

PREVIEW - YOUFIXTHIS.COM

No communication with the steering controller.

Code Diagnosis

Displayed text: No SSU Communication

Additional References:

8000 Series Field Installed, section 246C, group 15I.

8000 Series Field Installed Theory of Operation, section 246C, group 15J.

8000 Series Field Installed Electrical Schematic, section 246C, group 15J.

(1) SSU Check

Action:

Check to be sure that SSU is listed in list of control units in CommandCenter when in diagnostic mode.

Result:

YES:SSU is listed in CommandCenterSee**8000 Series Field Installed AutoTrac CAN Bus Diagnostics** , section 246J, group 15I to diagnose an implement CAN Bus problem.

NO:SSU is not listed in CommandCenterSee**CCD Network Diagnosis** section 240, group 15 to diagnose a CCD Bus problem.

52- CAN Bus Problem

⁶¹

Multiple primary GREENSTAR™ Displays detected on the bus.

Code Diagnosis

Displayed text: (None)

Additional References:

Theory of Operation, section 246C, group 15E.

Electrical Schematic, section 246C, group 15E.

(1) GREENSTAR™ Display Check

Action:

Only one primary display is allowed on the bus.

See**GREENSTAR™ Display Diagnostics** , section 246C, group 15E to diagnose a GREENSTAR™ Display problem.

Result:

YES:Code clearsDONE

53- CCD Bus Problem

⁶¹

An AUX address detected CCD active.

Code Diagnosis

Displayed Text: (None)

Additional References:

Theory of Operation, section 246C, group 15E.

See **Control Modules Diagnostic Schematic** in section 240, group 15.

Result:

YES: All systems function correctly. Code does not return, diagnosis complete.

NO: Test isolated problem. Recall, Record and Clear Codes before proceeding. See **Accessing Diagnostic Code Numbers** in section 240, group 04. If code does not return diagnosis complete.

SSU 111- Steering Valve Fault

42

SSU 111 is stored when the steering valve produces a fault. GREENSTAR™ AutoTrac Assisted Steering System will be disabled when code is active. Code will remain active until the power is cycled with the key switch.

Service Code Diagnosis

→NOTE:

Additional References:

- AutoTrac Steering System Theory in section 260, group 30.
- SSU Theory of Operation in section 260, group 25.
- Field Installed SSU Wiring Diagram in section 260, group 05.
- Diagnostic Codes, Addresses and Calibration Procedures in section 240, group 04.

(1) Calibrate Steering Valve

Action:

→NOTE:

Recall, Record and Clear Codes before proceeding. See **Accessing Diagnostic Code Numbers** in section 240, group 04.

Start tractor, access [SSU address 28](#) and perform [SSU Calibration](#).

Result:

YES: Diagnosis complete.

NO: Check for loose terminals in steering valve harness connectors X955 and X956. If loose terminals found, repair and perform calibration again. If problem still exists, [GO TO](#) step (11) of AutoTrac Steering System Diagnosis, Section 260 Group 30.

SSU 153- Steering Angle Sensor Calibration Fault

42

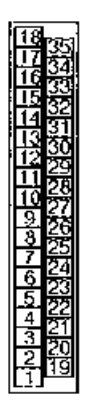
SSU 153 will be stored if the output signal from the steering angle sensor, located on flow meter, does not produce sufficient voltage during calibration. AutoTrac will be disabled when code is active. Code will remain active until cleared.

Service Code Diagnosis

→NOTE:

Additional References:

- SSU Theory of Operation in section 260, group 25.
- AutoTrac Steering System Theory in section 260, group 30.
- Field Installed SSU Wiring Diagram in section 260, group 05.
- Diagnostic Codes, Addresses and Calibration Procedures in section 240, group 04.

(8) Sensor Harness Check for Shorts**Action:**

ECU
35-Way
Connector

ECU 35-Way Connector**IMPORTANT:**

Only TOUCH harness connector pins with tester probes. Forcing tester probes into connector could damage the pins.

→NOTE:

Fuel temperature sensor connector, X33, and ECU 35-way connector MUST be disconnected and jumper wires removed to make this test valid.

Perform a continuity check at ECU 35-way connector between:

- Terminal "24" (circuit 328) and all other terminals of the ECU 35-way connector and ground.
- Terminal "35" (circuit 316) and all other terminals of the ECU 35-way connector EXCEPT 31 and ground.

All readings should be greater than 2000 ohms.

Result:

YES: All readings were greater than 2000 ohms. [GO TO \(9\)](#).

NO: If readings were found less than 2000 ohms between circuits 328 or 316 and "other" circuits of the harness, they are shorted to each other. Refer to [Engine Control Unit \(ECU\) Harnesses Diagram \(PIN —11,000\)](#), this Group, to isolate the "other" ECU 35-way connector and circuit numbers that are shorted to circuits 328 or 316. Repair as necessary. Reconnect connectors and perform [ECU Test Procedure No. 1](#), this GroupCode "37" or "38" returns. [GO TO \(9\)](#).

(9) Replace ECU**Action:**

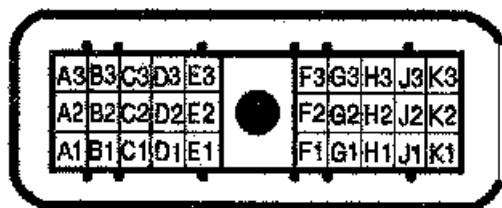
Replace ECU.

Result:

YES:Reading was within range of 600 and 1500 ohms. [GO TO \(4\)](#) .

NO:Reading was less than 600 ohms. Sensor is shorted. Replace injection pump. Reconnect connector X33 and perform [JDECU Test Procedure NO. 1](#) , this Group. If code "39" returns, turn key switch OFF, and disconnect connector X33. [GO TO \(4\)](#) .

