Magnum™ 250
Magnum™ 280
Magnum™ 310
Magnum™ 340
Magnum™ 380
Magnum™ 310 Rowtrac™
Magnum™ 340 Rowtrac™
Magnum™ 380 Rowtrac™
Continuously Variable Transmission (CVT) Tractor

PIN ZERF08100 and above

SERVICE MANUAL

Part number 47748111
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CASE IH AGRICULTURE

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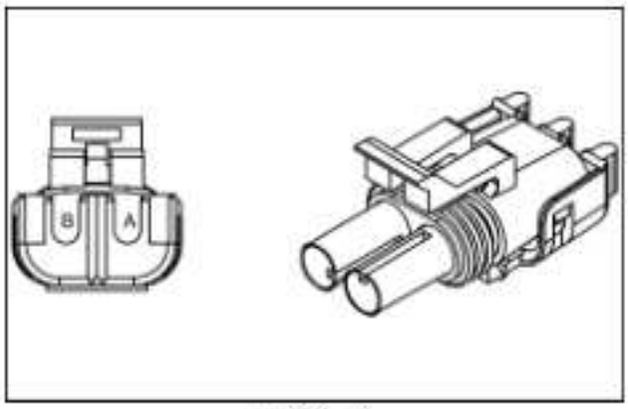
N°	Test Point	Expected Result	Other Result (Possible Cause)
2	**Check** Test the electrical control circuit: • Place the PTO switch in the off position. • Check if the PTO icon appears on the tractor instrumentation.	**Result** PTO icon does not display. **Action** Go to Step 5.	**Result** PTO icon does display: there is a problem in the electrical control circuit. **Action** Check for active fault codes, tractor control unit (TCU) status and the data bus.
3	**Condition** Disconnect connector from the PTO solenoid valve. Turn the keyswitch on and the PTO switch off. **Check** Measure voltage between pin 1 of connector at the PTO solenoid and chassis ground.	**Result** No voltage. **Action** Go to Step 4.	**Result** **12 V**. **Action** Locate and repair the short circuit to B+ between the PTO solenoid and the tractor control unit (TCU).
4	**Condition** Turn the PTO switch on. **Check** Measure voltage between pin 1 of connector at the PTO solenoid and chassis ground.	**Result** **12 V**. **Action** Go to Step 5.	**Result** No voltage. **Action** Locate and repair the open circuit between the PTO solenoid valve and the tractor control unit (TCU).
5	**Condition** • Remove the plug from the test port on the PTO valve. • Install a diagnostic fitting from special tool kit **380040106** into the test port. • Connect a **35 bar** (**500 psi**) gauge with hose to the test port. **Check** Measure pressure at the test port with the PTO switch off.	**Result** **0 bar** (**0 psi**). **Action** PTO clutch is leaking. Remove, disassemble, inspect and repair the PTO clutch.	**Result** Pressure reading greater than **0 bar** (**0 psi**). **Action** • Solenoid cartridge is stuck in the engaged position. Test the solenoid cartridge for proper operation and replace if required. • Modulation spool is stuck in the engaged position. Remove the PTO modulation spool, clean, inspect and replace or reinstall.

Power Take-Off (PTO) clutch - Testing - Test 2

N°	Test Point	Expected Result	Other Result (Possible Cause)
1	**Check** Check the tractor control unit (TCU) for PTO fault codes.	**Result** Active fault codes found. **Action** Use the fault code troubleshooting in this repair manual for the active fault code(s) to resolve this problem.	**Result** Active fault codes not found. **Action** Go to step 2.
2	**Check** Test the electrical control circuit: • Place the PTO switch in the off position. • Check if the PTO icon appears on the tractor instrumentation.	**Result** PTO icon does not display. **Action** Go to Step 5.	**Result** PTO icon does display: there is a problem in the electrical control circuit. **Action** Check for active fault codes, tractor control unit (TCU) and the data bus.

