1150M
Tier 4A (interim)
Crawler Dozer

PIN NCDC11500 and above; PIN NDDC11000 and above
PIN NEDC11000 and above; PIN NFDC11000 and above

SERVICE MANUAL

Part number 47907865
2nd edition English
October 2015
Replaces part number 47619909

CASE CONSTRUCTION

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FLOWMETER CHECK SHEET – U.S

Owner_____ Date_____ Hours_____

Model_____ Product Identification Number_____

Oil Temperature: At start of test_____ **- °F** At end of test_____ **- °F**

Test No. 1 — Equipment Pump Efficiency

1._____ gpm at minimum pressure at **2000 RPM**

2._____ gpm at **2000 psi** at **2000 RPM**

Note: The efficiency of the pump is line 2 divided by line 1. (example: 23 / 26 = .88 = 88% efficient)

Test No. 2 — Dozer / Ripper Circuits and Load Sense Relief Valve

Load Sense relief valve begins to open at _____ psi

Load Sense relief valve completely open at _____ psi

See hydraulic specifications: **Hydraulic systems - General specification (35.000)**

Engine Speed **2000 RPM** at **2000 psi** :

Dozer Lift _____ psi

Dozer Lower _____ psi

Angle Right _____ psi

Angle Left _____ psi

Tilt Right _____ psi

Tilt Left _____ psi

Ripper Lift _____ psi

Ripper Lower _____ psi

NOTE: *See hydraulic specifications for pressure readings:* ***Hydraulic systems - General specification (35.000)***

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Schematic legend			
(1)	UCM connector X-018 Pin 6 Right Motor Solenoid Signal Fault Codes 4141, 4142, 4143, 4144, and 4322	(4)	Connector X-001/ X-090
(2)	UCM connector X-016 Pin 21 Right/ Left Motor Solenoid Return Fault Codes 4321, 4323, and 4322	(5)	Right Motor Solenoid Connector X-131
(3)	UCM connector X-018 Pin 19 Left Motor Solenoid Signal Fault Codes 4151, 4152, 4153, 4154, and 4322	(6)	Left Motor Solenoid Connector X-132

A. The connectors are secure and the harness is free of damage. Go to step **3**.

B. The connectors or the harness has damage. Repair or replace the harness or connectors as required. Return to step **1** to confirm elimination of fault.

3. Measure the voltage on the signal wire.

   Turn the ignition switch OFF.

   Disconnect UCM connector X-018.

   Disconnect the right motor solenoid.

   Turn the ignition switch ON.

   Measure the voltage between X-018 pin 6 and chassis ground. The chassis ground connection must be clean and free of paint, oil, and dirt. The voltage should be less than **0.5 V**.

   A. The voltage is less than **0.5 V**. Go to step **4**.

   B. The voltage is greater than **0.5 V**. There is a short circuit to another voltage source. Repair or replace the harness as required. Return to step **1** to confirm elimination of fault.

4. Test the circuit.

   Turn the ignition switch OFF.

   Reconnect the UCM connector.

   Disconnect the right motor solenoid.

   Fabricate a jumper wire that will connect between X-133 pin 1 and X-133 pin 2.

   Connect the jumper wire between X-133 pin 1 and X-133 pin 2.

   Turn the ignition switch ON.

   Access the fault code screen on the EST.

   Fault code 4143 should no longer be active. Fault code 4142 is now active.

   A. Fault code 4143 is no longer active. Fault code 4142 is now active. Temporarily replace the solenoid and retest. Return to step **1** to confirm elimination of the fault.

   B. Fault code 4143 is still present and active. Fault code 4142 did not become active. Temporarily replace the UCM and retest. Return to step **1** to confirm elimination of the fault.

Harnesses and connectors - Electrical schematic sheet 09 UCM (55.100-C.20.E.09)
Harnesses and connectors - Electrical schematic sheet 23 Drive Train/ Pumps (55.100-C.20.E.23)

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19740-ECM/PCM Power Relay Control Circuit Open - Main Relay Short Circuit

1150M	NA

Context:
When the machine is shutdown, the afterrun cycle will supply power until the DEF/Adblue® purge cycle is finish.

Cause:
Monitoring of the internal voltage is out of range, below limit.

