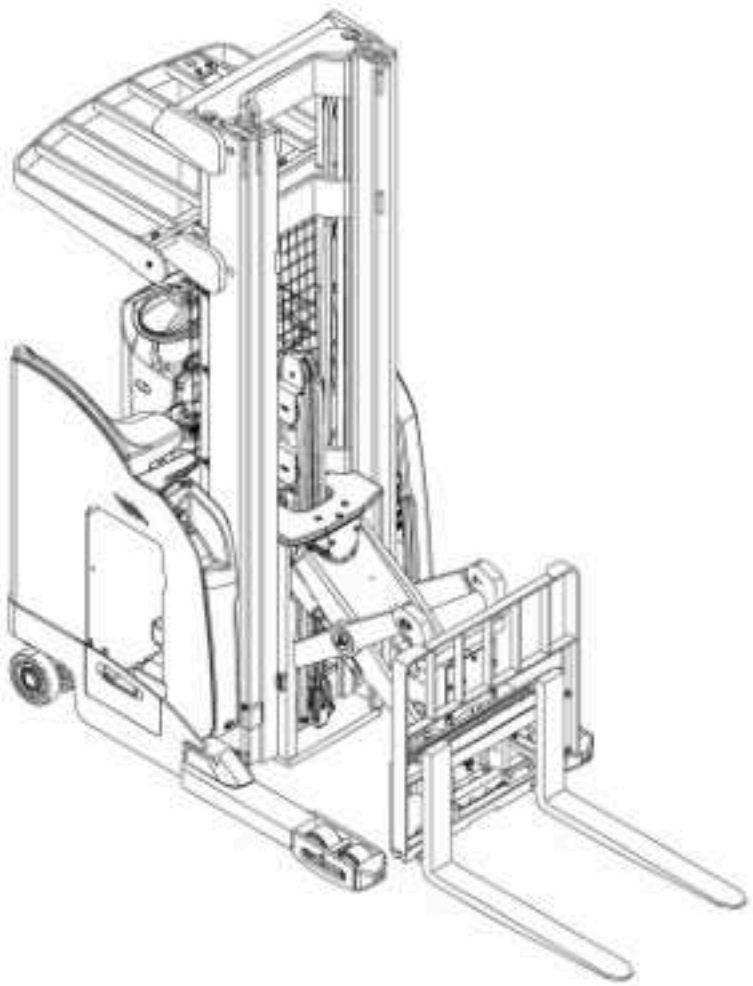
SERVICE MANUAL

E470 (N35ZR2, N40ZR2, N30ZDR2)



Rev. 06/14

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This section is for the following models:

N30XMXDR3, N45XMXR3 [B264];
N30XMH, N30XMH$_2$ [C210];
N25XMDR3, N30/40XMR3 [C470];
N50XMA3 [C471];
N30XMDR3, N45XMR3 [G138];
W30-40ZA [B453];
W20-30ZR [B455];
W25-30-40ZC [B454];
V30ZMD [D210/E210];
N35ZDR, N45ZR [C264];
N35ZDR2, N45ZR2 [D264];
N30ZDR, N35-40ZR [D470];
N35-40ZR2, N30ZDR2 [E470];
N30ZDRS, N35-40ZRS [A265];
N35-40ZRS2, N30ZDRS2 [B265];
W25-30ZA$_2$ [B495]