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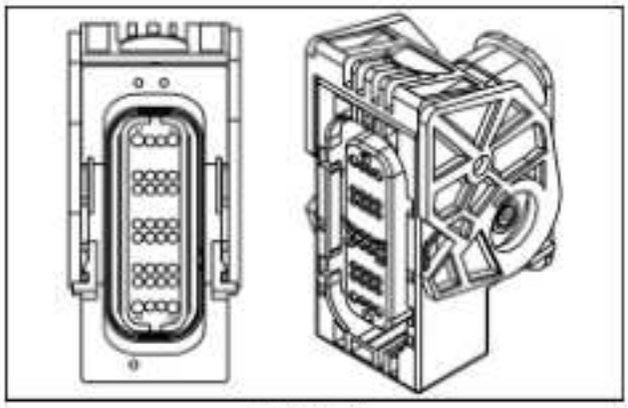
X-024 - LH LICENSE PLATE LIGHT #1 (87692855) (Female)



87692855 12

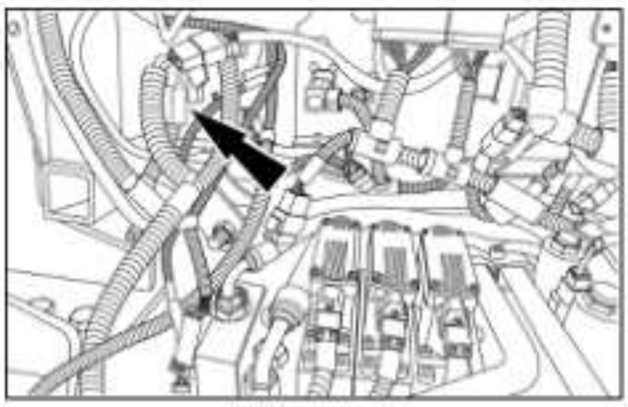
87692855

X-025 - TO CAB HARNESS (84254836) (Female)



84254836 13

84254836



RAIL14TRXX625AA 14

Pin	From	Wire	Description	Color-Size	Frame
A1	**X-147 (Male) pin E** TO REAR FRAME HARNESS	RF-165	TRAILER TAIL LIGHTS	OR - 2.0	**Wiring harnesses - Electrical schematic sheet 27 - Lighting, fender and trailer (55.100)**
A3	**X-1862 (Female) pin 1** AIR BRAKE DRYER	RF-1002	SW B+ DRYER	OR - 0.8	**Wiring harnesses - Electrical schematic sheet 24 - Brake switches (55.100)**
A4	SP-601B-P-PIN1	RF-601B	HITCH/PTO/LINK B+	OR - 0.8	**Wiring harnesses - Electrical schematic sheet 40 - Hitch control system - Electronic draft control (EDC) (55.100)**
A5	**X-1020 (Female) pin 5** TO FENDER HARNESS	RF-750C	LEFT TAIL LIGHTS	VT - 1.0	**Wiring harnesses - Electrical schematic sheet 27 - Lighting, fender and trailer (55.100)**
A6	**X-1020 (Female) pin 10** TO FENDER HARNESS	RF-2032A	R/L EHR TOP LINK EXTEND	YE - 0.8	**Wiring harnesses - Electrical schematic sheet 34 - Remote Power Take-Off (PTO) and hydraulic link switches (55.100)**

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19068-Downstream SCR catalyst temperature is too low

Context:
For information regarding the functional operation of the Selective Catalytic Reduction (SCR) system see **Selective Catalytic Reduction (SCR) electrical system - Dynamic description (55.988)**. The Engine Control Unit (ECU) **A-9000** monitors the SCR downstream exhaust gas temperature sensor **B-9104**. If the temperature downstream of he SCR catalyst is below **-40.04 °C** (**-40.07 °F**), this fault will occur.

Cause:
The ECU **A-9000** is sensing the downstream SCR catalyst temperature is below the lower threshold limit.

Possible failure modes:

1. Ambient air temperature, below **-40.04 °C** (**-40.07 °F**).
2. Faulty SCR downstream exhaust gas temperature sensor **B-9104**, internal failure.
3. Faulty SCR downstream exhaust gas temperature sensor **B-9104**, installation.
4. Faulty ECU **A-9000**, software.

