Magnum™ 180
Magnum™ 200
Magnum™ 220
Powershift Transmission (PST)
Tractor

PIN ZERH08100 and above

SERVICE MANUAL

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September 2014

CASE IH AGRICULTURE

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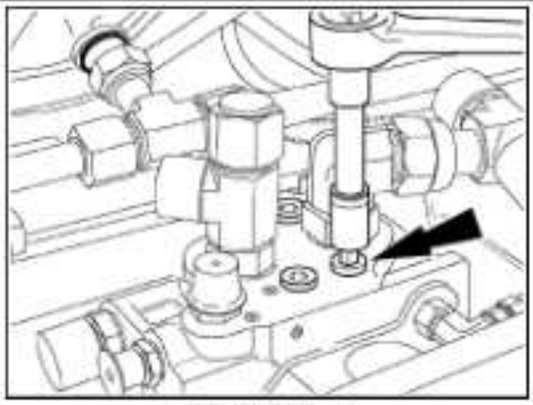
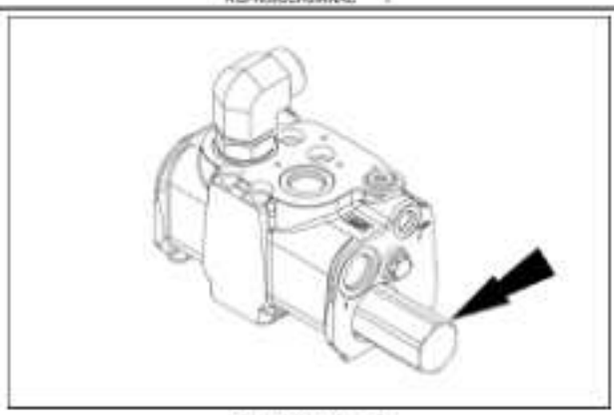
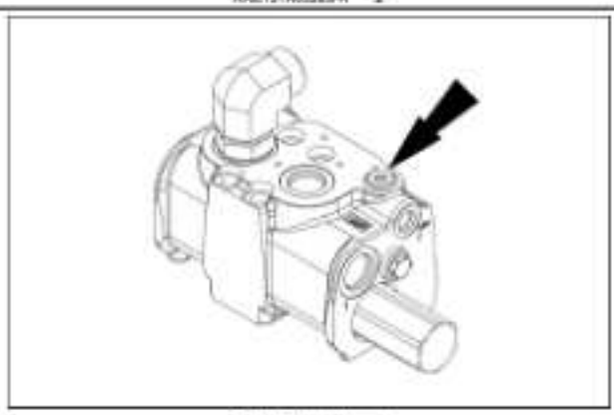
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Pump control valve Priority/Regulator valve - Torque

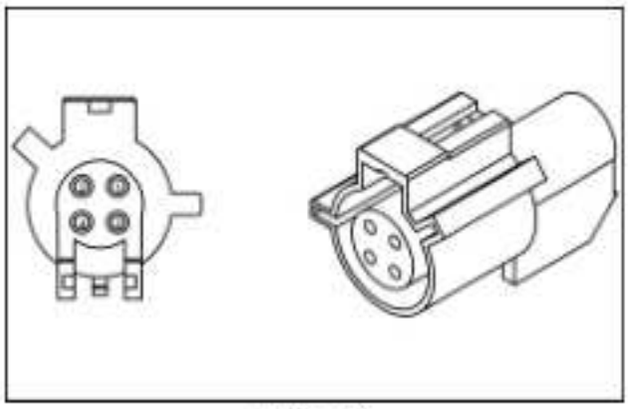
Component	N-m	Identification	lb-ft
Priority valve mounting bolts	**50 N·m**		**37 lb ft**
Spring cap	**55 N·m**		**40 lb ft**
Selector valve hex socket plug	**9 N·m**		**7 lb ft**

Pump control valve Priority/Regulator valve - General specification

Maximum inlet flow at port P	**165 L/min (44 US gpm)**
Maximum pressure at port P	**250 bar (3625 psi)**
Master priority working pressure	**5.8 - 11.6 bar (84 - 168 psi)**
Steering compensator working pressure	**12.8 - 17.4 bar (186 - 252 psi)**