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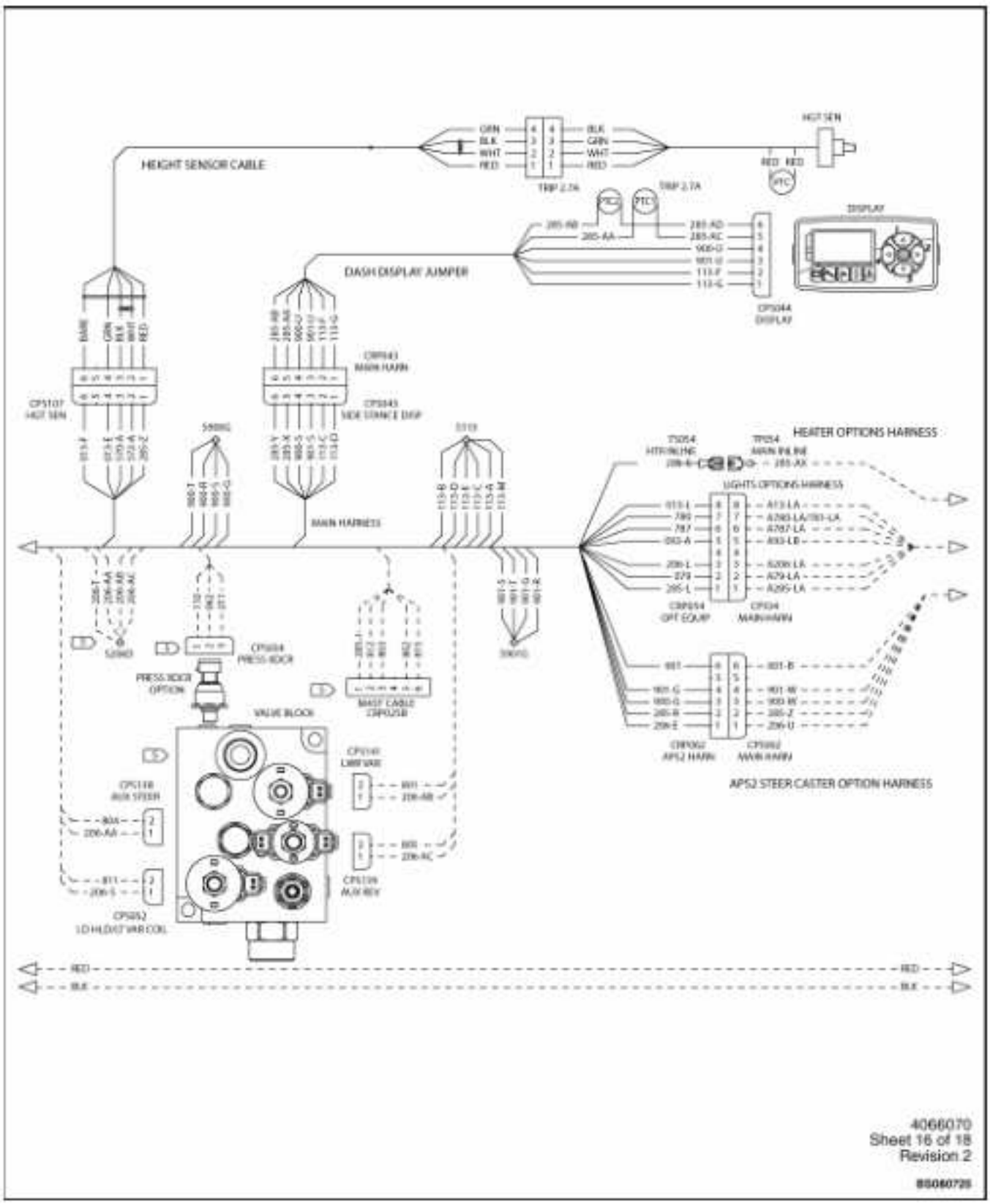
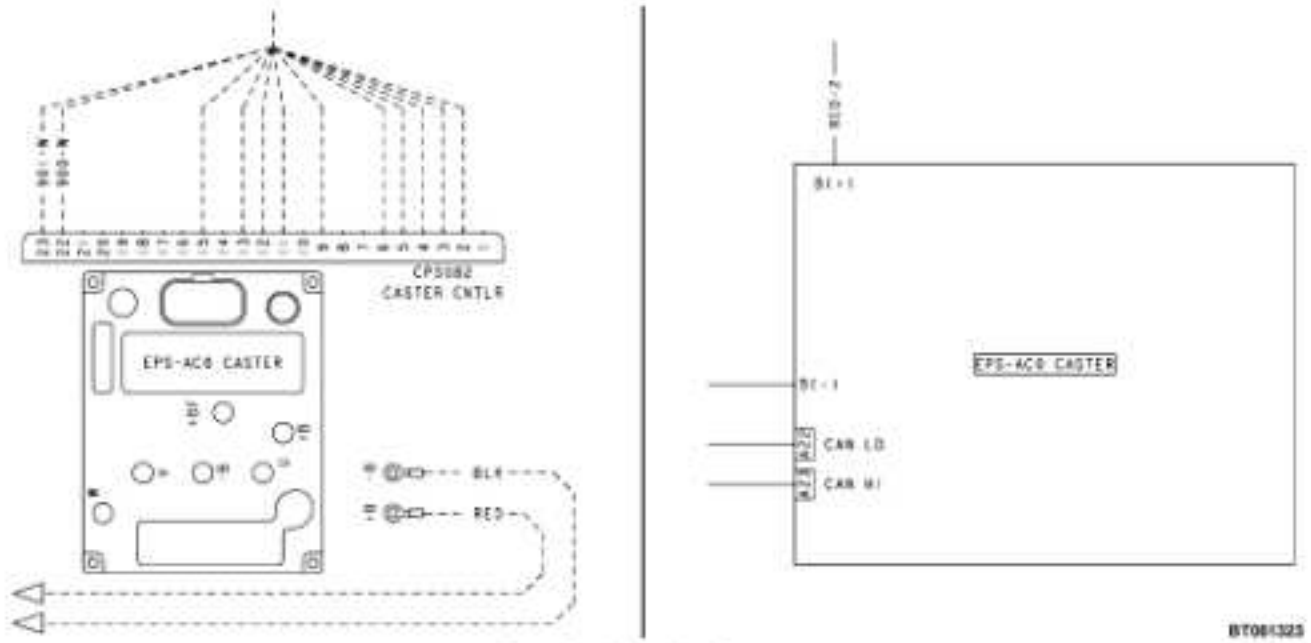