Solution:

1. Verify fault is present and active.

   Use the Electronic Service Tool (EST) to check the status of this fault.

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

   B. If the fault is no longer present or in an inactive state, the fault may be intermittent and not currently active. Continue with Step **5**.

2. Determine ambient temperature.

   Establish if ambient temperature is appreciably greater or less than **-40.04 °C** (**-40.07 °F**).

   A. If the ambient temperature is less than **-40.04 °C** (**-40.07 °F**), this fault will be present and active. The machine will need to be started or moved to a warmer environment, ignore this fault and return the machine to service.

   B. If the ambient temperature is greater than **-40.04 °C** (**-40.07 °F**), continue with Step **3**.

3. Check the condition of the SCR downstream exhaust gas temperature sensor **B-9104**.

   Disconnect the vehicle (VE) harness from the SCR downstream exhaust gas temperature sensor **B-9104** at connector **X-9104**.

   With the keyswitch in the off position, use a multimeter to measure the resistance on the sensor:

From	To	Value
X-9104 pin 1	**X-9104 pin 2**	there should be greater than **169.7 Ω**
***NOTE:** To determine actual resistance values for various temperatures see **Selective Catalytic Reduction (SCR) temperature sensors - General specification (55.988)**.*		

   A. If there is greater than **169.7 Ω**, continue with Step **4**.

   B. If there is less than **169.7 Ω**, the SCR downstream exhaust gas temperature sensor **B-9104** has failed internally. Replace the sensor.

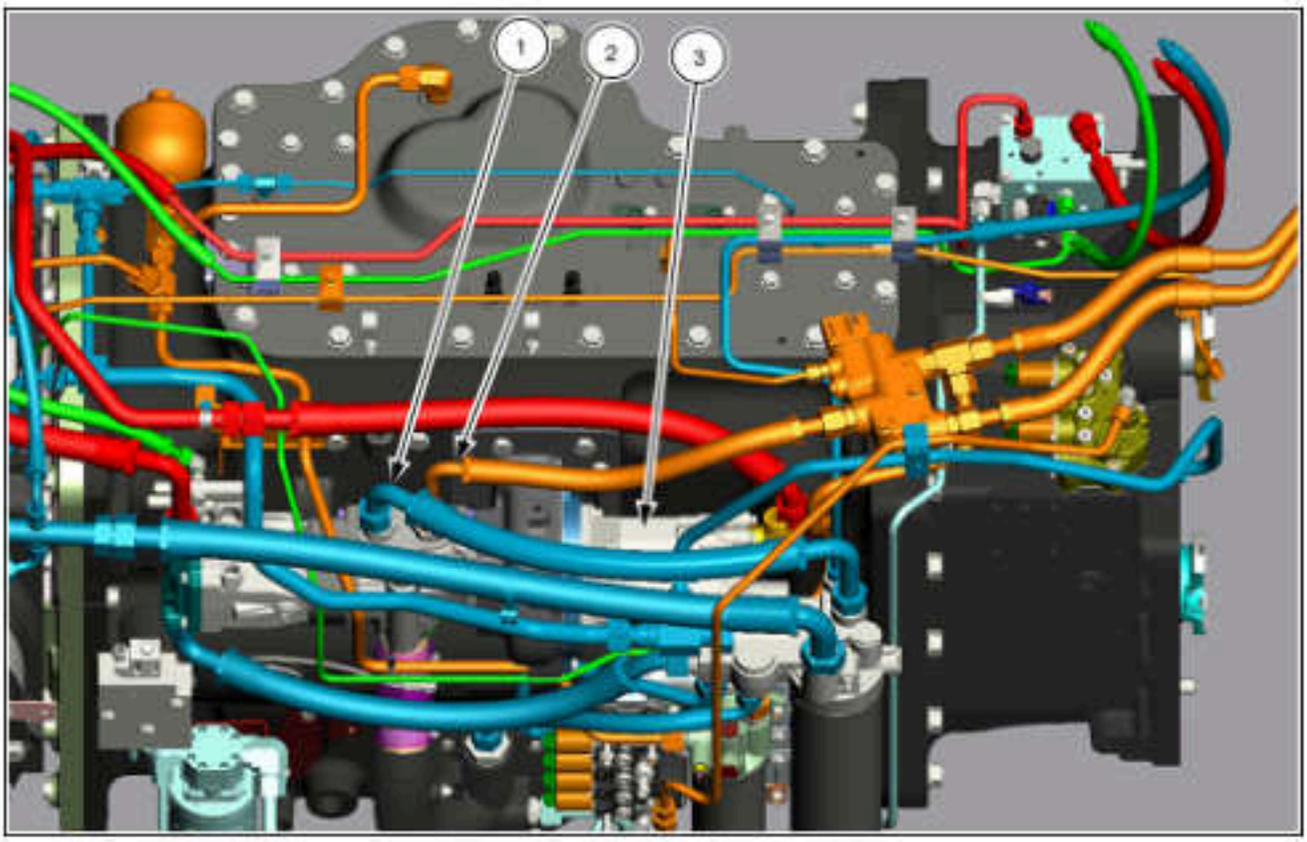
4. Verify proper sensor installation.

