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Section 249 - ELECTRICAL CONNECTORS, WIRING HARNESSES, AND COMPONENTS

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Section 250C - POWRQUAD™ TRANSMISSION

Group 05 - PowrQuad™ Transmission - General Information

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CCU 000237.31- VIN Information, Incorrect

11

The diagnostic trouble code is generated when control software detects that the vehicle identification number is not being received from other control units / control software, or received incorrectly. All active VIN participants have to send the programmed vehicle identification number to the control software at regular intervals.

Diagnostics

Reaction of the control software: Limited function of the vehicle.

(1) Check the diagnostic trouble code

Action:

1. Access, record and delete the diagnostic trouble codes for this control software. See Procedure for Dealing with Diagnostic Trouble Codes in Section 245.
2. Switch the ignition switch off, wait for one minute and then switch it on again.
3. Check to see if DTC reappears.
4. If the problem only occurs occasionally, repeat the test until the diagnostic trouble code reappears.

Result:

YES: Diagnostic trouble code does not reappear. Diagnostics completed.

NO: Diagnostic trouble code reappears. GO TO 2 .

(2) Check circuit

Action:

1. Diagnostic trouble codes that indicate a problem at the CAN bus take priority.
2. Perform VIN Security Fault Diagnosisin Section 240.

Result:

YES: Diagnostics completed.

NO: Problem still exists.• Perform 50ZZ - Main Control Unit, Test , Section 240. • Perform General Information - Electrical System, Troubleshooting Unsolved Problems , Section 210.

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For diagnostic procedure (test steps), see the relevant CTM for diesel engines:

- **000655.13**

Vehicle-related information in the diagnostics manual:

- For details of location and information on components, see X5021 - Injection Valves on 6-Cylinder Engines (Y086, Y087, Y088, Y089, Y090, Y091), Component Information in Section 249.
- For an overview of the circuit (layout of leads), see:
  - 50FA - Fuel System (Cab), Diagnostic Schematic , Section 240.
  - 50FA - Fuel System (Open Operator's Station), Diagnostic Schematic , Section 240.

ECU 000655.18- Injection Valve 5 Fault

17

Fuel flow of injection valve is lower than expected.

IMPORTANT:

The connector and lead numbers specified for diesel engines in the CTM can deviate from the actual wiring harness on the vehicle. For the diagnostic procedure of the ECU diagnostic trouble codes, follow the test steps of the corresponding CTM for diesel engines and also always observe the diagnostic schematics and wiring harness, connector and component information in the corresponding diagnostics manual for the vehicle .

For diagnostic procedure (test steps), see the relevant CTM for diesel engines:

- **000655.18**

Vehicle-related information in the diagnostics manual:

- For details of location and information on components, see X5021 - Injection Valves on 6-Cylinder Engines (Y086, Y087, Y088, Y089, Y090, Y091), Component Information in Section 249.
- For an overview of the circuit (layout of leads), see:
  - 50FA - Fuel System (Cab), Diagnostic Schematic , Section 240.
  - 50FA - Fuel System (Open Operator's Station), Diagnostic Schematic , Section 240.

ECU 000656.02- Part Number of Injector 6 Invalid

17

Incorrect part number entered in ECU.

IMPORTANT:

The connector and lead numbers specified for diesel engines in the CTM can deviate from the actual wiring harness on the vehicle. For the diagnostic procedure of the ECU diagnostic trouble codes, follow the test steps of the corresponding CTM for diesel engines and also always observe the diagnostic schematics and wiring harness, connector and component information in the corresponding diagnostics manual for the vehicle .

For diagnostic procedure (test steps), see the relevant CTM for diesel engines:

- **000656.02**

Vehicle-related information in the diagnostics manual:

- For details of location and information on components, see X5021 - Injection Valves on 6-Cylinder Engines (Y086, Y087, Y088, Y089, Y090, Y091), Component Information in Section 249.
- For an overview of the circuit (layout of leads), see:

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HCC 523703.03- Draft Sensor (Right), Voltage Too High

241

The diagnostic trouble code is generated if the control software detects that the voltage at the signal input of the draft sensor (right) is too high (above 4.75 V). This indicates a short circuit to a positive lead.

Diagnostics

Reaction of the control software: Limited or no function of the hitch.

(1) Check the diagnostic trouble code

Action:

1. Access, record and delete the diagnostic trouble codes for this control software. See Procedure for Dealing with Diagnostic Trouble Codes in Section 245.
2. Try to reproduce the diagnostic trouble code. Perform an operational check of the faulty component/function, or perform a test drive. Then refresh the diagnostic trouble codes.
3. Check to see if DTC reappears.
4. If the problem only occurs occasionally, repeat the test until the diagnostic trouble code reappears.

Result:

YES: Diagnostic trouble code does not reappear. Diagnostics completed.

NO: Diagnostic trouble code reappears. GO TO 2 .

(2) Check circuit

Action:

Cab:

Perform B019 - Draft Sensor (Right), Circuit Test, Section 240.

Perform B020 - Left Draft Sensor (Cab), Circuit Test , Section 240.

OOS:

Perform B019 - Right Draft Sensor (Open Operator´s Station), Circuit Test , Section 240.

Perform B020 - Left Draft Sensor (Open Operator´s Station), Circuit Test , Section 240.

Result:

YES:• Circuit test completed and problem identified. Recondition as needed, and perform operational check.• All circuits are within specification. Replace the draft sensor (right) of the rear hitch and perform an operational check.