NO:Reading was greater than 1500 ohms. Sensor is open. Replace injection pump. Reconnect connector X33 and perform [JDECU Test Procedure NO. 1](#) , this Group. If code "39" returns, turn key switch OFF, and disconnect connector X33. [GO TO \(4\)](#) .

(4) Inspect ECU Connector**Action:****ECU CONNECTOR (X1)****ECU Connector X1**

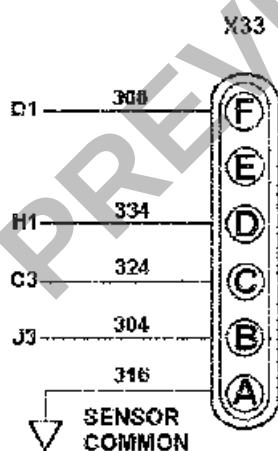
With key switch OFF and connector X33 disconnected, disconnect ECU connector X1.

Inspect both the connector X1 and ECU for damage, corrosion, and poorly positioned terminals.

Result:

YES:Connector X1 and ECU terminals are good. Leave connectors X1 and X33 disconnected. [GO TO \(5\)](#) .

NO:Repair as necessary. Reconnect connectors and perform [JDECU Test Procedure NO. 1](#) , this Group. If code "39" returns, turn key switch OFF, disconnect connectors X1 and X33. [GO TO \(5\)](#) .

(5) Harness Check for Open in Sensor Circuit**Action:****Connector X33 (Harness Side)**

Function			
Address Number	Calibratable (Displayed Spec—Normal)	Read Only (Displayed Spec—Normal) ACU Software Version Number (XXX) (XXX)	Not Used
86 & 87			
88 & 89		End-of-Line Software Part Number (XXX) (XXX)	
90 & 91		End-of-Line Software Version (XXX) (XXX)	
92—99			X

¹ Used only in ACU configuration No. “000” (See ACU Test No. 24 for more information.)

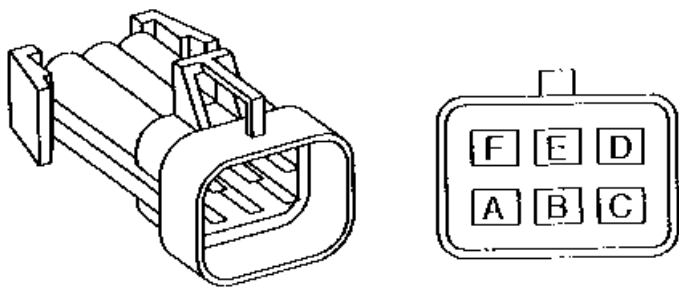
Component Identification Legend—Continued

- [X16—Diagnostic Connector \(W4,W6\)¹](#) , [X16—Diagnostic Connector¹](#)
- [X17—SCV 2 & 3 Solenoids-to-Chassis Harness Connector \(W3\)](#)
- X18—Not Used
- [X19—SCV 4 & 5 and ROW TRAK Control Unit-to-Chassis Harness Connector \(W7,W9,W3\)](#)
- [X20—Convenience Outlet Junction Block to-Cab Harness \(Right Side\) \(W12,W4,W6\)](#)
- [X21—SCV 4/5 Solenoids-to-SCV 4/5 Control Unit Harness \(W7,W9,W3\)](#)
- [X22—Seat Harness-to-Cab Harness Connector \(W22,W4,W6\)](#)
- [X23—Chassis Harness-to-Chassis Harness Connectors for Transmission Operation \(W3\)](#)
- [X24—Armrest Control Unit \(ACU\) Harness-to-Cab Harness Connector \(W14,W4,W6\)](#)
- [X25—Engine Control Unit \(ECU\) Diagnostic Connector 4-Way \(W3\)](#)
- [X26—7-Way Accessory Outlet \(W4,W6\)](#)
- [X27—Fusible Link Connector Block Connector Posts \(W3\)](#)
- [X28—Roof Harness-to-Cab Harness Connector \(W24,W4,W6\)](#)
- X29— [PST Solenoid Valves Harness-to-Chassis Harness Connector \(PIN —19,999\)](#) , or [PST Solenoid Valves Harness-to-Chassis Harness Connector \(PIN 20,000—\)](#) (W11,W3)
- [X30—Roof Harness-to-Cab Harness Connector 2-Way \(W24,W4,W6\)](#)
- [X31—ROW TRAK Probe Box Harness-to-SCV 4 and 5 Control Unit Harness \(W3,W9,W29\)](#)
- [X32—Beacon Light Harness-to-Cab Harness \(W26,W4,W6\)](#)
- [X33—Fuel Injection Pump Sensors and Solenoids- to-Chassis Harness \(W3\)](#)
- [X34—Performance Monitor Connector \(W28,W4,W6\)](#)
- [X35—JDECU Diagnostic Connector \(9-Way\) \(PIN 11,001—\)](#) (W3)
- [X36—Back-Up Alarm Relay Harness-to-Cab Harness \(W30,W4,W6\)](#)
- [X37—Chassis Harness-to-Front Lamps Harness Connector \(W3,W17 or W19\)](#)
- [X38—Convenience Outlet](#)
- [X39—Front Lamps Harness-to-Front Floods Harness²](#) (W19,W17)
- X40—Left Fender Tail/Turn Lamps Connector, [X40 and X42—Tail/Turn Lamps Connectors](#)
- [X41—Touch Set Depth Control \(TSDC\) Harness \(W5,W3\)](#)
- X42—Right Fender Tail/Turn Lamps Connector, [X40 and X42—Tail/Turn Lamps Connectors](#)
- [X43—Shipping Starting Circuit Connector²](#)
- X44—Left Front Clearance/Warning Lamp Connector² , [X44 and X46—Front Clearance Lamp Connectors](#)
[European tractors]
- X45—Not Used
- X46—Right Front Clearance/Warning Lamp Connector² , [X44 and X46—Front Clearance Lamp Connectors](#)
[European tractors]
- X47—Convenience Outlet Junction Block-to-Cab Harness (Left Side) (W4,W6,W12)
- X48—Business Band Radio Harness-to-Convenience Outlet Junction Block (Left Side) (W4,W6,W33)
- X49—Auxiliary Power Strip Connectors (W4,W6)
- X50—Universal Monitor Harness-to-Cab Harness (W4,W34)
- X51—Universal Monitor Implement Data Connector (Power Terminals) (W34)
- X52—Universal Monitor Implement Data Connector (4-Way) (W34)
- X53—Universal Monitor Implement Data Connector (2-Way) (W34)
- X54—CAN Terminator Connector
- X55—Convenience Outlet Harness-to-Field Office Harness Connector
- X56—Radar Adapter Harness-to-Chassis Harness
- X57—Radar Adapter Harness-to-Radar Unit
- [Y1—Start Aid Solenoid \(SE1,W3\)](#)
- [Y2—Seat Bleed Valve Solenoid \(SE2,W22\)](#)
- Y3—Seat Up-Stop Solenoid (SE2,W22)
- [Y4—A/C Compressor Clutch Solenoid \(SE3,W3\)](#)
- Y5—Hitch Raise Solenoid (SE7,W3)
- Y6—Hitch Lower Solenoid (SE7,W3)
- Y7—SCV 1 Extend Solenoid (SE7,W3)
- Y8—SCV 1 Retract Solenoid (SE7,W3)
- Y9—SCV 2 Extend Solenoid (SE7,W3)
- Y10—SCV 2 Retract Solenoid (SE7,W3)