   Check the SCR downstream exhaust gas temperature sensor **B-9104** for correct mounting and the electrical connection. Refer to **Selective Catalytic Reduction (SCR) temperature sensors - Remove - After catalyst sensor (55.988)** to locate or replace the sensor.

   A. If the sensor is not properly mounted or electrical connector integrity is questionable, remove and re-install, adjust, and/or replace, as required.

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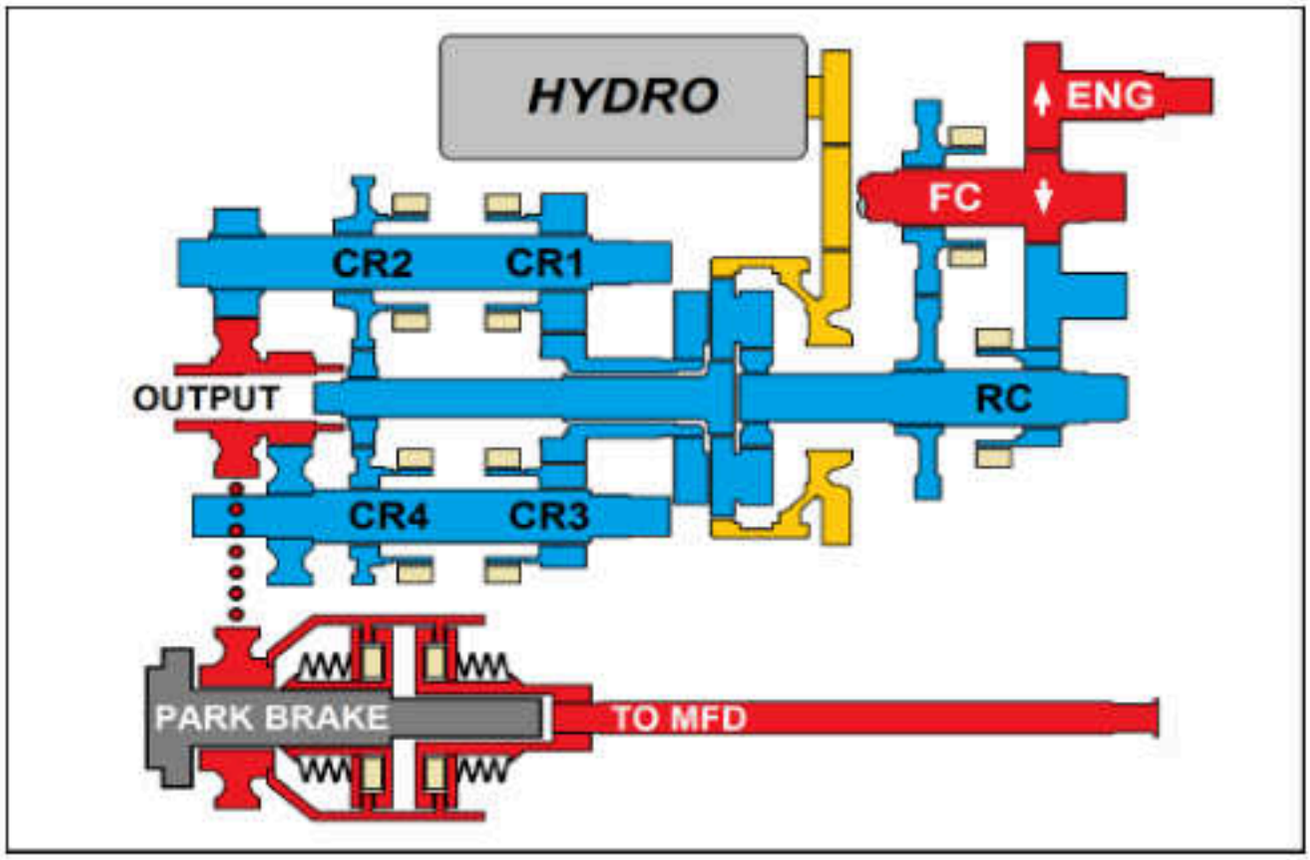
High flow pressure/flow compensating pump — Component identification



