Section 246C—AG MANAGEMENT SOLUTIONS (AMS) — AUTOTRAC
Group 5A—How to Use This Diagnostic Information
Group 10A—Accessing Diagnostic Addresses and Codes
Group 10B—Diagnostic Trouble Codes
Group 15A—AutoTrac Identification
Group 15B—AutoTrac Diagnostics - 8000 Series Factory Installed
Group 15C—AutoTrac Diagnostics - 8000 Series Field Installed
Group 15D—GREENSTAR™ Parallel Tracking Identification
Group 15E—Parallel Tracking Diagnostics - 8000 Series Factory Installed
Group 15F—Parallel Tracking Diagnostics - 8000 Series Field Installed
Group 15G—GREENSTAR™ Display Diagnostics
Group 15H—GREENSTAR™ Mobile Processor Diagnostics
Group 15I—STARFIRE™ Receiver Diagnostics
Group 15J—GREENSTAR™ KeyCard Diagnostics
Group 15K—AutoTrac CAN Bus Identification
Group 15L—AutoTrac CAN Bus Diagnostics - 8000 Series Factory Installed
Group 15M—AutoTrac CAN Bus Diagnostics - 8000 Series Field Installed
Group 15N—AutoTrac CCD Bus Identification
Group 15O—AutoTrac CCD Bus Diagnostics - 8000 Series Factory Installed
Group 15P—AutoTrac CCD Bus Diagnostics - 8000 Series Field Installed
Group 15Q—AutoTrac Power Identification
Group 15R—AutoTrac Power Diagnostics - 8000 Series Factory Installed
Group 15S—AutoTrac Power Diagnostics - 8000 Series Field Installed
Group 15T—AutoTrac Status Identification
Group 15U—AutoTrac Status Diagnostics - 8000 Series Factory Installed
Group 15V—AutoTrac Status Diagnostics - 8000 Series Field Installed
Group 15W—AutoTrac Steering Response Identification
Group 15X—AutoTrac Steering Response Diag. - 8000 Series Factory Installed
Group 15Y—AutoTrac Steering Response Diag. - 8000 Series Field Installed
Group 15Z—AutoTrac Steering Control Unit Identification
Group 15AA—AutoTrac Steering Control Unit Diag - 8000 Series Factory Installed
Group 15AB—AutoTrac Steering Control Unit Diag - 8000 Series Field Installed
Group 20A—Circuit Code Listing
Group 20B—Connector Information

Section 246D—AG MANAGEMENT SOLUTIONS (AMS) —FIELD DOC™
Group 15A—GPS Position and StarFire Receiver Operation and Tests
Group 15B—FIELD DOC™ Basic Operation and Tests

Section 250—POWERSHIFT TRANSMISSION
Group 10—Operational Checks
Group 15—Tests And Adjustments
Group 20—Theory of Operation
Group 25—Schematics and Diagrams

Section 256—DRIVE SYSTEMS
Group 15—Tests And Adjustments
Group 20—Theory of Operation
Group 25—Schematics and Diagrams

Section 260—STEERING AND BRAKES
Group 05—Preliminary Checks
Group 10—Operational Checks
Group 15—Tests And Adjustments
Group 20—Theory of Operation
Group 25—Schematics and Diagrams

Section 270—HYDRAULIC SYSTEM
Group 05—Preliminary Checks
Group 10—Operational Checks
Group 15—Tests And Adjustments
Group 20—Theory of Operation
Group 25—Schematics and Diagrams

Section 290—OPERATOR STATION
Group 05—Preliminary Checks
Group 10—Operational Checks
Group 15—Tests And Adjustments
Group 20—Theory Of Operation
Group 25—Schematics and Diagrams

Section 299—TOOLS
Group 10—Fabricated Tools
Group 15—Test Kits

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49 — CAN Bus Problem

No primary GREENSTAR™ Display detected.

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EM44581,00004AA -19-19NOV09-1/3

Code Diagnosis

Displayed text: (None)

Additional References:

Reference **246C-15G-001**, Theory of Operation

Reference **246C-15G-002**, Electrical Schematic

EM44581,00004AA -19-19NOV09-2/3

1 **GREENSTAR™ Display Check**	See reference **246C-15G-003**, **GREENSTAR™ Display Diagnostics** to diagnose a GREENSTAR™ Display problem.	**OK:** Code clears DONE

EM44581,00004AA -19-19NOV09-3/3

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ATC 10.4 — Cab Temperature Control Circuit Voltage Low

Service code 10.4 indicates that the temperature set control potentiometer is above maximum value (short circuit to power or open circuit).