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X-2014 - RADAR (87712738) (Female)



87712738 26

87712738

Pin	From	Wire	Description	Color-Size	Frame
1	**X-026A (Female) pin AC6** TO OUTSIDE CAB HARNESS	TP/TC-200A	RADAR GROUND SPEED	YE - 0.8	**Wiring harnesses - Electrical schematic sheet 17 - Transmission, rear PTO, EDC, radar, brakes (55.100)**
2	**X-2014 pin 2** RADAR	TP/TC-700J	RADAR SEN GND	BL - 0.8	**Wiring harnesses - Electrical schematic sheet 16 - Transmission, sensors (55.100)**
3	**X-026A (Female) pin BC7** TO OUTSIDE CAB HARNESS	TP/TC-283E	RADAR B+	OR - 0.8	**Wiring harnesses - Electrical schematic sheet 17 - Transmission, rear PTO, EDC, radar, brakes (55.100)**
4	**X-026A (Female) pin AC7** TO OUTSIDE CAB HARNESS	TP/TC-263	RADAR PRESENT	YE - 0.8	

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2359-High range clutch solenoid - over voltage

NOTE: *When the cause of the error code has been rectified, clear the error code and test the system for normal operation.*

Possible failure modes:

1. External power supply connected
2. Faulty charging system
3. Faulty solenoid
4. Faulty harness
5. Faulty controller

Solution:

1. Check for other error codes being displayed.

   A. Other error codes are displayed. Continue to troubleshoot the other error codes.

   B. No other error codes are displayed. Continue to step **2**.

2. Check that the tractor battery power supply has not been connected to an external power supply.

   A. An external power supply is connected to the tractor. Disconnect the external power supply and test the system for normal operation.

   B. An external power supply is not connected to the tractor. Continue to step **3**.

3. Check the battery voltage on the instrument cluster.

   Start the engine and run at **2000 rev/min**.

   A. The voltage displayed is greater than approximately **15 Volts**. Continue to test for a fault in the charging system.

   B. The battery voltage is okay. Continue to step **4**.

4. Check the high range clutch solenoid.

   Turn the keyswitch OFF.

   Disconnect connector **X-643** . Measure the resistance between the solenoid terminals:

Test point 1	Test point 2	Expected result
X-643 (Female) pin 1	**X-643 (Female) pin 2**	**8 - 11 Ω**

   A. Result is outside the expected range. Remove and replace the solenoid, and return unit to field operation.

   B. Result is within the expected range. Continue to step **5**.

5. Check for +Ve Voltage.

   Disconnect the TCU connector **X-350** .

   Turn the keyswitch ON.