Figure 1. Schematic/Wiring Diagram (Sheet 16 of 18)

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DTC xx105 (Cont)
CANBus Communications - Caster Steer

DTC XX105 CANBUS COMMUNICATIONS - CASTER STEER DIAGRAMS



Troubleshooting Scenes

END FAULT

DTC xx106
CANBus Communications - Handle

POSSIBLE CAUSE

A. CANBUS COMMUNICATION FAULT
B. HANDLE WIRING FAULT

NOTE

Please refer to the end of this procedure for supporting diagrams.

COMPONENT OPERATIONAL CHECK

NOTE: Always check battery condition and state of charge before performing electrical troubleshooting. A faulty or low charged battery will cause electrical features to not operate as designed and give incorrect readings while performing electrical tests.

PROCEDURE OR ACTION:

1. Conduct a visual inspection of all connectors/wiring associated with the fault code.
   Are any faults detected/observed?
   YES: Repair/replace connector or wiring associated with faults found. Refer to the appropriate **Electrical System** SRM.
   NO: Proceed to Step 2.
2. Re-key the vehicle.

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Hydraulic System

N30ZDRS2, N35-40ZRS2, N35ZDR2, N45ZR2,N30ZDR2, N35-40ZR2				
Hydraulic System	**Motor**	**Pump Displacement**	**Speed (RPM)**	**Max Pump Pressure**
Main Lift Pump and Motor	36V	25.00cc	105 to 3300	20.68 MPa (3000 psi)
	36V Hi Performance	28.00cc	105 to 3300	20.68 MPa (3000 psi)
	36V - EE	20.00cc	105 to 3300	20.68 MPa (3000 psi)
Auxiliary Pump and Motor	24V/36V	2.08cc	600 to 3500	17.92 MPa (2600 psi)
N30ZDRS2, N35-40ZRS2, N35ZDR2, N45ZR2,N30ZDR2, N35-40ZR2				
Hydraulic System	**Motor**	**Pump Displacement**	**Speed (RPM)**	**Max Pump Pressure**
Main Lift Pump and Motor	24V	19.20cc	105 to 3300	20.68 MPa (3000 psi)
	36V	19.20cc	105 to 3300	20.68 MPa (3000 psi)

Relief Valves		
Model	**Valve Function**	**Relief Pressure[1]**
N30ZDRS2, N35-40ZRS2, N35ZDR2, N45ZR2,N30ZDR2, N35-40ZR2	Main Lift Relief Valve Pressure	20.99 MPa (3045 psi)
	Auxiliary Relief Valve Pressure	17.92 MPa (2600 psi)
N30ZDRS2, N35-40ZRS2, N35ZDR2, N45ZR2,N30ZDR2, N35-40ZR2	Main Lift Relief Valve Pressure	17.24 MPa (2500 psi)
[1]All measurements made when hydraulic oil temperature is 38 to 66°C (100 to 150°F).		

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Remote Module Tilt Coil (Cont)

2. Disconnect the remote module connector CPS85 and measure resistance between socket 4 and the tilt coil connector CPS68, socket 2.
   Is resistance <1 ohm?
   YES: Proceed to Cause B.
   NO: Inspect mast cable and circuit 10B/Black for damage.