RX33672,00002FF -19-11MAR03-1/3

Service Code Diagnosis

NOTE: Codes for the new ATC are displayed on ATC control on side panel or on SERVICE ADVISOR™. Code displayed will have a suffix letter (a or s) shown. For example, if 01.3a, is displayed,"Cab Temperature Sensor Circuit Voltage High" is currently malfunctioning (active). 01.3s would indicate "Cab Temperature Sensor Circuit Voltage High" was previously stored.

NOTE: CLIMATRAK™ codes are not broadcast on the CCD network (Corner Post Display).

Additional References:

- *CLIMATRAK™ (ATC) Theory Of Operation (010001—) (See Reference 290-20-011).*
- *SE3c-Standard HVAC, SE3d-CLIMATRAK™ (010001—) (See Reference 240-25-042).*
- *CLIMATRAK™ (ATC) Wiring Diagram (010001—) (See Reference 245-ATC-300).*
- *General Reference List (See Reference 210-15-001).*

SERVICE ADVISOR is a trademark of Deere & Company
CLIMATRAK is a trademark of Deere & Company

RX33672,00002FF -19-11MAR03-2/3

❶	**Replace CLIMATRAK™ Control Unit**	The temperature set control potentiometer can not be serviced individually. Replace and calibrate CLIMATRAK™ Control (ATC) unit (A222) located in side control panel.	**NOT OK:** Replace CLIMATRAK™ Control Unit and perform CLIMATRAK™ (ATC) Calibration Procedure (010001—), (See Reference 290-15-022).

RX33672,00002FF -19-11MAR03-3/3

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CCU 093 — Intake Manifold Air Temperature Message Missing

CCU 093 is stored if the CCU does not receive the intake manifold air temperature message from the ECU via the CAN Network. The ECU uses circuits 463 and 464 from the intake manifold air temperature sensor to receive the manifold air temperature message. The Information and Service lamps will flash.

OURX937,0000054 -19-11MAR03-1/3

Service Code Diagnosis

NOTE: Additional References:

- *CCU Wiring Diagram (—010000) (See Reference 245-CCU-300.)*
- *CCU Wiring Diagram (010001—) (See Reference 245-CCU-301.)*
- *ECU Wiring Diagram (—010000) (See Reference 245-ECU-300.)*
- *ECU Wiring Diagram (010001—) (See Reference 245-ECU-301.)*
- *ICU Wiring Diagram (—010000) (See Reference 245-ICU-300.)*
- *ICU Wiring Diagram (010001—) (See Reference 245-ICU-301.)*
- *General References List (See Reference 210-15-001.)*

OURX937,0000054 -19-11MAR03-2/3

1 **CAN Network Diagnosis**	*NOTE: Recall, Record and Clear Codes before proceeding. (See Reference 245-05-001.)* Perform **CAN Network Diagnosis**, (See Reference 245-05-006). This procedure covers testing the CAN Communication circuits and their connections to control units and separate terminators (Active, Passive).	**OK:** Circuit checks good. Diagnosis complete. **NOT OK:** Repair circuit as necessary.

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EHo 163 — Front Brake Solenoid Calibration Fault

EHo 163 is stored when the current determined during a front brake calibration is too small or too large. EHo 163 remains active until a successful calibration is performed. The Information, Secondary hand brake and Read Manual indicators will flash until the fault condition is corrected. This code is only for European tractors.

OUO1041,0000068 -19-20AUG03-1/4

Service Code Diagnosis

NOTE: Additional References:

- *EHo Theory of Operation (See Reference 245-EHo-200.)*
- *Independent Link Suspension Mechanical Theory (See Reference 256-20-016.)*
- *Independent Link Suspension Hydraulic Theory (See Reference 270-20-013.)*
- *Tractor Schematic List (See Reference 240-25-001.)*
- *SE13b- Front Hitch / Independent Link Suspension / SCV 4 and 5 Control Unit (EHo) (See Reference 240-25-020.)*
- *EHo Wiring Diagram (—010000) (See Reference 245-EHo-300.)*
- *EHo Wiring Diagram (010001—) (See Reference 245-EHo-301.)*
- *General References List (See Reference 210-15-001.)*

OUO1041,0000068 -19-20AUG03-2/4

1 Front Brake Solenoid Check

NOTE: Recall, Record and Clear Codes before proceeding. (See Reference 245-05-001.)