NO: Problem still exists. Perform General Information - Electrical System, Troubleshooting Unsolved Problems in Section 210.

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PTQ 523953.02- Reverse Drive Lever Out of Range

35

The diagnostic trouble code is generated if the control software detects a conflict between the switch position of the reverse drive lever and the drive signal of the TIQ control software and FCC control software. The reverse drive lever has to be moved to park position to reset this diagnostic trouble code.

Diagnostics

Reaction of the control software: Tractor automation is turned off.

(1) Check the diagnostic trouble code

Action:

1. Access, record and delete the diagnostic trouble codes for this control software. See Procedure for Dealing with Diagnostic Trouble Codes in Section 245.
2. Move reverse drive lever to park position.
3. Start the engine.
4. Check to see if DTC reappears.
5. If the problem only occurs occasionally, repeat the test until the diagnostic trouble code reappears.

Result:

YES: Diagnostic trouble code does not reappear. Diagnostics completed.

NO: Diagnostic trouble code reappears. GO TO 2 .

(2) Process any priority diagnostic trouble codes

Action:

Diagnostic trouble codes in the TIQ and FCC control software that may be associated with an internal problem take priority.

Result:

YES: Diagnostic trouble code does not reappear. Diagnostics completed.

NO: There are no priority diagnostic trouble codes. GO TO 3 .

(3) Check electrical circuit

Action:

Perform test, see 50ZZ - Main Control Unit, Test and A082 - Reverse Drive Lever, Circuit Test , Section 245.

Result:

YES: Diagnostic trouble code does not reappear. Diagnostics completed.

NO:• All circuits are within specification. Replace lever, see A082 - Reverse Drive Lever, Component Information , and perform operational check. • Problem still exists. Perform General Information - Electrical System, Troubleshooting Unsolved Problems , Section 210.

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SFA 523964.06- Solenoid Valve for Suspended Front-Wheel Drive Axle Pressure Reduction, Current Too High

39

The diagnostic trouble code is generated if the control software registers that the voltage at the signal input of the solenoid valve for pressure reduction of the suspended front-wheel drive axle is too high. This indicates a short circuit to ground. This may also indicate an overheated solenoid valve.

Diagnostics

Reaction of the control software: Suspended front-wheel drive axle is disabled.

(1) Check the diagnostic trouble code

Action:

1. Access, record and delete the diagnostic trouble codes for this control software. See Procedure for Dealing with Diagnostic Trouble Codes in Section 245.
2. Try to reproduce the diagnostic trouble code. Perform an operational check of the faulty component/function, or perform a test drive. Then refresh the diagnostic trouble codes.
3. Check to see if DTC reappears.
4. If the problem only occurs occasionally, repeat the test until the diagnostic trouble code reappears.

Result:

YES: Diagnostic trouble code does not reappear. Diagnostics completed.

NO: Diagnostic trouble code reappears. GO TO 2 .

(2) Check the circuit

Action:

Perform circuit test for the following components:

- Y068 - Solenoid Valve for Suspended Front-Wheel Drive Axle Pressure Reduction, Circuit Test

, Section 240.

Result:

YES:• Circuit test completed and problem identified. Repair as required.• All circuits are within specification. Perform operational check of the individual components and replace if necessary.

NO: Problem still exists. Perform General Information - Electrical System, Troubleshooting Unsolved Problems in Section 210.

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XSC 523824.16- Steering Wheel Position Sensor, Frequency on Channel 2 Too High

322

A frequency of over 300 Hz is registered on channel 2 of the steering wheel position sensor.

Diagnostics

Reaction of the control software: Limited or no function of control unit

(1) Check the diagnostic trouble code

Action:

1. Access, record and delete the diagnostic trouble codes for this control software. See Procedure for Dealing with Diagnostic Trouble Codes in Section 245.
2. Try to reproduce the diagnostic trouble code. Perform an operational check of the faulty component/function, or perform a test drive. Then refresh the diagnostic trouble codes.
3. Check to see if diagnostic trouble code reappears.
4. If the problem only occurs occasionally, repeat the test until the diagnostic trouble code reappears.

Result:

YES: Diagnostic trouble code does not return. Diagnostics completed.

NO: Diagnostic trouble code reappears. GO TO 2 .

(2) Circuit test

Action:

Perform B138 - Steering Wheel Position Sensor, Circuit Test , Section 240.

Result:

YES:• Circuit test completed and problem identified. Recondition as needed and perform an operational check.• All circuits are within specification. Replace B138 - Steering Wheel Position Sensor, and perform operational check.

NO: Problem still exists. Perform troubleshooting; see General Information - Electrical System, Troubleshooting Unsolved Problems in Section 210.

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3. Check that the resistance meets the following specification:

Item	Measurement	Specification
Continuity check of lead		
Resistance of Lead	Resistance	0—1 Ω

Result:

YES:GO TO 3 .

NO: Recondition defective lead and perform operational check.

(3) Check lead for short to ground

Action:

1. Ignition switch OFF.
2. Use a multimeter to measure the resistance between slot K002, pin 1 (6076) and ground.

Result:

YES:GO TO 4 .

NO: Repair defective lead 6076 and perform operational check.

(4) Check lead 0612

Action:

1. Ignition switch OFF.
2. Use a multimeter to measure the voltage between slot K002, pin 3 and ground.
3. Check if the voltage complies with the following specification:

Item	Measurement	Specification
Check lead		
Circuit Voltage	Voltage	11.5 V - 14.0 V

Result:

YES:GO TO 5 .