¹ If tractor is equipped with optional equipment that is connected to "X16", (e.g.ROW TRAK), the 6-way connector of the optional equipment harness becomes "X16".

² European tractors

X22—Seat Harness-to-Cab Harness Connector



Harness Connector (Seat-to-Cab Wiring)

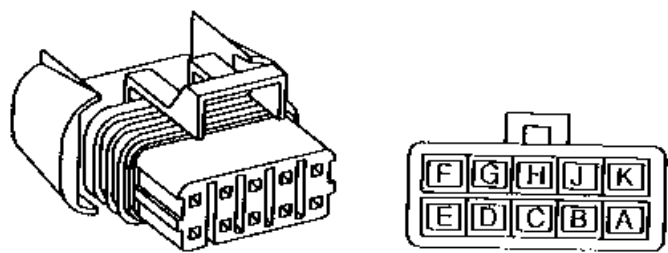
Harness Connector (Seat-to-Cab Wiring)

Terminal Number	Circuit Number	Wire Color/Size	Circuit Termination Points
A ^{1, 3}	202 B	RD/16	A2,K27,X20
A ^{2, 3}	202 B	RD/16	P1,A2,X20,K27
A ^{1, 4}	202 B	RD/16	A2,K27,X20
A ^{2, 4}	202 B	RD/16	P1,A2,X20,K27
B	50 C3	BK/20	See "Ground Point Locations"
C	292	RD/16	F38
D	923	OR/20	X24
E	10 C	BK/16	See "Ground Point Locations"
F	Spare		

¹ North American tractors
² European tractors
³ PIN (—10,000)
⁴ PIN (10,001—)

X21—SCV 4/5 Solenoids-to-SCV 4/5 Control Unit Harness

[SCV 4 & 5 application only]



SCV 4/5 Solenoid Harness

SCV 4/5 Solenoid Harness

Terminal Number	Circuit Number	Wire Color/Size	Circuit Termination Points
A	891	BN/16	A12X2
B	894	YL/16	A12X2
C	896	BL/16	A12X2
D	898	GY/16	A12X2
E	Spare		
F	Spare		
G	899	WH/16	A12X2
H	897	PU/16	A12X2
J	895	GN/16	A12X2
K	893	OR/16	A12X2

W9—SCV 4 and 5 ROW TRAK Control Unit Harness (With ROW TRAK) (SCo/LHP)

Harness consists of the following components.

- [A12X1—30-Way SCo/LHP Connector](#)
- [A12X2—18-Way SCo/LHP Connector](#)
- [X19—SCV 4 & 5 and ROW TRAK Control Unit-to-Chassis Harness Connector](#) (W7,W9,W3)
- [X21—SCV 4/5 Solenoids-to-SCV 4/5 Control Unit Harness](#) (W7,W9,W3)
- [X31—ROW TRAK Probe Box Harness-to-SCV 4 and 5 Control Unit Harness](#) (W3,W9,W29)

S17
Road Light Switch

Battery +

F20
30A

V1
Diode Block

F24
10A

To Devices That Use Backlighting Signal (Headlamp On)

E22
RH Console

W2

F30
30A

K3

F31
30A

K5

V2
Diode Block

F42
20A

K1

F41
20A

K2

E13
L/R Rear Fender Floods

W2

X30

E18
Front Roof Floods

W2

E15
Midbody Floods

W2

E20
High Beam

E19
Low Beam

W2

W1

X26
7-Way Accessory Outlet

- 4 Accessory
- 7 Accessory
- 3 LeftTurn
- 5 RightTurn
- 2 Flood
- 6 Tail
- 1 Ground

PREVIEW - YOUFXTHIS.COM

Diagnostic Schematic (SE1, SE4, SE5A) PIN (10001-)

[<- Go to Section TOC](#)

CCU Test Procedure No. 4

- NOTE:
- CCU diagnostic code no. is "68" or "75".
- GO TO (4) .
- CCU diagnostic code no. is "23".
- GO TO (1) .

