Genie®
A TEREX BRAND

Service Manual Supplement

Serial Number Range

Self Propelled Servicing Platform

from UAFSP06-102

This manual applies to Z45/25J Bi-Energy with an EE rating and manufactured for the USAF.

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Specifications

REV D

Machine Specifications

Tires and wheels	
Tire size	9-14.5 LT
Wheel diameter	14.5 inches
Wheel width	7 inches
Wheel lugs Front Rear	 8 @ 5/8 -18 9 @ 5/8 -18
Lug nut torque	125 ft-lbs 169.5 Nm
Tire size	9-14.5 LT
Tire ply rating	Tread 6 Sidewall 6
Tire contact area	43.5 sq in 280 sq cm
Overall tire diameter	28 in 71 cm

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

Fluid capacities	
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	23 fl oz 0.68 liter

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.

Performance Specifications

Gradeability	See Operator's Manual
Boom function speeds, maximum from platform controls	
Jib boom up	30 to 40 seconds
Jib boom down	18 to 23 seconds
Primary boom up	33 to 41 seconds
Primary boom down	21 to 27 seconds
Secondary boom up	46 to 56 seconds
Secondary boom down	33 to 41 seconds
Primary boom extend	16 to 24 seconds
Primary boom retract	13 to 23 seconds
Turntable rotate, 355° primary boom retracted	96 to 106 seconds
Platform rotate, 160°	9 to 13 seconds

Hydraulic Specifications

Hydraulic Oil Specifications	
Hydraulic oil type	Royco 782 (meets MIL-H-83282 specifications)
Cleanliness level, minimum	15/13
Water content, maximum	200 ppm
Pour point	-78° F
Flash point	445° F
Viscosity specifications (in centistokes, cSt)	
@ -40° F	2050
@ 104° F	14.2
@ 212° F	3.5

Function pump	
Type: fixed displacement gear pump	
Displacement	0.12 cu in 2 cc
Hydraulic tank circuit return line filter	10 micron with 25 psi / 1.7 bar bypass
Function manifold	
Function relief valve pressure	3200 psi 221 bar
Secondary boom down relief valve pressure	2100 psi 145 bar
Platform level relief valve pressure	2500 psi 172 bar
Auxiliary pump	
Type: fixed displacement gear pump	
Displacement	0.5 gallons per minute 1.9 liters per minute
Auxiliary pump relief pressure	3200 psi 220.6 bar

Kubota Z482-E2B Engine
Kubota Z482-E3B 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	23.5:1
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) **Z482-E2B** **Z482-E3B**	 2.2 quarts 2.1 liters 2.6 quarts 2.5 liters
Oil viscosity requirements	10W-30
Engine oil should have minimum properties of API classification CC/SE, CD/SE, CC/SF or CD/SF grades.	

Injection system	
Injection pump make	Bosch MD
Injection timing	20° BTDC
Injection pump pressure	1991 psi 137 bar
Fuel requirement	diesel number 2-D
Alternator Output	 12V DC, 150 watts
Starter motor	
Brush length, new	0.5188 in 13 mm
Brush length, minimum	0.3346 in 8.5 mm
Battery	
Type	12V, Group 70
Quantity	1
Cold cranking ampere	450A
Reserve capacity @ 25A rate	125 minutes
Fan belt deflection	1/4 to 3/8 inch 7 to 9 mm

Hydraulic Hose and Fitting Torque Specifications

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

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

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

Seal-Lok® fittings

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

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

2 Lubricate the O-ring before installation.

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

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

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

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

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

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

Seal-Lok® Fittings
(hose end)

SAE Dash size	Torque
-4	18 ft-lbs / 25 Nm
-6	30 ft-lbs / 40 Nm
-8	40 ft-lbs / 55 Nm
-10	60 ft-lbs / 80 Nm
-12	85 ft-lbs / 115 Nm
-16	110 ft-lbs / 150 Nm
-20	140 ft-lbs / 190 Nm
-24	180 ft-lbs / 245 Nm

SAE FASTENER TORQUE CHART

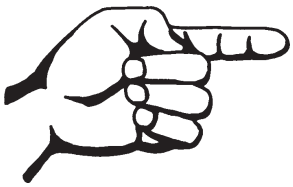
• This chart is to be used as a guide only unless noted elsewhere in this manual •

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

METRIC FASTENER TORQUE CHART

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

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



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Scheduled Maintenance Procedure

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, 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.
- ☑ Use only Genie approved replacement parts.
- ☑ 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-steering wheels
  - Turntable secured with the turntable rotation lock
  - Key switch in the off position with the key removed
  - Wheels chocked
  - All external AC power disconnected from the machine

About This Section

This section contains detailed procedures for each scheduled maintenance inspection.

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

Symbols Legend

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

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

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

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

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

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

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

Maintenance Inspection Report

Model

Serial number

Date

Hour meter

Machine owner

Inspected by (print)

Inspector signature

Inspector title

Inspector company

Instructions

- Make copies of this report to use for each inspection. Maintain completed forms for a minimum of 4 years or in compliance with employer, jobsite and govermental regulations and requirements.
- 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

Refer to the *Genie Z-45/25 Bi-Energy & Z-45/25J Bi-Energy* Service Manual for scheduled machine maintenance procedures.
The following scheduled maintenance procedure will need to be performed every 1000 hours or annually in addition to regularly scheduled machine maintenance inspections as outlined in the Service Manual.

Checklist D - Rev A	**Y**	**N**	**R**
D-6.1 Temperature sensor			

Maintenance Procedure

REV C

D-6.1
Test the Exhaust Manifold Temperature Sensor




Genie specifications require that this procedure be performed every 1000 hours of operation or yearly.

Yearly calibration of the exhaust manifold temperature sensor is essential to safe machine operation. Continued use of an improperly calibrated temperature sensor could result in failure to sense an accurate exhaust manifold temperature. This could create a hazardous situation.

NOTICE Component damage hazard. This procedure requires specific repair skills and testing equipment. Dealer service is strongly recommended.

1 See *How to Program the Temperature Display* and access the TYPE menu item.

2 To change the input type, press the blank (un-marked) button to scroll through the available choices until L IN is shown on the display. Press the SEL button to select and return to the main menu.

3 Press the SEL button until the OFSET menu is shown on the display. Change the offset value to zero.

4 Press and hold the SEL button for 3 seconds to enter the value and return to the main menu.

5 Remove the jumper wire from the back of the temperature display.

⊙ Result: The display will show SAVE to indicate the programming changes are being saved into memory.

Note: Do not turn the machine off before removing the jumper from the back of the display. If the machine is turned off before the jumper wire is removed, all data may not save completely or correctly. This could result in a fault display of FR IL the next time the machine is turned on.

6 Use a precision DC voltage power supply with an output range of -10 mV DC to 60 mV DC and an accuracy of 0.03% or better. Connect the negative lead to the TC - terminal and the positive lead to the TC+ terminal of the temperature display.

7 Set the power supply to mV DC and turn the power supply on.

8 Compare the voltage on the temperature display to that of the power supply over a range of -10 mV DC to 60 mV DC.

⊙ Result: If the voltage differences between the temperature display and the power supply are within 0.02 mV DC at all points over the range of -10 mV DC to 60 mV DC, the display does not need to be calibrated.

⊗ Result: If the voltage differences between the temperature display and the power supply are *more* than 0.02 mV DC at one or more points over the range of -10 mV DC to 60 mV DC, the display will need to be calibrated. See *How to Calibrate the Temperature Sensor Voltage Input.*

How to Program the Temperature Display

There are six items that can be accessed in the programming mode.

TYPE - Allows the choice of thermocouple being used. Genie uses Type K thermocouples.

CJC - Cold Junction Compensation. This feature is not used on your machine.

DISP - Allows the choice between °F or °C. Also allows the choice between whole numbers or tenths.

FLTER - Used to help stabilize the display if it is difficult to read due to small process variations or noise. Choose "0" for no filtering or up to "3" for heavy filtering.

RANGE - The range value determines if the filter will be applied to the new input sample. If the new input value is within the range of the previous display, the filter will be applied to the new input.

OFSET - Used to add or subtract a constant temperature from the display.

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

2 Open the ground control box and locate the temperature display.

3 Connect a jumper wire between the PROGRAM and COMM terminals on the back of the temperature display.

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

5 Press the SEL button to scroll to the menu item you want to program.

6 Press the blank (un-marked) button to cycle through available choices for each menu item.

7 Press the SEL button to make your choice and return to the main menu.

8 Repeat steps 5 through 7 for each menu item.

9 Remove the jumper wire from the back of the temperature display.

⊙ Result: The display will show SAVE to indicate the programming changes are being saved into memory.

Note: Do not turn the machine off before removing the jumper from the back of the display. If the machine is turned off before the jumper wire is removed, all data may not save completely or correctly. This could result in a fault display of FR IL the next time the machine is turned on.

How to Calibrate the Temperature Sensor Voltage Input

NOTICE Component damage hazard. This procedure requires specific repair skills and testing equipment. Dealer service is strongly recommended.

Note: Calibration of the exhaust manifold temperature sensor should only be performed by individuals experienced in calibrating electronic equipment.

Note: Allow the temperature sensor to warm up for 30 minutes before performing the calibration procedure.

Note: The calibration procedure should be performed at an ambient temperature between 59° to 95° F / 15° to 35° C.

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

2 Open the ground control box and locate the temperature display.

3 Connect a jumper wire between the PROGRAM and COMM terminals on the back of the temperature display.

4 Tag and disconnect the thermocouple wires from the TC + and TC - terminals of the temperature display.

5 Use a precision DC voltage power supply with an output range of -10 mV DC to 60 mV DC and an accuracy of 0.03% or better. Connect the positive and negative leads of the power supply to the TC + and TC - terminals on the back the temperature display.