Possible failure modes:

1. Faulty wiring.
2. Faulty DCU.

Solution:

1. Verify fault is present and in an active state.

   A. If the fault is active, continue with Step **2**.

   B. If the fault is inactive or not present, the fault may have been intermittent. Check for an intermittent fault.
2. Inspect the wiring harness and connectors.

   Verify the wiring harness from the power distribution system to the DCU is not damaged and connections are properly connected.

   Verify the connector locks are not broken and securely hold the connectors in a connected and locked position.

   A. If there is no damage and the connectors are properly connected, continue to Step **3**.

   B. If damaged wiring is found, repair the damaged wiring. Retest the circuit(s).
3. Verify the supply voltage to the DCU.

   Disconnect the wiring harness from the DCU.

   Place the key switch ON.

   Use a multimeter to check for voltage on the wiring harness side of the DCU connector pin 3 to pin 14.

   Use a multimeter to check for voltage on the wiring harness side of the DCU connector pin 4 to pin 15.

   Use a multimeter to check for voltage on the wiring harness side of the DCU connector pin 24 to chassis ground.

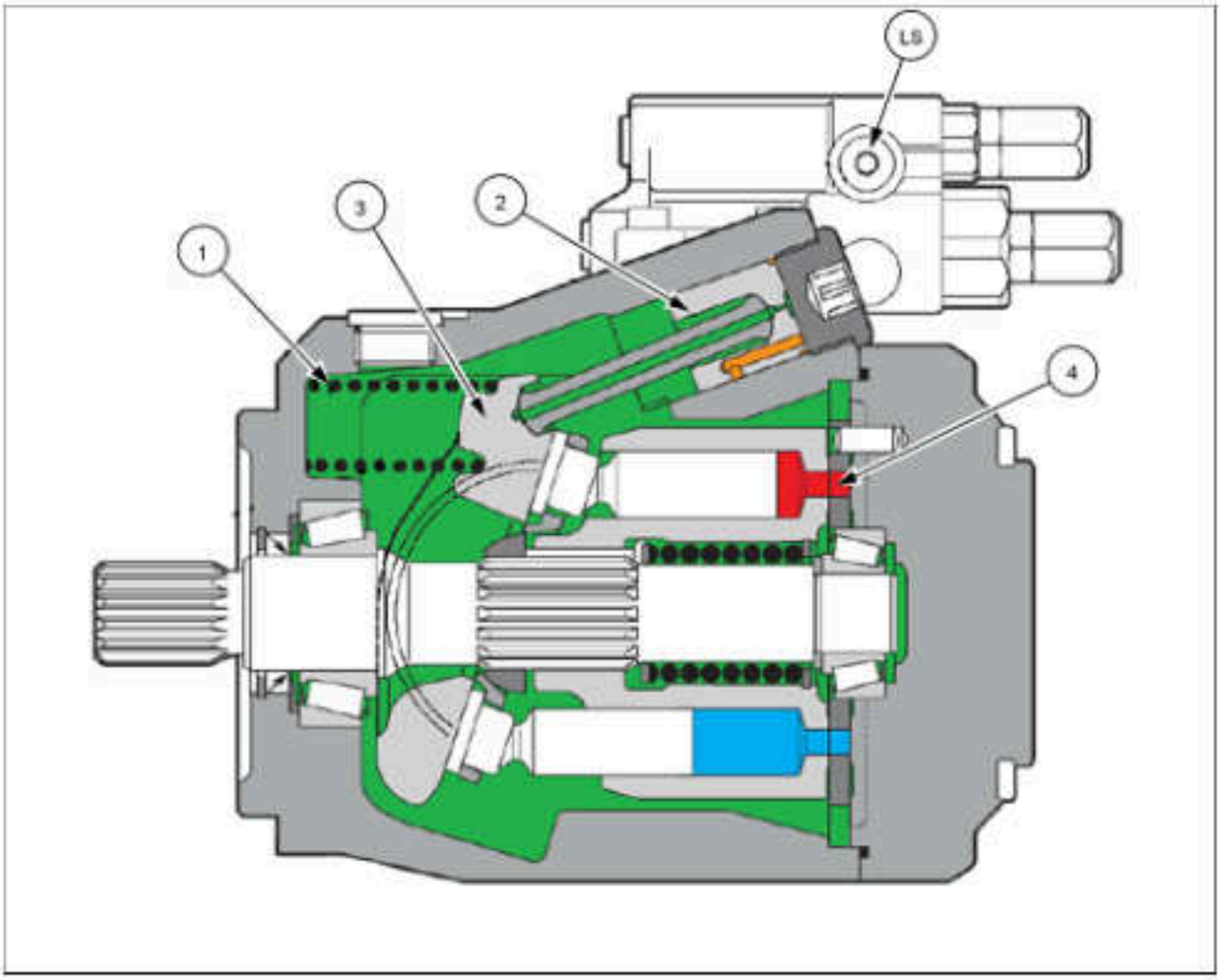
   There should be between **20 - 28 V**.