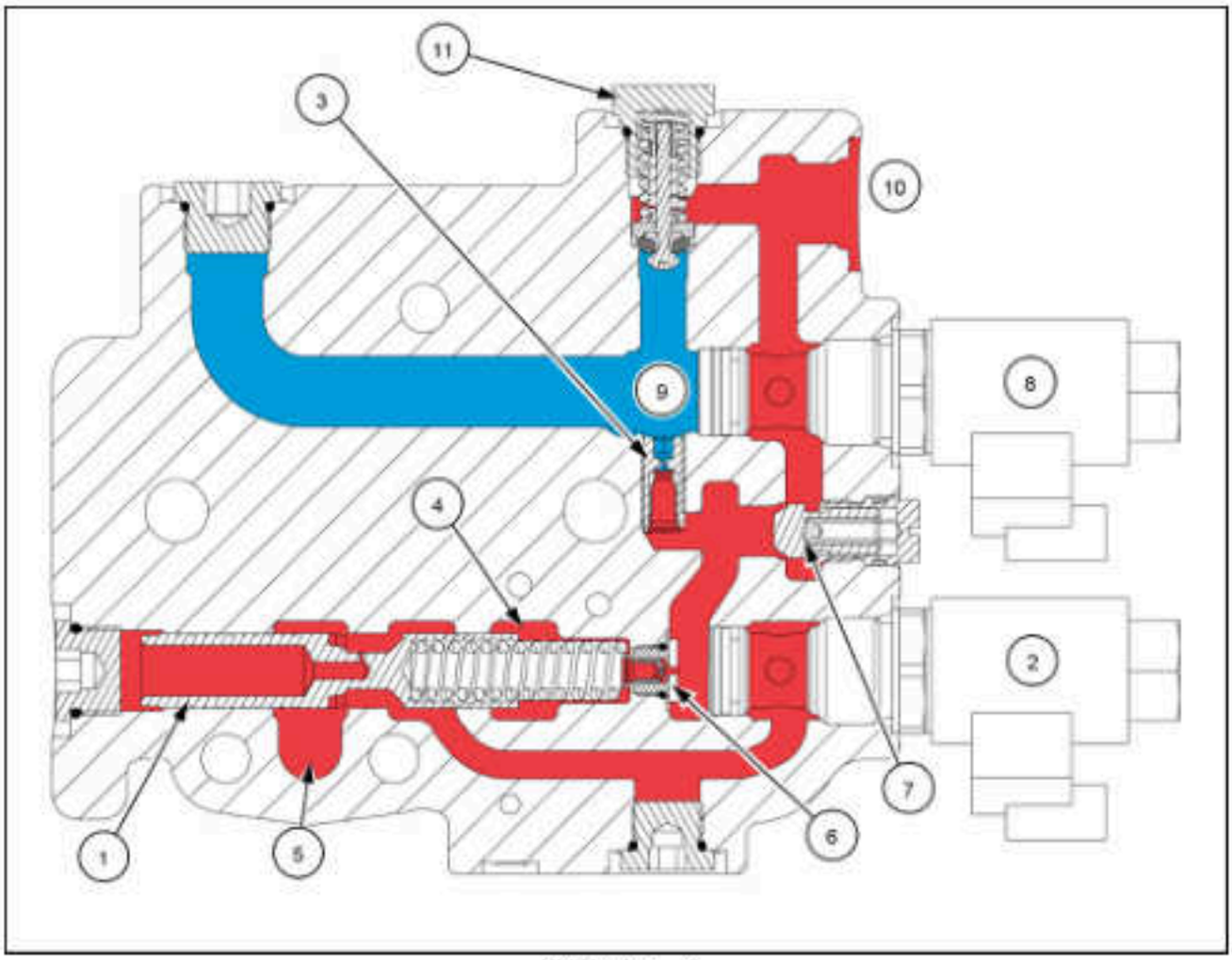
   Measure voltage between these test points:

Test point 1	Test point 2	Expected reading
X-350 (Female) pin 25	GND	No voltage

   A. Voltage found. Repair or replace the harness as required, and return unit to field operation.

   B. Voltage not found. Continue to step **6**.

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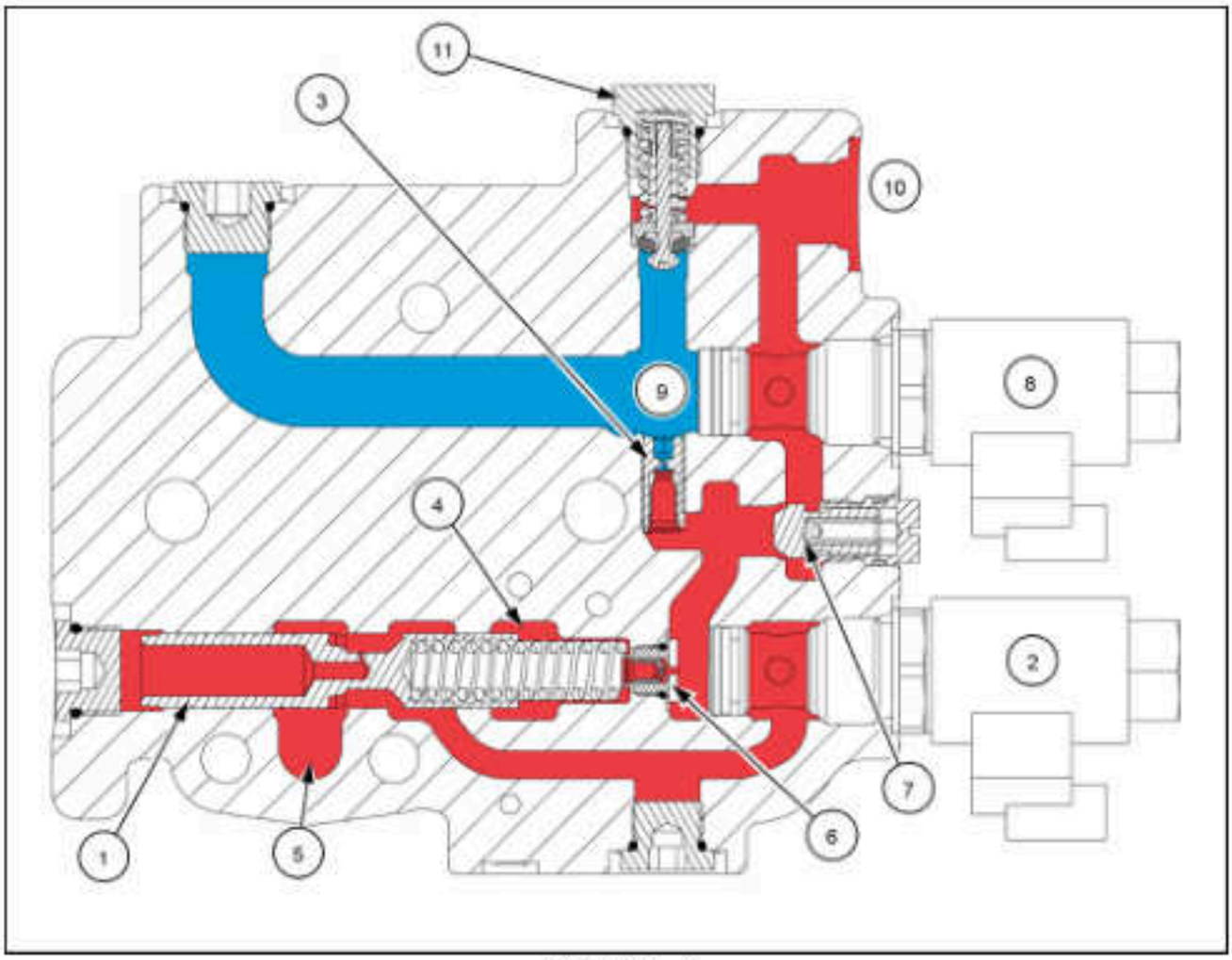
RAISE POSITION

PFC pump pressure	Return to tank pressure
Trapped oil	
1. Flow control spool	7. Load check
2. Raise solenoid	8. Lower solenoid
3. Screened orifice plug	9. Return to tank
4. Pilot signal to compensator	10. Hitch cylinders
5. PFC pump supply	11. Relief valve
6. Check/orifice plug	

Lowering Function

To lower the hitch, the lower proportional solenoid valve must be energized by the central control unit (RM). The amount of spool movement depends on the amount of current supplied by the controller to the proportional solenoid. Once the lower solenoid is energized, the solenoid valve shifts opening a flow path directly back to tank.

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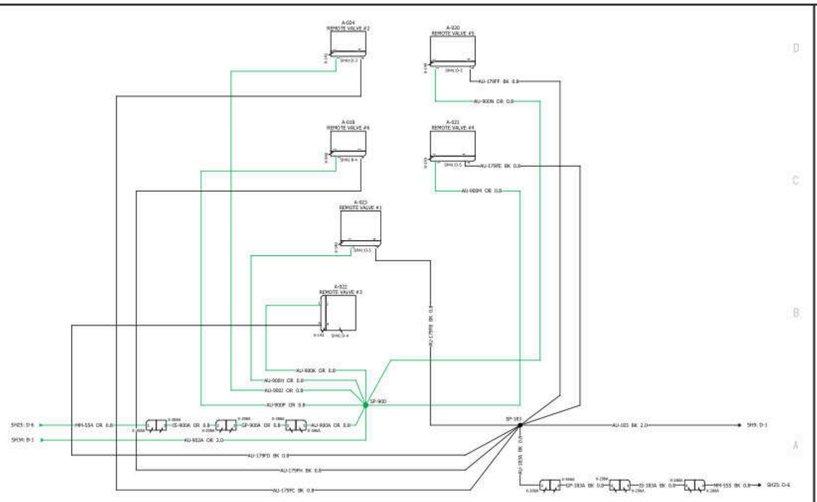
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4. Pilot signal to compensator	10. Hitch cylinders
5. PFC pump supply	11. Relief valve
6. Check/orifice plug	