Engine Speed and PTO Speed Sensor Circuits

PTO Speed Sensor

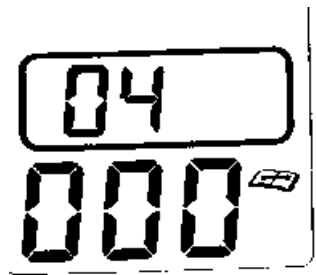
CCU Address	Specification*	Circuit Description	Related Diagnostic Code Number (CCU)
4	000/001 (Engine Running/PTO Engaged)	PTO Speed Sensor	"68" or "75"
	000/010 (Engine Running)	Engine Speed Sensor	"23"

*Check PTO speed sensor function by viewing the right display digit and engine speed sensor function by viewing center display digit

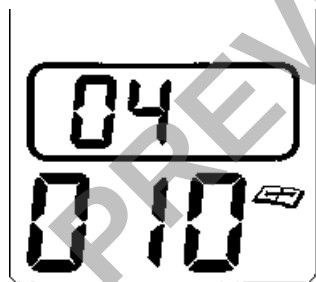
Engine Speed and PTO Speed Sensor Circuits

(1) Engine Speed Sensor

Action:



CCU Address 4



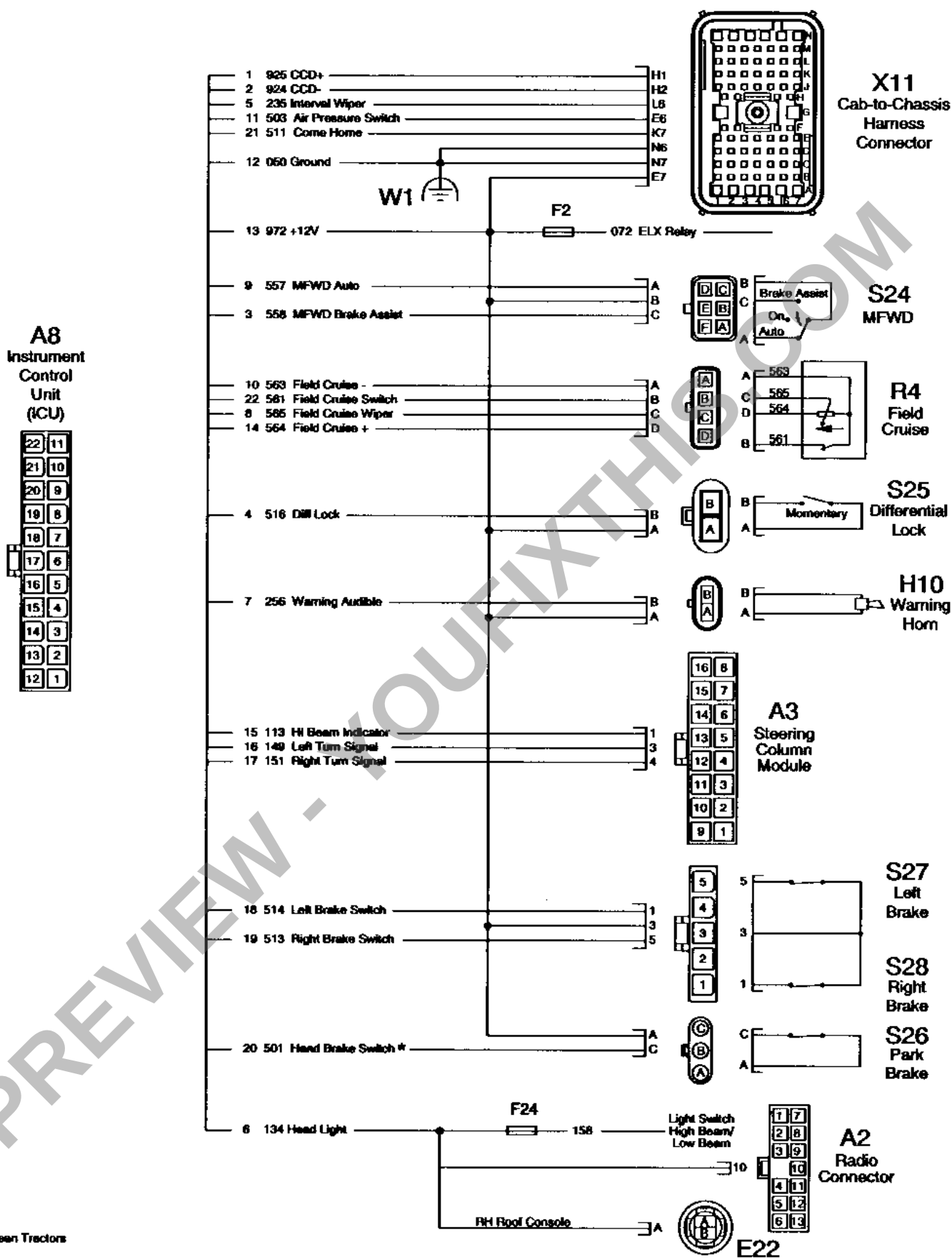
04/010 Displayed

Start the engine and access CCU address 4.

The corner post display should read:

04
000

ICU (Instrument Control Unit) Harnesses



* European Tractors

ICU Harnesses

Performance Monitor Operational Information

The performance monitor is an optional display unit that in its normal operating mode, provides a display for monitoring field

ACU Address 21

Address 21

(1) SCV Control Levers

Action:



21/PPC Displayed

→NOTE:

The following calibration of the SCV control lever applies to any of the five SCV control levers. SCV lever calibration at ACU address 21 is independent of SCU or SCo calibration.

With the engine OFF, access Address 21 to calibrate any of the five SCV control levers.

The corner post display should read:

21
PPC

→NOTE:

"PPC" means "Potentiometer Position Calibration". The ACU reads and stores the voltage of each SCV control lever for its "potentiometer position" range (from off position, to against, but not in, either detent position).