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

7 Turn on the power supply and set it to -10 mV DC.

8 Press the SEL button until CAL is shown on the display.

9 Press the blank (un-marked) button to select YES.

⊙ Result: The display will show "00000".

10 Press the blank (un-marked) button to increment the access code until the display shows "00006".

MAINTENANCE PROCEDURE REV C

11 Press and hold the SEL button. After entering the correct access code, the display will show IN 1. Follow the table below for the calibration sequence.

Note: The display will show CALC for approximately 3 seconds after pressing the SEL button before proceeding to the next input point.

Note: After the calibration sequence is complete, the display will show CAL.

12 Exit the programming mode by removing the jumper wire from the back of the temperature display.

⊙ Result: The display will show SAVE to indicate the programming changes are being saved into memory.

Note: Do not turn the machine off before removing the jumper from the back of the display. If the machine is turned off before the jumper wire is removed, all data may not save completely or correctly. This could result in a fault display of FR IL the next time the machine is turned on.

13 Perform procedure *Test the Exhaust Manifold Temperature Display* to verify voltage calibration.

14 Repeat the calibration procedure if necessary.

Display	Parameter	Action
IN1	-10mV DC	Apply -10mV DC, wait 5 seconds, press SEL button
IN2	0 mV DC	Apply 0 mV DC, wait 5 seconds, press SEL button.
IN3	10 mV DC	Apply 10 mV DC, wait 5 seconds, press SEL button.
IN4	20 mV DC	Apply 20 mV DC, wait 5 seconds, press SEL button.
IN5	30 mV DC	Apply 30 mV DC, wait 5 seconds, press SEL button.
IN6	40 mV DC	Apply 40 mV DC, wait 5 seconds, press SEL button.
IN5	50 mV DC	Apply 50 mV DC, wait 5 seconds, press SEL button.
IN5	60 mV DC	Apply 60 mV DC, wait 5 seconds, press SEL button.

How to Program the Temperature Offset

Note: This procedure will need to be performed if either the temperature display or thermocouple is being replaced or if the saved data is corrupted and needs to be reset.

Note: Begin this procedure with the thermocouple not installed onto the machine and the engine cool. Allow the machine and thermocouple to rest in ambient temperature for at least 60 minutes before programming the temperature offset into the display at the ground controls.

Note: An accurate temperature measuring device capable or reading up to 350°F (such as a laser thermometer) will be required to perform this procedure.

1 Install the thermocouple with attached clamp around the exhaust pipe as close as possible to the exhaust manifold flange. Securely tighten the clamp.

2 Route the thermocouple wire to the inside of the ground control box.

NOTICE Component damage hazard. Be sure to route the wires away from hot or moving engine parts. Protect the thermocouple wires from damage.

3 Connect the thermocouple wires to the TC+ and TC- terminals on the temperature display.

Determine the temperature offset:

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

5 Compare the temperature reading on the display at the ground controls with that of the temperature measuring device.

- Result: If the temperature shown on the display at the ground controls is above actual temperature shown on the temperature measuring device, including the temperature measuring device's accuracy or tolerance, then no offset is needed.
- Result: If the display at the ground controls is lower than the actual temperature shown on the temperature measuring device, including the temperature measuring device's accuracy or tolerance, then an offset will need to be programmed into the display at the ground controls. The offset to program into the display is the actual temperature, minus the temperature shown on the display at the ground controls, plus the accuracy or tolerance of the measuring device, plus 1 degree Celsius or Fahrenheit.

Example: The display at the ground controls shows 247° and actual temperature is 250° (250 - 247 = 3°). The accuracy or tolerance of the temperature measuring device is ±3°. So add the difference in temperature, the accuracy or tolerance plus 1 degree (3+3+1=7° temperature offset).

Note: Refer to the owner's manual of your temperature measuring device to determine the accuracy or tolerance.

MAINTENANCE PROCEDURE REV C

Program the temperature offset:

6 See *How to Program the Temperature Display* and access the OFSET menu item.

7 To enter the offset value, press the blank (un-marked) button to increment the flashing digit or the sign of the number. To select a new digit or sign of the number, press the SEL button.

Note: If no digits are flashing, press the blank button to toggle the sign of the number or press the SEL button to wrap around to the LED.

8 After the desired offset value is on the display, press and hold the SEL button for 3 seconds to enter the value and return to the main menu.

9 Remove the jumper wire from the back of the temperature display.

⊙ Result: The display will show SAVE to indicate the programming changes are being saved into memory.

NOte: Do not turn the machine off before removing the jumper from the back of the display. If the machine is turned off before the jumper wire is removed, all data may not save completely or correctly. This could result in a fault display of FR IL the next time the machine is turned on.

Repair Procedures

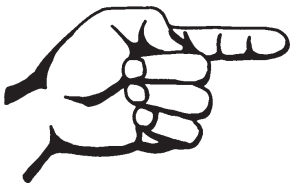
REV A

Fiberglass Covers

Repair or Replacement of a Fiberglass Cover

Repair: Minor damage, including small holes, cracks and chips in a fiberglass cover may be repaired by a qualified repair facility.

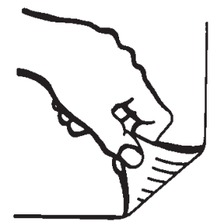
Replacement: Replacement of a fiberglass cover when the structural integrity has been compromised due to excessive damage is required.



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Electrical Schematic
(from serial number 102 to 130)

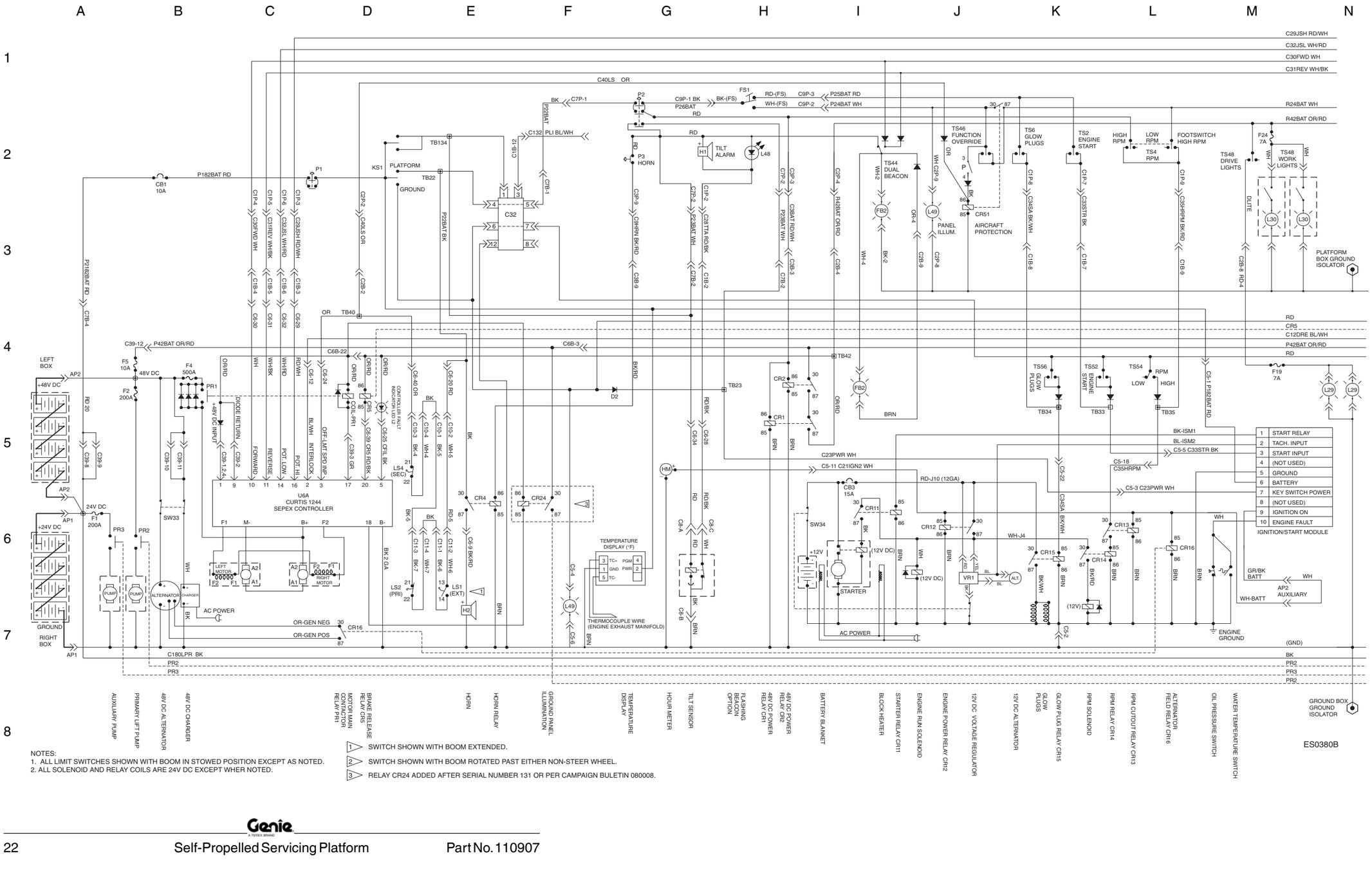




Electrical Schematic

(from serial number 102 to 130)