RAIL13TR002746A 3

1. Charge/lubrication pump outlet	3. High flow PFC pump
2. Regulated charge pump outlet	

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Park position with Mechanical Front Drive (MFD) engaged

Torque transmitting/clutch pressurized	HSU driven
Non-torque transmitting	Clutch not pressurized

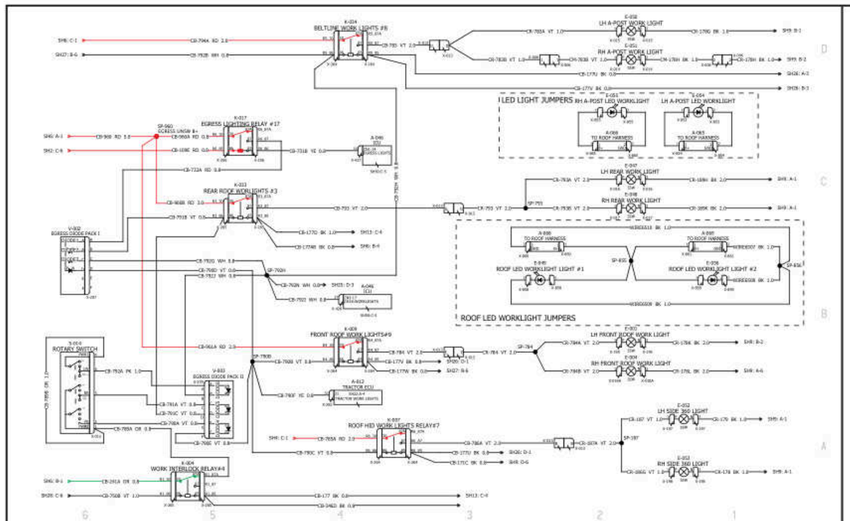
In park, no drive clutches are engaged, but the park brake is; and this locks the output shaft of the transmission. If the Mechanical Front Drive (MFD) clutch is not released, braking is also through the front axle.

The HSU motor drives the large compound planetary ring gear. By varying the speed of the ring gear, the output speed of the planetary system is varied. The engine drives the input sun in the planetary system through the forward or reverse clutch.