Result:

YES: [GO TO \(2\)](#).

(2) Calibrate Control Lever

Action:

Turn the warning lights switch ON and then OFF.

→NOTE:

The warning horn should "beep".

The corner post display should be between:

21
12.5

Result:

YES:No short circuits found.GO TO **(4)** .

NO:Repair circuit as necessary. Return to diagnosis in progress.

(4) Circuit 050 Continuity Check**Action:**

On the field installed GREENSTAR™ Cab Harness (W92), check continuity between connector (X106) pin B to:

- GREENSTAR™ System Display Connector (X90) pin D.
- STARFIRE™ Receiver Connector (X91) pin 7.
- GREENSTAR™ Mobile Processor Connector (X92) pin C.
- Active Terminator Connector (X95A) pin 2.

See GREENSTAR™ Cab Harness (Field Installed) - Implement Ready Harness (Field Installed) in section 240, group 10.

See Field Installed GREENSTAR™ Cab Harness Wiring Diagram (N.A.) (European) in section 246A, group GSS.

Result:

YES:No problems found.GO TO **(5)** .

NO:Repair circuit as necessary. Return to diagnosis in progress.

(5) 050 Short Circuit Check**Action:**

On the field installed GREENSTAR™ Cab Harness (W92), check that circuit 050 is not shorted to other wires in the harness.

See GREENSTAR™ Cab Harness (Field Installed) - Implement Ready Harness (Field Installed) in section 240, group 10.

See Field Installed GREENSTAR™ Cab Harness Wiring Diagram (N.A.) (European) in section 246A, group GSS.

Result:

YES:No short circuits found. Return to diagnosis in progress.

NO:Repair circuit as necessary. Return to diagnosis in progress.

(6) Fuse F17 Check**Action:**

Check the following:

- Good fuse (F17).
- Battery voltage on pin A at (F17) position in the fuse panel.

See **SCV IV, V, Row Trak, Diag Connector, Display Units, (SE12, SE13, and SE14)** for diagnostic connector in section 240, group 10.

Result:

YES:Voltage is present at pin A, troubleshoot circuit 992 from pin B of (F17) position in fuse panel to Diagnostic Connector (X16) (SE11).GO TO **(1)** .

NO:Incorrect voltage on pin A, troubleshoot circuit 002 from pin A back to battery (G1).GO TO **(1)** .

Action:

Key Switch in the RUN position

Press INFO button on GREENSTAR™ Display

Press button next to **GREENSTAR™ Display**

Press button next to **CAN Bus Analyzer**

Observe addresses listed under **Source ID**

Possible Address entries listed below:

- **0xD2 Mobile Processor**
- **0xFC KeyCard**
- **0x1C STARFIRE™ Receiver**
- **0x2B Mobile Processor in Reprogramming Mode**
- **0x80 GREENSTAR™ Display**
- **0x81 Secondary GREENSTAR™ Display**

Is address **0xD2** (Mobile Processor) or **0xFC** (KeyCard) listed and **Message Count** number increasing?

Result:

YES: GO TO **(8)**

NO: GO TO **(11)**

(8) GPS Receiver CAN Check**Action:**

Key Switch in the RUN position

Press INFO button on GREENSTAR™ Display

Press button next to **GREENSTAR™ Display**

Press button next to **CAN Bus Analyzer**

Observe addresses listed under **Source ID**

Possible Address entries listed below:

- **0xD2 Mobile Processor**
- **0xFC KeyCard**
- **0x1C STARFIRE™ Receiver**
- **0x2B Mobile Processor in Reprogramming Mode**
- **0x80 GREENSTAR™ Display**
- **0x81 Secondary GREENSTAR™ Display**

Is address **0x1C** (GPS Receiver) listed and **Message Count** number increasing?

Result:

YES: DONE

NO: GO TO **(9)**

(9) GPS Position Receiver CAN Hi Check

Observe **Speed Source** value on GREENSTAR™ Display.

Is there a **Speed Source** selected?

Result:

YES: Call 1-888-GRNSTAR or enter an AMS DTAC case.

NO: Vehicle needs a Speed Source for FIELD DOC™ Basic to function.

NO: GO TO **(17)**

(19) Implement Switch Usage Check

Action:

Is Implement Switch used to turn Recording **ON** and **OFF** ?

Result:

YES: GO TO **(20)**

NO: GO TO **(23)**

(20) Implement Switch Operation Check

Action:

Drive vehicle in field and actuate the implement switch by lowering and raising implement.

Observe GREENSTAR™ Display.

Did Recording Turn **ON** and **OFF**?

Result:

YES: GO TO **(21)**

NO: GO TO **(24)**

(21) Implement Switch Check

Action:

Is Implement Switch turning Recording **ON** and **OFF** opposite of customer's expectation?

Result:

YES: Reverse Selection on Step 24 GO TO **(24)**

NO: GO TO **(22)**

(22) Implement Switch Operational Check

Action:

Perform the desired field task(s)

Did the use of the Implement Switch to turn Recording **ON/OFF** accurately reflect FIELD DOC™ task(s)?

PCU Addresses (—19,999)—Continued

PCU Addresses (—19,999)

Address Number	Function Calibratable (Displayed—Normal)	Read Only (Displayed—Normal)	Not Used
1		Recall and clear codes	
2		System diagnostic ("Beep") mode (Including speed sensors)	
3 & 4			X
5 ¹		Transmission enable relays K17, K18 and K22 (000—Open) (001—Closed)	
6 ¹		Forward enable relay K21 (000—Open) (001—Closed)	
7 ¹		Reverse enable relay K20 (000—Open) (001—Closed)	
8 ¹		Not neutral relay K22 (000—Open) (001—Closed)	
9			X
10 ¹		Clutch disengaged switch status (000—Open) (001—Closed)	
11 ¹		Clutch engaged switch status (000—Open) (001—Closed)	
12—19			X
20 ¹		Solenoid valve pressure (duty cycle %) and voltage checks (XX.1—100%—13.3 volts) (XX.2—0%—0 volts) (XX.3—36%—4.4 volts) (XX.4—57%—7.3 volts) (XX.5—Ramp—0 to 13.3 volts) XX=Cr (Reverse Slot Position) XX=Ab, bC, cC, dC, C1, C3, C2 or C4 (Forward Slot Position)	
21 ¹		Hydraulic oil temperature reading (0°C)	
22	Transmission calibration (000 or 001 Oil Grades) (Calibrate Shift Valves)		

¹ See test procedure of the same number in Group 15A.