REV D



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

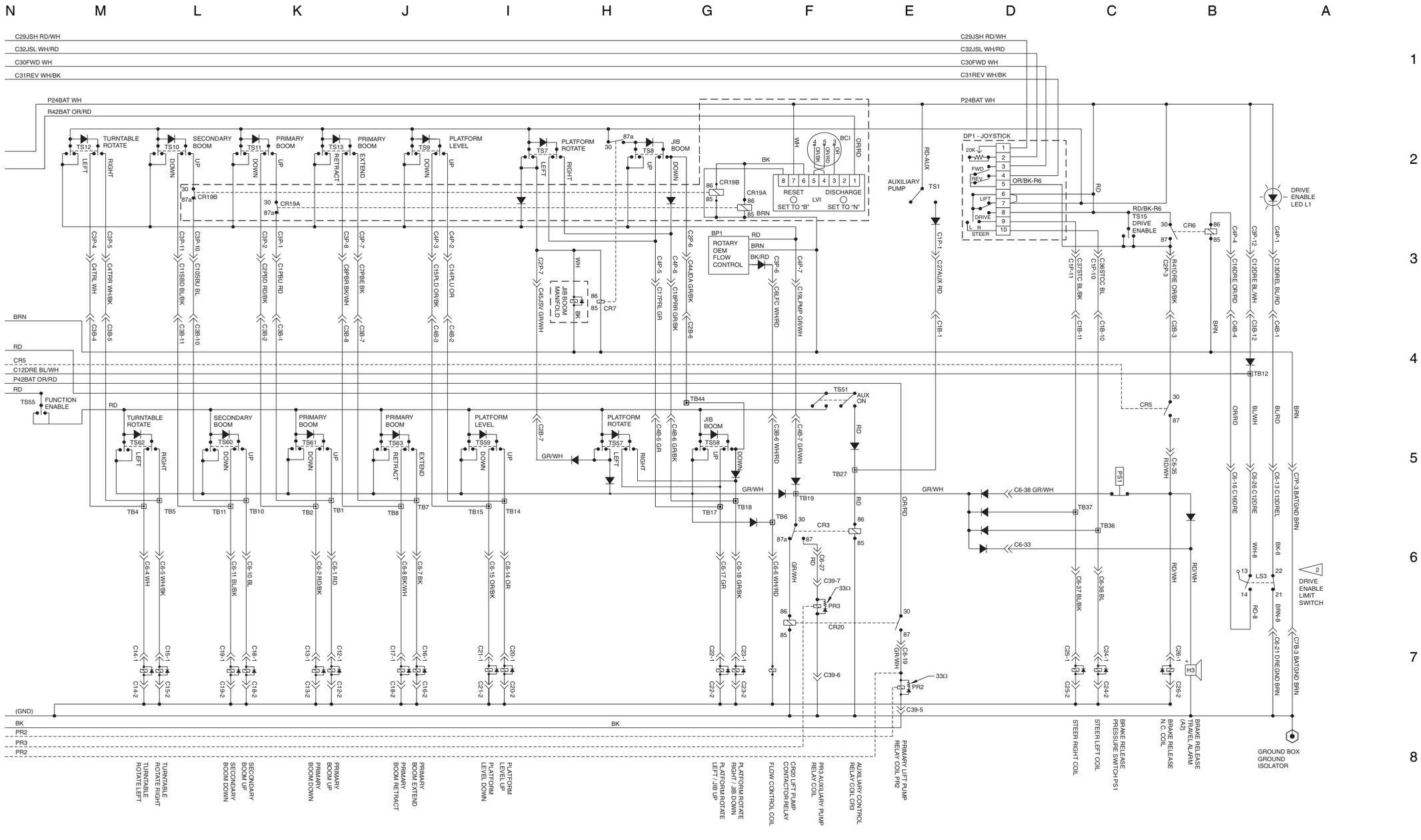
1 SWITCH SHOWN WITH BOOM EXTENDED.

2 SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

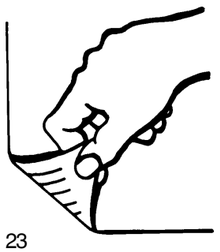
3 RELAY CR24 ADDED AFTER SERIAL NUMBER 131 OR PER CAMPAIGN BULETIN 080008.

REV D

Electrical Schematic
(from serial number 102 to 130)

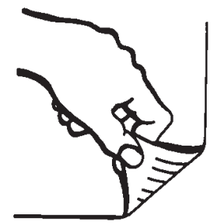


Electrical Schematic
(from serial number 102 to 130)



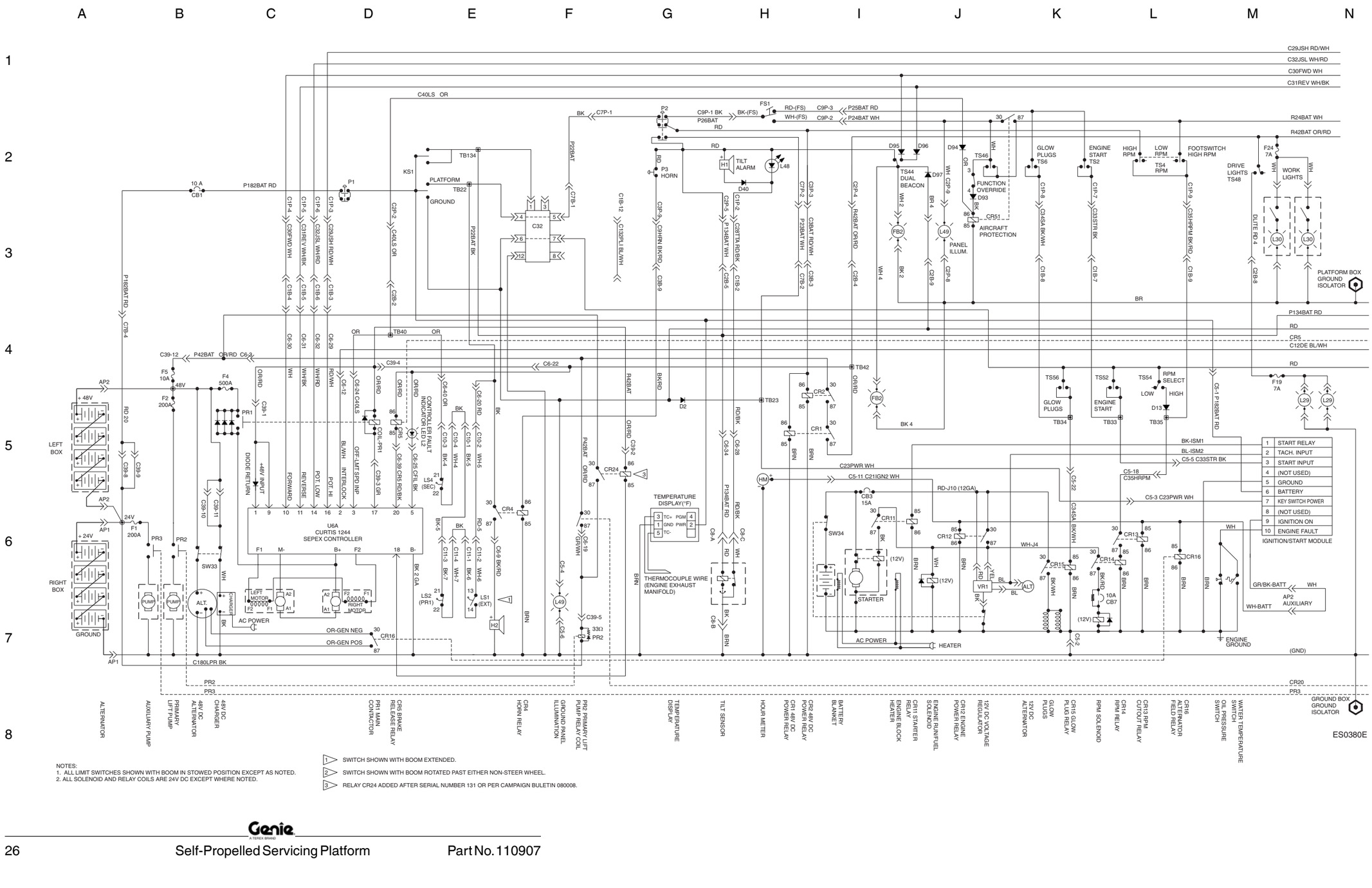
Electrical Schematic
(after serial number 130)





Electrical Schematic
(after serial number 130)

REV D



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

1 SWITCH SHOWN WITH BOOM EXTENDED.

2 SWITCH SHOWN WITH BOOM ROTATED PAST EITHER NON-STEER WHEEL.

3 RELAY CR24 ADDED AFTER SERIAL NUMBER 131 OR PER CAMPAIGN BULETIN 080008.

REV D

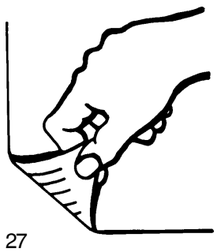
Electrical Schematic
(after serial number 130)