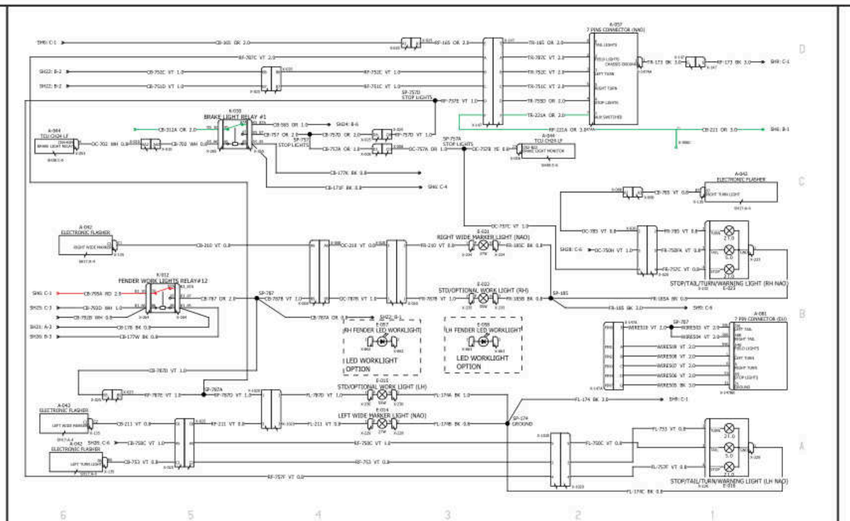
The dual output planetary; one output from the planetary carrier, the other from the output sun gear shaft drives two range shafts containing the four range clutches.

As the vehicle speed increases, the clutches alternate between the planetary outputs and range shafts to ensure seamless shifts and constant transmission output speed increase. The pump swashes back and forth as the clutches are shifted. The TCU calculates when the off-going and the on-coming clutches are speed matched so there is minimal slipping of the clutches during transition. One of the two range shafts then drives the transmission output shaft, depending on which clutch is selected.

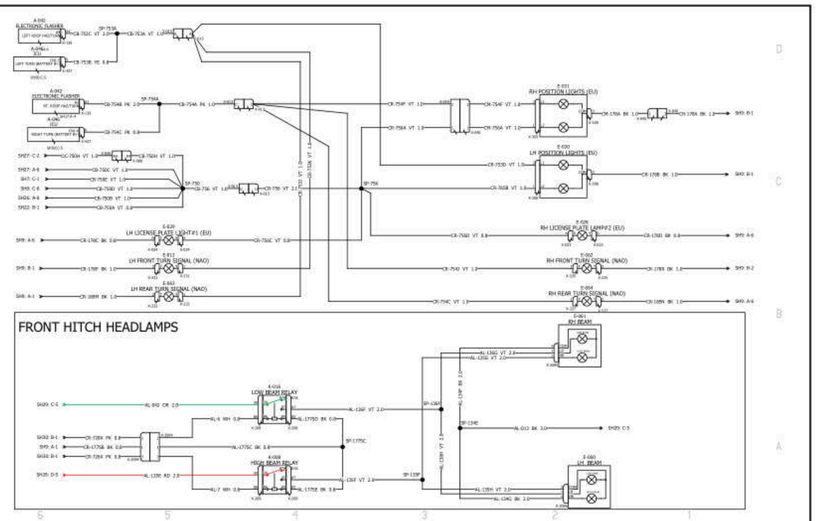
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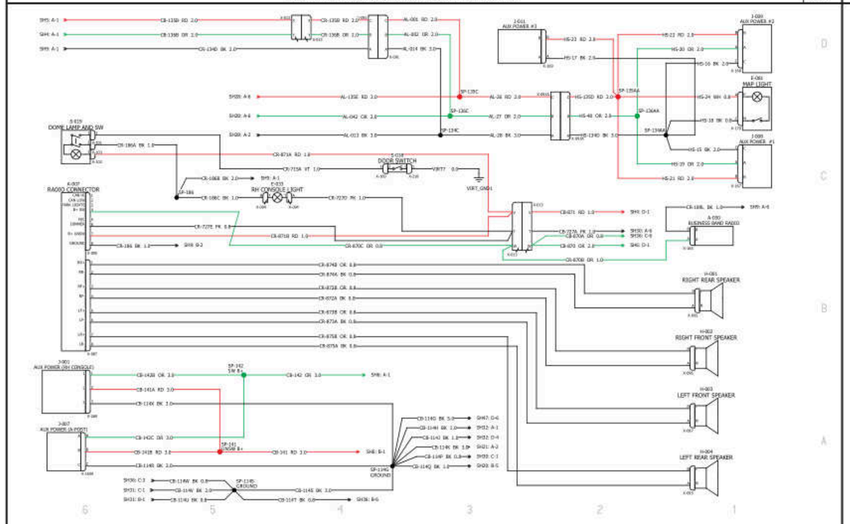
LIGHTING - ROOF, WORK AND HID LAMPS | 26