PCU Addresses (—19,999)

Address Number	Function Calibratable (Displayed—Normal)	Read Only (Displayed—Normal)	Not Used
23 ¹	No Load Fuel Flow Calibration		
24	Rear PTO calibration (engine running) (24/PTO) (24/END)		
25 ²		PTO calibration fill pressure check (000—100) Range	
26 ²		PTO calibration fill volume check (26-006—Milliseconds ÷ 20)	
27	(Displayed—Normal) (003—3 Reverse Gears) (004—4 Reverse Gears) (005—5 Reverse Gears) European		
28 ³	Engineering Mode (Factory Use)		X
29 ²	Load compensation per tractor model (081—8100 Tractor) (082—8200 Tractor) (083—8300 Tractor) (084—8400 Tractor)		
30	Calibration Pressure and Fill Volume Values		
31 ⁴	Blow off Ball Valve Speed Default is 52 rpm. Valid Range is 26 to 64		

Action:

Check for correct engine speed sensor calibration value at CCU address 20. Correct value should be "027". See "[CCU Calibration Procedure](#)" Section 240, Group 20.

Result:

YES:If calibration value is correct, check engine speed sensor and harness.

NO:Re-calibrate. See CCU address "20", Section 240, Group 20.

(3) Check Wheel Rolling Circumference Calibration**Action:**

Check for correct wheel rolling circumference calibration values at CCU addresses 56 and 57. See "[CCU Calibration Procedure](#)" Section 240, Group 20.

→NOTE:

The displayed calibration value at addresses "56" and "57" may be different than shown in the table (Section 240, Group 20). A difference of ± 15 is acceptable IF the calibration value is the result of driving the tractor 400 feet to calibrate wheel rolling circumference.

Result:

YES:If calibration value is correct, [GO TO \(5\)](#).

NO:Re-calibrate. See CCU addresses "56" and "57", Section 240, Group 20.

(4) Check Transmission Pulses Per Axle Revolution Calibration**Action:**

Check for correct calibration value of transmission pulses per axle revolution at CCU addresses 58 and 59. See "[CCU Calibration Procedure](#)" Section 240, Group 20.

Result:

YES:If calibration value is correct, [GO TO \(5\)](#).

NO:Re-calibrate. See CCU addresses "58" and "59", Section 240, Group 20.

(5) Check Wheel Speed Sensor Output**Action:****→NOTE:**

Because faulty wheel speed sensor operation can be intermittent due to splashing oil, the sensor should be checked when the problem is occurring. The fault may occur more frequently when the oil is hot.

Check for correct wheel speed sensor output. See "[CCU Test Procedure No. 5](#)", Section 240, Group 20.

Result:

YES:GO TO Section 250 to check for slipping clutch elements.

Preliminary Checks—Tractor Condition—Form 2

Form 2. Prelim. Checks—Tractor Condition

TRACTOR MODEL — SERIAL NUMBER

DATE — TIME

Record ALL Stored Codes:

Clear Codes, Operate Tractor, Record Again:

Record Transmission Pressure at "PS" Port on Top of SCV Stack:

NOTE: Oil temperature should be greater than 38°C (100° F)

at 1000 rpm

Specification - 1620—1660 kPa (16—17 bar) (235—240 psi)

at 2000 rpm

Specification - 1793—1827 kPa (18—19 bar) (260—265 psi)

IMPORTANT: Low or overly high system pressure possibly will cause poor shifting.
Adjust transmission pressure control valve as needed, then RECALIBRATE.

Perform Leak Tests for PARK and PTO (and MFWD and Differential Lock for Wheel Tractors). (See Group 10, Test 19 for 65° C only).

Record Below:

Oil Temperature

LUBE PRESSURE @ 1000 rpm:

Park Brake

ON

OFF

(Leave ON)

PTO

ON

OFF

(Leave OFF)

Wheel Tractors:

MFWD

ON

OFF

(Leave ON)

Differential Lock

ON

OFF

(Leave OFF)

Perform Element Leak Tests (MFWD in ON position for Wheel Tractors)

Record Below:

