platform Overload System*.

NOTICE There may be an approximate 2 second delay before the overload indicator light turns on 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.

NOTICE Machine functions should still operate with auxiliary power at the ground controls.

11 Lift the test weights off the platform floor using a suitable lifting device.

⊙ Result: The platform overload indicator light and alarm should turn off at both the ground and platform controls.

NOTICE There may be an approximate 2 second delay before the overload indicator light and alarm turn off.

12 Test all machine functions from the ground controls.

⊙ Result: All ground control functions should operate normally.

13 Turn the key switch to platform control.

14 Test all machine functions from the platform controls.

⊙ Result: All platform control functions should operate.

NOTICE If the platform overload system is not operating properly, see D-6, *Calibrate the Platform Overload System.*

C-4
Perform Engine Maintenance



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

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

Checklist D Procedures

REV B

D-1
Check the Primary Boom Wear Pads



Maintaining the 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 extremely worn 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 specification, 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 may cause binding or scraping of the boom.

NOTICE Always maintain squareness between the outer and inner boom tubes.

Primary boom wear pad specifications	New	Minimum
Top, bottom and side wear pads (platform end of boom)	3/4 inch 19 mm	5/8 inch 15.9 mm
Side and bottom wear pads (pivot end of boom)	5/8 inch 15.9 mm	1/2 inch 12.7 mm
Top wear pads (pivot end of boom)	3/4 inch 19 mm	5/8 inch 15.9 mm

D-2
Check the Turntable Rotation Bearing Bolts



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.

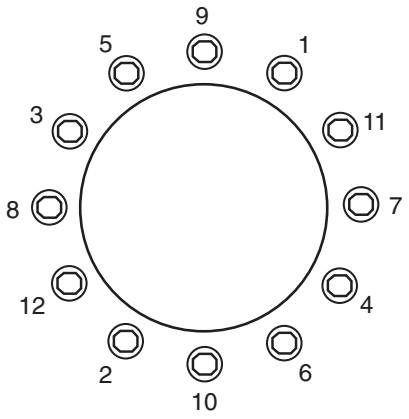
1 Raise the primary boom and place a safety chock on the lift cylinder rod. Carefully lower the boom onto the lift cylinder safety chock.

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

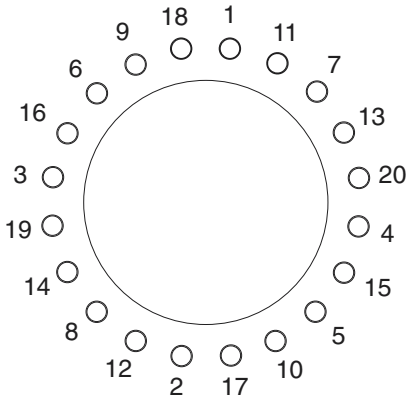
NOTICE A lift cylinder safety chock is available through Genie (part number 33484).

REV B CHECKLIST D PROCEDURES

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



Bolt torque sequence
(before serial number 23332)

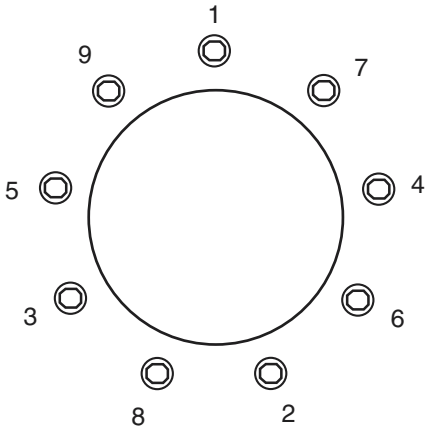


Bolt torque sequence
(after serial number 23331)

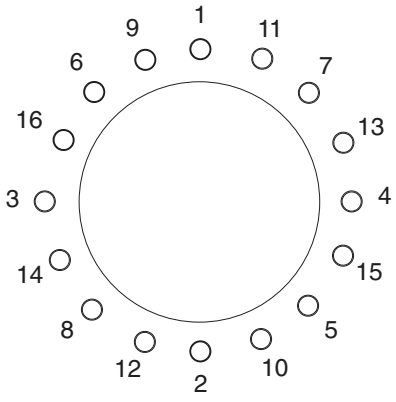
3 Lower the boom to the stowed position.

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
(before serial number 23332)



Bolt torque sequence
(after serial number 23331)

CHECKLIST D PROCEDURES REV B

D-3
Check the Free-wheel Configuration

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 could result in death or serious injury and property damage.

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

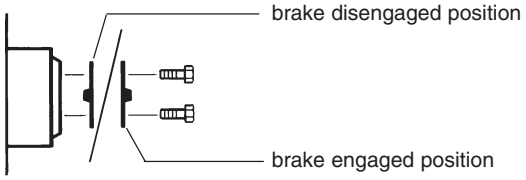
CAUTION Component damage hazard. If the machine must be towed, do not exceed 2 mph / 3.2 km/h.

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

2 Center a lifting jack of ample capacity (20,000 lbs / 10,000 kg under the drive chassis between the non-steer tires.

3 Lift the wheels off the ground and then 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 Re-engage the drive hubs by turning over the hub disconnect caps. Rotate each wheel to check for engagement. Lift the machine and remove the jack stands.

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

REV B CHECKLIST D PROCEDURES

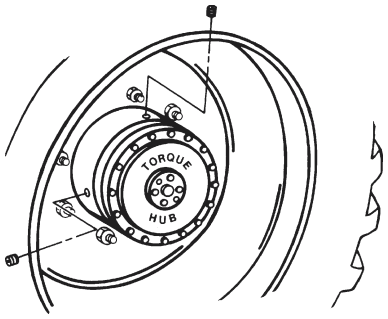
D-4
Replace the Drive Hub Oil

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.

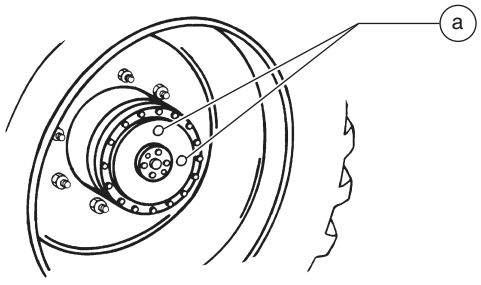
1 Select the drive hub to be serviced. Then drive the machine until one of the two plugs is at the lowest point.

2 Remove both plugs and drain the oil.

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



models with pipe plugs



a 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 side plug hole.

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 steps 1 through 5 for the other drive hub.

CHECKLIST D PROCEDURES REV B

D-5
Replace the Hydraulic Tank Return Filter



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

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

1 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 out 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



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.

NOTICE Perform this procedure with the machine on a firm, level surface and the boom in the stowed position.

1 Grease the turntable bearing. See A-7, *Grease the Turntable Bearing and Rotate Gear.*

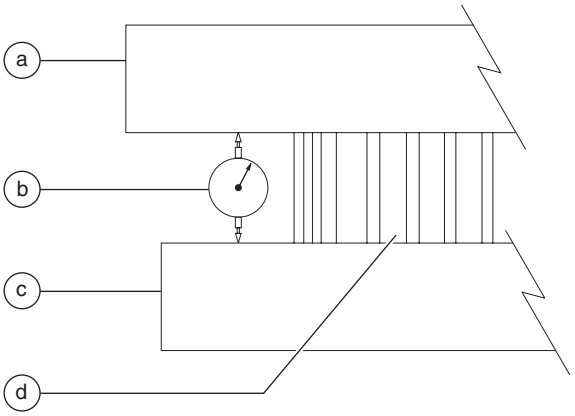
2 Torque the turntable bearing bolts to specification. See D-2, *Check the Turntable Rotation Bearing Bolts.*

3 Start the machine from the ground controls and raise the primary and secondary booms to full height. Do not extend the primary boom.

REV B CHECKLIST D PROCEDURES

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

NOTICE 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 At the dial indicator, adjust it to "zero" the indicator.

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 "zero" 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 D PROCEDURES REV B

D-7
Calibrate the Platform Overload System (if equipped)




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

Yearly 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.

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

1 Level the platform.

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

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

Determine the limit switch trigger point:

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

⊙ Result: **The overload indicator light and the alarm is on.** Slowly tighten the load spring adjustment nut by turning it clockwise just until the overload indicator light and alarm turns off.

NOTICE The platform will need to be moved up and down and allowed to settle in between adjustments.

NOTICE There may be an approximate 2 second delay before the overload indicator light turns on and the alarm sounds.

⊙ Result: **The overload indicator light and alarm is off.** Slowly loosen the load spring adjustment nut by turning it counterclockwise just until the overload indicator light and alarm turn on.

NOTICE There may be an approximate 2 second delay before the overload indicator light turns on and the alarm sounds.

NOTICE The platform will need to be moved up and down and allowed to settle in between adjustments.

Confirm the setting:

5 Turn the key switch to platform control.

6 Lift the test weight off the platform floor using a suitable lifting device.

7 Place the test weight back onto the center of the platform floor using a suitable lifting device.

⊙ Result: The alarm should be off. The platform overload indicator light should be off at both the ground and platform controls.

NOTICE There may be an approximate 2 second delay before the overload indicator light and alarm turn off.

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

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

NOTICE There may be an approximate 2 second delay before the overload indicator light turns on and the alarm sounds.

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.

NOTICE If the platform overload system is not operating properly, repeat steps 1 through 4.

D-8
Perform Engine Maintenance



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

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

CHECKLIST D PROCEDURES REV B

D-9
Perform Engine Maintenance



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

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

Checklist E Procedures

REV B

E-1
Test or Replace the Hydraulic Oil



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.

NOTICE 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.**

NOTICE Perform this procedure with the boom in the stowed position.

NOTICE 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.

CAUTION 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.

CAUTION 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 of oil.

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

E-2
Grease the Steer Axle Wheel Bearings



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, then 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.

REV B 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 35 ft-lbs / 47 Nm to seat the bearings.

8 Loosen the castle nut and re-tighten to 8 ft-lbs / 11 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 and 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.

NOTICE 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.

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.

NOTICE Always replace the bearing grease seal when removing the hub.

16 Slide the hub onto the yoke spindle.

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

17 Place the outer bearing into the hub.

18 Install the washer and castle nut.

19 Tighten the castle nut to 35 ft-lbs / 47 Nm to seat the bearings.

20 Loosen the castle nut and re-tighten to 8 ft-lbs / 11 Nm.

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

NOTICE Always use a new cotter pin when installing a castle nut.

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

CHECKLIST E PROCEDURES REV B

E-3
Perform Engine Maintenance



NOTICE Engine specifications require that this procedure be performed every 2000 hours or every two years, whichever comes first.

Proper engine maintenance, following the engine manufacturer's maintenance schedule, is essential to good engine performance and service life. Failure to perform the maintenance procedures can lead to poor engine performance and component damage.

Required maintenance procedures and additional engine information are available in the *Kubota Z482-E Operator's Manual* (Kubota part number 16676-89163).

Kubota Z482-E Operator's Manual	
Genie part number	52958

To access the engine:

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine.

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 *Genie Z-45/25 Bi-Energy and Genie Z-45/25J Bi-Energy 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 Used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING Used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION With safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

CAUTION Without safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE Used to indicate operation or maintenance information.

⊙ 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.

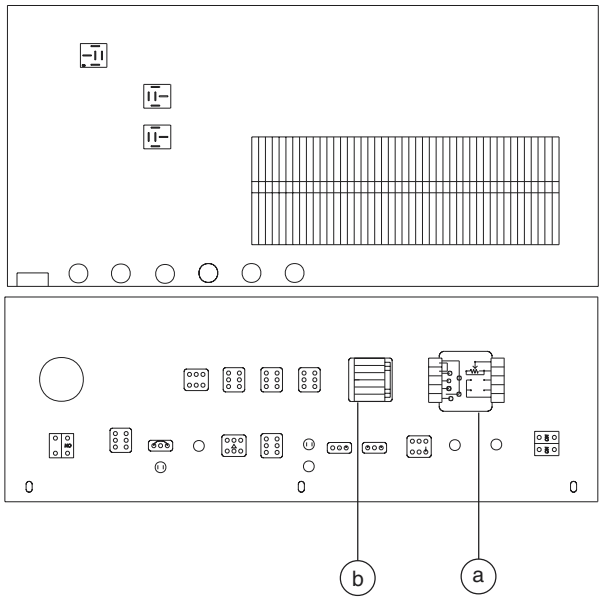
Platform Controls

REV B

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. See the Troubleshooting 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.



a boom function speed controller
b drive joystick

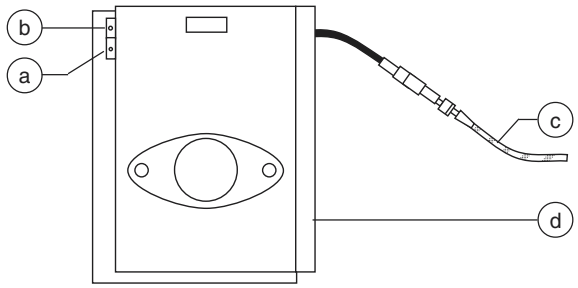
Boom Function Speed Controller Adjustments

NOTICE Do not adjust the controllers unless the static battery supply voltage is above 24V DC at the platform red Emergency Stop button.

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

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

Before serial number 21180:

3 Remove the wht/red wire from TP6. Temporarily insert a short piece of stripped wire into TP6.

4 Connect the red (+) lead from an amp meter to the wht/red wire. Connect the black (-) lead to the piece of wire at TP6.

From serial number 21180 to 23235:

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.

All models:

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.

9 **Before serial number 21180:** Remove the temporary wire from TP6 and install the wht/red wire into TP6.

Boom function speed controller specifications	
Threshold	0.17 to 0.18A
Max-out	0.54 to 0.55A

Platform Components

REV B

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 Platform Leveling Slave Cylinder

NOTICE Before cylinder removal is considered, bleed the slave cylinder to be sure there is no air in the closed loop.

NOTICE 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.

NOTICE 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.

CAUTION 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

1 Raise the primary boom to a horizontal position.

2 Move the platform level switch up and down through two platform leveling cycles to remove any air that might be in the system.

2-2 Platform Rotator

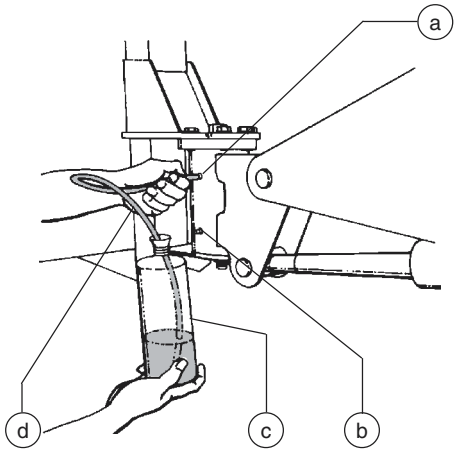
How to Bleed the Platform Rotator

NOTICE This procedure will require two people.

1 Move the function enable toggle switch to either side and 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.

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.

REV B

Jib Boom Components, Z-45/25J

3-1
Jib Boom

How to Remove the Jib Boom

NOTICE Perform this procedure with the boom in the stowed position.

NOTICE 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 and 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 and 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.

3-2
Jib Boom Lift Cylinder

How to Remove the Jib Boom Lift Cylinder

NOTICE Perform this procedure with the boom in the stowed position.

NOTICE 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.

NOTICE 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 half way out. Then 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 and 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

REV B

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

NOTICE 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. Number 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 located on 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.

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 in 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.

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

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

NOTICE 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. Number 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.

PRIMARY BOOM COMPONENTS REV B

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 on the counterbalance valve manifold located on 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.

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.

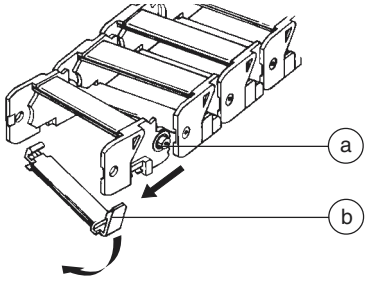
⚠WARNING Crushing hazard. The cable track could become unbalanced and fall if not properly attached to the overhead crane.

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

How to Repair the Primary Boom Cable Track

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

NOTICE 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.

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.

NOTICE Perform this procedure with the boom in the stowed position.

NOTICE 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.

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. Then lower the cylinder and let it hang down.

CAUTION 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, then 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

NOTICE 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.

NOTICE 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.

NOTICE 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.

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

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.

NOTICE 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.

NOTICE 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.

CAUTION 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.

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

NOTICE Note the length of the cylinder after removal. The cylinder must be at the same length for installation.

4-5 Platform Leveling Master Cylinder

The master cylinder acts as a pump for the slave cylinder. It's 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

NOTICE 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 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.

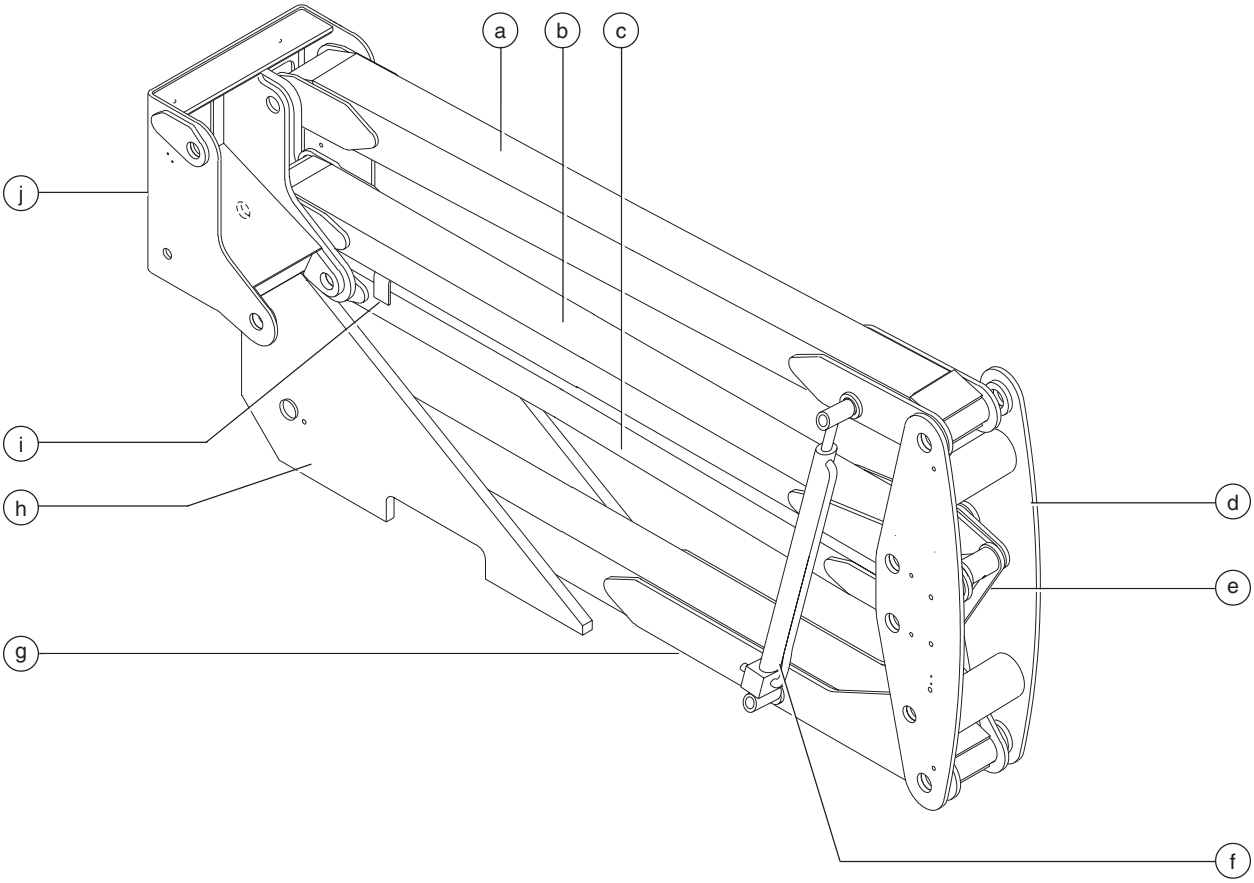
7 Place a rod through the rod-end pivot pin and twist to remove the pin.

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

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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

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.

NOTICE 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 3-2, *How to Remove the Primary Boom*.

4 Remove the master cylinder. See 4-5, *How to Remove the 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. Then 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.

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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.

CAUTION 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. Then lower the secondary boom assembly onto the block.

⚠WARNING Crushing hazard. The secondary boom assembly could fall if not properly supported by the 4 x 4 x 11 inch / 10 x 10 x 28 cm block.

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

CAUTION 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.

CAUTION 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. Then 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.

SECONDARY BOOM COMPONENTS REV B

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.

CAUTION 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 fuel tank filler cap.

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

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

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

NOTICE Be sure to only use a hand-operated pump suitable for use with gasoline and diesel fuel.

46 Tag, disconnect and plug the fuel hoses from the fuel tank. Clean up any fuel that may have spilled.

47 Remove the fuel tank mounting fasteners. Carefully remove the fuel tank from the machine.

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

NOTICE Clean the fuel tank and inspect for cracks and other damage before installing it onto the machine.

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

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

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

51 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.

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

53 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.

54 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.

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

56 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.

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

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

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

60 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.

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.

NOTICE 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.

CAUTION 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.

Kubota Z482-E Engine

REV A

6-1 Timing Adjustment

Complete information to perform this procedure is available in the *Kubota Z482-E Workshop Manual* (Kubota part number 97897-01165).

Kubota Z482-E Workshop Manual	
Genie part number	52956

6-2 RPM Adjustment

See the scheduled maintenance procedure B-8, *Check and Adjust the Engine RPM.*

6-3 Engine Drive Pulley

How to Remove the Engine Drive Pulley

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine to access the engine drive pulley.

3 Loosen the tension adjustment bolt on the generator.

4 Pull the generator away from the machine and remove the belts from the generator pulley.

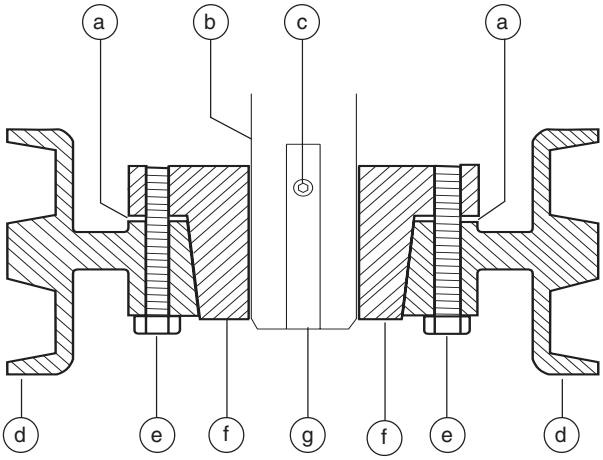
5 Remove the 3 bolts that attach the engine drive pulley to the shaft bushing.

6 Install the same 3 bolts that were removed in step 5 into the threaded holes of the engine drive pulley.

7 Carefully tighten each bolt evenly until the engine drive pulley slides off the shaft.

CAUTION Component damage hazard. The engine drive pulley and/or shaft can be damaged if the bolts are not tightened evenly.

8 Loosen the set screw on the pulley bushing, then slide the pulley bushing off of the engine shaft.



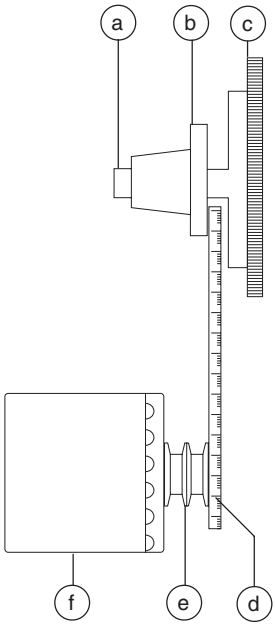
a gap
b shaft
c set screw
d engine drive pulley
e engine drive pulley bolt
f shaft bushing
g woodruff key

How to Install the Engine Drive Pulley

NOTICE The generator pulley must already be installed before performing this procedure. See 7-1, *How to Install the Generator Pulley*.

1 Align the woodruff key on the engine shaft with the slot in the pulley bushing and slide the pulley bushing onto the engine shaft. Do not tighten the set screw.

2 Align the flywheel side of the pulley bushing on the engine shaft with the outer face of the generator pulley using a straightedge.



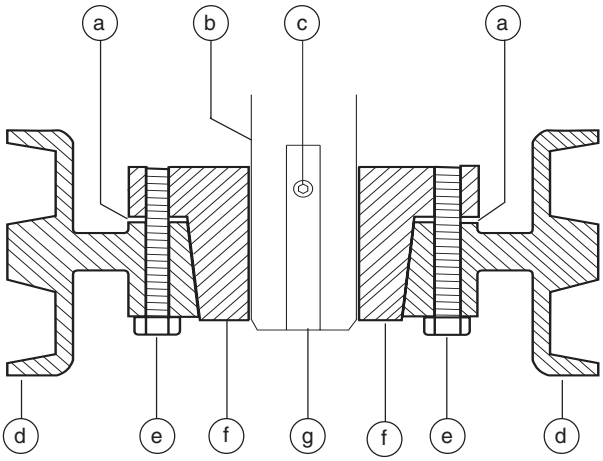
a pulley shaft
b pulley bushing
c engine flywheel
d straightedge
e generator pulley
f generator

3 Tighten the set screw on the pulley bushing hand tight.

4 Slide the engine pulley onto the pulley bushing.

5 Install the pulley mounting bolts and tighten them to specification. Refer to Section 2, *Specifications*.

CAUTION Component damage hazard. Do not overtighten the pulley mounting bolts. There must be a gap visible between the engine drive pulley and the pulley bushing.



a gap
b shaft
c set screw
d engine drive pulley
e pulley mounting bolt
f pulley bushing
g woodruff key

6 Check the alignment between the engine drive pulley and the generator pulley using a straightedge. Refer to Section 2, *Specifications*.

NOTICE If the pulley alignment is not within specification, remove the engine pulley and repeat steps 2 through 6. See 6-4, *How to Remove the Engine Drive Pulley.*

Generator

REV A

7-1 Generator Pulley

How to Remove the Generator Pulley

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine to access the generator pulley.

3 Loosen the tension adjustment bolt on the generator.

4 Pull the generator away from the machine and remove the belts from the generator pulley.

5 Disconnect the battery cables from the engine battery.

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

6 Remove the engine battery hold down, then remove the battery from the machine.

7 Remove the generator pulley retaining nut from the generator shaft.

8 Slide the pulley off of the generator shaft.

How to Install the Generator Pulley

NOTICE The pulley on the generator must be installed before installing the engine drive pulley.

1 Align the woodruff key on the generator shaft with the slot in the pulley and slide the pulley all the way onto the generator shaft.

2 Install the flat washer and pulley retaining nut onto the generator shaft, then torque the nut to specification. Refer to Section 2, *Specifications*.

3 Adjust the tension of the generator belts. See 7-2, *How to Adjust the Generator Belts.*

7-2 Generator Belts

How to Adjust the Generator Belts

1 Disconnect the battery packs.

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

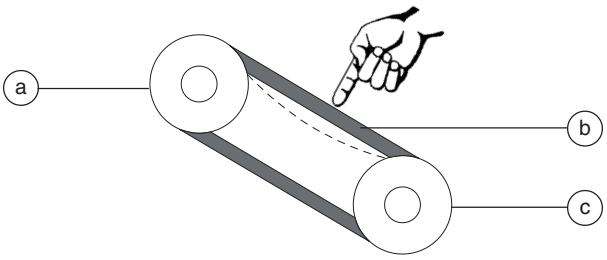
2 Remove the engine pivot plate latch retainer.

3 Open the engine pivot plate latch and swing the engine out away from the machine to access the generator belts.

4 Loosen the tension adjustment bolt on the generator.

5 Push the generator towards the machine and tighten the adjustment bolt.

6 Check the generator belts for proper tension. Refer to Section 2, *Specifications*. If the belt deflection is not within specification, perform steps 4 and 5 and re-check the belt tension.



a engine pulley
b generator belts
c generator pulley

7-3 Generator Voltage Regulator

How to Adjust the Generator Voltage Regulator

The voltage regulator regulates the output voltage of the generator. A properly adjusted voltage regulator is essential to good generator performance and service life. A defective or improperly adjusted voltage regulator could result in component damage.

NOTICE Be sure the batteries are fully charged before performing this procedure.

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine out away from the machine to access the generator.

3 Connect the positive lead of a voltmeter to the POS terminal on the generator and the negative lead of the voltmeter to the NEG terminal on the generator.

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

4 Start the engine from the ground controls and move the rpm select toggle switch to the maintained high idle position. Check the voltage on the generator.

⊙ Result: The voltage should be 54V DC.

5 If the voltage reading is not 54V DC, insert a small flat blade screwdriver into the potentiometer located inside of the generator. Use the access hole on the back of the generator labeled VOLT ADJ.

CAUTION Component damage hazard. Be sure that the screwdriver is properly inserted into the potentiometer or the generator and/or voltage regulator may become damaged.

6 Carefully adjust the potentiometer to obtain a 54V DC voltage reading. Turn the potentiometer clockwise to increase the voltage or counterclockwise to decrease the voltage. Do not rotate the potentiometer past the internal stops.

CAUTION Component damage hazard. The voltage regulator inside the generator will become damaged if the potentiometer is rotated past the internal stops.

NOTICE The maximum range of motion of the potentiometer on the voltage regulator is 280° and the maximum allowed torque is 5 oz-in / 0.035 Nm.

How to Replace the Voltage Regulator

1 Disconnect the battery packs from the machine.

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

2 Remove the engine pivot plate latch retainer.

3 Open the engine pivot plate latch and swing the engine out away from the machine to access the generator.

4 Tag and disconnect the positive and negative battery cables from the generator.

5 Loosen the tension adjustment bolt on the generator.

6 Pull the generator away from the machine and remove the belts from the generator pulley.

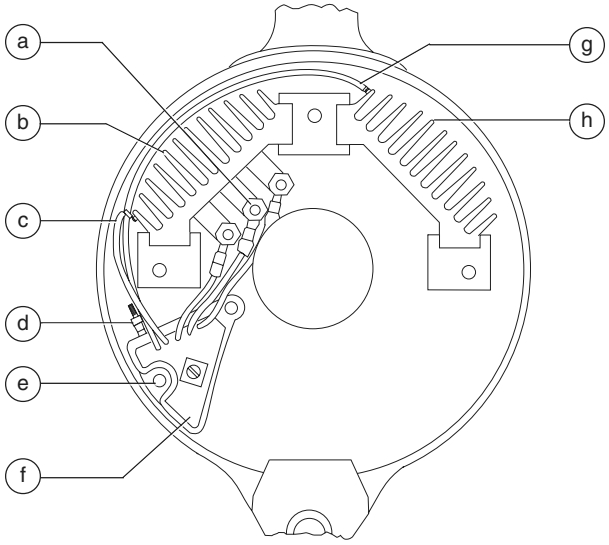
7 Remove the generator mounting fasteners then remove the generator from the machine.

8 Remove the 3 nuts from the battery cable terminal posts.

9 Remove the 3 screws that hold the plastic cover onto the generator. Carefully remove the cover.

GENERATOR REV A

10 Locate the 3 white wires that lead from the voltage regulator to the negative rectifier assembly.



a white wires (#10 nuts)
b negative rectifier assembly
c black wire (#10 screw)
d black wire (#4 nut)
e voltage regulator mounting fastener (#8 screw)
f voltage regulator
g red wire (#10 screw)
h positive rectifier assembly

11 Remove the nuts on those 3 wires from the negative rectifier assembly, then remove the wires.

NOTICE Do not remove the spacers from the underneath the wires on the negative rectifier assembly.

12 Locate the red wire that leads from the voltage regulator to the positive rectifier assembly.

13 Remove the screw that attaches the red wire to the positive recitfier assembly.

14 Remove the #4 nut that attaches the black wire to the voltage regulator.

15 Remove the voltage regulator mounting screws.

16 Remove the voltage regulator while carefully guiding the red and black wires from underneath the bottom support of the positive and negative rectifier assembly.

17 Install the new voltage regulator by following the previous steps in reverse order.

18 Apply Loctite® removable thread sealant onto the voltage regulator mounting fasteners and torque to specification. Refer to Section 2, *Specifications*.

19 Torque all fasteners to specification. Refer to Section 2, *Specifications*.

20 Install the plastic cover onto the generator then install the generator onto the machine.

21 Adjust the generator belts. See 7-2, *How to Adjust the Generator Belts.*

22 Adjust the voltage regulator. See 7-3, *How to Adjust the Voltage Regulator.*

CAUTION Component damage hazard. The voltage regulator and/or generator may become damaged if the voltage regulator is not properly adjusted after replacement.

NOTICE When the voltage regulator is replaced, the voltage regulator must be adjusted. See 7-3, *How to Adjust the Voltage Regulator.*

Hydraulic Pumps

REV B

8-1 Auxiliary Pump

How to Remove the Auxiliary Pump

NOTICE 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.

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 Remove the engine pivot plate latch retainer.

5 Open the engine pivot plate latch and swing the engine pivot plate out away from the machine.

6 Tag, disconnect and plug the hydraulic hoses from the auxiliary 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.

7 Remove the auxiliary pump mounting bolts. Carefully remove the pump.

8-2 Function Pump

How to Remove the Function Pump

NOTICE 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.

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 Remove the engine pivot plate latch retainer.

5 Open the engine pivot plate latch and swing the engine pivot plate out away from the machine.

6 Tag, disconnect and plug the hydraulic hoses from the pump.

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

7 Remove the function pump mounting bolts. Carefully remove the pump.

Manifolds

REV C

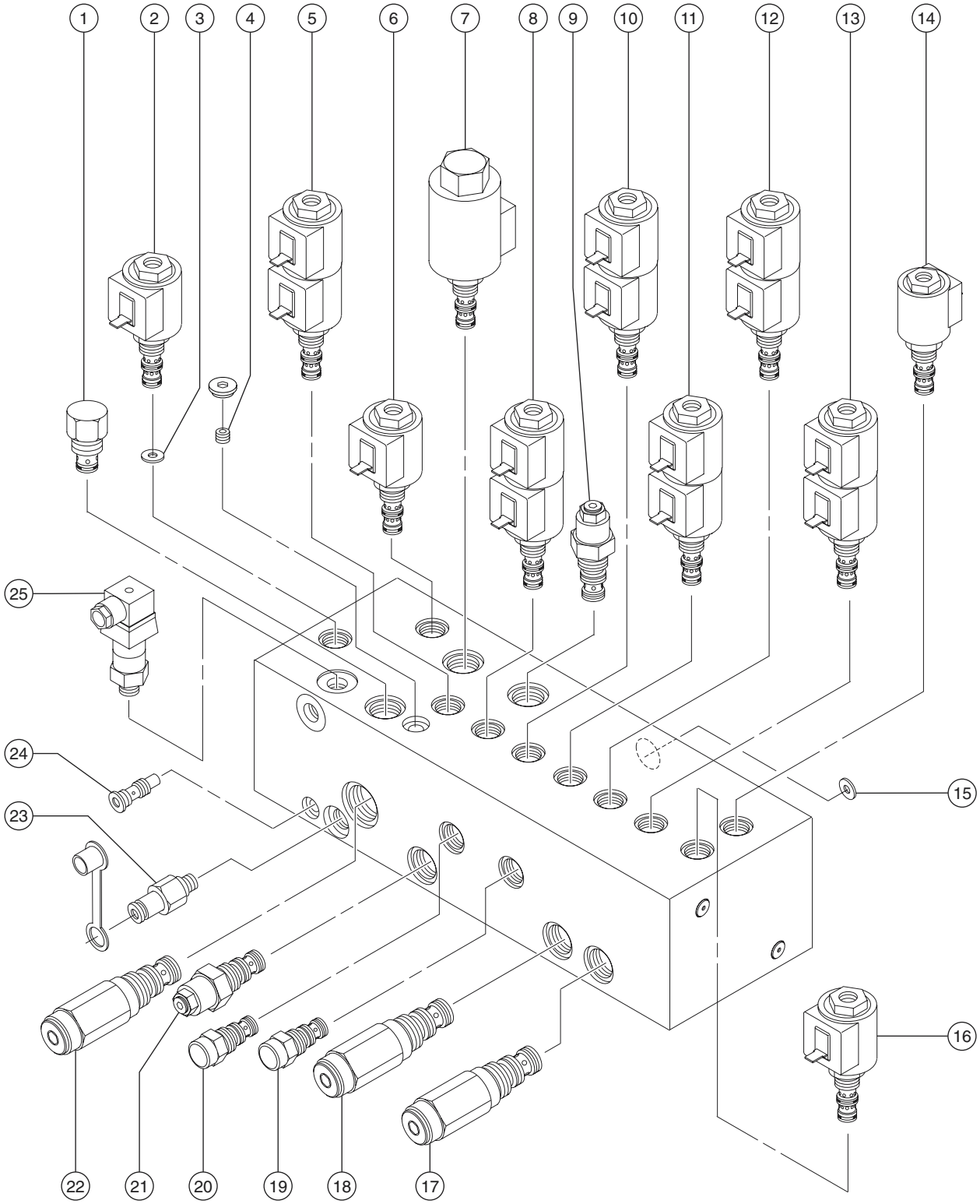
9-1
Function Manifold Components (before serial number 17841)

The function manifold is located next to the hydraulic tank underneath the ground controls side cover.

Index No.	Description	Schematic Item	Function	Torque
1	Differential sensing valve	A	All functions	20-25 ft-lbs / 27-34 Nm
2	Solenoid valve, N.O. poppet	B	Brake circuit	20-25 ft-lbs / 27-34 Nm
3	Orifice, 0.050 inch / 1.27 mm	C	Brake circuit	
4	Orifice, 0.060 inch / 1.5 mm	D	Steer circuit	
5	Solenoid valve, 3 position 4 way	E	Steer left/right	20-25 ft-lbs / 27-34 Nm
6	Solenoid valve, N.C. poppet	F	Brake circuit	20-25 ft-lbs / 27-34 Nm
7	Proportional solenoid valve	G	All functions	25-30 ft-lbs / 34-41 Nm
8	Solenoid valve, 3 position 4 way	H	Platform level up/down	20-25 ft-lbs / 27-34 Nm
9	Counterbalance valve	I	Platform level up	35-40 ft-lbs / 47-54 Nm
10	Solenoid valve, 3 position 4 way	J	Jib boom up/down and Platform rotate left/right	20-25 ft-lbs / 27-34 Nm
11	Solenoid valve, 3 position 4 way	K	Turntable rotate left/right	20-25 ft-lbs / 27-34 Nm
12	Solenoid valve, 3 position 4 way	L	Secondary boom up/down	20-25 ft-lbs / 27-34 Nm
13	Solenoid valve, 3 position 4 way	M	Primary boom up/down	20-25 ft-lbs / 27-34 Nm
14	Solenoid valve, 2 position 3 way	N	Primary boom extend	20-25 ft-lbs / 27-34 Nm
15	Orifice, 0.037 inch / 0.94 mm	O	Secondary boom up	
16	Solenoid valve, 2 position 3 way	P	Primary boom retract	20-25 ft-lbs / 27-34 Nm
17	Relief valve, 2300 psi / 158.7 bar (before serial number 11819)	Q	Primary boom down	25-30 ft-lbs / 34-41 Nm
18	Relief valve, 1800 psi / 124.1 bar	R	Secondary boom down	25-30 ft-lbs / 34-41 Nm
19	Flow regulator valve, 0.6 gpm / 2.27 L/min	S	Turntable rotate left/right (prevents overflowing the proportional valve)	10-12 ft-lbs / 14-6 Nm

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REV C MANIFOLDS

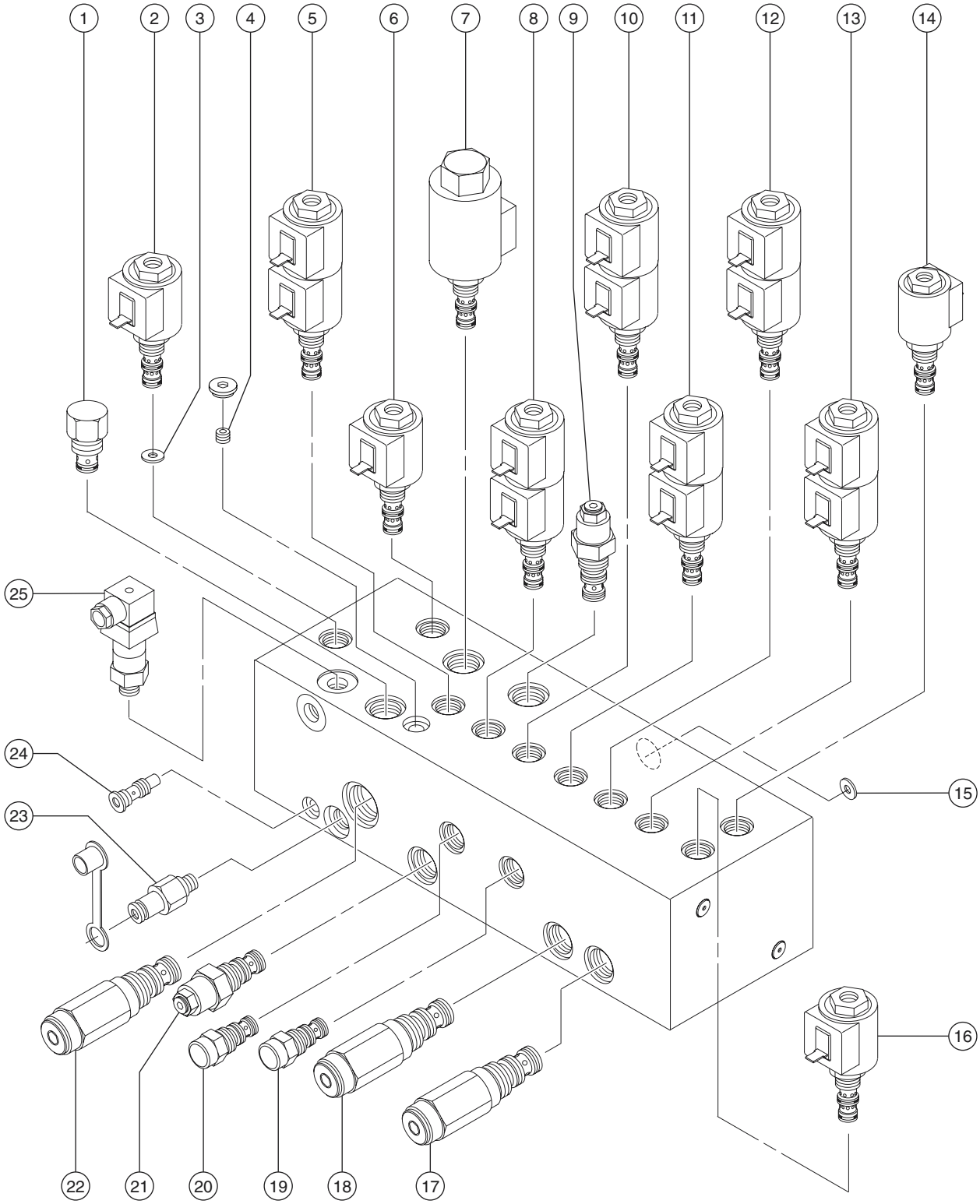


Function Manifold Components (before serial number 17841), continued

The function manifold is located next to the hydraulic tank underneath the ground controls side cover.

Index No.	Description	Schematic Item	Function	Torque
20	Flow regulator valve, 0.6 gpm / 2.27 L/min	T	Jib boom up/down, platform rotate left/right and platform level up/down (prevents overflowing the proportional valve)	10-12 ft-lbs / 14-6 Nm
21	Counterbalance valve	U	Platform level down	35-40 ft-lbs / 47-54 Nm
22	Relief valve, 3200 psi / 220.6 bar	V	System relief	35-40 ft-lbs / 47-54 Nm
23	Diagnostic nipple	W	Testing	
24	Check valve	X	Pressure switch circuit	10-12 ft-lbs / 14-6 Nm
25	Pressure switch	Y	Brake circuit	

REV C MANIFOLDS

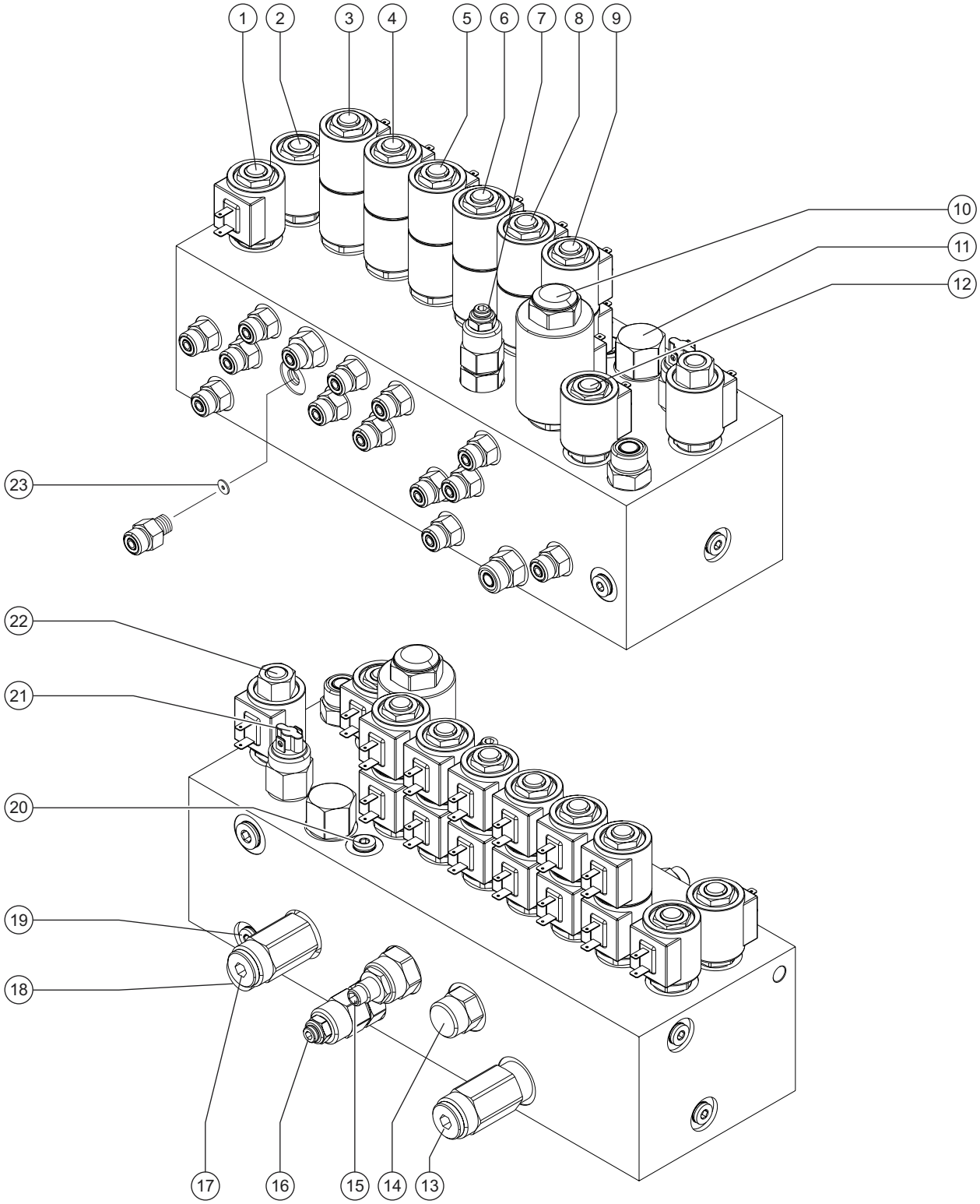


9-2
Function Manifold Components (from serial number 17841 to 20379)

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	AA	Primary boom retract	20 ft-lbs / 27 Nm
2	Solenoid valve, 2 position 3 way	AB	Primary boom extend	20 ft-lbs / 27 Nm
3	Solenoid valve, 3 position 4 way	AC	Primary boom up/down	25 ft-lbs / 34 Nm
4	Solenoid valve, 3 position 4 way	AD	Secondary boom up/down	25 ft-lbs / 34 Nm
5	Solenoid valve, 3 position 4 way	AE	Turntable rotate left/right	25 ft-lbs / 34 Nm
6	Solenoid valve, 3 position 4 way	AF	Platform rotate left/right and jib boom up/down (Z-45/25J)	25 ft-lbs / 34 Nm
7	Counterbalance valve	AG	Platform level up	20-25 ft-lbs / 27-34 Nm
8	Solenoid valve, 3 position 4 way	AH	Platform level up/down	25 ft-lbs / 34 Nm
9	Solenoid valve, 3 position 4 way	AI	Steer left/right	25 ft-lbs / 34 Nm
10	Proportional solenoid valve	AJ	Controls flow to functions	27 ft-lbs / 37 Nm
11	Differential sensing valve	AK	All functions	25 ft-lbs / 34 Nm
12	Solenoid valve, 2 position 2 way, N.C. poppet	AL	Brake circuit	20 ft-lbs / 27 Nm
13	Relief valve, 1800 psi / 124 bar	AM	Secondary boom down	20 ft-lbs / 27 Nm
14	Flow regulator valve, 0.6 gpm / 2.27 L/min	AN	Platform rotate, turntable rotate and jib boom circuits (Z-45/25J)	20 ft-lbs / 27 Nm
15	Flow control valve, 0.1 gpm / 0.38 L/min	AO	Platform level circuit	25 ft-lbs / 34 Nm
16	Counterbalance valve	AP	Platform level down	20-25 ft-lbs / 27-34 Nm
17	Relief valve, 3200 psi / 220.6 bar	AQ	System relief	20 ft-lbs / 27 Nm
18	Diagnostic nipple	AR	Testing	
19	Check valve	AS	Brake circuit	12-14 ft-lbs / 16-19 Nm
20	Orifice, 0.060 inch / 1.5 mm	AT	Steer circuit	
21	Pressure switch	AU	Brake circuit	
22	Solenoid valve, 2 position 2 way, N.O. poppet	AV	Brake circuit	20 ft-lbs / 27 Nm
—	Orifice, 0.030 inch / 0.76 mm (located under item VV)	AW	Brake circuit	
23	Orifice, 0.046 inch / 1.17 mm	AX	Secondary boom up	

REV C MANIFOLDS

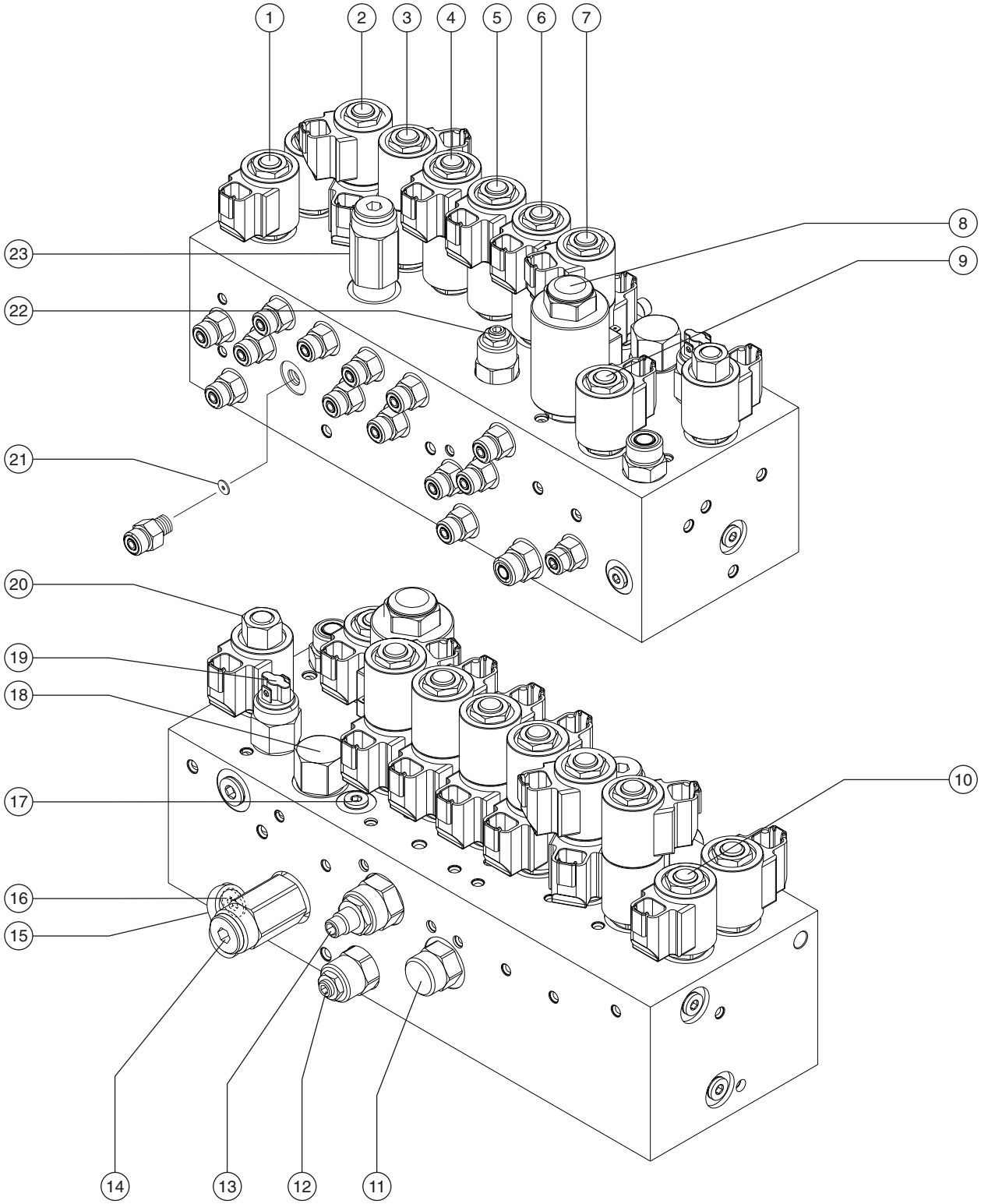


9-3
Function Manifold Components (from serial number 20380 to 22565)

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	BA	Primary boom retract	20 ft-lbs / 27 Nm
2	Solenoid valve, 3 position 4 way	BB	Primary boom up/down	25 ft-lbs / 34 Nm
3	Solenoid valve, 3 position 4 way	BC	Secondary boom up/down	25 ft-lbs / 34 Nm
4	Solenoid valve, 3 position 4 way	BD	Turntable rotate left/right	25 ft-lbs / 34 Nm
5	Solenoid valve, 3 position 4 way	BE	Platform rotate left/right and jib boom up/down (Z-45/25J)	25 ft-lbs / 34 Nm
6	Solenoid valve, 3 position 4 way	BF	Platform level up/down	25 ft-lbs / 34 Nm
7	Solenoid valve, 3 position 4 way	BG	Steer left/right	25 ft-lbs / 34 Nm
8	Proportional solenoid valve	BH	Controls flow to functions	27 ft-lbs / 37 Nm
9	Solenoid valve, 2 position 2 way, N.C. poppet	BI	Brake circuit	20 ft-lbs / 27 Nm
10	Solenoid valve, 2 position 3 way	BJ	Primary boom extend	20 ft-lbs / 27 Nm
11	Flow regulator valve, 0.6 gpm / 2.27 L/min	BK	Platform rotate and turntable rotate circuits	20 ft-lbs / 27 Nm
12	Counterbalance valve	BL	Platform level down	20-25 ft-lbs / 27-34 Nm
13	Flow control valve	BM	Platform level circuit	25 ft-lbs / 34 Nm
14	Relief valve, 3200 psi / 220.6 bar	BN	System relief	20 ft-lbs / 27 Nm
15	Diagnostic nipple	BO	Testing	
16	Check valve	BP	Brake circuit	12-14 ft-lbs / 16-19 Nm
17	Orifice, 0.060 inch / 1.5 mm	BQ	Steer circuit	
18	Differential sensing valve	BR	All functions	25 ft-lbs / 34 Nm
19	Pressure switch	BS	Brake circuit	
20	Solenoid valve, 2 position 2 way, N.O. poppet	BT	Brake circuit	20 ft-lbs / 27 Nm
—	Orifice, 0.030 inch / 0.76 mm (located under item BT)	BU	Brake circuit	
21	Orifice, 0.046 inch / 1.17 mm	BV	Secondary boom up	
22	Counterbalance valve	BW	Platform level up	20-25 ft-lbs / 27-34 Nm
23	Relief valve, 1800 psi / 124 bar	BX	Secondary boom down	20 ft-lbs / 27 Nm

REV C MANIFOLDS

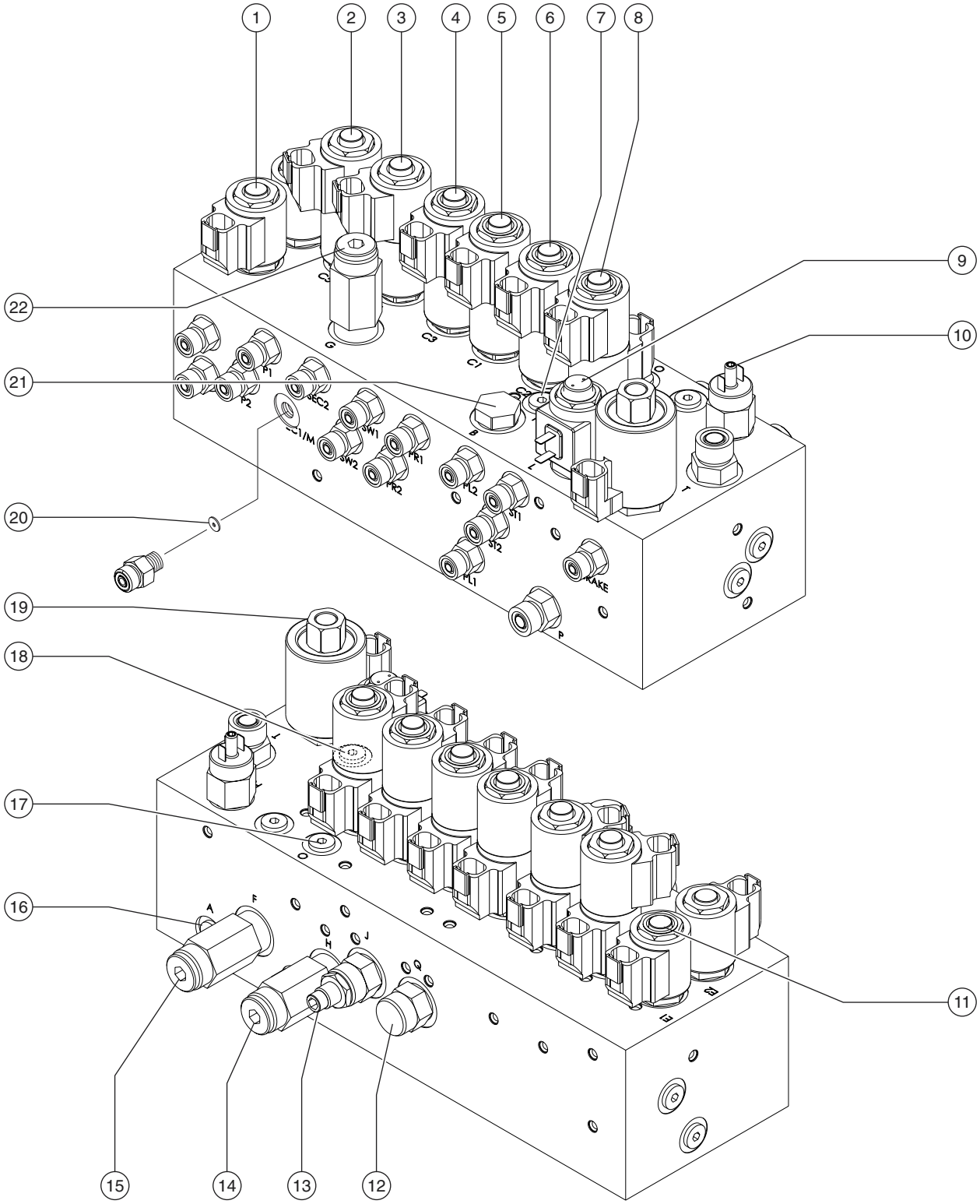


9-4
Function Manifold Components (from serial number 22566 to 23235)

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	CA	Primary boom retract	20 ft-lbs / 27 Nm
2	Solenoid valve, 3 position 4 way	CB	Primary boom up/down	25 ft-lbs / 34 Nm
3	Solenoid valve, 3 position 4 way	CC	Secondary boom up/down	25 ft-lbs / 34 Nm
4	Solenoid valve, 3 position 4 way	CD	Turntable rotate left/right	25 ft-lbs / 34 Nm
5	Solenoid valve, 3 position 4 way	CE	Platform rotate left/right and jib boom up/down (Z-45/25J)	25 ft-lbs / 34 Nm
6	Solenoid valve, 3 position 4 way	CF	Platform level up/down	25 ft-lbs / 34 Nm
7	Shuttle valve	CG	Platform level circuit	4-5 ft-lbs / 5.5-6.7 Nm
8	Solenoid valve, 3 position 4 way	CH	Steer left/right	25 ft-lbs / 34 Nm
9	Proportional solenoid valve	CI	Controls flow to functions	27 ft-lbs / 37 Nm
10	Pressure switch	CJ	Brake circuit	
11	Solenoid valve, 2 position 3 way	CK	Primary boom extend	20 ft-lbs / 27 Nm
12	Flow regulator valve, 0.4 gpm / 1.5 L/min	CL	Platform rotate and turntable rotate circuits	20 ft-lbs / 27 Nm
13	Needle valve	CM	Platform level circuit	20 ft-lbs / 27 Nm
14	Relief valve, 2500 psi / 172 bar	CN	Platform level circuit	20 ft-lbs / 27 Nm
15	Relief valve, 3200 psi / 220.6 bar	CO	System relief	20 ft-lbs / 27 Nm
16	Check valve, 5 psi / 0.3 bar	CP	Brake circuit	12-14 ft-lbs / 16-19 Nm
17	Orifice, 0.060 inch / 1.5 mm	CQ	Steer circuit	
18	Orifice, 0.030 inch / 0.76 mm	CR	Proportional valve circuit	
19	Solenoid valve, 2 position 3 way	CS	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 CS)	CT	Brake circuit	
20	Orifice, 0.037 inch / 0.94 mm	CU		
21	Check valve, pilot operated	CV	Platform level circuit	20 ft-lbs / 27 Nm
22	Relief valve, 2100 psi / 145 bar	CW	Secondary boom down circuit	20 ft-lbs / 27 Nm

REV C MANIFOLDS



9-5 Valve Adjustments - Function Manifold

How to Adjust the System Relief Valve

NOTICE Perform this procedure with the boom in the stowed position.

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

2 Move and hold the function enable toggle switch to either side and hold the primary boom extend/retract toggle switch in the retract direction with the primary boom fully retracted. 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 V, AQ, BN or CO).

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 Primary Boom Down Relief Valve (before serial number 11819)

NOTICE Perform this procedure with the boom in the stowed position.

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

2 Move and hold the function enable toggle switch to either side and hold the primary boom up/down toggle switch in the down direction with the primary boom fully lowered. Observe the pressure reading on the pressure gauge. Refer to Section 2, *Specifications*.

3 Turn the machine off. Hold the primary boom down relief valve with a wrench and remove the cap (item Q).

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

NOTICE Perform this procedure with the boom in the stowed position.

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

2 Move and hold the function enable toggle switch to either side and hold the secondary boom up/down toggle switch in the down direction with the secondary boom fully lowered. 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 R, AM, BX or CW).

4 Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Then install the relief valve cap.

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

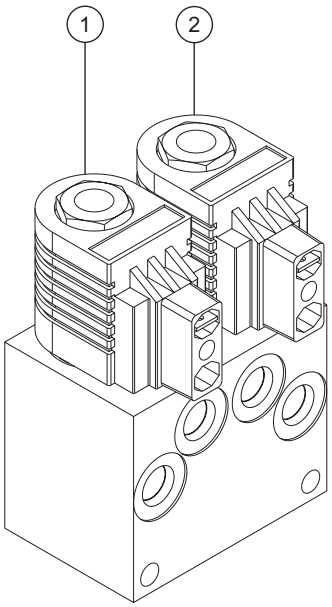
5 Repeat steps 2 through 4 and recheck relief valve pressure.

MANIFOLDS REV C

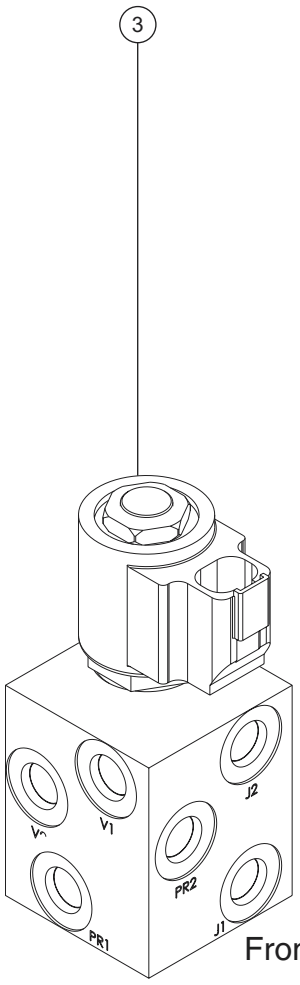
9-6
Jib Boom / Platform Rotate Manifold Components

The jib boom / platform rotate manifold is mounted to platform support.

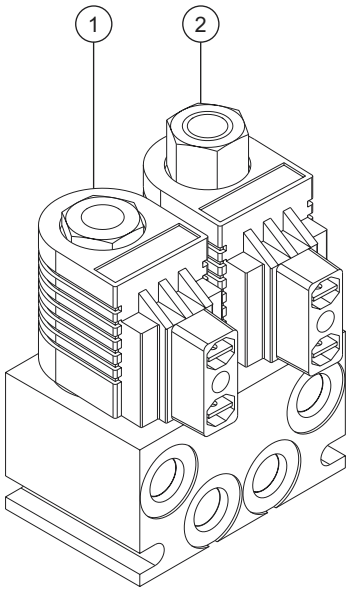
Index No.	Description	Schematic Item	Function	Torque
1	Solenoid valve, 2 position 2 way	DA	Jib boom platform rotate select	8-10 ft-lbs / 11-14 Nm
2	Solenoid valve, 2 position 2 way	DB	Jib boom platform rotate select	8-10 ft-lbs / 11-14 Nm
3	Solenoid valve, 2 position 3 way	DC	Jib boom / platform rotate select	20 ft-lbs / 27 Nm



Before serial number 16963



From serial number 22566 to 23235

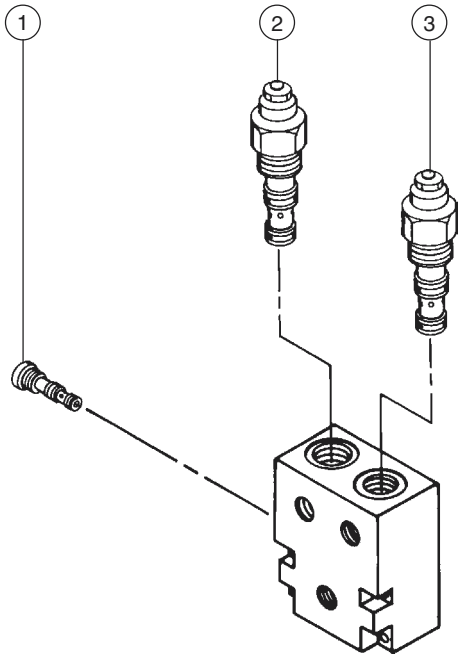


From serial number 16963 to 22565

9-7
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	Shuttle valve 2 position 3 way	CX	Turntable rotation brake release	10-13 ft-lbs / 14-18 Nm
2	Counterbalance valve	CY	Turntable rotate right	30-35 ft-lbs / 41-47 Nm
3	Counterbalance valve	CZ	Turntable rotate left	30-35 ft-lbs / 41-47 Nm



Turntable Rotation Components

REV B

10-1
Rotation Hydraulic Motor (before serial number 18367)

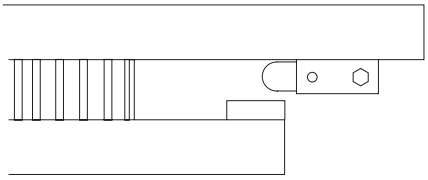
How to Remove the Rotation Hydraulic Motor

NOTICE 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.*

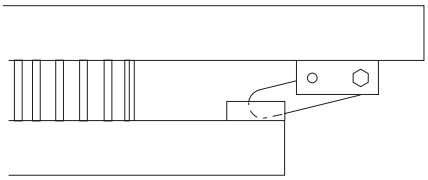
1 Raise the secondary boom until the upper pivot is above the turntable covers. Turn the machine off.

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.



Unlocked position



Locked position

3 Remove the engine pivot plate latch retainer.

4 Open the engine pivot plate latch and swing the engine out away from the machine to access the turntable rotation motor.

5 Remove the retaining fasteners from the center turntable cover. Remove the cover from the machine.

6 Disconnect the battery backs from the machine.

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

7 Place a suitable container under the engine plate.

8 Tag and disconnect the fuel hose from the fuel filter and drain the fuel tank into a container of suitable capacity. See capacity specifications.

9 Tag, disconnect and plug the fuel hoses from the fuel tank.

10 Remove the fuel tank strap fasteners and remove the tank strap.

11 Remove the fuel tank from the machine.

12 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.

13 Remove the turntable rotation motor mounting fasteners. Remove the motor from the brake.

14 Remove the turntable rotation motor from the machine.

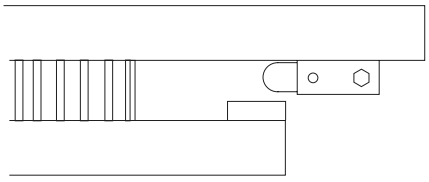
How to Remove the Turntable Rotation Brake (before serial number 18367)

NOTICE 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.*

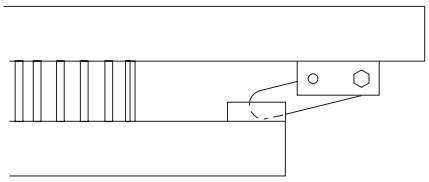
1 Raise the secondary boom until the upper pivot is above the turntable covers. Turn the machine off.

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.



Unlocked position



Locked position

3 Remove the engine pivot plate latch retainer.

4 Open the engine pivot plate latch and swing the engine out away from the machine to access the turntable rotation motor and brake.

5 Remove the retaining fasteners from the center turntable cover. Remove the cover from the machine.

6 Disconnect the battery backs from the machine.

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

7 Place a suitable container under the engine plate.

8 Tag and disconnect the fuel hose from the fuel filter and drain the fuel tank into a suitable container. See capacity specifications.

9 Tag, disconnect and plug the fuel hoses from the fuel tank.

10 Remove the fuel tank strap fasteners and remove the tank strap.

11 Remove the fuel tank from the machine.

12 Tag, disconnect and plug the hydraulic hoses from the turntable rotation motor manifold and the brake. Cap the fittings on the manifold and the brake.

⚠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 turntable rotation motor mounting fasteners. Remove the motor from the brake.

14 Remove the brake mounting bolts. Remove the turntable rotation brake 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.

10-2 Turntable Rotation Assembly (from serial number 18367 to 23235)

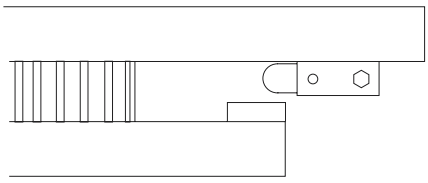
How to Remove the Turntable Rotation Assembly

NOTICE 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.*

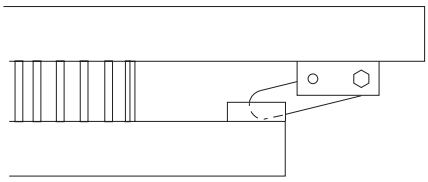
1 Raise the secondary boom until the upper pivot is above the turntable covers. Turn the machine off.

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.



Unlocked position



Locked position

3 Remove the engine pivot plate latch retainer.

4 Open the engine pivot plate latch and swing the engine out and away from the machine to access the turntable rotation assembly.

5 Remove the retaining fasteners from the center turntable cover. Remove the cover from the machine.

6 Disconnect the battery backs from the machine.

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

7 Place a suitable container under the engine plate.

8 Tag and disconnect the fuel hose from the fuel filter and drain the fuel tank into a suitable container. See capacity specifications.

9 Tag, disconnect and plug the fuel hoses from the fuel tank.

10 Remove the fuel tank strap fasteners and remove the tank strap.

11 Remove the fuel tank from the machine.

12 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.

13 Attach a lifting strap from and overhead crane or other suitable lifting device to the turntable rotation assembly.

14 Remove the turntable rotation assembly mounting fasteners.

15 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

REV A

11-1
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 Troubleshooting 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

NOTICE 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 Remove the chassis cover from the non-steer end of the machine.

3 Tag and disconnect all power cables from the motor controller.

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

4 Press the release tab on the motor controller harness connector and remove the motor controller harness connector from the motor controller.

5 Connect the leads from an ohmmeter to test each motor controller terminal combination listed below and check for resistance.

⊙ Result: All desired results must be 500 kilohms or more. If any test has a result less than 500 kilohms, replace the motor controller.

Test	Desired result (in kilohms)
F1 to F2	500kΩ or more
F1 to B-	500kΩ or more
F1 to M-	500kΩ or more
F1 to B+	500kΩ or more
F2 to B-	500kΩ or more
F2 to M-	500kΩ or more
F2 to B+	500kΩ or more
B- to M-	500kΩ or more
M- to B+	500kΩ or more
Pin 17 to B-	500kΩ or more
Pin 20 to B-	500kΩ or more

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 printed in the *Genie Z-45/25 Bi-Energy and Genie Z-45/25J Bi-Energy Operator's Manual* on your machine.
- ☑ Be sure that all necessary tools and test equipment are available and ready for use.
- ☑ Read each appropiate fault code thoroughly. Attempting shortcuts may produce hazardous conditions.
- ☑ Be aware of the following hazards and follow generally accepted safe workshop practices.

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

⚠WARNING Electrocution hazard. Contact with electrically charged circuits may 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.

NOTICE Perform all troubleshooting on a firm level surface.

FAULT CODES REV A

⚠DANGER Tip-over hazard. When adjusting the raised drive speed settings, the maximum raised drive speed must not exceed 0.6 mph / 1Km/h or 40 feet/45 seconds / 12.2 meters / 45 seconds. If the machine is allowed to drive faster than specification, the machine could become unstable and will tip over.

NOTICE Additional troubleshooting of the fault codes may by accomplished by using the hand-held pendant motor controller programmer (Genie part number 56303-S).

NOTICE 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 of 0.6 mph / 1Km/h or 40 feet / 45 seconds / 12.2 meters / 45 seconds.

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

REV A

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.

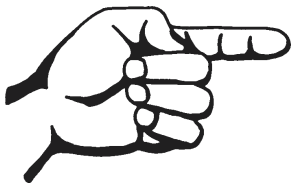
Continued on next page

FAULT CODE CHART REV A

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.

REV A 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 printed in the *Genie Z-45/25 Bi-Energy and Genie Z-45/25J Bi-Energy 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. An illustration legend precedes each group of drawings.

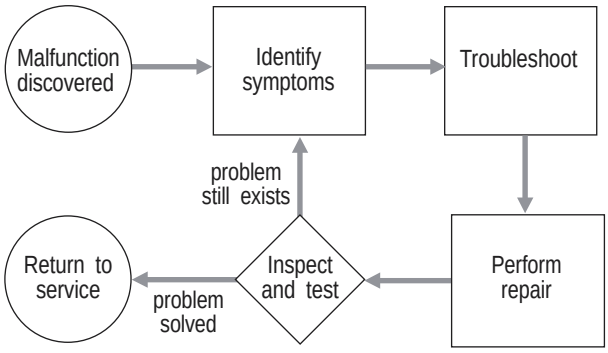
Electrical Schematics

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

Hydraulic Schematics

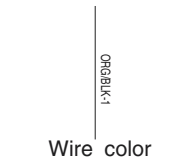
⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

General Repair Process

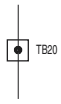


Electrical Symbols Legend

REV A



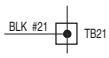
Wire color with cable number



Terminal



Quick disconnect terminal



T-circuits connect at terminal



T-circuits connect



Connection no terminal

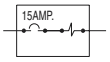


Circuits crossing no connection

Diode



Battery



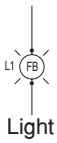
Circuit breaker



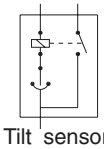
Solenoid or relay coil



Horn



Light



Tilt sensor



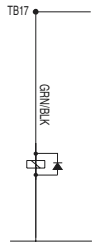
Limit switch normally closed held open



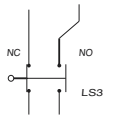
Red Emergency Stop button normally closed



Relay contact normally open



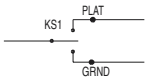
Ground supression circuit



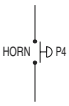
Limit switch



Limit switch normally open held closed



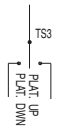
Key switch



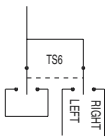
Horn button normally open



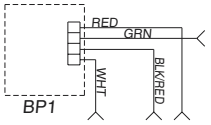
Relay panel contactor



Toggle switch SPDT



Toggle switch DPDT



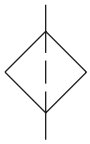
Boom function speed controller

Hydraulic Symbols Legend

REV A



Pressure gauge



Filter



Fixed displacement pump



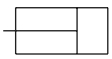
Spring applied, hydraulically released brake



Bi-directional motor



Pump prime mover (motor)



Cylinder



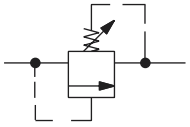
Orifice with size



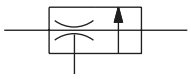
Variable orifice or shut-off valve



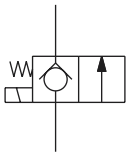
Check valve



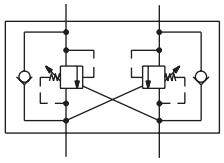
Relief valve



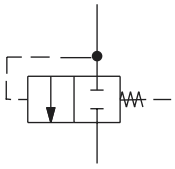
Priority flow regulator



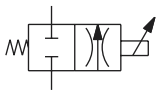
2 position 2 way solenoid valve



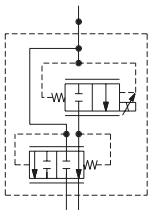
Counterbalance valve



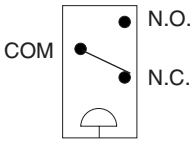
Differential sensing valve



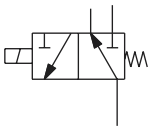
Solenoid operated proportional valve (before serial number 22566)



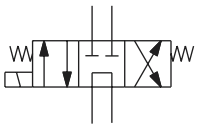
Solenoid operated proportional valve (after serial number 22565)



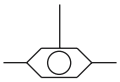
Pressure switch



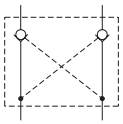
Solenoid operated 2 pos., 3 way, directional valve



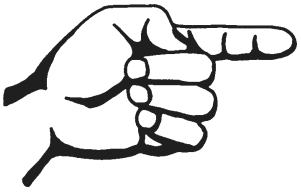
3 position 4 way directional solenoid valve



Shuttle valve



Check valve, pilot operated

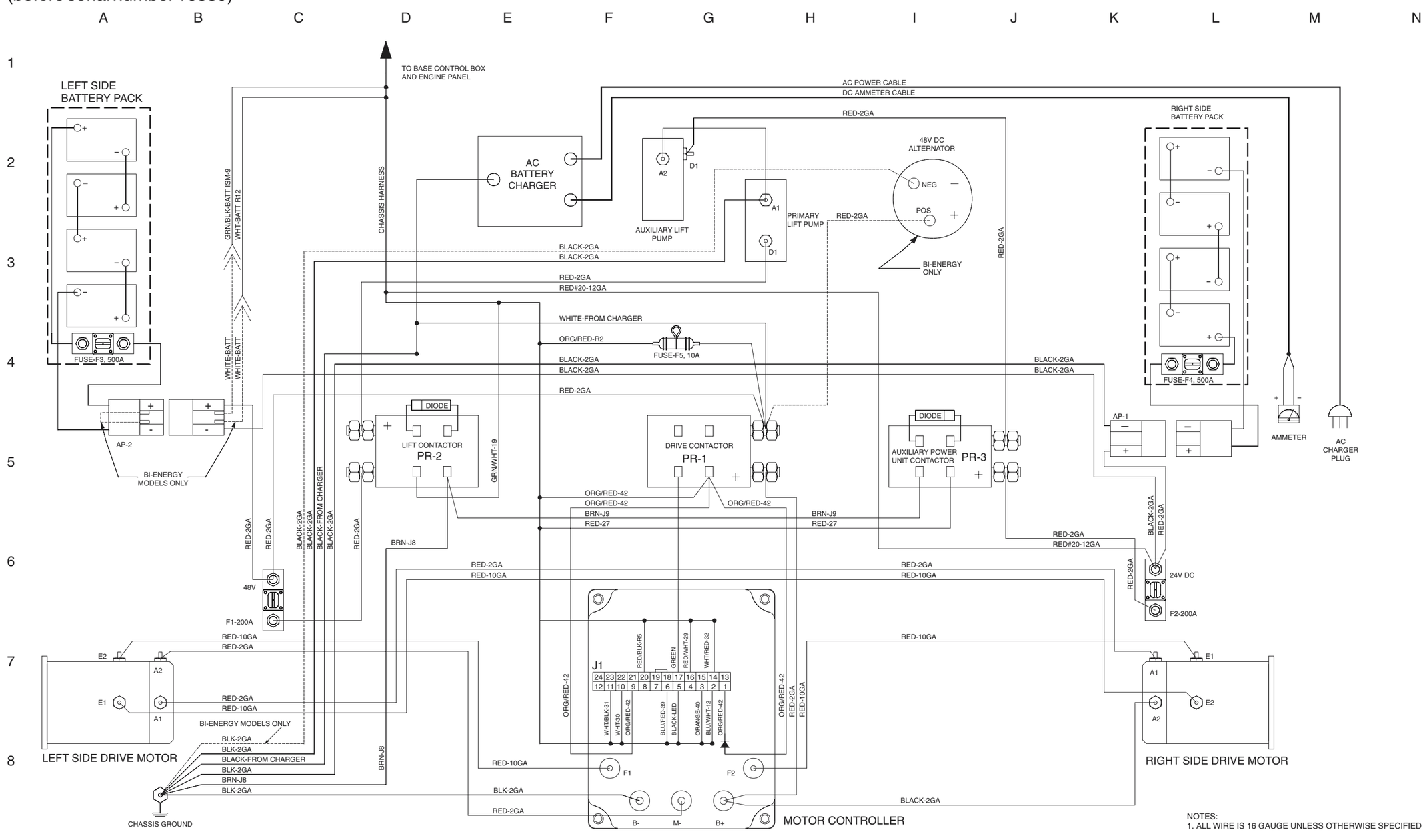


Power Cable Diagram
(before serial number 16839)

Power Cable Diagram

(before serial number 16839)

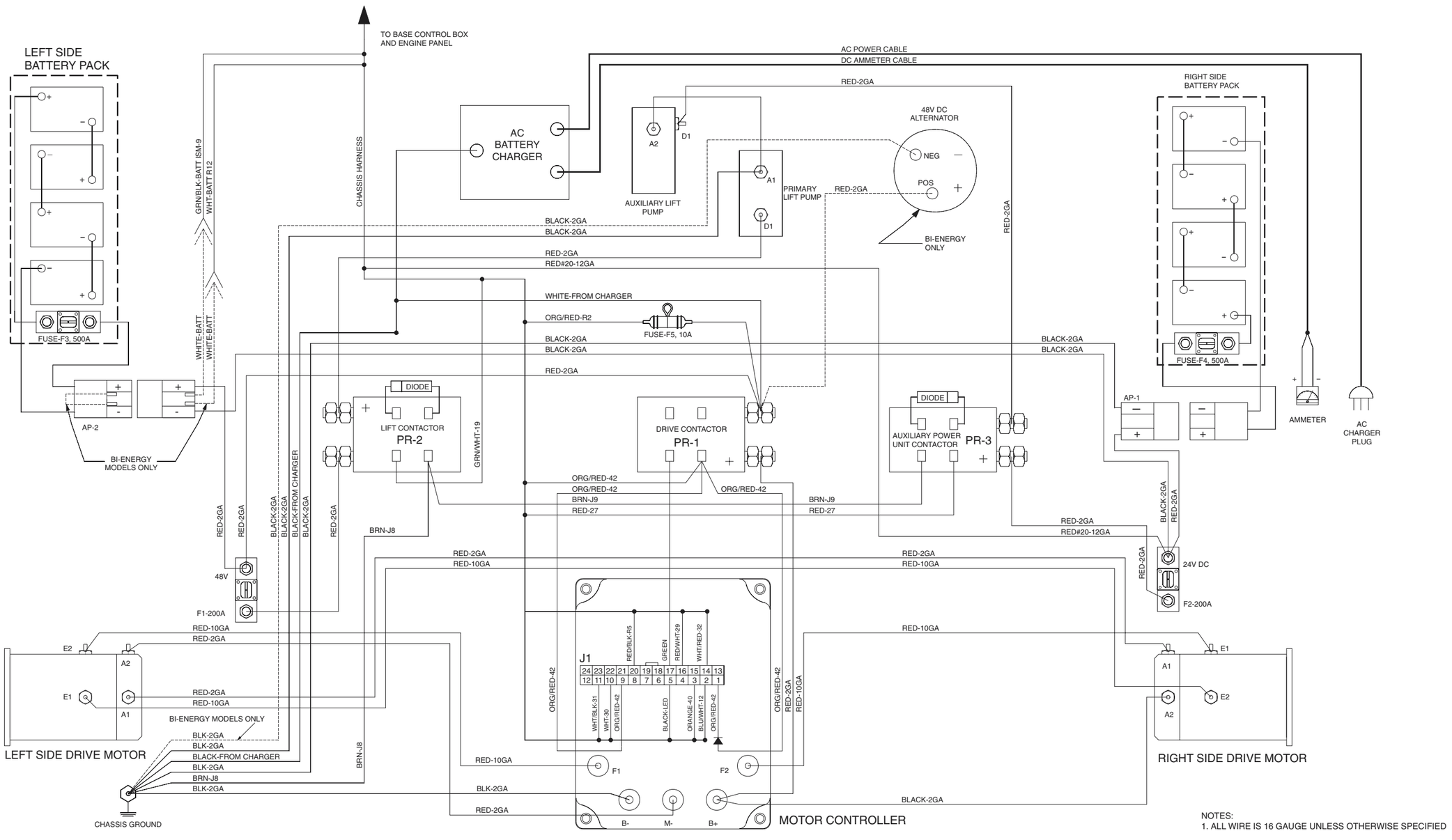
REV A



NOTES:
1. ALL WIRE IS 16 GAUGE UNLESS OTHERWISE SPECIFIED

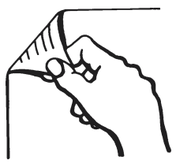
REV A

Power Cable Diagram
(from serial number 16840 to 21179)

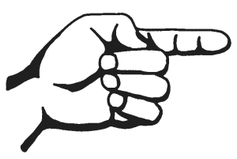


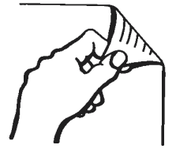
NOTES:
1. ALL WIRE IS 16 GAUGE UNLESS OTHERWISE SPECIFIED

Power Cable Diagram
(from serial number 16840 to 21179)



Power Cable Diagram
(from serial number 21180 to 22050)

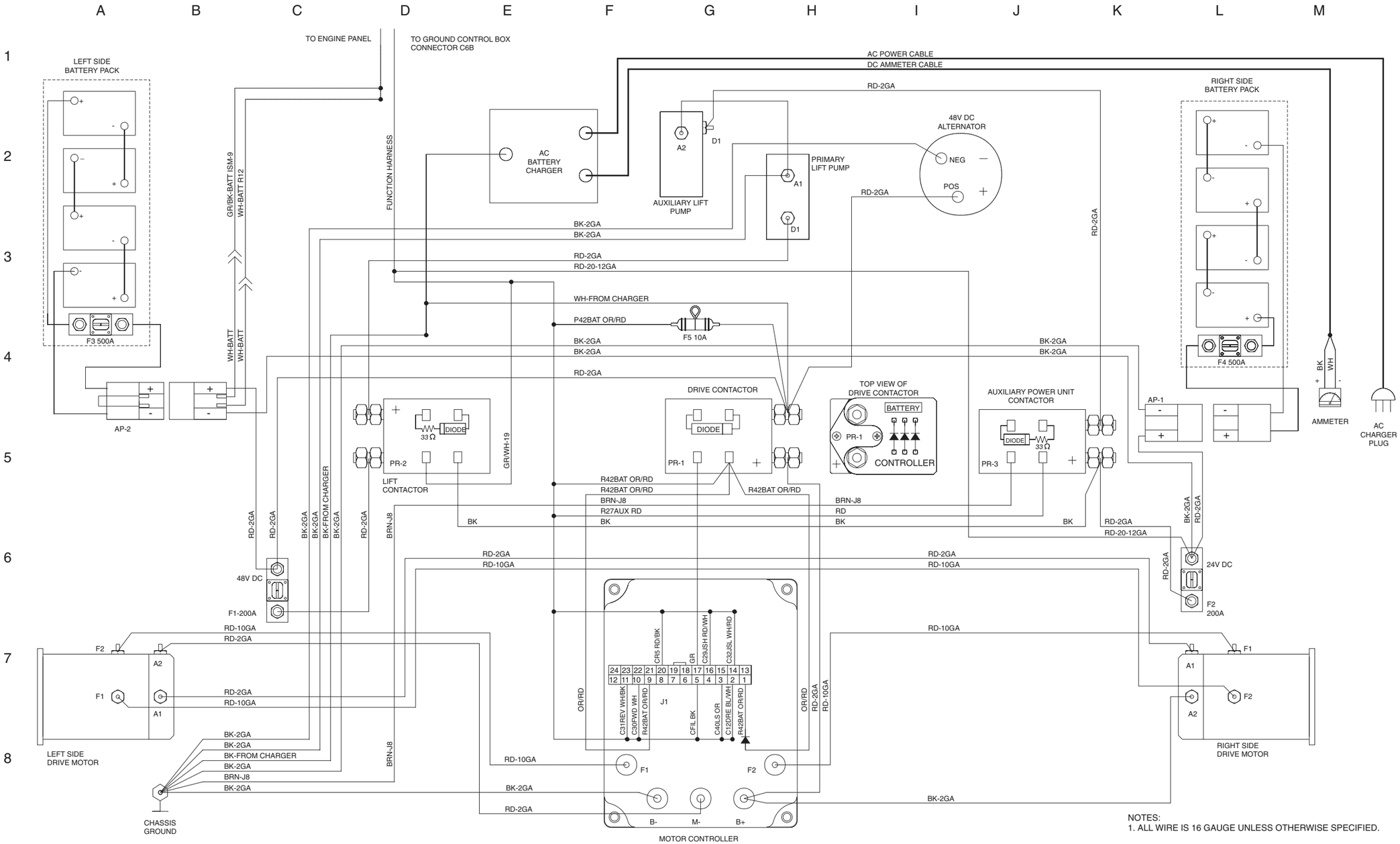




Power Cable Diagram

REV A

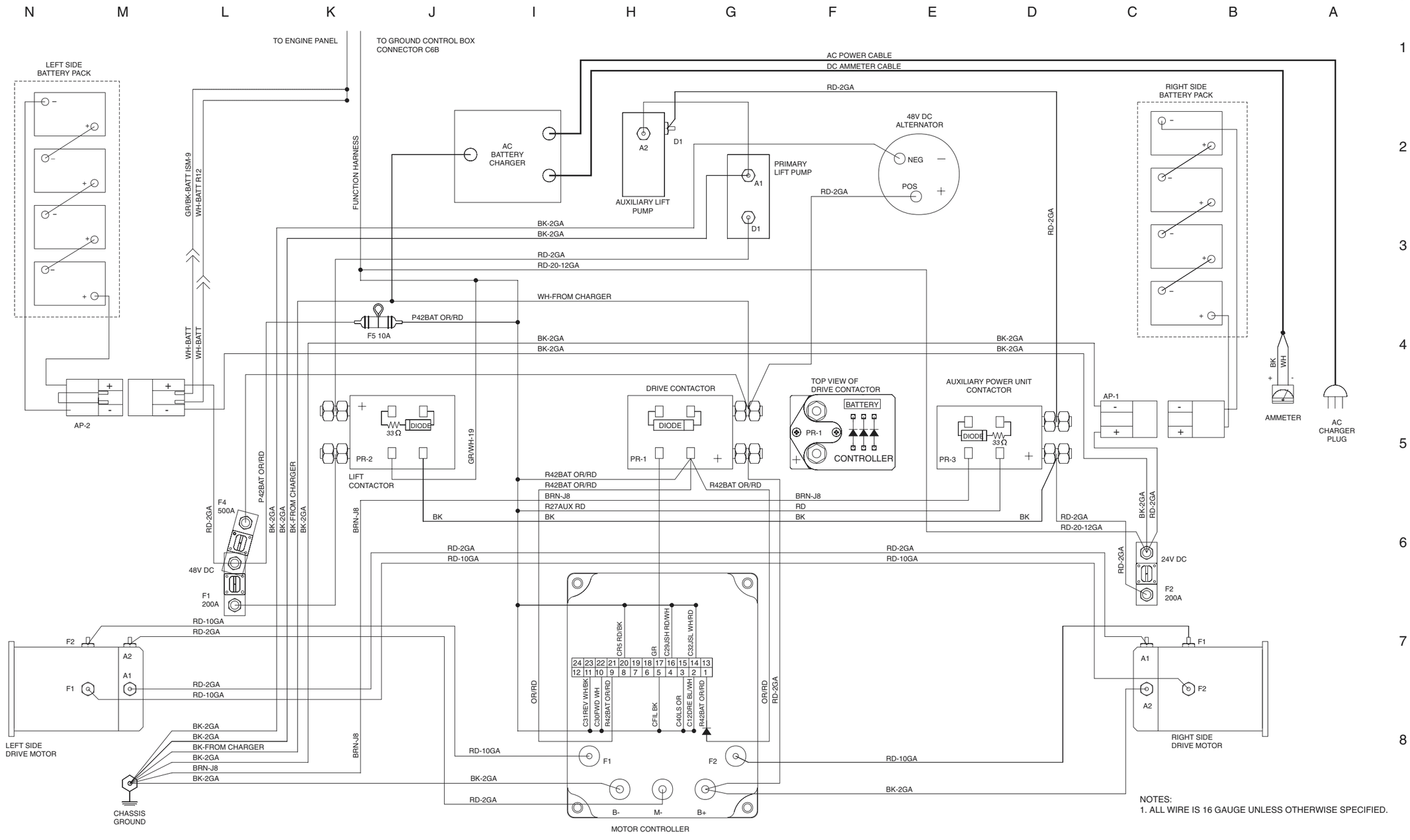
(from serial number 21180 to 22050)



NOTES:
1. ALL WIRE IS 16 GAUGE UNLESS OTHERWISE SPECIFIED.

REV A

Power Cable Diagram
(from serial number 22051 to 23235)



NOTES:
1. ALL WIRE IS 16 GAUGE UNLESS OTHERWISE SPECIFIED.

Power Cable Diagram
(from serial number 22051 to 23235)

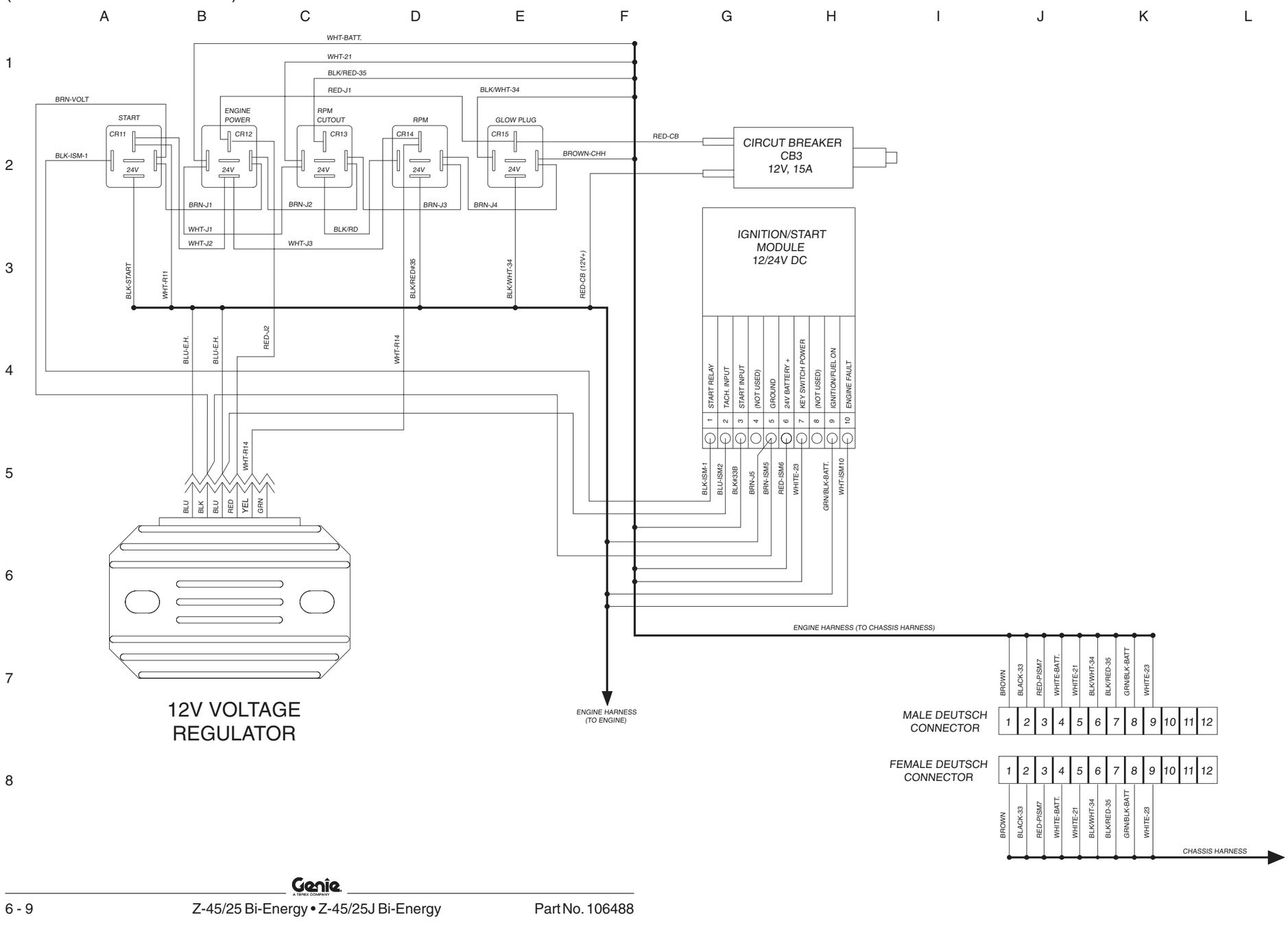


Engine Panel Diagram
(before serial number 13361)

Engine Panel Diagram

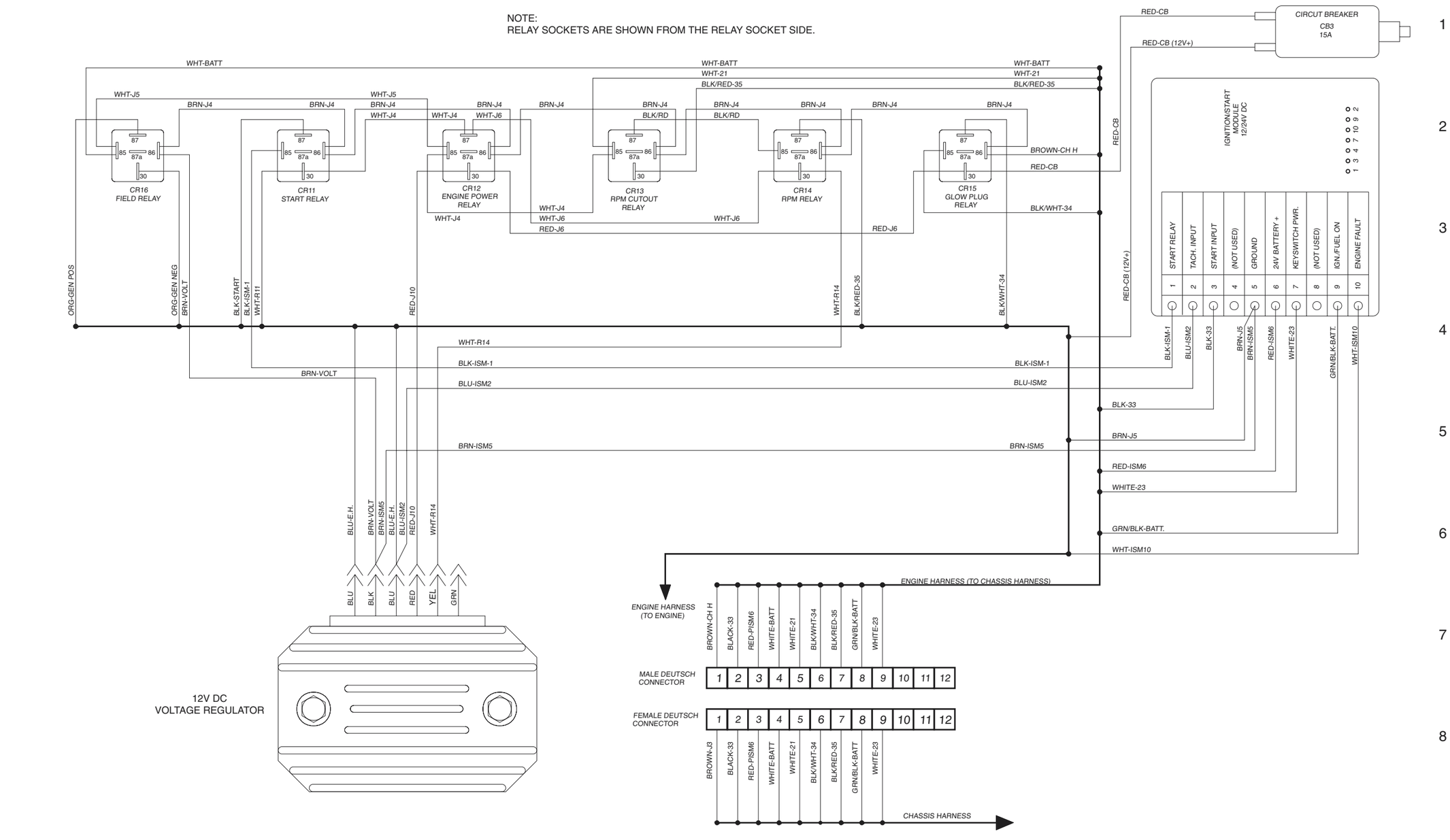
(before serial number 13361)

REV A

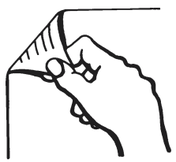


REV A

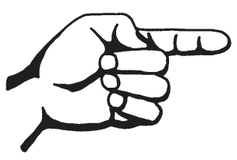
Engine Panel Diagram
(from serial number 13361 to 14078)

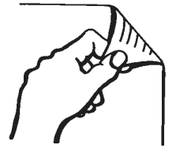


Engine Panel Diagram
(from serial number 13361 to 14078)



Engine Panel Diagram
(from serial number 14079 to 14650)

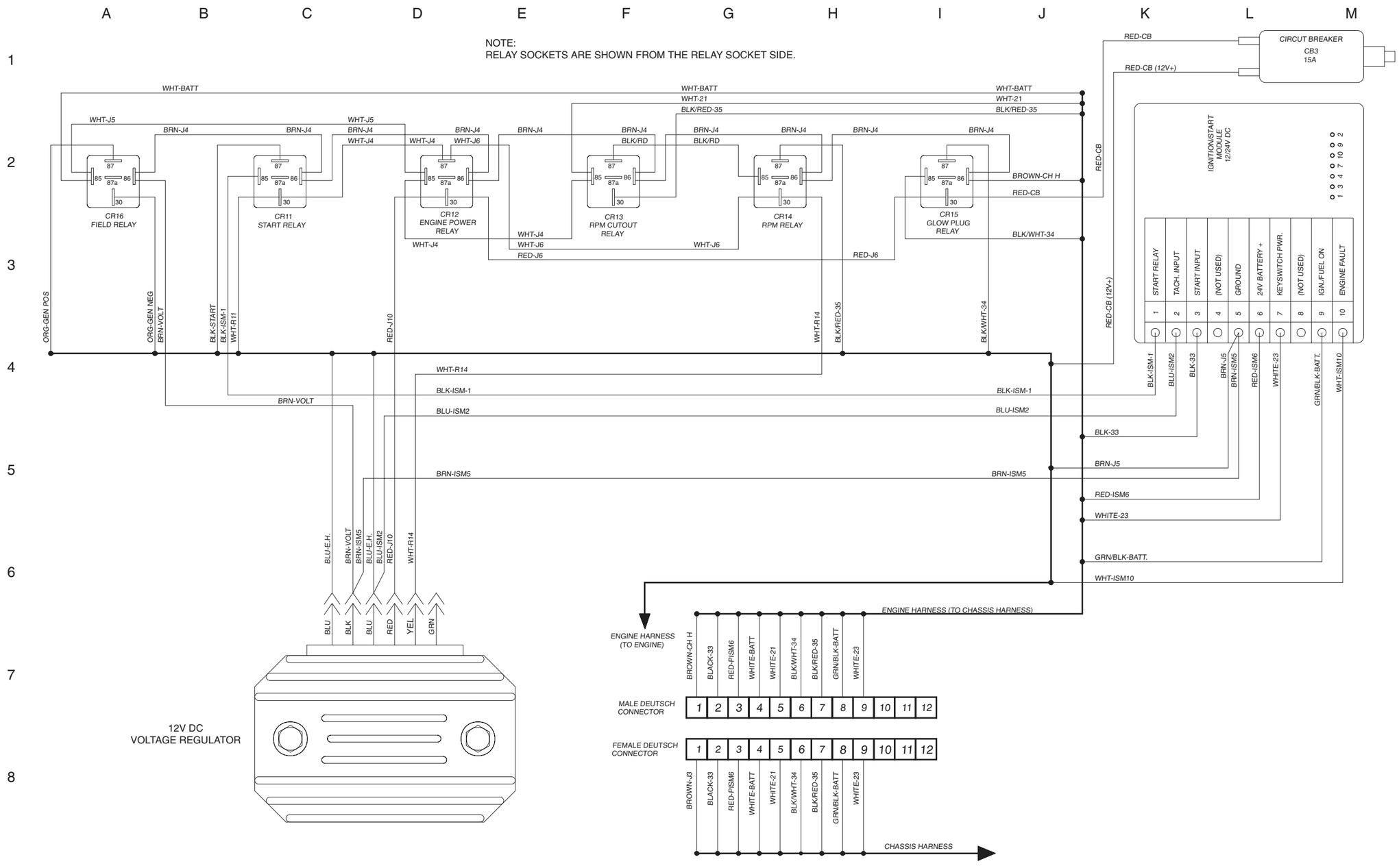




Engine Panel Diagram

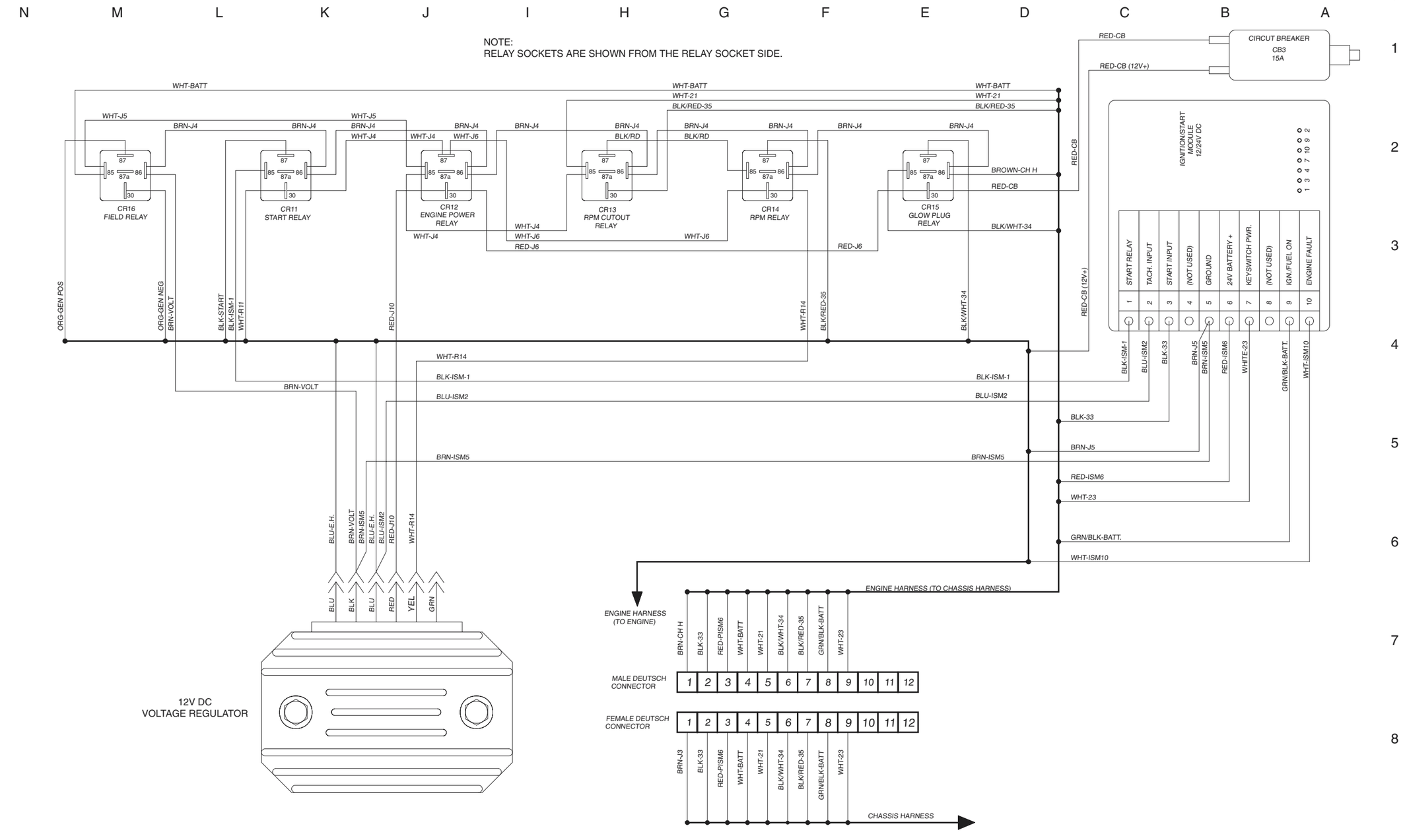
(from serial number 14079 to 14650)

REV A

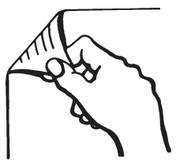


REV A

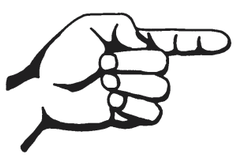
Engine Panel Diagram
(from serial number 14651 to 16839)

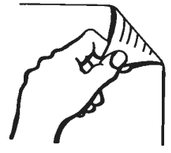


Engine Panel Diagram
(from serial number 14651 to 16839)



Engine Panel Diagram
(from serial number 16840 to 17974)

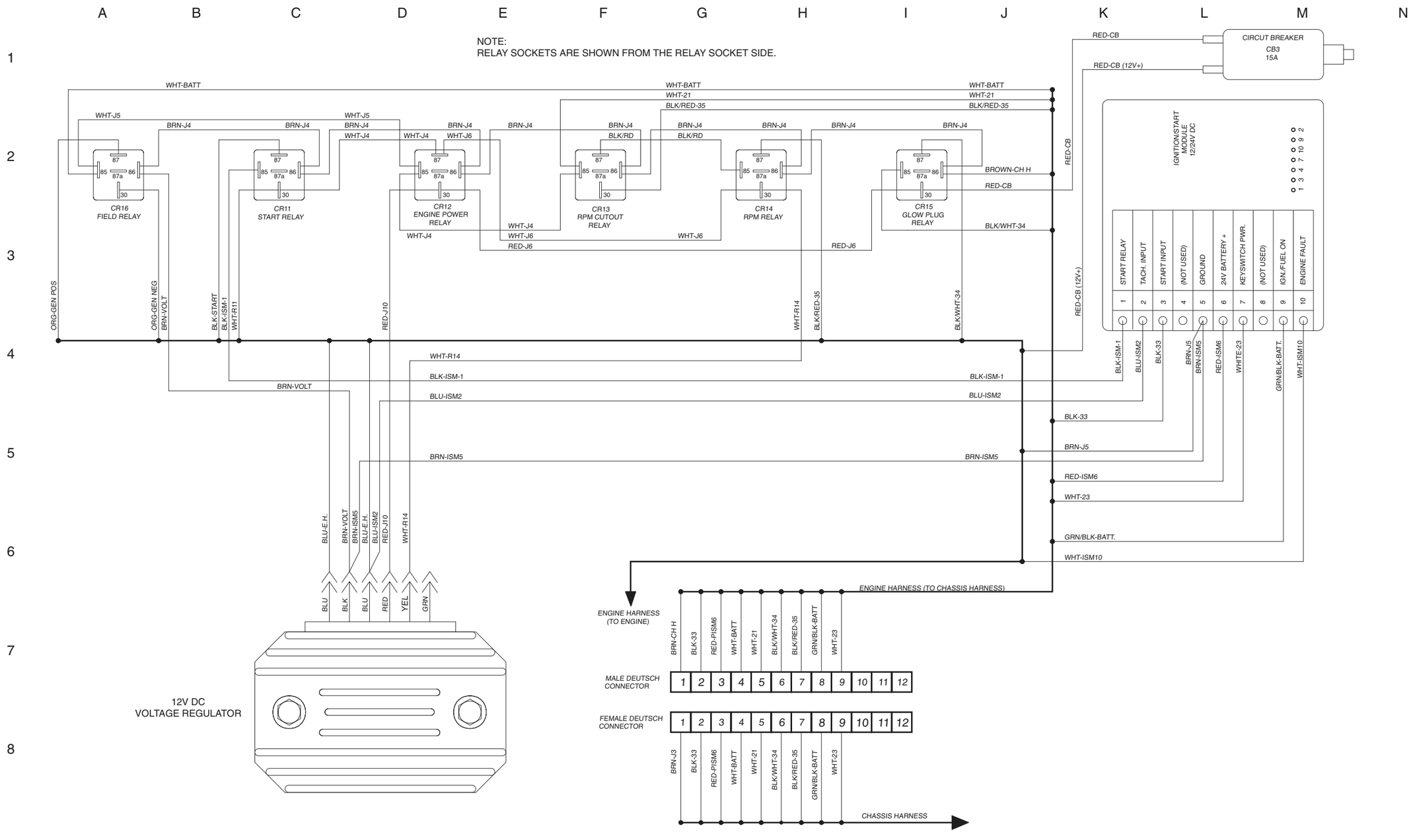




Engine Panel Diagram

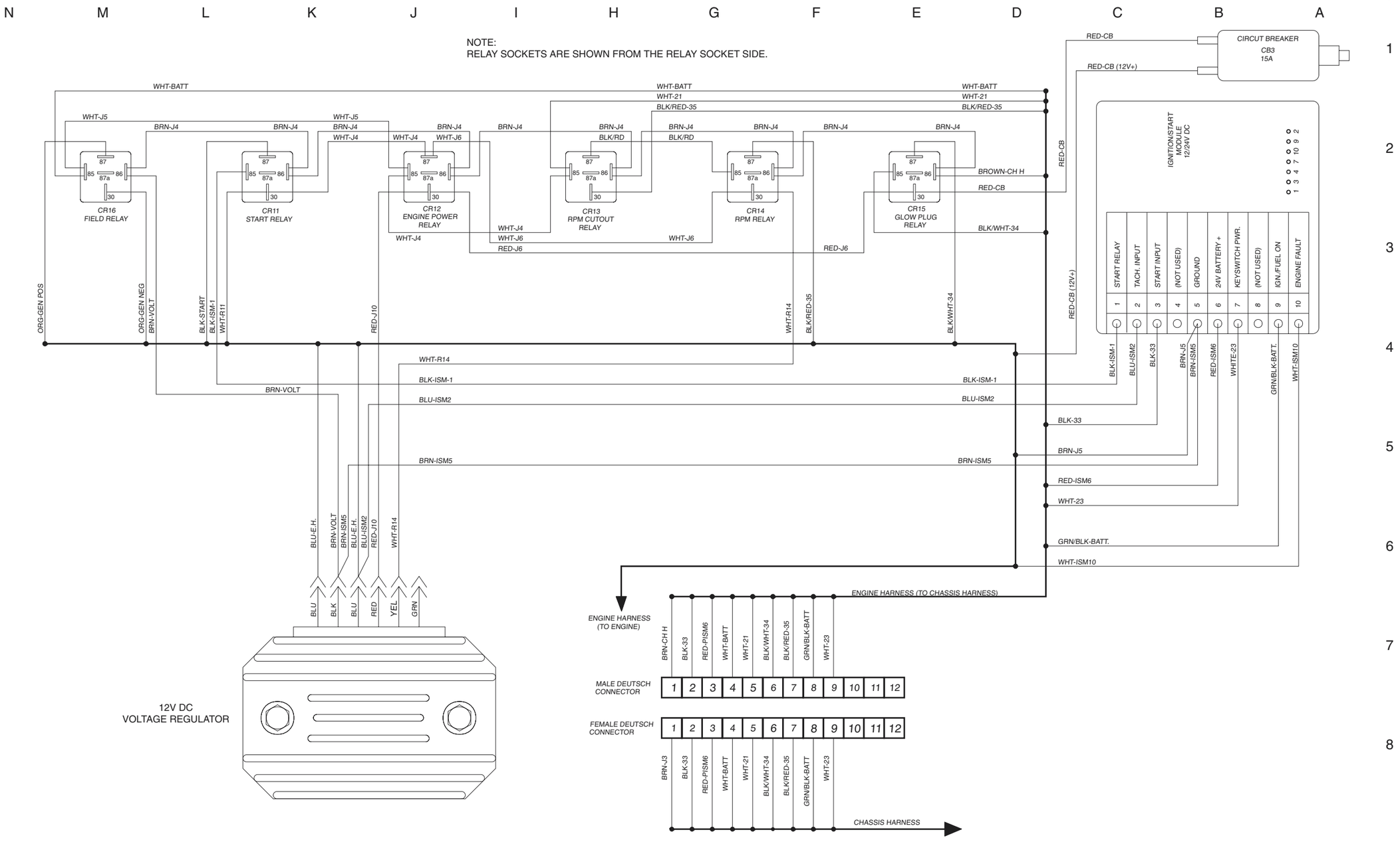
(from serial number 16840 to 17974)

REV A

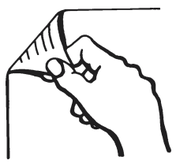


REV A

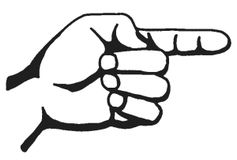
Engine Panel Diagram
(from serial number 17975 to 21180)

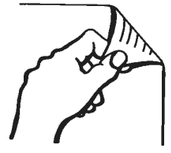


Engine Panel Diagram
(from serial number 17975 to 21180)



Engine Panel Diagram
(from serial number 21181 to 22050)

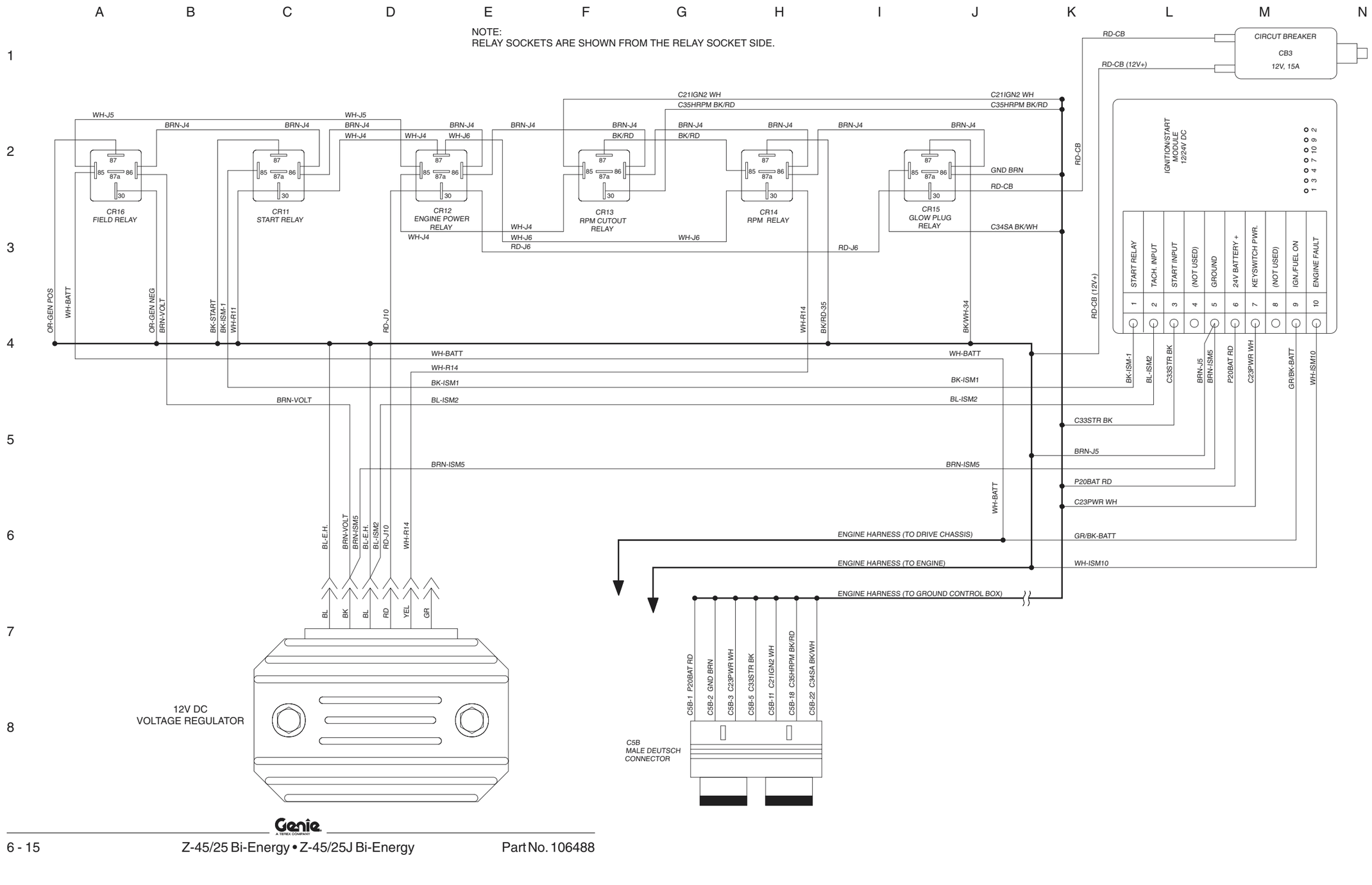




Engine Panel Diagram

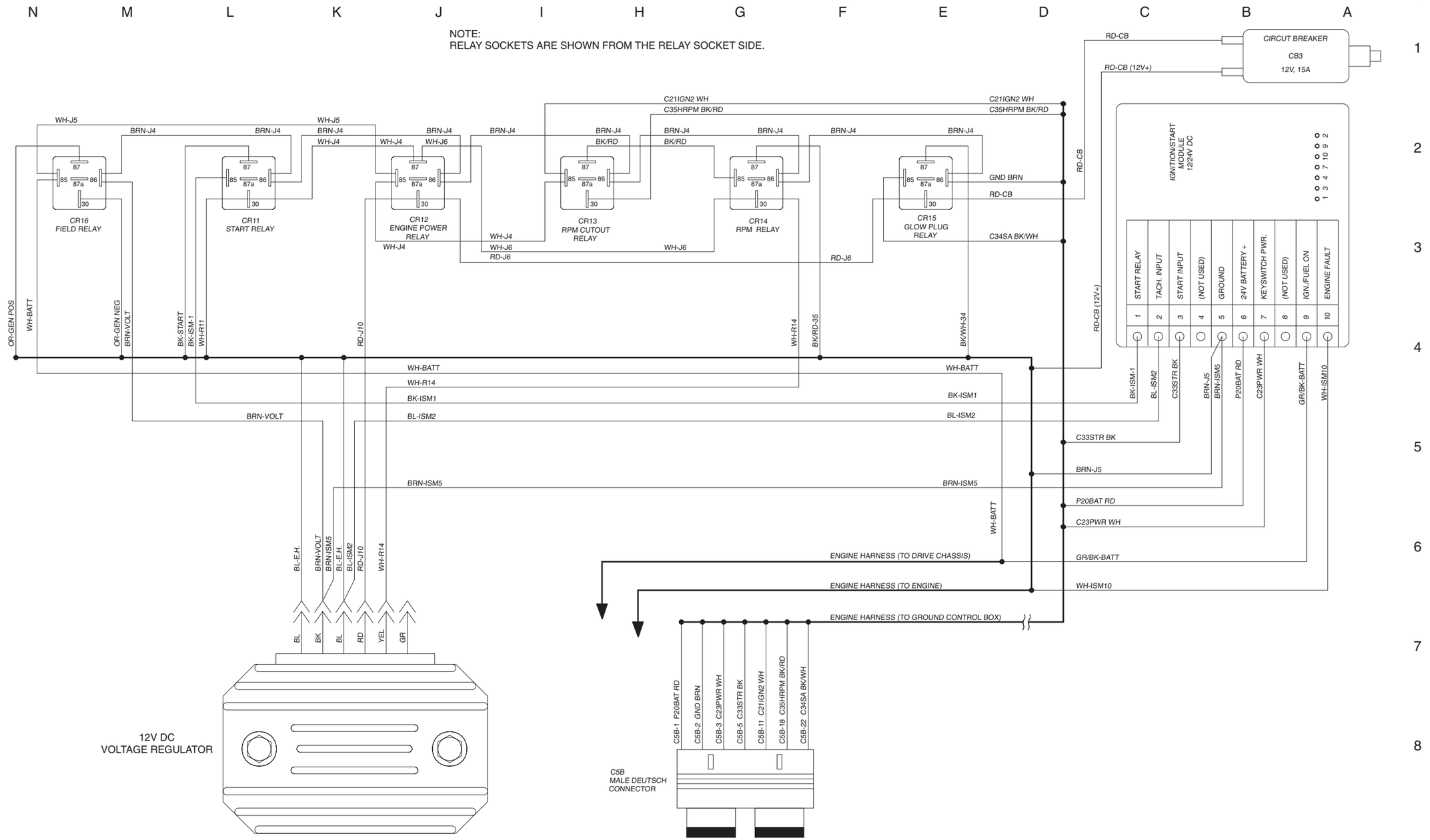
(from serial number 21181 to 22050)

REV A

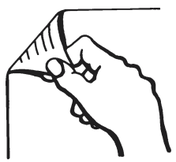


REV A

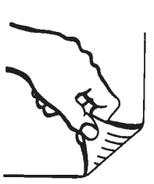
Engine Panel Diagram
(from serial number 22051 to 23235)



Engine Panel Diagram
(from serial number 22051 to 23235)



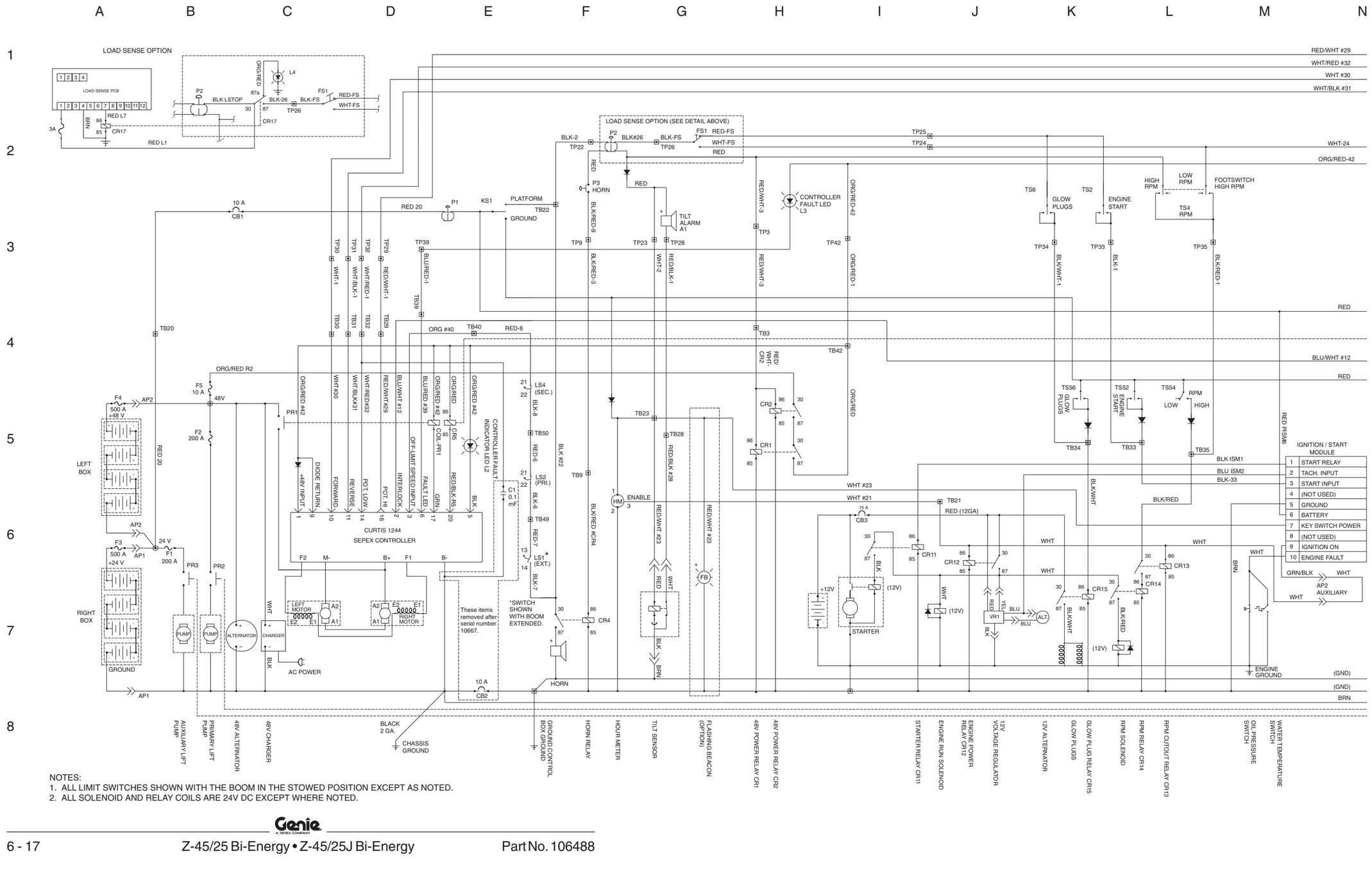




Electrical Schematic, Z-45/25

(before serial number 13361)

REV A



NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH THE BOOM IN THE STOWED POSITION EXCEPT AS NOTED.
2. ALL SOLENOID AND RELAY COILS ARE 24V DC EXCEPT WHERE NOTED.

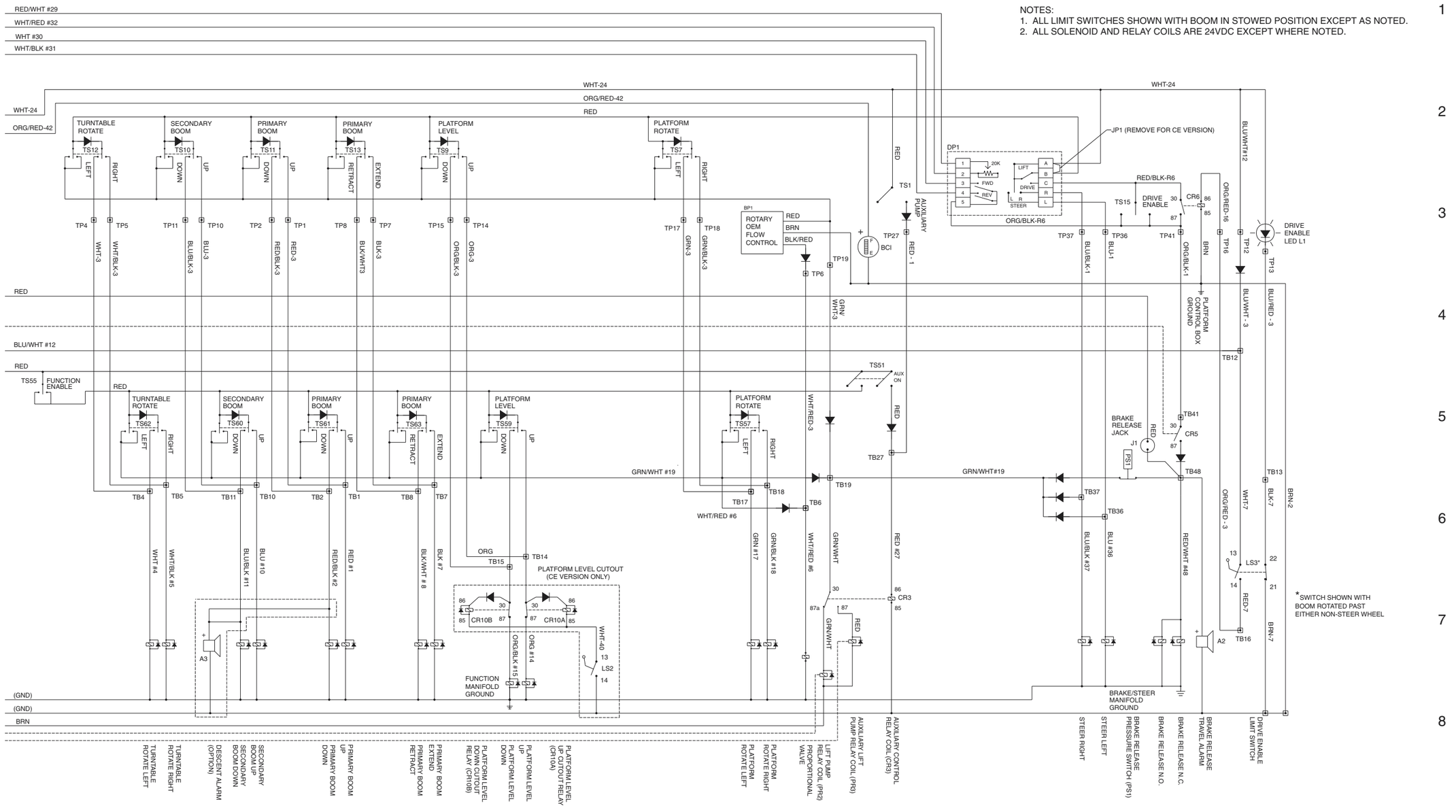
REV A

Electrical Schematic, Z-45/25
(before serial number 13361)

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

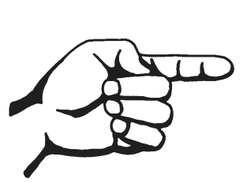
1 2 3 4 5 6 7 8

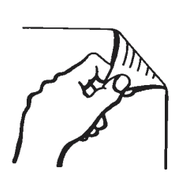
NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.



Electrical Schematic, Z-45/25
(before serial number 13361)



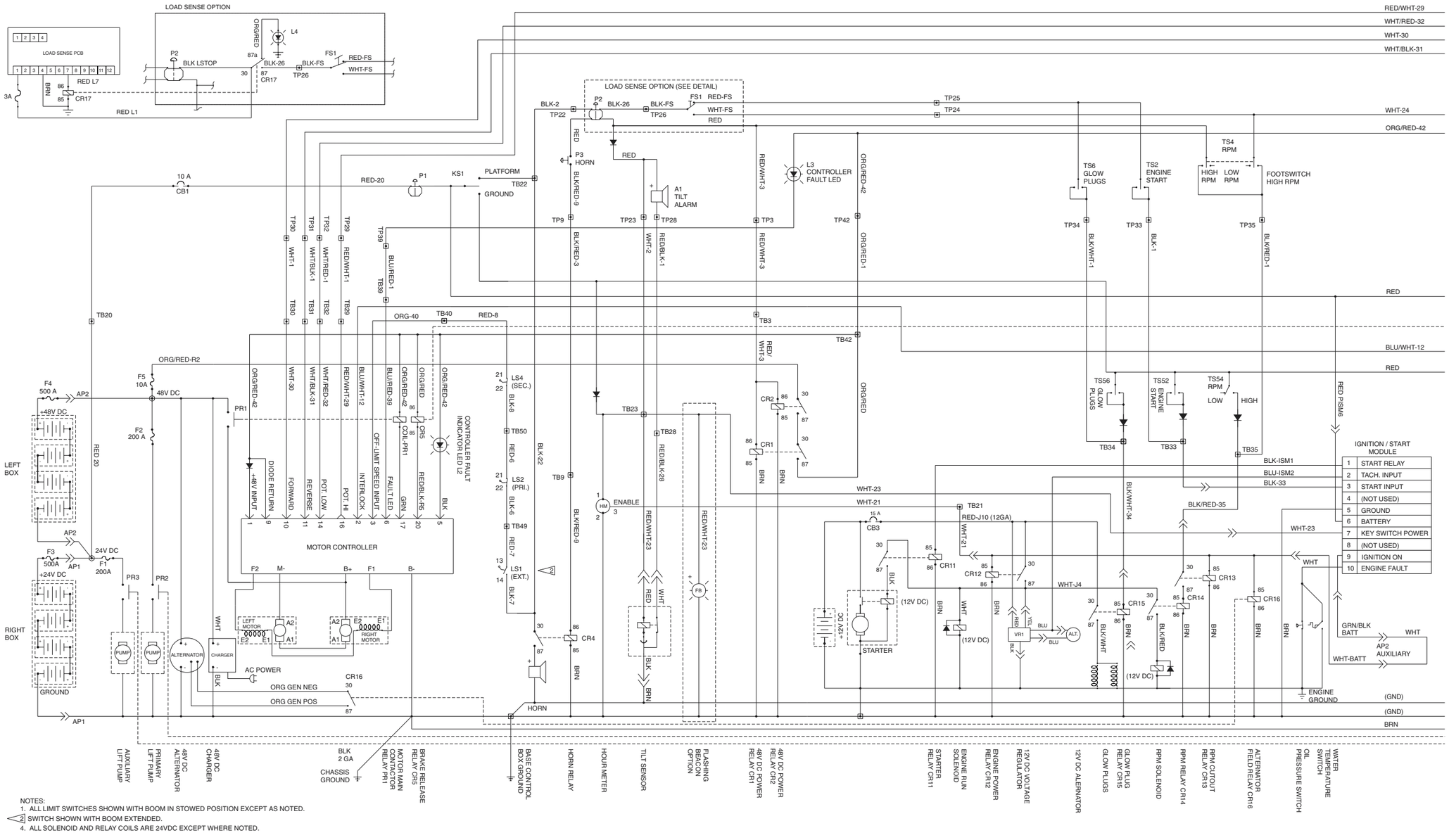




Electrical Schematic, Z-45/25

REV A

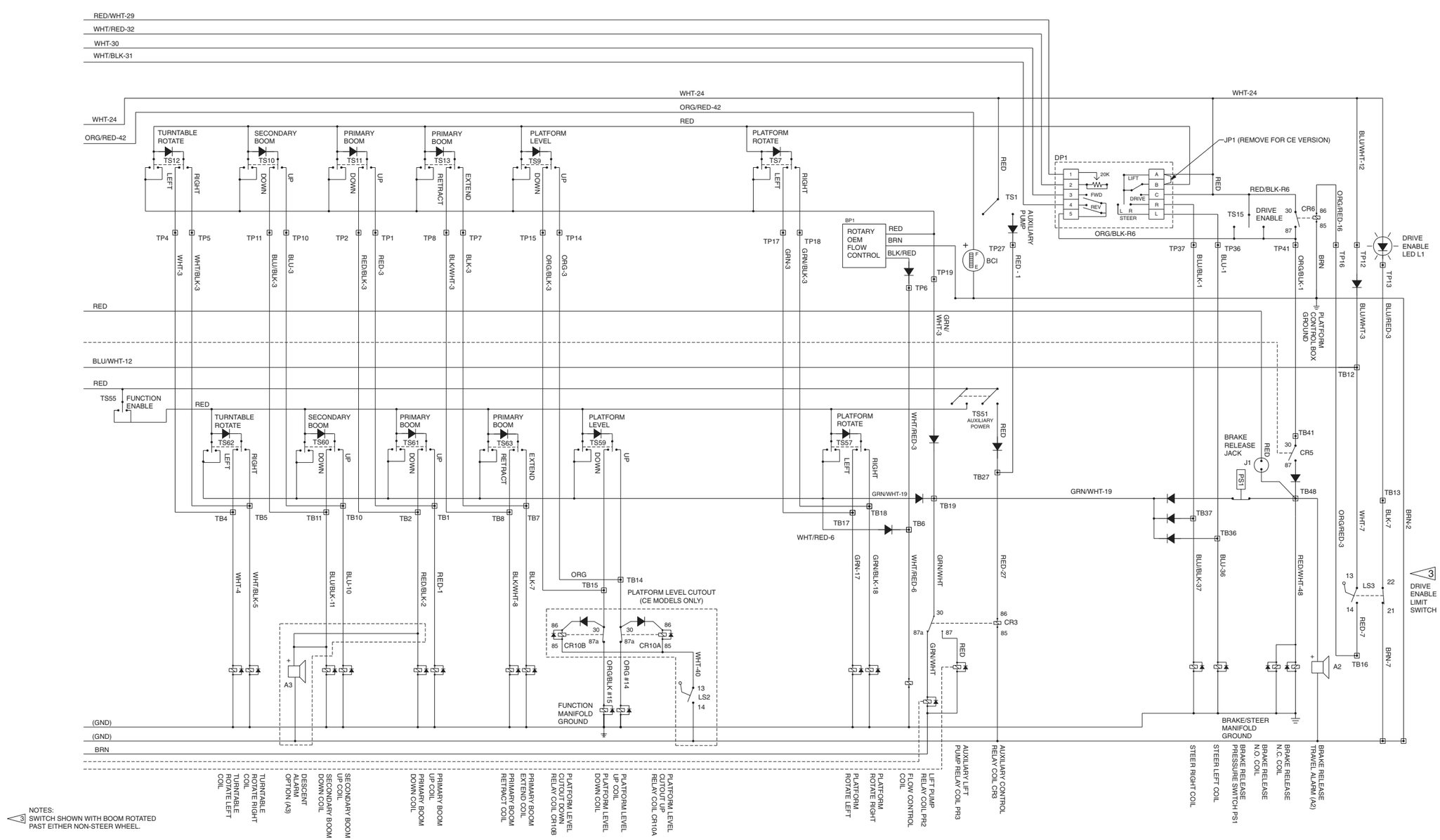
(from serial number 13361 to 14078)



NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. (5) SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

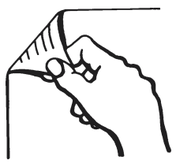
REV A

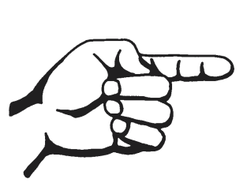
Electrical Schematic, Z-45/25
(from serial number 13361 to 14078)

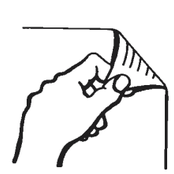


NOTES:
3 SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

Electrical Schematic, Z-45/25
(from serial number 13361 to 14078)







Electrical Schematic, Z-45/25

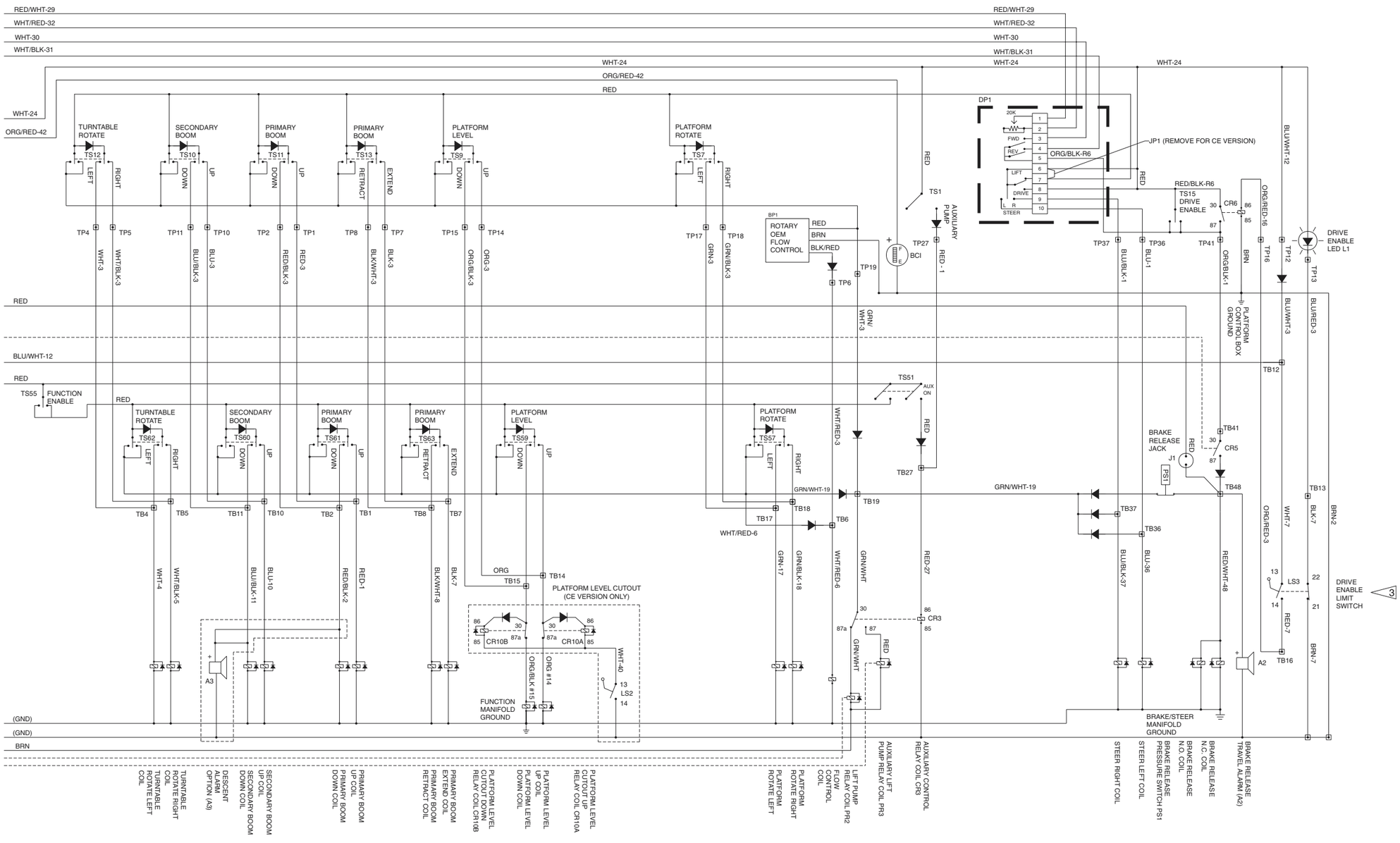
REV A

(from serial number 14079 to 14650)

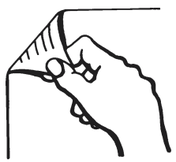
NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

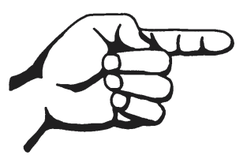
REV A

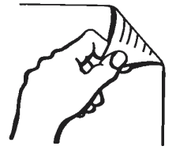
Electrical Schematic, Z-45/25
(from serial number 14079 to 14650)



Electrical Schematic, Z-45/25
(from serial number 14079 to 14650)



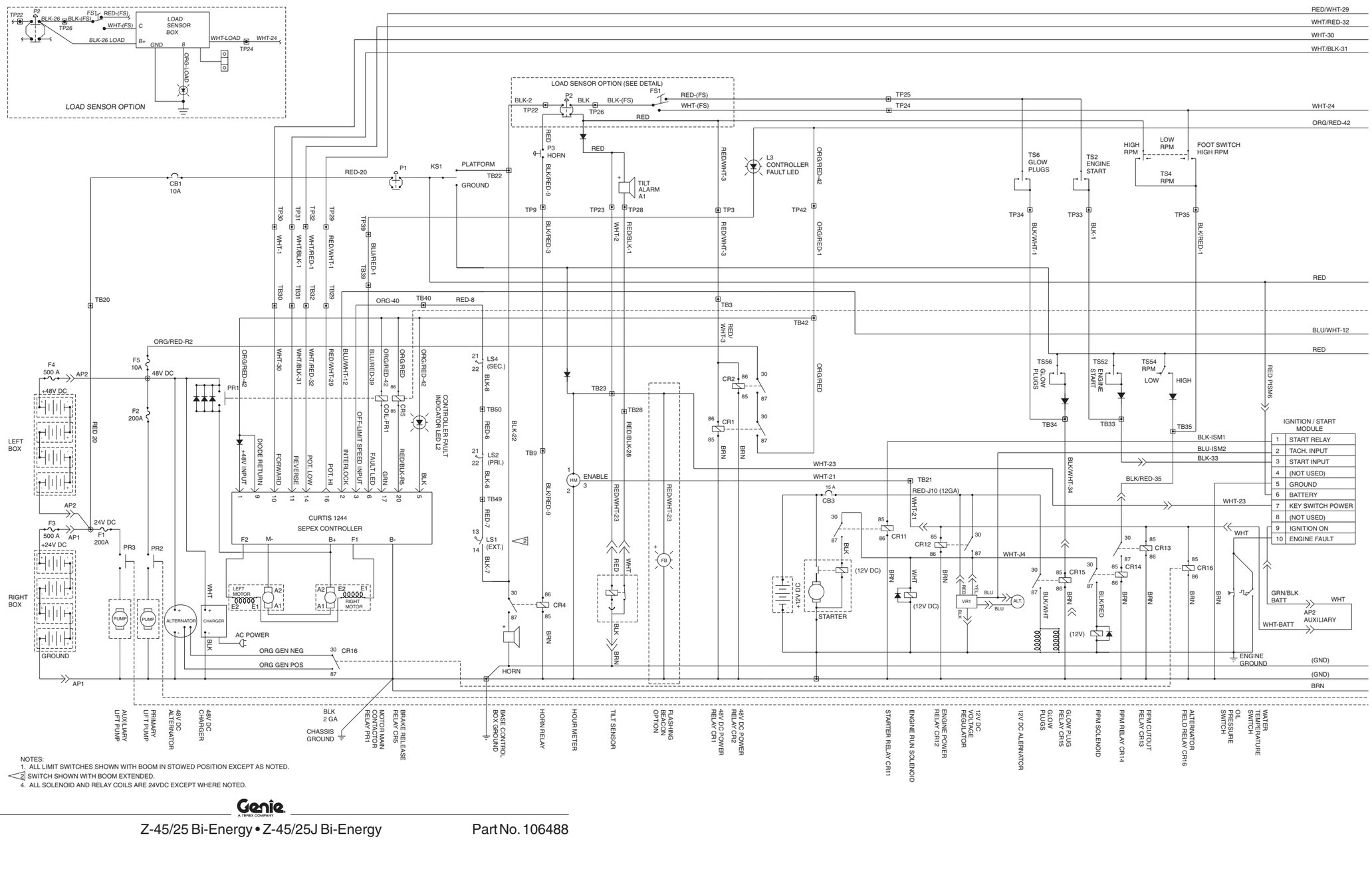




Electrical Schematic, Z-45/25

(from serial number 14651 to 16839)

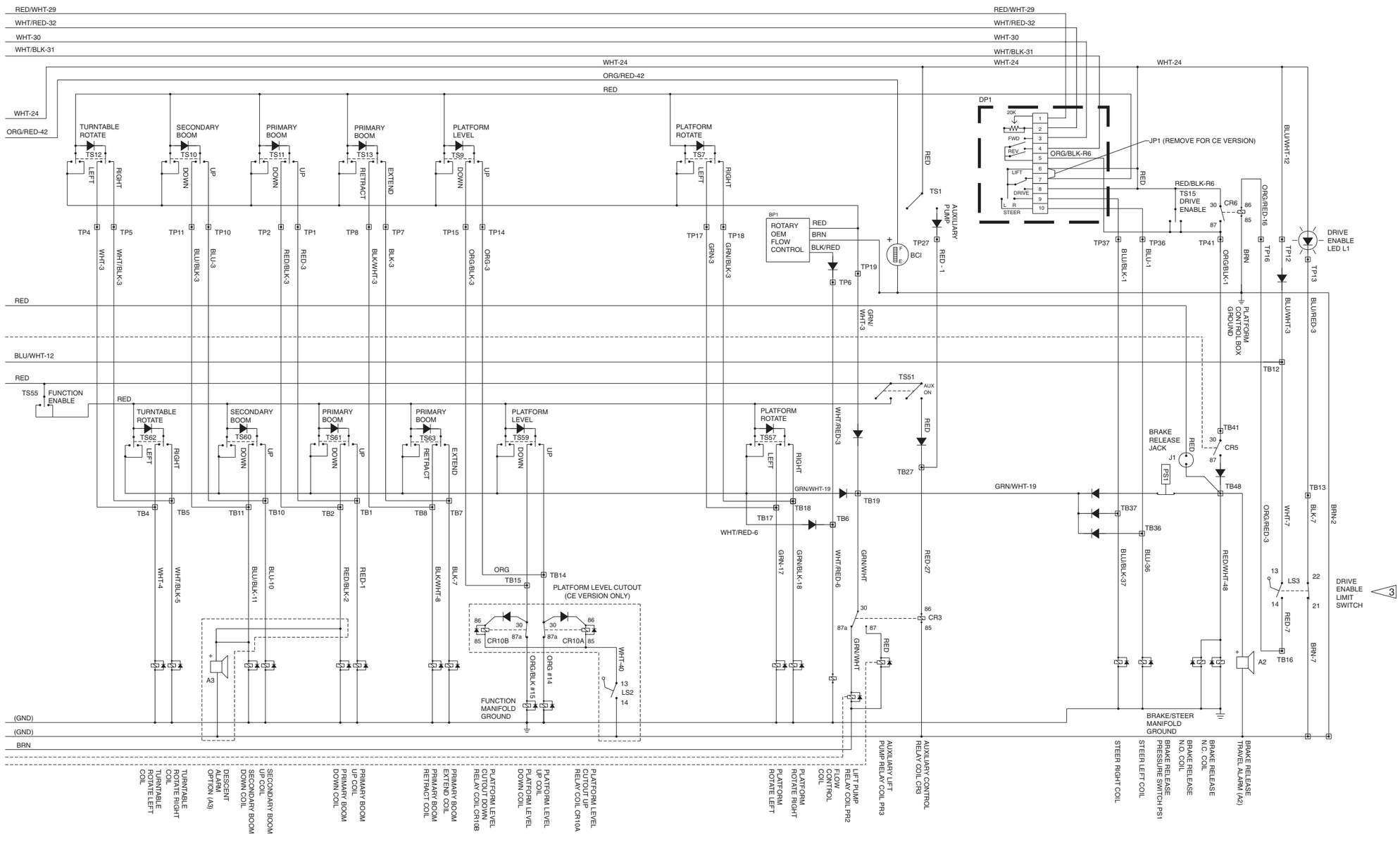
REV A



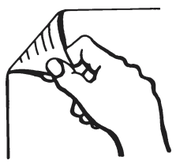
NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

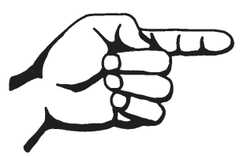
REV A

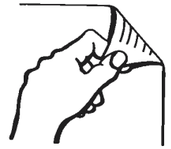
Electrical Schematic, Z-45/25
(from serial number 14651 to 16839)



Electrical Schematic, Z-45/25
(from serial number 14651 to 16839)



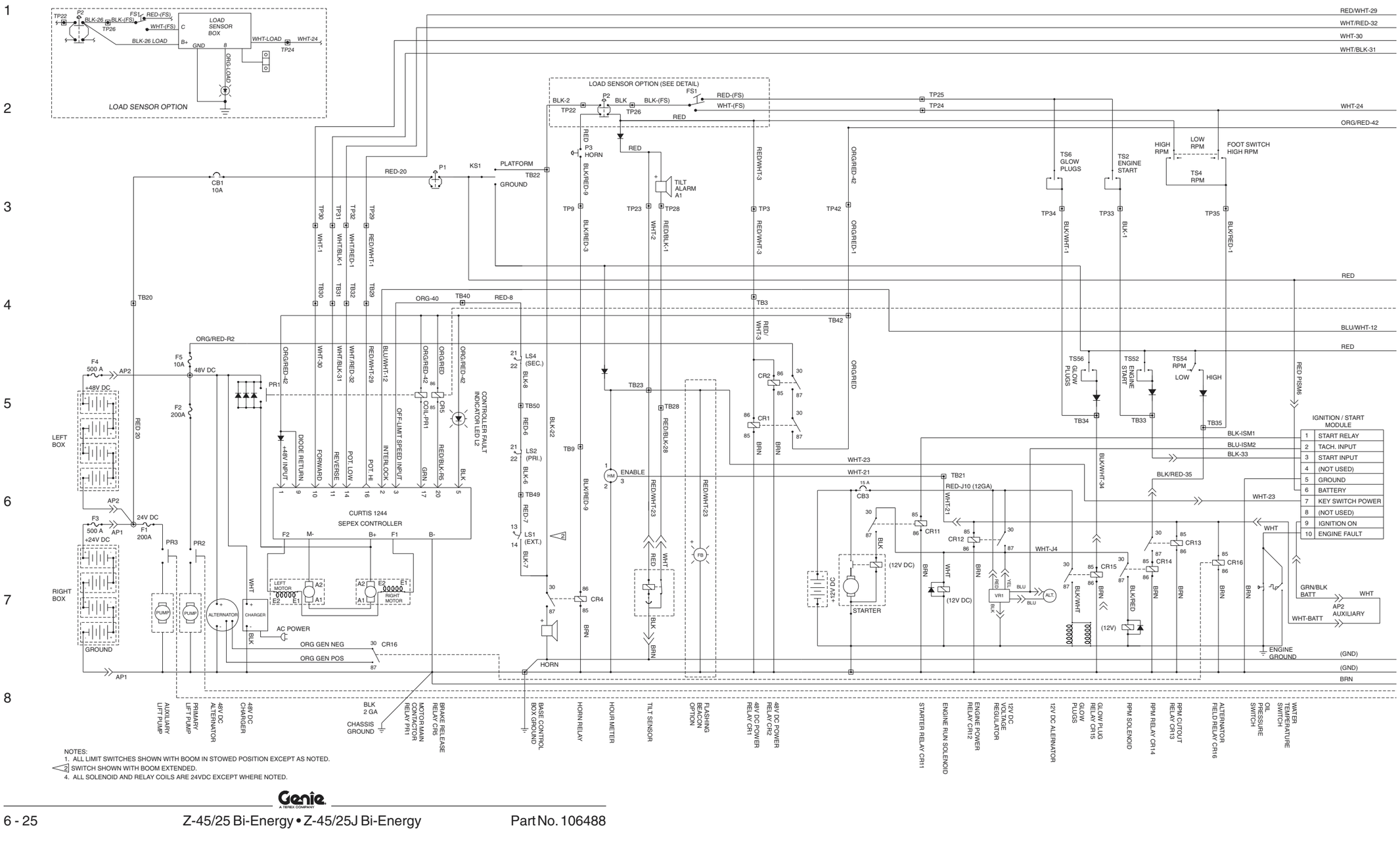




Electrical Schematic, Z-45/25

(from serial number 16840 to 17974)

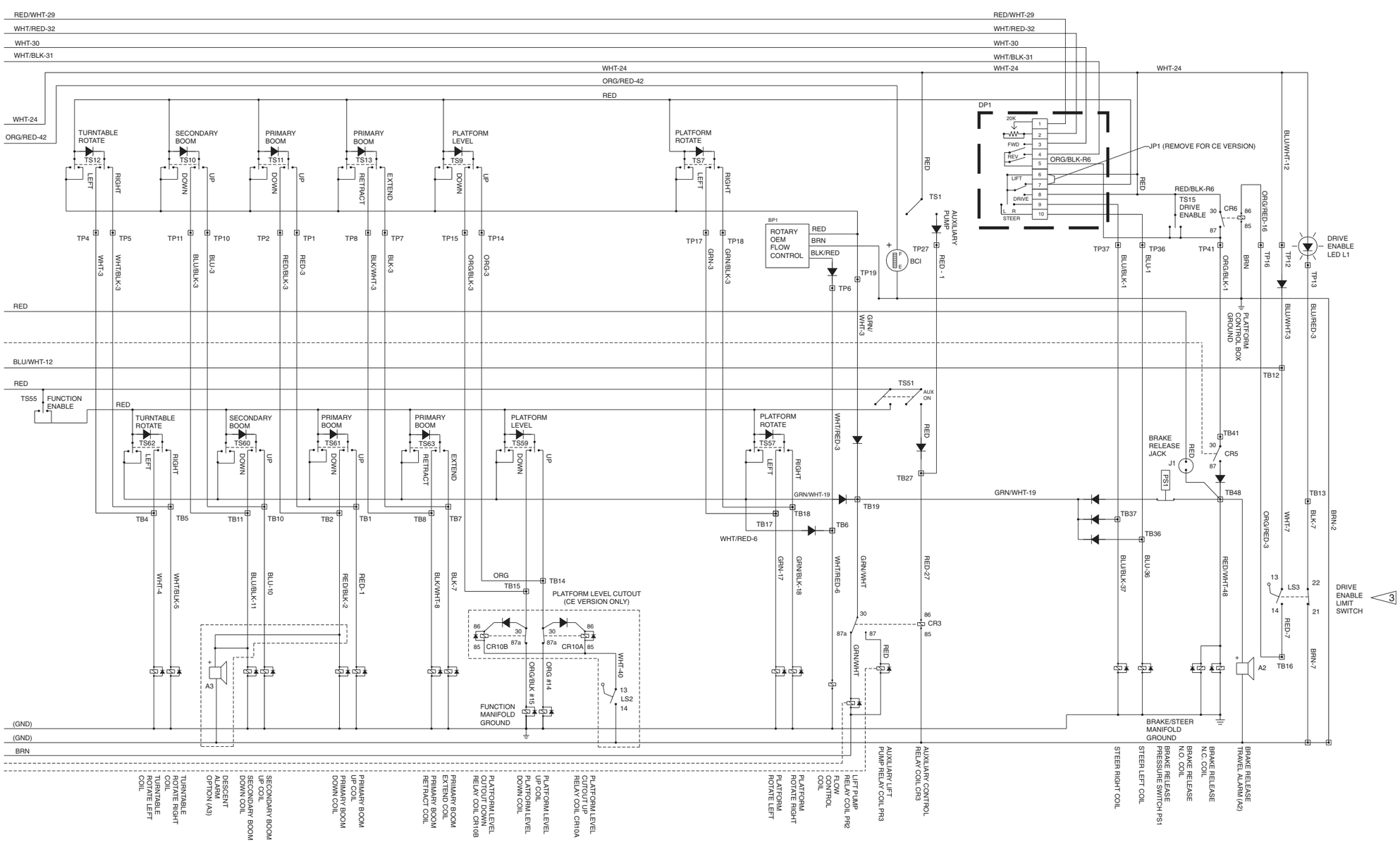
REV A



NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

REV A

Electrical Schematic, Z-45/25
(from serial number 16840 to 17974)



Electrical Schematic, Z-45/25
(from serial number 16840 to 17974)



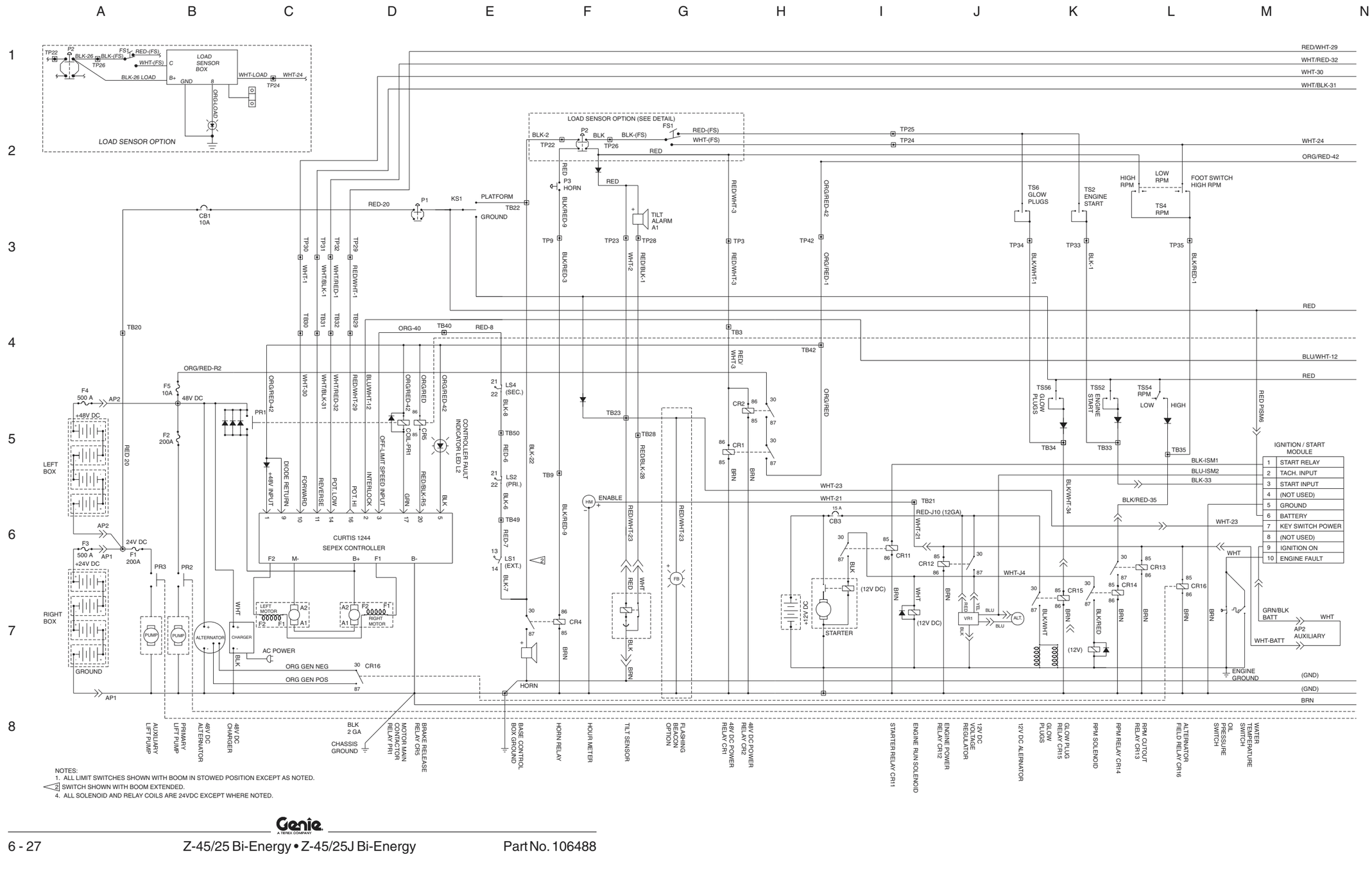




Electrical Schematic, Z-45/25

(from serial number 17975 to 21180)

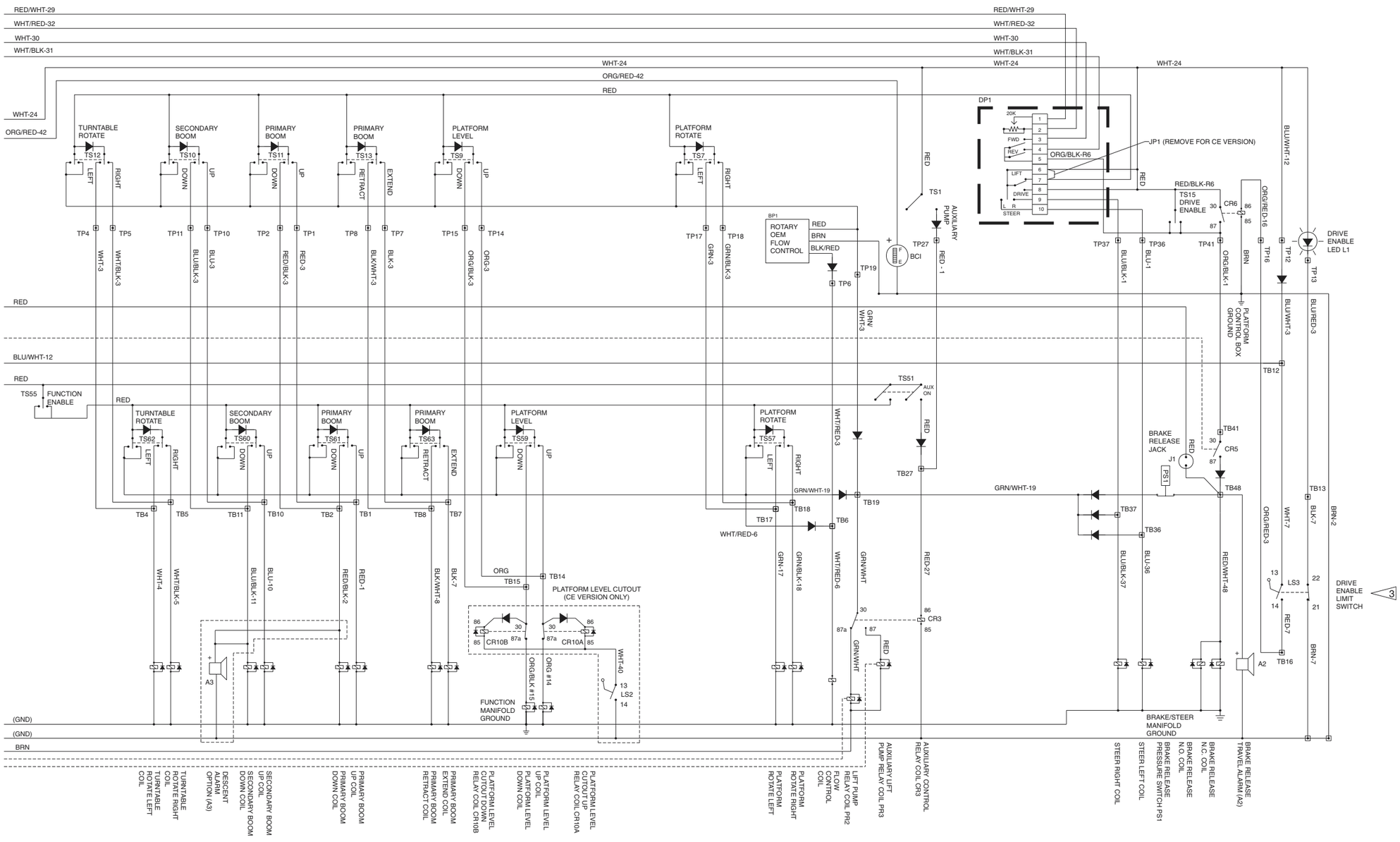
REV A



NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

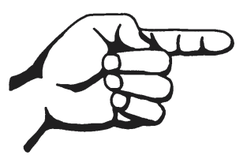
REV A

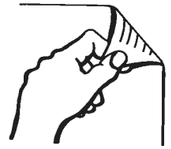
Electrical Schematic, Z-45/25
(from serial number 17975 to 21180)



Electrical Schematic, Z-45/25
(from serial number 17975 to 21180)



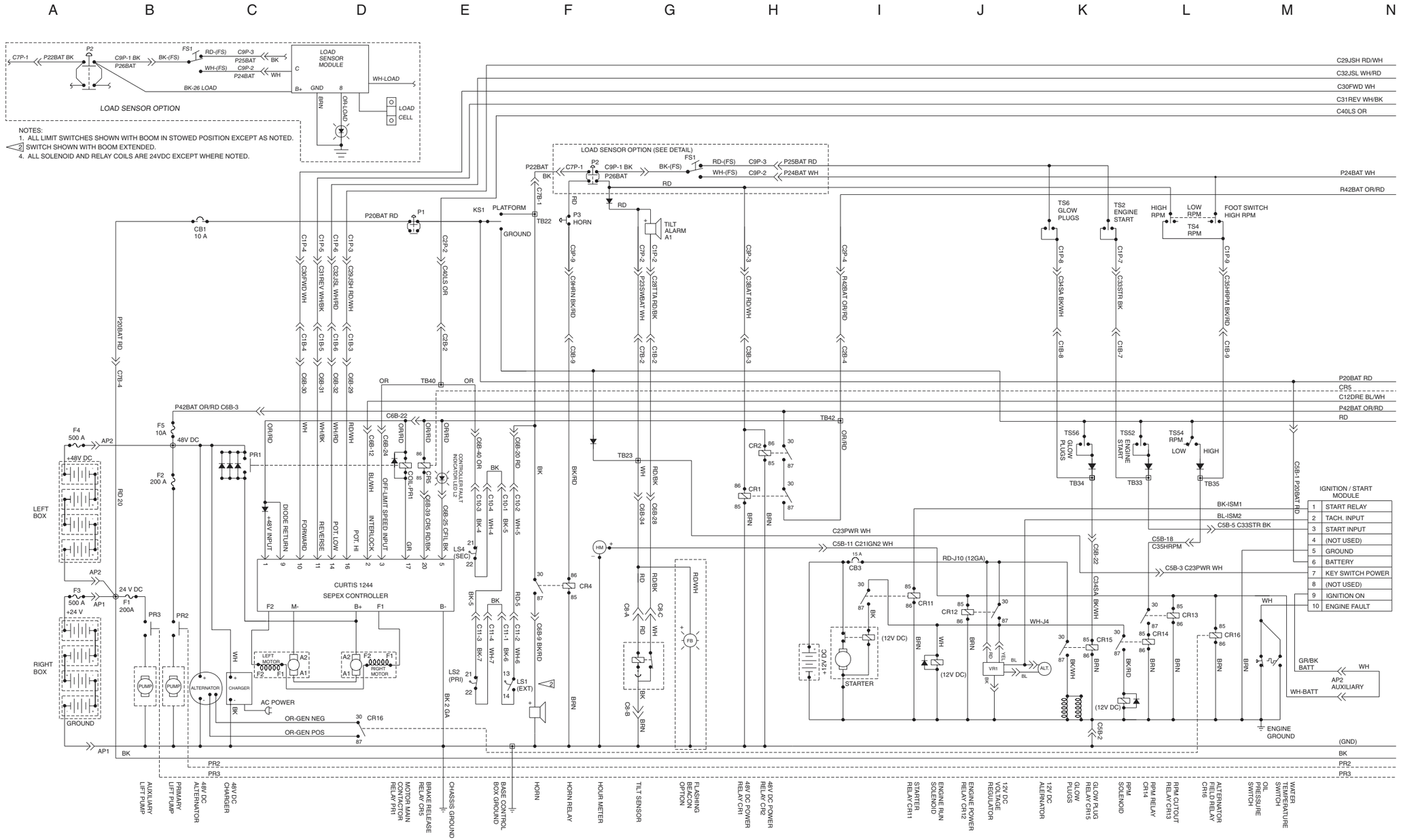




Electrical Schematic, Z-45/25

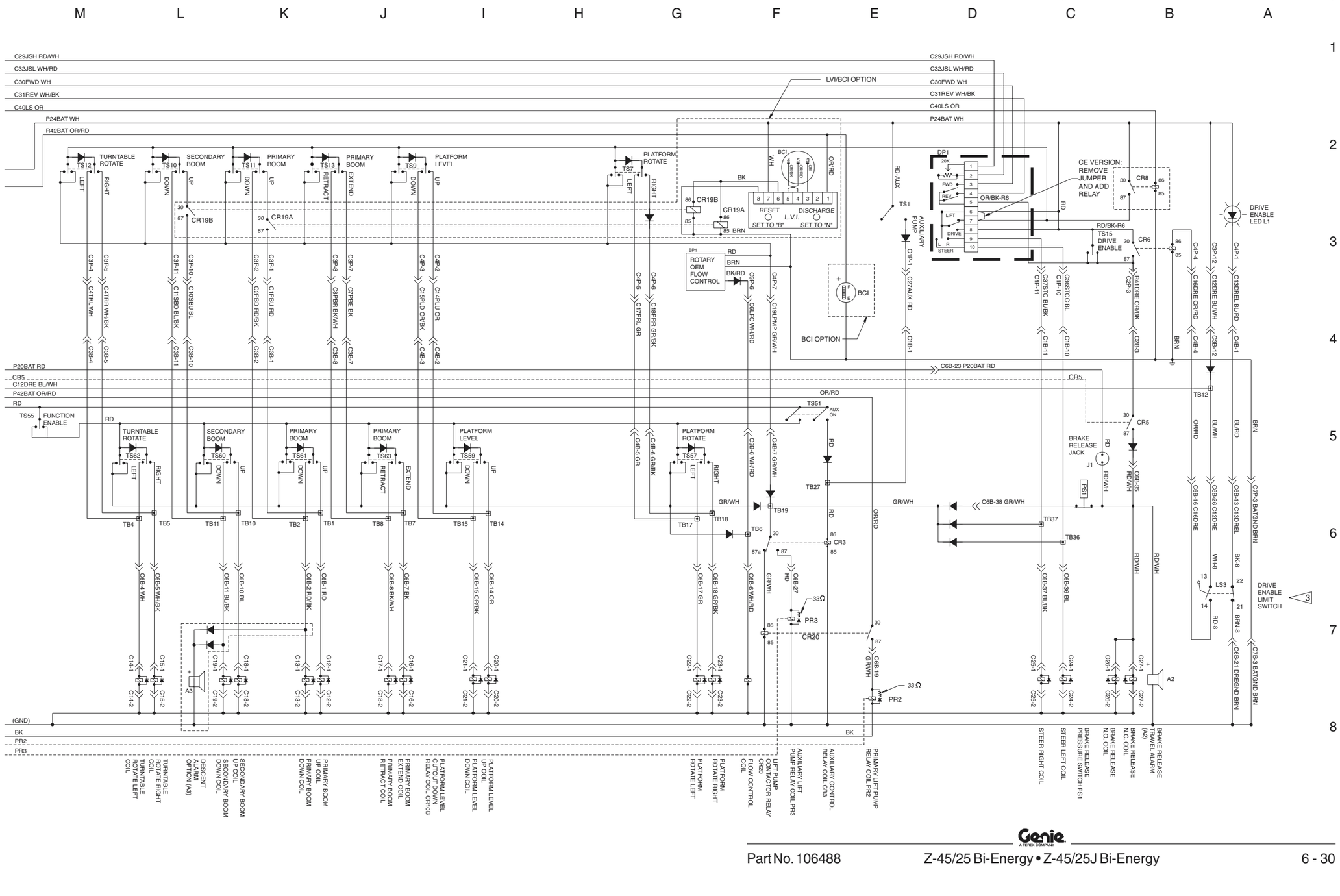
(from serial number 21180 to 22050)

REV A

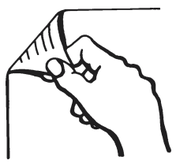


REV A

Electrical Schematic, Z-45/25
(from serial number 21180 to 22050)



Electrical Schematic, Z-45/25
(from serial number 21181 to 22050)



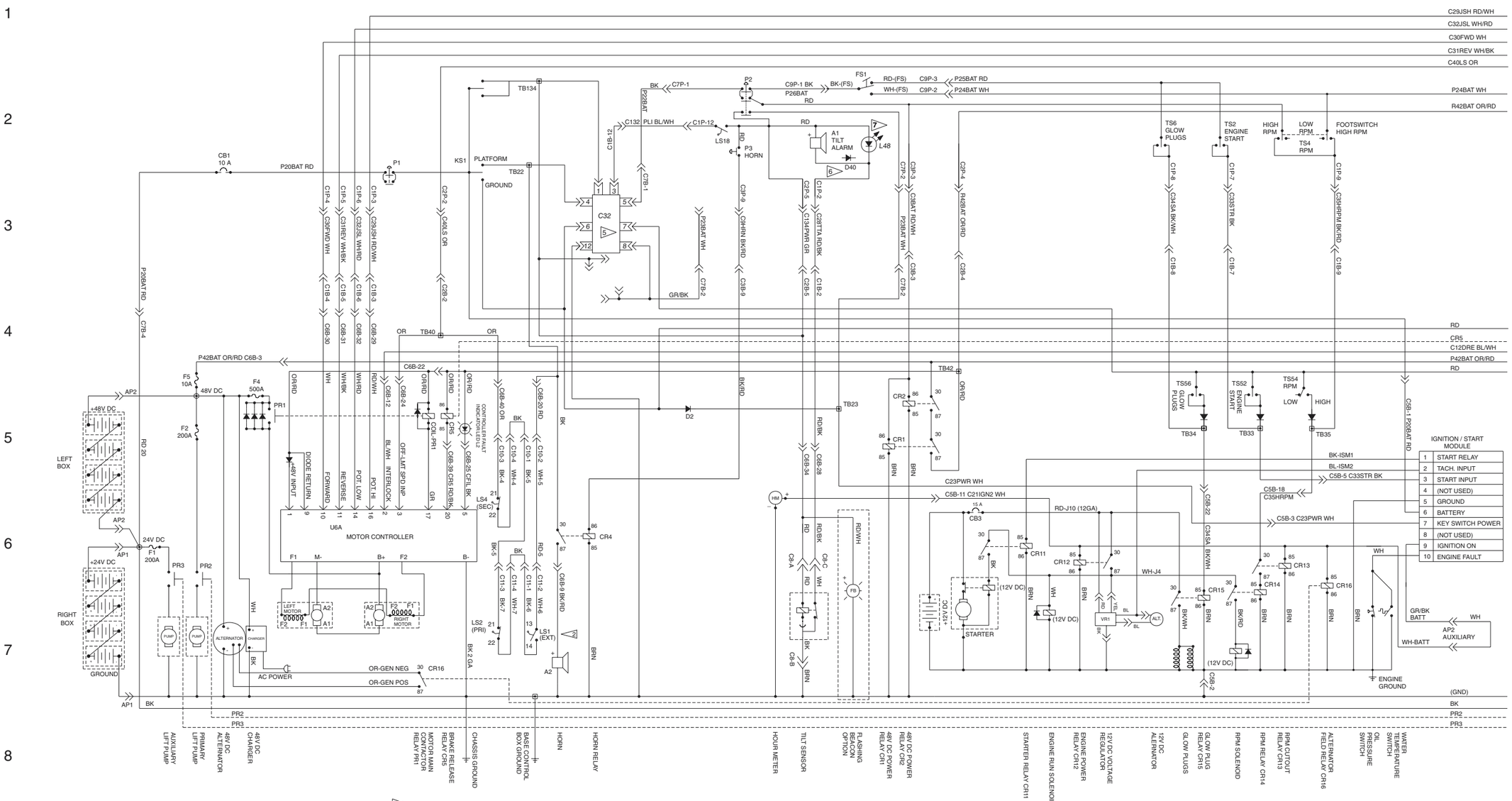




Electrical Schematic, Z-45/25, ANSI and CSA Models

(from serial number 22051 to 23235)

REV A



NOTES:

1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

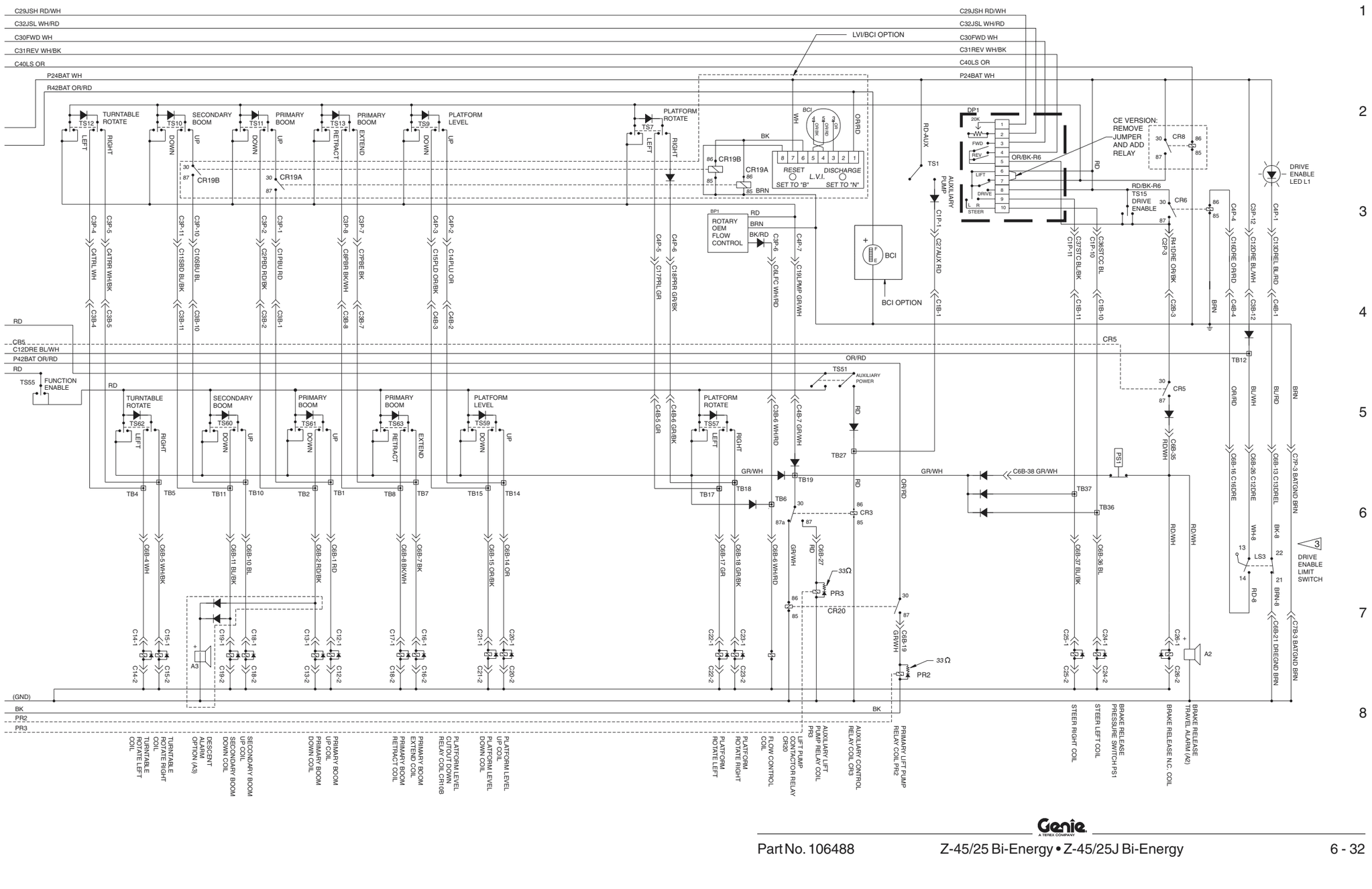
5 SWITCH SHOWN WITH BOOM EXTENDED.

6 ADD D40 ONLY IF UNIT HAS L4 AND L48.

7 ANSI/CSA

REV A

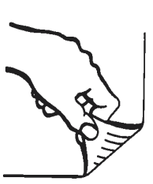
Electrical Schematic, Z-45/25, ANSI and CSA Models
(from serial number 22051 to 23235)



Electrical Schematic, Z-45/25, ANSI and CSA Models
(from serial number 22051 to 23235)



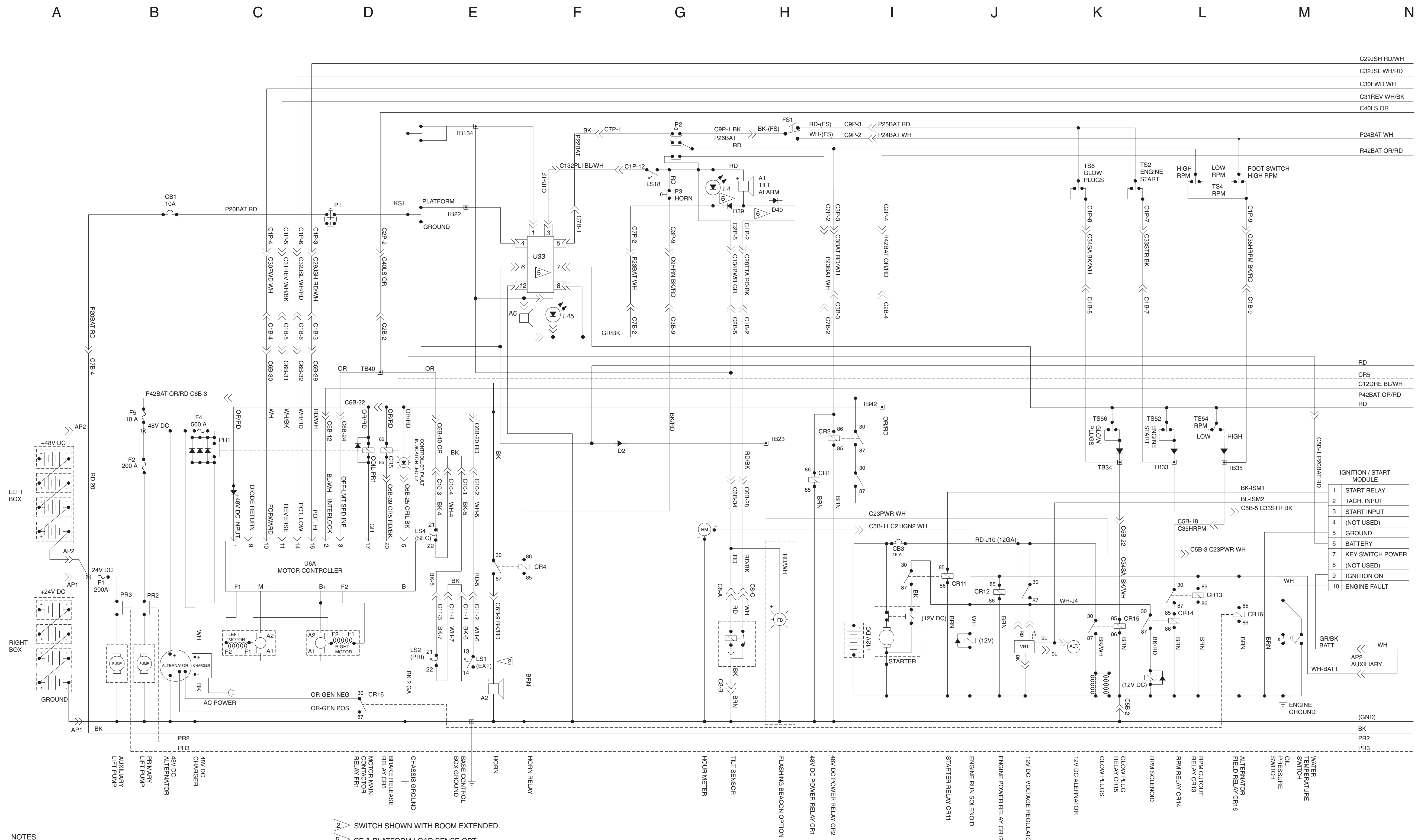




Electrical Schematic, Z-45/25, CE Models

REV A

(from serial number 22051 to 23235)



2 SWITCH SHOWN WITH BOOM EXTENDED.

5 CE & PLATFORM LOAD SENSE OPT.

6 ADD D40 ONLY IF UNIT HAS L4 AND L48.

NOTES:

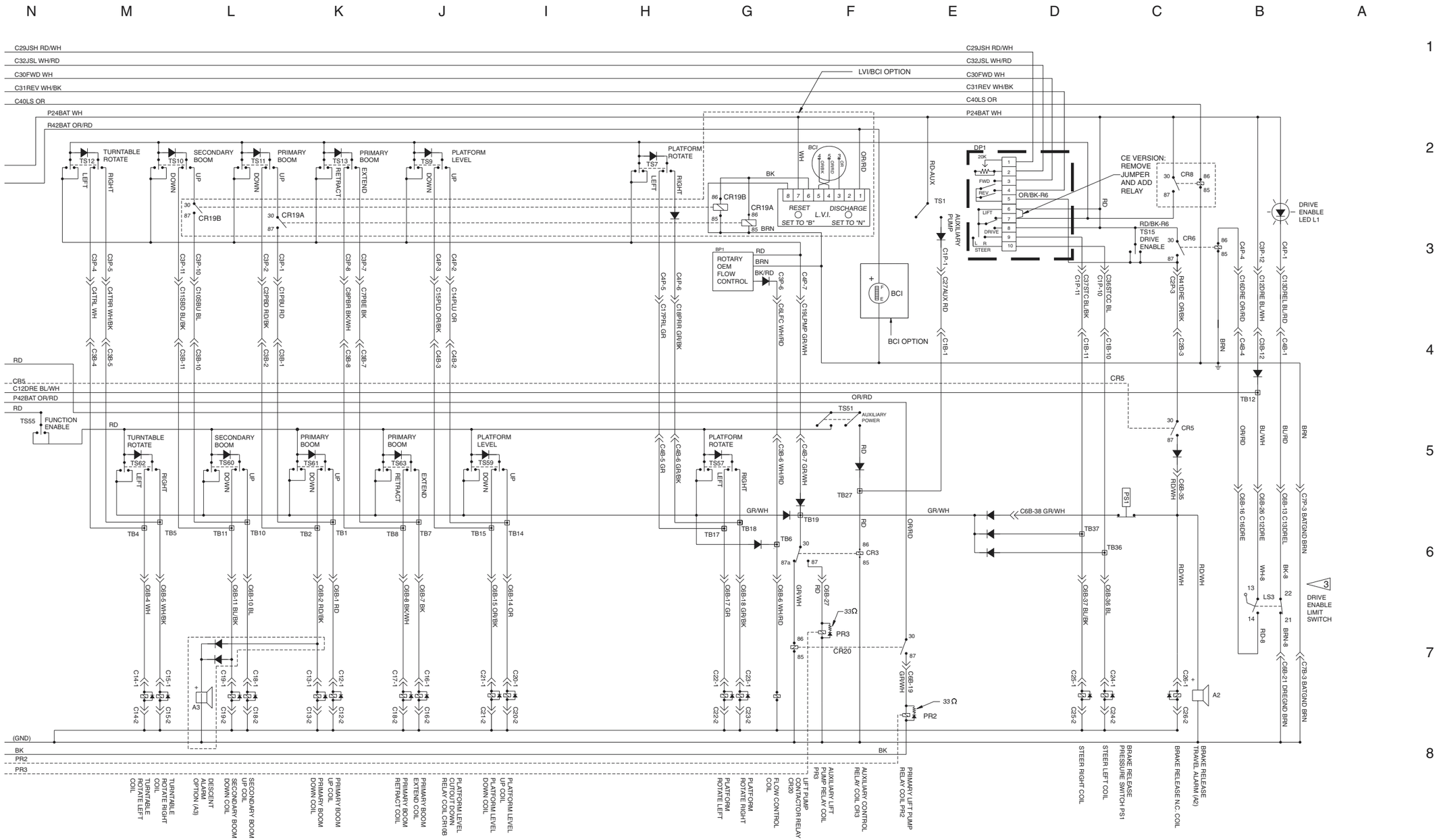
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

Genie A TEREX COMPANY

REV A

Electrical Schematic, Z-45/25, CE Models

(from serial number 22051 to 23235)



Electrical Schematic, Z-45/25, CE Models
(from serial number 22051 to 23235)



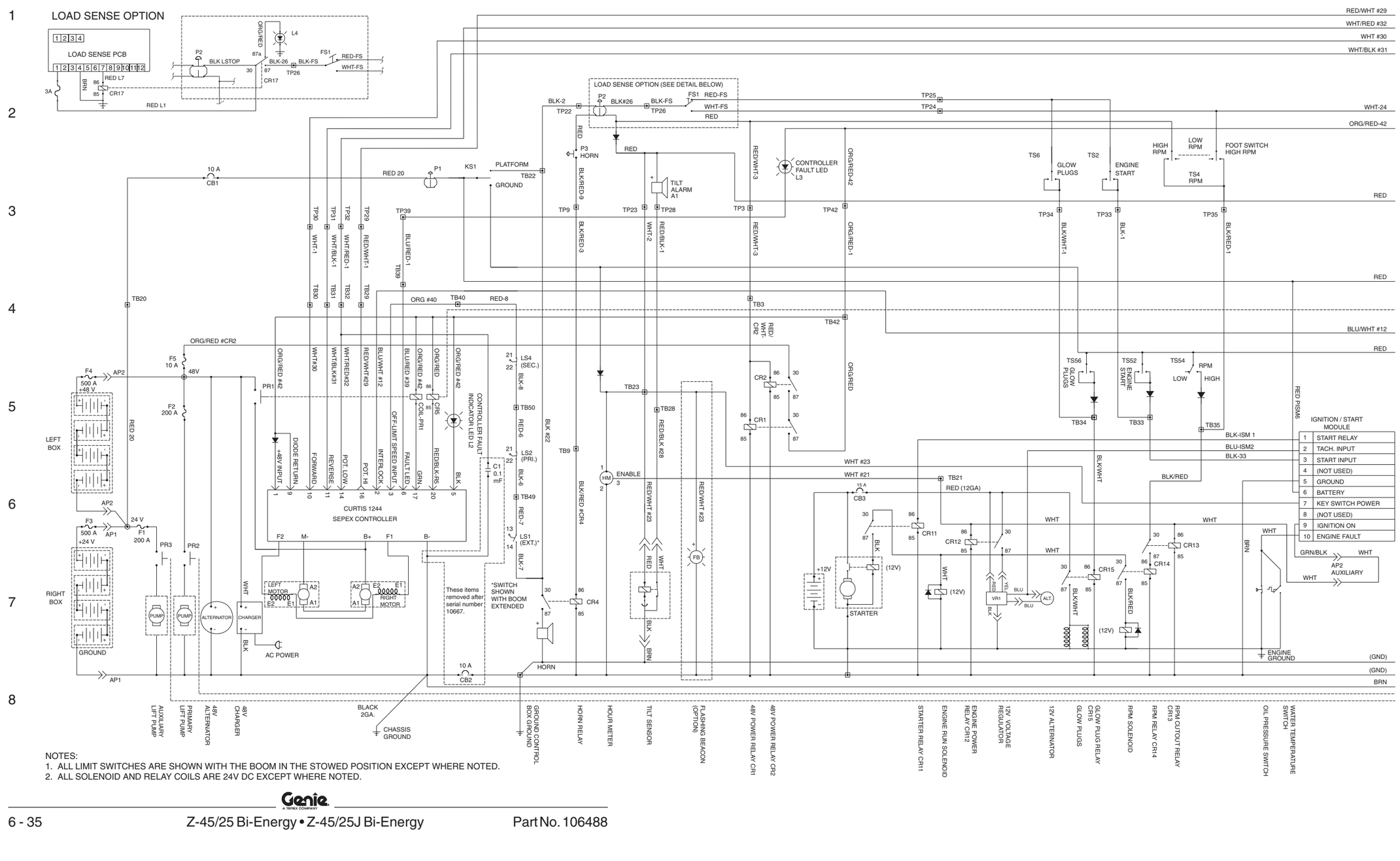




Electrical Schematic, Z-45/25J

(before serial number 13361)

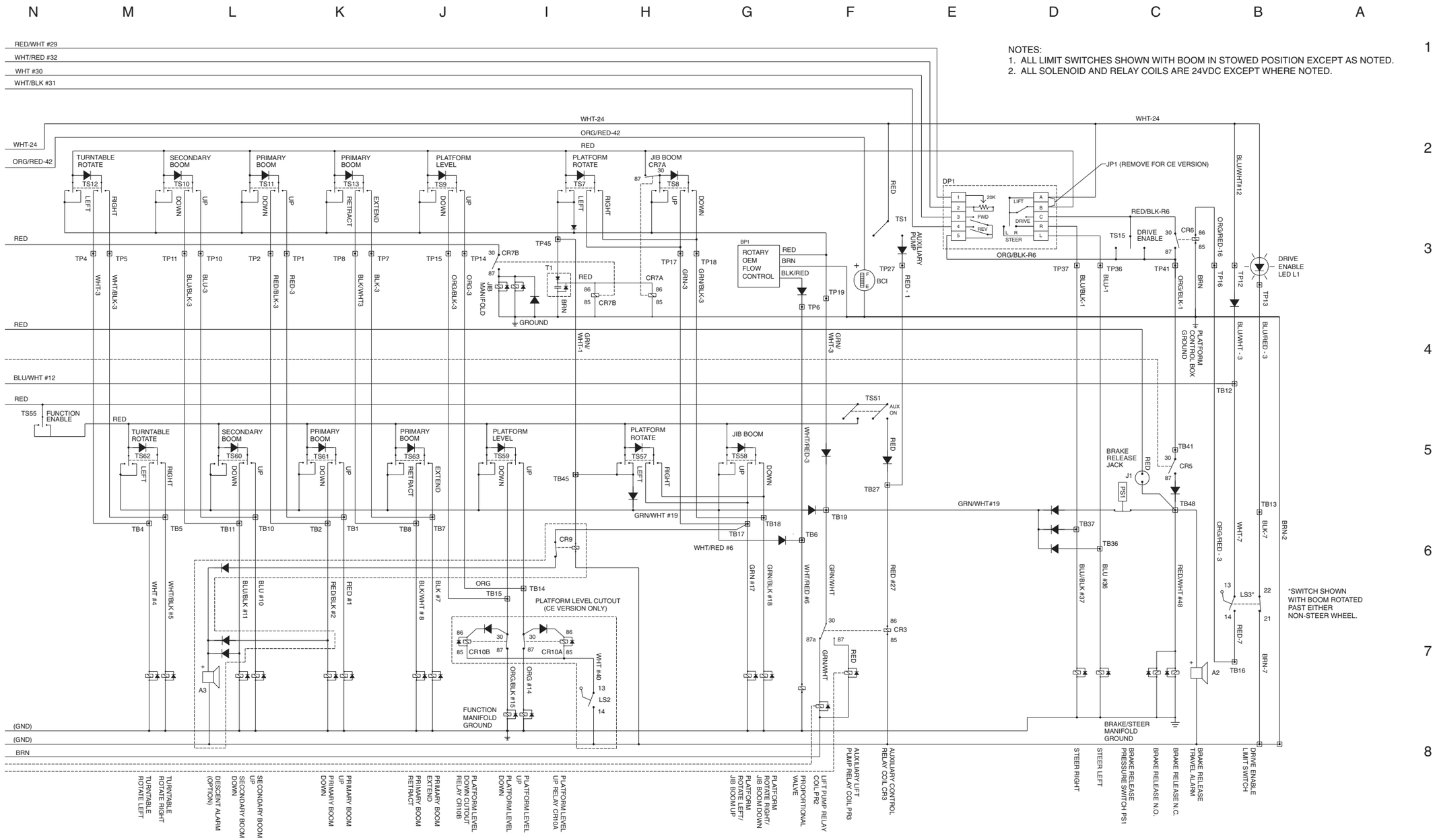
REV A



NOTES:
1. ALL LIMIT SWITCHES ARE SHOWN WITH THE BOOM IN THE STOWED POSITION EXCEPT WHERE NOTED.
2. ALL SOLENOID AND RELAY COILS ARE 24V DC EXCEPT WHERE NOTED.

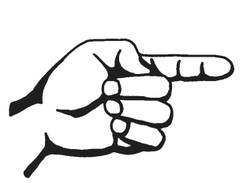
REV A

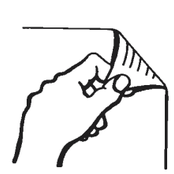
Electrical Schematic, Z-45/25J
(before serial number 13361)



Electrical Schematic, Z-45/25J
(before serial number 13361)







Electrical Schematic, Z-45/25J

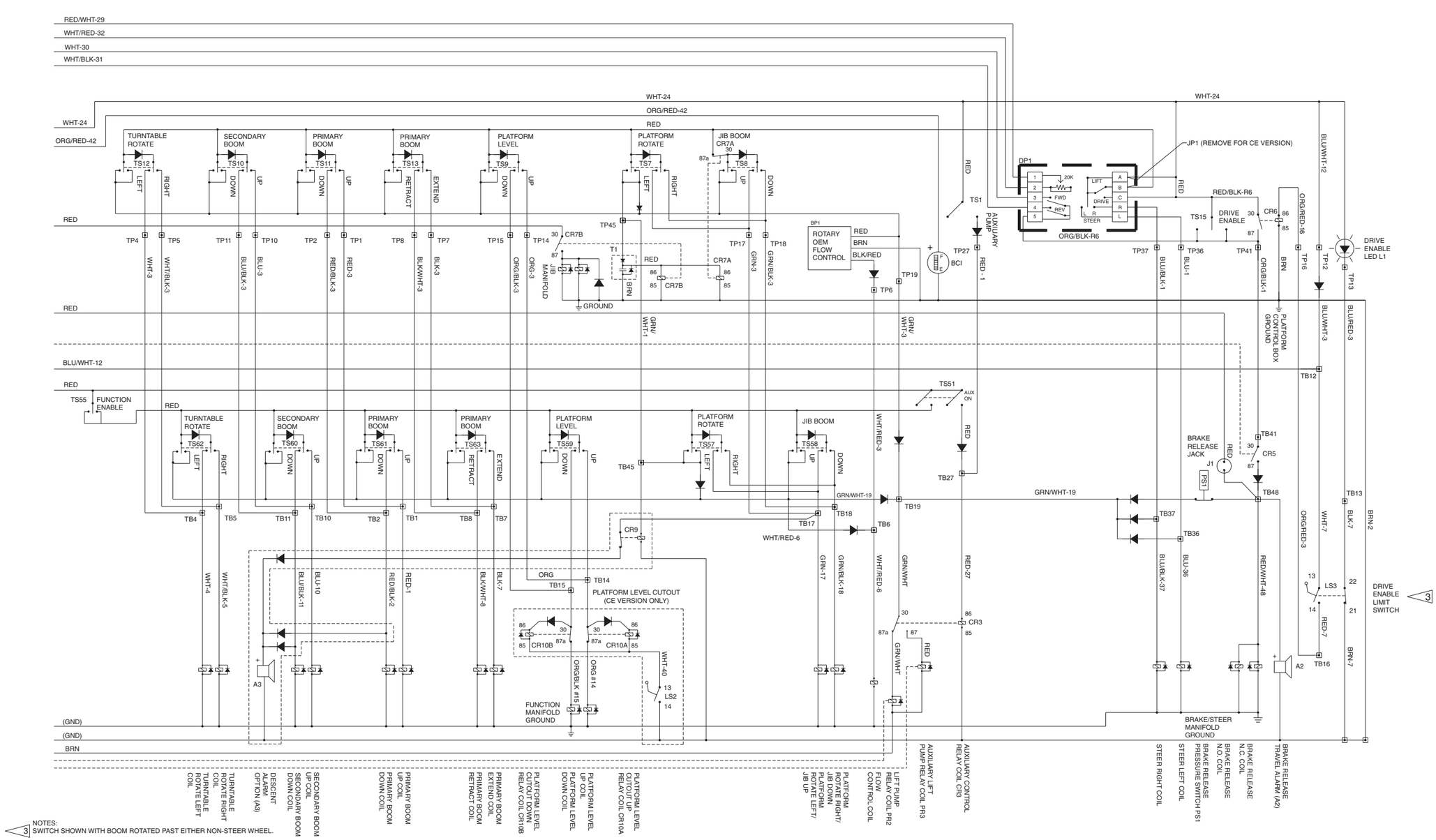
(from serial number 13361 to 14078)

REV A

NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

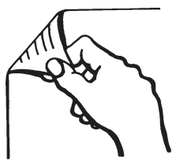
REV A

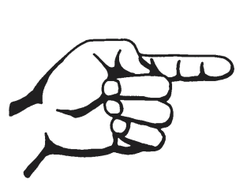
Electrical Schematic, Z-45/25J
(from serial number 13361 to 14078)

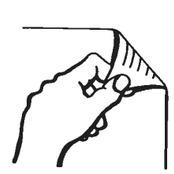


NOTES:
3 SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

Electrical Schematic, Z-45/25J
(from serial number 13361 to 14078)







Electrical Schematic, Z-45/25J

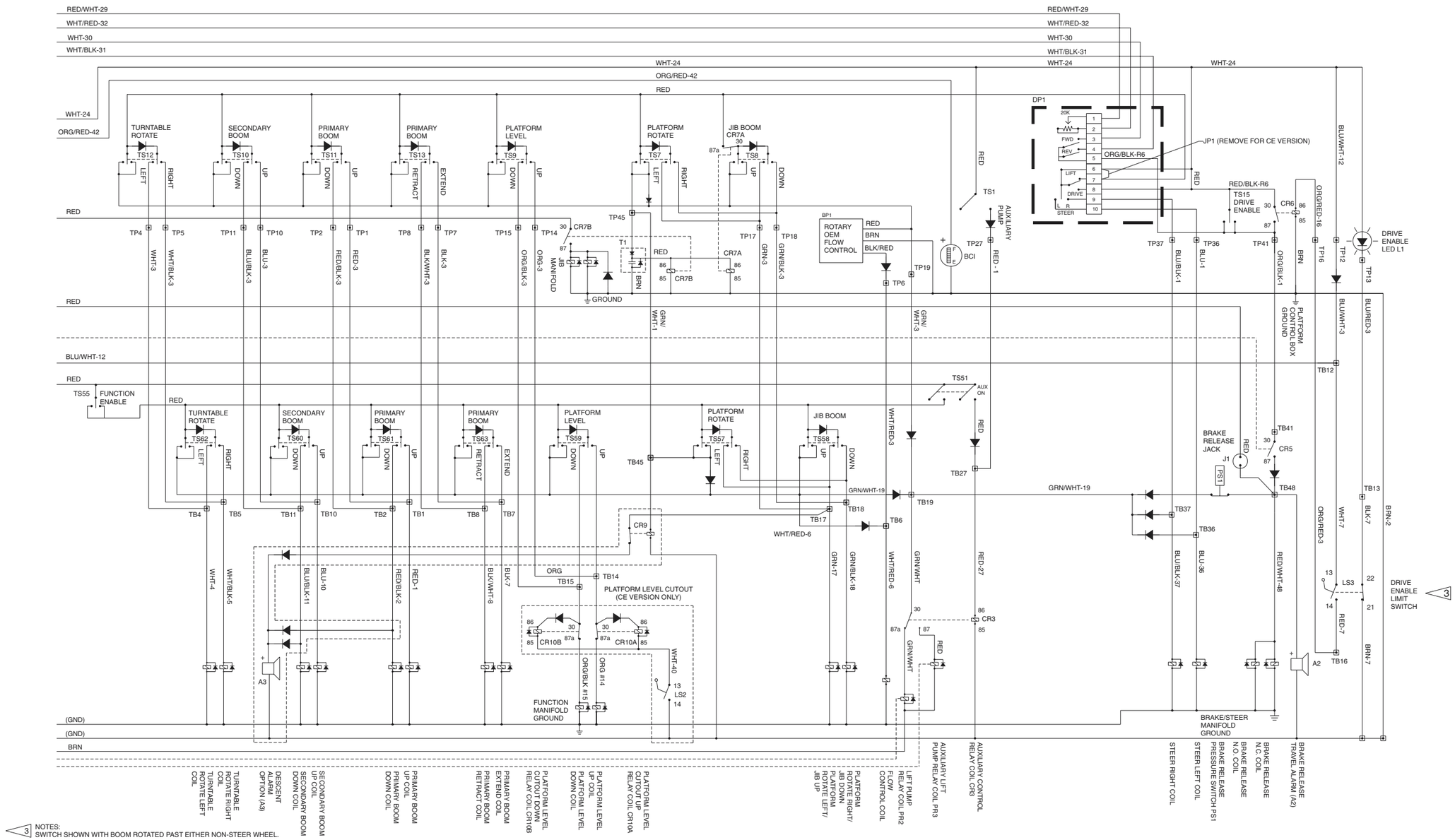
(from serial number 14079 to 14650)

REV A

NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

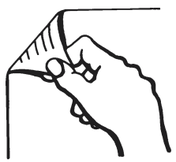
REV A

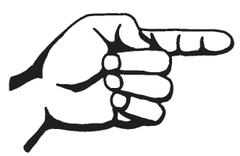
Electrical Schematic, Z-45/25J
(from serial number 14079 to 14650)

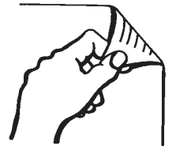


3 NOTES:
SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

Electrical Schematic, Z-45/25J
(from serial number 14079 to 14650)







Electrical Schematic, Z-45/25J

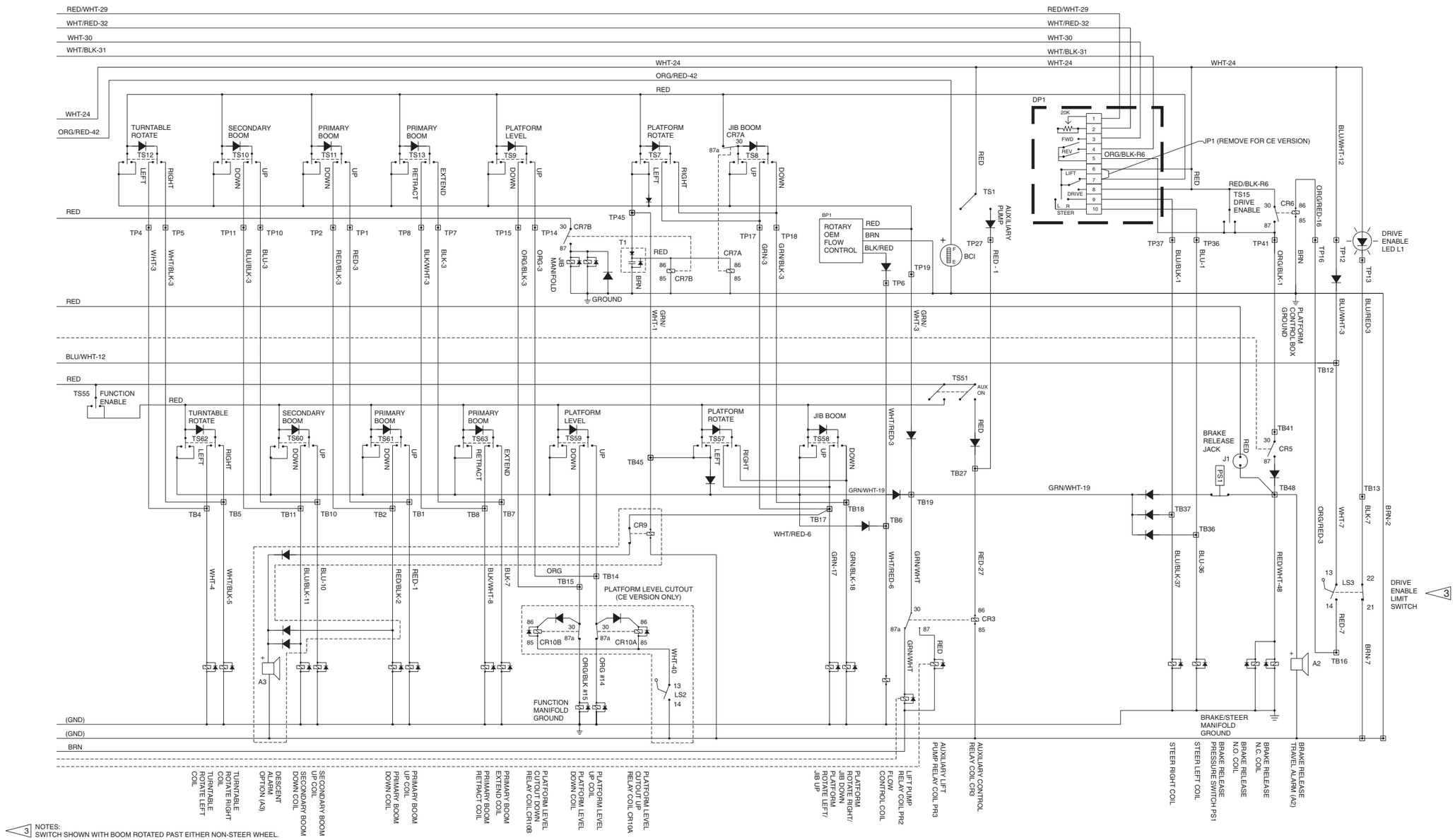
(from serial number 14651 to 16839)

REV A

NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

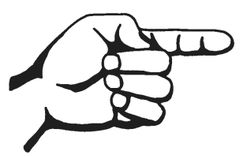
REV A

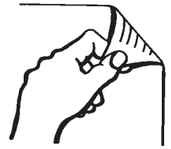
Electrical Schematic, Z-45/25J
(from serial number 14651 to 16839)



Electrical Schematic, Z-45/25J
(from serial number 14651 to 16839)



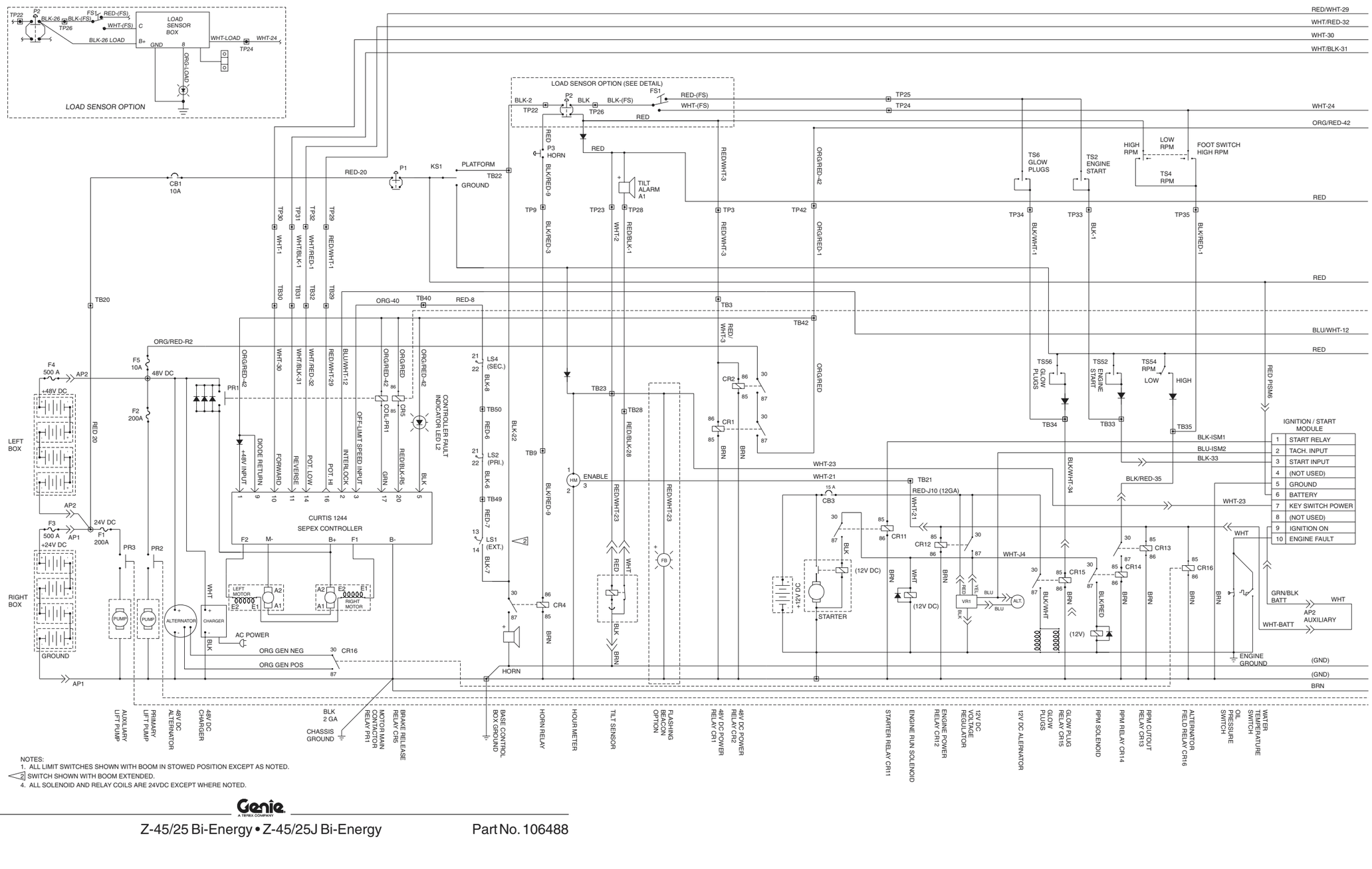




Electrical Schematic, Z-45/25J

(from serial number 16840 to 17974)

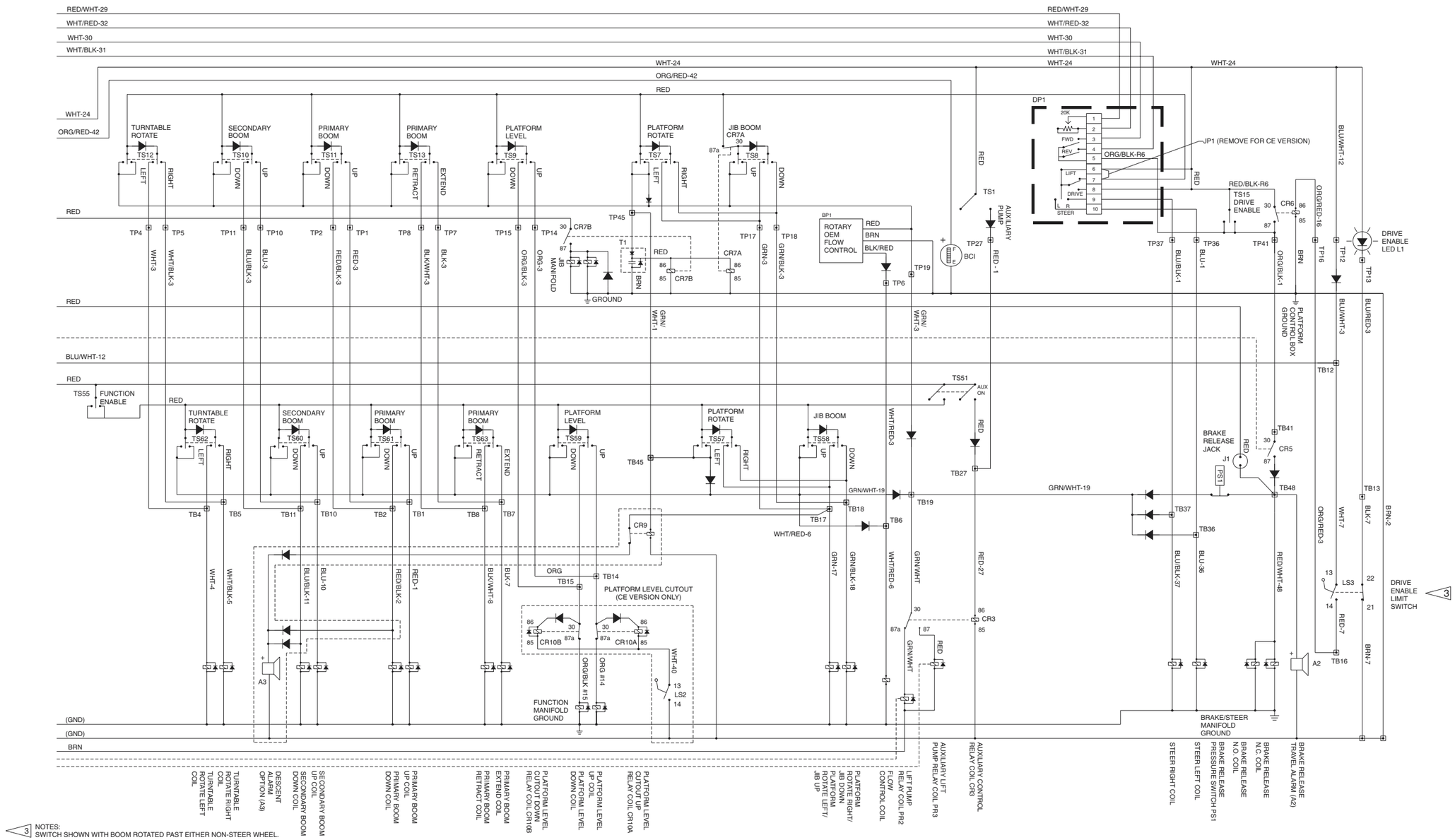
REV A



NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

REV A

Electrical Schematic, Z-45/25J
(from serial number 16840 to 17974)



3 NOTES:
SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

Electrical Schematic, Z-45/25J
(from serial number 16840 to 17974)



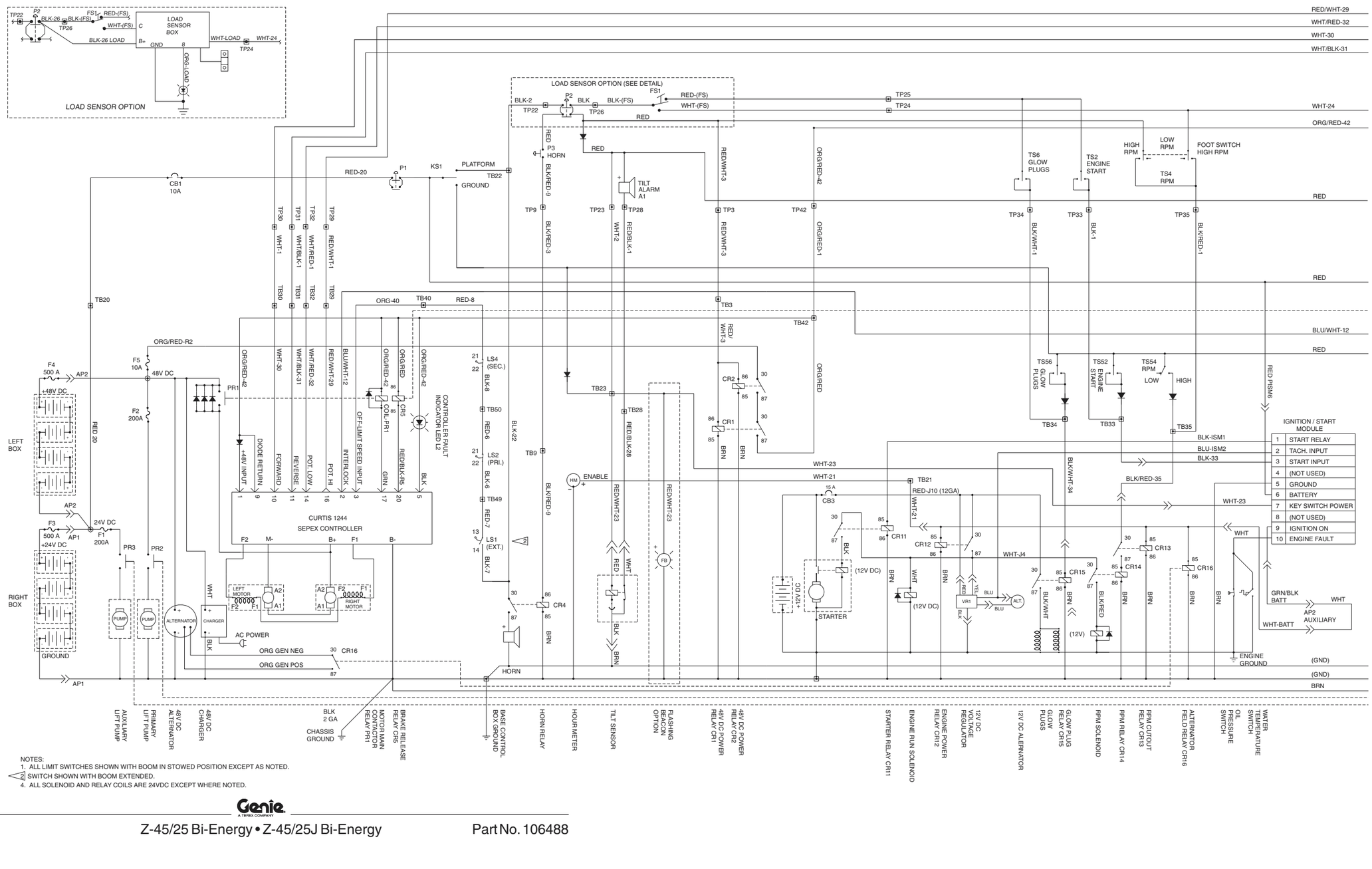




Electrical Schematic, Z-45/25J

(from serial number 17975 to 21180)

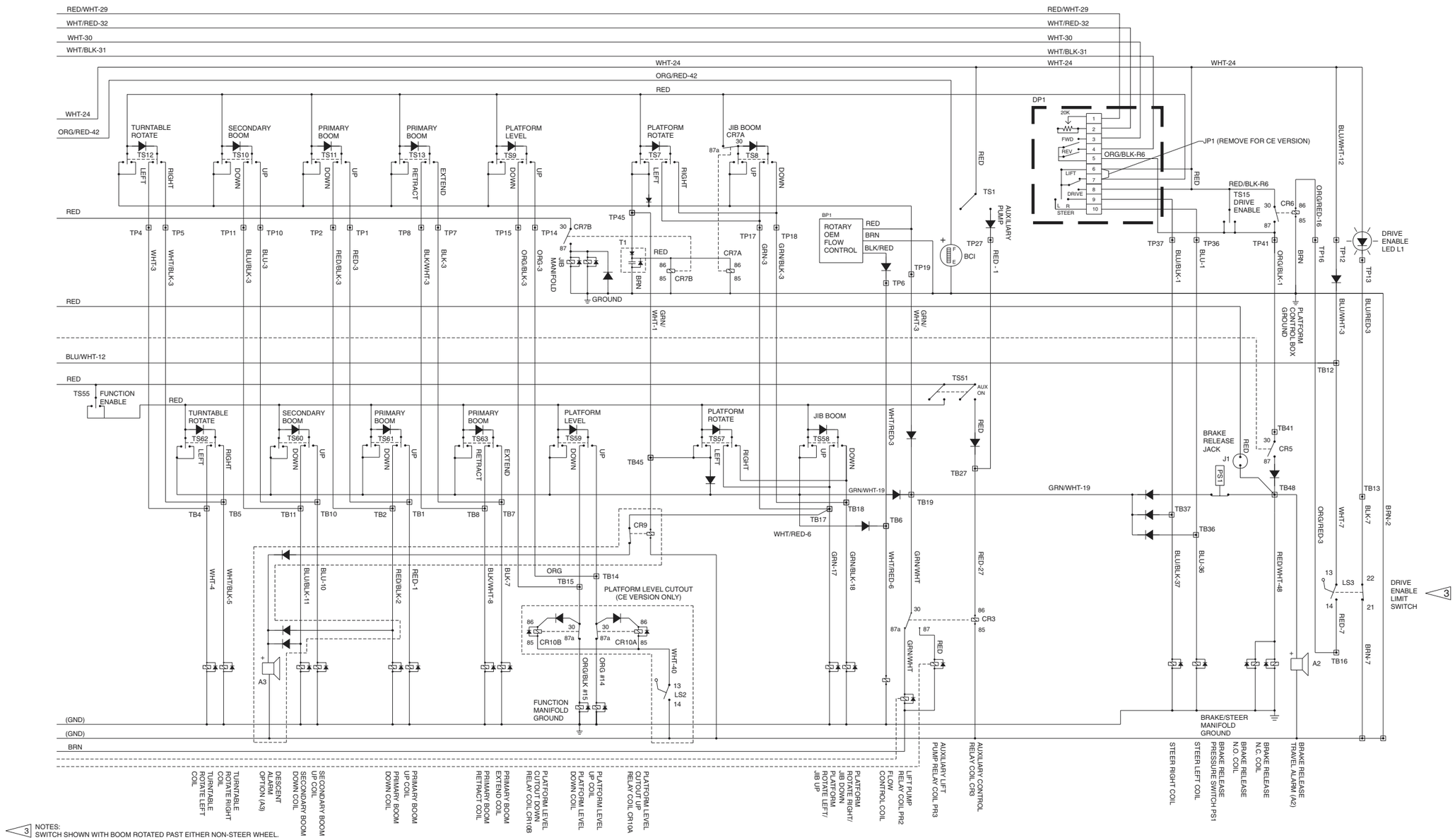
REV A



NOTES:
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
2. SWITCH SHOWN WITH BOOM EXTENDED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

REV A

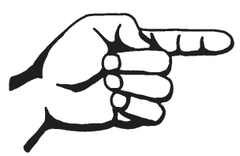
Electrical Schematic, Z-45/25J
(from serial number 17975 to 21180)

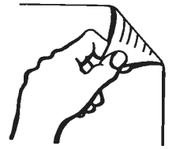


3 NOTES:
SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

Electrical Schematic, Z-45/25J
(from serial number 17975 to 21180)



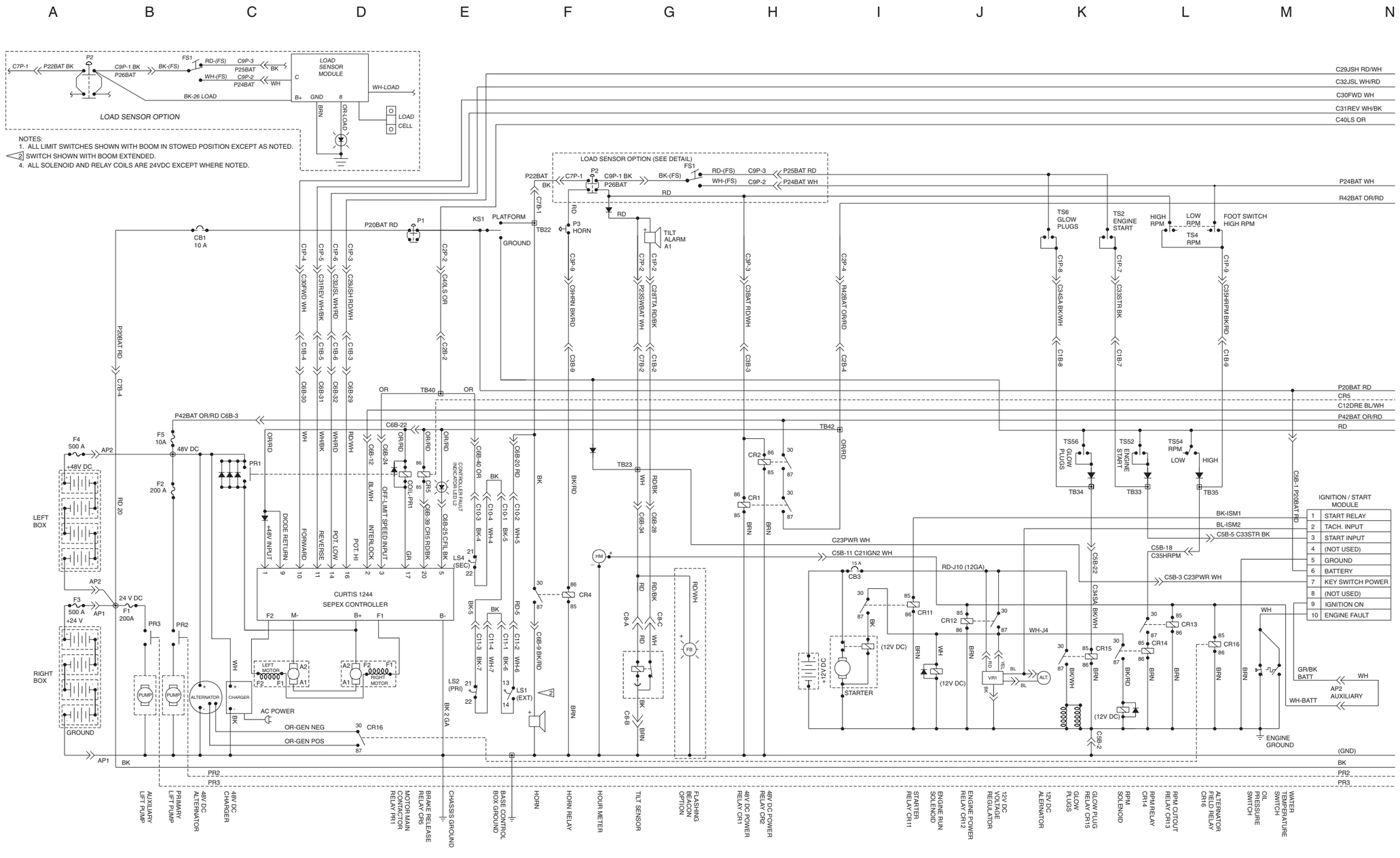




Electrical Schematic, Z-45/25J

(from serial number 21180 to 22050)

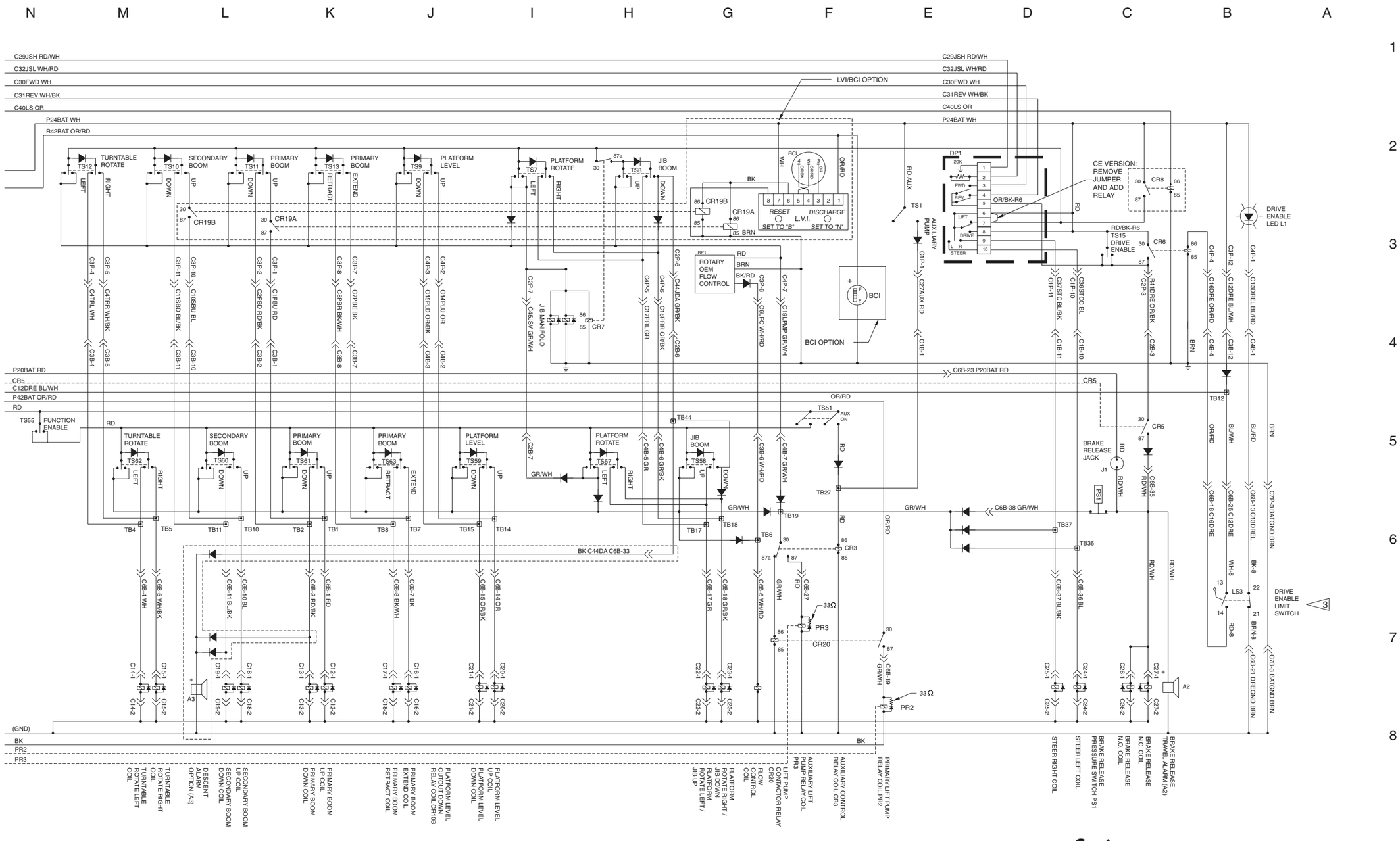
REV A



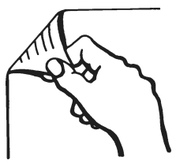
REV A

Electrical Schematic, Z-45/25J

(from serial number 21180 to 22050)



Electrical Schematic, Z-45/25J
(from serial number 21181 to 22050)



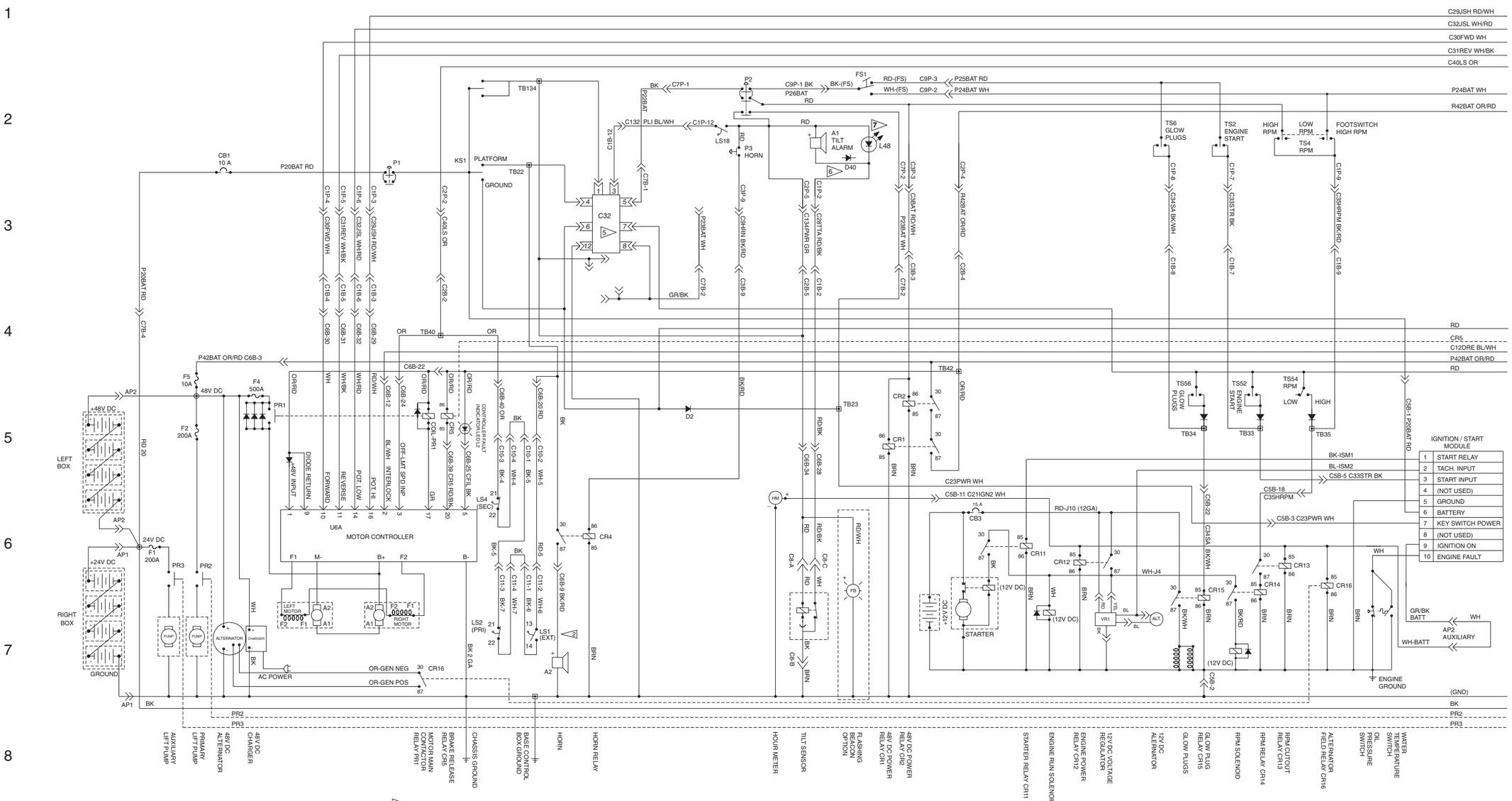




Electrical Schematic, Z-45/25J, ANSI and CSA Models

(from serial number 22051 to 23235)

REV A



NOTES:

1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

5 SWITCH SHOWN WITH BOOM EXTENDED.

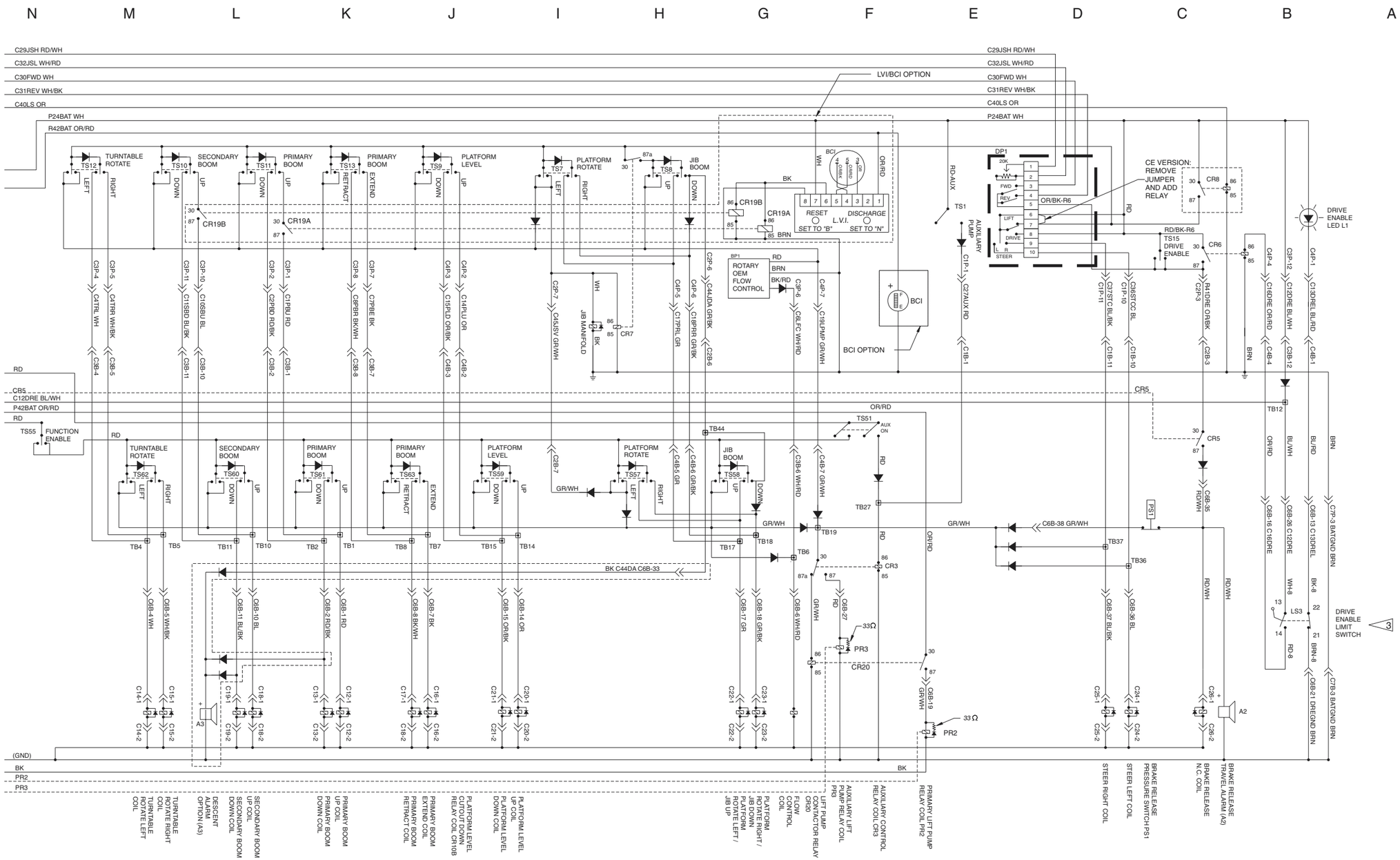
6 ADD D40 ONLY IF UNIT HAS L4 AND L48.

7 ANSI/CSA

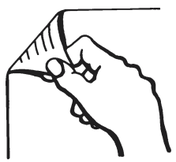
REV A

Electrical Schematic, Z-45/25J, ANSI and CSA Models

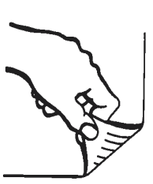
(from serial number 22051 to 23235)



Electrical Schematic, Z-45/25J, ANSI and CSA Models
(from serial number 22051 to 23235)



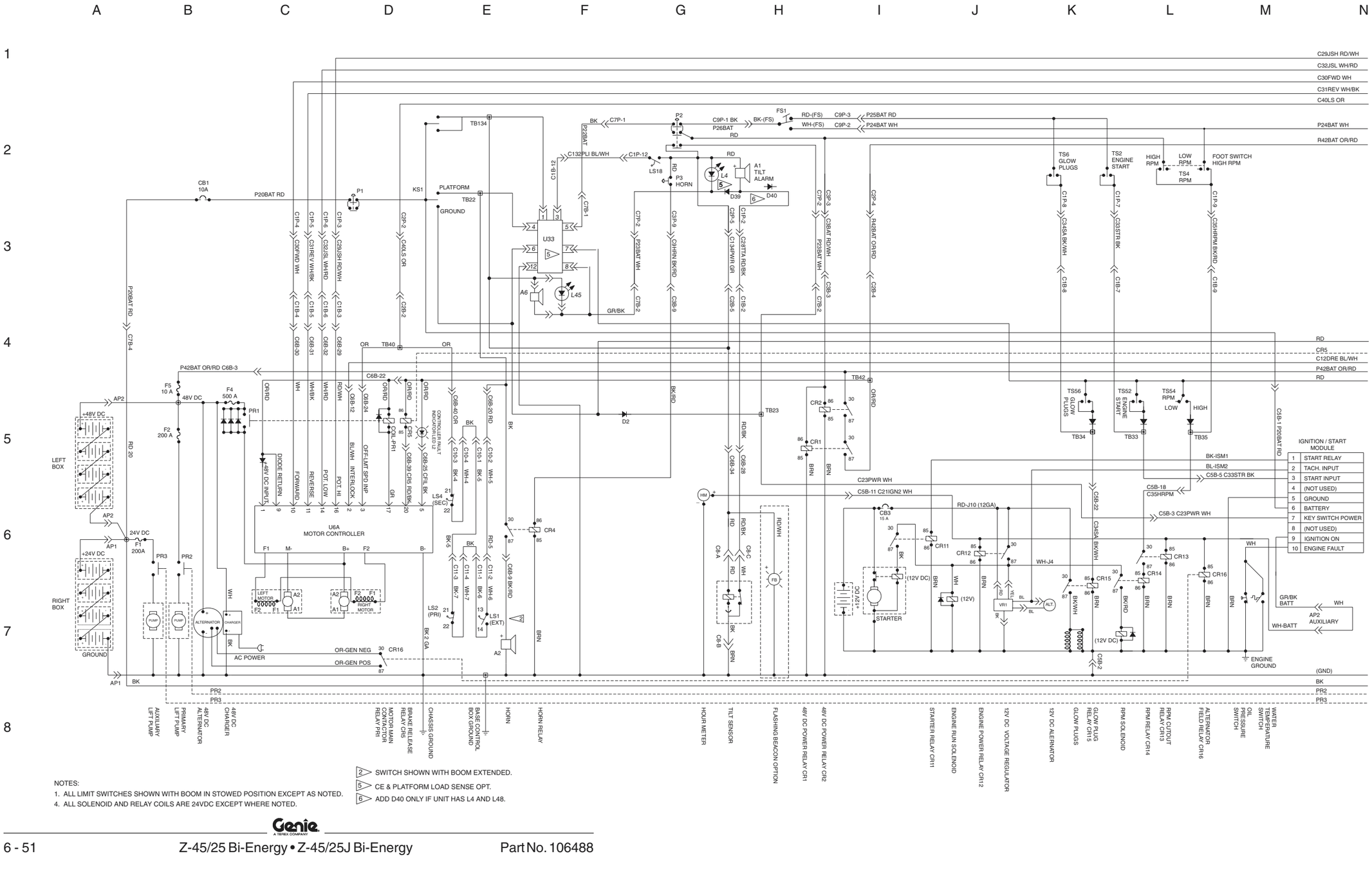




Electrical Schematic, Z-45/25J, CE Models

REV A

(from serial number 22051 to 23235)



NOTES:

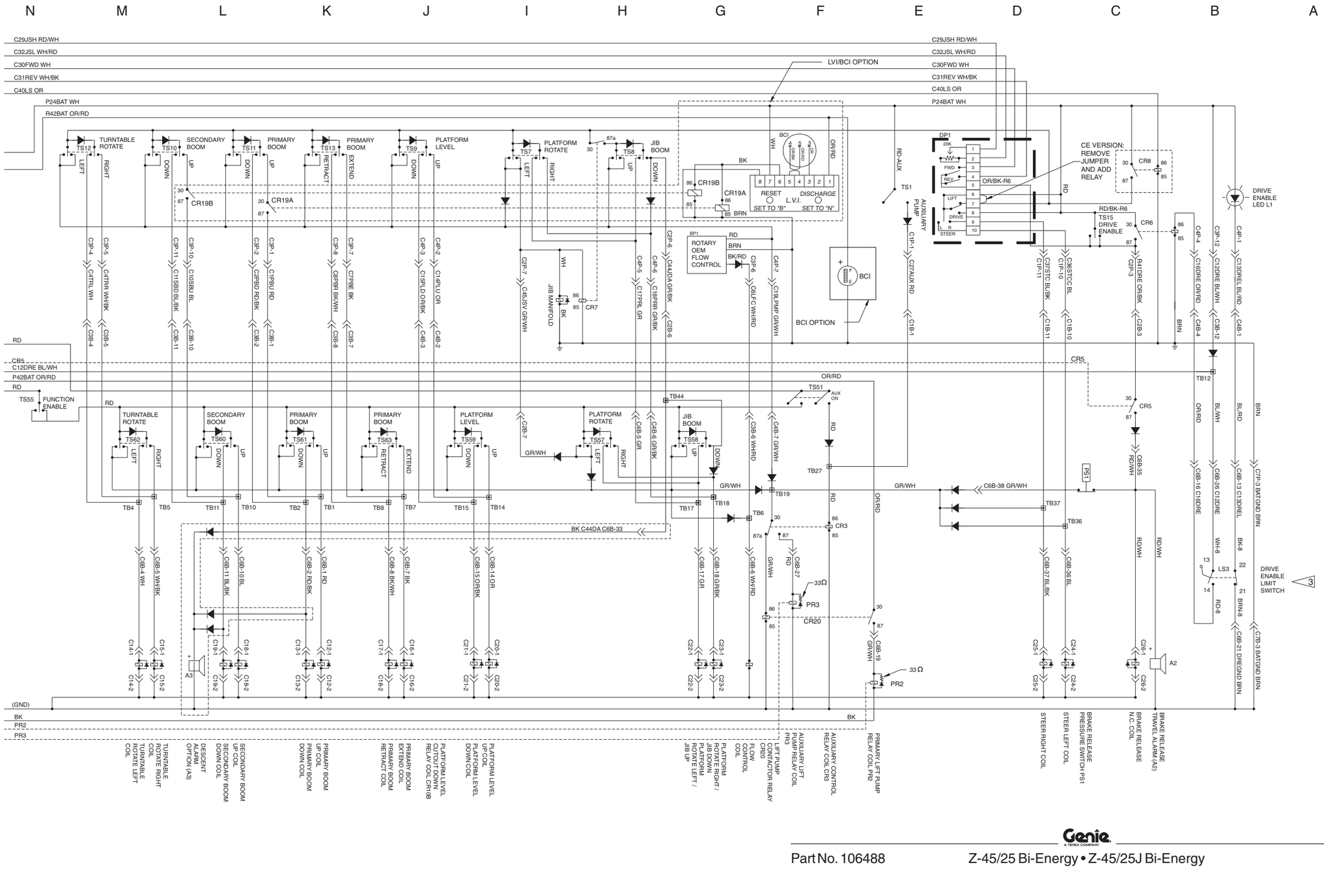
1. ALL LIMIT SWITCHES SHOWN WITH BOOM IN STOWED POSITION EXCEPT AS NOTED.
4. ALL SOLENOID AND RELAY COILS ARE 24VDC EXCEPT WHERE NOTED.

2 SWITCH SHOWN WITH BOOM EXTENDED.
D CE & PLATFORM LOAD SENSE OPT.
6 ADD D40 ONLY IF UNIT HAS L4 AND L48.

REV A

Electrical Schematic, Z-45/25J, CE Models

(from serial number 22051 to 23235)



Electrical Schematic, Z-45/25J, CE Models
(from serial number 22051 to 23235)



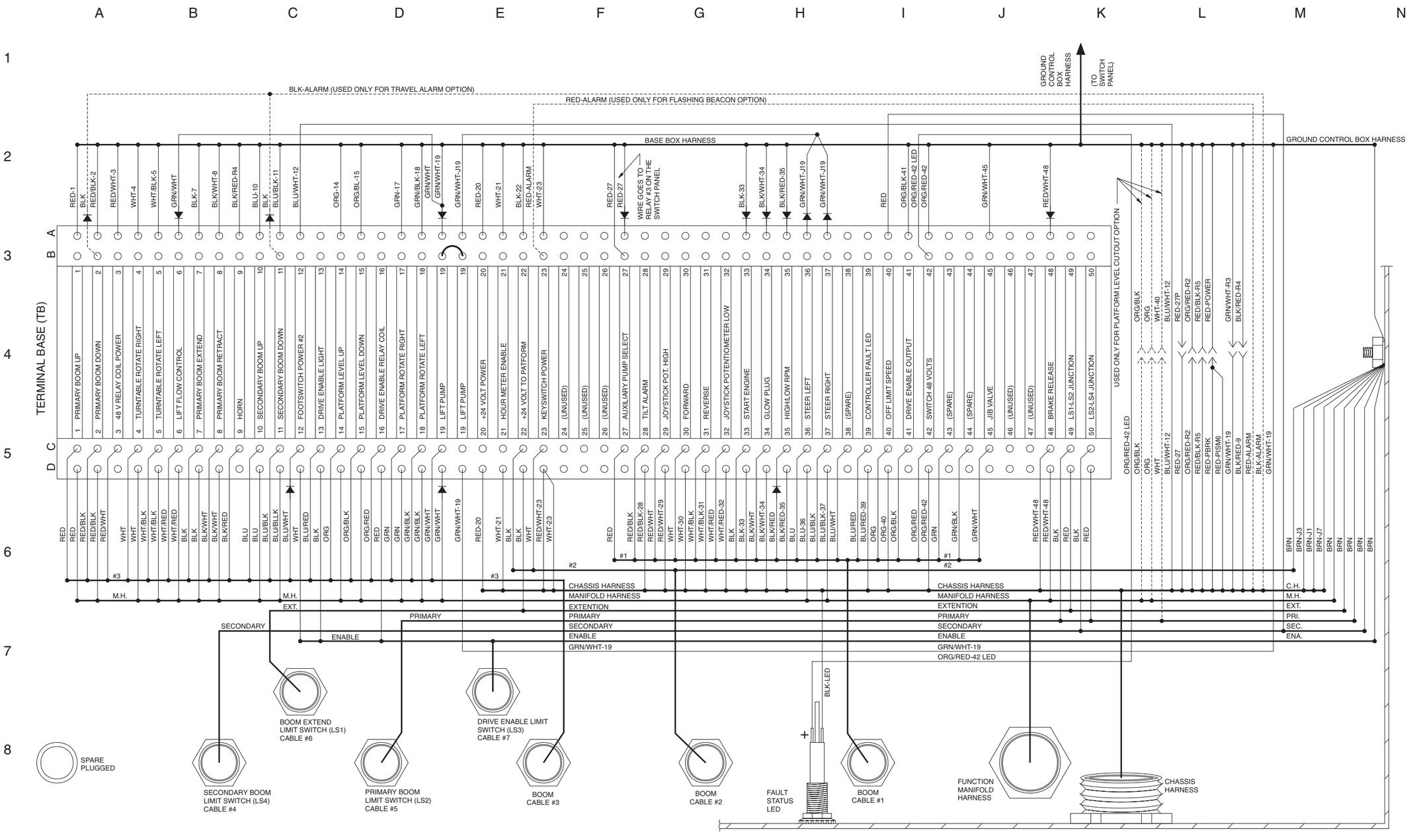
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

(before serial number 13361)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

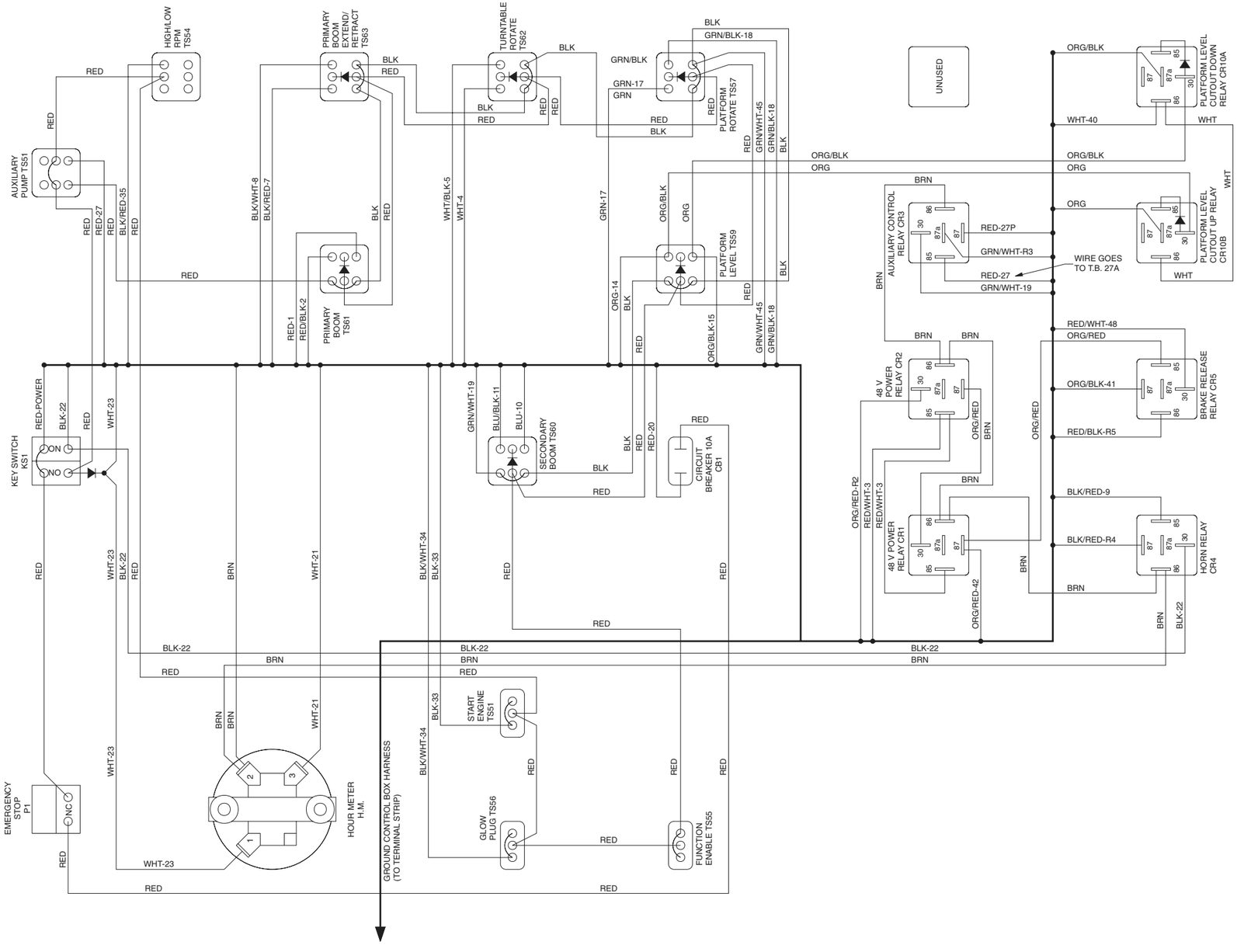
REV A

(before serial number 13361)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(before serial number 13361)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(before serial number 13361)



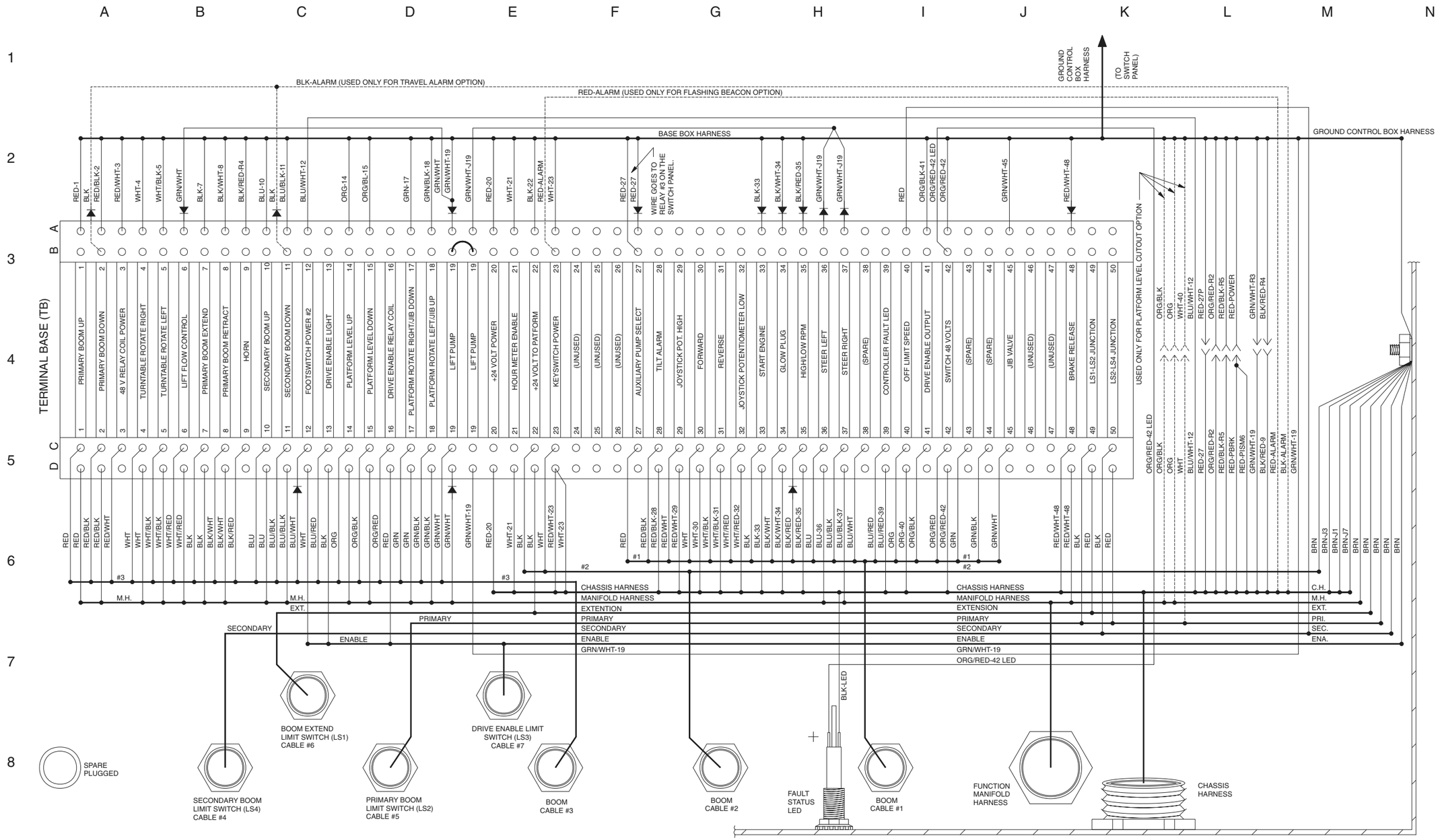
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

(from serial number 13361 to 14078)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

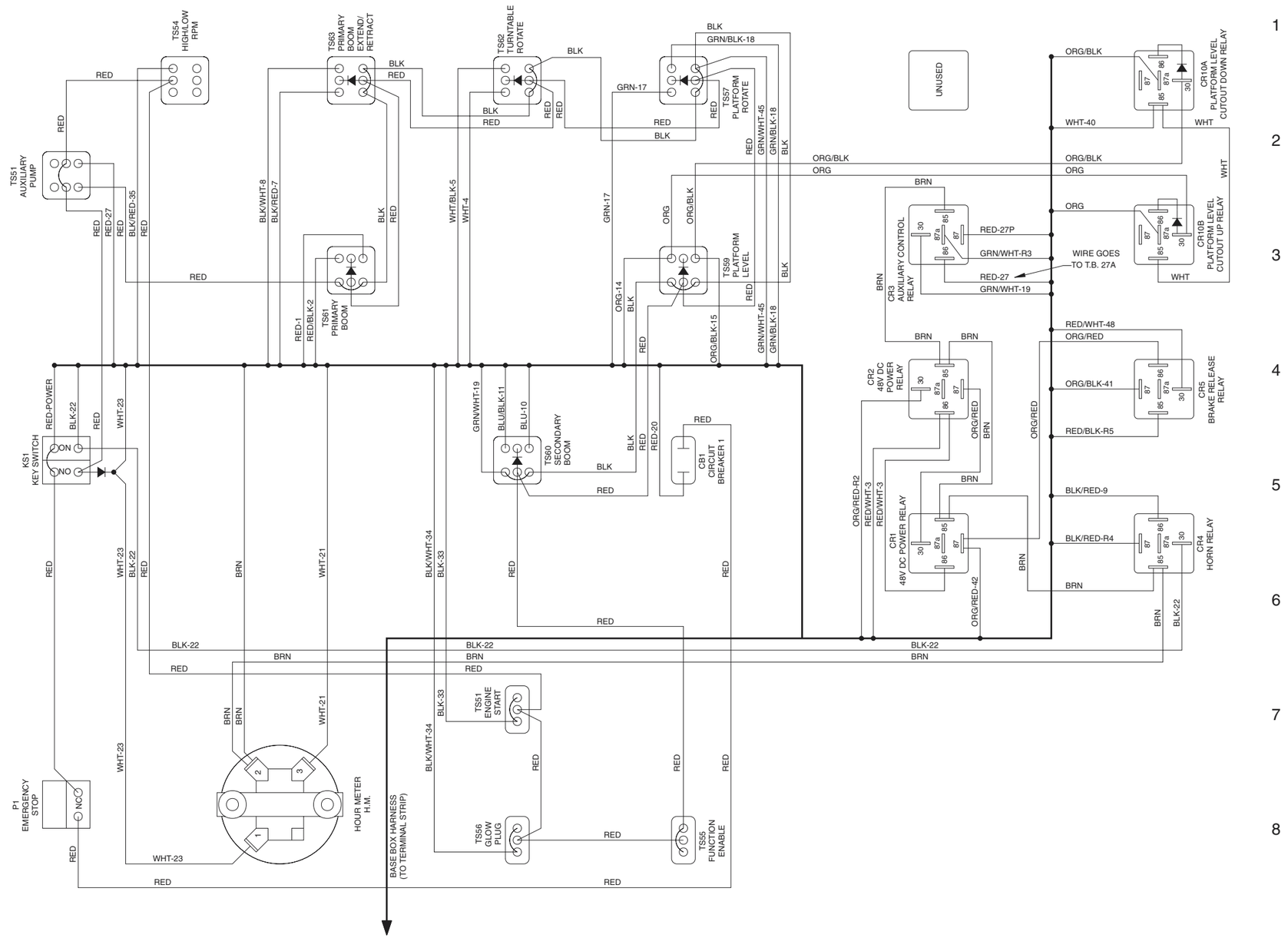
REV A

(from serial number 13361 to 14078)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(from serial number 13361 to 14078)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(from serial number 13361 to 14078)



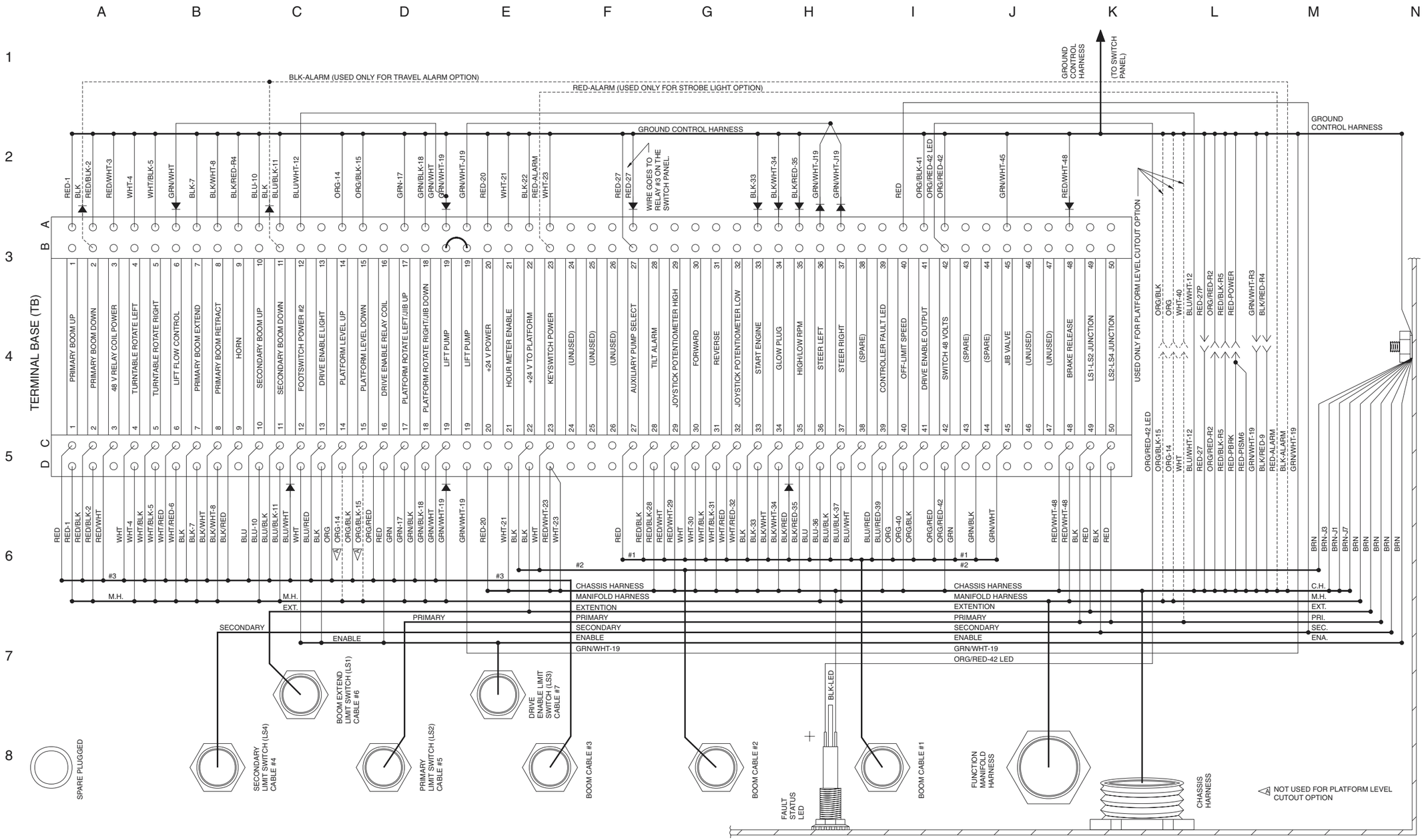
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

(from serial number 14079 to 14650)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

REV A

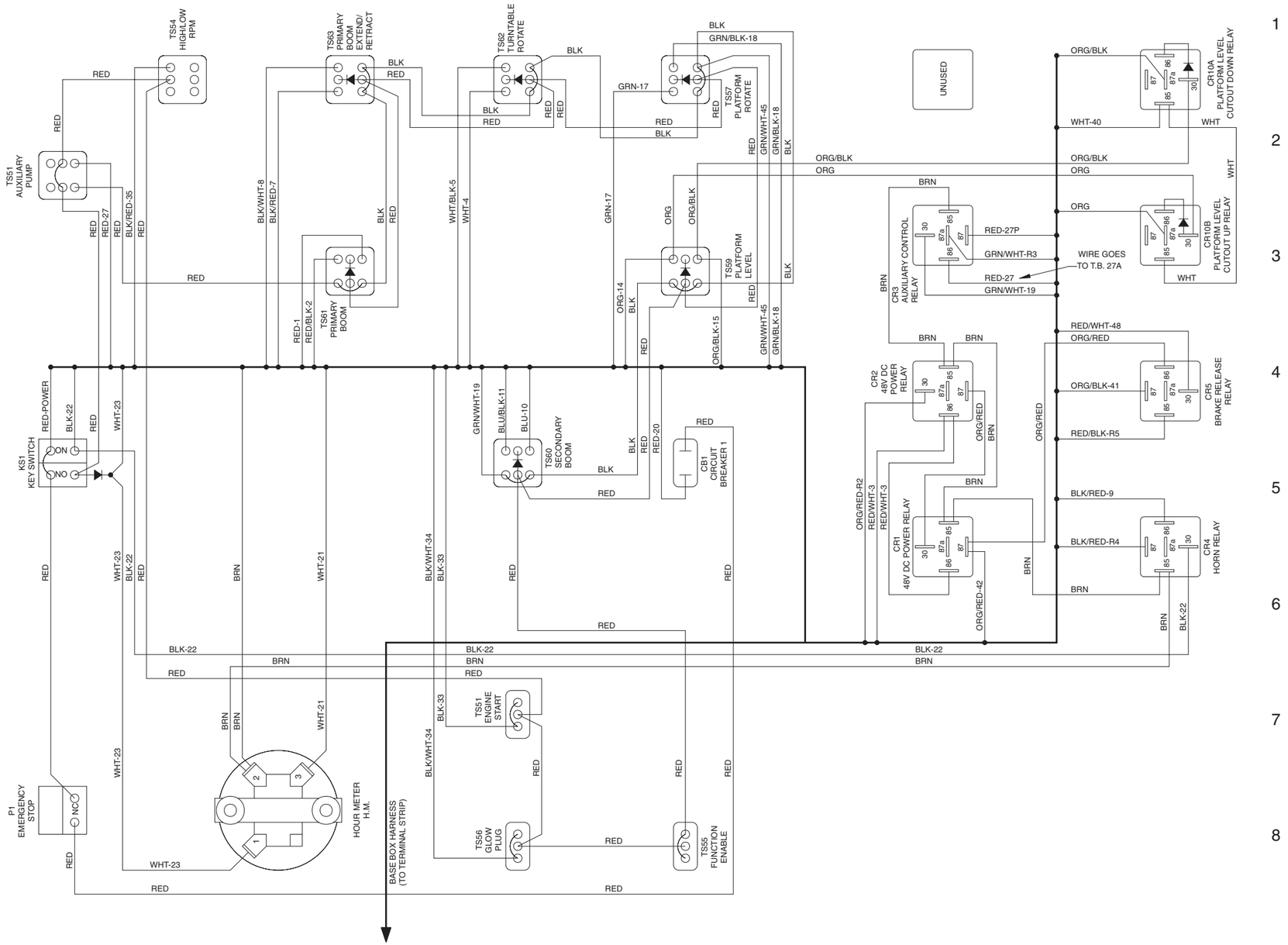
(from serial number 14079 to 14650)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25

(from serial number 14079 to 14650)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(from serial number 14079 to 14650)



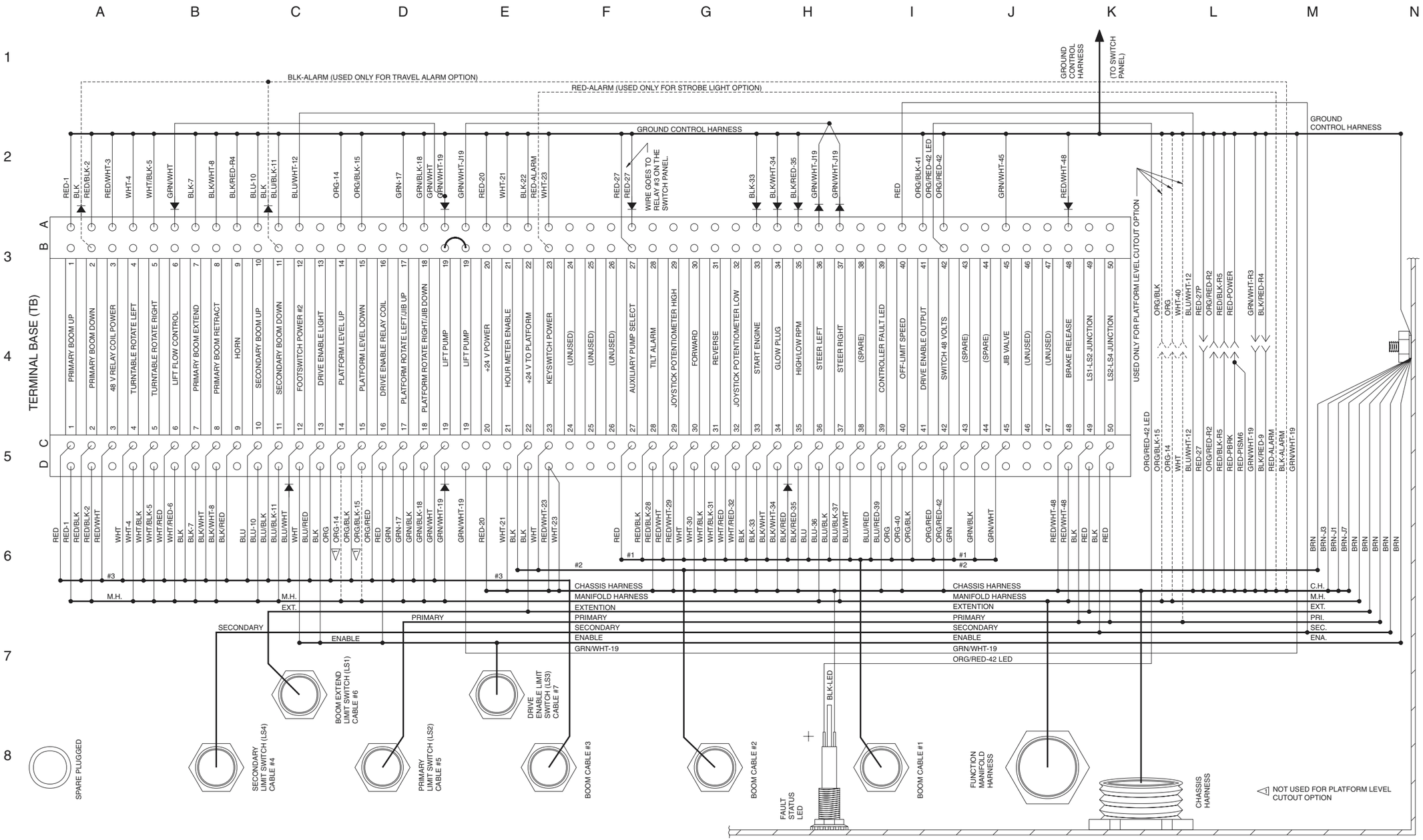
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

(from serial number 14651 to 16839)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

REV A

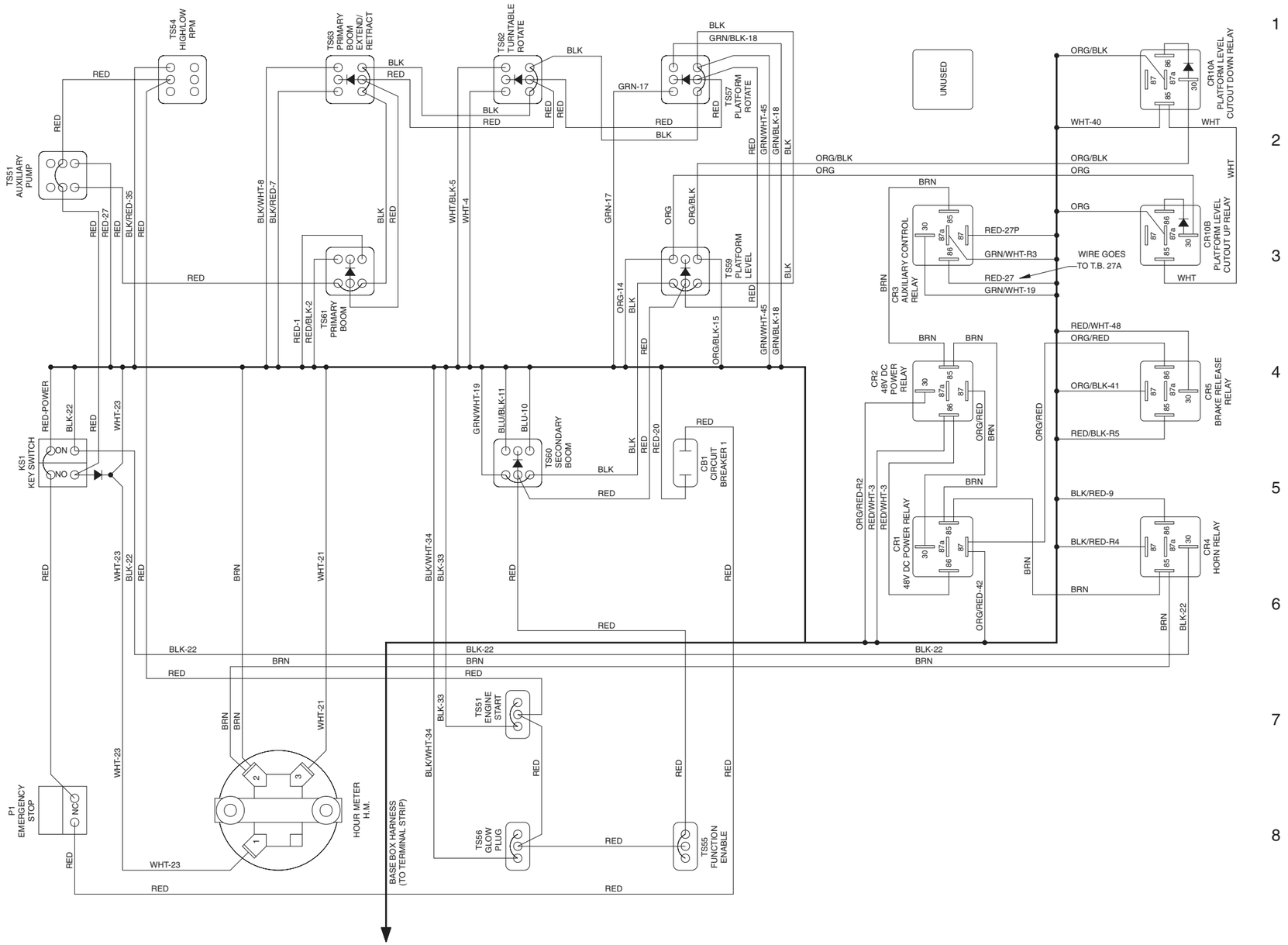
(from serial number 14651 to 16839)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25

(from serial number 14651 to 16839)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(from serial number 14651 to 16839)



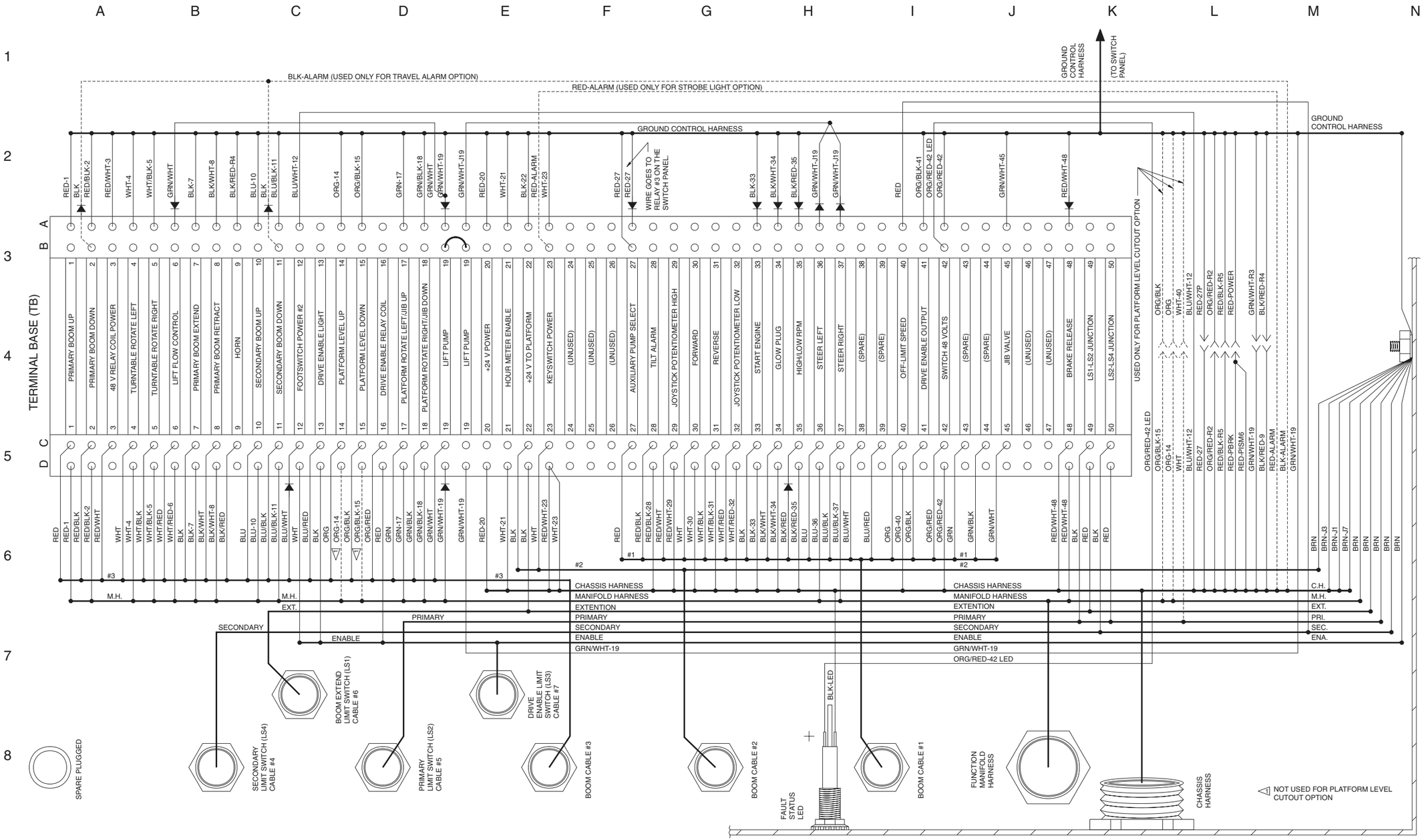
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

(from serial number 16840 to 17974)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

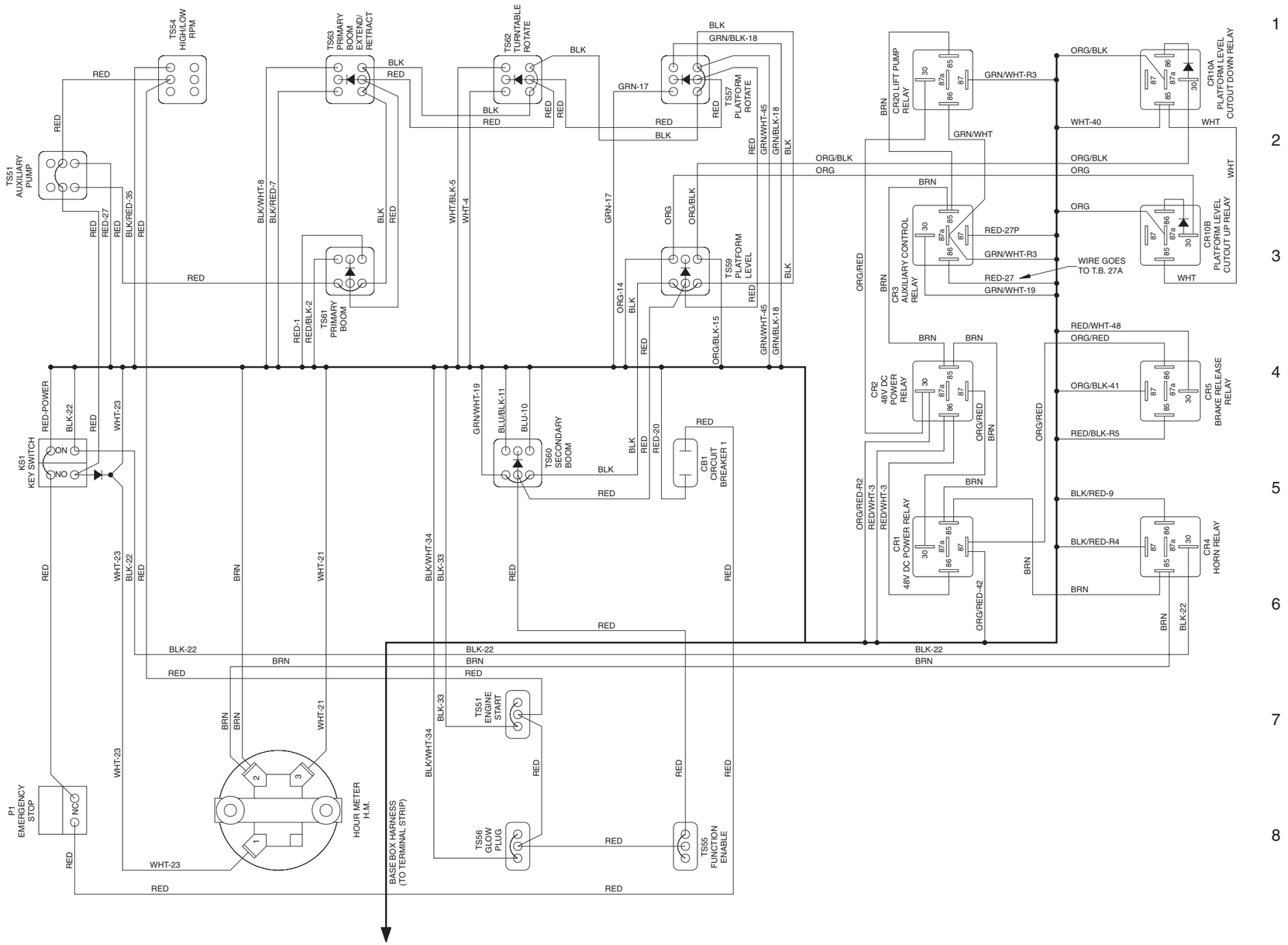
REV A

(from serial number 16840 to 17974)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(from serial number 16840 to 17974)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(from serial number 16840 to 17974)



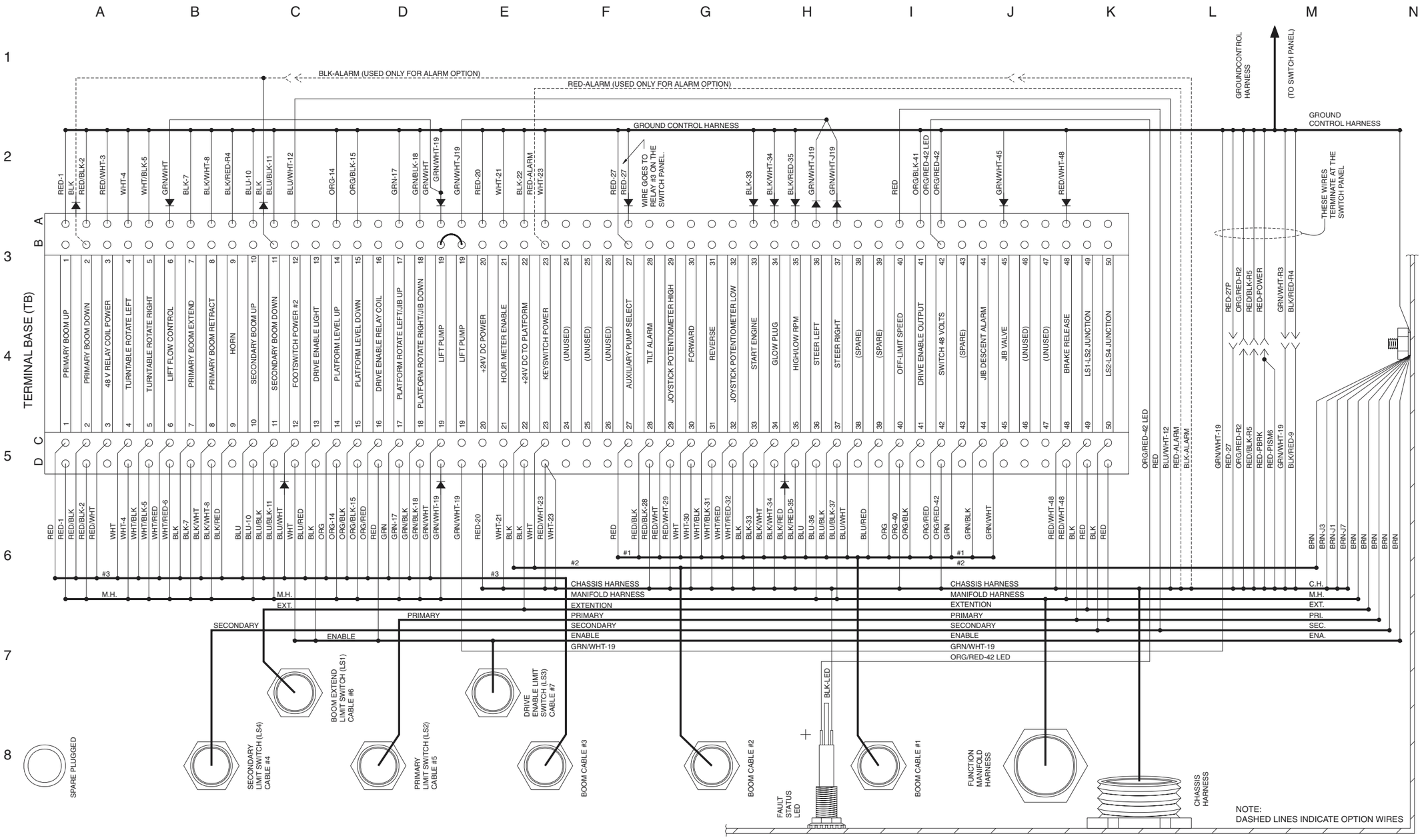
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

(from serial number 17975 to 21180)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

REV A

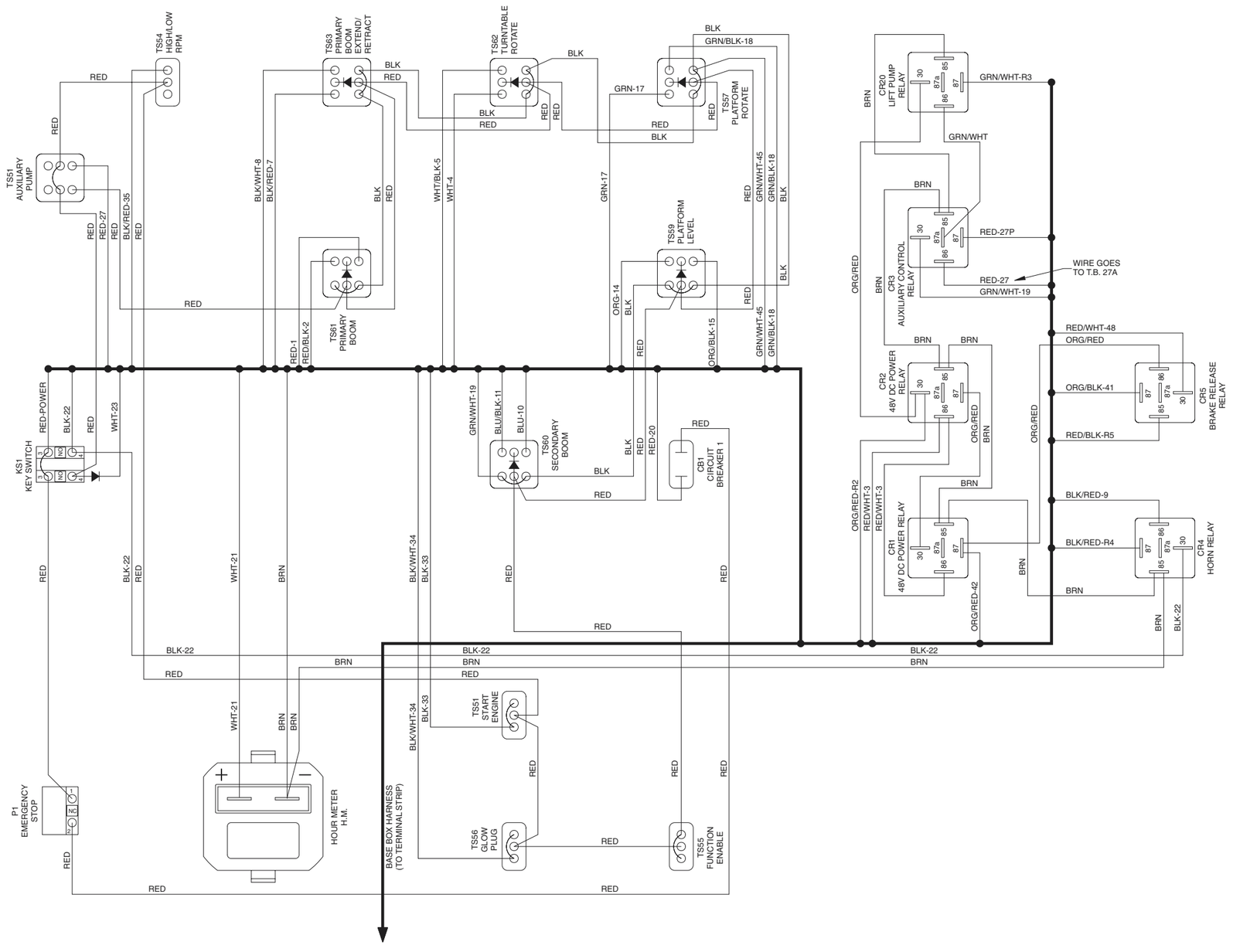
(from serial number 17975 to 21180)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25

(from serial number 17975 to 21180)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(from serial number 17975 to 21180)



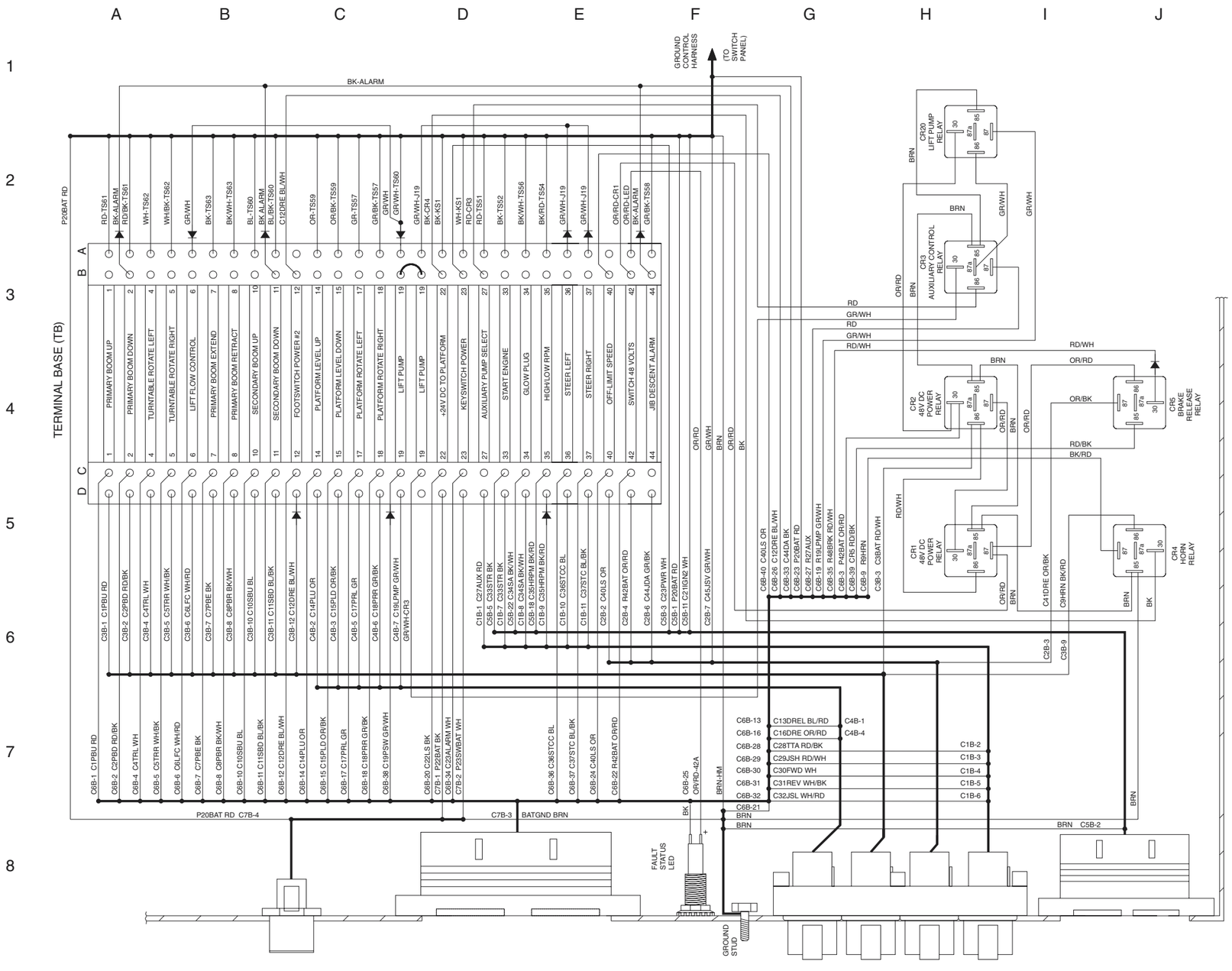
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

(from serial number 21181 to 22050)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25

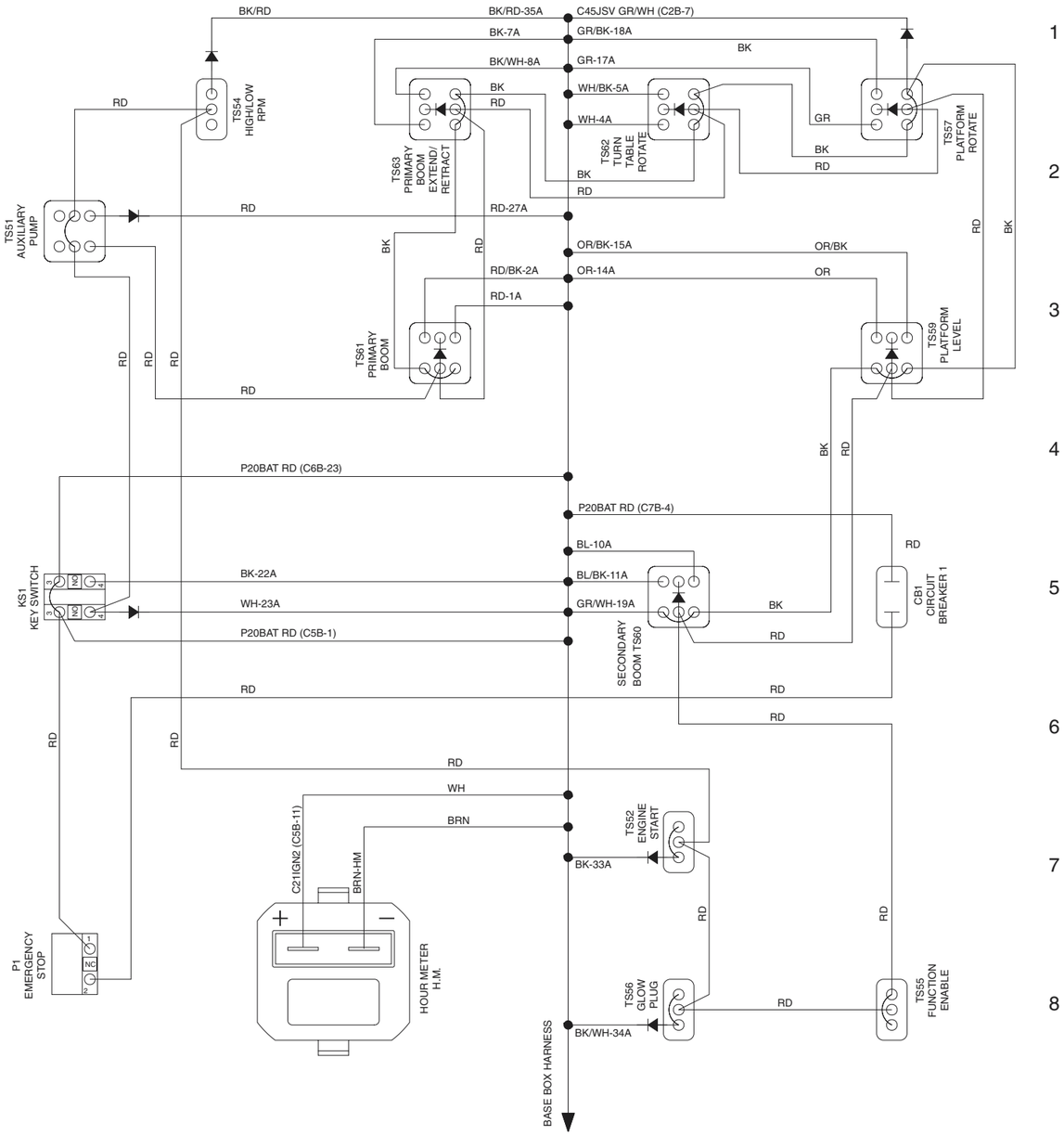
(from serial number 21181 to 22050)

REV A



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(from serial number 21181 to 22050)



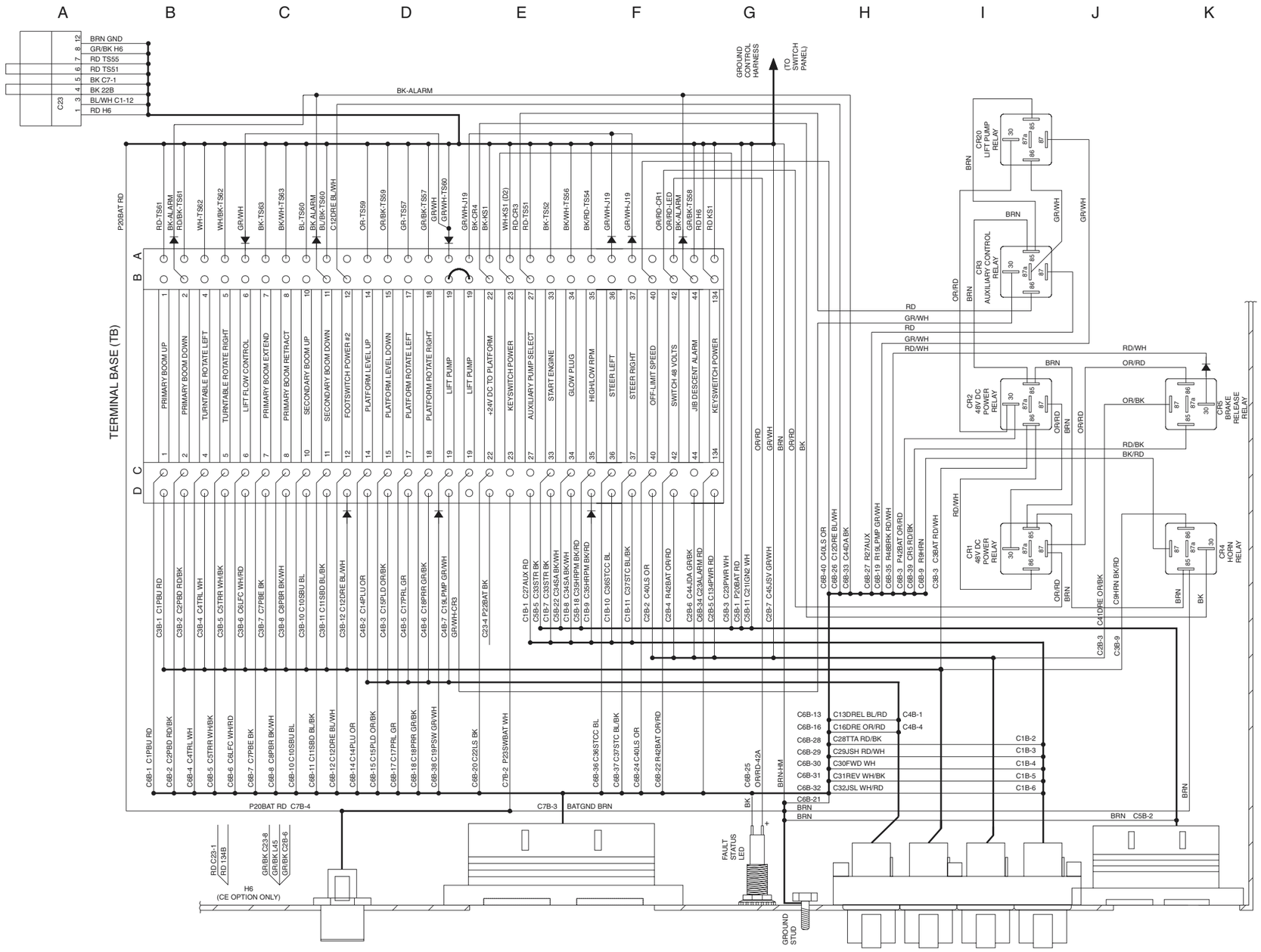
Ground Control Box Switch Panel Wiring Diagram, Z-45/25
(from serial number 21181 to 22050)



Ground Control Box Terminal Strip Wiring Diagram, Z-45/25 ANSI and CSA Models (from serial number 22051 to 23235)

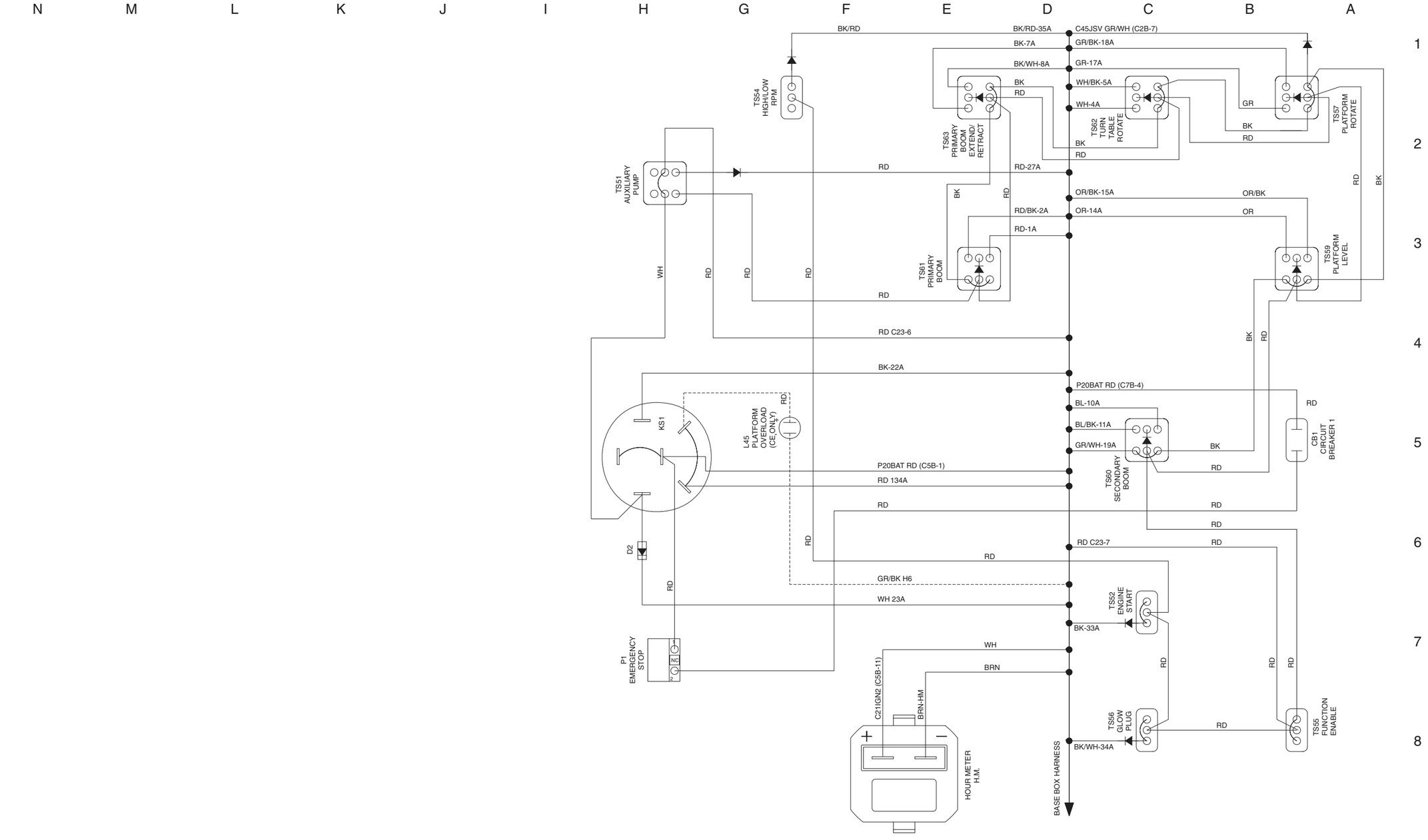
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25, ANSI and CSA Models (from serial number 22051 to 23235)

REV A

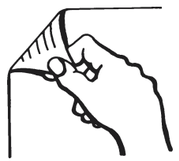


REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25, ANSI and CSA Models (from serial number 22051 to 23235)



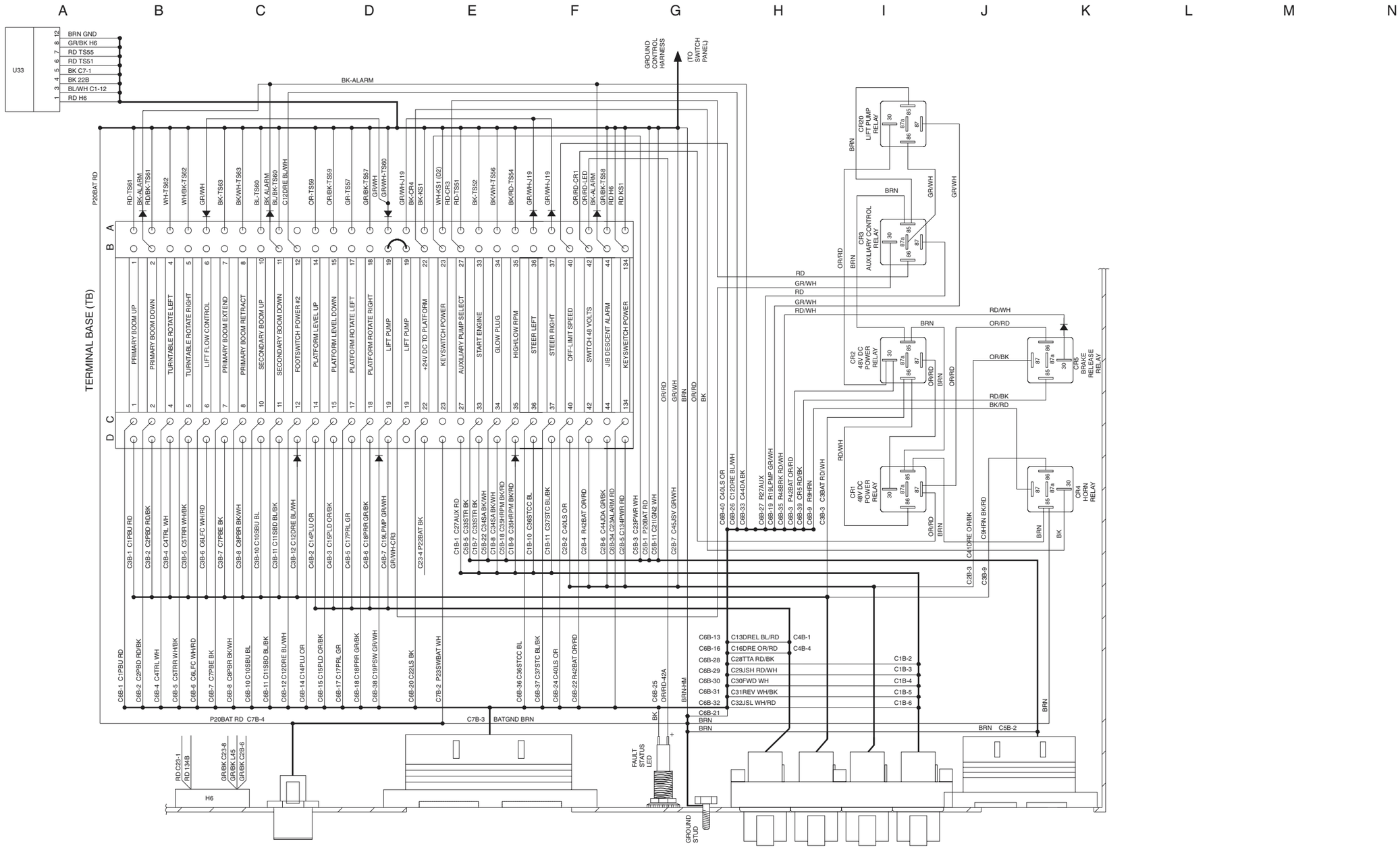
Ground Control Box Switch Panel Wiring Diagram, Z-45/25, ANSI and CSA Models (from serial number 22051 to 23235)



Ground Control Box Terminal Strip Wiring Diagram, Z-45/25, CE Models (from serial number 22051 to 23235)

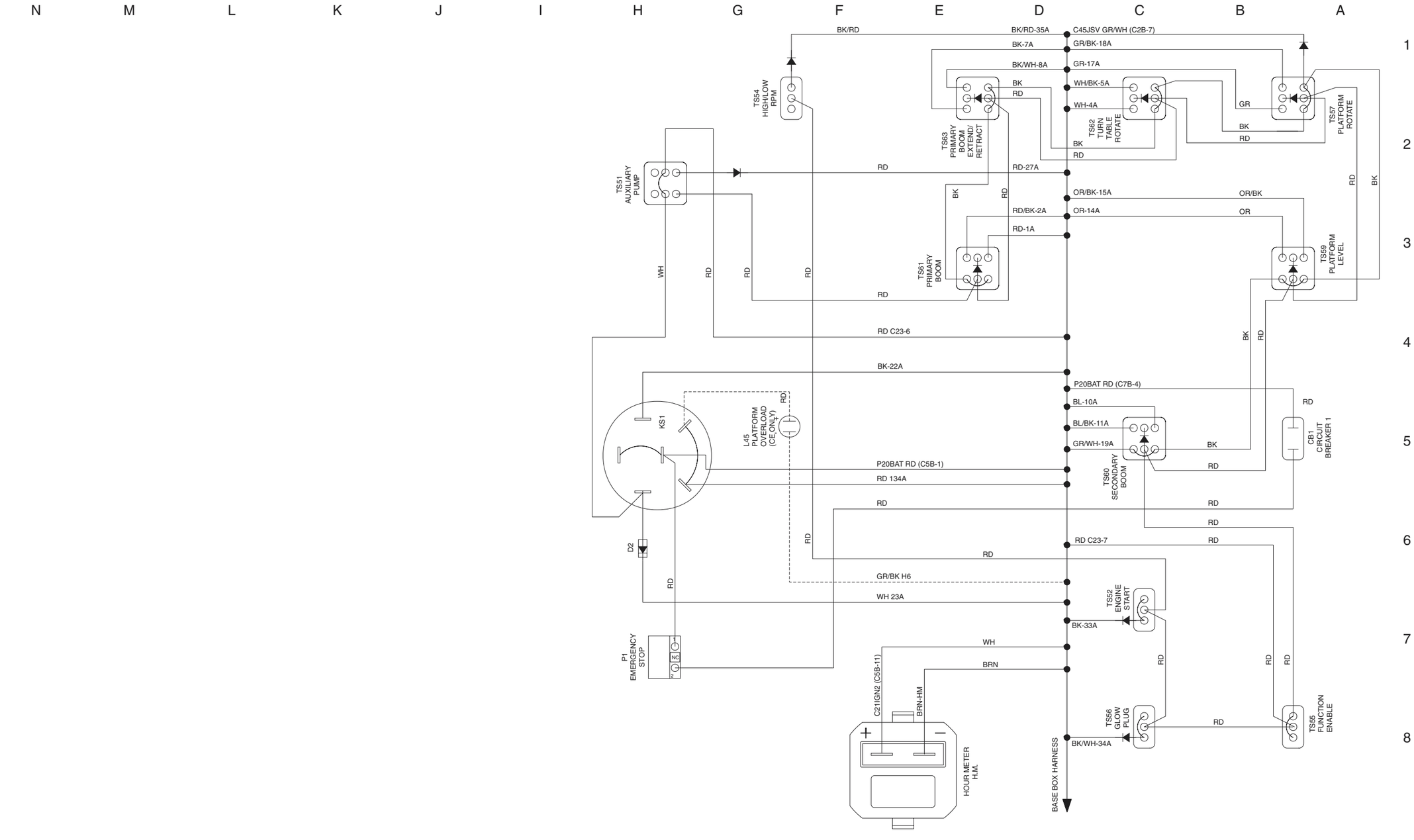
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25, CE Models (from serial number 22051 to 23235)

REV A

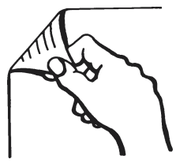


REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25, CE Models (from serial number 22051 to 23235)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25, CE Models (from serial number 22051 to 23235)



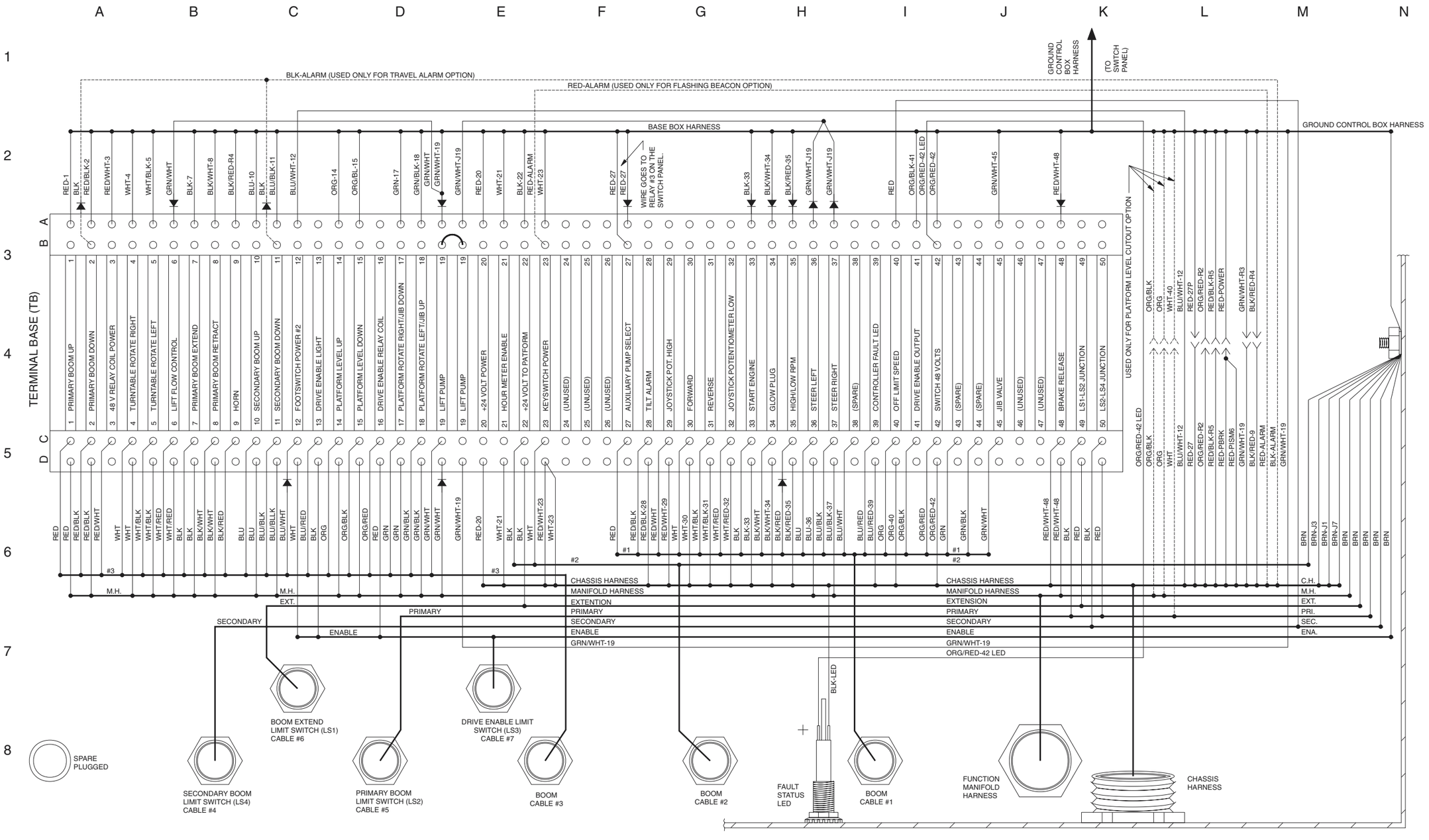
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

(before serial number 13361)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

(before serial number 13361)

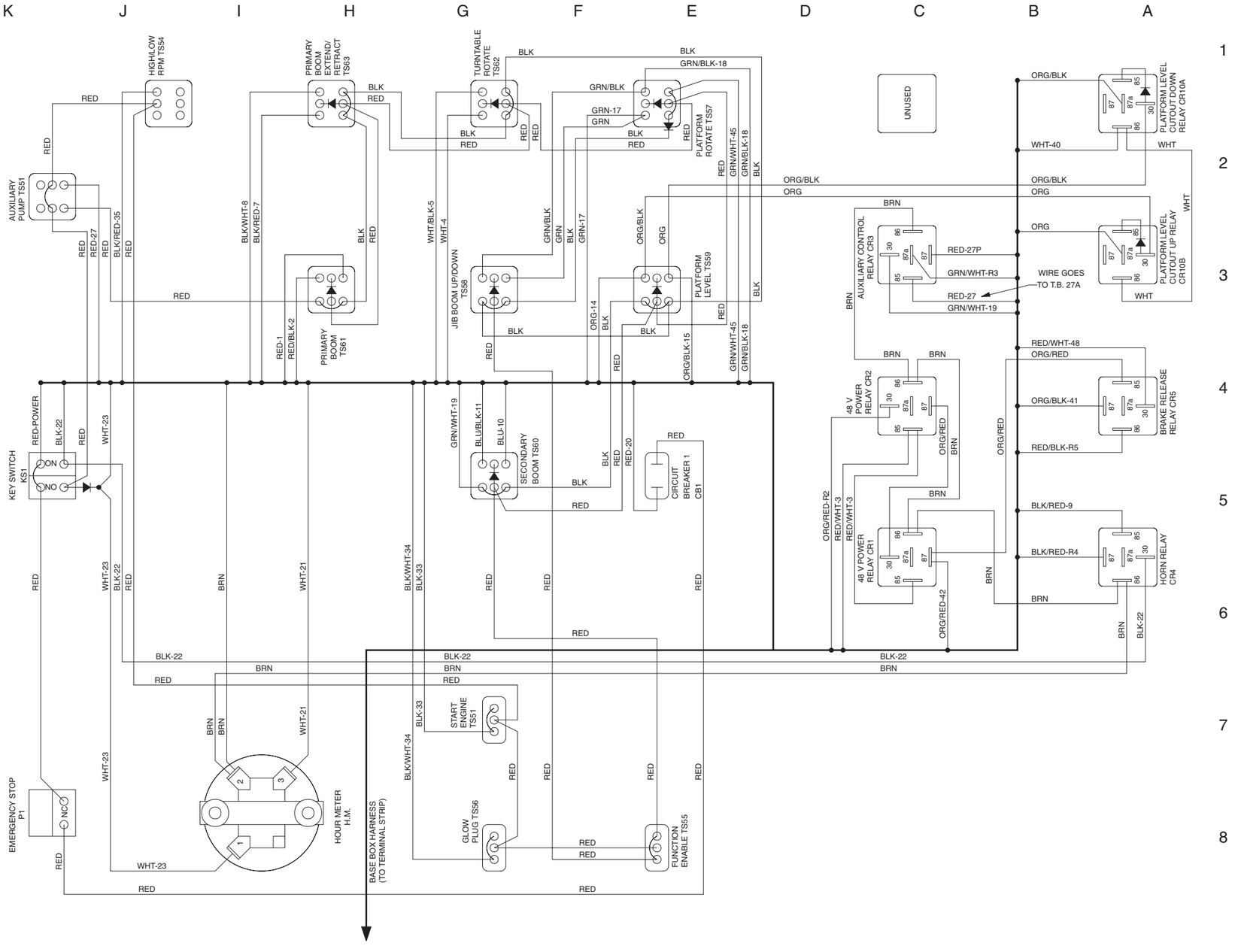
REV A



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25J

(before serial number 13361)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25J
(before serial number 13361)

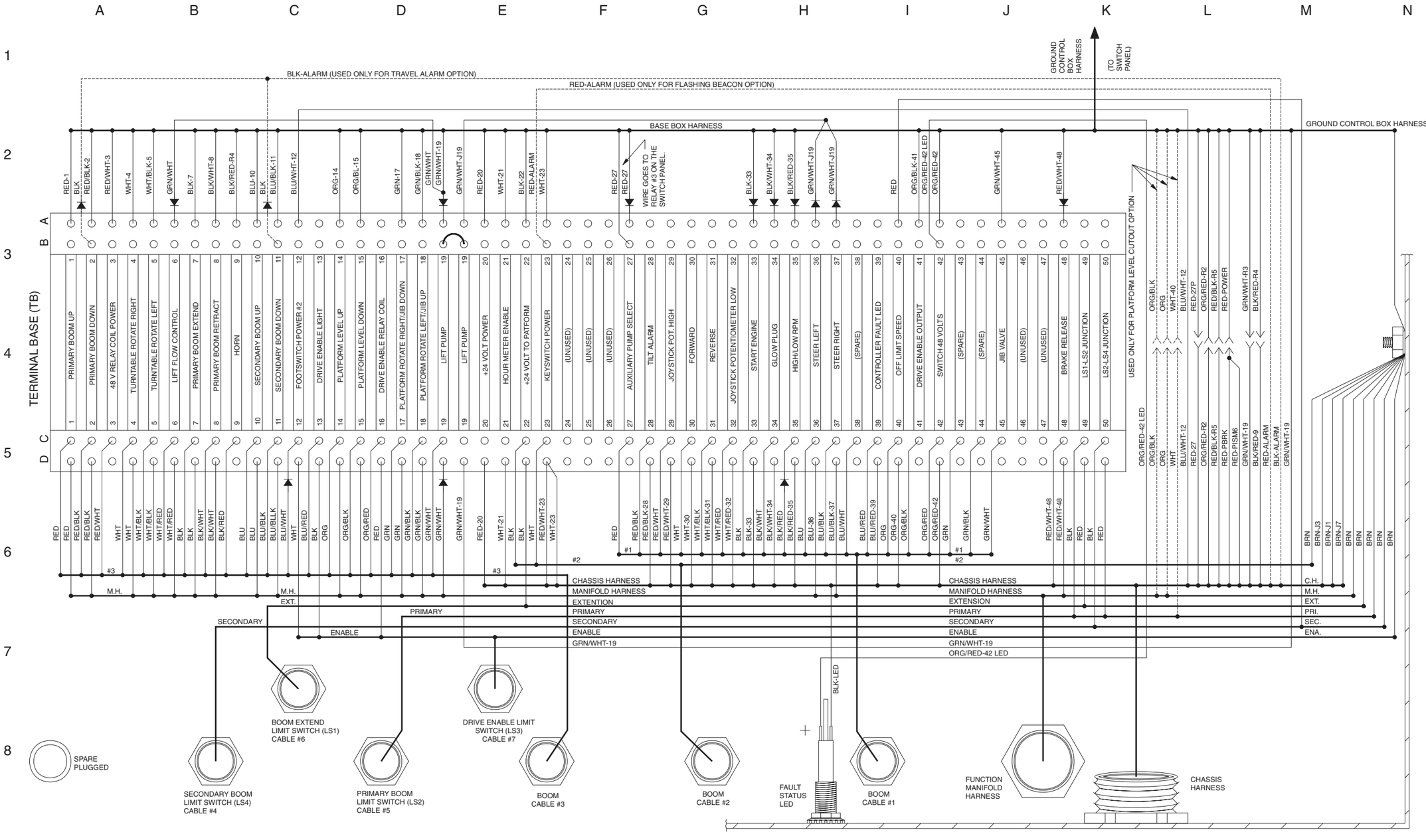


Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J
(from serial number 13361 to 14078)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

REV A

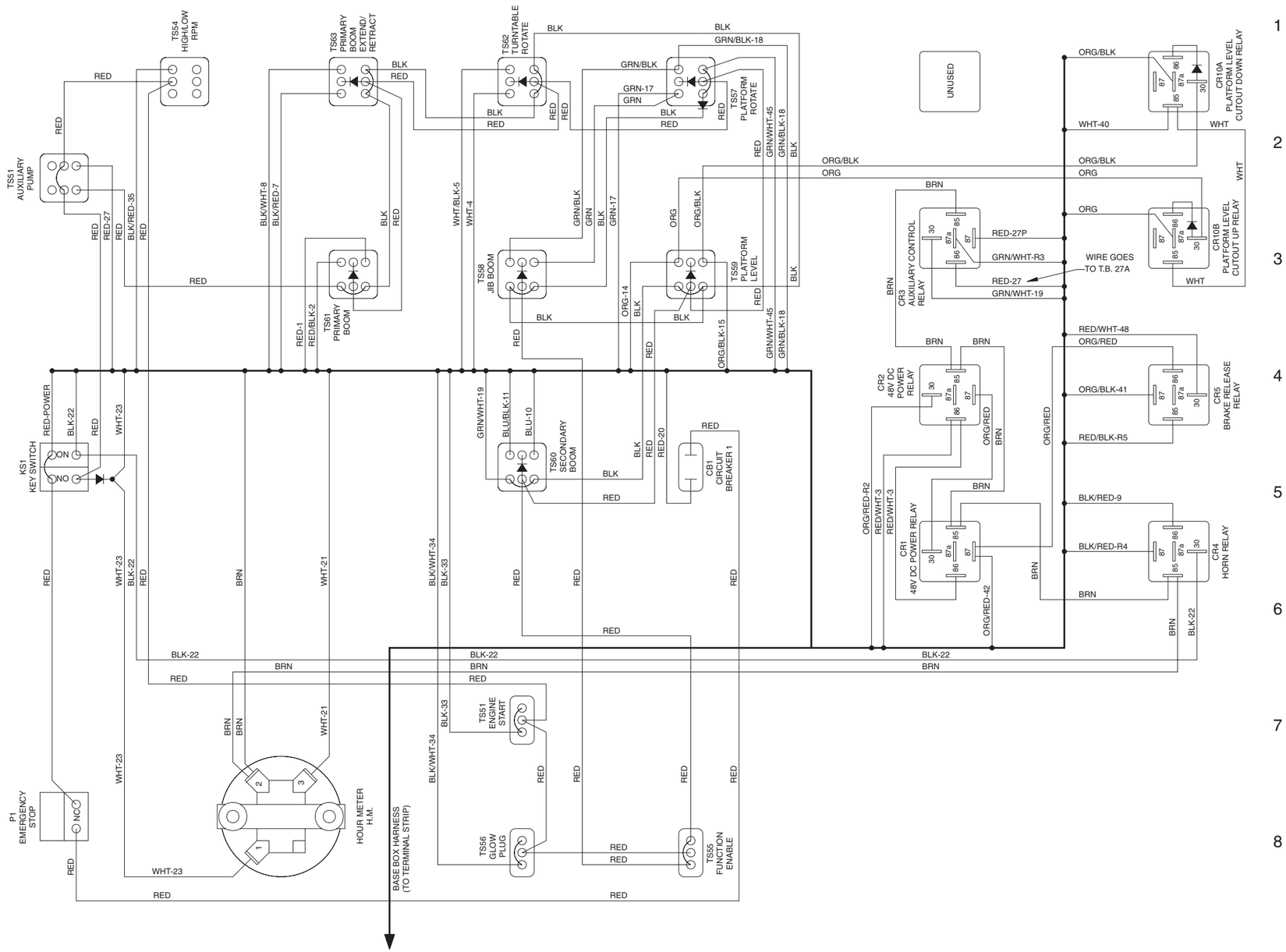
(from serial number 13361 to 14078)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25J

(from serial number 13361 to 14078)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25J
(from serial number 13361 to 14078)

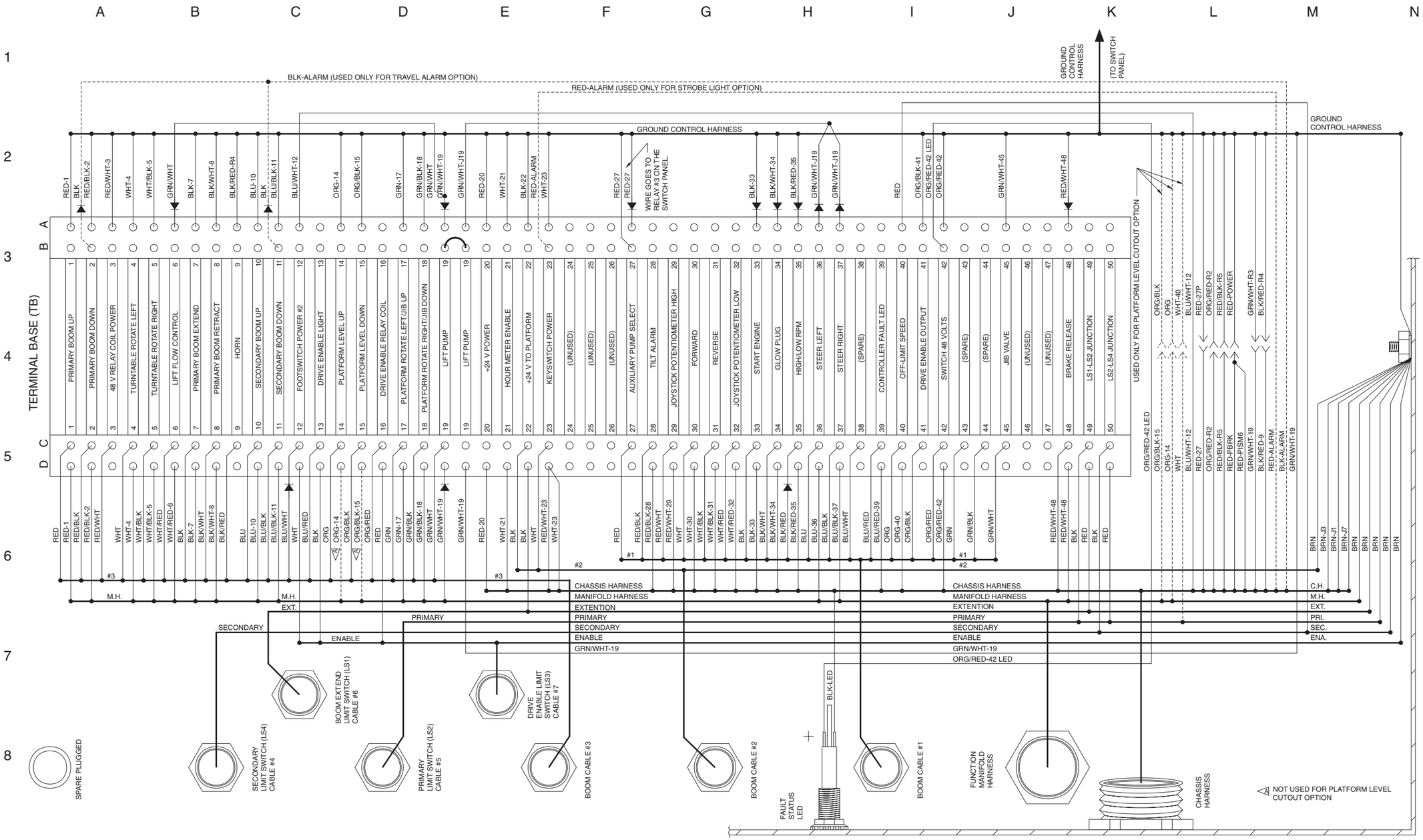


Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J
(from serial number 14079 to 14650)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

REV A

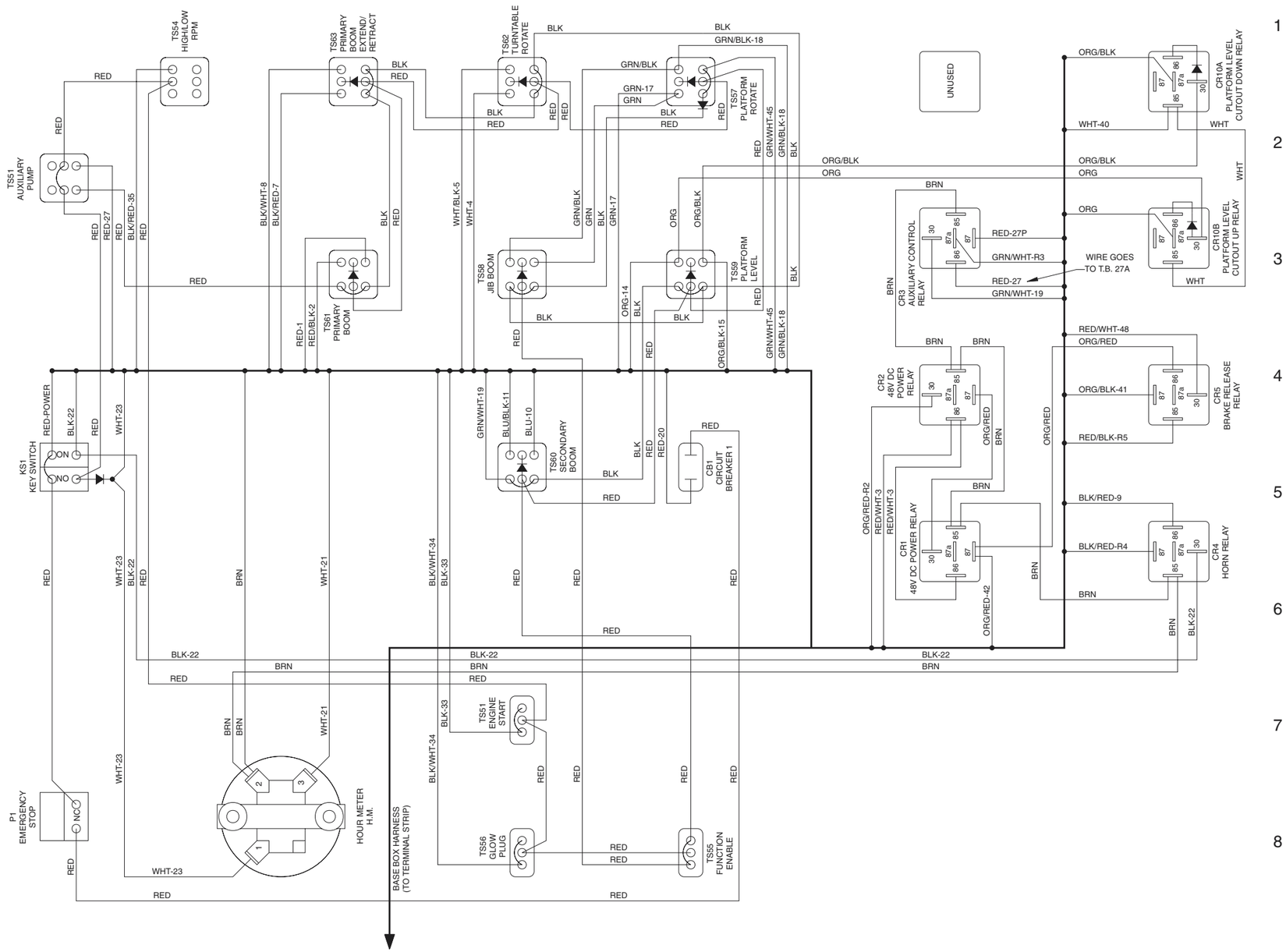
(from serial number 14079 to 14650)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25J

(from serial number 14079 to 14650)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25J
(from serial number 14079 to 14650)

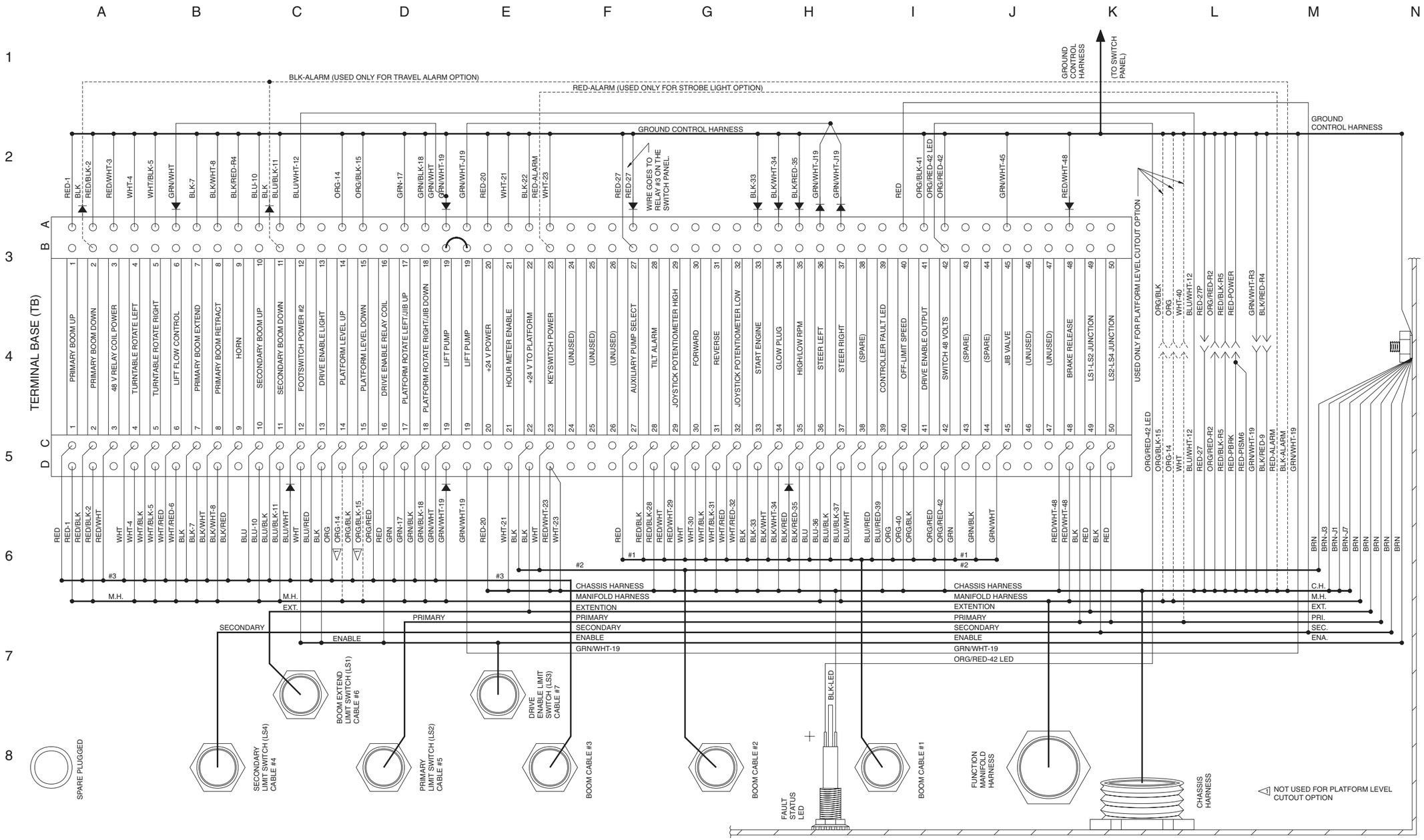


Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J
(from serial number 14651 to 16839)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

REV A

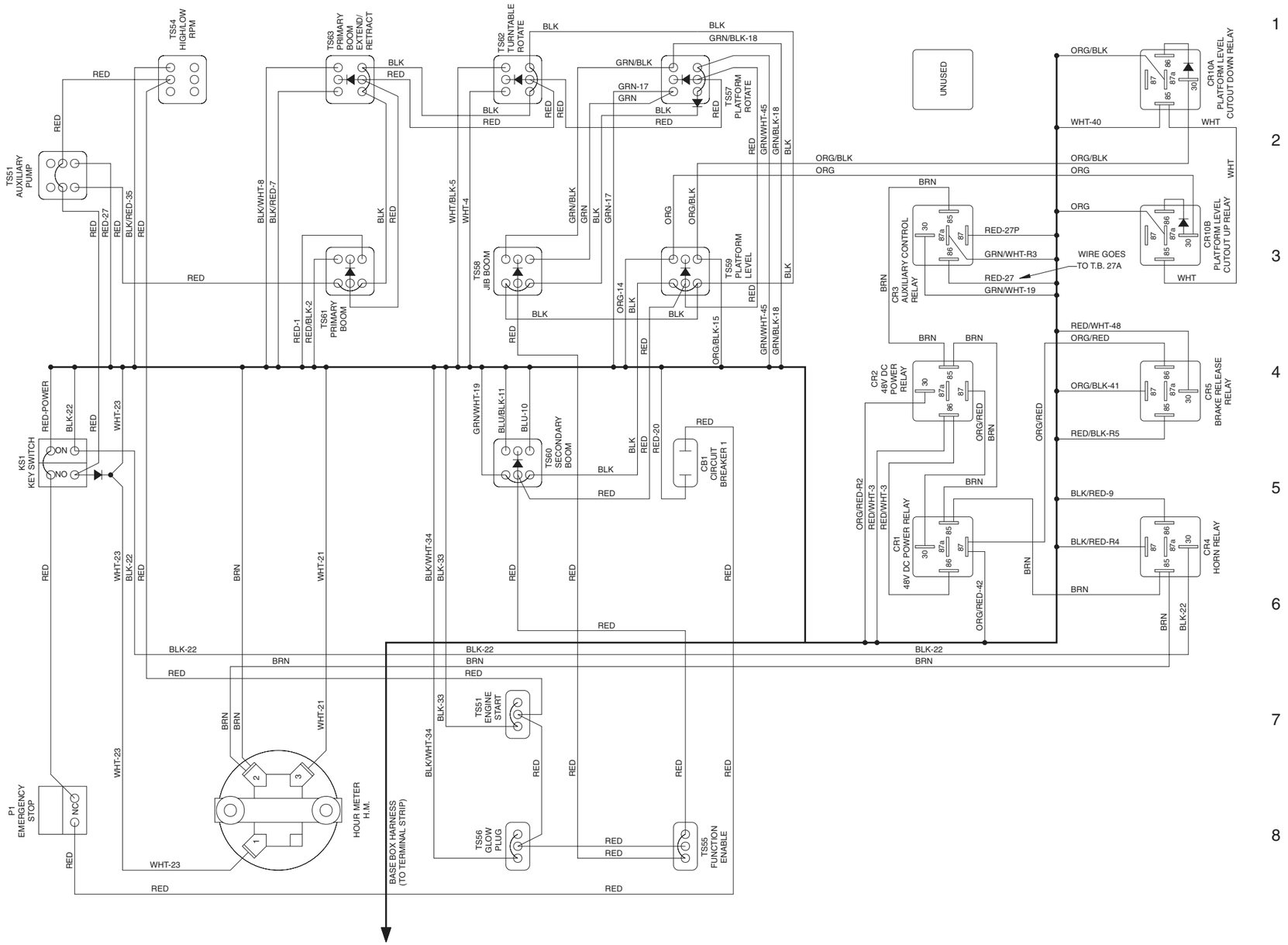
(from serial number 14651 to 16839)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25J

(from serial number 14651 to 16839)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25J
(from serial number 14651 to 16839)



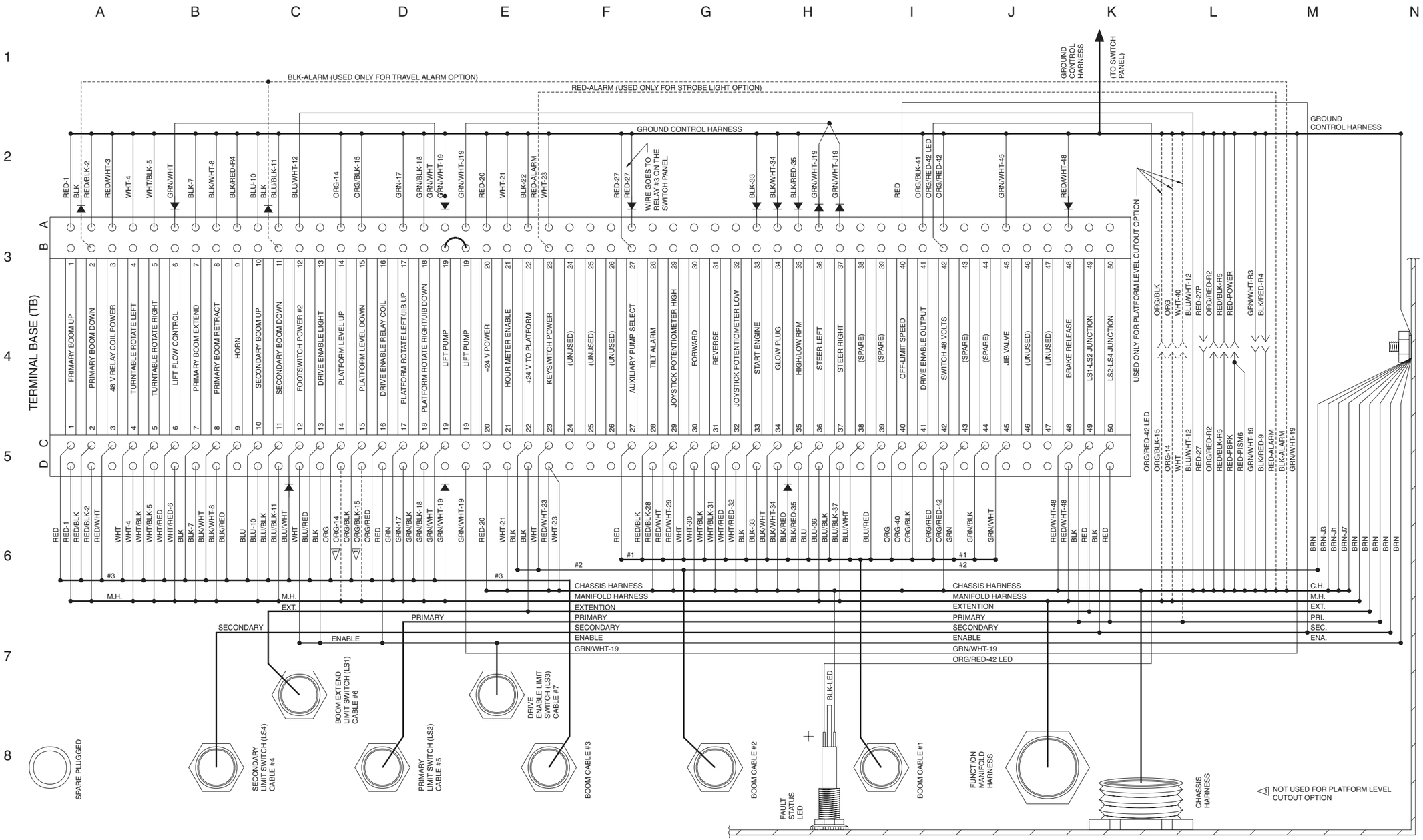
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

(from serial number 16840 to 17974)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

REV A

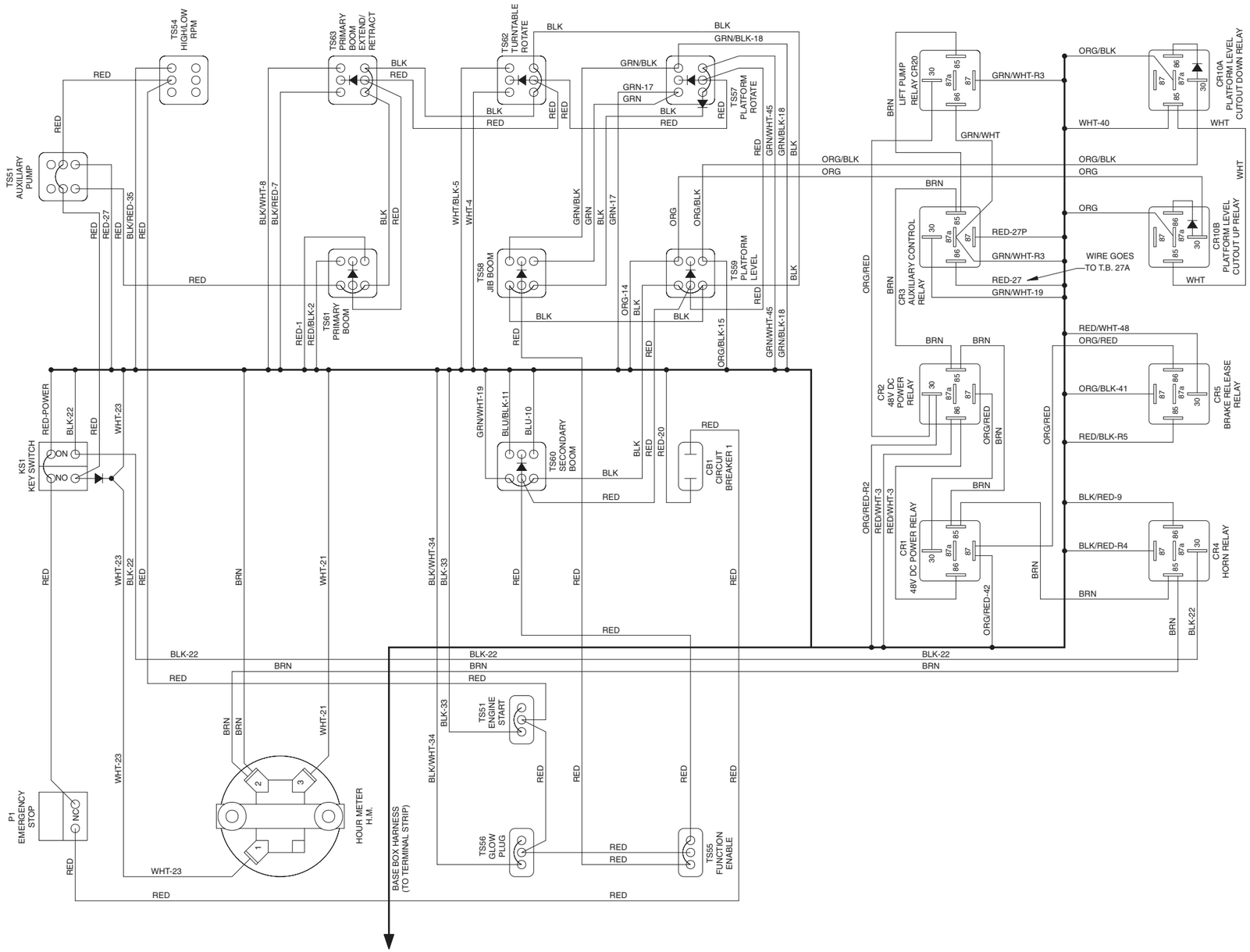
(from serial number 16840 to 17974)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25J

(from serial number 16840 to 17974)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25J
(from serial number 16840 to 17974)

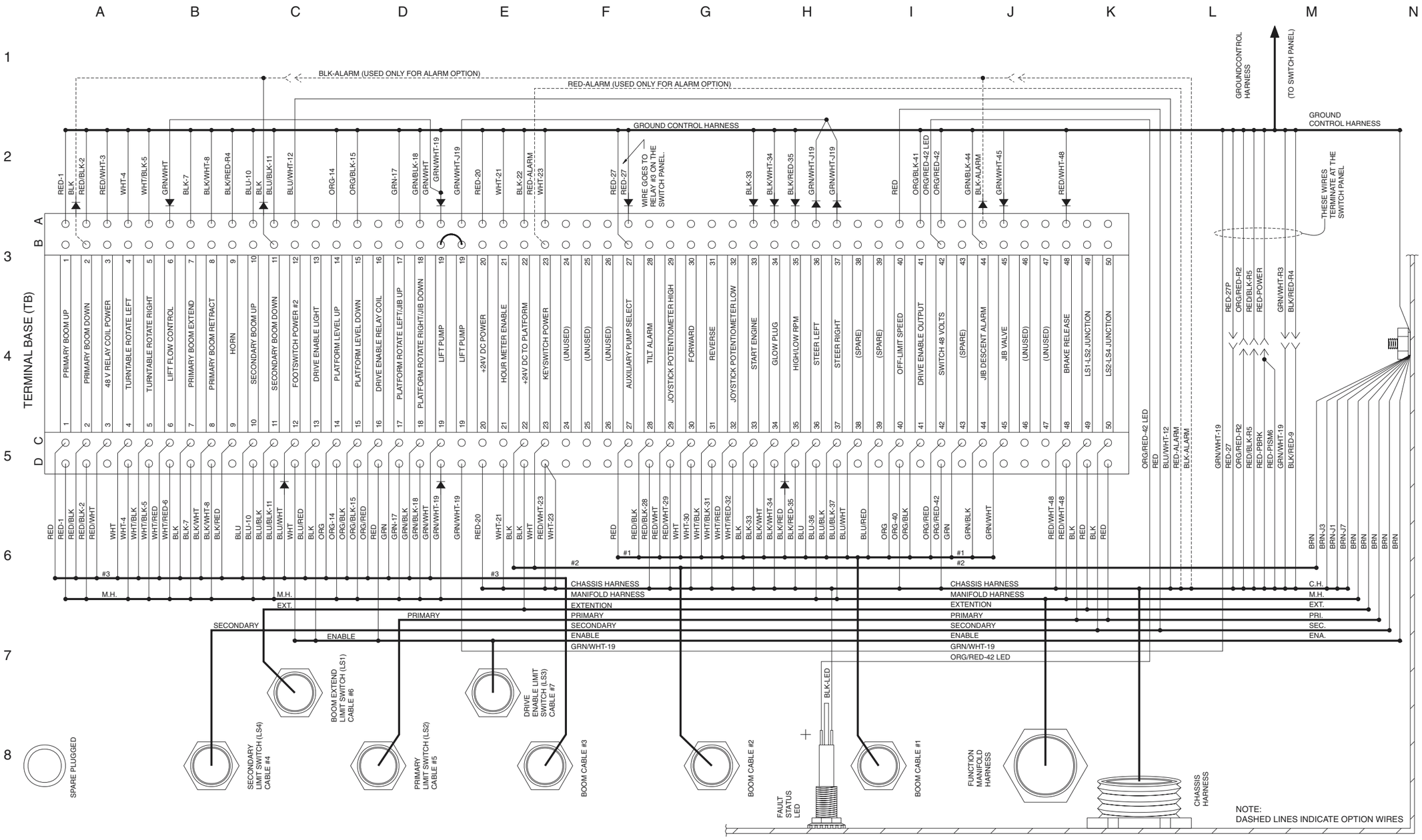


Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J
(from serial number 17975 to 21180)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

REV A

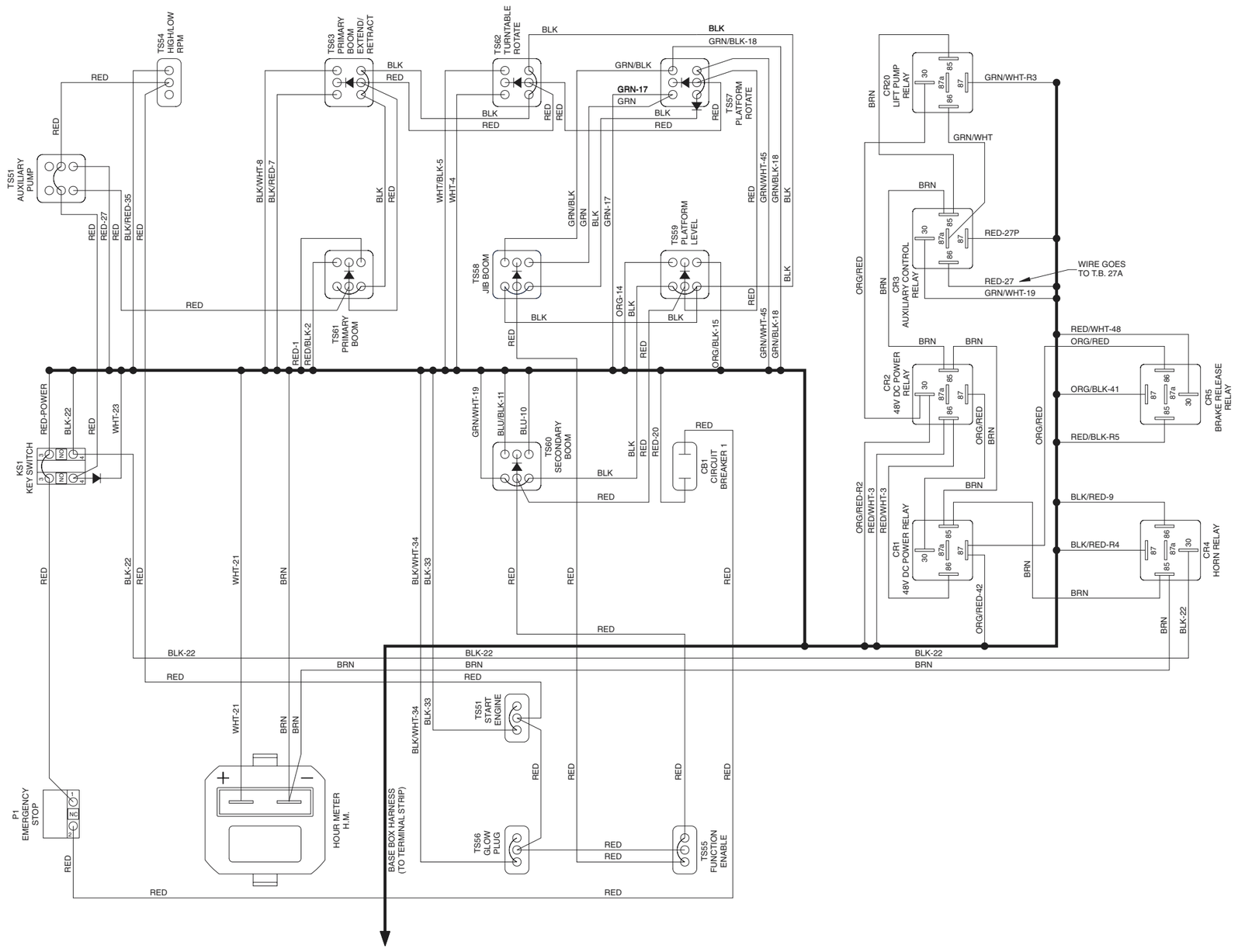
(from serial number 17975 to 21180)



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25J

(from serial number 17975 to 21180)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25J
(from serial number 17975 to 21180)



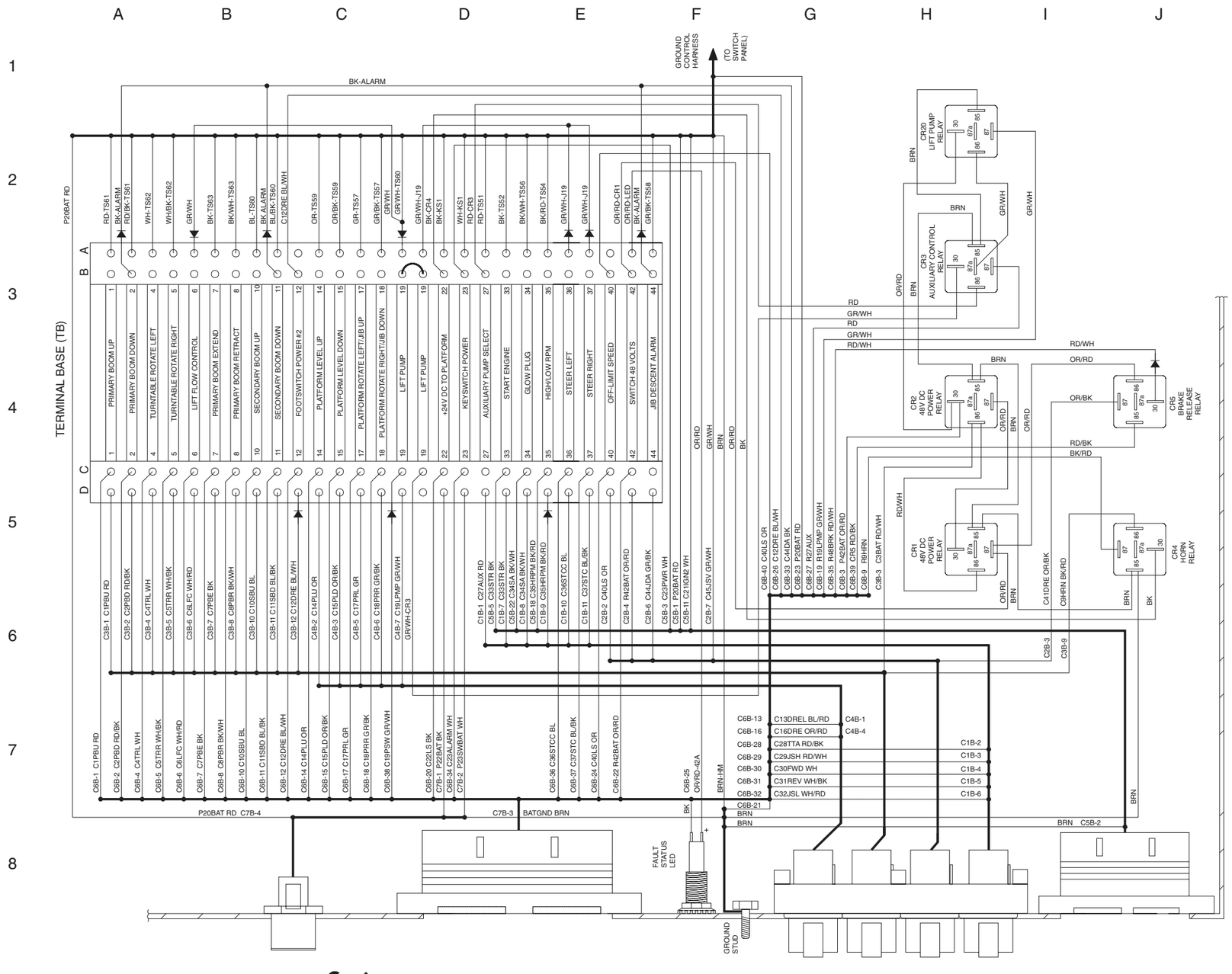
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

(from serial number 21181 to 22050)

Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J

(from serial number 21181 to 22050)

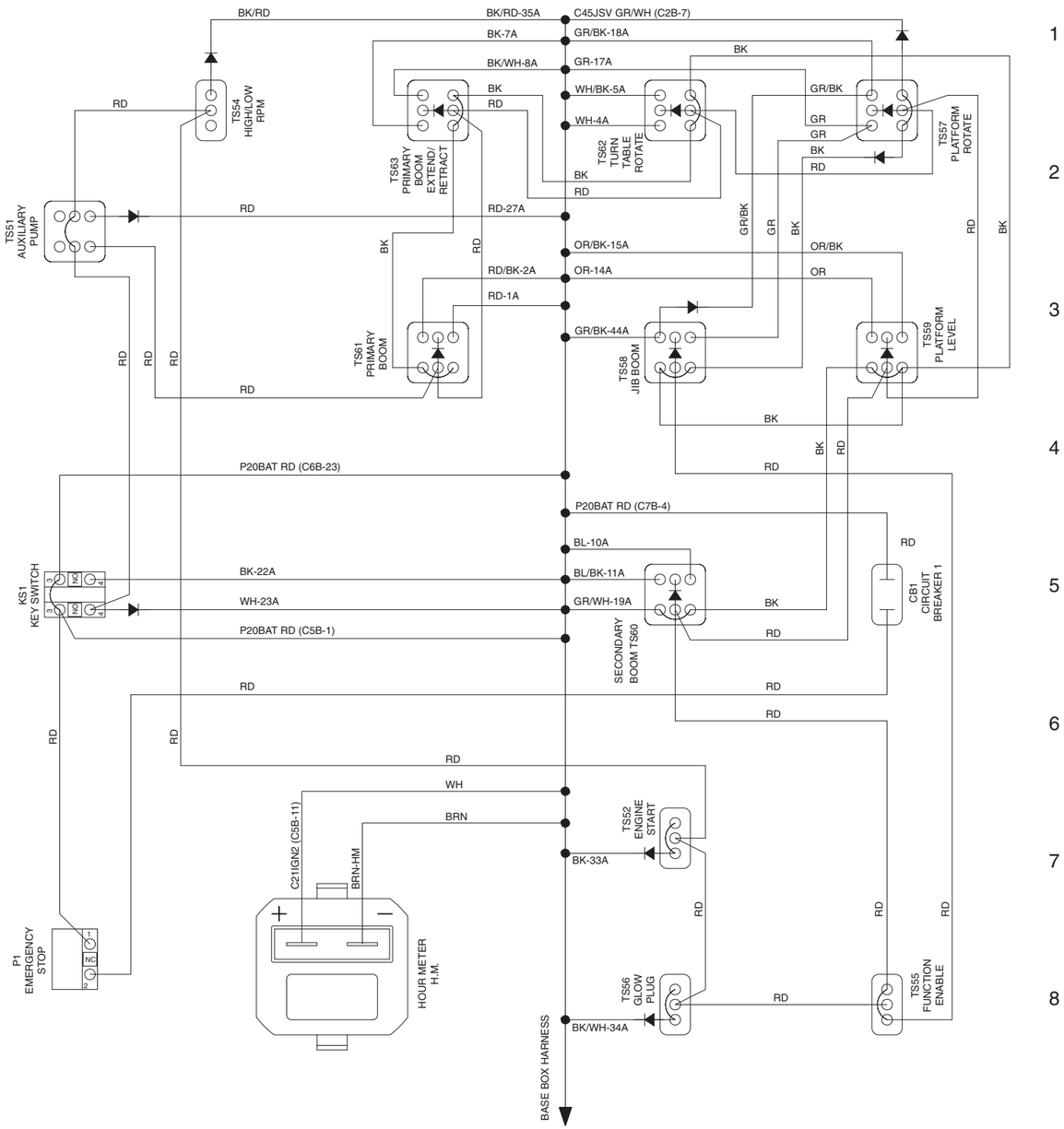
REV A



REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25J

(from serial number 21181 to 22050)



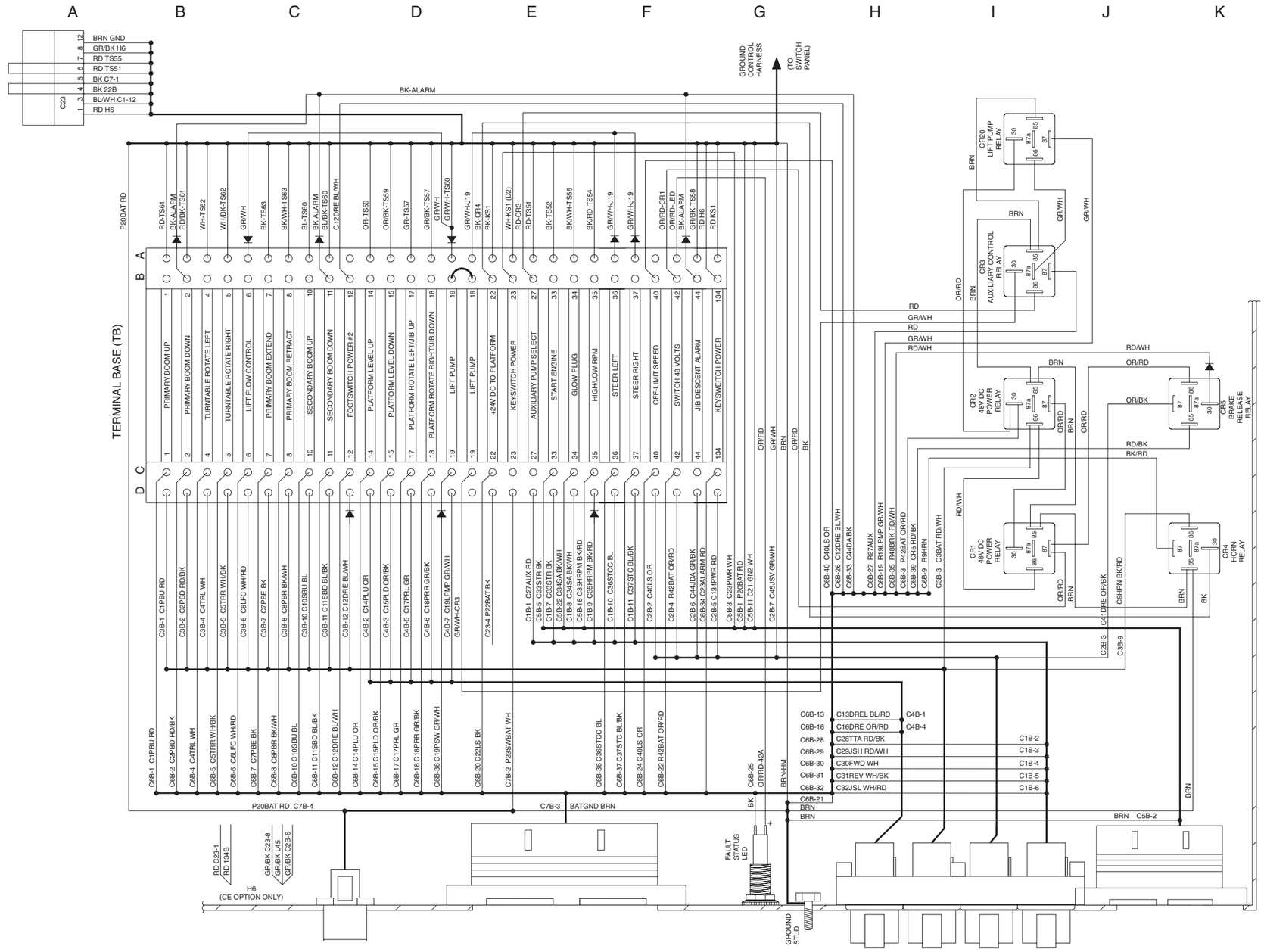
Ground Control Box Switch Panel Wiring Diagram, Z-45/25J
(from serial number 21181 to 22050)



Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J ANSI and CSA Models (from serial number 22051 to 23235)

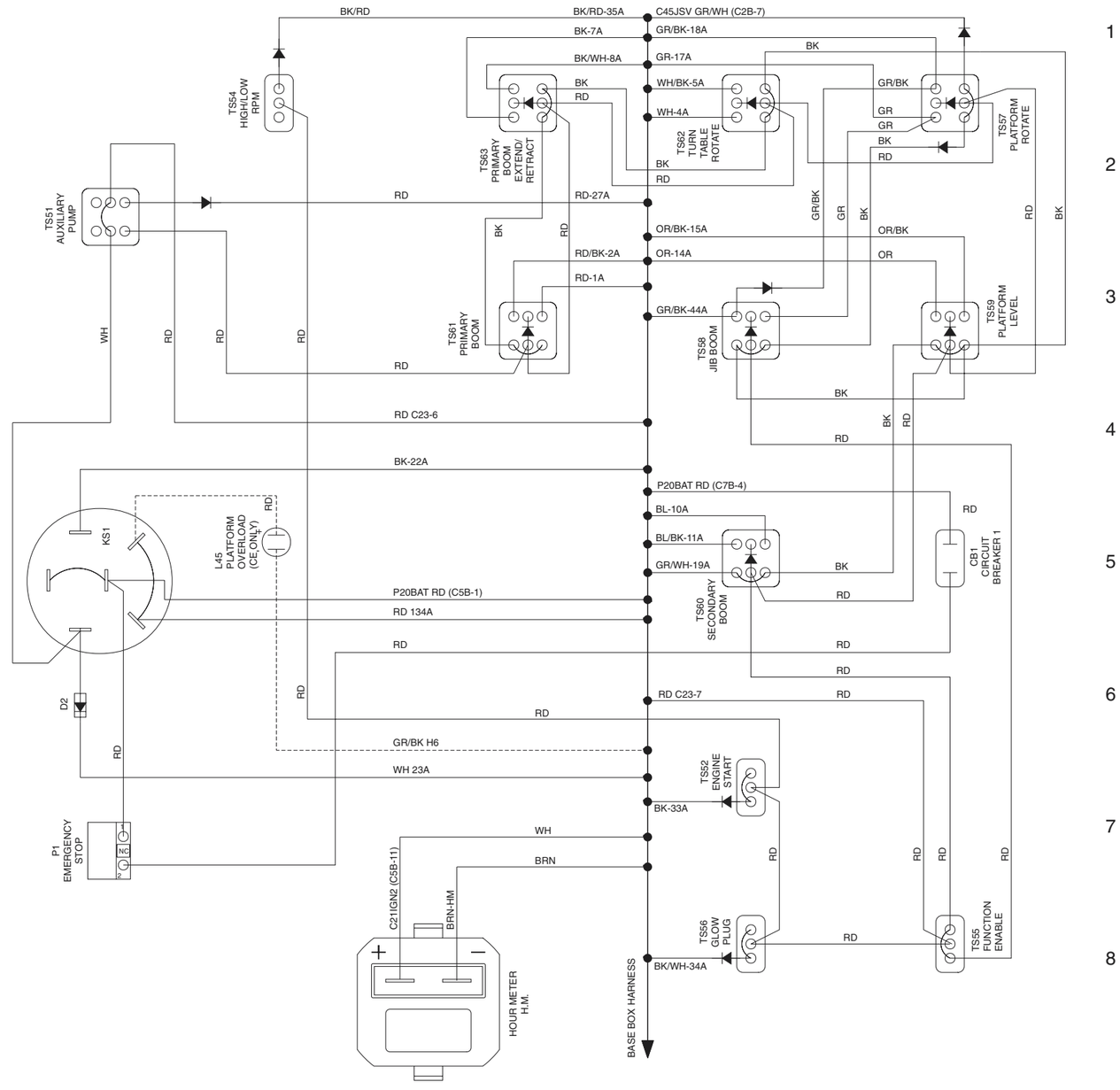
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J, ANSI and CSA Models (from serial number 22051 to 23235)

REV A

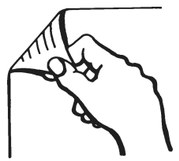


REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25J, ANSI and CSA Models (from serial number 22051 to 23235)



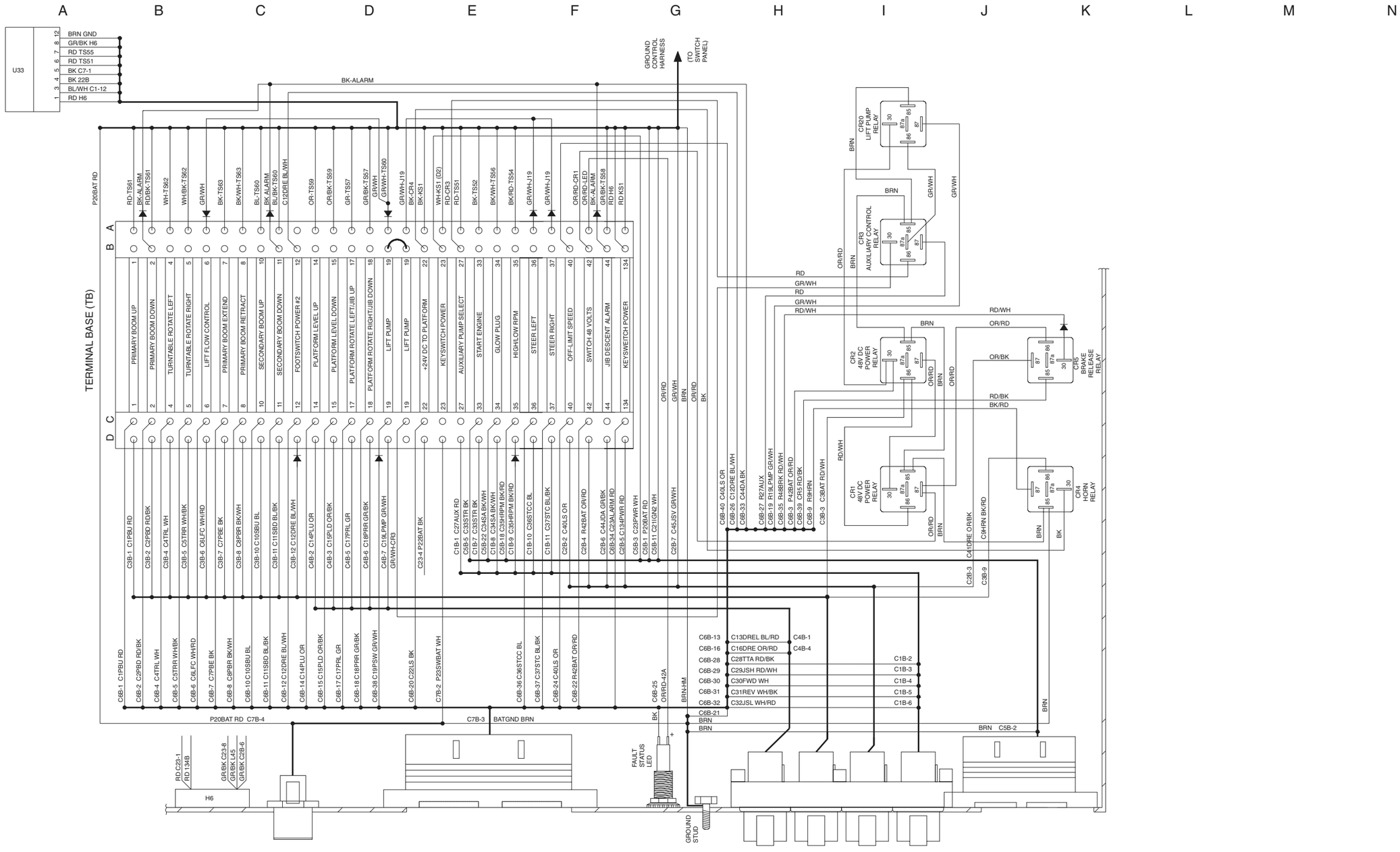
Ground Control Box Switch Panel Wiring Diagram, Z-45/25J, ANSI and CSA Models (from serial number 22051 to 23235)



Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J, CE Models (from serial number 22051 to 23235)

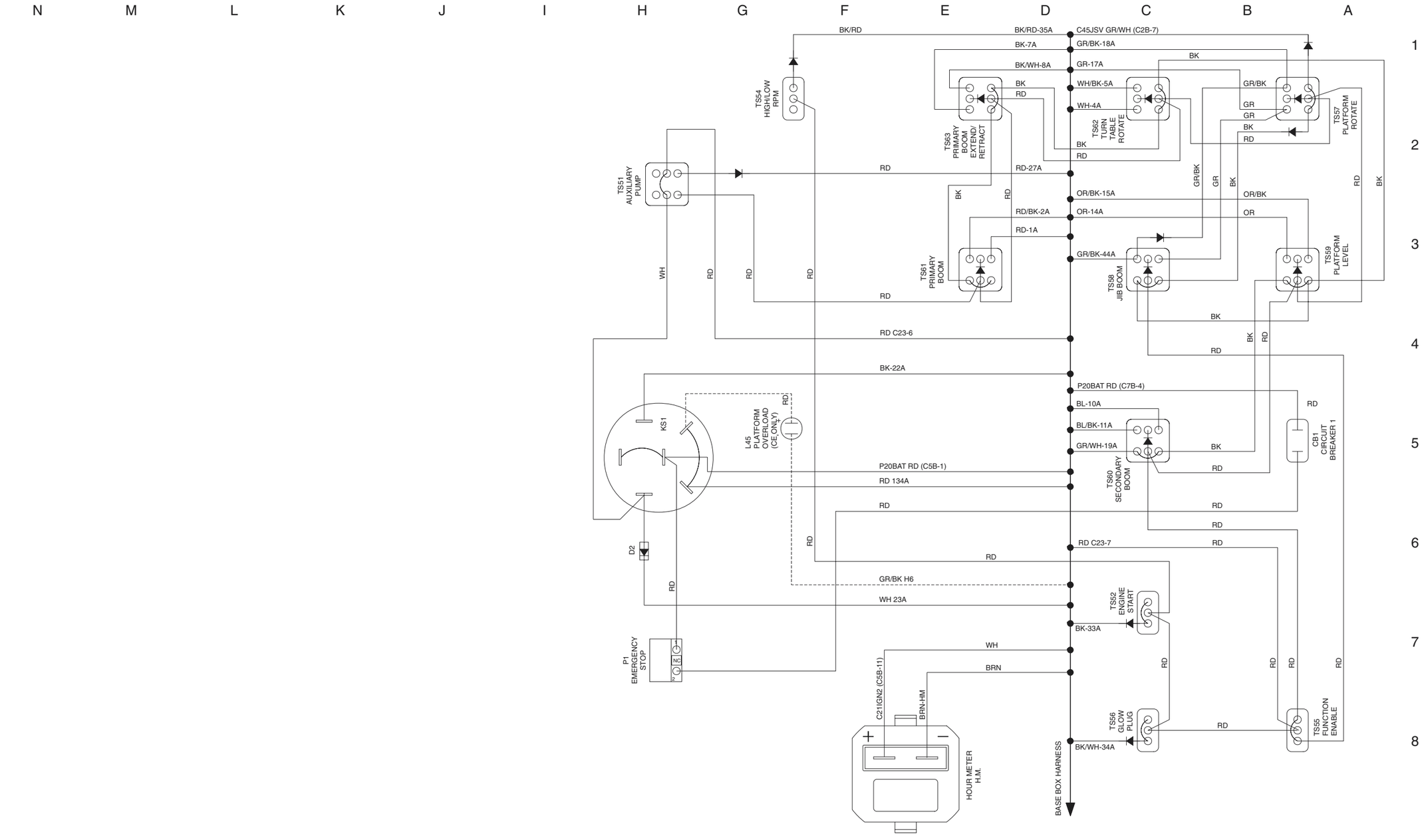
Ground Control Box Terminal Strip Wiring Diagram, Z-45/25J, CE Models (from serial number 22051 to 23235)

REV A

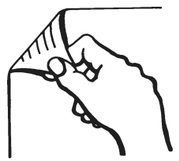


REV A

Ground Control Box Switch Panel Wiring Diagram, Z-45/25J, CE Models (from serial number 22051 to 23235)



Ground Control Box Switch Panel Wiring Diagram, Z-45/25J, CE Models (from serial number 22051 to 23235)

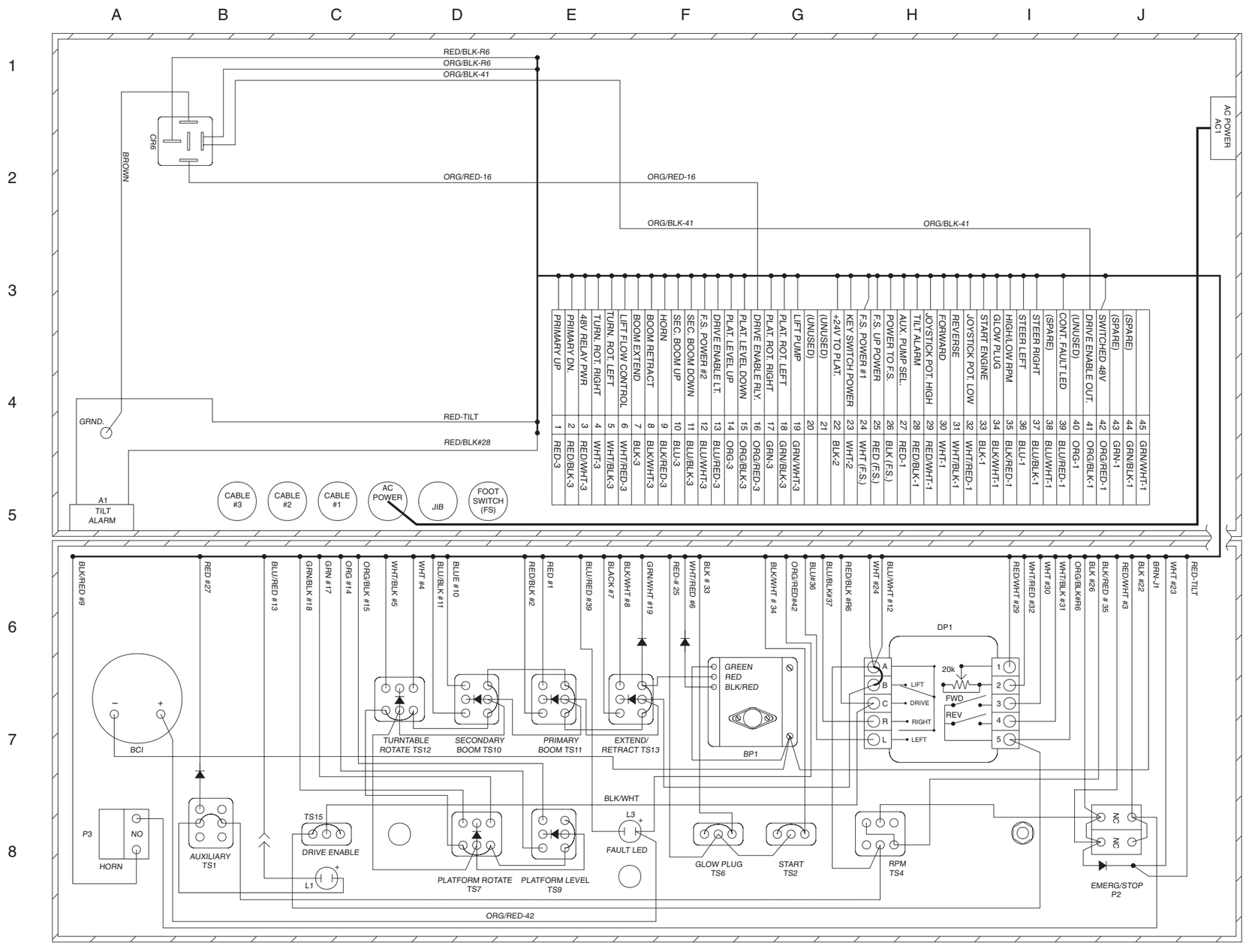


Platform Control Box Wiring Diagram, Z-45/25
(before serial number 13361)

Platform Control Box Wiring Diagram, Z-45/25

(before serial number 13361)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.
2. FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & B ON THE DRIVE JOYSTICK

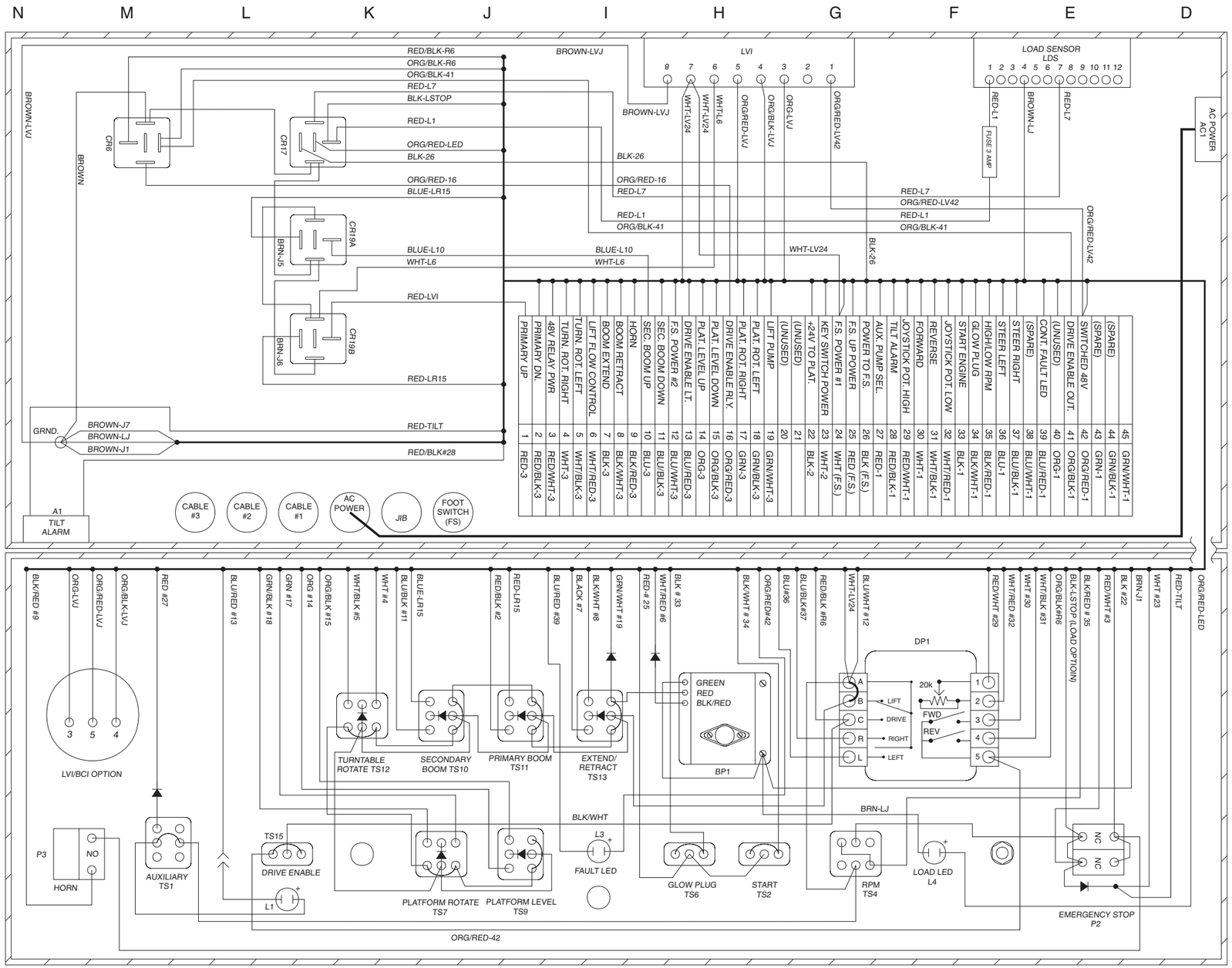
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
CR17	LOAD SENSOR RELAY (LOAD SENSOR OPTION ONLY)
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A (LVI OPTION ONLY)
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B (LVI OPTION ONLY)
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
L4	OVERLOAD LED (LOAD SENSOR OPTION)
LDS	LOAD SENSOR MODULE
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP #2
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY SWITCH
TS2	START ENGINE SWITCH (BI-ENERGY ONLY)
TS4	HIGH / LOW RPM SWITCH (BI-ENERGY ONLY)
TS6	GLOW PLUG SWITCH (BI-ENERGY ONLY)
TS7	PLATFORM ROTATE SWITCH
TS8	JIB BOOM UP / DOWN SWITCH (JIB ONLY)
TS9	PLATFORM LEVEL SWITCH
TS10	SECONDARY BOOM SWITCH
TS11	PRIMARY BOOM UP / DOWN SWITCH
TS12	TURNTABLE ROTATE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT SWITCH
TS14	DRIVE RANGE HIGH / LOW SWITCH
TS15	DRIVE ENABLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25

(with Platform Load Sense and LVI/BCI Option) (before serial number 13361)



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.
2. FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & B ON THE DRIVE JOYSTICK

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
CR17	LOAD SENSOR RELAY (LOAD SENSOR OPTION ONLY)
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A (LVI OPTION ONLY)
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B (LVI OPTION ONLY)
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
L4	OVERLOAD LED (LOAD SENSOR OPTION)
LDS	LOAD SENSOR MODULE
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP #2
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY SWITCH
TS2	START ENGINE SWITCH (BI-ENERGY ONLY)
TS4	HIGH / LOW RPM SWITCH (BI-ENERGY ONLY)
TS6	GLOW PLUG SWITCH (BI-ENERGY ONLY)
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TS10	SECONDARY BOOM SWITCH
TS11	PRIMARY BOOM UP / DOWN SWITCH
TS12	TURNTABLE ROTATE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT SWITCH
TS14	DRIVE RANGE HIGH / LOW SWITCH
TS15	DRIVE ENABLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25

(with Platform Load Sense and LVI/BCI Option) (before serial number 13361)

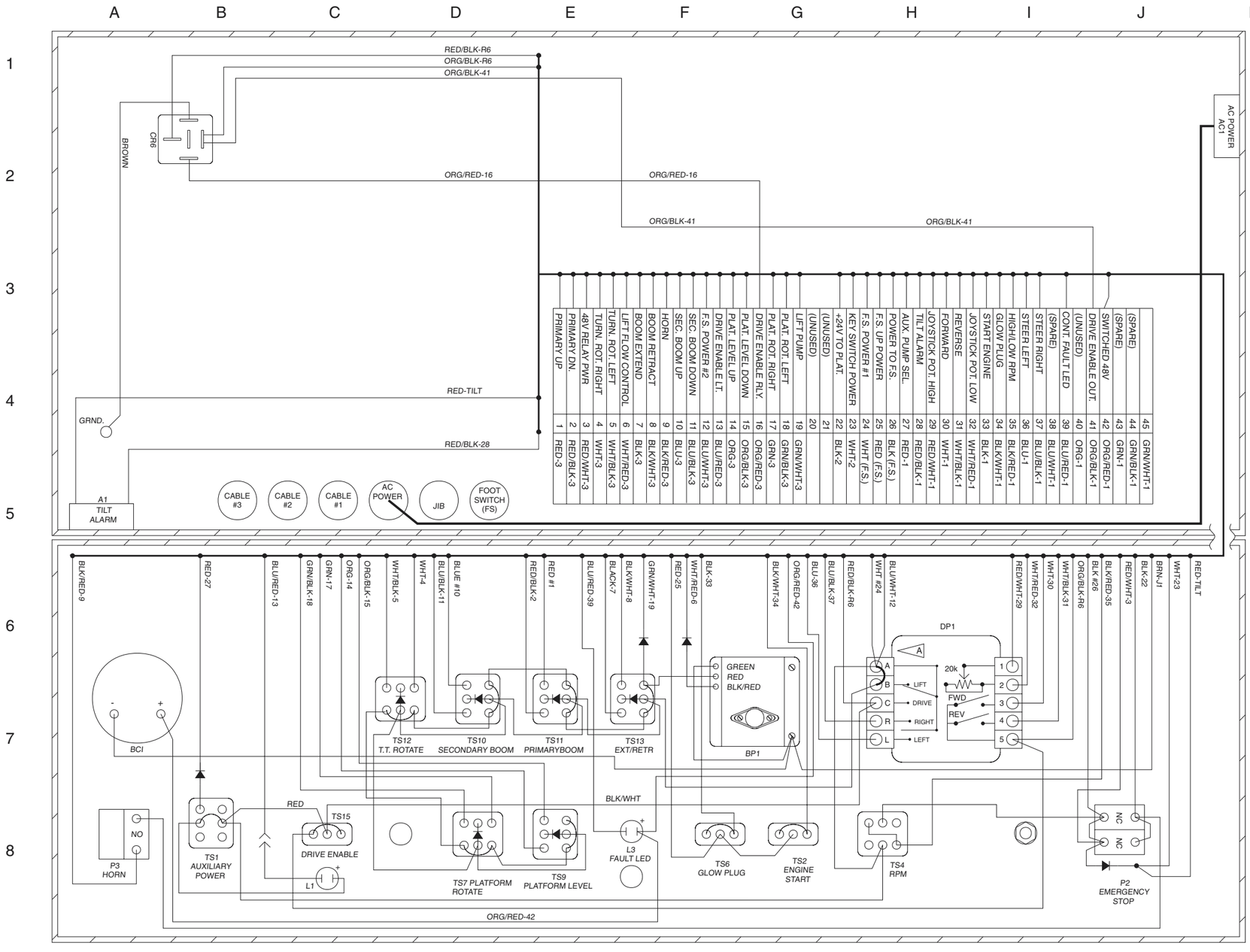


Platform Control Box Wiring Diagram, Z-45/25
(from serial number 13361 to 14078)

Platform Control Box Wiring Diagram, Z-45/25

(from serial number 13361 to 14078)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.
2. FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & B ON THE DRIVE JOYSTICK.

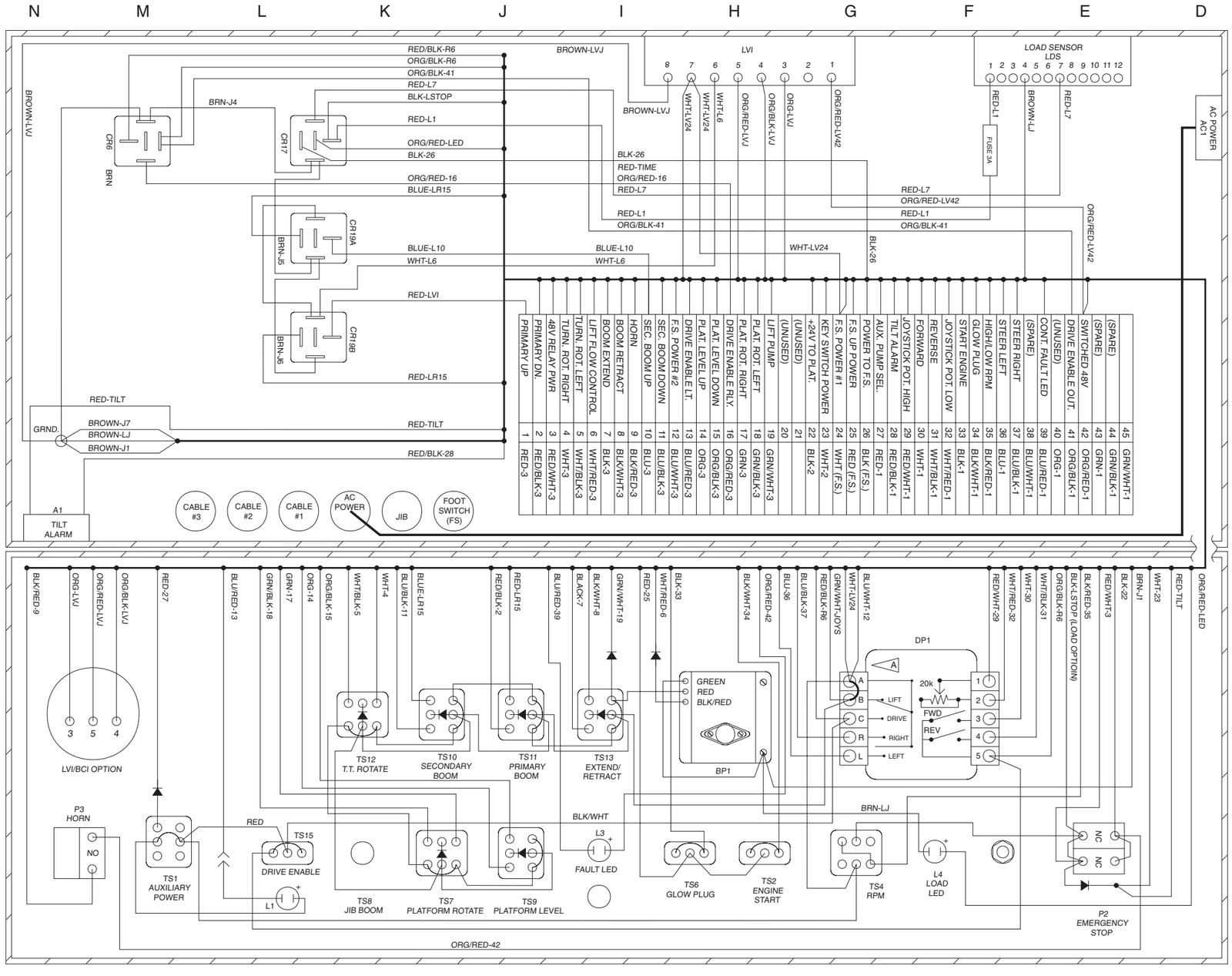
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
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TS7	PLATFORM ROTATE TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25

with Platform Load Sense and LVI/BCI Option (from serial number 13361 to 14078)



NOTES:
ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

A — *FOR LIFT DRIVE SELECTOR OPTION TAKE OFF JUMP BETWEEN A & B*

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR17	LOAD SENSOR RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
L4	OVERLOAD LED
LDS	LOAD SENSOR MODULE
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS9	PLATFORM LEVEL TOGGLE SWITCH
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TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25

with Platform Load Sense and LVI/BCI Option
(from serial number 13361 to 14078)

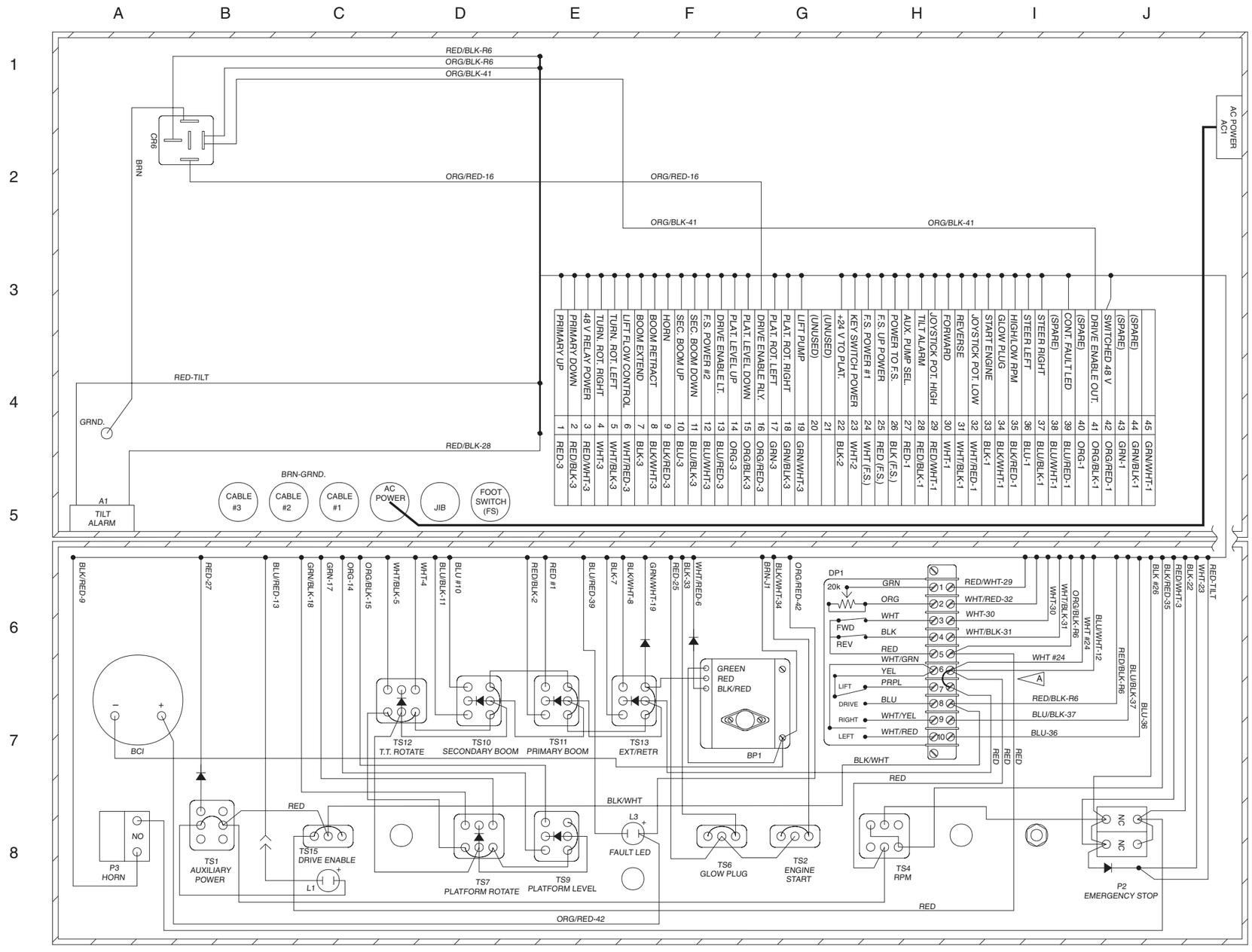


Platform Control Box Wiring Diagram, Z-45/25
(from serial number 14079 to 14650)

Platform Control Box Wiring Diagram, Z-45/25

(from serial number 14079 to 14650)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

A FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS 6 & 7 ON THE DRIVE JOYSTICK.

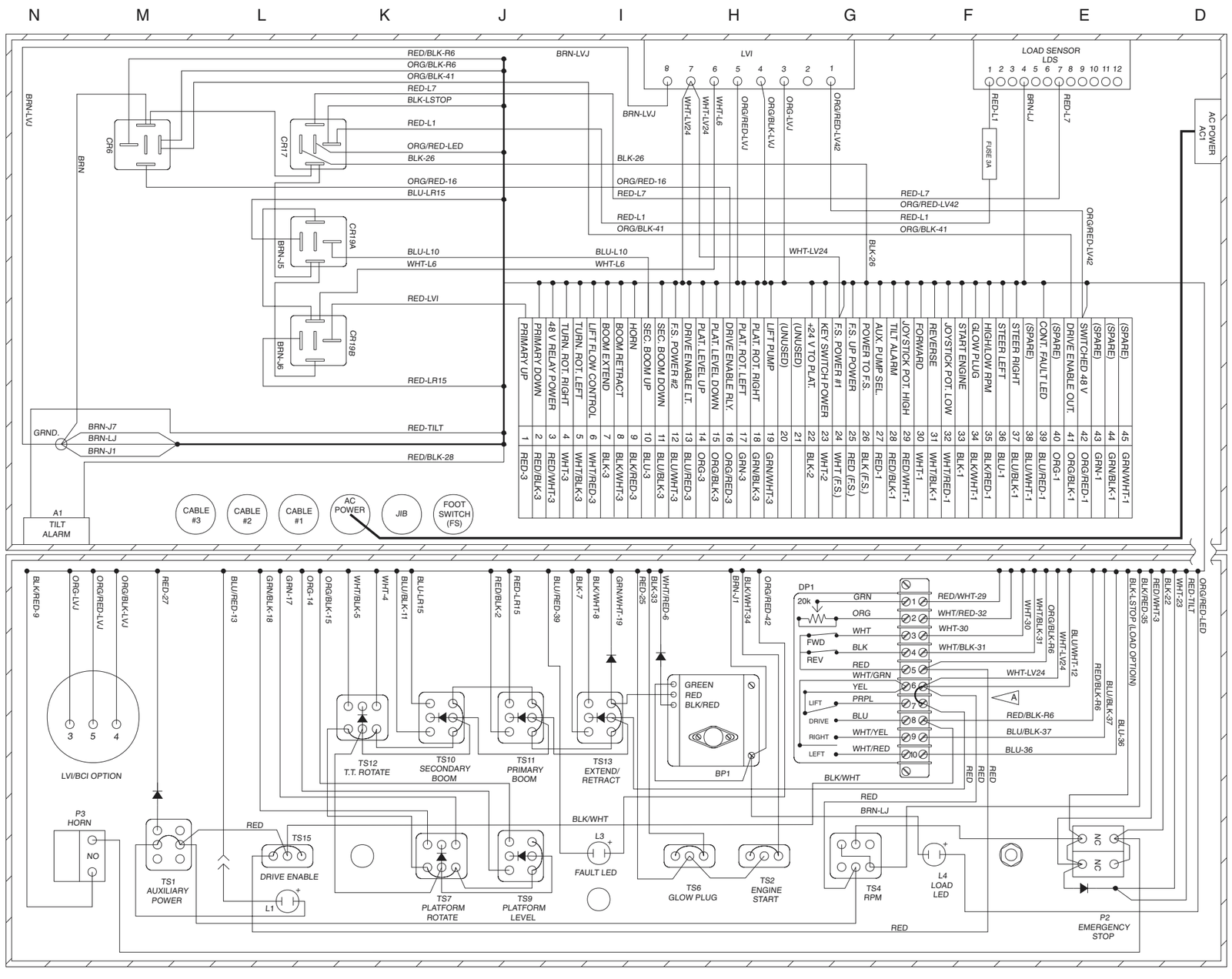
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS9	PLATFORM LEVEL TOGGLE SWITCH
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TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25

with Platform Load Sense and LVI/BCI Option(from serial number 14079 to 14650)



NOTES:
ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

A — FOR LIFT DRIVE SELECTOR OPTION TAKE OFF JUMP BETWEEN 6 & 7

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR17	LOAD SENSOR RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
L4	OVERLOAD LED
LDS	LOAD SENSOR MODULE
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
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TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25

with Platform Load Sense and LVI/BCI Option
(from serial number 14079 to 14650)

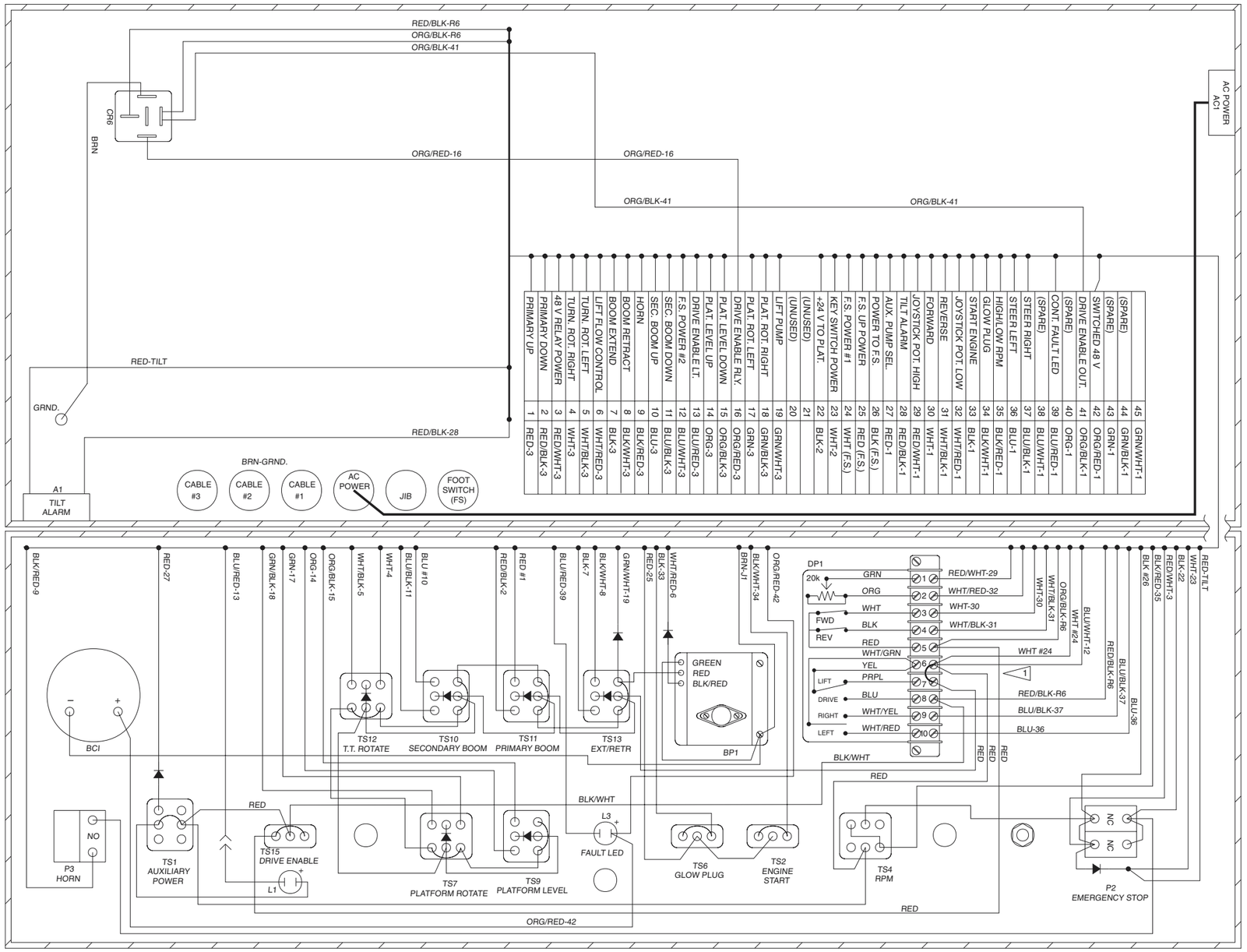


Platform Control Box Wiring Diagram, Z-45/25
(from serial number 14651 to 16839)

Platform Control Box Wiring Diagram, Z-45/25

(from serial number 14651 to 16839)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

1 FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS 6 & 7 ON THE DRIVE JOYSTICK.

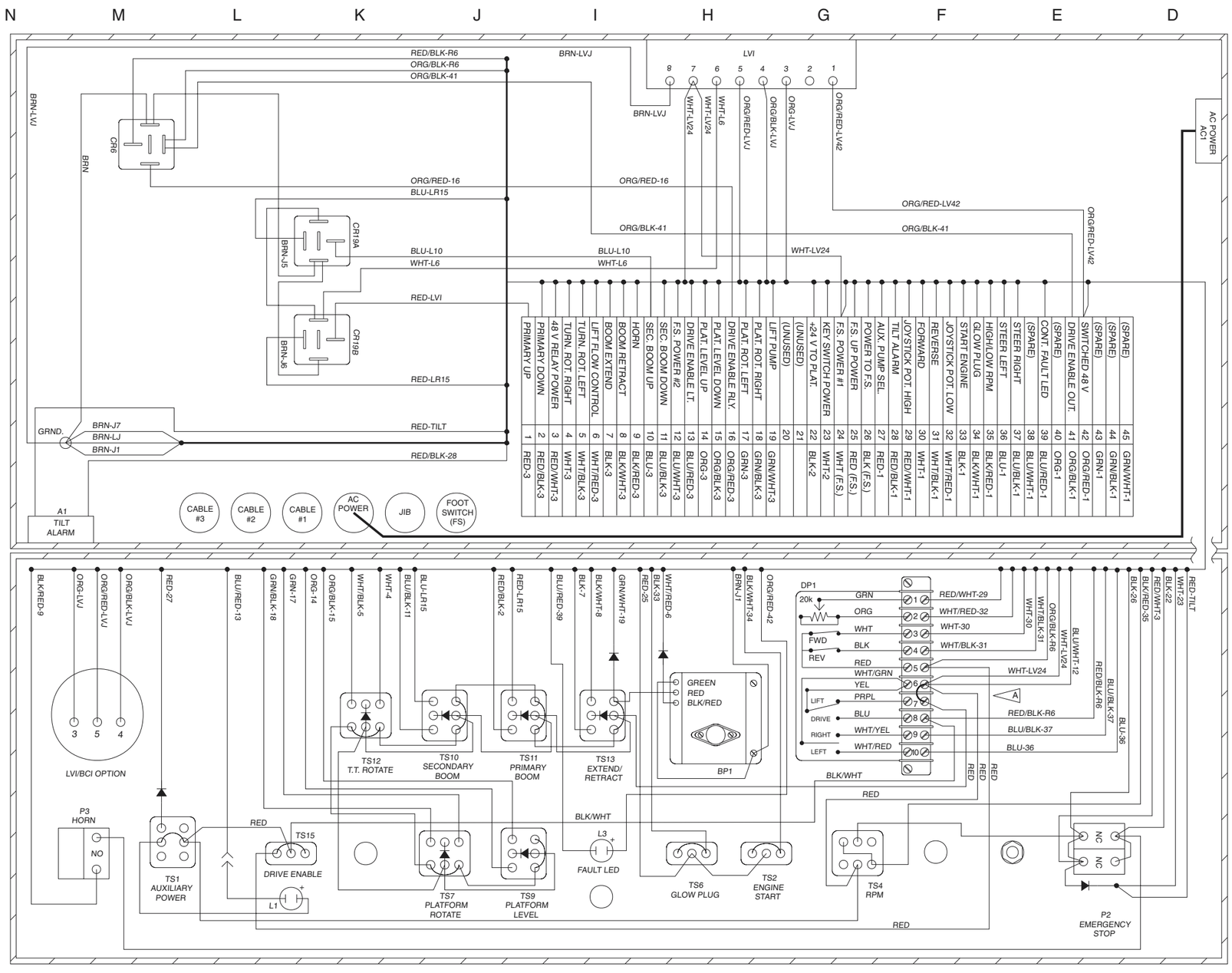
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
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TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25

with LVI/BCI Option (from serial number 14651 to 16839)



NOTES:
ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

A — FOR LIFT DRIVE SELECTOR OPTION TAKE OFF JUMP BETWEEN 6 & 7

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
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TS7	PLATFORM ROTATE TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25
with LVI/BCI Option (from serial number 14651 to 16839)

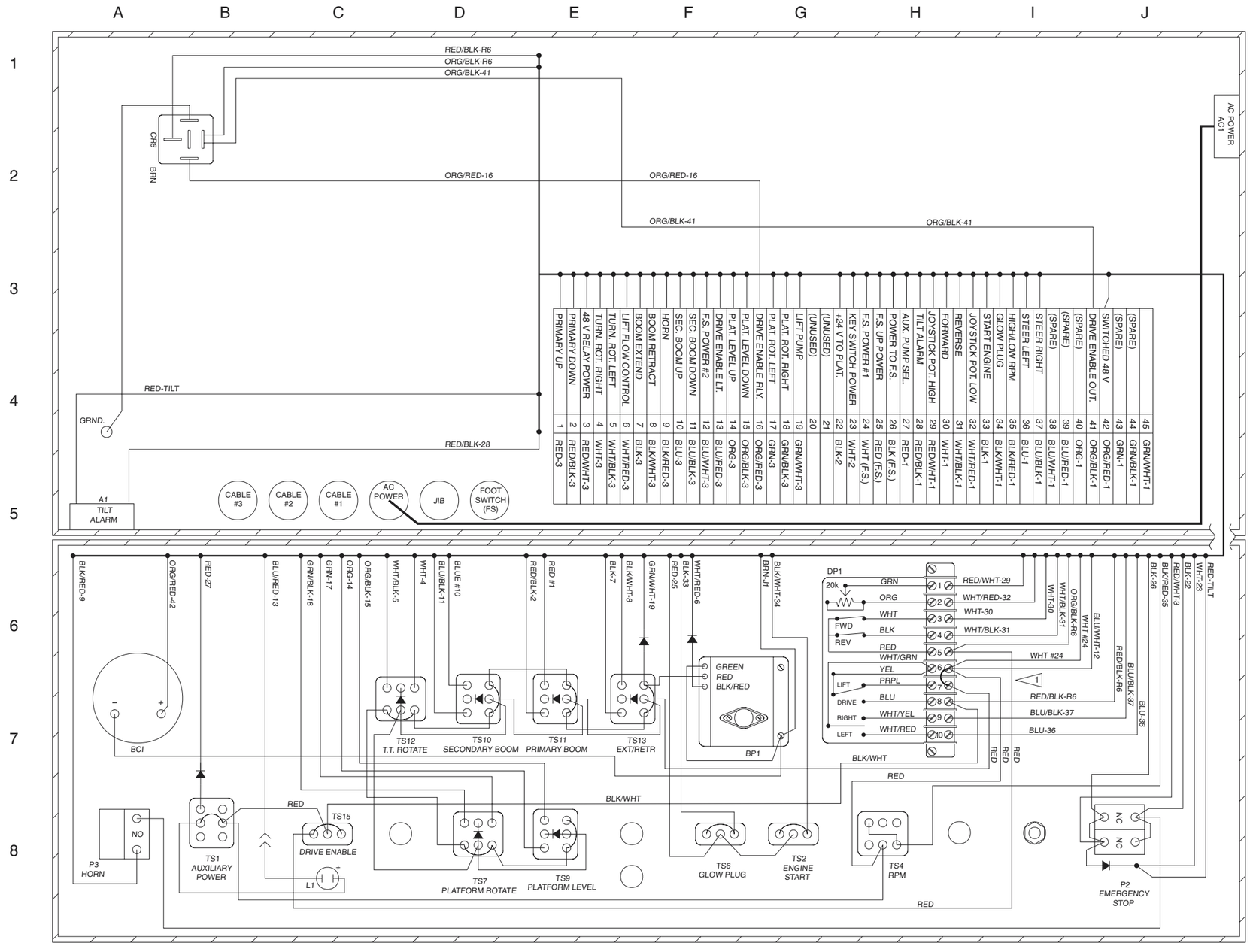


Platform Control Box Wiring Diagram, Z-45/25
(from serial number 16840 to 17974)

Platform Control Box Wiring Diagram, Z-45/25

REV A

(from serial number 16840 to 17974)



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

1 FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & B ON THE DRIVE JOYSTICK.

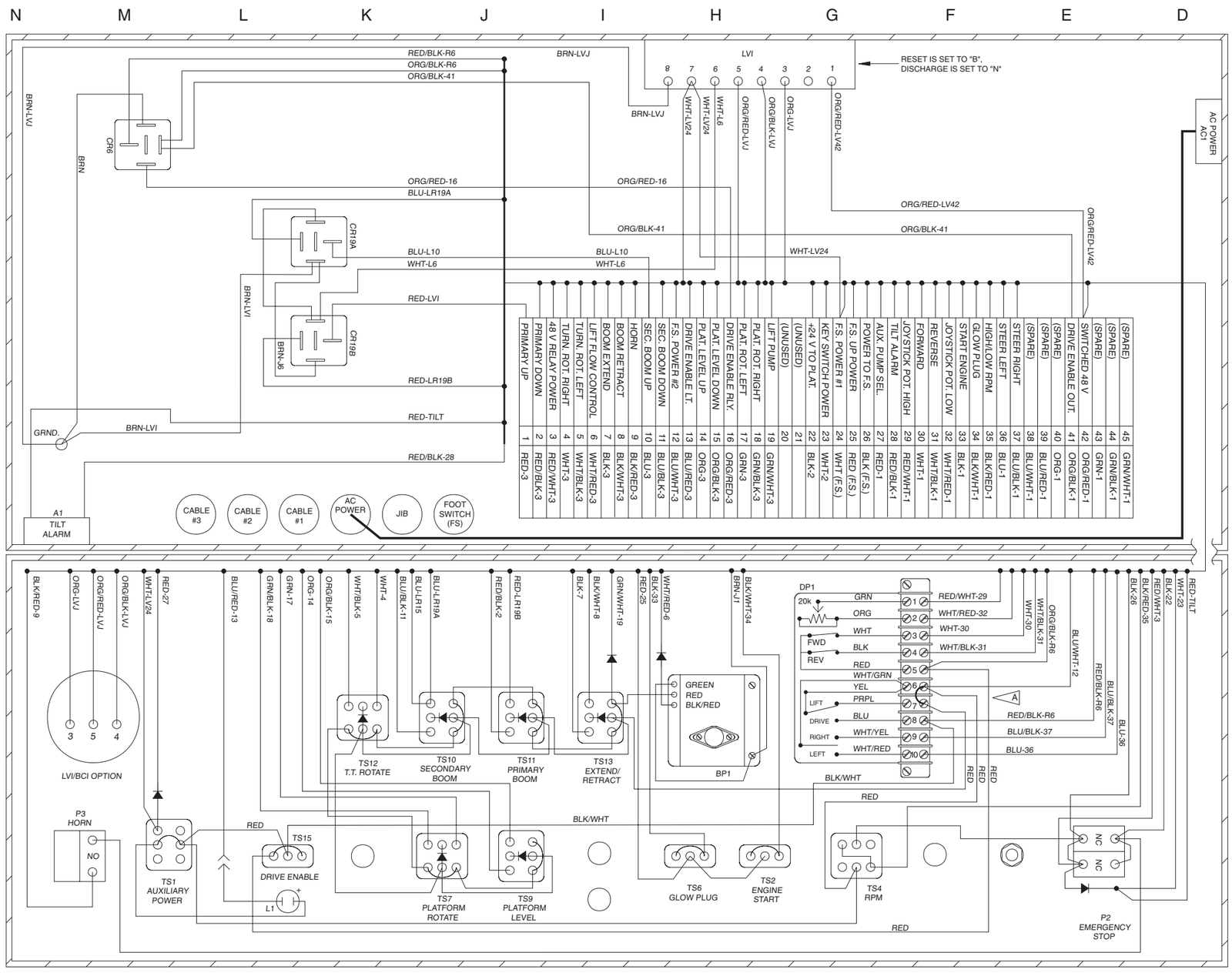
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
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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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25

with LVI/BCI Option (from serial number 16840 to 17974)



NOTES:
ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

A *FOR LIFT DRIVE SELECTOR OPTION TAKE OFF JUMP BETWEEN 6 & 7*

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
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TS9	PLATFORM LEVEL TOGGLE SWITCH
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TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25
with LVI/BCI Option (from serial number 16840 to 17974)

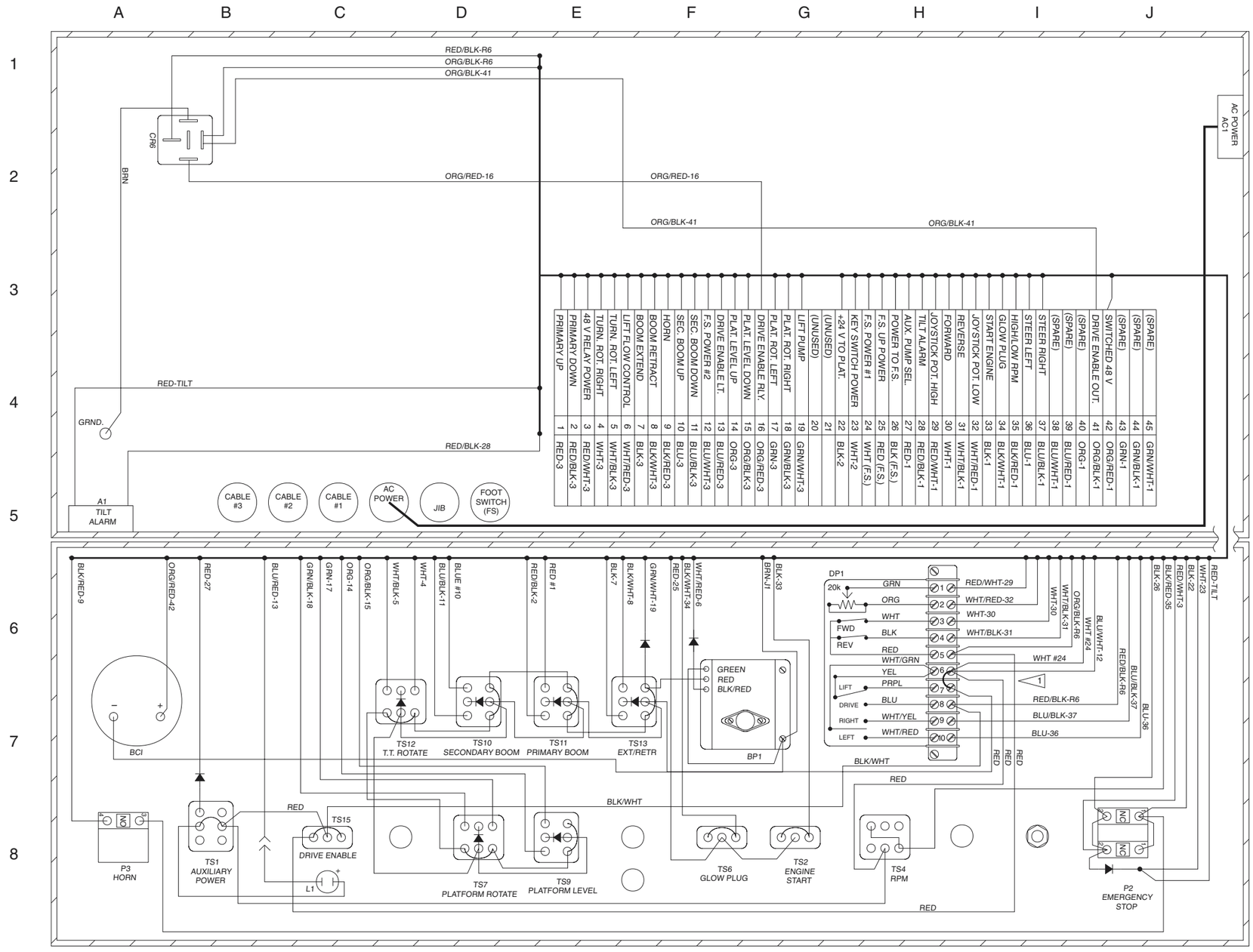


Platform Control Box Wiring Diagram, Z-45/25
(from serial number 17975 to 21180)

Platform Control Box Wiring Diagram, Z-45/25

(from serial number 17975 to 21180)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

1 FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & B ON THE DRIVE JOYSTICK.

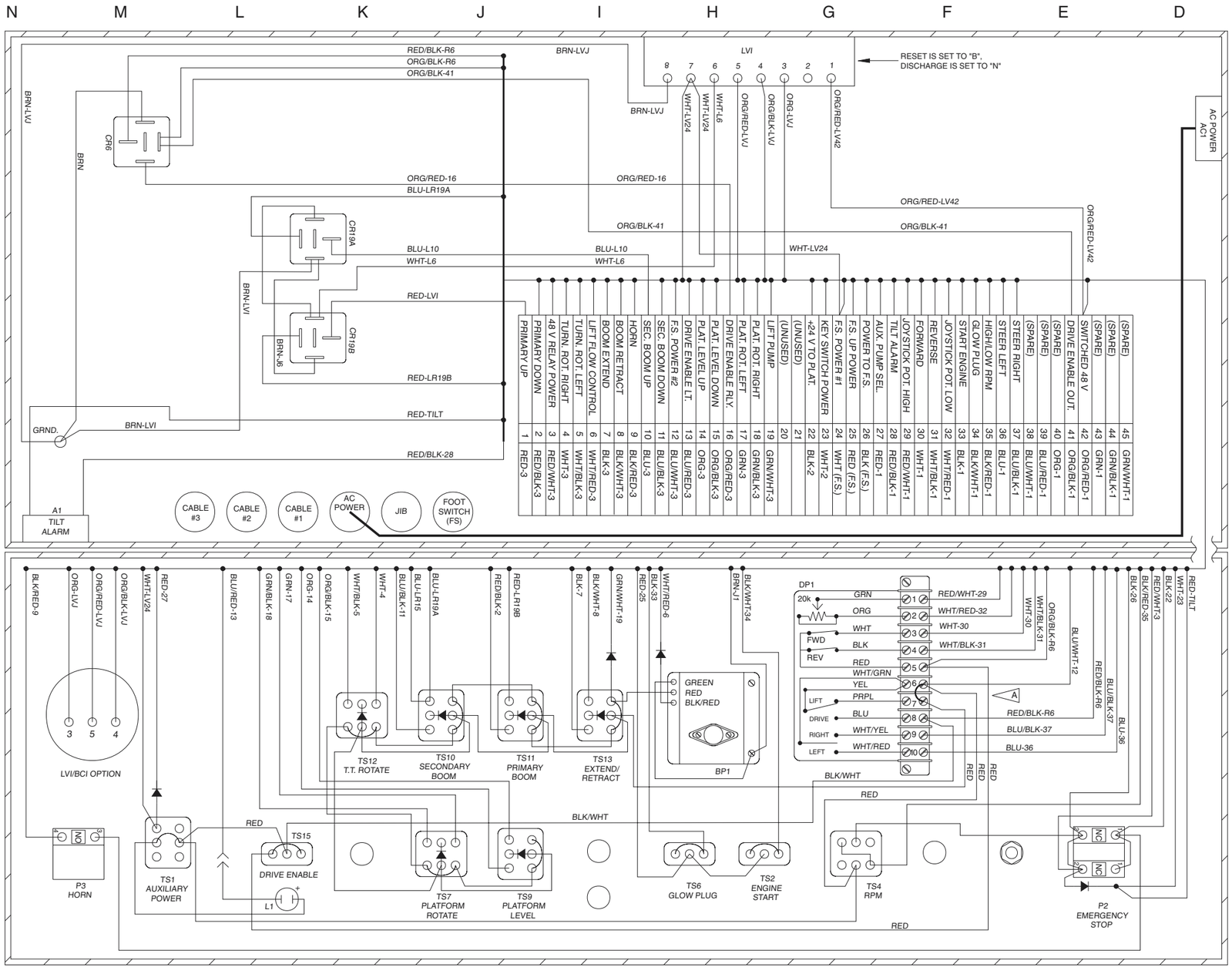
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
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TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS12	TURNTABLE ROTATE TOGGLE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25

with LVI/BCI Option (from serial number 17975 to 21180)



NOTES:
ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

A *FOR LIFT DRIVE SELECTOR OPTION TAKE OFF JUMP BETWEEN 6 & 7*

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25
with LVI/BCI Option (from serial number 17975 to 21180)

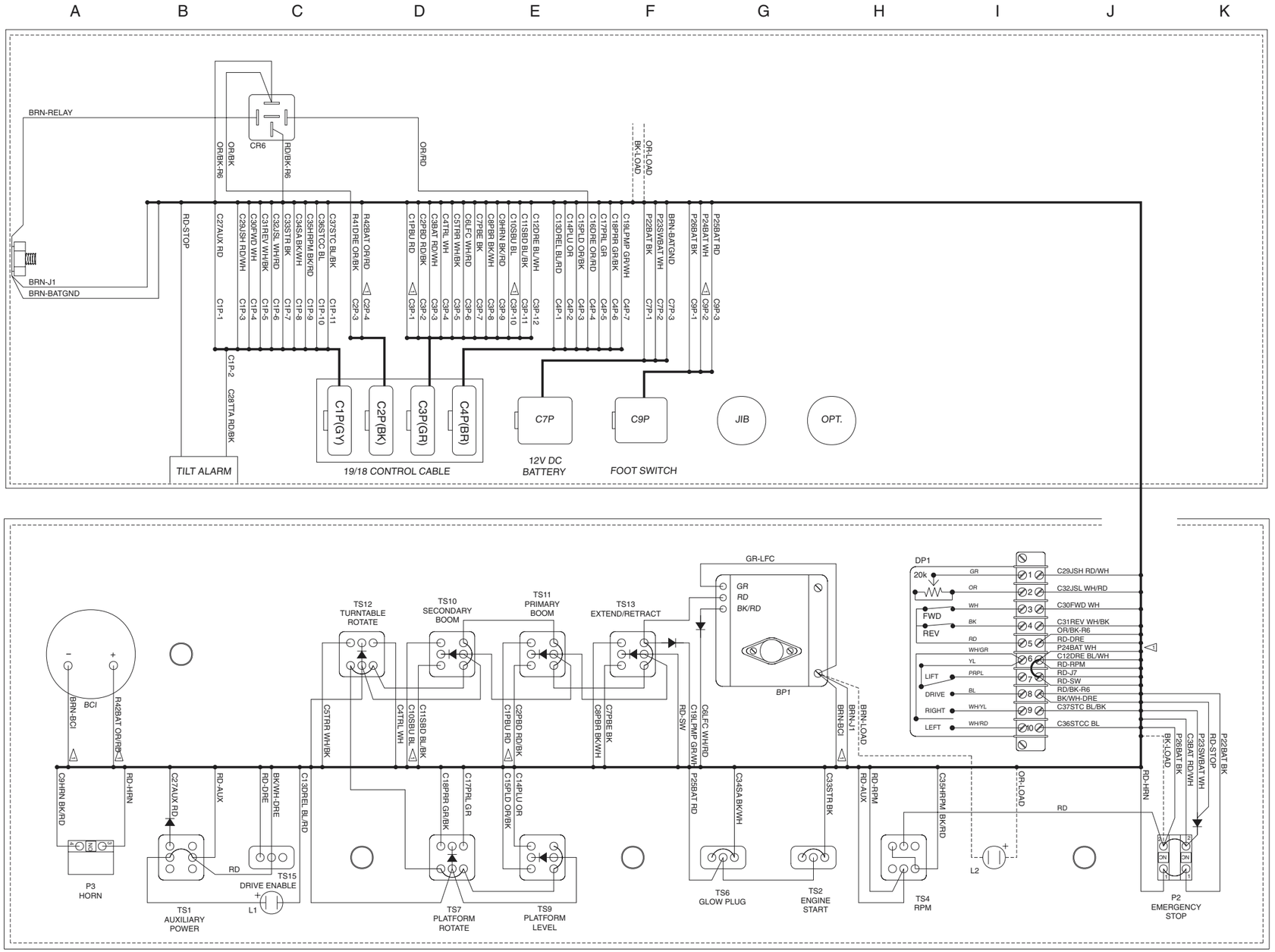


Platform Control Box Wiring Diagram, Z-45/25
(from serial number 21181 to 22050)

Platform Control Box Wiring Diagram, Z-45/25

(from serial number 21181 to 22050)

REV A



NOTES:

1. LOAD SENSE WIRES SHOWN WITH DASHED LINES.
1. FOR LVI/BCI OPTION REMOVE INDICATED WIRES.

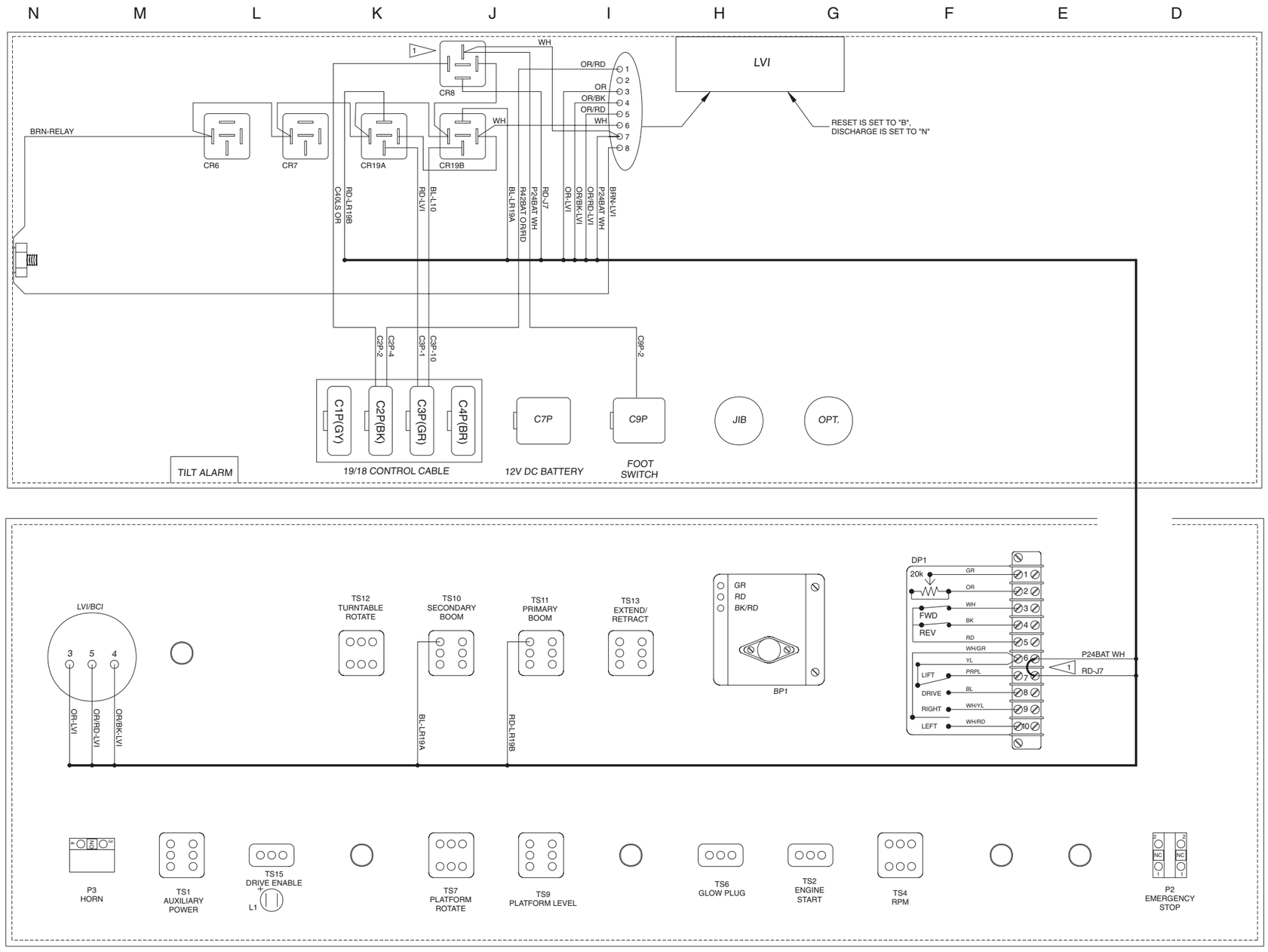
COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L2	LOAD SENSE LED
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY POWER TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
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

REV A

Platform Control Box Wiring Diagram, Z-45/25

with LVI/BCI Option (from serial number 21181 to 22050)



NOTES:

1. FOR CE OPTION, TAKE OFF JUMPER ON JOYSTICK BETWEEN TERMINALS 6 & 7 AND ADD CR8.

COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L2	LOAD SENSE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
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

Platform Control Box Wiring Diagram, Z-45/25
with LVI/BCI Option (from serial number 21181 to 22050)

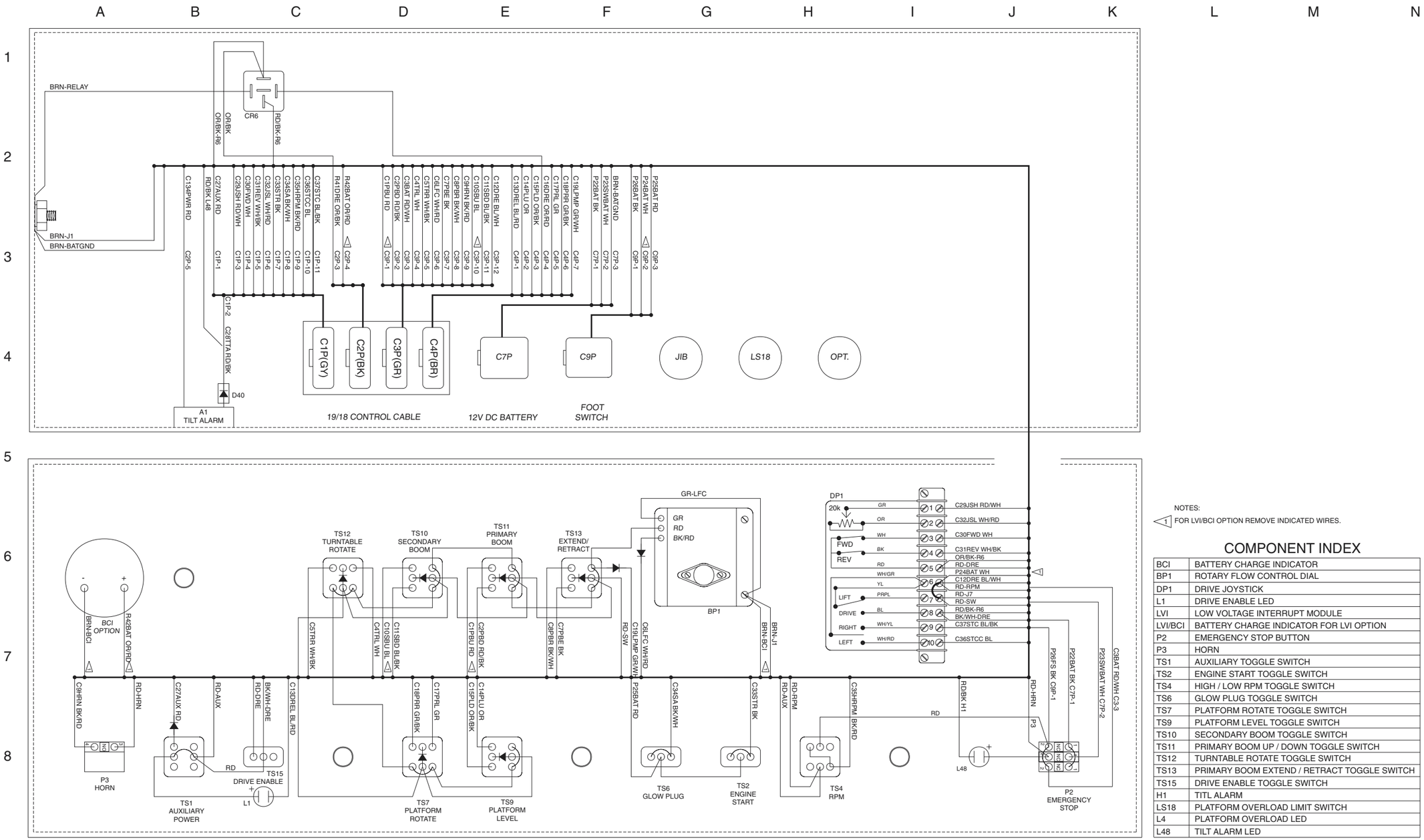


Platform Control Box Wiring Diagram, Z-45/25
(after serial number 22051 to 23235)

Platform Control Box Wiring Diagram, Z-45/25

REV A

(from serial number 22051 to 23235)



NOTES:

1. FOR LVI/BCI OPTION REMOVE INDICATED WIRES.

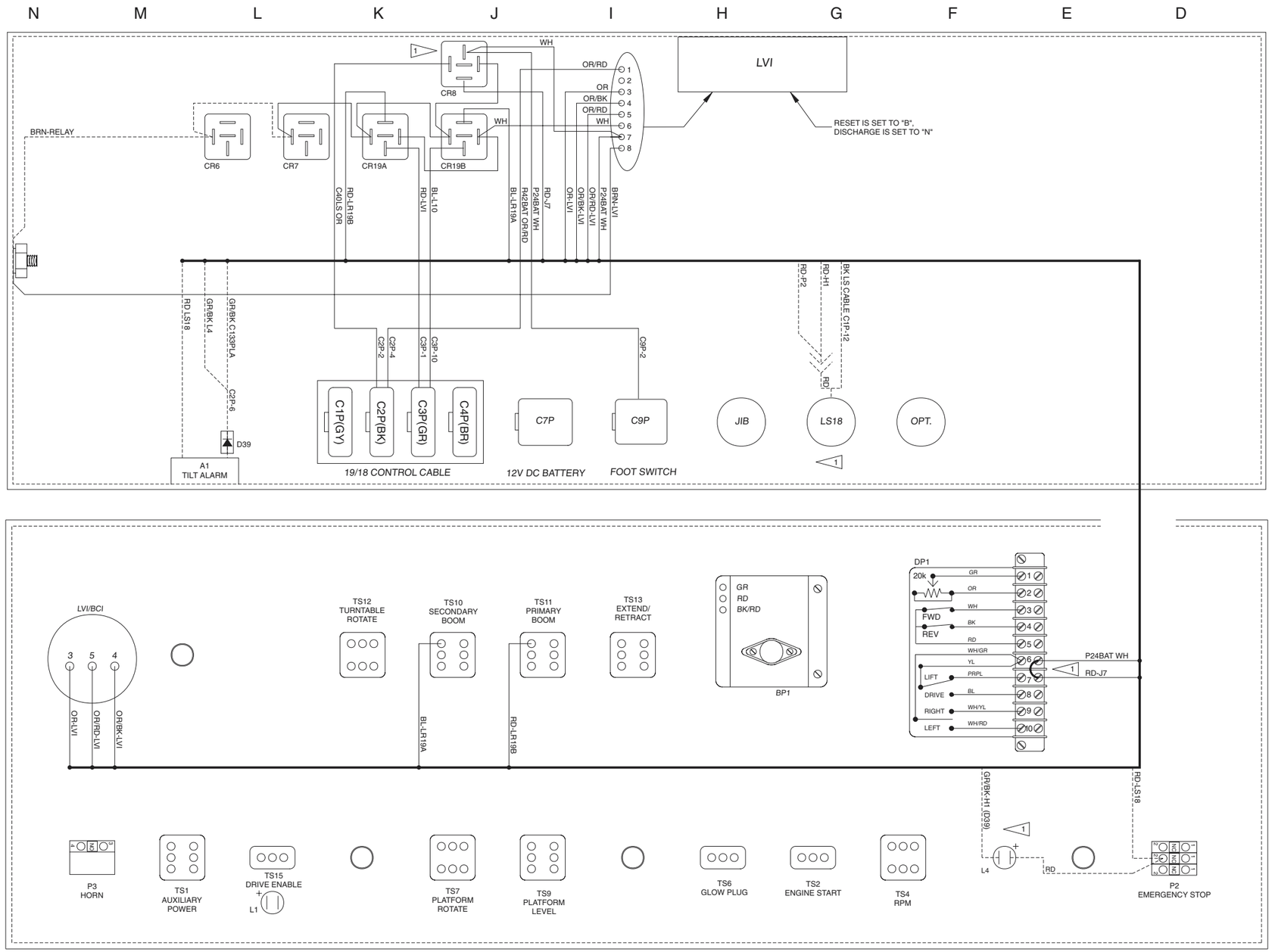
COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
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
H1	TITL ALARM
LS18	PLATFORM OVERLOAD LIMIT SWITCH
L4	PLATFORM OVERLOAD LED
L48	TILT ALARM LED

REV A

Platform Control Box Wiring Diagram, Z-45/25

with LVI/BCI Option (from serial number 22051 to 23235)



NOTES:

1. LOAD SENSE WIRES SHOWN WITH DASHED LINES

1 FOR CE OPTION, REMOVE JUMPER ON JOYSTICK BETWEEN TERMINALS 6 & 7 AND ADD CR8, LS18 AND L4.

COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L2	LOAD SENSE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	START ENGINE TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
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
A1	TILT ALARM
LS18	PLATFORM OVERLOAD LIMIT SWITCH
L4	PLATFORM OVERLOAD LED
L48	TILT ALARM LED

Platform Control Box Wiring Diagram, Z-45/25
with LVI/BCI Option (from serial number 22051 to 23235)

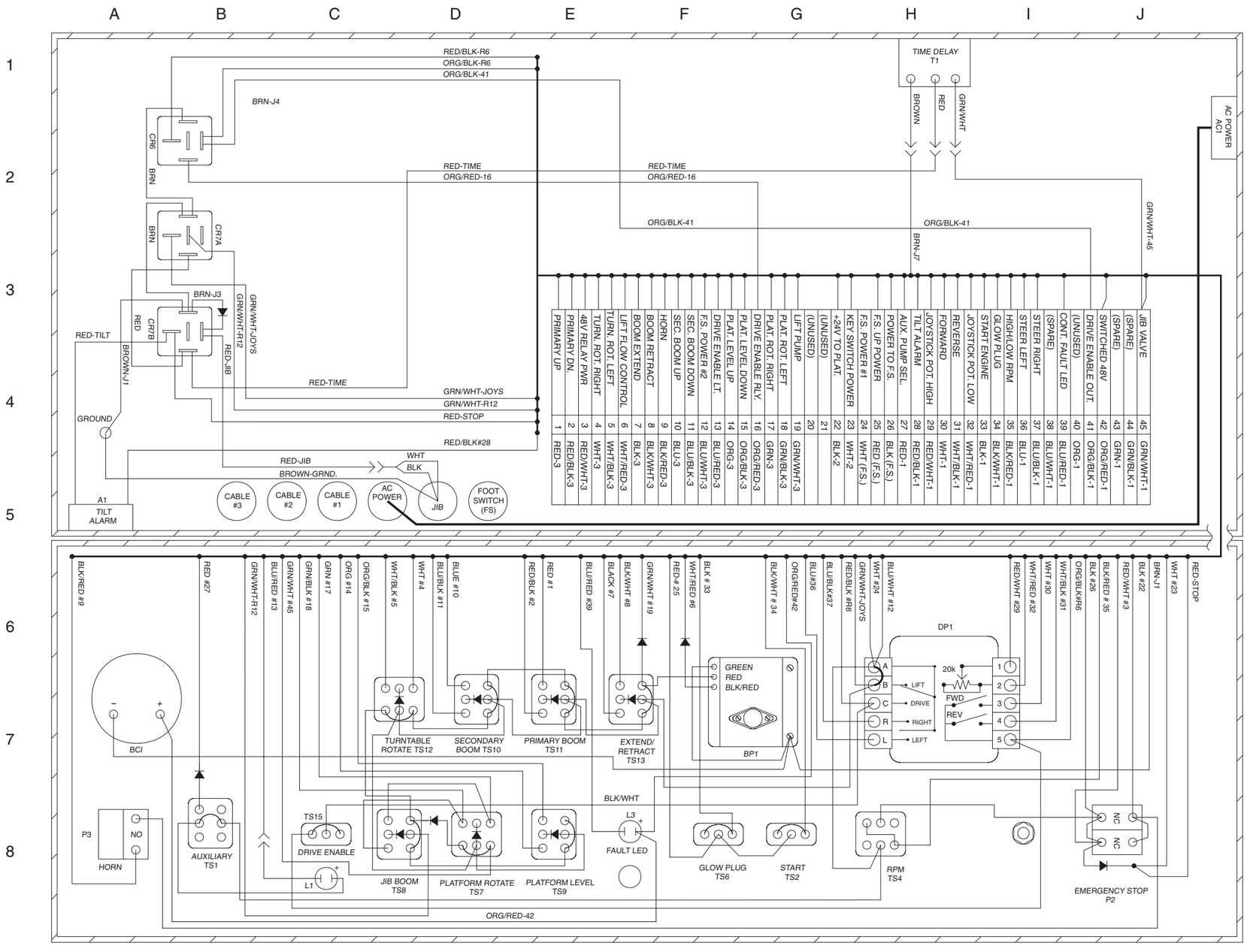


Platform Control Box Wiring Diagram, Z-45/25J
(before serial number 13361)

Platform Control Box Wiring Diagram, Z-45/25J

(before serial number 13361)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.
2. FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & B ON THE DRIVE JOYSTICK.

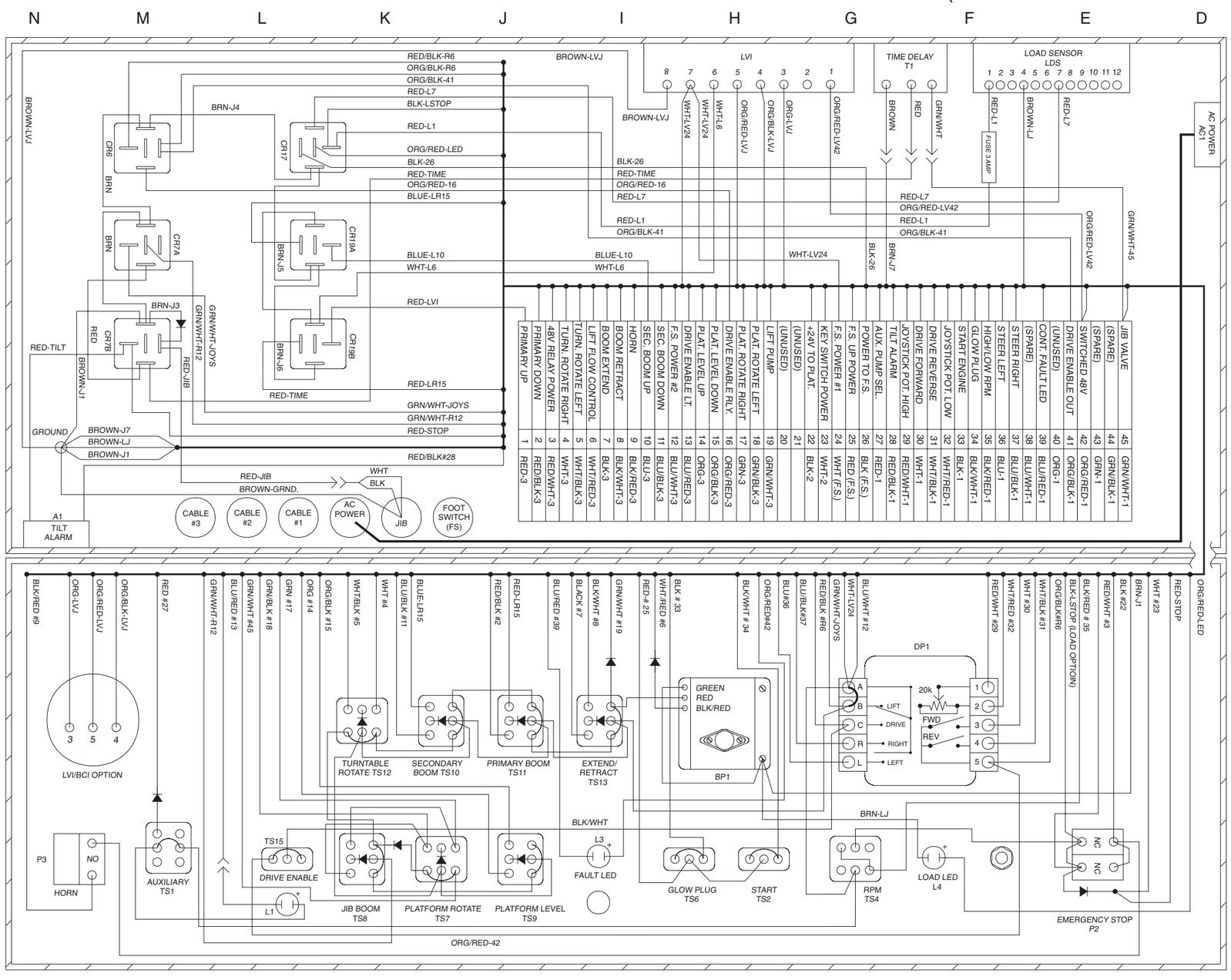
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
CR17	LOAD SENSOR RELAY (LOAD SENSOR OPTION ONLY)
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A (LVI OPTION ONLY)
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B (LVI OPTION ONLY)
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
L4	OVERLOAD LED (LOAD SENSOR OPTION)
LDS	LOAD SENSOR MODULE
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP #2
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY SWITCH
TS2	START ENGINE SWITCH (BI-ENERGY ONLY)
TS4	HIGH / LOW RPM SWITCH (BI-ENERGY ONLY)
TS6	GLOW PLUG SWITCH (BI-ENERGY ONLY)
TS7	PLATFORM ROTATE SWITCH
TS8	JIB BOOM UP / DOWN SWITCH (JIB ONLY)
TS9	PLATFORM LEVEL SWITCH
TS10	SECONDARY BOOM SWITCH
TS11	PRIMARY BOOM UP / DOWN SWITCH
TS12	TURNTABLE ROTATE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT SWITCH
TS14	DRIVE RANGE HIGH / LOW SWITCH
TS15	DRIVE ENABLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25J

(with Platform Load Sense and LVI/BCI Option) (before serial number 13361)



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.
2. FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & ON THE DRIVE JOYSTICK

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB VALVE RELAY
CR17	LOAD SENSOR RELAY (LOAD SENSOR OPTION ONLY)
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A (LVI OPTION ONLY)
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B (LVI OPTION ONLY)
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
L4	OVERLOAD LED (LOAD SENSOR OPTION)
LDS	LOAD SENSOR MODULE
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP #2
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY SWITCH
TS2	START ENGINE SWITCH (BI-ENERGY ONLY)
TS4	HIGH / LOW RPM SWITCH (BI-ENERGY ONLY)
TS6	GLOW PLUG SWITCH (BI-ENERGY ONLY)
TS7	PLATFORM ROTATE SWITCH
TS8	JIB BOOM UP / DOWN SWITCH (JIB ONLY)
TS9	PLATFORM LEVEL SWITCH
TS10	SECONDARY BOOM SWITCH
TS11	PRIMARY BOOM UP / DOWN SWITCH
TS12	TURNTABLE ROTATE SWITCH
TS13	PRIMARY BOOM EXTEND / RETRACT SWITCH
TS14	DRIVE RANGE HIGH / LOW SWITCH
TS15	DRIVE ENABLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25J

(with Platform Load Sense and LVI/BCI Option) (before serial number 13361)

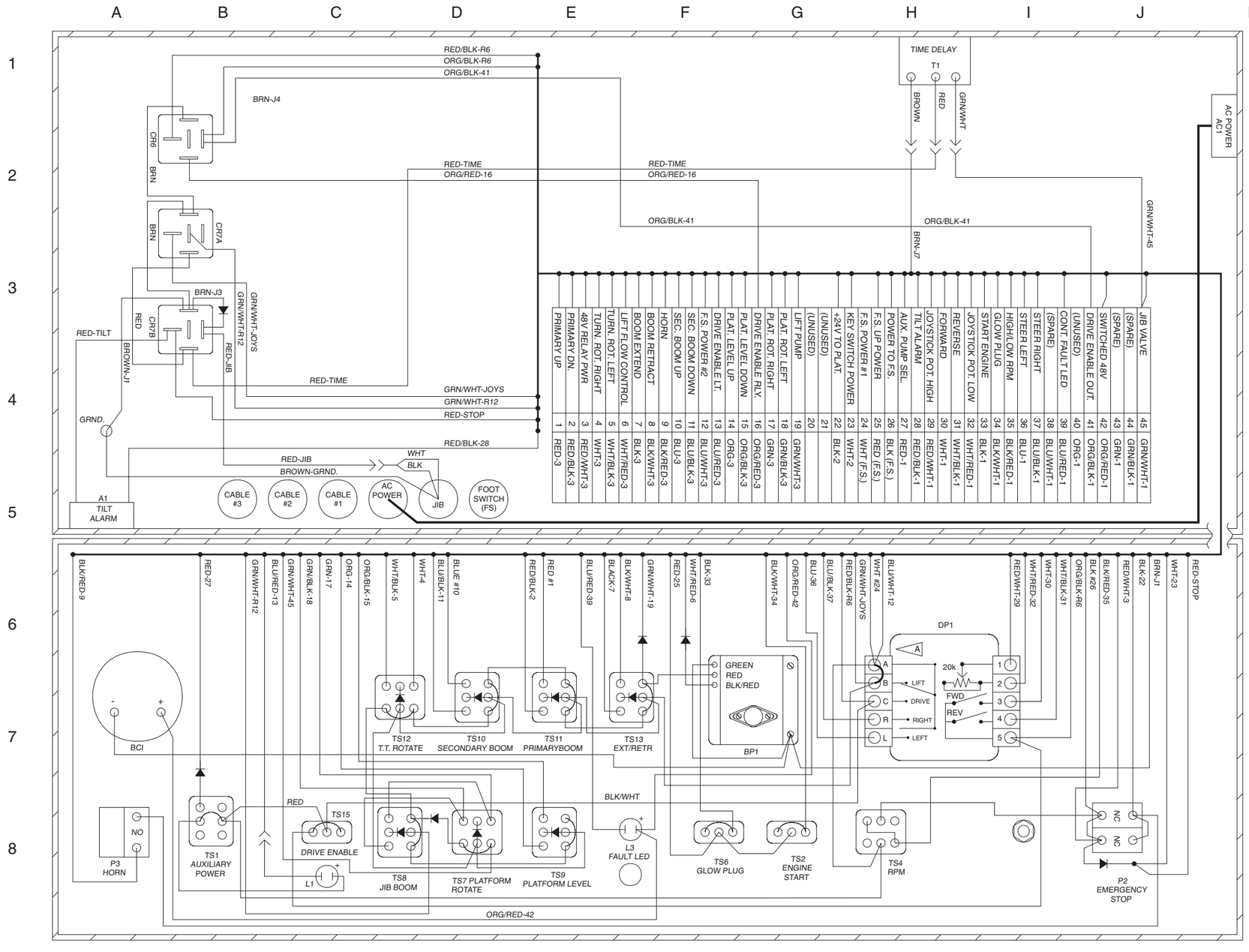


Platform Control Box Wiring Diagram, Z-45/25J
(from serial number 13361 to 14078)

Platform Control Box Wiring Diagram, Z-45/25J

(from serial number 13361 to 14078)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.
2. FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & B ON THE DRIVE JOYSTICK.

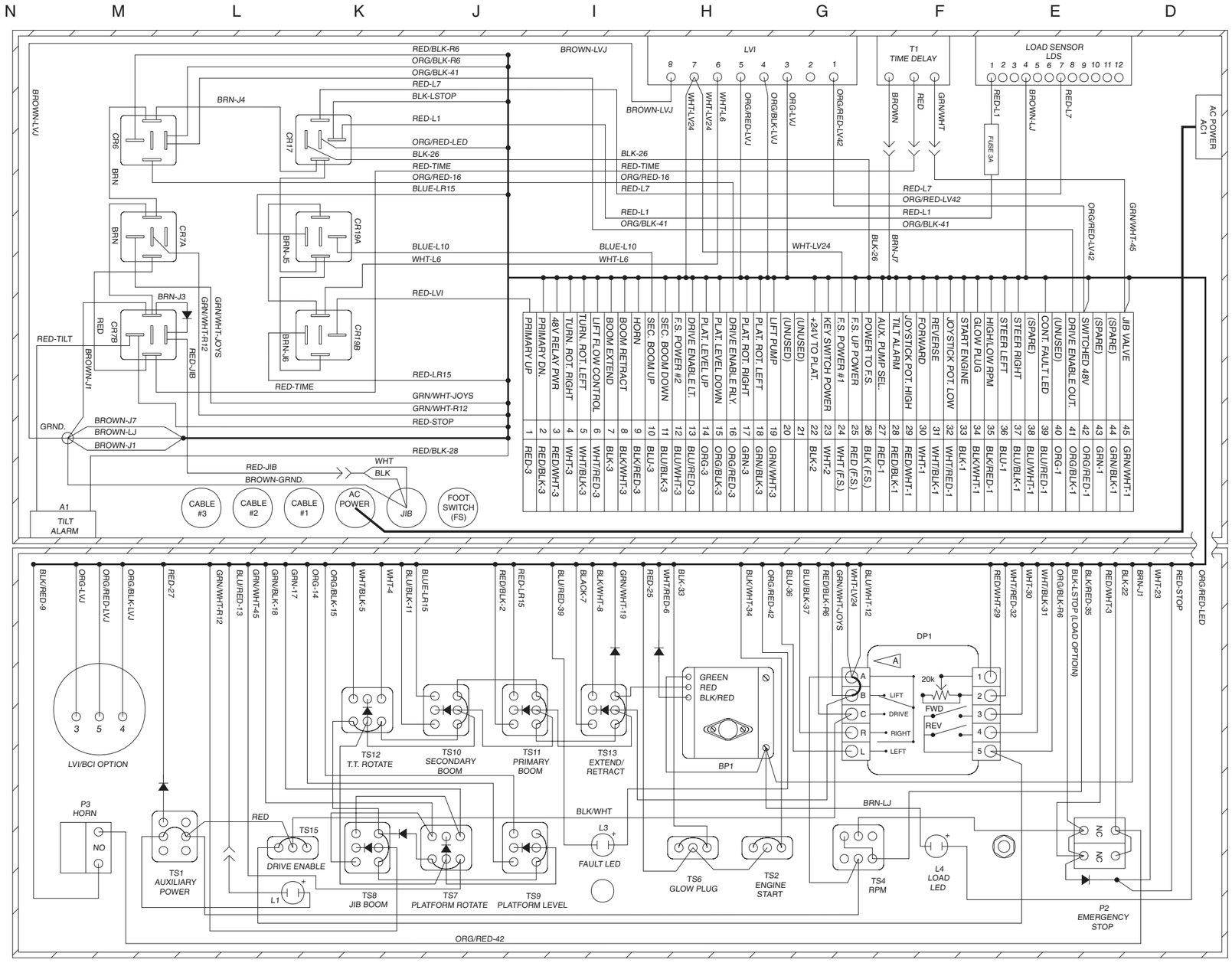
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25J

with Platform Load Sense and LVI/BCI Option (from serial number 13361 to 14078)

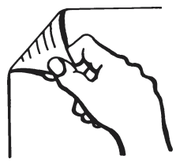


COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR7A	JIB CUTOUT RELAY
CR7B	JIB VALVE RELAY
CR17	LOAD SENSOR RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
L4	OVERLOAD LED
LDS	LOAD SENSOR MODULE
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25J

with Platform Load Sense and LVI/BCI Option
(from serial number 13361 to 14078)

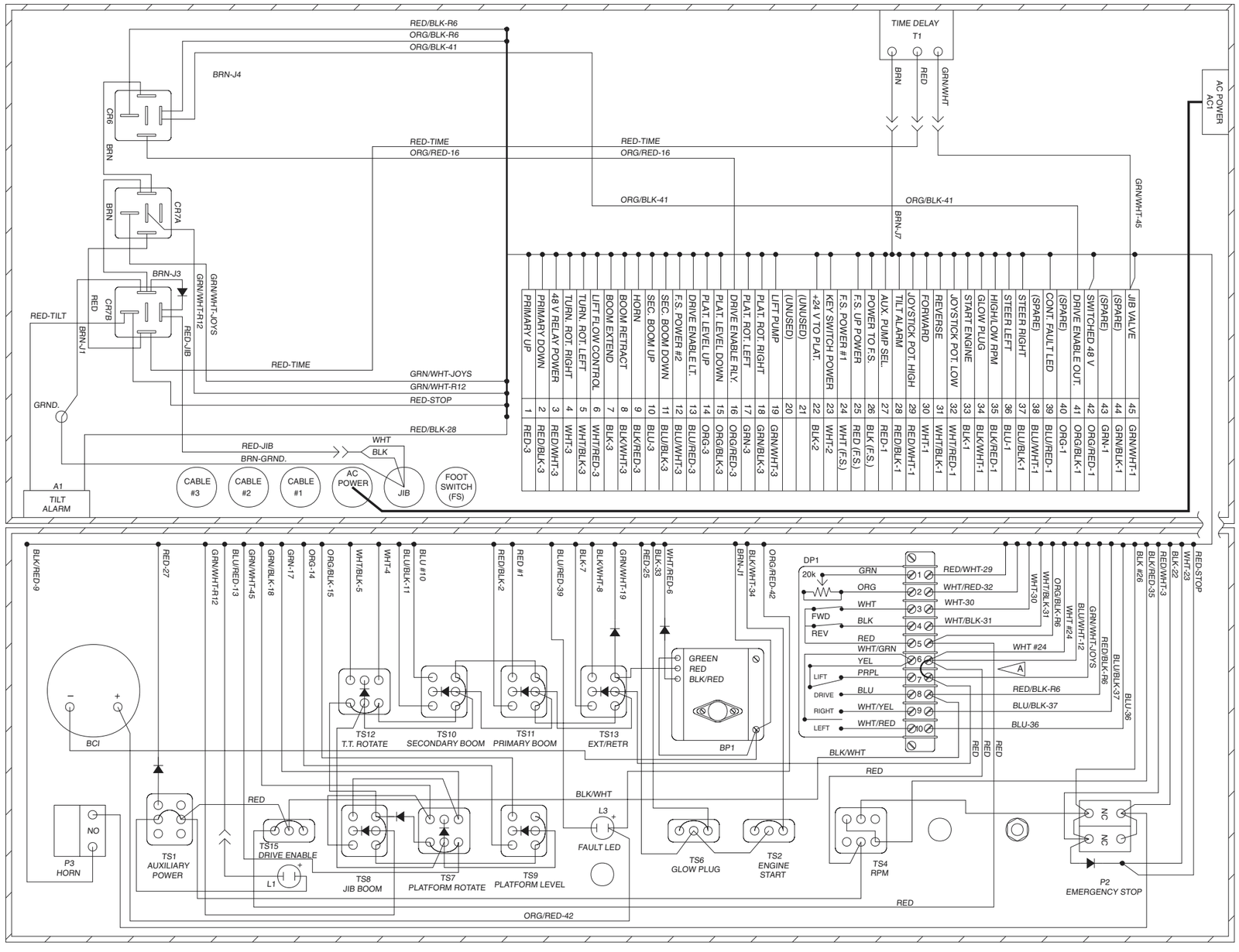


Platform Control Box Wiring Diagram, Z-45/25J
(from serial number 14079 to 14650)

Platform Control Box Wiring Diagram, Z-45/25J

(from serial number 14079 to 14650)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

A FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS 6 & 7 ON THE DRIVE JOYSTICK.

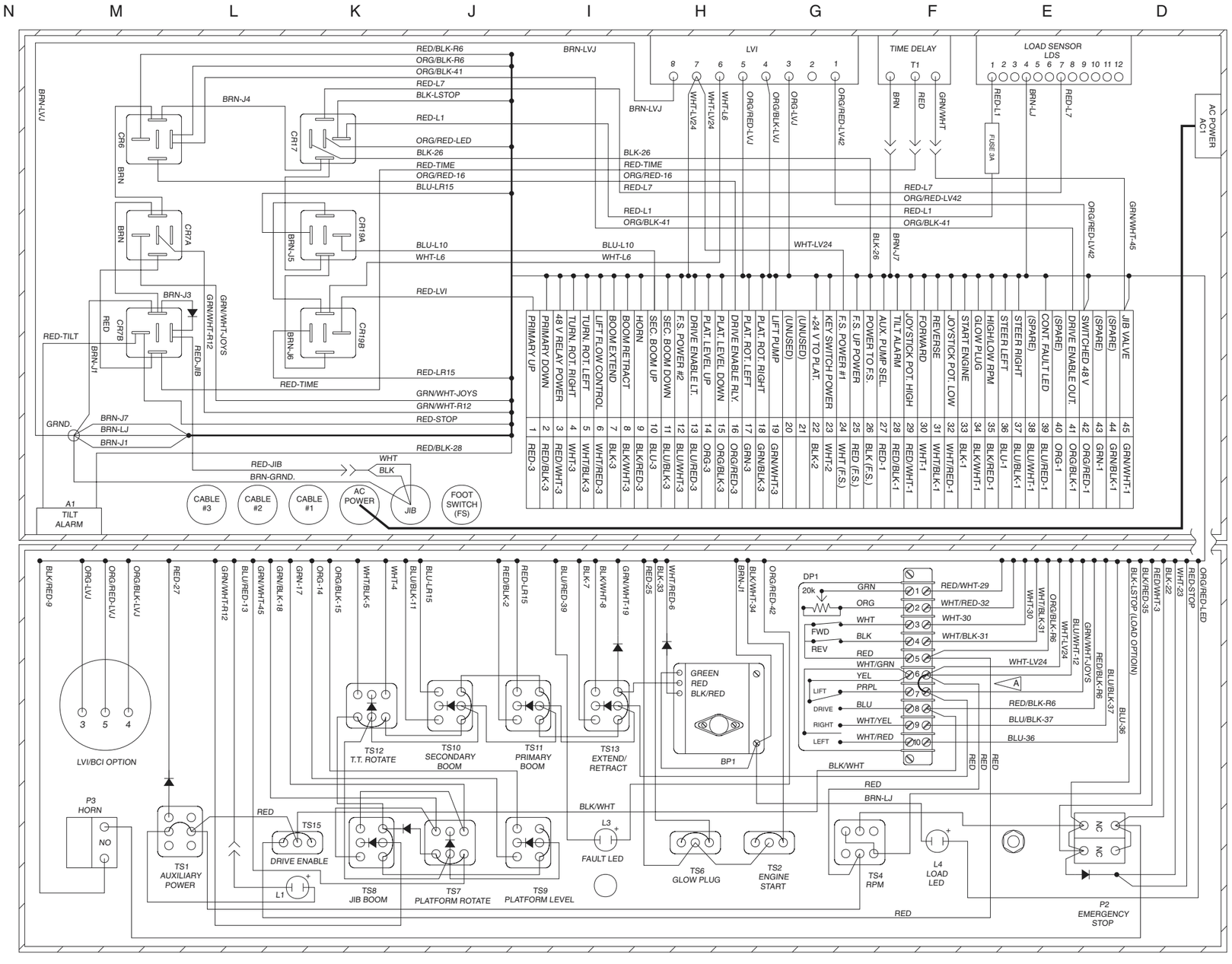
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25J

with Platform Load Sense and LVI/BCI Option(from serial number 14079 to 14650)



NOTES:
ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

A — FOR LIFT DRIVE SELECTOR OPTION TAKE OFF JUMP BETWEEN 6 & 7

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR7A	JIB CUTOUT RELAY
CR7B	JIB VALVE RELAY
CR17	LOAD SENSOR RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
L4	OVERLOAD LED
LDS	LOAD SENSOR MODULE
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25J

with Platform Load Sense and LVI/BCI Option
(from serial number 14079 to 14650)

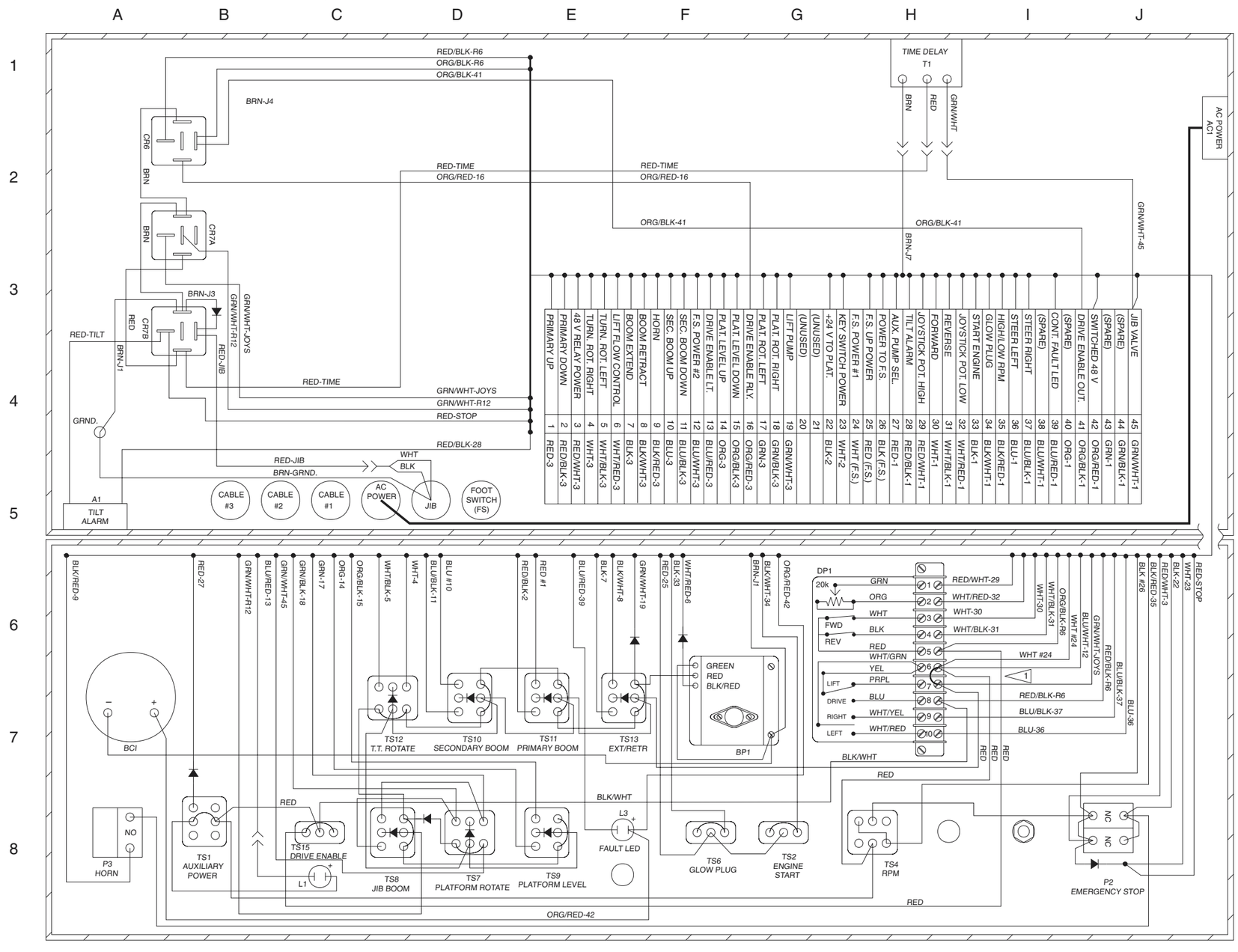


Platform Control Box Wiring Diagram, Z-45/25J
(from serial number 14651 to 16839)

Platform Control Box Wiring Diagram, Z-45/25J

(from serial number 14651 to 16839)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

1 FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS 6 & 7 ON THE DRIVE JOYSTICK.

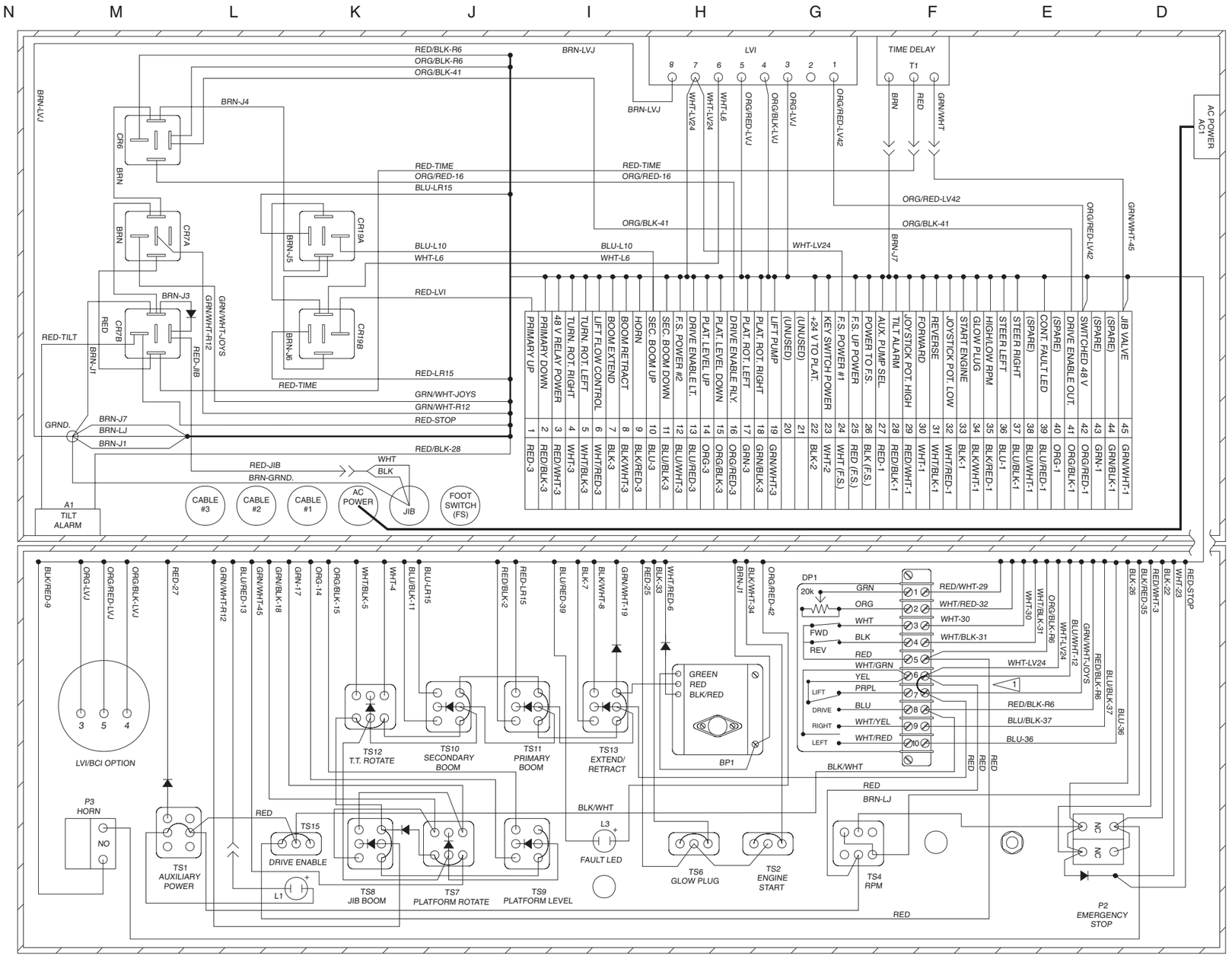
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25J

with LVI/BCI Option (from serial number 14651 to 16839)



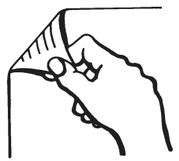
NOTES:
ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

7 — *FOR LIFT DRIVE SELECTOR OPTION TAKE OFF JUMP BETWEEN 6 & 7*

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR7A	JIB CUTOUT RELAY
CR7B	JIB VALVE RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L3	CONTROLLER FAULT LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25J
with LVI/BCI Option (from serial number 14651 to 16839)

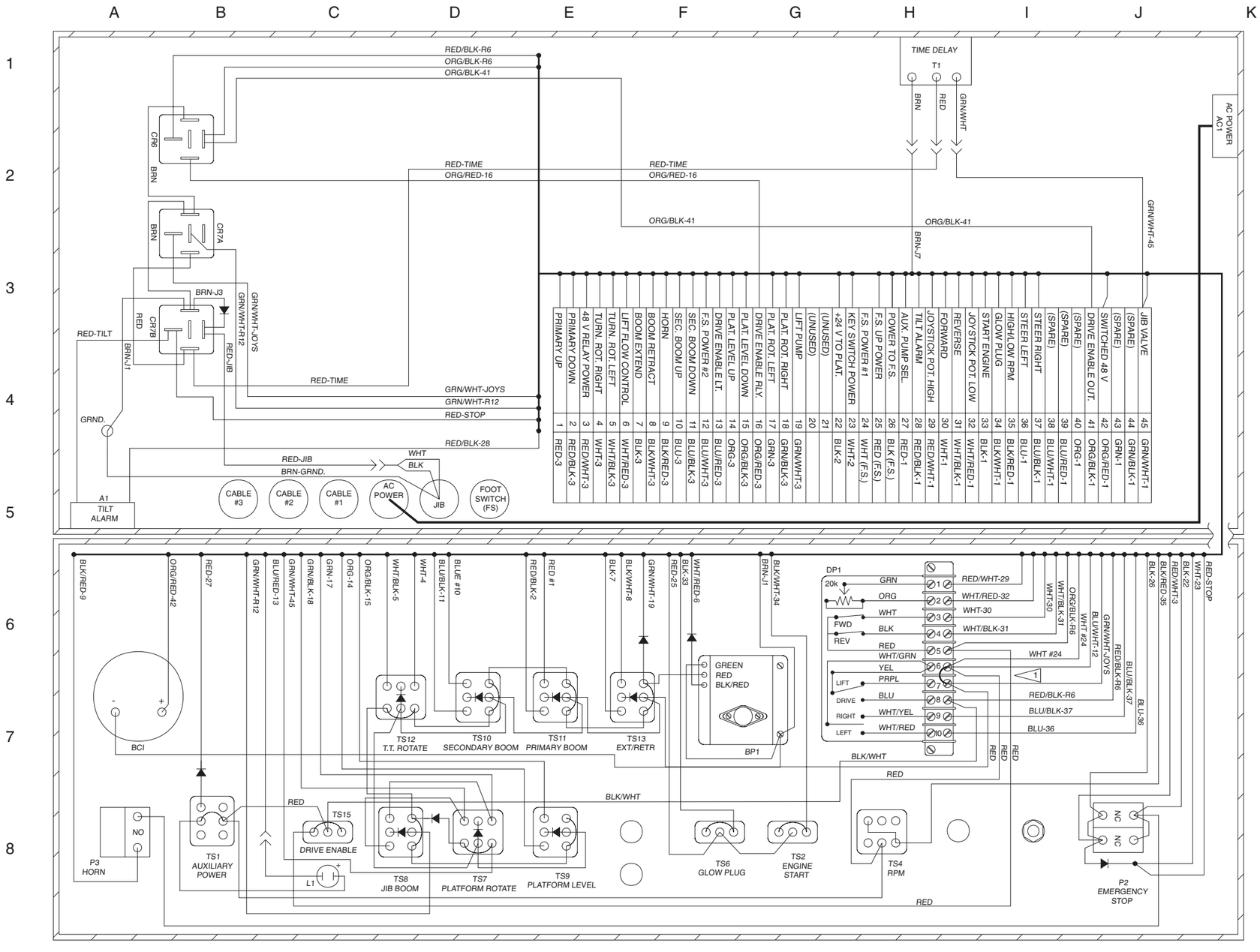


Platform Control Box Wiring Diagram, Z-45/25J
(from serial number 16840 to 17974)

Platform Control Box Wiring Diagram, Z-45/25J

(from serial number 16840 to 17974)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

1 FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & B ON THE DRIVE JOYSTICK.

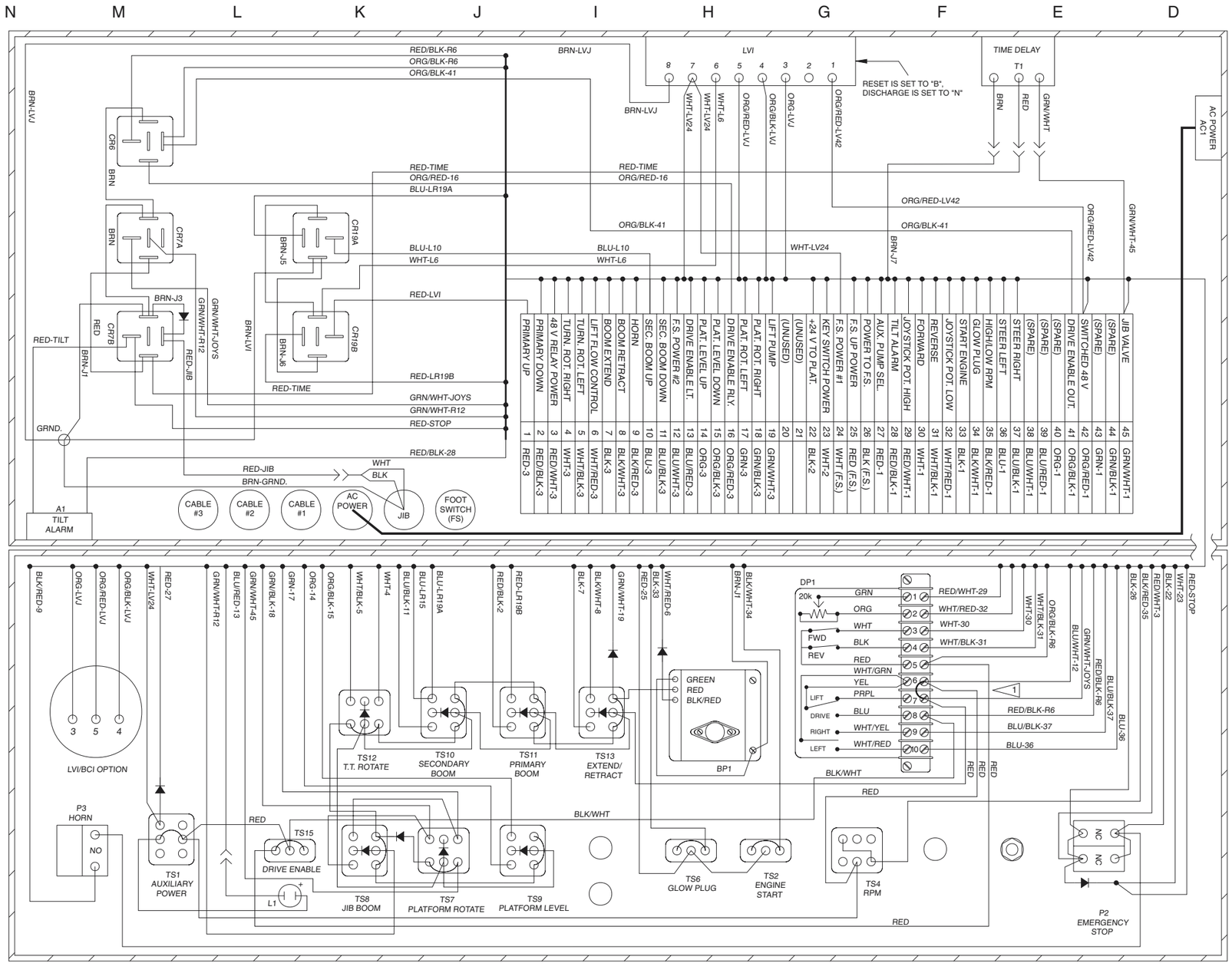
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25J

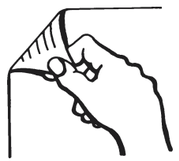
with LVI/BCI Option (from serial number 16840 to 17974)



COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR7A	JIB CUTOUT RELAY
CR7B	JIB VALVE RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25J
with LVI/BCI Option (from serial number 16840 to 17974)

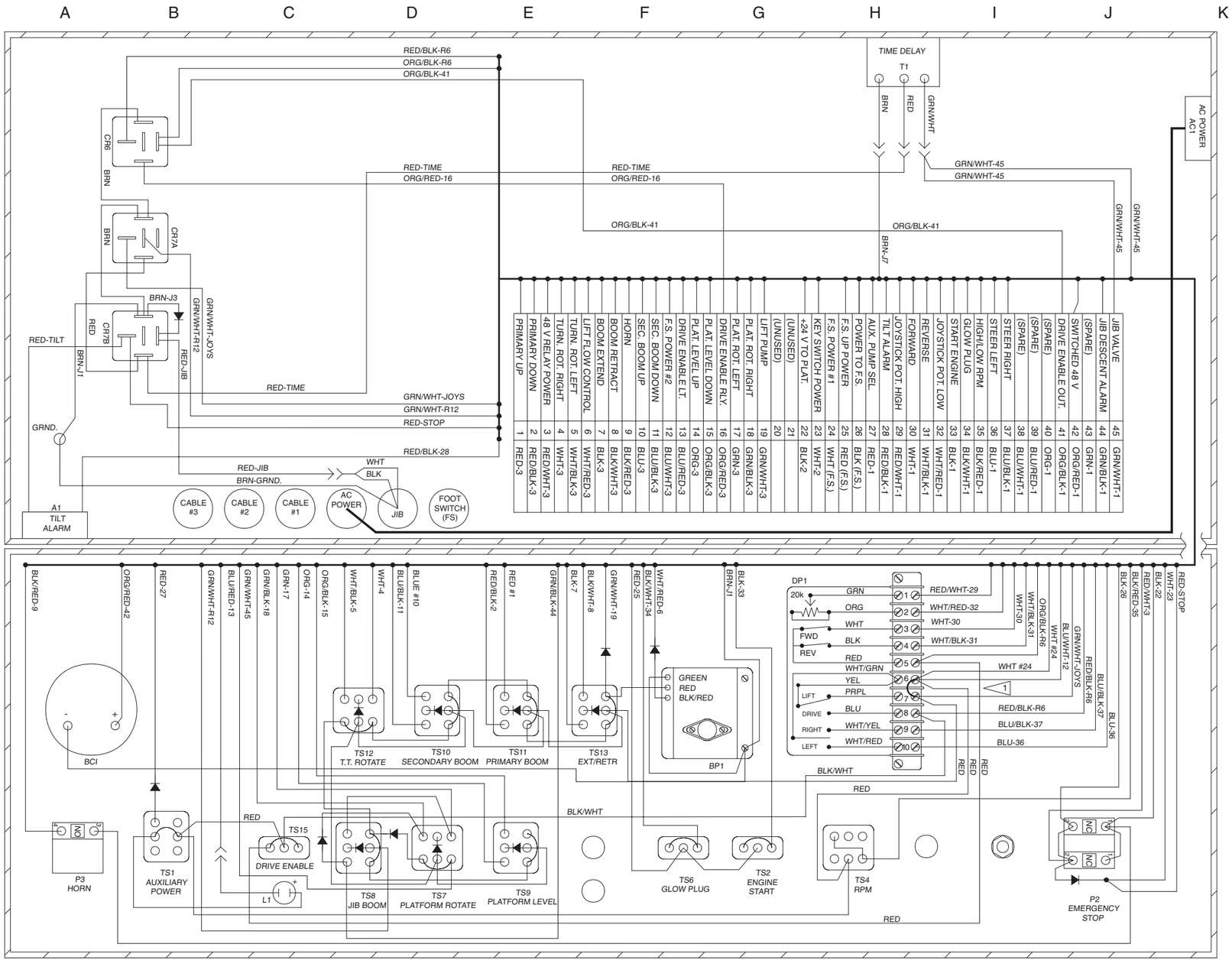


Platform Control Box Wiring Diagram, Z-45/25J
(from serial number 17975 to 21180)

Platform Control Box Wiring Diagram, Z-45/25J

(from serial number 17975 to 21180)

REV A



NOTES:
1. ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

1 FOR LIFT/DRIVE SELECT OPTION, REMOVE JUMPER BETWEEN TERMINALS A & B ON THE DRIVE JOYSTICK.

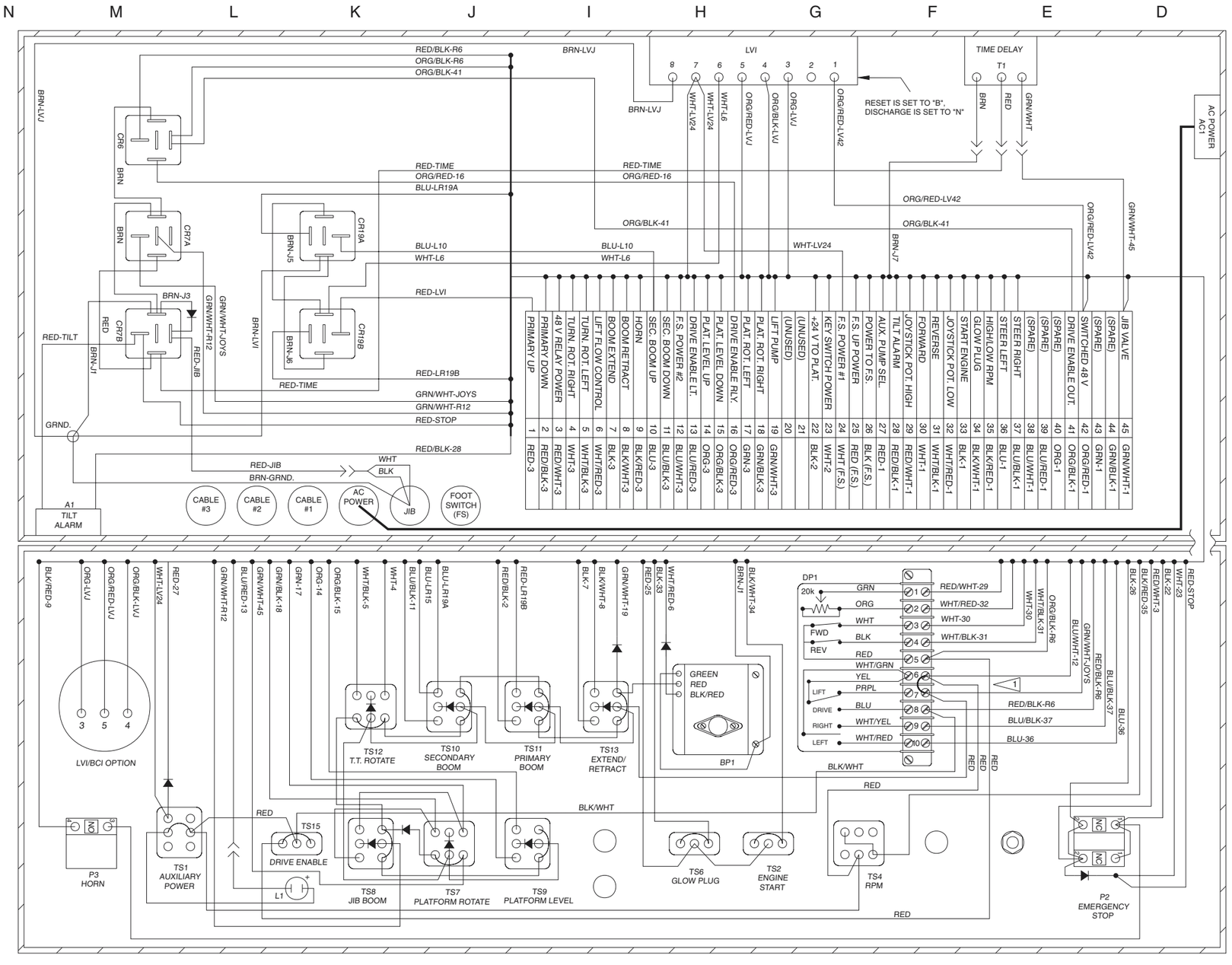
COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	BOOM PROPORTIONAL ROTARY CONTROLLER
CR6	DRIVE ENABLE RELAY
CR7A	JIB BOOM CUTOUT RELAY
CR7B	JIB BOOM VALVE RELAY
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	START ENGINE TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

REV A

Platform Control Box Wiring Diagram, Z-45/25J

with LVI/BCI Option (from serial number 17975 to 21180)



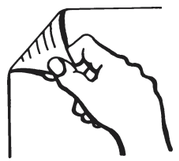
NOTES:
ALL WIRES WITHOUT LABELS ARE EITHER RED OR BLACK JUMPER WIRES.

1 *FOR LIFT DRIVE SELECTOR OPTION TAKE OFF JUMP BETWEEN 6 & 7*

COMPONENT INDEX

A1	TILT ALARM
AC1	AC OUTLET BOX
BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR7A	JIB CUTOUT RELAY
CR7B	JIB VALVE RELAY
CR19A	LOW VOLTAGE INTERRUPT/BCI RELAY A
CR19B	LOW VOLTAGE INTERRUPT/BCI RELAY B
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
T1	TIME DELAY #1
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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
TS14	DRIVE RANGE HIGH / LOW TOGGLE SWITCH
TS15	DRIVE ENABLE TOGGLE SWITCH

Platform Control Box Wiring Diagram, Z-45/25J
with LVI/BCI Option (from serial number 17975 to 21180)

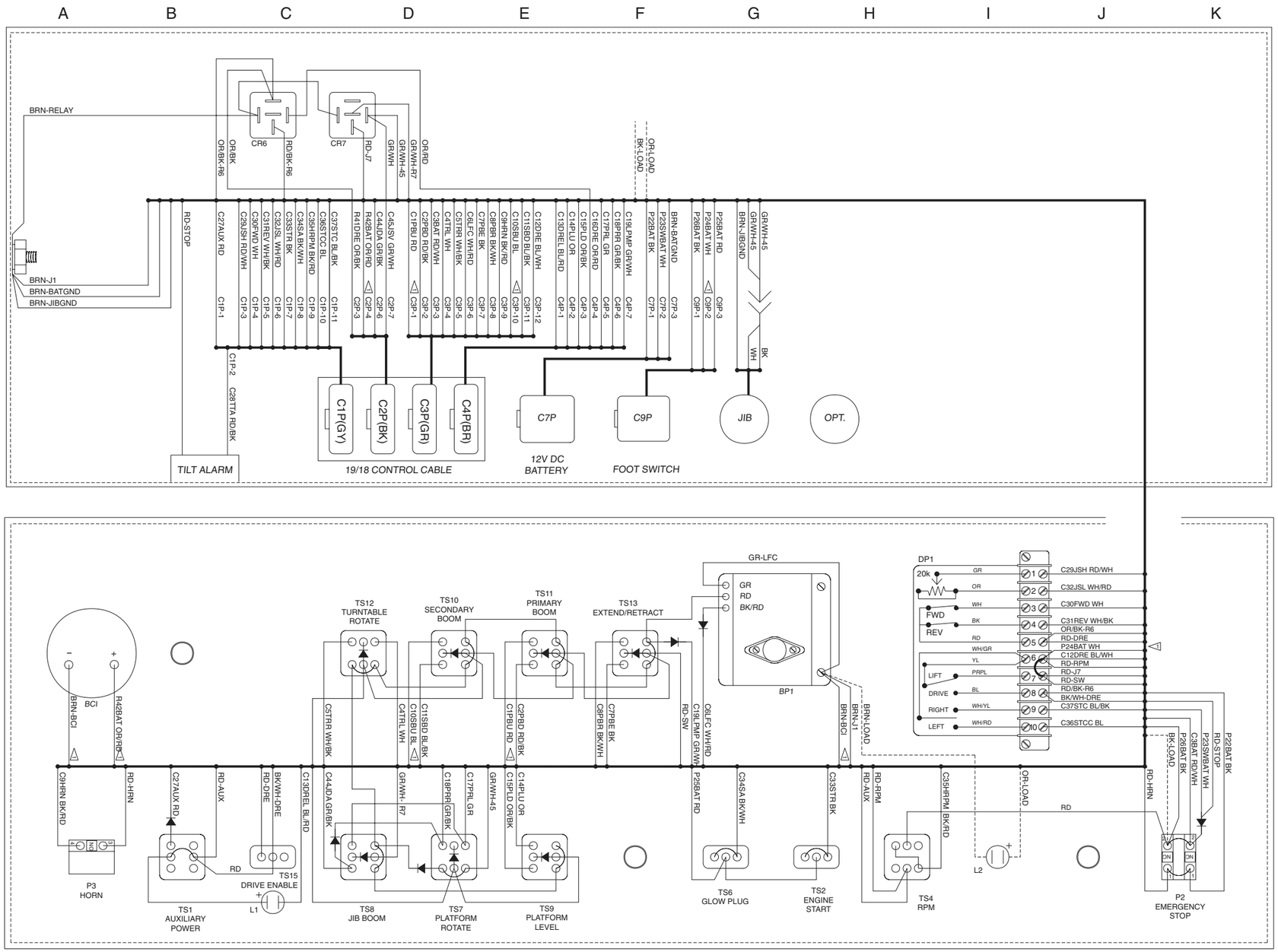


Platform Control Box Wiring Diagram, Z-45/25J
(from serial number 21181 to 22050)

Platform Control Box Wiring Diagram, Z-45/25J

REV A

(from serial number 21181 to 22050)



NOTES:

1. LOAD SENSE WIRES SHOWN WITH DASHED LINES.
1. FOR LVI/BCI OPTION REMOVE INDICATED WIRES.

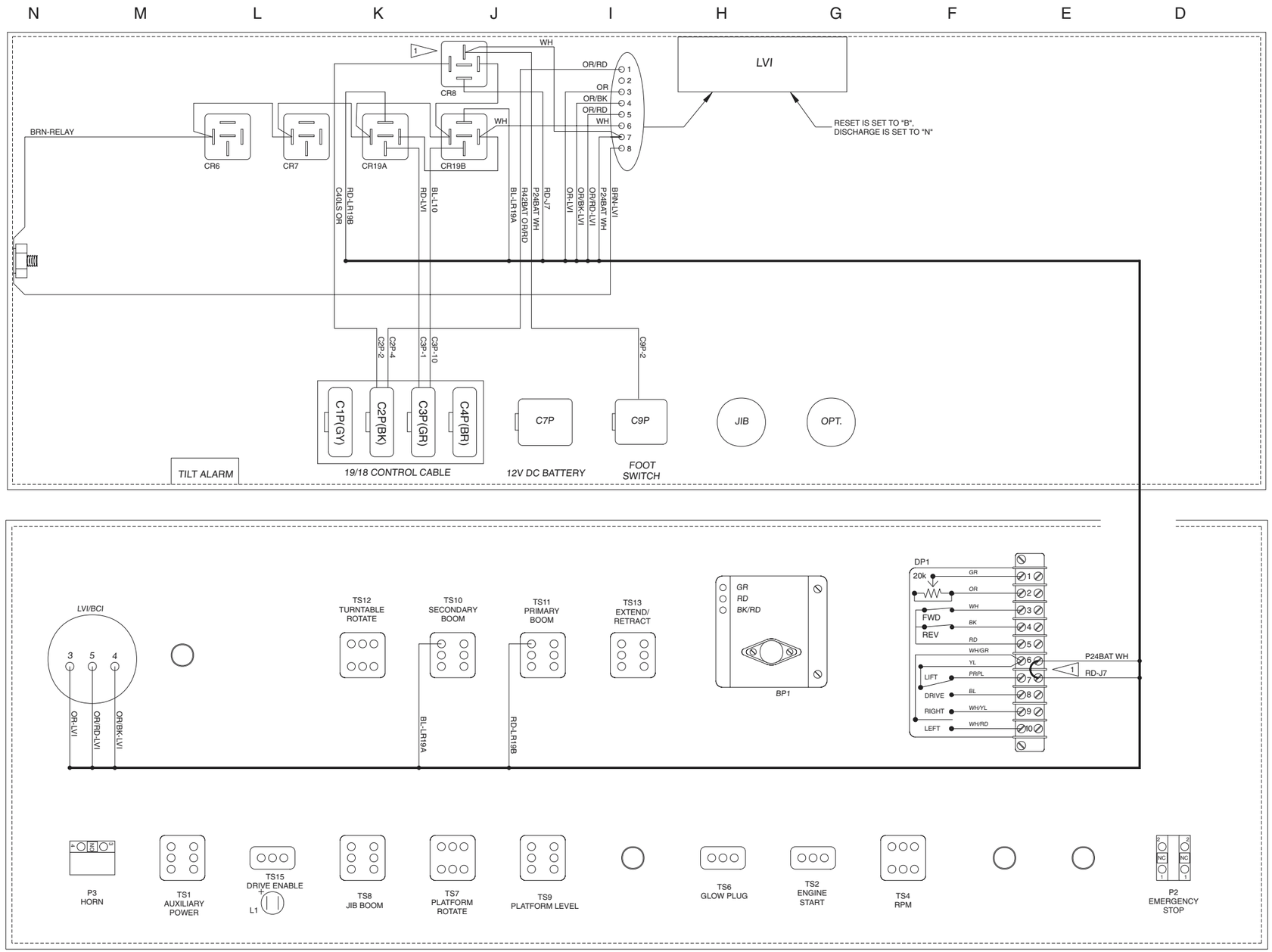
COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L2	LOAD SENSE LED
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY POWER TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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

REV A

Platform Control Box Wiring Diagram, Z-45/25J

with LVI/BCI Option (from serial number 21181 to 22050)



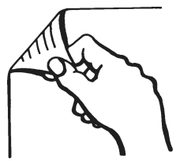
NOTES:

1. FOR CE OPTION, TAKE OFF JUMPER ON JOYSTICK BETWEEN TERMINALS 6 & 7 AND ADD CR8.

COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L2	LOAD SENSE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN TOGGLE SWITCH
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

Platform Control Box Wiring Diagram, Z-45/25J
with LVI/BCI Option (from serial number 21181 to 22050)

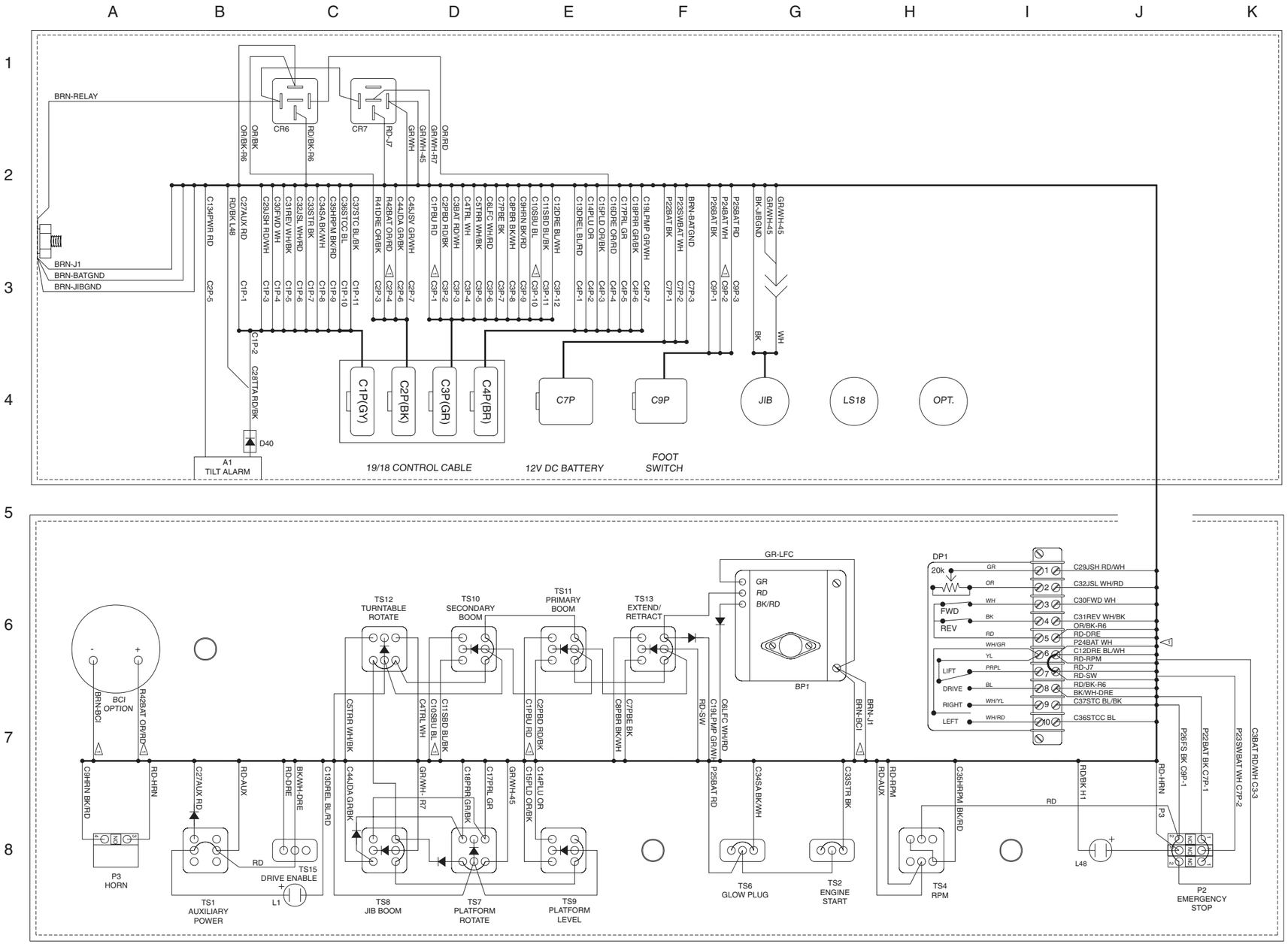


Platform Control Box Wiring Diagram, Z-45/25J
(from serial number 22051 to 23235)

Platform Control Box Wiring Diagram, Z-45/25J

(from serial number 22051 to 23235)

REV A



NOTES:

1. FOR LVI/BCI OPTION REMOVE INDICATED WIRES.

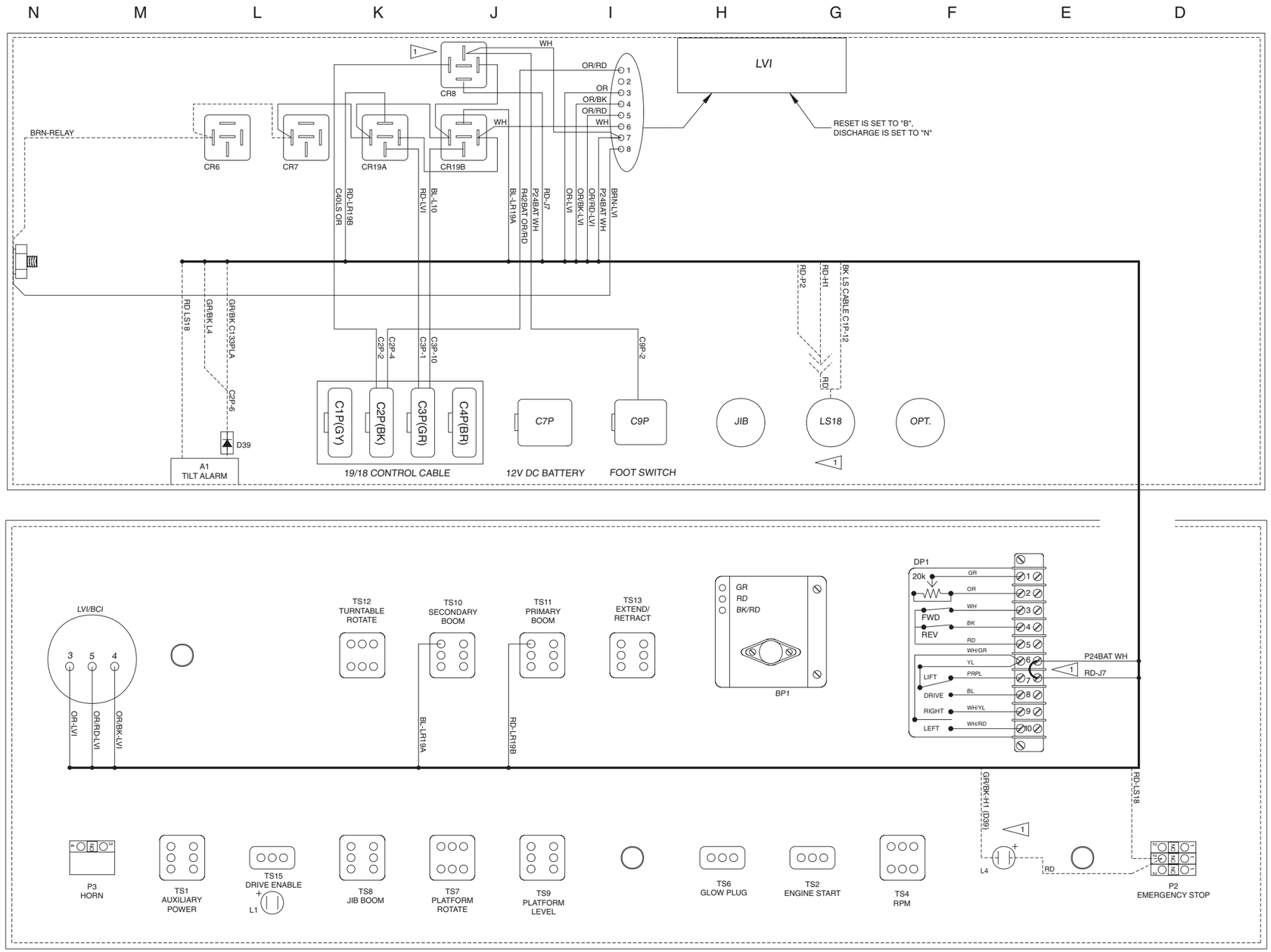
COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB BOOM UP / DOWN SWITCH
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
H1	TITL ALARM
LS18	PLATFORM OVERLOAD LIMIT SWITCH
L4	PLATFORM OVERLOAD LED
L48	TILT ALARM LED

REV A

Platform Control Box Wiring Diagram, Z-45/25J

with LVI/BCI Option (from serial number 22051 to 23235)



NOTES:

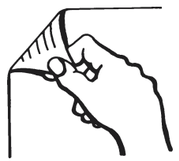
1. LOAD SENSE WIRES SHOWN WITH DASHED LINES

1 FOR CE OPTION, REMOVE JUMPER ON JOYSTICK BETWEEN TERMINALS 6 & 7 AND ADD CR8, LS18 AND L4.

COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
BP1	ROTARY FLOW CONTROL DIAL
DP1	DRIVE JOYSTICK
L1	DRIVE ENABLE LED
L2	LOAD SENSE LED
LVI	LOW VOLTAGE INTERRUPT MODULE
LVI/BCI	BATTERY CHARGE INDICATOR FOR LVI OPTION
P2	EMERGENCY STOP BUTTON
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	START ENGINE TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM ROTATE TOGGLE SWITCH
TS8	JIB UP / DOWN TOGGLE SWITCH
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
A1	TILT ALARM
LS18	PLATFORM OVERLOAD LIMIT SWITCH
L4	PLATFORM OVERLOAD LED
L48	TILT ALARM LED

Platform Control Box Wiring Diagram, Z-45/25J
with LVI/BCI Option (from serial number 22051 to 23235)

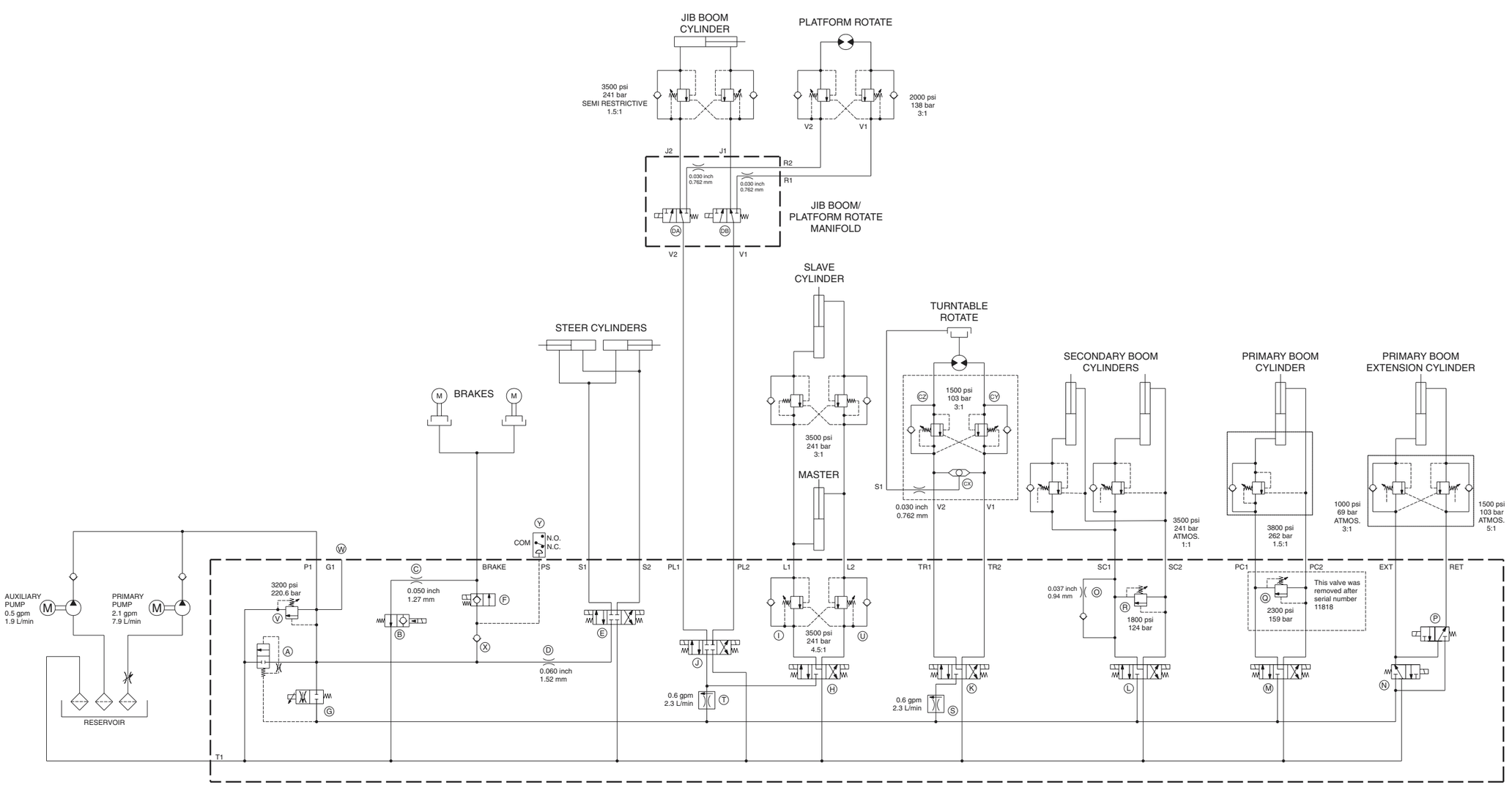


Hydraulic Schematic
(before serial number 16962)

Hydraulic Schematic

(before serial number 16962)

REV B

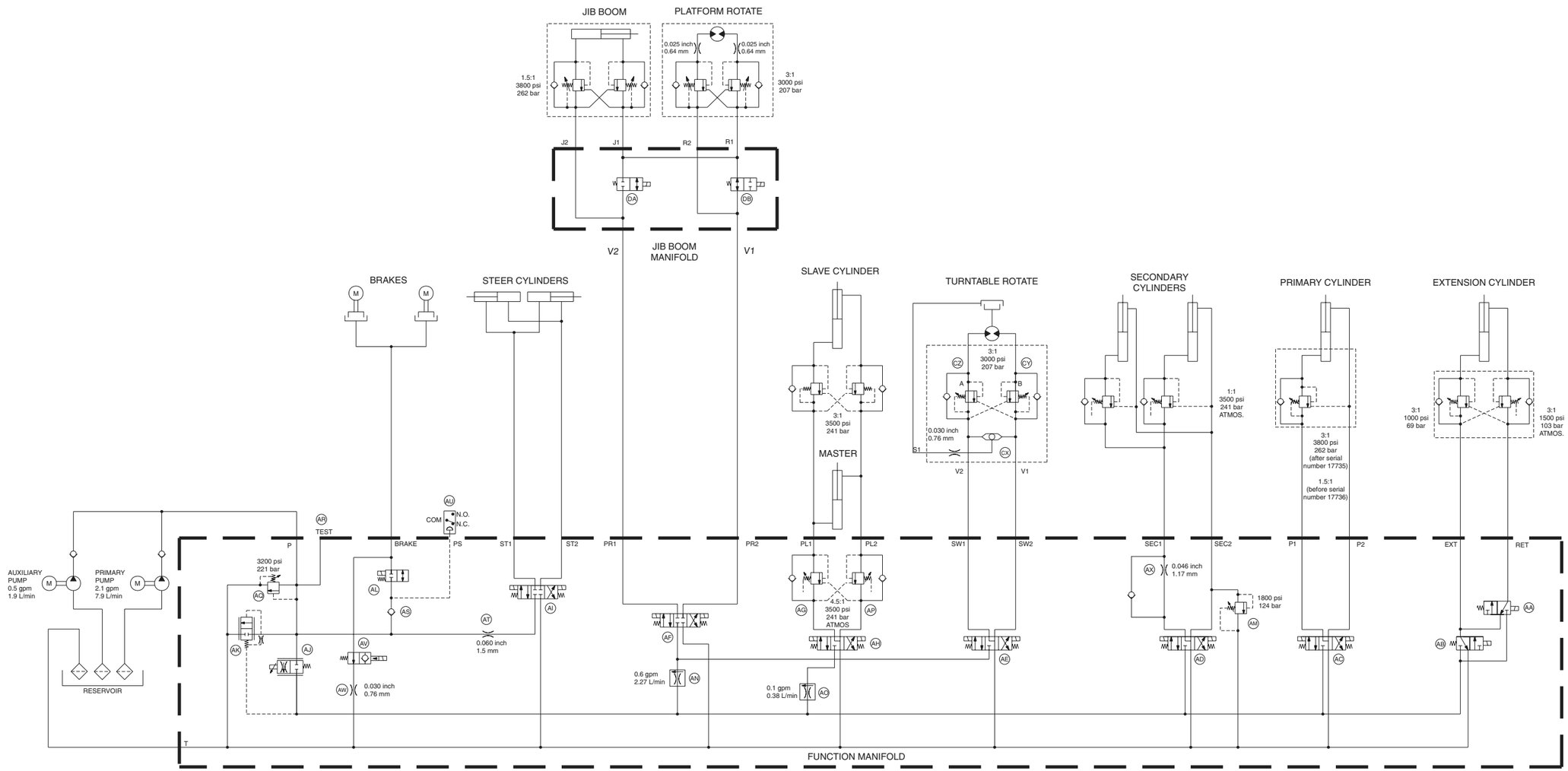


REV B

Hydraulic Schematic
(from serial number 16962 to 20379)

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

1 2 3 4 5 6 7 8



Hydraulic Schematic
(from serial number 16962 to 20379)

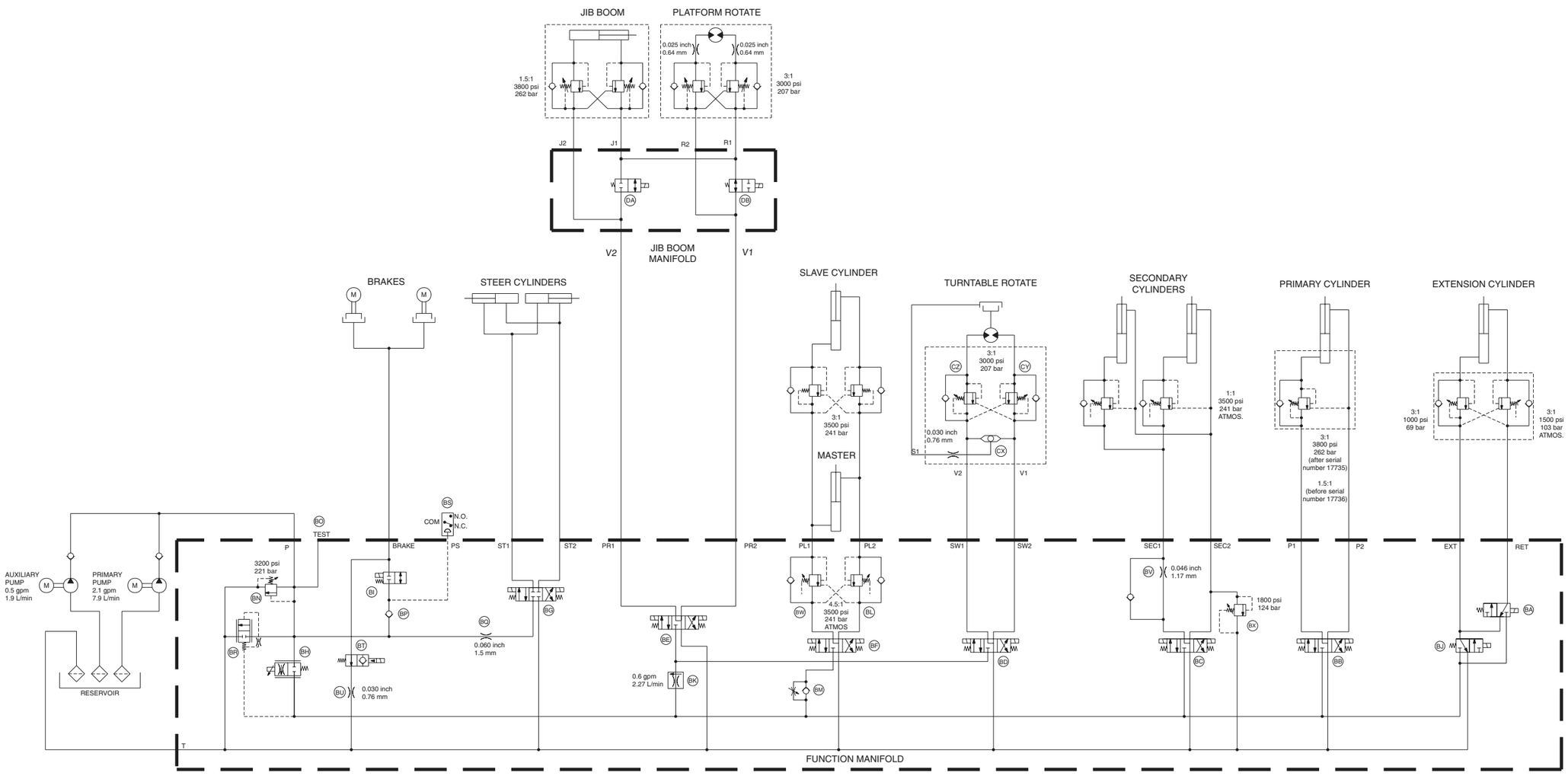


Hydraulic Schematic
(from serial number 20380 to 22565)

Hydraulic Schematic

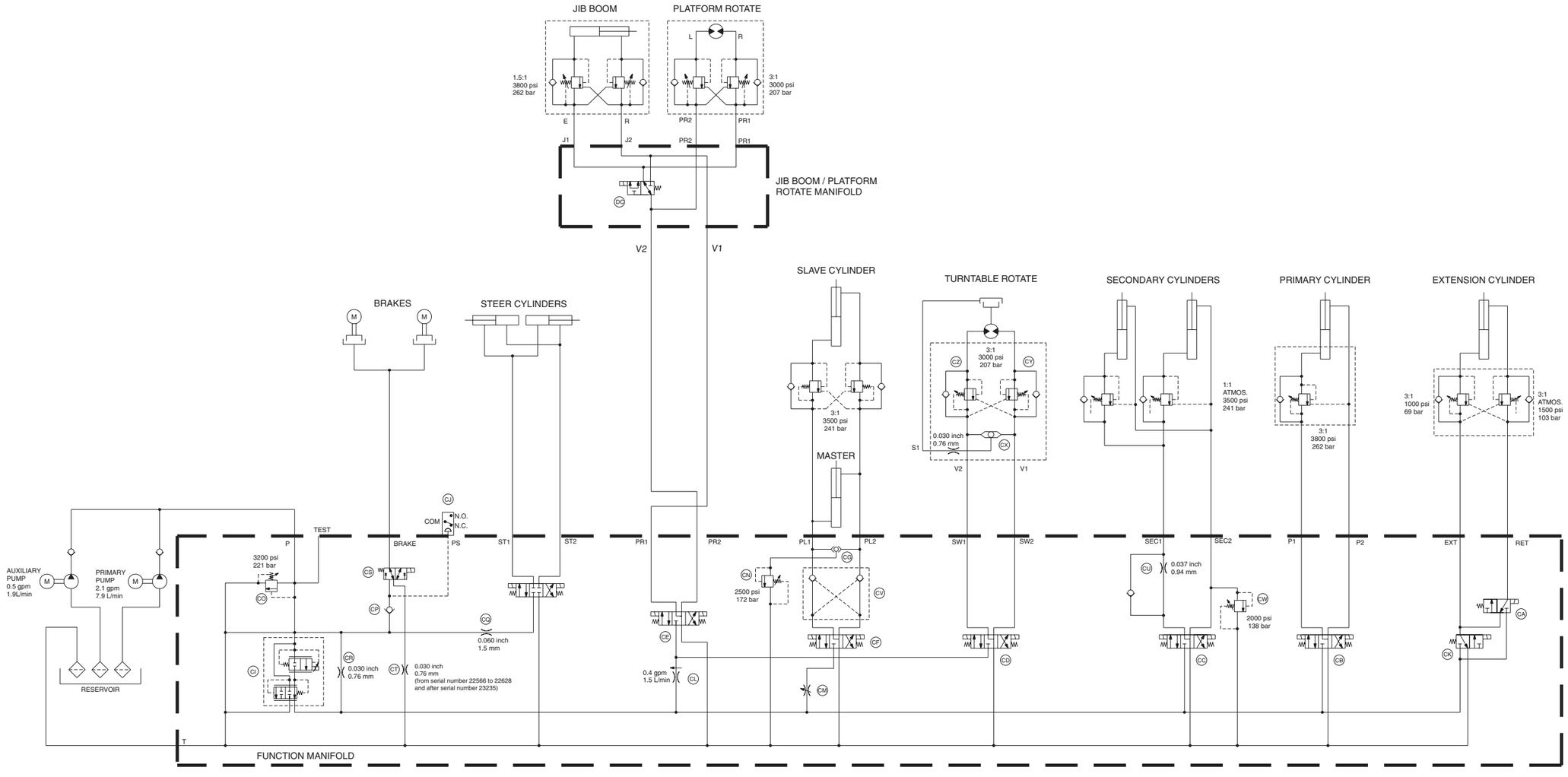
REV B

(from serial number 20380 to 22565)

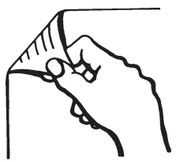


REV B

Hydraulic Schematic
(from serial number 22566 to 23235)



Hydraulic Schematic
(from serial number 22566 to 23235)



California Proposition 65

WARNING

The exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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Service Manual

Z-45/25 • Z-45/25J *Bi-Energy Power*

(from serial number 9996 to 23235)

Part No. 106488

Rev B

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