   A. The voltage is incorrect, repair/replace the supply power wiring to the DCU. Test the system for proper operation.

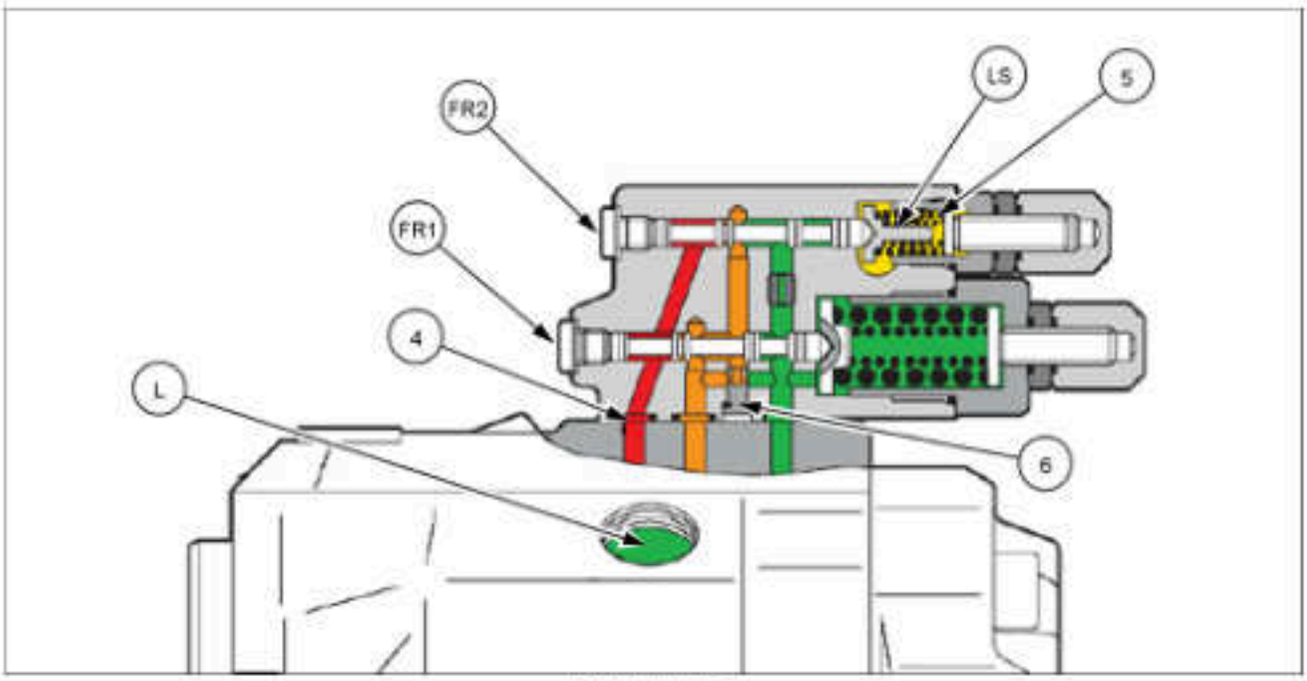
   B. If the voltage is correct, try reloading the DCU software. If the fault is still present, replace the DCU.