NO: Recondition defective lead and perform operational check.

(5) Visual inspection of connector

Action:

1. Ignition switch OFF.
2. Remove relay K003 from slot.
3. Check the slot for any dirty, pushed back or loose pins. See General Information - Electrical System, Check Connectors in Section 210.

Result:

YES:GO TO 6 .

NO: Repair the slot and perform operational check.

(6) Continuity check of lead 0009

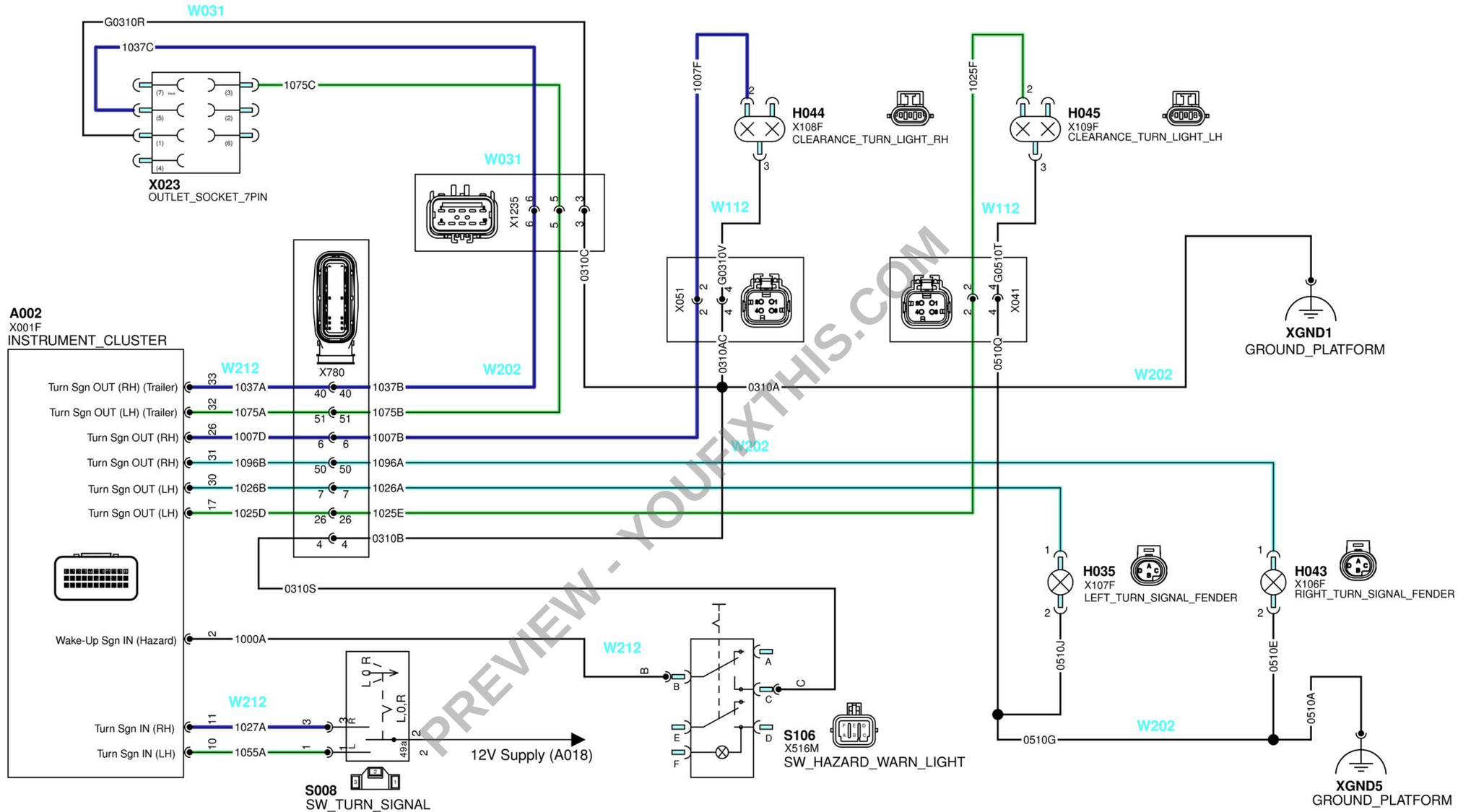
Action:

1. Ignition switch OFF.

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50BD - Turn-Signal Lights (Open Operator's Station) (SAE), Diagnostic Schematic



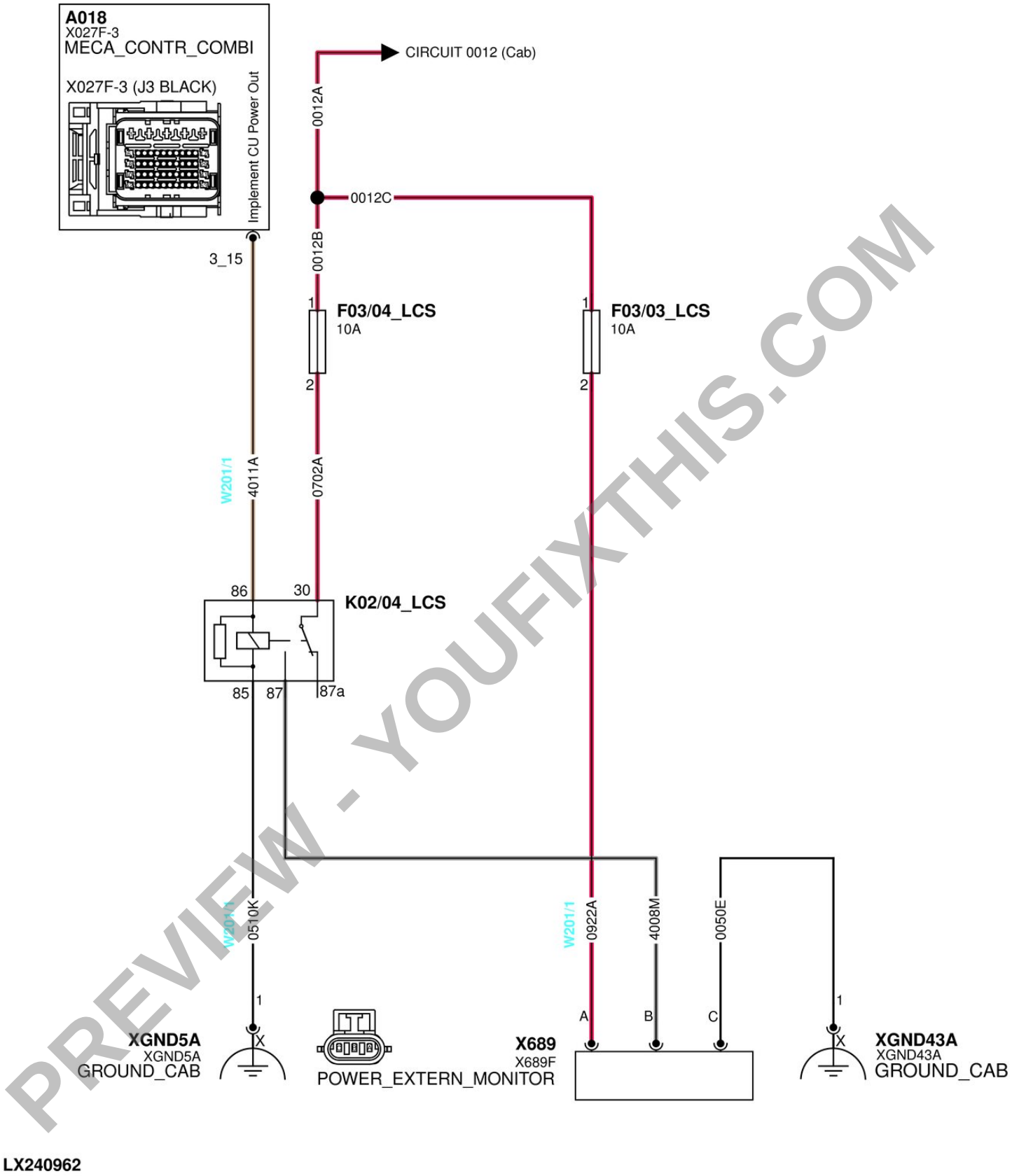
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Turn-Signal Lights (Open Operator's Station) (SAE)

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50EA - Connector for External Display (X689), Diagnostic Schematic



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Connector for External Display (X689)

LEGEND:

A018	A018 - Main Control Unit, Component Information
F03/03_LCS	LCS - Fuses, Relays and Diodes (Cab), Component Information
F03/04_LCS	LCS - Fuses, Relays and Diodes (Cab), Component Information
K02/04_LCS	LCS - Fuses, Relays and Diodes (Cab), Component Information
W201/1	W201/1: Cab Wiring Harness (PowrQuad™ Transmission)
X689	X689F - Connector of Power Supply for External Display

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NO: Repair connector and perform operational check.

(3) Check supply voltage

Action:

1. Key switch ON (engine OFF).
2. Use a multimeter to measure the voltage between connector X088F, pin A (6102) and ground.
3. Check if the voltage complies with the following specification:

Item	Measurement	Specification
Wheel Speed Sensor		
Circuit Voltage	Voltage	5 V

Result:

YES:GO TO 4 .

NO:GO TO 5 .

(4) Visual inspection of connector

Action:

1. Ignition switch OFF.
2. Disconnect connector X027F-2 from component. See A018 - Main Control Unit, Component Information .
3. Check the connector for any dirty, pushed back or loose pins. See General Information - Electrical System, Check Connectors in Section 210.

Result:

YES:GO TO 5 .

NO: Repair connector and perform operational check.

(5) Check leads for shorts to ground

Action:

1. Ignition switch OFF.
2. Use a multimeter to check for short to ground as follows:
   - Between connector X027F-2, pin 40 (6102) and ground.

Result:

YES:GO TO 6

NO: Short to ground present. Recondition defective lead and perform operational check.

(6) Continuity check of lead 6102

Action:

1. Ignition switch OFF.
2. Use a multimeter to measure resistance between connector X027F-2, pin 40 (6102) and connector X88F, pin A (6102).
3. Check that the resistance meets the following specification:

Item	Measurement	Specification
Continuity check of lead		
Resistance of Lead	Resistance	0—1 Ω

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- Between connector X633F, pin 6 (6033) and connector X027F-1, pin J1-J3 (6033).

3. Check that the resistance meets the following specification:

Item	Measurement	Specification
Continuity check of leads		
Resistance of Lead	Resistance	0—1 Ω

Result:

YES:GO TO 3 .

NO: Recondition defective lead and perform operational check.

(3) Check leads for shorts to ground

Action:

1. Ignition switch OFF.
2. Use a multimeter to check for short to ground as follows:
   - Between connector X633F, pin 1 (6033) and ground.
   - Between connector X633F, pin 2 (6031) and ground.
   - Between connector X633F, pin 3 (4026) and ground.
   - Between connector X633F, pin 4 (4027) and ground.
   - Between connector X633F, pin 5 (6031) and ground.
   - Between connector X633F, pin 6 (6033) and ground.

Result:

YES: Replace B139 - Wheel Angle Sensor, and perform operational check.

NO:• Repair defective lead and perform an operational check.• General Information - Electrical System, Troubleshooting Unsolved Problems

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S075 - LIN Bus Module (Multi-Function Lever), Circuit Test

Additional references:

- **Diagnostic schematic:**
  - 50ID - LIN Bus - Battery Cut-Off Relay, Diagnostic Schematic , Section 240.
- **Component:** For details of location and information on components, see:
  - S075 - LIN Bus Module (Multi-Function Lever), Component Informationin Section 249.

→NOTE:

When the key switch is ON, disconnected connectors may cause additional diagnostic trouble codes. The fault memory must be cleared once the circuit/harness test has been completed.

Test Procedure

→NOTE:

Required tools:

1. **JT05791A or JDG1478- Multimeter.**
2. **JDG10466- Flexible Test Kit**

→NOTE:

Unless stated otherwise, use a chassis ground point for voltage checks.

→NOTE:

To identify corroded, damaged or pinched leads, it might be necessary to test the leads under load.

Refer to: General - Electrical System, Test for Open Circuit under Load , Section 210.

→NOTE:

When ignition is ON, disconnected connectors may cause additional diagnostic trouble codes. The fault memory must be cleared once the circuit/harness test has been completed.

(1) Visual inspection of connector

Action:

1. Ignition switch OFF.
2. Disconnect connector X343F from component.See S075 - LIN Bus Module (Multi-Function Lever), Component Information
3. Check the connectors for any dirty, pushed back or loose pins. See General Information - Electrical System, Check Connectors in Section 210.

Result:

YES:GO TO 2 .

NO: Repair connector and perform operational check.

(2) Check supply voltage

Action:

1. Key switch ON (engine OFF).
2. Use a multimeter to measure the voltage at connector X343F between pin 1 (6103) and pin 4 (0050).
3. Check if the voltage complies with the following specification:

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EIC 103 - Key for Immobilizer (Programmed ID for Key Number 3) 219
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FCC 008 - Turn-Signal Switch, Status 233
FCC 009 - Light Switch, Status 234
FCC 010 - High-Beam Switch, Wake-up Signal and ELX Supply Voltage, Status 235
FCC 011 - Windshield Wiper Switch, Status 236
FCC 012 - Rear Window Wiper Switch, Status 237
FCC 013 - Supply Voltage (BAT) 237
FCC 014 - Supply Voltage (ELX) 237
FCC 015 - Reverse Drive Lever, Status 238
FCC 016 - Output for Left Turn-Signal Light on Cab Frame (ECE) or on Front of Roof (SAE), Current and Status 239
FCC 017 - Output for Right Turn-Signal Light on Cab Frame (ECE) or on Front of Roof (SAE), Current and Status 240
FCC 018 - Supply Voltage (BAT), Current and Status 241
FCC 019 - Wake-Up Signal (ELX), Current and Status 242
FCC 020 - Reverse Drive Lever, Indicator Light, Current and Status 243
FCC 036 - Output for Left Turn-Signal Light (Trailer Socket), Current and Status 244
FCC 037 - Output for Right Turn-Signal Light (Trailer Socket), Current and Status 245
FCC 048 - Output for Left Turn-Signal Light on Rear of Fender, Current and Status 246
FCC 049 - Output for Right Turn-Signal Light on Rear of Fender, Current and Status 247
FCC 050 - Transmission Type, Configuration 248
FCC 051 - Reverse Drive Lever, Configuration 248
FCC 052 - Turn-Signal Lever, Configuration 248
FCC 053 - Light Switch, Configuration 248
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FCC 055 - Address for Factory Use Only, Configuration 249
FCC 056 - Address for Factory Use Only, Configuration 249

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ECU Control Software, Summary of Addresses		
036	DIA	ECU 036 - Water-in-Fuel Sensor B5600
037	NU	ECU 037 - Not Used
038	DIA	ECU 038 - Sensor for Fuel Rail Pressure B5113
039	DIA	ECU 039 - Calculated Travel Speed
040	DIA	ECU 040 - Fan Speed Y137
041	NU	ECU 041 - Calculated Fan Speed Y137
042	DIA	ECU 042 - Barometric Pressure Sensor The sensor is located in the engine control unit
045	NU	ECU 045 - Not Used
046	NU	ECU 046 - Not Used
047	DIA	ECU 047 - Exhaust Manifold Pressure Sensor B5102
048	NU	ECU 048 - Not Used
049	NU	ECU 049 - Not Used
059	INP	ECU 059 - Harness Test, Configuration 1 - Activate **→NOTE:** **When setting is changed from 1 to 0, the harness test starts again.**
062	INP	ECU 062 - Test for Hydraulic Motor of Charge Air Cooler, Configuration 1 - Activate (max. speed) 0 - OFF
070	DIA	ECU 070 - EGR Temperature Sensor B5207
071	DIA	ECU 071 - Charge Air Cooler Outlet Air Temperature Sensor B5205
072	DIA	ECU 072 - Calculated VGT Inlet Temperature
073	DIA	ECU 073 - Ambient Temperature
074	DIA	ECU 074 - VGT Actuator, Percent Y5500
075	NU	ECU 075 - Not Used
076	NU	ECU 076 - Not Used
077	NU	ECU 077 - Not Used
078	NU	ECU 078 - Not Used
079	NU	ECU 079 - EGR Valve Actuator, Percent Y5400
080	NU	ECU 080 - Not Used
081	DIA	ECU 081 - Sensor Supply Voltage 6 (5 V) B5102 B5108 Y5400
082	DIA	ECU 082 - Sensor Supply Voltage 7 (5 V) B5103 B5207
083	DIA	ECU 083 - Sensor Supply Voltage 8 (5 V) B5109 B5204 B5212
084	NU	ECU 084 - Not Used
087	DIA	ECU 087 - Exhaust Filter Temperature Module, DOC Inlet Temperature B5204
088	DIA	ECU 088 - Exhaust Filter Temperature Module, DOC Outlet Temperature B201
089	DIA	ECU 089 - Exhaust Filter Temperature Module, DPF Outlet Temperature B5204
090	DIA	ECU 090 - DPF Differential Pressure Sensor B5204

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RPT 027 - Operator Presence Switch, EOL Configuration

Read-only address

- Turn ignition ON.

RPT 027 - Operator Presence Switch, EOL Configuration

RPT 027 - Operator Presence Switch, EOL Configuration	Status
not present	X0
present	X1
Information about Operator Absence **OFF**	0X
Information about Operator Absence **ON**	1X

RPT 029 - Tractor Series, EOL Configuration

Read-only address

- Turn ignition ON.

RPT 029 - Tractor Series, EOL Configuration

RPT 029 - Tractor Series, EOL Configuration	Status

RPT 030 - Allocation of Rear PTOs by Model, EOL Configuration

Read-only address

- Turn ignition ON.

RPT 030 - Allocation of Rear PTOs by Model, EOL Configuration

RPT 030 - Allocation of Rear PTOs by Model, EOL Configuration	Status
No Rear PTO Present	0
Rear PTOs with Proportional Solenoid Valve (PAPTOS) Present	4

RPT 032 - Number of Available Rear PTO Speeds, EOL Configuration

Read-only address

- Turn ignition ON.

RPT 032 - Number of Available Rear PTO Speeds, EOL Configuration

RPT 032 - Number of Available Rear PTO Speeds, EOL Configuration	Status
Rear PTO speed 2	2
Rear PTO speed 3	3

RPT 034 - With 2 Rear PTO Speeds (540 /1000), EOL Configuration

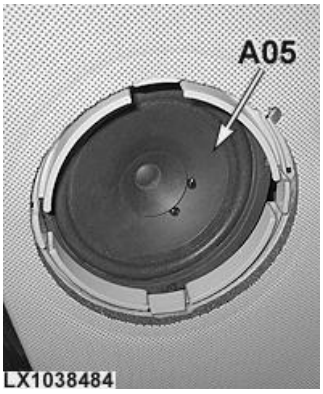
Read-only address

- Turn ignition ON.

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A005 - Left Front Speaker, Component Information



A005 - Left Front Speaker



A005 - Left Front Speaker

Component information

A005 **Component information**	
Connector:	X283F-1 X283F-2
Wiring harness:	For W221, see Summary of Wiring Harnesses, Summary of References in Section 249, Group 40.
Circuit:	50CF - Radio, Summary of References in Section 240, Group 50CF.
Ground connection:	-
Specifications:	Impedance: 4 ohms Nominal load capacity: 15 watts Band width: 70 - 20000 Hertz For more information, see: • Component Testing
Torque:	-

X283F-1 - Connector of Left Front Speaker

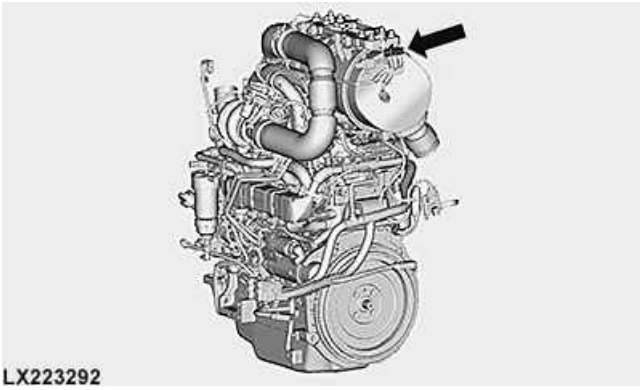
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B5109 - Sensor for DPF Differential Pressure, Component Information

Tractors with Final Tier 4 / Stage IV Platform diesel engines (ECU Level 33), engine serial number: CD6068UXXXXXX; and (ECU Level 34) engine serial number: CD4045UXXXXXX

B5109 - 6100M to 6145M tractors



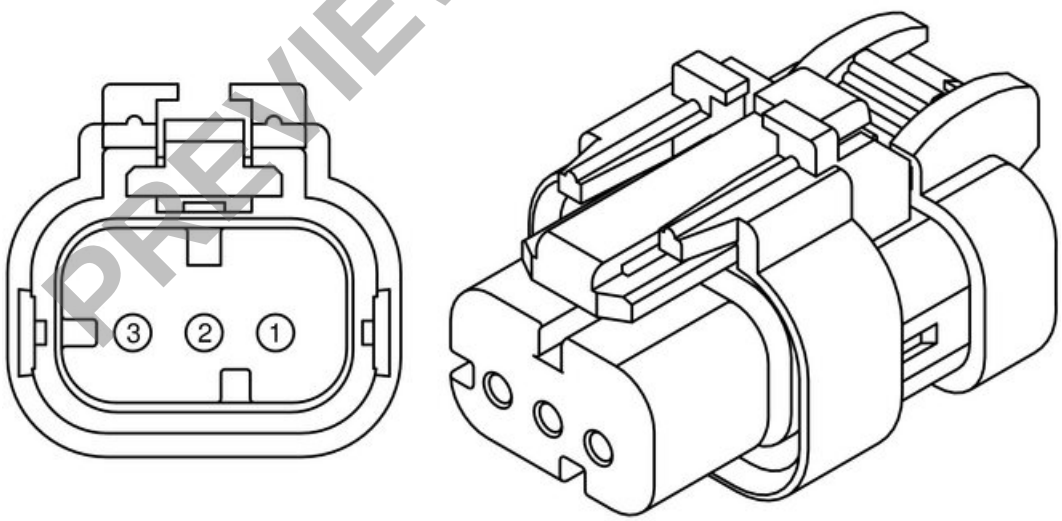
B5109

→NOTE:

The component is covered in the relevant CTM for diesel engines (Final Tier 4/Stage IV Platform).

Component information

B5109 **Component information**	
Connector:	X670F
Wiring harness:	For W531, see Summary of Wiring Harnesses, Summary of References in Section 249, Group 40.
Circuit:	50FA - Electronic Engine Control, Summary of References in Section 240, Group 50FA.
Ground connection:	-



LX1054021

X670F-2

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70 A Relay, Component Information



LX1044229

70 A relay

Component information

70 A relay **Component information**	
Connector:	For tractors with a cab: K04LCS/01; K002; K003; K068 For tractors with an open operator's station: K002; K003
Wiring harness:	W201, W401 and W511 on tractors with cab, see Summary of Wiring Harnesses, Summary of References in Section 249, Group 40 W511 on tractors with open operator's station, see Summary of Wiring Harnesses, Summary of References in Section 249, Group 40
Circuit:	On tractors with cab, see 30A - Electrical System - Summary of Schematics (Cab) , Section 240, Group 30 On tractors with open operator's station, see 30A - Electrical System - Summary of Schematics (Open Operator's Station) , Section 240, Group 30
Ground connection:	50X - Ground Connections, Summary of References in Section 240, Group 50X
Specifications:	Operating voltage: 9 - 15 volts Coil resistance: 100 ohm Switch capacity: Switch-on current 70 A max. For more information, see: • Component Testing

Component Testing

(1) Check the 70-amp relay

Action:

Perform a visual inspection of the component and the associated connectors:

1. Check for signs of damage or dirt.
2. Check the electrical connections for bad, loose, widened, slid-back or corroded contacts; also check the leads.
3. Use a JT05791A or JDG1478multimeter to check for continuity at the component, between pin 30 (3) and pin 87 (5). If the relay coil is not energized, no continuity is present from pin (30) 3 to pin (87) 5. If 12 volts are applied at pin 86 (1) and ground current is applied at pin 85 (2), there is continuity between pin 30 (3) and pin 87 (5).
4. Use JT05791A or JDG1478multimeter to measure resistance at the relay between pins 85 (2) and 86 (1):

→NOTE: The component must be disconnected from the circuit before performing continuity tests.

Item	**Measurement**	**Specification**
70 A relay		
Relay coil:	Resistance	Approx. 90 - 100 Ω
Relay coil de-energized:	Continuity	30 (3) and 87 (5) Open
Relay coil energized:	Continuity	30 (3) and 87 (5) Closed

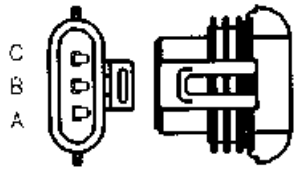
Result:

YES: Test complete.

NO: Replace component and perform an operational check

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LX1017885

X024F-1 - Connector of Differential Lock Switch with Auto Function

Connector information

X024F-1 Connector Information	
Number of pins:	3
Spare part number:	57M7255
Color:	Black
Manufacturer / repair information:	For repair information, see Section 40, Group 05 of the relevant Repair Technical Manual.

Connector layout

X024F-1 Connector layout		
Pin no.	**Lead no.**	**Wire color**
A	6147	Purple
B	6111	Brown
C	0310	Black



LX1017882

X024F-2 - Connector of Differential Lock Switch with Auto Function

Connector information

X024F-2 Connector Information	
Number of pins:	2
Spare part number:	57M7254

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Connector information

X287M **Connector Information**	
Number of pins:	24
Spare part number:	57M8070
Color:	Black
Manufacturer / repair information:	For repair information, see Section 40, Group 05 of the relevant Repair Technical Manual.
Wiring harness:	W602, see Summary of Wiring Harnesses, Summary of References in Section 249, Group 40

Connector layout

X287M **Connector layout**		
Pin no.	**Lead no.**	**Wire color**
1	6107	Purple
2	6105	Green
3	6125	Green
4	6164	Yellow
5	6102	Red
6	7085	Green
7	7084	Yellow
8	7073	Orange
9	6128	Gray
10	6131	Brown
11	6015	Green
12	0510	Black
13	6121	Brown
14	0050	Black
15	6016	Blue
16	6022	Red
17	6076	Blue
18	9045	Green
19	9044	Yellow
20	7058	Gray
21	-	-
22	7078	Gray
23	-	-
24	-	-

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Connector information

X568F **Connector Information**	
Number of pins:	8
Spare part number:	57M7632
Color:	Gray
Manufacturer / repair information:	For repair information, see Section 40, Group 05 of the relevant Repair Technical Manual.