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

1 2 3 4 5 6 7 8

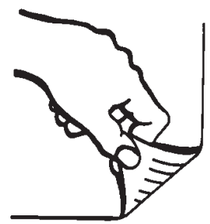
C29JSH RD/WH
C32JSL WH/RD
C30FWD WH
C31REV WH/BK
R24BAT WH
R42BAT OR/RD
GND BR
P134BAT RD
RD
CR5
C12DE BL/WH
TS55 FUNCTION ENABLE
TURNTABLE ROTATE TS12 LEFT RIGHT
SECONDARY BOOM TS10 DOWN UP
PRIMARY BOOM TS11 DOWN UP
PRIMARY BOOM TS13 RETRACT EXTEND
PLATFORM LEVEL TS9 DOWN UP
PLATFORM ROTATE TS7 LEFT RIGHT
JIB TS8 UP DOWN
CR19B
CR19A
D81
D27
LVI/BCI
AUXILIARY PUMP
TS1
D69
C1P-1 C27AUX RD
C1B-1
DP1 - JOYSTICK
20K
FWD REV
LIFT DRIVE
L R STEER
OR/BK-R6
RD/BK-R6
TS15 DRIVE ENABLE
CR6
DRIVE ENABLE LED L1
C3P-4 C4TRL WH
C3P-5 C4TRH WH/BK
C3P-11 C11SBD BL/BK
C3P-10 C10SBU BL
C3P-2 C2PBD RD/BK
C3P-1 C1PBU RD
C3P-8 C8PBR BK/WH
C3P-7 C7PBE BK
C4P-3 C15PLD OR/BK
C4P-2 C14PLU OR
GR/WH
CR14
JIB MANIFOLD
C1
BRN
C2P-7 C45JSV GR/WH
C4P-5 C17PRL GR
C4P-6 C16PRR GR/BK
C2B-6
C44JDA GR/BK
BP1 ROTARY OEM FLOW CONTROL
BK/RD
C3P-9 C9LFC WH/RD
C4P-7 C18LPMP GR/WH
D73
C1P-11 C27SGW BL/BK
C1P-10 C36SGC BL
C2P-3 R41DE OR/BK
C4P-4 C16DE OR/RD
C3P-12 C12DE BL/WH
C4P-1 C13DELBL/RD
C4B-1
C4B-2
C4B-3
C4B-4
C3B-12
D78
TB12
OR/RD
BL/WH
BL/RD
BRN
C6-16 C16DE
C6-28 C12DE
C6-13 C13DEL
BK-8
WH-8
RD-8
LS3
DRIVE ENABLE LIMIT SWITCH
C7P-3 BATGND BRN
C7B-3 BATGND BRN
GROUND BOX GROUND ISOLATOR
TS51 AUX ON
D4
TB27
TB44
JIB TS58 UP DOWN
PLATFORM ROTATE TS57 LEFT RIGHT
PLATFORM LEVEL TS59 DOWN UP
PRIMARY BOOM TS63 RETRACT EXTEND
PRIMARY BOOM TS61 DOWN UP
SECONDARY BOOM TS60 DOWN UP
TURNTABLE ROTATE TS62 LEFT RIGHT
C2B-7 GR/WH
D80
D82
D28
C4B-5 GR
C4B-4 GR/BK
C4B-7 GR/WH
C4B-6 WH/RD
TB19
TB18
TB17
TB6
D72
D74
GR/WH
CR3
C6-27 RD
C39-7
33Ω PR3
C39-6
CR20
C6-6 WH/RD
C6-17 GR
C6-18 GR/BK
C6-15 GR/BK
C6-14 GR
C6-8 BK/WH
C6-7 BK
C6-2 RD/BK
C6-1 RD
C6-11 BL/BK
C6-10 BL
C6-5 WH/BK
C6-4 WH
TB4 TB5 TB11 TB10 TB2 TB1 TB8 TB7 TB15 TB14
C14-1 C15-1 C19-1 C18-1 C13-1 C12-1 C17-1 C16-1 C21-1 C20-1 C22-1 C23-1
C14-2 C15-2 C19-2 C18-2 C13-2 C12-2 C17-2 C16-2 C21-2 C20-2 C22-2 C23-2
(GND)
CR20
PR3
TURNTABLE ROTATE LEFT
TURNTABLE ROTATE RIGHT
TURNTABLE ROTATE
SECONDARY BOOM DOWN
SECONDARY BOOM UP
SECONDARY BOOM
PRIMARY BOOM DOWN
PRIMARY BOOM UP
PRIMARY BOOM
PRIMARY BOOM RETRACT
PRIMARY BOOM EXTEND
PRIMARY BOOM
PLATFORM LEVEL DOWN
PLATFORM LEVEL UP
PLATFORM LEVEL
PLATFORM ROTATE LEFT / JIB UP
PLATFORM ROTATE RIGHT / JIB DOWN
PLATFORM ROTATE
CR20 LIFT PUMP CONTACTOR RELAY
FLOW CONTROL COIL
PR3 AUXILIARY PUMP RELAY COIL
AUXILIARY CONTROL RELAY COIL CR3
GR/WH
D76
D59
D60
D91
C6-38 GR/WH
C6-33
TB37
TB36
PS1
C8-B
D92
C8-C
C8-A
RD/WH
C6-37 BL/BK
C6-36 BL
C25-1 C25-2
C24-1 C24-2
H3
STEER RIGHT COIL
STEER LEFT COIL
BRAKE RELEASE PRESSURE SWITCH PS1
BRAKE RELEASE N.C. COIL
BRAKE RELEASE TRAVEL ALARM

Electrical Schematic
(after serial number 130)



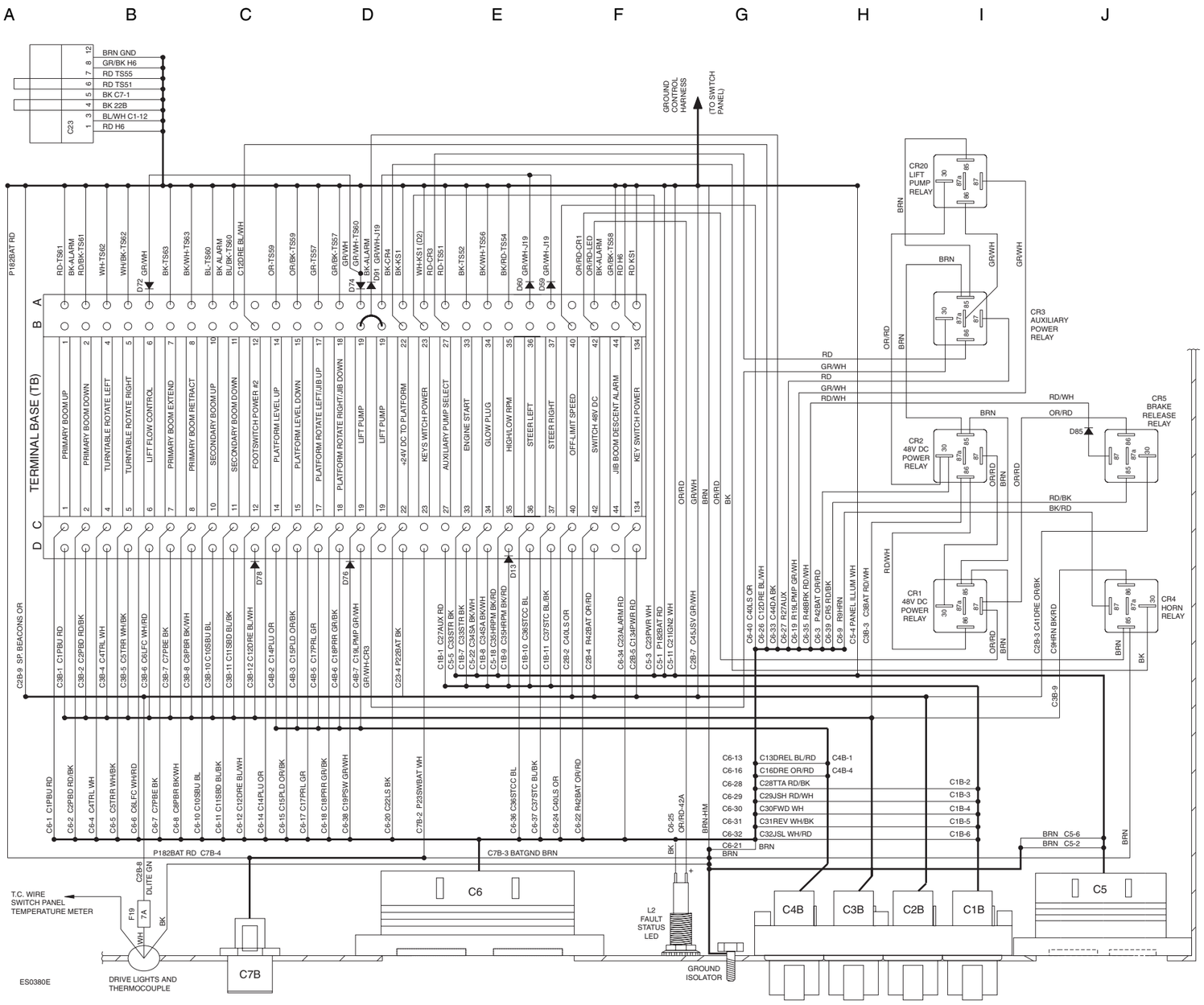
Ground Control Box Terminal Strip Wiring Diagram