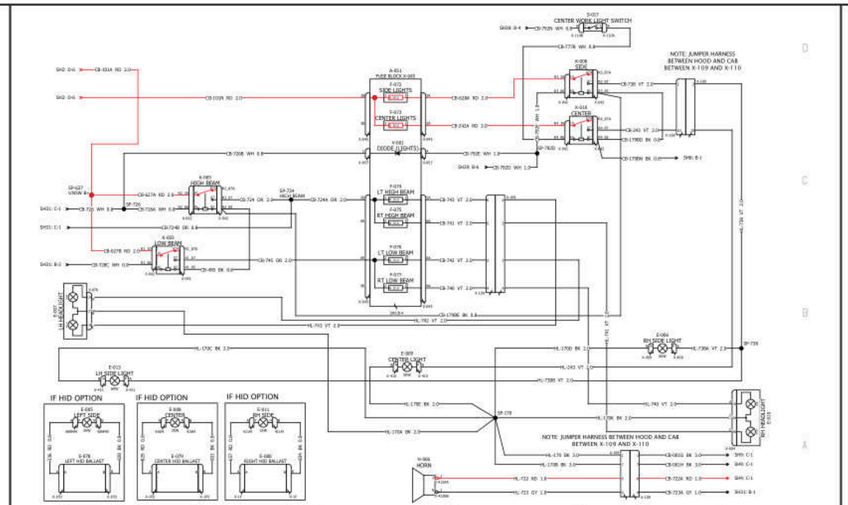
Lowering function

To lower the hitch, the lower proportional solenoid valve must be energized by the TCU (RM). The amount of spool movement depends on the amount of current supplied by the controller to the proportional solenoid. Once the lower solenoid is energized, the solenoid valve shifts opening a flow path directly back to tank.