Connector layout

X568F **Connector layout**		
Pin no.	**Lead no.**	**Wire color**
1	5493	Orange
2	-	-
3	5495	Green
4	-	-
5	5498	Gray
6	5499	White
7	5492	Red
8	5496	Blue

Component Testing

(1) Check Y047 injection valves on 4-cylinder engines (ECU Level 16) (Y082, Y083, Y084, Y085)

Action:

Perform a visual inspection of the component and the associated connectors:

1. Check for signs of damage or dirt.
2. Check the electrical connections for bad, loose, widened, slid-back or corroded contacts; also check the leads.

Result:

YES: Test completed

NO: Replace component and perform an operational check

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J	Pressure Sensor for Oil Filter Indicator Light
K	Restrictor
L	Transmission Oil Filter
M	Oil cooler
N	Transmission oil pump
O	Lube Relief Valve
P	Return
Q	Primary filter screen
R	Main Oil Reservoir (Return)
S	Pressure Oil
T	Lube/Cooling Oil
U	Pressure-Free Oil

Illustration shows the situation with transmission oil filter extremely restricted (emergency situation).

If transmission oil filter (L) is not changed when the oil filter indicator light comes on, the filter becomes more and more restricted.

Oil pressure before the transmission oil filter continues to increase. At the same time, the pressure behind the filter drops even further.

From a difference in pressure of 450 kPa (4.5 bar; 65 psi), filter by-pass valve (I) switches to its 3rd stage and the oil flows directly to pressure-regulating valve (H). This oil is unfiltered. Impurities in the oil may lead to damage at the valves.

From a difference in pressure of 500 kPa (5 bar; 73 psi), filter by-pass valve switches to its 4th stage and oil can flow through an oil passage to lubricate the transmission. This reduces oil pressure and ensures lubrication at the same time.

Because of the low pressure behind the transmission oil filter, the pressure-regulating valve cannot operate. The spring on the pressure-regulating valve holds the valve spool in its 1st stage position. With the spool in this position, it is possible for unfiltered oil from the filter by-pass valve to enter the entire system.

With the pressure regulating valve in the position shown, no oil can flow to the oil cooler, and this prevents the pressure from dropping further. The transmission is lubricated by the filter by-pass valve, which also provides cooling for the disk clutch or disk brake.

The fact that oil flows through the pressure-regulating valve means that the oil pressure behind the transmission oil filter may rise slightly, and the filter by-pass valve moves back and forth between the 3rd and 4th stages.

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Brakes - Special Tools, Summary of References

Brakes - Special Tools, Summary of References



FKM10470 - Pressure Measuring System (Stage 1)

FKM10470 - Pressure Measuring System (Stage 1)

Pressure Measuring System (Stage 1)

FKM10470

Section 260B — Brakes



FKM10471 - Pressure Measuring System (Stage 2)

FKM10471 - Pressure Measuring System (Stage 2)

Pressure Measuring System (Stage 2)

FKM10471

Section 260B — Brakes



FKM10472-4 Temperature Sensor

FKM10472-4 - Temperature Sensor

Temperature Sensor

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Pressure control valve (priority 1) dirty or defective.

1. Check pressure control valve, see PC Hydraulic System - Repair the Priority Valve in Section 70 of the relevant Repair Manual.

Seal rings between hydraulic components are defective.

1. Check seal rings, see Section 70 of the relevant Repair Technical Manual.

LS check valve and LS restrictor (M-SCV I—IV, PB housing or M-SCV XI—XIII) dirty or defective.

1. Check valves and LS restrictor, see Repair the Selective Control Valves (SCVs) and Couplers - Summary of References in Section 70 of the relevant Repair Manual.

Result:

NO: Recondition as required and carry out an operational check. Then GO TO: 4

Action:

4.6 System pressure constantly at maximum pressure

Possible causes:

A control valve (e.g. steering valve, SCV, hitch valve, etc.) in the hydraulic system is not in neutral position or defective (stuck).

1. Check control valves in the hydraulic system and repair as necessary, see Section 70 of the relevant Repair Manual.

Pressure control valve (priority 1 or 3) dirty or defective.

1. Check pressure control valve, see PC Hydraulic System - Repair the Priority Valve in Section 70 of the relevant Repair Manual.

Result:

NO: Repair as needed and perform an operational check. Then GO TO: 4

(5) Priority circuit 1, check LS pressure (steering)

Action:

See PC Hydraulic System - Priority Circuit 1, Check LS Oil Pressure for Steering in Section 270.

Result:

YES:GO TO: 6

NO: Minimum LS pressure too low: GO TO: 5.1Minimum LS pressure too high: GO TO: 5.2Maximum LS pressure too low: GO TO: 5.3Maximum LS pressure too high: GO TO: 5.4

Action:

5.1 Priority circuit 1, minimum LS pressure (steering) too low

Possible causes:

Pressure reduction valve (priority 1, steering) dirty or defective.

Restrictor, dia. 0.7 mm (priority valve) dirty.

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