Harnesses and connectors - Electrical schematic sheet 01 Power Distribution/ Charging System (55.100-C.20.E.01)
Harnesses and connectors - Electrical schematic sheet 02 Starting System (55.100-C.20.E.02)
Harnesses and connectors - Electrical schematic sheet 05 Exhaust Control (55.100-C.20.E.05)

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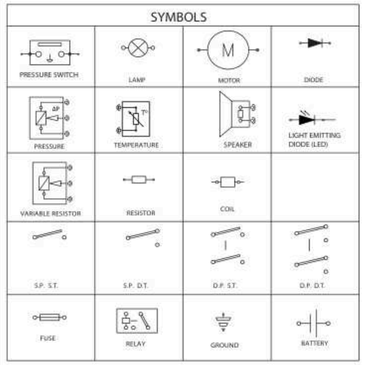
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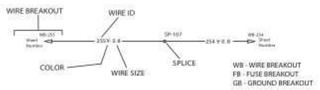
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SYMBOLS



CIRCUIT DIAGRAM LEGENDS



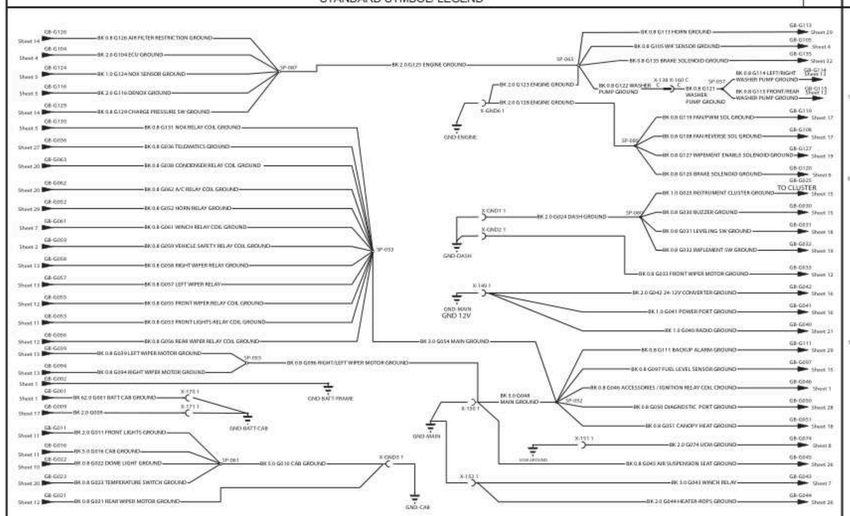
COLOR	ABBREVIATION
BLACK	BK
BLUE	BL
LIGHT BLUE	LB
BLACK/WHITE	BK/WH
GREEN	GN
LIGHT GREEN	LG
ORANGE	OR
PINK	PK
VIOLET	VT
RED	RD
GREY	GY
TAN	TN
WHITE	WH
YELLOW	YE