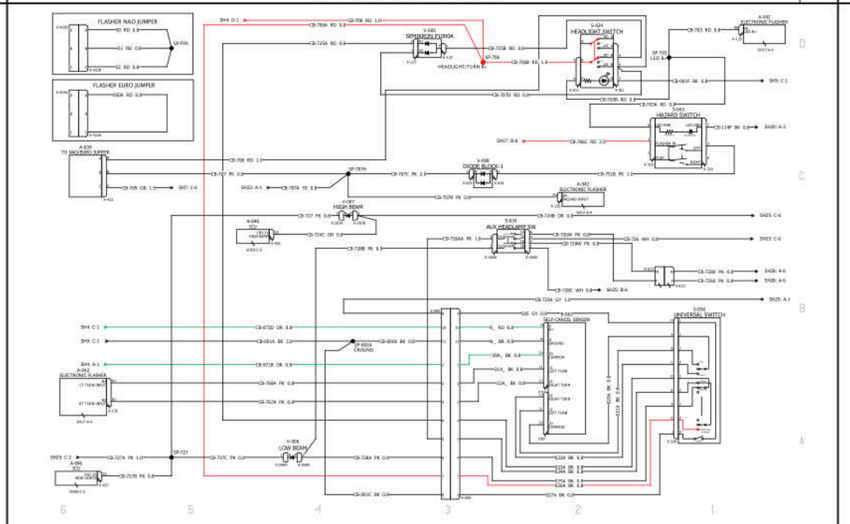
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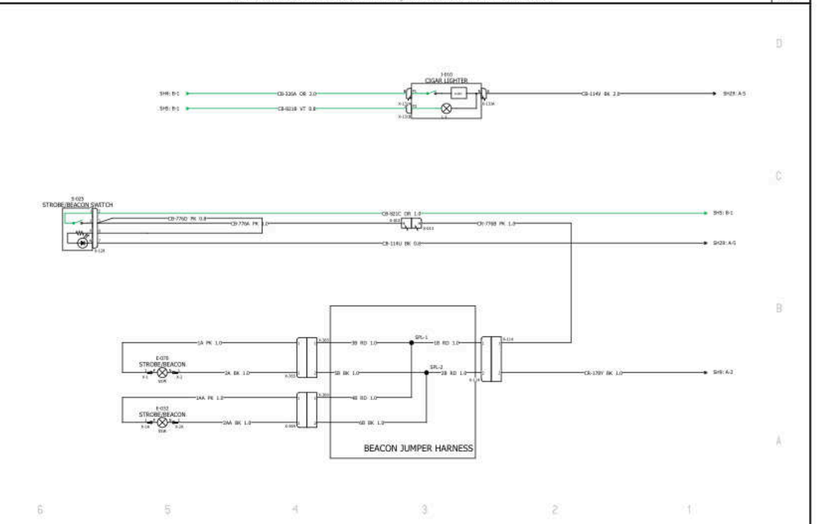
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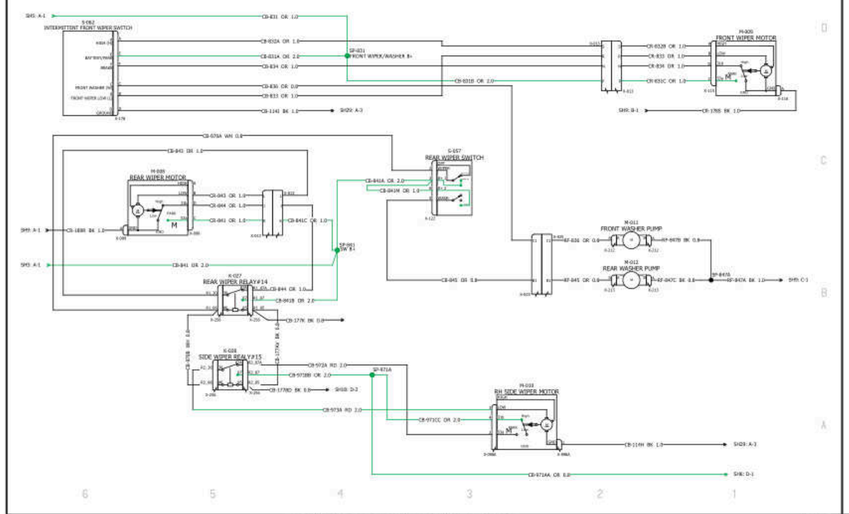