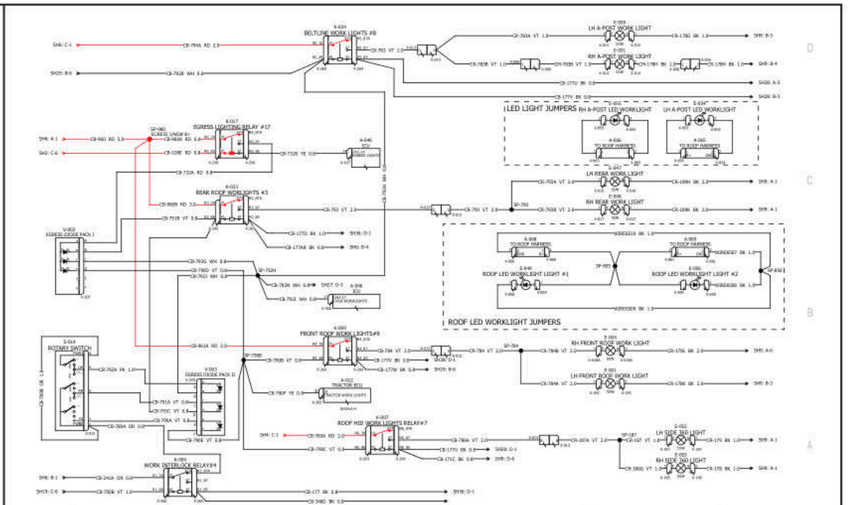
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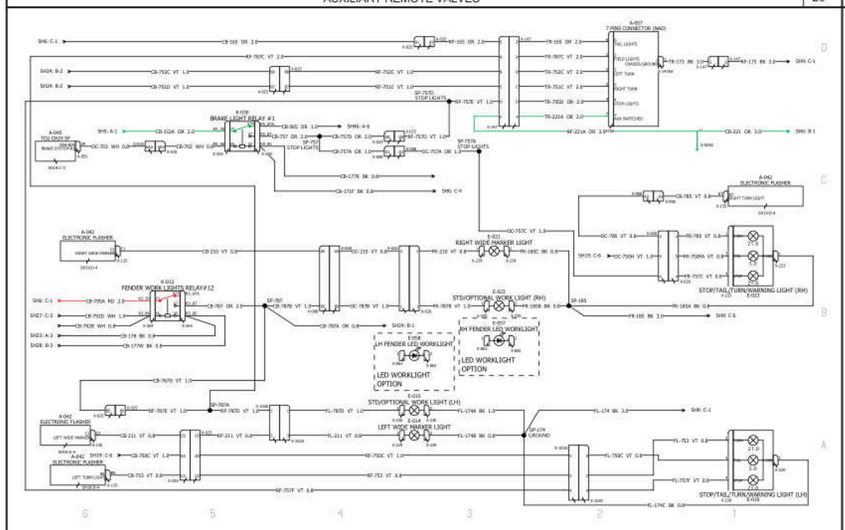
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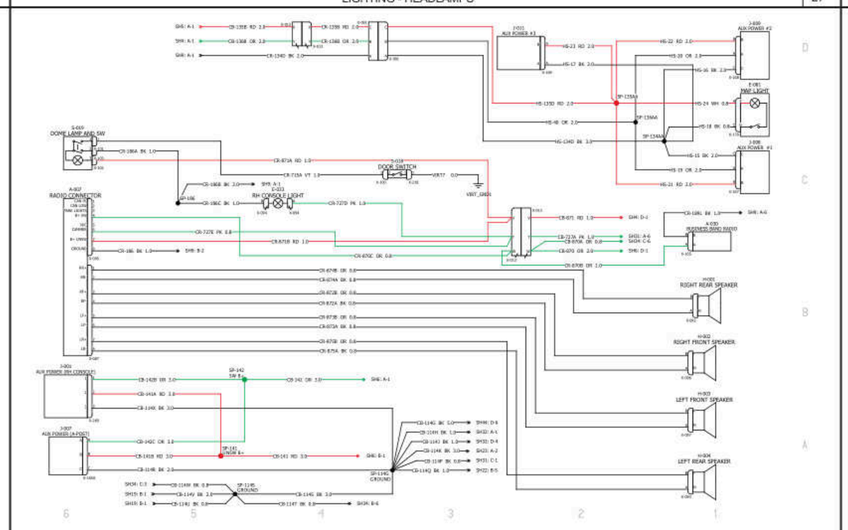
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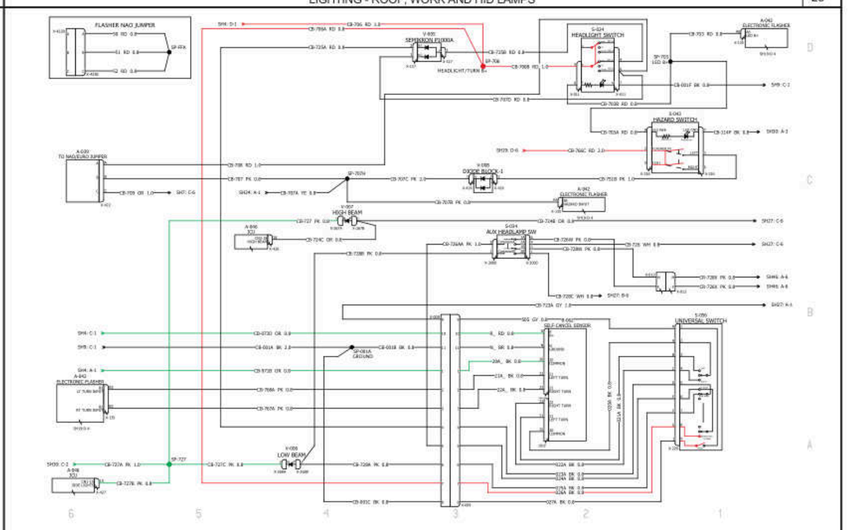