WIRE SIZE CHART	
Sq. mm	AWG
0.5	20
0.8	18
1.0	16
2.0	14
3.0	12
5.0	10
8.0	8

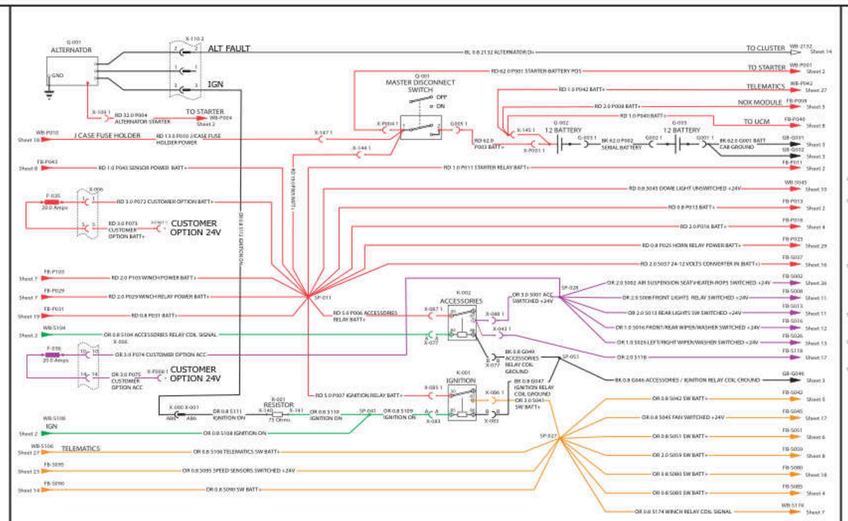
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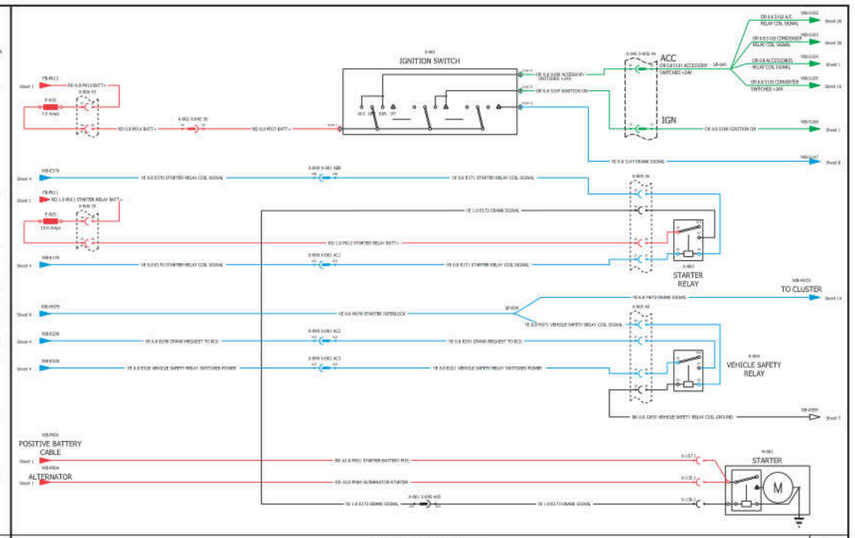
STANDARD SYMBOL/ LEGEND