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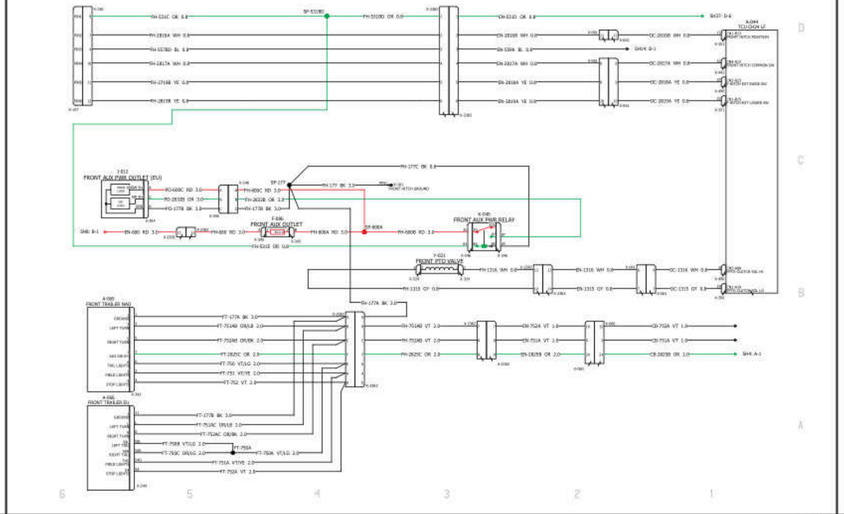
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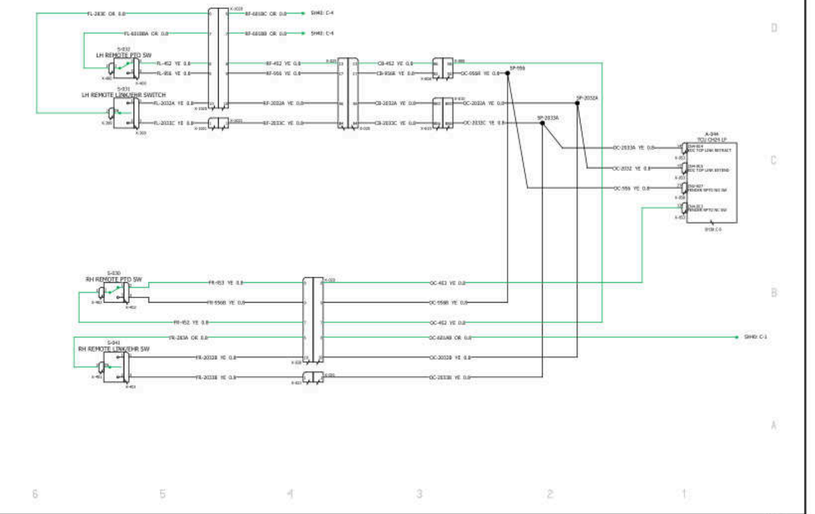
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