Ab

NOTE: Compare Ab to CC

bC

cC

Compare bC, cC, dC, C1, C2, C3, C4, and Cr

dC

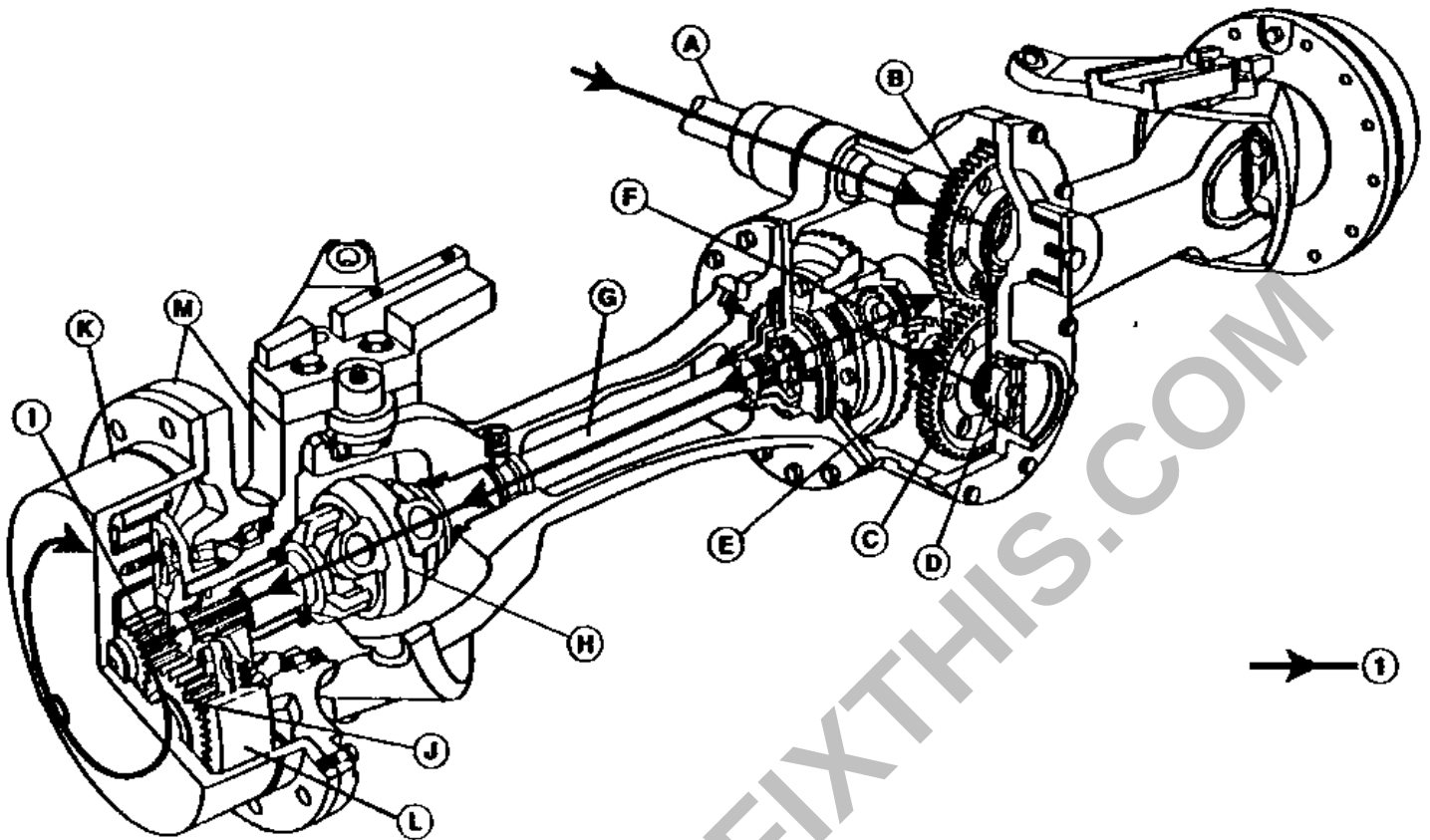
C1

A difference of 30 kPa (0.3 bar) (4.0 psi) indicates a leak.

C3

C2

Mechanical Front Wheel Drive (MFWD) Axle Operation



MFWD Axle Operation

LEGEND:

A	MFWD Drive Shaft
B	Drive Gear
C	Driven Gear
D	Bevel Pinion Shaft
E	Differential Ring Gear
F	Differential Assembly
G	Axle Shaft
H	Universal Joint
I	Sun Shaft
J	Planetary Pinions
K	Planetary Carrier
L	Planetary Ring Gear
M	Knuckle Housing/Wheel Hub
1	Power Flow

Power flows into the axle from the transmission output shaft, MFWD clutch, and MFWD drive shaft.

The drive shaft (A) is splined to the drive gear (B) which meshes with the driven gear (C) splined to the bevel pinion shaft (D).

The bevel pinion shaft turns the differential ring gear (E), causing the differential assembly (F) to rotate.

The differential assembly supplies power to the axle shaft (G). (See MFWD Differential Operation—Limited Slip.) The axle shaft is splined to a double universal joint (H). The outboard end of the double universal joint is splined to a sun shaft (I).

The sun shaft rotates fixed planetary pinions (J) located in the planetary carrier (K). As the planet pinions rotate, the pinions "walk around" the internal planetary ring gear (L), which is locked to the knuckle housing/wheel hub (M), rotating the carrier.

The European version MFWD axle is equipped with secondary brakes and different quantity and type of differential friction disks and separator plates.

Resident oil in the bottom half of the differential case lubricates the input gear train, differential assembly, and axle shaft. The universal joint is lubed for life.

→NOTE:

If display is showing a heading error, this needs to be considered when measuring the tractors accuracy. The advertised accuracy of ± 10 cm (± 4 in) is based on tests run under controlled conditions with intervals of 15 minutes "pass to pass". Variations in tractors and operating conditions can slightly effect the accuracy of this system. Consider your operating conditions when evaluating the systems accuracy, take into effect cab roll, GPS drift, dual vs single tires, ballasting, and implement being used.

It may be required to change the AutoTrac steering gain value in the SSU to make the tractors steering system respond faster or slower. Access SSU address 37 and adjust this setting from 50 to 200. (50 slowest, 200 fastest)

Repeat this test several more times over a 15 minute period to check repeatability of the AutoTrac system.

If needed, make setup changes to the tractor and recheck accuracy, if tractor setup is good, return to diagnosis in progress.