GROUNDING | 3

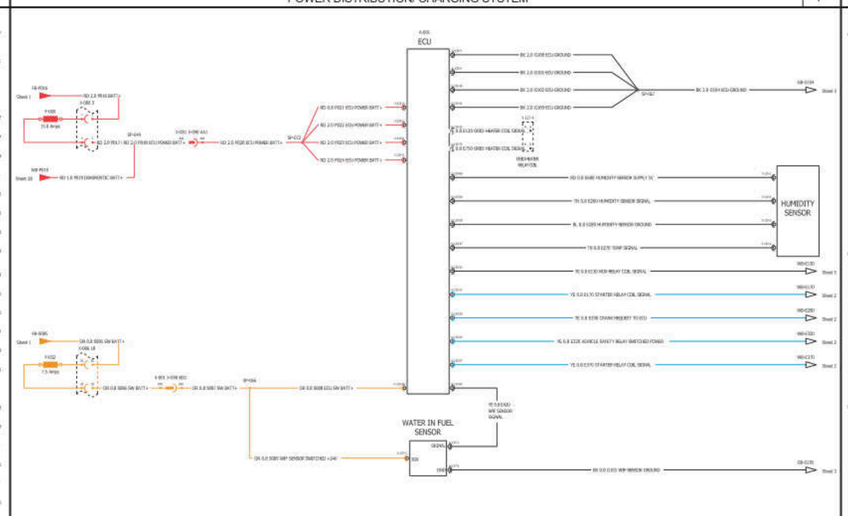


POWER DISTRIBUTION/ CHARGING SYSTEM | 1

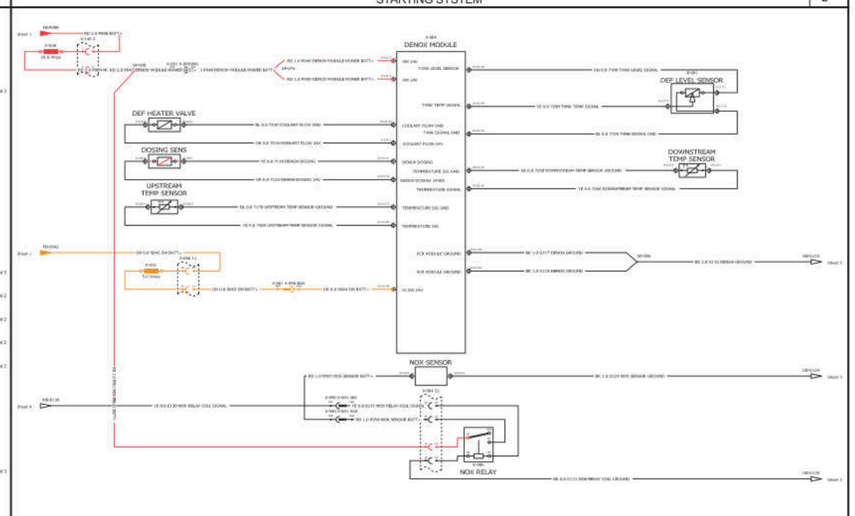


STARTING SYSTEM | 2

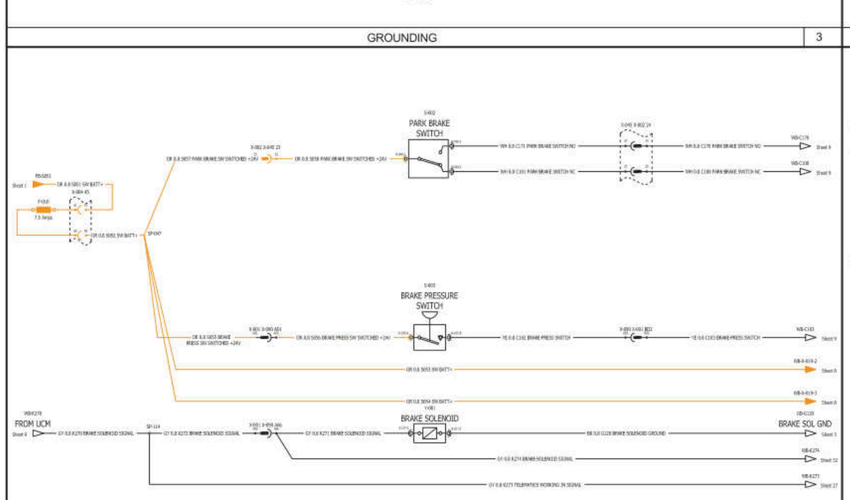
GROUNDING | 3



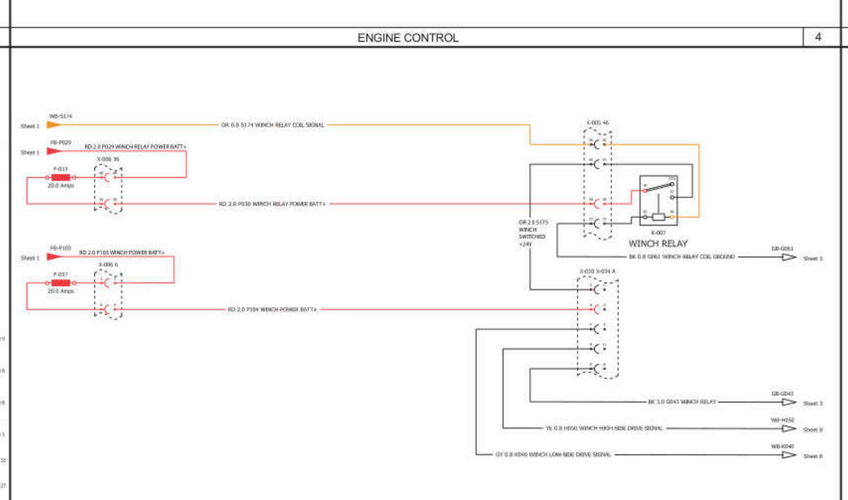
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EXHAUST CONTROL | 5



PARK BRAKE | 6



WINCH CONTROL | 7

ELECTRICAL SCHEMATIC
1150M\1650M TIER 4A (Interim)\STAGE IIIB CRAWLER DOZER

Additional copies of this schematic can be ordered through the Technical Publications Distribution System.
Part # RAC 47907890 (replaces RAC 47619956)

LEGEND

- UNSWITCHED BATTERY POWER
- SWITCHED BATTERY POWER
- STARTING CIRCUIT
- IGNITION RELAY CIRCUIT
- ACCESSORIES RELAY CIRCUIT
- 12 VOLT CIRCUIT

DESCRIPTION

RAC47907890S1S1

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