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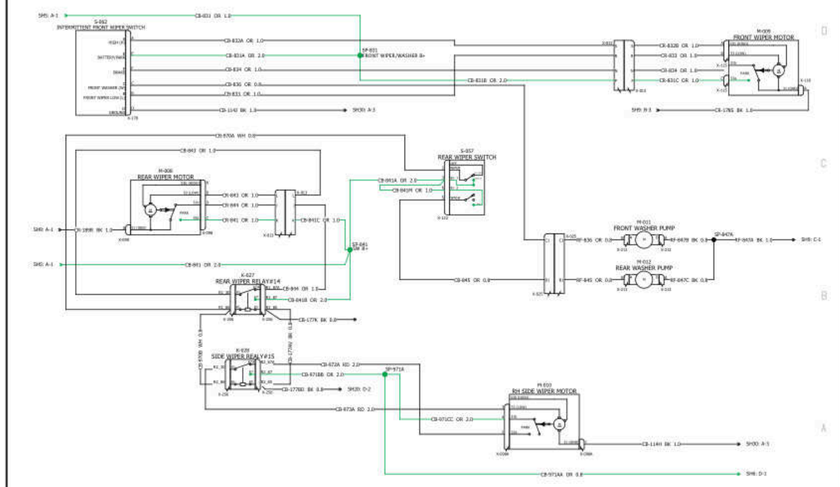
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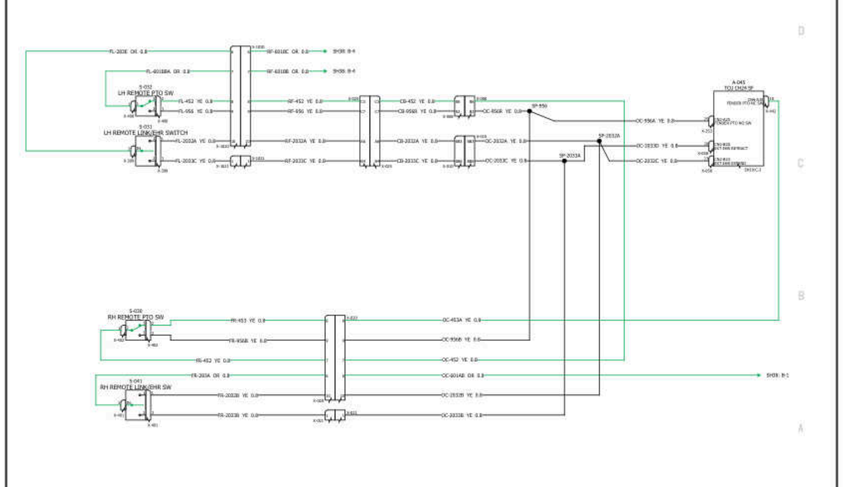
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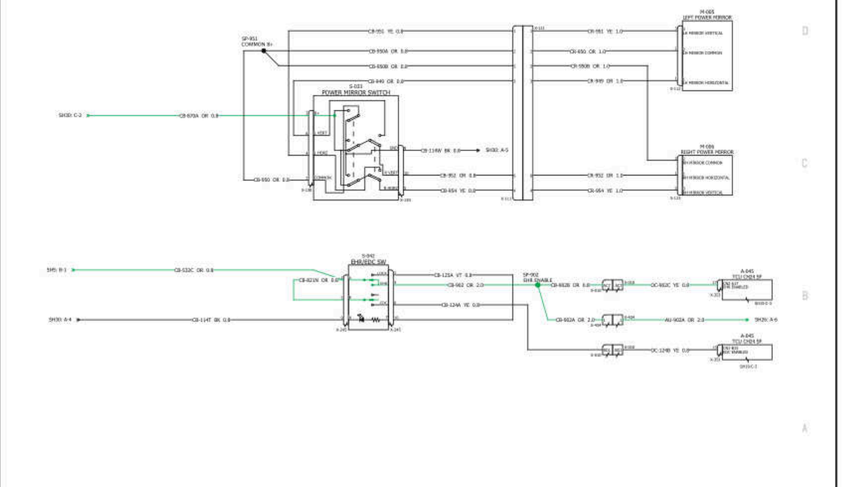
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