LEGEND:

A5	Hitch Control Unit/SCV 1, 2 & 3 Control Unit (HCU/SCU) (SE7, W3)
A5X1	30-Way HCU/SCU Connector
A5X2	18-Way HCU/SCU Connector
A16	Armrest Control Unit (ACU) (SE15, W14)
A16X1	6-Way Hitch Control Levers Harness-to-ACU
A16X2	10-Way SCV 1, 2 and 3 Control Levers Harness-to-ACU
F5	Hitch Control Unit (HCU) and SCV 1 (SE7)
F6	SCV 2 & 3 (SE7)
F10	"Diag" Mode Enable (SE9)
F11	Alternator, Fuel Heater, Start Aid (SE1)
R6	Hitch Rate-of-Drop Control (SE15, W16)
R7	Hitch Raise Limit Control (SE15, W16)
R8	Hitch Load/Depth Control (SE15, W16)
R9	Hitch Control Lever (SE15, W16)
S21	External Raise/Lower Switch (SE7, W4, W6)
S22	External Raise/Lower Switch (RH) 2 (SE7, W6)
W1	Single Point Ground (SPG) (Cct. 050)
W2	Chassis Ground (Cct. 010)
W3	Chassis Harness
W5	Touch-Set Depth Control (TSDC) Harness
W14	Armrest Control Unit (ACU) Harness
W16	Hitch Controls Harness
X11	Cab Harness-to-Chassis Harness (78-Way) (W3, W4, W6)
X12	Load Center Junction Block Connector Post (W4, W6)
X13	Touch-Set Depth Control (TSDC) Harness-to-Chassis Harness Connector (W5)
X15	Hitch Solenoids and SCV 1 Solenoids-to-Chassis Harness (W3)
X22	Seat Harness-to-Cab Harness (W22, W4, W6)
X24	Armrest Control Unit Harness-to-Cab Harness (W14, W4, W6)
X29	PST Valves Harness-to-Chassis Harness (W11, W3)
X41	Electro-Hydraulic Depth Control Harness Connector (W5, W3)
Y5	Hitch Raise Solenoid (SE7, W3)
Y6	Hitch Lower Solenoid (SE7, W3)

HCU Test Procedure No. 1**Clearing HCU Diagnostic Code Numbers After Repair****(1) Accessing HCU Diagnostic Code Numbers****Action:****01/HCU Displayed****→NOTE:****This test procedure applies to all HCU diagnostic code numbers.**

If diagnostic fuse is NOT in location F10, turn key switch OFF and see "HCU Enter/Exit Diagnostic Mode", this group.

If diagnostic fuse is in location F10 and you are in an ICU address mode, activate the right or left turn signal to obtain "01/HCU" on the corner post display.

SCo Diagnostic Code Numbers

SCo Diagnostic Code Numbers

Diagnostic Code Number	SCo Circuit Malfunction	SCo Test Procedure Sect 270/Grp 15
022	Battery Voltage Out of Range (Less than 8 volts)	None
027	Calibration Not Complete	21
028	Calibration Memory Failure or Never Calculated	22
060 ¹	CCD Communication Line Failure	24 & See Footnote ¹
090	SCV Function Disabled Due to Low Oil Level	CCU 7
098	Invalid Option Pin Configuration (Jumper in Wrong Location at 9-Way Connector)	None
099	ROW TRAK Option Connector Removed or Installed with Key ON	LHP 4
100	Operator Seat Vacant with SCV in Detented Flow and Transmission in Neutral	ACU 19
140	SCV No. 4 Extend Control Circuit	10
141	SCV No. 4 Extend Valve Circuit	16
142	SCV No. 4 Retract Valve Circuit	16
143	SCV No. 4 Extend Valve (CAL Fault)	16
144	SCV No. 4 Retract Valve (CAL Fault)	16
150	SCV No. 5 Control Circuit	11
151	SCV No. 5 Extend Valve Circuit	17
152	SCV No. 5 Retract Valve Circuit	17
153	SCV No. 5 Extend Valve (CAL Fault)	17
154	SCV No. 5 Retract Valve (CAL Fault)	17

¹ See CCD Network Diagnosis, Section 240, Group 15.

SCo Test Procedure No. 2

→NOTE:

SCo Test Procedure No. 2 is reserved for a diagnostic "beep" mode test. However, the diagnostic "beep" mode test is unavailable at this time. Even though SCo address "02" can be accessed, no SCo related circuits or components will generate a "beep".

The number 4 and 5 SCV controls can be checked in the "beep" mode using ACU Test Procedure No. 2.

LHP Test Procedure No. 18

System Voltage Test

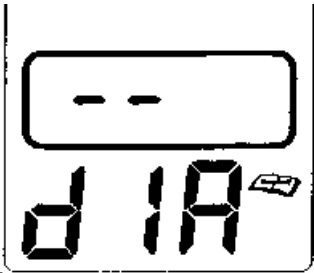
System Voltage Test

LHP Address	Specification	Circuit Description	Related Diagnostic Code Number (LHP)
18	Battery Voltage	System Voltage	"22"

System Voltage Test

(1) Access Diagnostic Mode

Action:



Dashes and "dIA" Displayed

Remove "diagnostic fuse" (A) from its storage location at F9 and install it in "diagnostic" location at F10.

Turn key switch (B) ON but do not start tractor.

The corner post display will complete a "lamp check" cycle in approximately two seconds and then display:

--
dIA

Result:

YES: [GO TO \(2\)](#) .

NO:Check:•diagnostic fuse (F10)•diagnostic circuit (312)

(2) Access "ALL"

Action:



Dashes and "ALL" Displayed

Activate the right turn signal.

The display should change to dashes and "ALL" (A).

0	From Primary Pump
1	High Pressure Oil
2	Priority Circuit Pressure Oil
3	Sump Oil
4	Trapped Oil

PREVIEW ONLY

You're viewing 25 of 2687 pages

The full manual includes:

- All 2687 pages, complete
 - Searchable PDF (find any keyword)
 - No watermarks
 - Instant download
 - Print-ready quality
-

GET FULL MANUAL NOW

John Deere 8100, 8200, 8300, 8400 Operation and Test Manual



Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual