Foreword

This “Diagnostics” manual is valid for the following tractor types:

6120, 6220, 6320 and 6420
6120L, 6220L, 6320L, 6420L and 6520L

This manual is written for experienced technicians. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.

 This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

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(1) Preliminary test

Action:

1.1

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing the Addresses and Diagnostic Trouble Codes.

Result:

YES: If the diagnostic trouble code is no longer generated: Diagnosis completed.

NO: If the diagnostic trouble code is active or is regenerated after it has been deleted and a functional test has been carried out: GO TO 1.2

Action:

1.2

Check the power supply to the fan motor driver unit:

- Bridging plug K10/1.
- Fuse F05/13.
- Fuse F05/1.

Result:

YES: GO TO 2

NO: Recondition as required and do an Operational Check for Fan Motors , see 245-ATC.

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(2) Check the position of the air distribution flaps

Action:

- Ignition ON.
- Access address ATC007 .
- Turn the airflow mode switch to the following settings in order to check whether the number displayed in address ATC007 complies with the following specifications:

Item	Measurement	Specification
ATC007 - Potentiometer (B132) for position of air distribution flaps, status		
Airflow mode switch:	Fault in circuit, at potentiometer or at motor	000
	"De-ice (windshield)" position	001
	"De-ice (windshield)/dashboard/footwell" position	002
	"Footwell" position	003
	"Dashboard" position	004
	Position between "De-ice (windshield)" and "Dashboard"	005
	Position between "De-ice (windshield)" and "Footwell"	006
	Calibration	009
AUTOMATIC button:	AUTOMATIC activated	008

Result:

YES: GO TO 5 .

NO: GO TO 3 .

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(1) Preliminary test

Action:

1.1

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing Addresses and Diagnostic Trouble Codes.

Result:

YES: Diagnostic trouble code is not active: Diagnosis completed.

NO: Diagnostic trouble code is active: GO TO 1.2

Action:

1.2 Perform a visual inspection of the battery, the alternator and the relay for alternator K02/2.

1. Check for visual signs of damage.
2. Check the electrical connections for bad, loose, widened or corroded contacts.

Result:

YES: GO TO 2 .

NO: Repair as needed and carry out an operational test.

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BCU 303056.04- Raise Limit Potentiometer, Signal Voltage Too Low

06

Diagnostic trouble code BCU 303056.04 is saved when the basic control unit measures a voltage below 0.25 volts at the signal input of the potentiometer. This indicates an open lead in the potentiometer circuit.

Diagnostics

→NOTE:

The following are possible causes:

- **Defective raise limit potentiometer (B27).**
- **Defective line connection between the potentiometer and the basic control unit (open or grounded circuit):**
  - **Positive lead (cable 873).**
  - **Ground lead (cable 871/531).**
  - **Signal lead (cable 876).**

Additional references:

• General hitch information: Reference 270-20-001 , PFC Hydraulic System - Summary of References.

• Electrical information: Reference 210-15-001 , General References - Summary.

• Reference 245-BCU-201 , Operation of the Basic Control Unit (Hitch Control).

(1) Preliminary test

Action:

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing the Addresses and Diagnostic Trouble Codes.

Result:

YES: Diagnostic trouble code is not active: Diagnosis completed.

NO: Diagnostic trouble code is active: GO TO 2 .

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(1) Preliminary checks

Action:

1.1

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing the Addresses and Diagnostic Trouble Codes.

Result:

YES: Diagnostic trouble code is not active: Diagnosis completed.

NO: Diagnostic trouble code is active: GO TO 1.2

Action:

1.2

Perform a visual inspection of the transmission/hydraulic system:

1. Check and clean side panels, front cover and screens (if equipped).
2. Check transmission oil level.
3. Check for leaks.
4. Check filter.
5. Check relevant oil tubes and pipes for bends.
6. Check the viscous fan drive: see Reference 230-15-090 , Checking the Viscous Fan Drive.
7. Check drive belts.
8. Check for visual signs of damages at the oil cooling system.

Result:

YES: No visual damage of cooling system recognizable: GO TO 2 .

NO: Repair as needed and carry out an operational test.

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ECU 000189.00- Engine Speed Derate

17 000189.00]

Diagnostics

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing the Addresses and Diagnostic Trouble Codes.

Diagnostics and additional references for Level 11 ECU with Denso HPCR:

See LEVEL 11 ECU - DTC SPN 189 FMI 00 - ENGINE SPEED DERATE - DIAGNOSTIC PROCEDURE in Section 04, Group 160 in CTM220.

Electrical information: See Reference 210-15-001 , General References - Summary.

For information on functional and diagnostic schematics, see:

• Reference 240-10-034 , SE23B - Engine Control Unit.

For component location and pin arrangement, see:

• Reference 240-26-503 , Wiring harnesses for tractors with AutoPowr/IVT transmission and TIER II Engine

[with ECU Level 11 (DENSO HPCR)]
- Summary of references.

• Reference 240-26-702 , Wiring harnesses for tractors with AutoPowr/IVT transmission and TIER II Engine

[with ECU Level 11 (DENSO HPCR)]
from Serial No. 398656 - Summary of references.

Diagnostics and additional references for Level 12 ECU with Stanadyne DE10 pump:

See LEVEL 12 ECU - DTC SPN 189 FMI 00 - ENGINE SPEED DERATE - DIAGNOSTIC PROCEDURE in Section 04, Group 160 in CTM331.

Electrical information: See Reference 210-15-001 , General References - Summary.

For information on functional and diagnostic schematics, see:

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ECU 001347.05- Pump Control Valve Current Mismatch

17 001347.05]

Diagnostics

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing the Addresses and Diagnostic Trouble Codes.

Diagnostics and additional references for Level 11 ECU with Denso HPCR:

See LEVEL 11 ECU - DTC SPN 1347 FMI 5 - PUMP CONTROL VALVE CURRENT MISMATCH - DIAGNOSTIC PROCEDURE in Section 04, Group 160 in CTM220.

Electrical information: See Reference 210-15-001 , General References - Summary.

For information on functional and diagnostic schematics, see:

• Reference 240-10-034 , SE23B - Engine Control Unit.

For component location and pin arrangement, see:

• Reference 240-26-503 , Wiring harnesses for tractors with AutoPowr/IVT transmission and TIER II Engine

[with ECU Level 11 (DENSO HPCR)]
- Summary of references.

• Reference 240-26-702 , Wiring harnesses for tractors with AutoPowr/IVT transmission and TIER II Engine

[with ECU Level 11 (DENSO HPCR)]
from Serial No. 398656 - Summary of references.

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EPC 306057.31- Faulty Transmission Enable Signal

19

Diagnostic trouble code EPC 306057.31 does not necessarily have any real meaning. Pay attention to this diagnostic trouble code only if operator error can be ruled out. It is saved if no transmission enable signal is received by the transmission control unit, although the transmission enable relay was activated and the clutch pedal switch is closed. This diagnostic trouble code triggers the alarm level: ”Information”.

Diagnostics

→NOTE:

The following are possible causes:

- **Operator error: Operator is too slow in moving the reverse drive lever to its forward or reverse position.**
  - **BCU software version number must be 2.2 or higher (BCU software 2.2 or higher can correct this operator´s error).**
  - **EPC software version number must be 2.01 or higher (EPC software 2.01 or higher can correct this operator´s error).**
- **BCU software problem: Up to and including BCU software version 3.01, code EPC 306057.31 may be stored as a follow-on fault of BCU 302123.31.**
- **EPC software problem: Up to and including EPC software version 3.00 code EPC 306057.31 may be stored.**
- **Defective transmission enable relay K09/5.**
- **Circuit fault in the transmission enable relay:**
  - **Short to ground or open lead in the circuit for the transmission enable signal (lead 553).**
  - **Open lead in the coil circuit (ground lead 560) between the basic control unit (BCU) and transmission enable relay K09/5.**
- **Circuit problem between reverse drive lever (A47, A68/1 or A68/2) and BCU control unit (this problem causes diagnostic trouble code BCU 302123.31).**
  - **Short to ground or open lead in the circuit of the reverse drive lever (forward signal 590, reverse signal 569 and/or not-neutral signal 561).**

Additional references:

• Electrical information: Reference 210-15-001 , General References - Summary.

• Reference 245-EPC-200 , Theory of Operation, PowrQuad Plus and AutoQuad Transmissions.

• Reference 240-25A-010 , Fuses up to tractor serial number 398655.

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Use the following diagnostic procedure for this JDL diagnostic trouble code: JDLink System Check

Additional references:

Operation: Reference 245-JDL-200 , JDLink - Theory of Operation.

Electrical information: Reference 210-15-001 , General References - Summary.

For circuit diagram, see SE30-JDLink Control Unit: Reference 240-10-001 , Sub-System Diagnostics (Cab) - Summary of References

For component location and pin arrangement refer to:

Tractors with AutoPowr/IVT transmission, Reference 240-26-411 , W41 - JDLink Wiring Harness.

Tractors with SynchroPlus, PowrQuad Plus or AutoQuad transmissions, Reference 240-26-411 , W41 - JDLink Wiring Harness.

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing the Addresses and Diagnostic Trouble Codes.

JDL 298876.31- Machine Data Configuration Fault 1

27

Use the following diagnostic procedure for this JDL diagnostic trouble code: JDLink System Check

Additional references:

Operation: Reference 245-JDL-200 , JDLink - Theory of Operation.

Electrical information: Reference 210-15-001 , General References - Summary.

For circuit diagram, see SE30-JDLink Control Unit: Reference 240-10-001 , Sub-System Diagnostics (Cab) - Summary of References

For component location and pin arrangement refer to:

Tractors with AutoPowr/IVT transmission, Reference 240-26-411 , W41 - JDLink Wiring Harness.

Tractors with SynchroPlus, PowrQuad Plus or AutoQuad transmissions, Reference 240-26-411 , W41 - JDLink Wiring Harness.

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(4) Check connecting rod lever

Action:

Check connecting rod lever for deformation, see ”Reconditioning the Position Sensor” in the relevant Repair Manual.

Result:

YES: GO TO 5 .

NO: Repair the lever and recalibrate the suspended cab control unit. See Reference 245-SFA-002 , Calibration and Input Addresses, Hydraulic Cab Suspension.

(5) Checking the ground speed signal

Action:

Access address BCU004 :

Item	Measurement	Specification
BCU004 - Status, Wheel Speed Sender (B63/B35/B09)		
No signal detected (tractor is stationary):	Status	XX0X
Signal detected by sender (during travel):	Status	XX1X

Result:

YES:GO TO 7.

NO:GO TO 6.

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SFA 324072.13- TLS Position Sensor, Signal Voltage in Mid-Position Out of Range

39

Diagnostic trouble code SFA 324072.13 is saved when the voltage measured by the control unit at the signal input of the TLS position sensor while the front axle is in the neutral (middle) position is not between 2 and 3 volts. This diagnostic trouble code does not necessarily mean that the TLS position sensor is responsible for the fault. This diagnostic trouble code triggers the alarm level: "CAUTION". This diagnostic trouble code can only be generated during the calibration.

Diagnostics

→NOTE:

The following are possible causes:

- **Priority diagnostic trouble codes SFA 324069.13 and SFA 324071.13 must be processed first.**
- **A problem in the 5 volts power supply circuit is generating other priority diagnostic trouble codes (SFA 324066.03 or SFA 324067.04). These diagnostic trouble codes take priority.**
- **Position sensor rod misadjusted.**
- **Defective TLS position sensor B53.**

Additional references:

• Electrical information: Reference 210-15-001 , General References - Summary.

• Reference 280-20-100 , Front-Wheel Drive Axle with TLS - Components.

• Reference 280-20-110 , Front-Wheel Drive Axle with TLS - Operation.

• Reference 280-20-130 , Front-Wheel Drive Axle with TLS - Position Sensor.

• "Reconditioning the Position Sensor" in the Repair Manual, Section 80, Group 25.

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SIC 334028.14- Control Unit Not Calibrated

40

Diagnostic trouble code SIC 334028.14 is saved if one or more of the functions in the controller are active, even although they have not yet been calibrated. The diagnostic trouble code triggers the alarm level: “Information”. A calibration memory error may also be the cause of this diagnostic trouble code. For this reason, this diagnostic trouble code cannot always be deleted at diagnostic address SIC 01. This diagnostic trouble code stops appearing once calibration has been completed successfully.

Diagnostics

→NOTE:

The following are possible causes:

- **The controller has not been calibrated.**
- **Directional axis (or axes) of E-ICV have been activated, but the axes have not been calibrated.**
- **Calibration memory fault.**

Additional references:

• Electrical information: Reference 210-15-001 , General References - Summary.

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SIC 334222.14- E-ICV No.2, Stepper Motor Fails to Respond to Command from Controller

40

Diagnostic trouble code SIC 334222.14 is saved when there is a problem in transferring data between the stepper motor of E-ICV no.2 and the controller. During operation, following a successful initialization (link made after ignition ON), the controller fails to establish a connection to the stepper motor, or makes only intermittent contact (possibly due to a loose wire). The diagnostic trouble code triggers the alarm level: “Information”.

Diagnostics

→NOTE:

The following are possible causes:

- **Harness problem caused by loose/bad/slid back contacts (loose connections) and/or bad ground connections.**
  - **Power supply circuit.**
  - **11-bit CAN BUS circuit.**
- **Defective stepper motor (M13) for the E-ICV no.2 function.**

Additional references:

• Electrical information: Reference 210-15-001 , General References - Summary.

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SSU 522273.00- Electro-Hydraulic Steering Valve, Control Signal Too High

42

The electro-hydraulic steering valve receives a control signal from the SSU controller, which can also request information on the position of the valve. If the control signal is not in the valid range (over 85 % or of the total range), diagnostic trouble code SSU 522273.00 is triggered.

Alarm level: *CAUTION.*

Diagnostics

Additional references:

• Electrical information: Reference 210-15-001 , General References - Summary.

• Reference 245-SSU-200 , Theory of Operation, AutoTrac Control Unit

(1) Preliminary test

Action:

1.1

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing the Addresses and Diagnostic Trouble Codes.

Result:

YES: Diagnostic trouble code is not active: Diagnosis completed.

NO: Diagnostic trouble code is active: GO TO 2 .

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(5) Additional checks and assessment of intermittent faults

Action:

Type of error indicates a loose contact:

- Before doing a check of the connections, see summary of wiring layout in Circuit/Harness Test for Wheel Angle Sensor (B139) in 245-SSU.
- For back-up, see also additional references for circuit checks:
  - Reference 245-SSU-100 , Test Procedure in the Case of Occasional SSU Circuit Problems (SSU Beep Mode).
  - Reference 210-15-046 , Troubleshooting Unsolved Problems.

Result:

YES: Diagnosis completed.

NO: Recondition as required and do an Operational Check for Wheel Angle Sensor (B139) , see 245-SSU.

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TCU 304074.08- Hydrostatic Speed Sender, Speed in Channel 1 Lower than in Channel 2

44

Diagnostic trouble code TCU 304074.08 is saved if a difference in frequency is detected between the two output signals of the hydrostatic speed sender. The diagnostic trouble code triggers the alarm level: “Information”.

Diagnostics

→NOTE:

The following are possible causes:

- **Mechanically defective hydrostatic speed sender (B62).**
- **A defect at the signal leads of channel 1 (cable 689) or channel 2 (cable 695) .**
  - **Diagnostic trouble codes TCU 304050.04, TCU 304052.04, TCU 304058.03 and TCU 304060.03 take priority.**
- **Incorrect installation of hydrostatic speed sender (sender′s position).**

Additional references:

• Electrical information: Reference 210-15-001 , General References - Summary.

• “Replacing the Hydrostatic Speed Sending Unit” , Repair Manual, Section 53, Group 10.

• Reference 245-TCU-200 , Theory of Operation (Transmission Control Unit).

• Reference 253-20-001 , AutoPowr/IVT Transmission - Operation (Summary of References).

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TCU 304117.03- BG Solenoid Valve, Shorted Circuit

44

Diagnostic trouble code TCU 304117.03 is stored if the transmission control unit registers resistance and voltage at the solenoid valve that does not correspond with the switch status of the BG disk brake. This indicates a short to the power supply (battery voltage) in the solenoid's circuit. The diagnostic trouble code triggers the alarm level: "CAUTION".

Diagnostics

→NOTE:

The following are possible causes:

- **A defective solenoid valve (BG).**
- **A shorted circuit at the ground lead (cable 654).**

Additional references:

• Electrical information: Reference 210-15-001 , General References - Summary.

• "AutoPowr/IVT Transmission, Input Housing - Reconditioning (Summary of References)" , Repair Manual, Section 53, Group 10.

• Reference 245-TCU-200 , Theory of Operation (Transmission Control Unit).

• Reference 253-20-001 , AutoPowr/IVT Transmission - Operation (Summary of References).

(1) Preliminary test

Action:

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing Addresses and Diagnostic Trouble Codes.

Result:

YES: Diagnostic trouble code is not active: Diagnosis completed.

NO: Diagnostic trouble code is active (tractor's function is impaired), GO TO: Circuit/harness test for BG solenoid valve ; see Section 245, Group TCU in the Technical manual.

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(1) Check transmission oil pressure and transmission oil filter functions using the diagnostic address

Action:

1.1 - Check transmission oil pressure:

• Access address TCU005 or template TCU900 - Transmission Oil Circuit for AutoPowr/IVT Transmission .

• Do this test while the engine is off and again when the engine is on (with speed set at 1800 rpm).

Item	Measurement	Specification
TCU005 -- Status, transmission oil pressure switch (S74)		
Engine off (switch is OPEN and under zero-pressure):	Status	X1X
Engine running (switch is CLOSED):	Status	X0X

Result:

YES: Diagnostic trouble code TCU 304177.01 appears again and again on tractor. GO TO: ”Pressure tests for diagnostic trouble code TCU 304177.01”

NO:GO TO 1.2.

Action:

1.2 - Check the oil filter:

• Operate engine at 1800 rpm for 10 - 15 seconds with oil temperature above 40 °C (104 °F).

• Access addresses TCU005 and TCU021 (oil temperature shown in °C) or template TCU900 - Transmission Oil Circuit for AutoPowr/IVT Transmission .

Item	Measurement	Specification
TCU005 -- Status, transmission oil filter switch (S73)		
Switch closed (filter unrestricted):	Status	XX1

Result:

YES: GO TO 2 .

NO: Replace the filter with a new one and repeat the test.

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UIC 305009.04- Controller, Wrong Input Value

46

Diagnostic trouble code UIC 305009.04 is stored if the setting/input in address UIC032 is incorrect. This diagnostic trouble code triggers the alarm level: ”CAUTION”.

Diagnostics

Additional references:

• Reference 245-UIC-200 , Theory of Operation (User Interface Controller).

• Reference 245-UIC-001 , Calibration and Input Addresses, User Interface Controller.

(1) Preliminary test

Action:

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing the Addresses and Diagnostic Trouble Codes.

Result:

YES: Diagnostic trouble code is not active: Diagnosis completed.

NO: Diagnostic trouble code is active: GO TO 2 .

(2) Checking input address UIC032

Action:

See Address UIC032 - Input address for anti-jack-knife control , 245-UIC.

Result:

YES: Diagnosis completed.

NO: Modify setting, confirm and carry out an operational test.

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UIC 305053.09- Engine Control Unit has Stopped Transmitting Data (Engine Speed)

46

Diagnostic trouble code UIC 305053.09 is saved when there is a problem in transferring data between the engine control unit (ECU) and the user interface controller. Reception of the CAN message regarding engine speed is intermittent or non-existent (intermittent reception could be due to a loose wire). This diagnostic trouble code triggers the alarm level: ”Information”. This diagnostic trouble code does not necessarily have any real meaning. It may be saved by accident. For this reason, diagnosis only needs to be performed if one or more related faults occur in conjunction with this code.

Diagnostics

→NOTE:

The following are possible causes:

- **Blown ECU fuse(s) F04/1 and/or F04/2.**
- **Defective 29-bit CAN BUS connection or power supply to the engine control unit causes an intermittent problem in transferring data.**
  - **Other diagnostic trouble codes are saved that indicate a general problem in transferring data to/from the engine control unit (UIC 305051.09, UIC 305052.09, UIC 305055.09, UIC 305056.09 and/or UIC 305060.09).**
- **A fault in the ECU’s monitoring circuit (faulty crankshaft speed sender B72).**
  - **ECU diagnostic trouble codes take priority.**
- **Defective 29-bit CAN BUS connection or power supply to the user interface controller causes an intermittent problem in transferring data.**
  - **Other diagnostic trouble codes are saved that indicate a general problem in transferring data to/from the user interface controller (ECU 000898.09 and/or TCU 304161.09).**
- **A general 29-bit CAN BUS problem.**
  - **If other diagnostic trouble codes from other control units are saved that indicate a general problem in the 29-bit CAN BUS:**
- **Intermittent 29-bit CAN BUS malfunction caused by strong electromagnetic influences.**
- **Defective engine control unit.**

Additional references:

• Electrical information: Reference 210-15-001 , General References - Summary.

• Reference 245-05-007 , Electronic Control Units - Location and Allocation.

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UIC 305146.02- Move Switch or Power Zero Switch has been Opened by Mistake

46

Diagnostic trouble code UIC 305146.02 is stored if the UIC detects a problem at the reverse drive lever. The output signal from the move switch or power-zero switch is no longer being received. This diagnostic trouble code sets off a “CAUTION” alarm.

Diagnostics

→NOTE:

The following are possible causes:

- **A defective reverse drive lever (S80).**
- **A problem at the signal leads (cables 225 and/or 214) between the reverse drive lever and the UIC.**

Additional references:

• Electrical information: Reference 210-15-001 , General References - Summary.

• “Reconditioning the Reverser Control” , Repair Manual, Section 53, Group 05.

• Reference 245-UIC-200 , Theory of Operation (User Interface Controller).

• Reference 253-20-001 , AutoPowr/IVT Transmission - Operation (Summary of References).

(1) Preliminary test

Action:

→NOTE:

Take note of the processing procedures of diagnostic trouble codes before starting the diagnosis, see Reference 245-05-002 , Accessing Addresses and Diagnostic Trouble Codes.

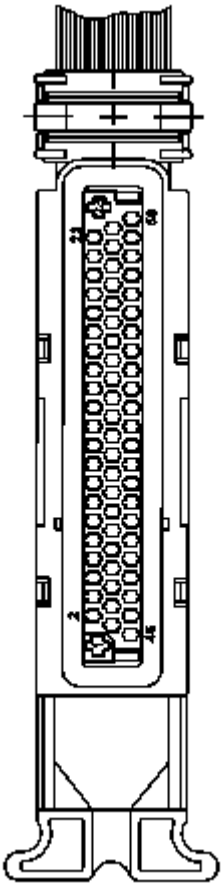
Result:

YES: Diagnostic trouble code is not active: Diagnosis completed.

NO: Diagnostic trouble code is active, GO TO: Reference 245-UIC-101 , Circuit test for reverse drive lever (S80).

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X382 45-pin plug for PLC

Item	Measurement	Specification
X382 45-pin plug for PLC		
Power supply:	Lead 682 (positive, ELX)	12 volts at pin 45
	Lead 032 (positive, BAT)	12 volts at pin 23
	Lead 330	Ground at pins 1 and 2
29-bit CAN BUS communication lines:	CAN+ (lead 934)	at pin 44
	CAN- (lead 935)	at pin 21
29-bit CAN BUS screen lines:	Lead 930-	Ground at pin 20
	Lead 932+	12 volts at pin 43
29-bit CAN BUS voltage (communication lines)		
between CAN+ (lead 934) and a suitable ground connection (lead 330):	Voltage	2.5 - 2.9 volts
between CAN- (lead 935) and a suitable ground connection (lead 330):	Voltage	2.1 - 2.5 volts

Result:

YES: Check the connections at the plug and control unit for loose, widened, slid-back or corroded contacts.

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Problem with the Lighting System (Tractors with Open Operator's Station)

65

Symptoms:

- Parking light is not functioning properly for at least some of the time.
- Parking light functioning on one side only.
- Dipped headlights are not functioning properly for at least some of the time.
- Dipped headlight functioning on one side only.
- Full-beam headlights are not functioning properly for at least some of the time.
- Full-beam headlight functioning on one side only.

• If there are problems with the **parking lights** :

Diagnostics on parking lights

• If there are problems with **dipped-beam** headlights, see:

Diagnostics on dipped-beam headlights

• If there are problems with **full-beam** headlights, see:

Diagnostics on full-beam headlights

Diagnostics on parking lights

(1) Preliminary test

Action:

1.1 Perform a visual inspection on clearance lights (E03/E04) at the front of the cab frame, on tail/brake/turn-signal light (E13/E14) on the rear of the fenders and on all 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.

1.2 Preliminary test of the parking light circuit:

- Check fuse F109.
- Check fuse F113.
- Check fuse F114.

Result:

YES: GO TO 2

NO: Repair as needed and carry out an operational test.

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(2) Checking the setting for front-wheel drive axle and air brakes at address UIC032

Action:

Access address UIC032 :

Item	Measurement	Specification
UIC032 - Input, front-wheel drive axle and air brakes		
Tractor with air brakes and braked front-wheel drive axle:	Status	0
Tractor with air brakes and without braked front-wheel drive axle:	Status	2
Tractor without air brakes and with braked front-wheel drive axle:	Status	1
Tractor without air brakes and without braked front-wheel drive axle:	Status	3

Result:

YES: GO TO 3

NO: Modify setting, confirm and carry out an operational test.

(3) Performing an operational check

Action:

For operational check, see: Reference 260-10-020 , Brake Check.

Result:

YES: Test completed.

NO: GO TO 4 .

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