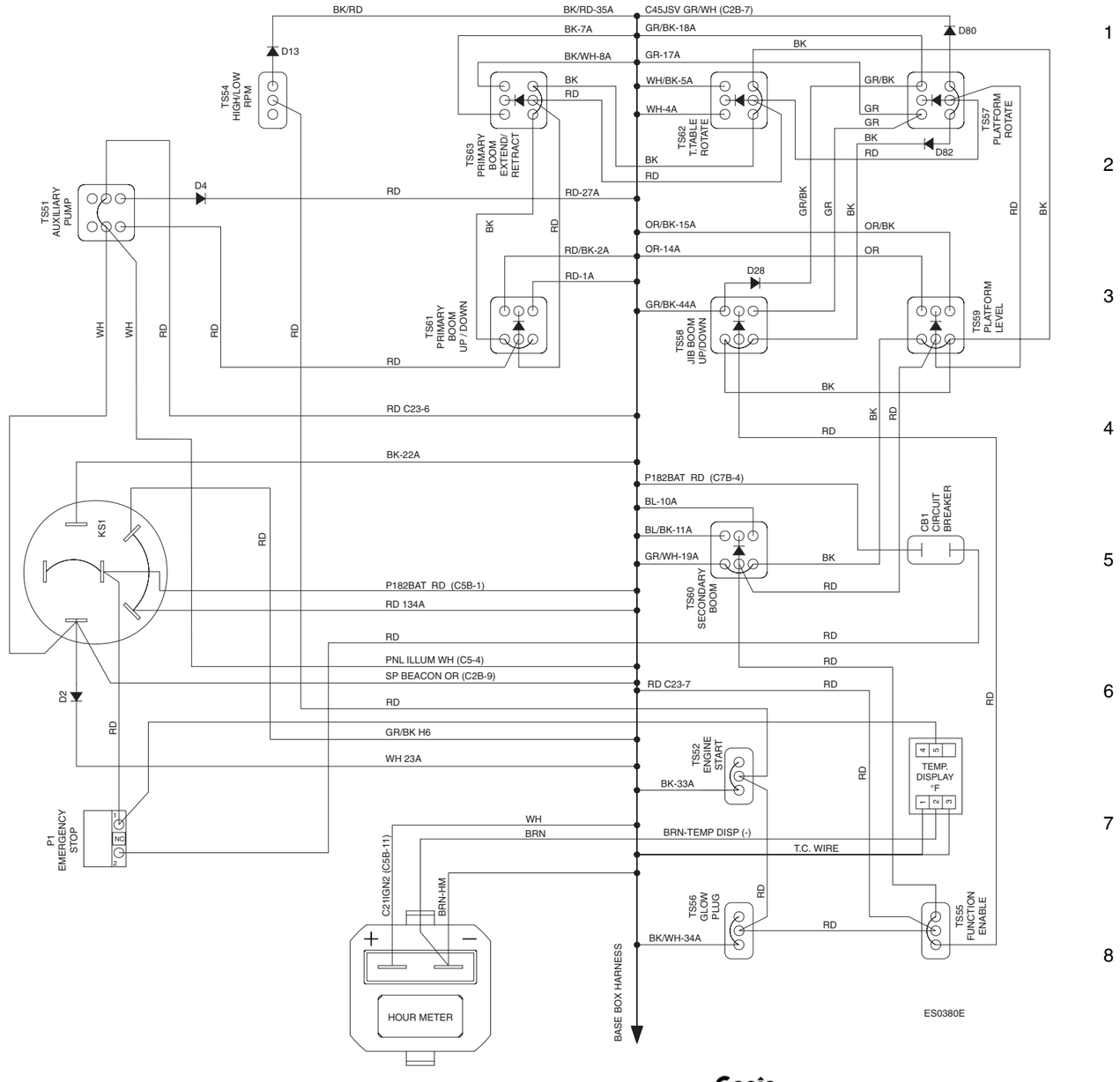
Ground Control Box Terminal Strip Wiring Diagram

REV D

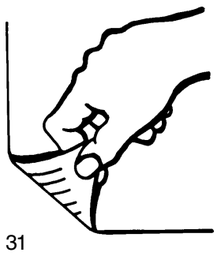


REV D

Ground Control Box Switch Panel Wiring Diagram

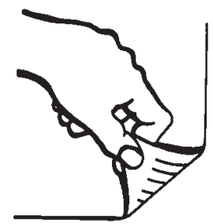


Ground Control Box Switch Panel Wiring Diagram



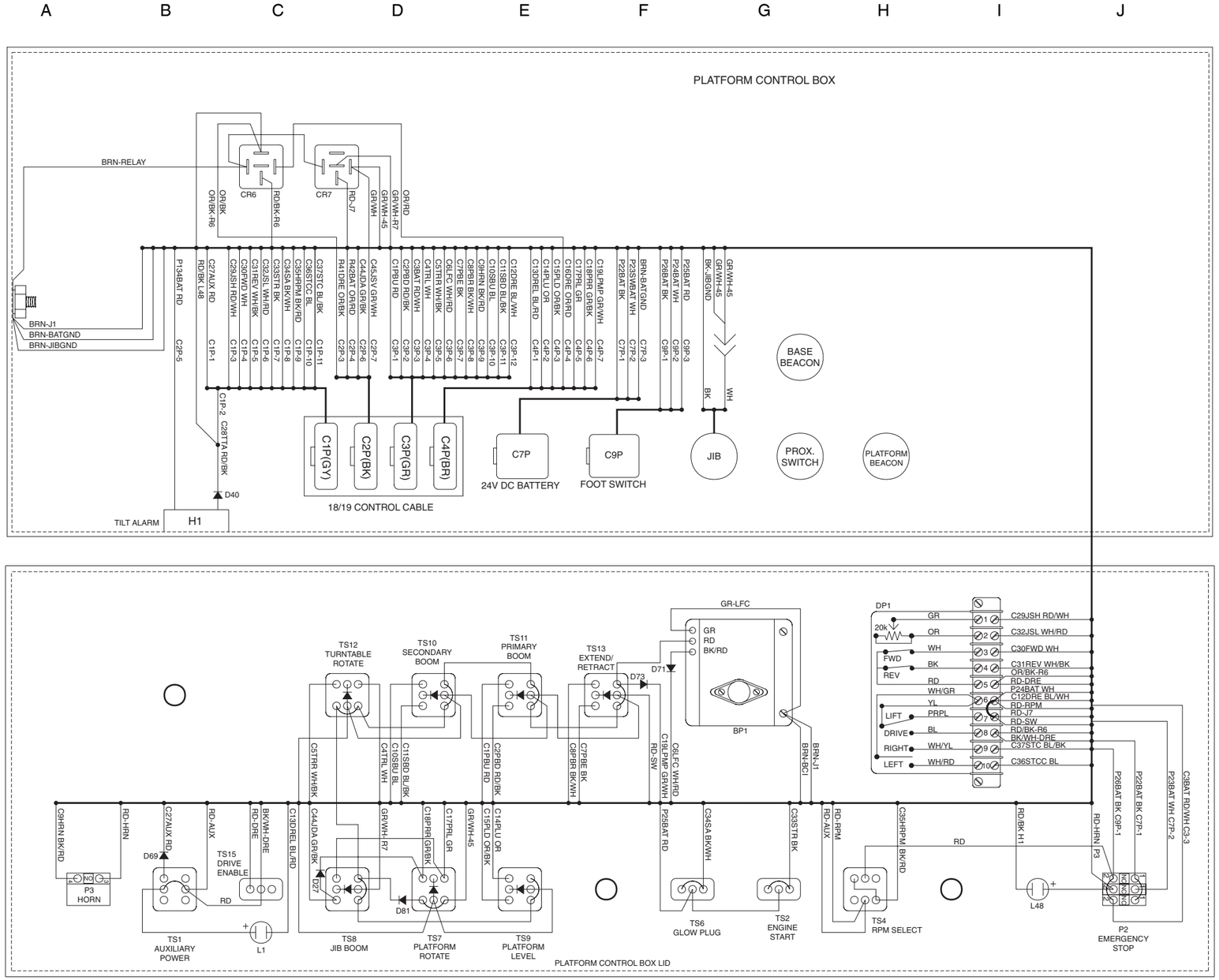
Platform Control Box Wiring Diagram
(from serial number 102 to 130)





Platform Control Box Wiring Diagram
(from serial number 102 to 130)

REV D



COMPONENT INDEX

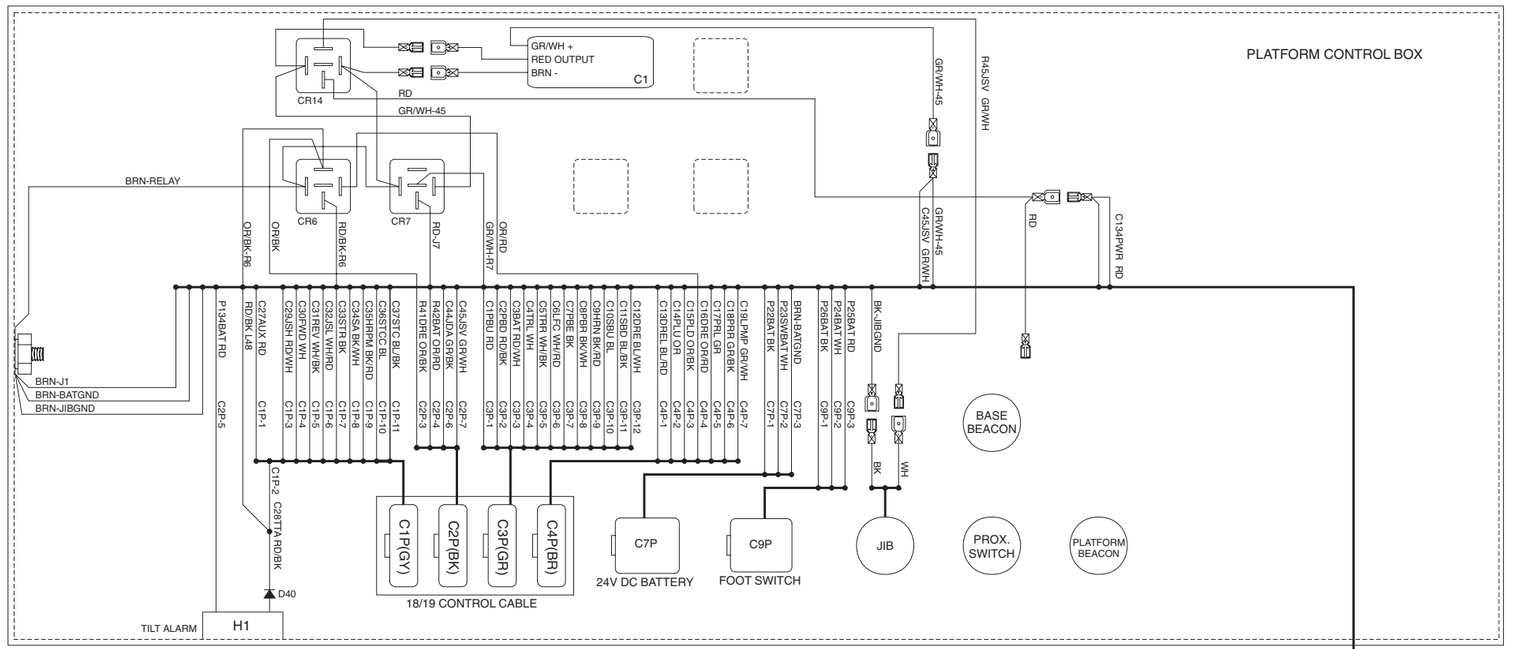
BP1	ROTARY FLOW CONTROL DIAL
CR6	DRIVE ENABLE RELAY
CR7	JIB SELECT RELAY
DP1	DRIVE JOYSTICK
H1	TITL ALARM
L1	DRIVE ENABLE LED
L48	TILT ALARM LED
P2	EMERGENCY STOP
P3	HORN
TS1	AUXILIARY TOGGLE SWITCH
TS2	ENGINE START TOGGLE SWITCH
TS4	HIGH / LOW RPM TOGGLE SWITCH
TS6	GLOW PLUG TOGGLE SWITCH
TS7	PLATFORM 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