END POSSIBLE CAUSES

CAUSE B - TILT COIL FAULT

PROCEDURE OR ACTION:

1. Measure resistance between the tilt coil's positive and negative terminals.
   Is resistance 40 ± 4.0 ohms?
   YES: Proceed to Cause C.
   NO: Replace faulty tilt coil.

END POSSIBLE CAUSES

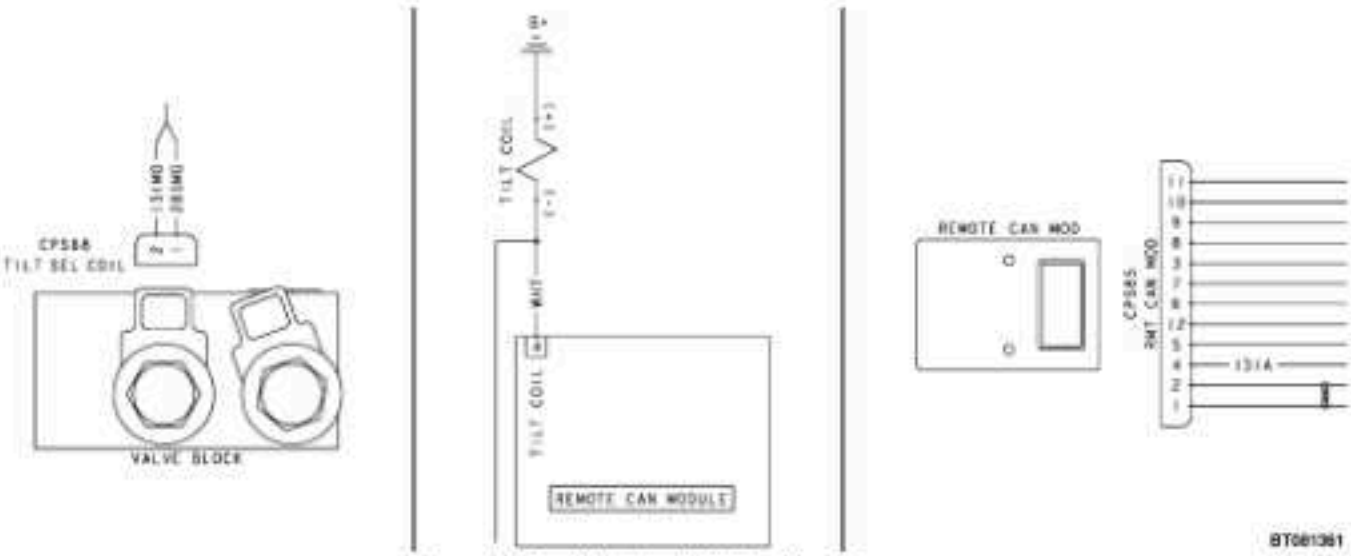
CAUSE C - FAULTY REMOTE MODULE

PROCEDURE OR ACTION:

1. If no faults are found, replace controller. Make sure to indicate the DTC code(s) on the warranty claim to include an accurate problem description leading to controller replacement.

END POSSIBLE CAUSES

DTC 91011 REMOTE MODULE - TILT COIL - CIRCUIT DIAGRAMS



Remote Module Troubleshooting Scenes

END FAULT

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DTC 50069 (Cont)
Pump - Capacitor - Charge

CAUSE B - FAULTY INTEGRATED FUSE BOARD

PROCEDURE OR ACTION:

NOTE: Key in OFF position.

1. Disconnect the integrated fuse board connector CPS001 and measure voltage between the integrated fuse board, pin 6 and B(-).
   Is precharge voltage same as battery voltage?
   YES: Connect connector CPS001 and proceed to Cause C.
   NO: Replace faulty integrated fuse board.

END POSSIBLE CAUSES

CAUSE C - PUMP CONTROLLER WIRING FAULT

PROCEDURE OR ACTION:

NOTE: Key in OFF position.

1. Measure voltage between the pump controller B(+) terminal and B(-).
   Is precharge voltage same as battery voltage?
   YES: Proceed to Cause D.
   NO: Inspect pump controller B(+) bus bar and cables for damage or loose connections.

END POSSIBLE CAUSES

CAUSE D - FAULTY PUMP CONTROLLER

PROCEDURE OR ACTION:

1. If no faults are found, replace controller. Make sure to indicate the DTC code(s) on the warranty claim to include an accurate problem description leading to controller replacement.

END POSSIBLE CAUSES

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