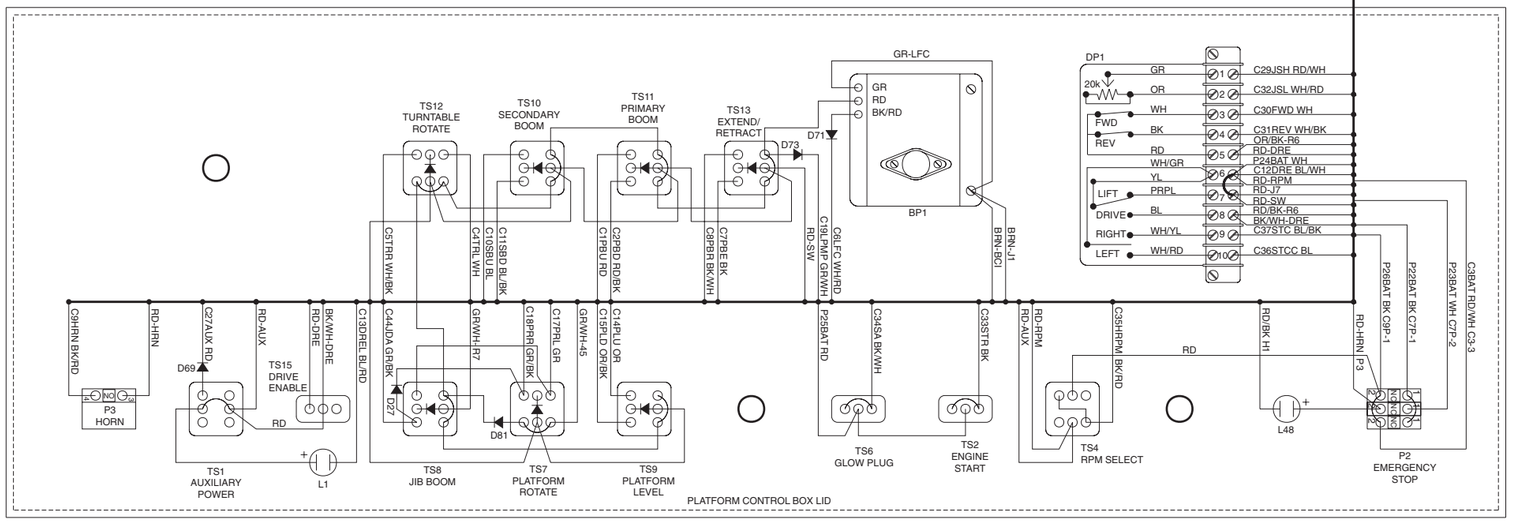
ES0380B

REV D

Platform Control Box Wiring Diagram
(after serial number 130)

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



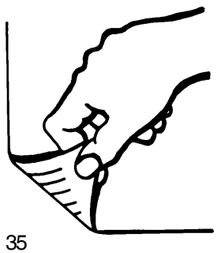


COMPONENT INDEX

BP1	ROTARY FLOW CONTROL DIAL
C1	JIB CAPACITOR
CR6	DRIVE ENABLE RELAY
CR7	JIB SELECT RELAY
CR14	JIB VALVE RELAY
DP1	DRIVE JOYSTICK
H1	TITL ALARM
L1	DRIVE ENABLE LED
L48	TILT ALARM LED
P2	EMERGENCY STOP
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

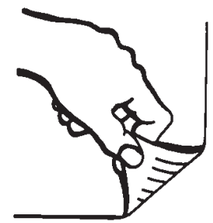
ES0380E

Platform Control Box Wiring Diagram
(after serial number 130)



Platform Control Box Options Wiring Diagram
(from serial number 102 to 130)

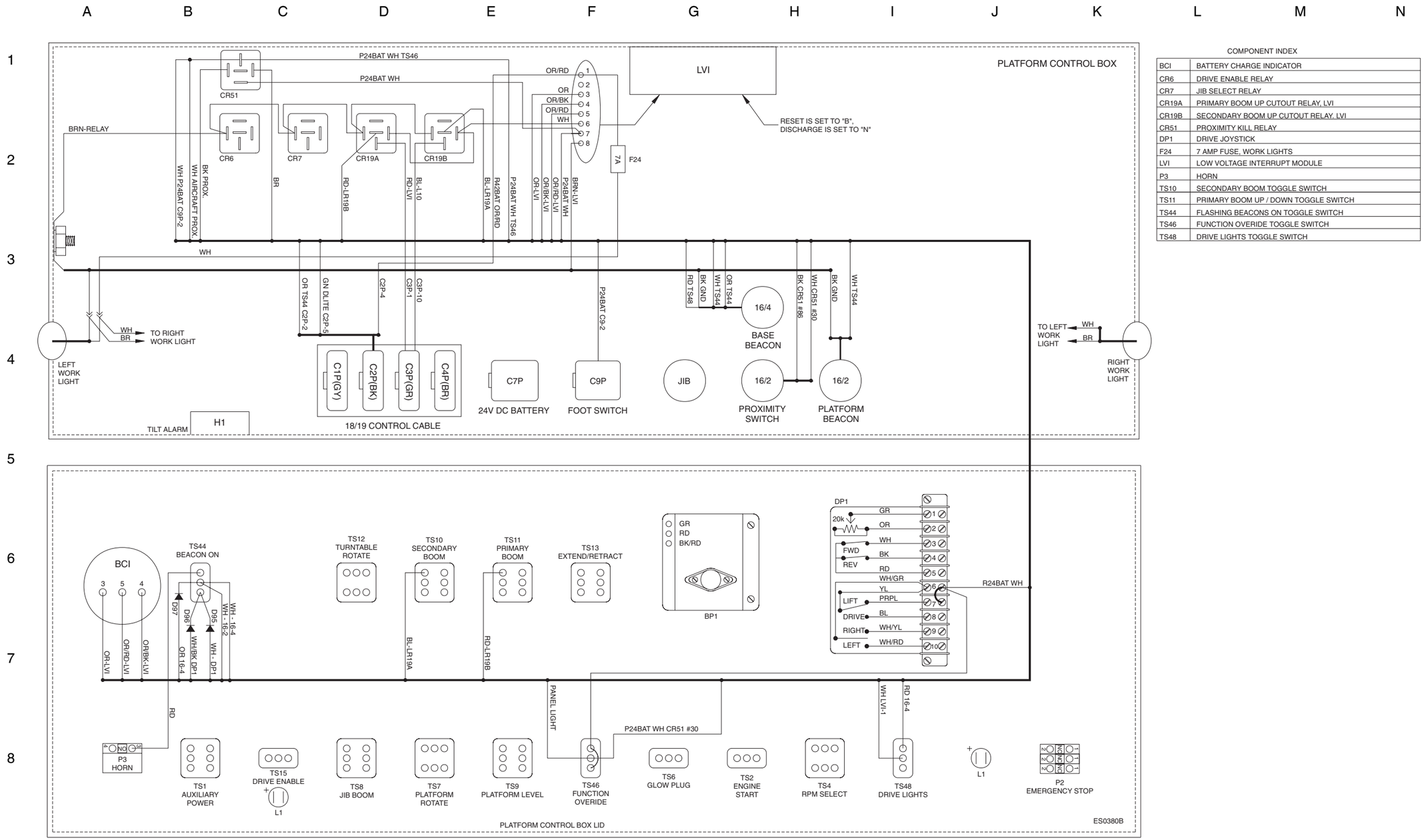




Platform Control Box Options Wiring Diagram

(from serial number 102 to 130)

REV D



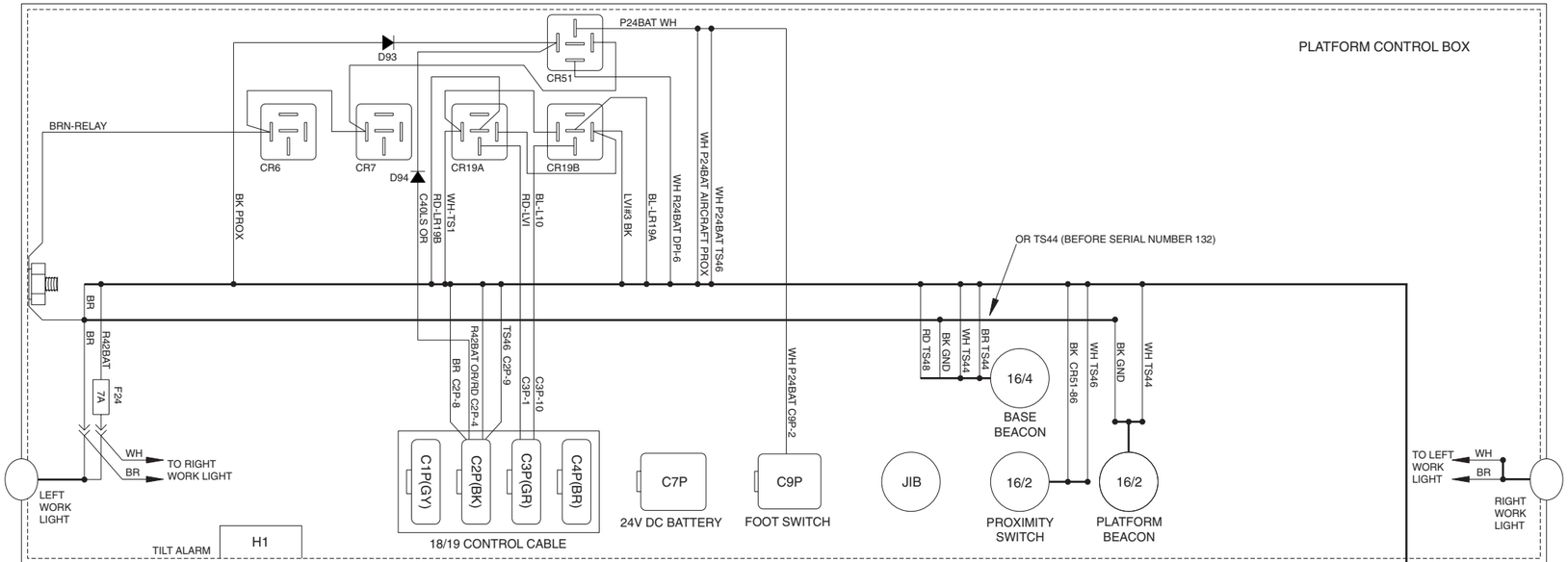
COMPONENT INDEX

BCI	BATTERY CHARGE INDICATOR
CR6	DRIVE ENABLE RELAY
CR7	JIB SELECT RELAY
CR19A	PRIMARY BOOM UP CUTOUT RELAY, LVI
CR19B	SECONDARY BOOM UP CUTOUT RELAY, LVI
CR51	PROXIMITY KILL RELAY
DP1	DRIVE JOYSTICK
F24	7 AMP FUSE, WORK LIGHTS
LVI	LOW VOLTAGE INTERRUPT MODULE
P3	HORN
TS10	SECONDARY BOOM TOGGLE SWITCH
TS11	PRIMARY BOOM UP / DOWN TOGGLE SWITCH
TS44	FLASHING BEACONS ON TOGGLE SWITCH
TS46	FUNCTION OVERIDE TOGGLE SWITCH
TS48	DRIVE LIGHTS TOGGLE SWITCH

REV D

Platform Control Box Options Wiring Diagram
(after serial number 130)

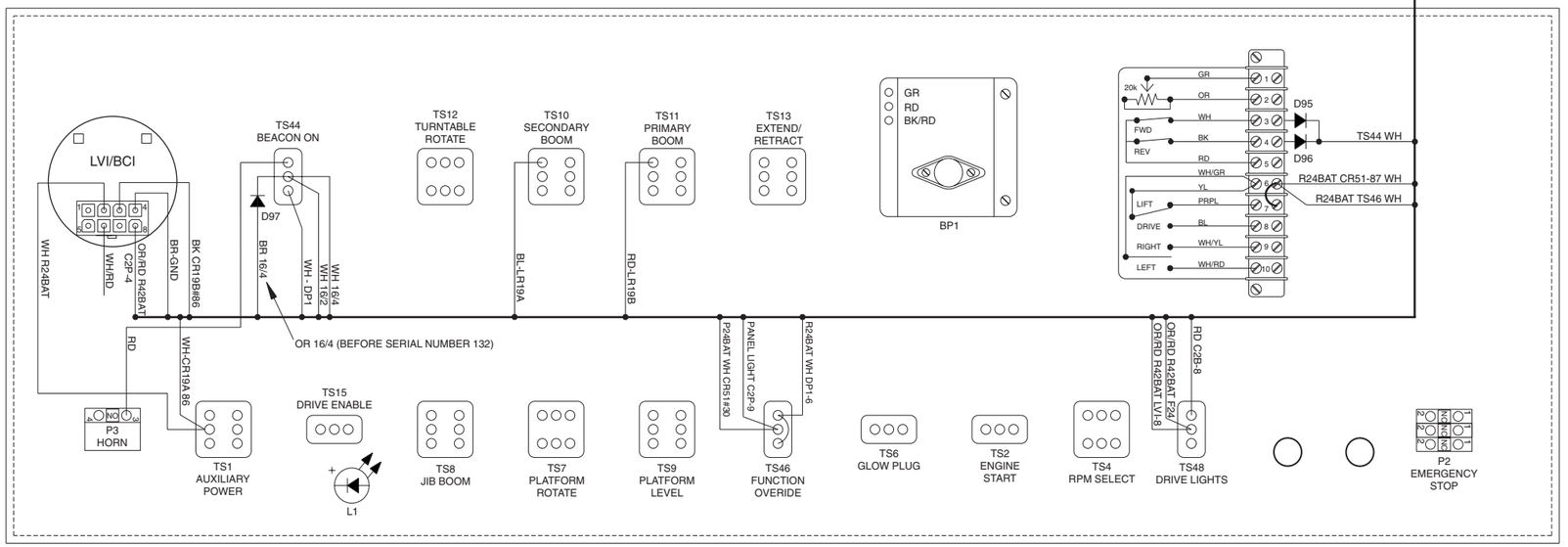
N M L K J I H G F E D C B A



COMPONENT INDEX

CR6	DRIVE ENABLE RELAY
CR7	JIB SELECT RELAY
CR19A	PRIMARY BOOM UP CUTOUT RELAY, LVI
CR19B	SECONDARY BOOM UP CUTOUT RELAY, LVI
CR51	PROX KILL RELAY
DP1	DRIVE JOYSTICK
F24	7 AMP FUSE
LVI/BCI	LOW VOLTAGE INTERRUPT / BATTERY CHARGE INDICATOR
P3	HORN
TS1	AUXILIARY SWITCH
TS10	SECONDARY BOOM SWITCH
TS11	PRIMARY BOOM UP / DOWN SWITCH
TS44	BEACON ON TOGGLE SWITCH
TS46	FUNCTION OVERIDE TOGGLE SWITCH
TS48	DRIVE LIGHTS

1 2 3 4

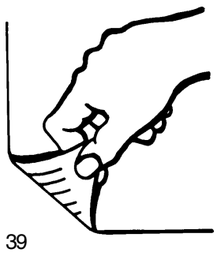


PLATFORM CONTROL BOX LID

5 6 7 8

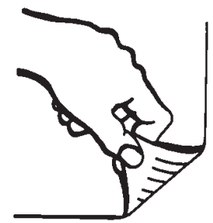
ES0380E

Platform Control Box Options Wiring Diagram
(after serial number 130)



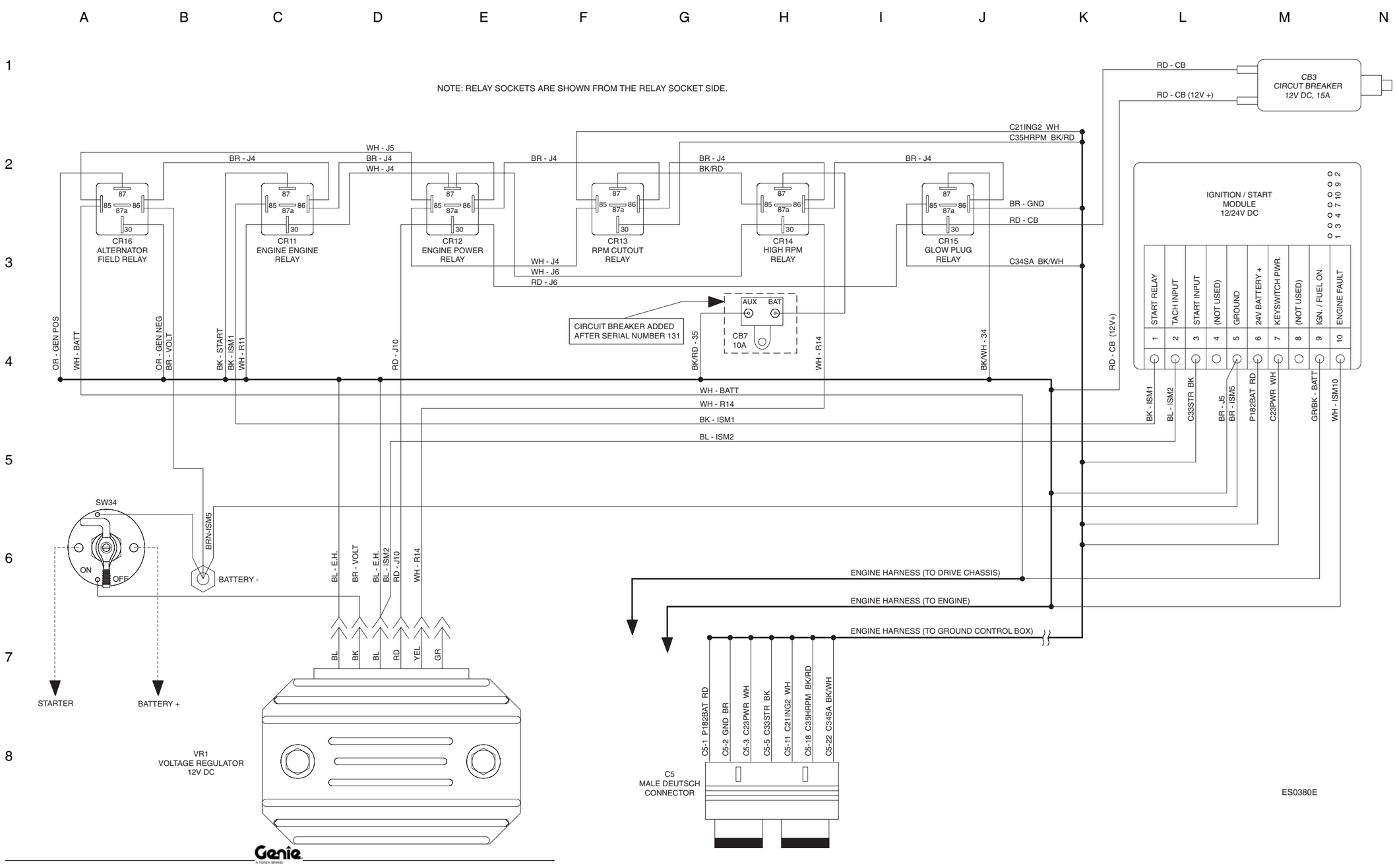
Engine Panel Wiring Diagram





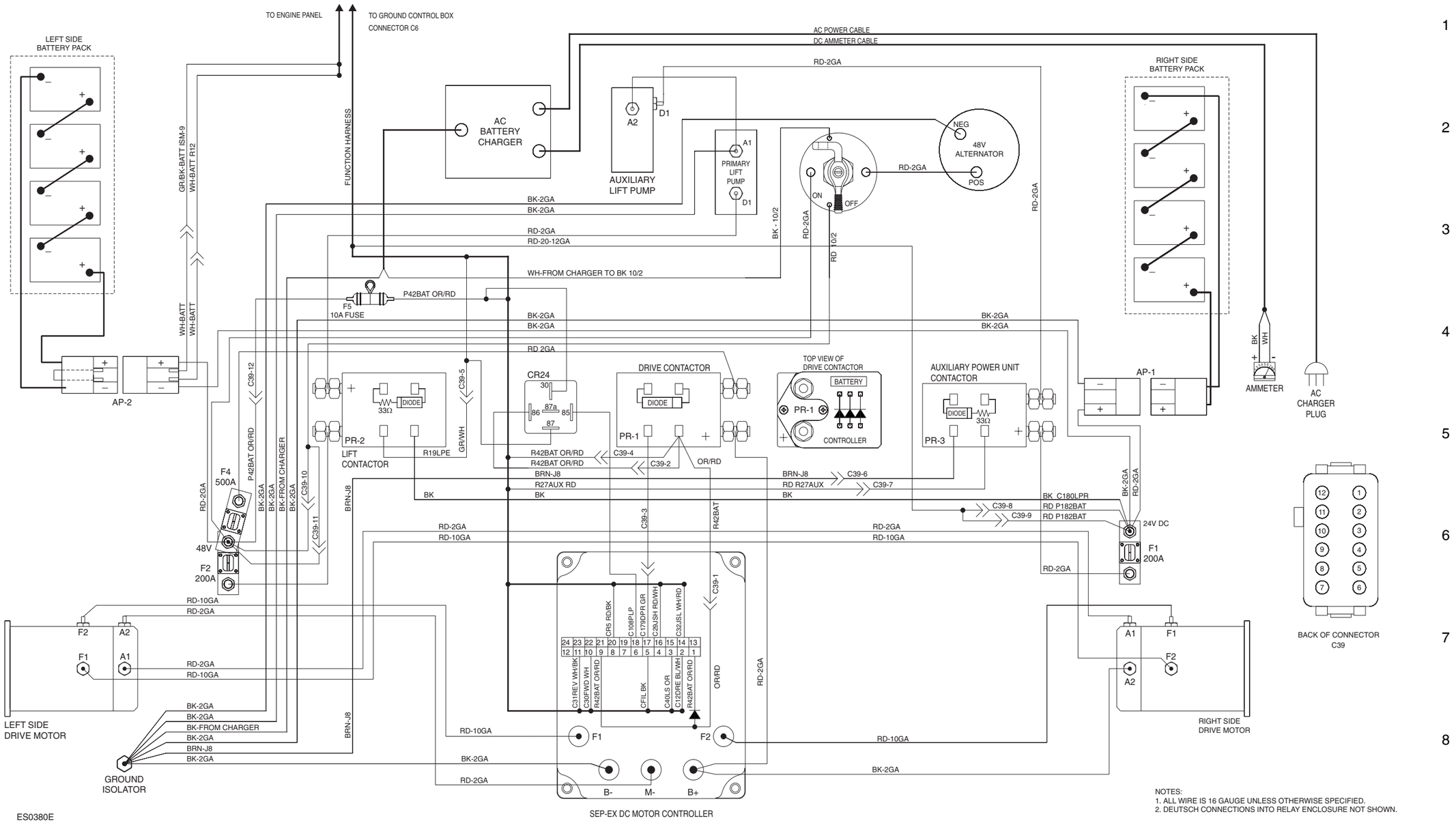
Engine Panel Wiring Diagram

REV D



REV D

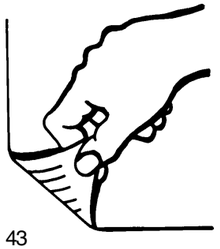
Power Panel and Cable Wiring Diagram



NOTES:
1. ALL WIRE IS 16 GAUGE UNLESS OTHERWISE SPECIFIED.
2. DEUTSCH CONNECTIONS INTO RELAY ENCLOSURE NOT SHOWN.

ES0380E

Power Panel and Cable Wiring Diagram

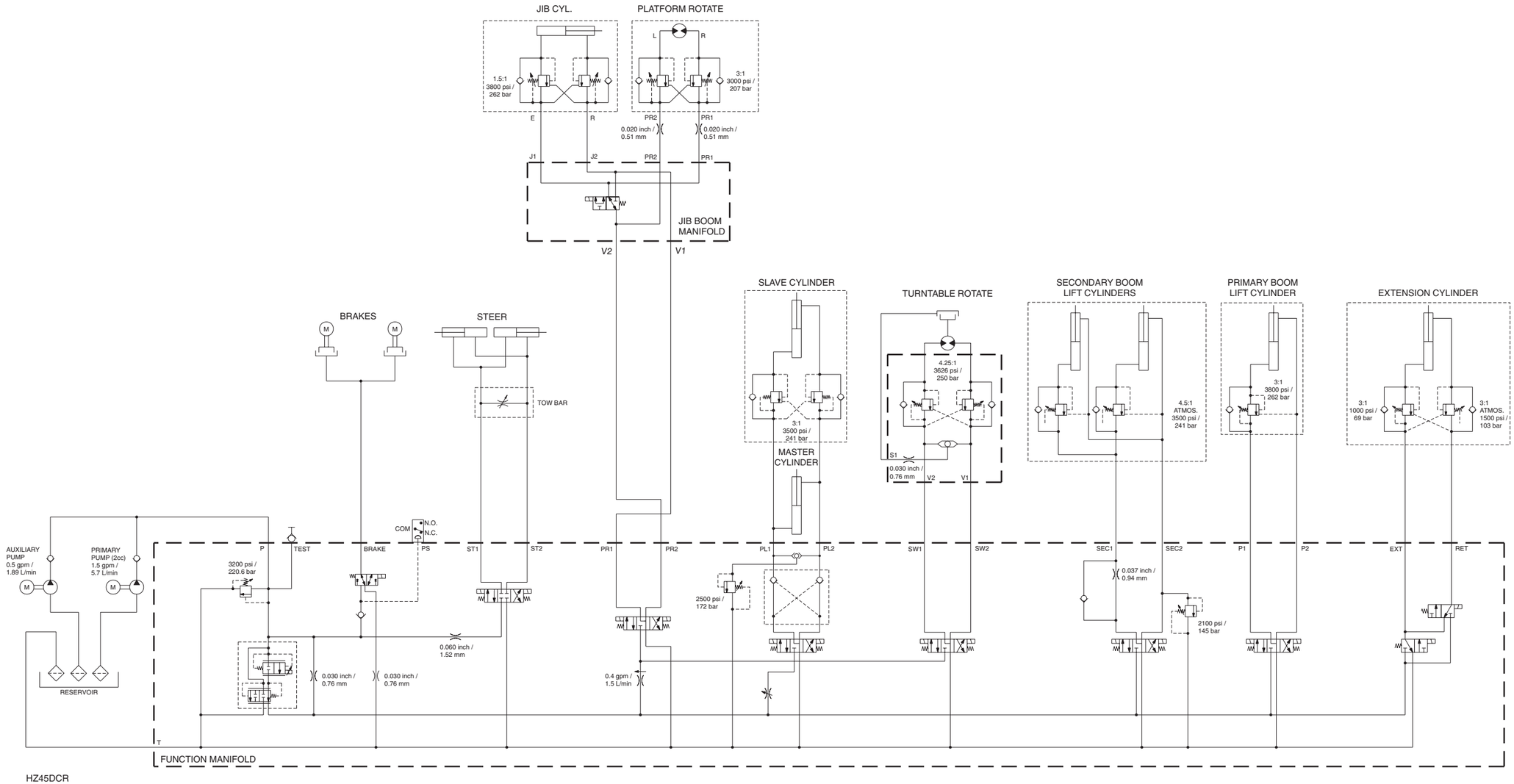


REV D

Hydraulic Schematic

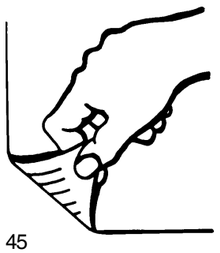
N M L K J I H G F E D C B A

1 2 3 4 5 6 7 8



HZ45DCR

Hydraulic Schematic



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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