Access EHo address 17 and perform **Front Brake Valve Current Status** Test.

(See **EHo Addresses**, Reference 245-EHo-001.)

(See Reference 245-05-002, Access Control Unit Addresses.)

The Front Brake Valve (Y885) is a proportional valve, meaning that the amount the valve opens depends on the amount of current sent to the solenoid. Therefore its display is measured as a percentage.

EHo Address 17—Specification

Front Brake Valve—Hand Brake	
Lowered	0%
Hand Brake Raised	75% (±25)

OK: No problems found.

Access EHo address 02 and perform **EHo System Beep Mode** to check for intermittent circuit problems.

(See **EHo Addresses**, Reference 245-EHo-001.)

NOT OK: Made necessary repairs. Operate hand brake lever and see if code returns.

GO TO 2

OUO1041,0000068 -19-20AUG03-3/4

2 Front Brake Calibration

Access EHo address 21 and perform **Front Brake Calibration (European Only)**.

(See **EHo Addresses**, Reference 245-EHo-001.)

(See Reference 245-05-002, Access Control Unit Addresses.)

The calibration procedure is to be initiated when the tractor is stationary and no EHo codes are active. Secondary hand brake lever is used to perform calibration by manually controlling the front brake solenoid and hydraulic pressure to the brake element.

OK: Diagnosis complete.

NOT OK: Made necessary repairs. Diagnosis complete.

OUO1041,0000068 -19-20AUG03-4/4

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PCU 046 — Neutral or Park Commanded / Forward or Reverse Enabled

PCU 046 is stored when NEUTRAL or PARK is commanded, but the FORWARD or REVERSE inputs from K20 or K21 is active. The transmission controller will default to NEUTRAL and the corner post will display "N". The operator must move the shift lever to NEUTRAL before attempting to go back into gear.

OURX937,0000082 -19-11MAR03-1/4

Service Code Diagnosis

NOTE: Additional References:

- *List of Powershift Transmission Theories (See Reference 250-20-001.)*
- *ACU Wiring Diagram (See Reference 245-ACU-300.)*
- *CCU Wiring Diagram (—010000) (See Reference 245-CCU-300.)*
- *CCU Wiring Diagram (010001—) (See Reference 245-CCU-301.)*
- *List of Powershift Drawings (See Reference 250-25-001.)*
- *General References List (See Reference 210-15-001.)*

OURX937,0000082 -19-11MAR03-2/4

❶ **Transmission Forward Relay Check**	Access PCU address 06 and perform **Transmission Forward Relay Status** Test. (See **PCU Addresses**, Reference 245-PCU-001.) (See Reference 245-05-002, Access Control Unit Addresses.) **PCU Address 06—Specification** Transmission Forward Relay Status—Shift Lever In Forward ..... XX1 Shift Lever Not In Forward XX0	**OK:** GO TO ❷ **NOT OK:** Made necessary repairs. GO TO ❷

OURX937,0000082 -19-11MAR03-3/4

❷ **Transmission Reverse Relay Check**	Access PCU address 07 and perform **Transmission Reverse Relay Status** Test. (See **PCU Addresses**, Reference 245-PCU-001.) (See Reference 245-05-002, Access Control Unit Addresses.) **PCU Address 07—Specification** Transmission Reverse Relay Status Test—Shift Lever In Reverse ..... XX1 Shift Lever Not In Reverse XX0	**OK:** Made necessary repairs. Diagnosis complete.

OURX937,0000082 -19-11MAR03-4/4

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❷ **Access SCo Address 11**	Access SCo address 11 and perform **SCV 5 Control Lever Voltage** Test. (See **SCo Addresses**, Reference 245-SCo-001.) (See Reference 245-05-002, Access Control Unit Addresses.) The engine must be OFF for this test. 1. With SCV 5 (R804) in the neutral position, the display should read: **11** **003** 2. Push the SCV switch forward, but not into detent, the display should read: **11** **002** 3. Push the SCV switch forward, into detent, the display should read: **11** **001** 4. Push the SCV switch full forward, past detent into “float”, the display should read: **11** **000** 5. Release the SCV switch back to neutral position. Pull the SCV switch rearward, but not into detent, the display should read: **11** **004**	**OK:** GO TO ❸

OURX937,00000F3 -19-11MAR03-4/5

❸ **Test Continued**	6. Pull the SCV 5 switch (R804) rearward, into detent, the display should read: **11** **005** 7. Release the SCV switch back to neutral position. The display will return to: **11** **003**	**OK:** All displays correct. Diagnosis complete. **NOT OK:** If displays were not correct, perform the SCV Control Switch Test. Access ACU address 16 and perform **SCV 1-5 Lever Voltage and Switch Status** Test. (See **ACU Addresses**, Reference 245-ACU-001.) (See Reference 245-05-002, Access Control Unit Addresses.)

OURX937,00000F3 -19-11MAR03-5/5

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4 Check Individual Lights	If one or more hazard lamps (from either left or right side) are not flashing, temporarily replace unlit lamp(s) with known good lamp to isolate problem as lamp or circuit malfunction. *NOTE: All right side hazard lamps and indicator are on circuit 115.* *All left side hazard lamps and indicator are on circuit 125.* SE5a-North American Lighting Wiring Diagram (—010000) (See Reference 240-25-027.) or SE5c-North American Lighting Diagram (010001—) (See Reference 240-25-057.)	**OK:** Warning lamps flash with temporary lamps. Replace bad lamps. GO TO 2 **NOT OK:** One or more warning lamps do not flash with temporary lamps. Refer to wore diagram and repair circuit(s) as necessary. GO TO 2

OUO1041,0000263 -19-30AUG03-6/12

5 Check Left Turn Relay (K9)	Remove left turn relay (K9). Check for battery voltage on pins 86 and 30.	**OK:** Voltage and "pulsating" ground are present and jumper wire lights left side lamps. Replace relay K9. GO TO 2
	With key switch (S001) ON, check for a "pulsating" ground on pin 85. This comes from CCU (A981) pin A2 of X981-2, circuit 133.	**NOT OK:** Incorrect voltage on pins 30 and 86 of K9 relay. Repair circuit 102 from F32 pin B to all of its loads. GO TO 2
	If voltage and "pulsating" ground are present, place jumper wire across pins 30 and 87. This applies power to circuit 125 and the left side lamps.	**NOT OK:** No "pulsating" ground on pin 85 of K9 relay. GO TO 9
	SE5a-North American Lighting Wiring Diagram (—010000) (See Reference 240-25-027.) or SE5c-North American Lighting Diagram (010001—) (See Reference 240-25-057.)	**NOT OK:** Jumper wire did not light lamps with voltage on pins 30 and 86. Repair circuit 125 from pin 87 to all of its loads. GO TO 2

Continued on next page

OUO1041,0000263 -19-30AUG03-7/12

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PTO Will Not Stop Turning

OURX927,0000091 -19-11MAR03-1/5

Observable Symptom Diagnosis

NOTE: Diagnosis of related service code(s) may resolve this observable symptom and must be performed first. Consult with customer for resolution of unrelated codes. See Additional References for Service Code Descriptions.

Additional References:

- *Drivetrain Theory Of Operation Contents (See Reference 256-20-001.)*
- *Tractor Schematic List (See Reference 240-25-001.)*
- *CCU Wiring Diagram (—010000) (See Reference 245-CCU-300.)*
- *CCU Wiring Diagram (010001—) (See Reference 245-CCU-301.)*
- *Recall, Record and Clear Codes (See Reference 245-05-001.)*
- *Service Code Descriptions (See Reference 245-05-003.)*
- *General References List (See Reference 210-15-001.)*

OURX927,0000091 -19-11MAR03-2/5

1 PTO control Valve Check	*NOTE: All related codes must be resolved before proceeding.* 1. Shut off engine and locate and unplug PTO solenoid valve connector. 2. Start engine and check to see if PTO is turning.	**OK:** PTO shuts off. GO TO 2 **NOT OK:** PTO is turning. GO TO 3

OURX927,0000091 -19-11MAR03-3/5

2 PTO Solenoid Circuit Test	1. Check for CCU codes 071, 072 and 073 and diagnose them first if present. If CCU 071 is present, remove and test PTO control switch (S501) for sticking in the ON mode. If no codes are present, continue on. 2. Circuit 584 and 693 are getting voltage and ground supplied to them when they should not be. Refer to electrical schematics listed in additional references and test circuits 584 and 693 between CCU connector X981-3 and PTO solenoid Y500. If OK, continue on. 3. If no codes are present and CCU (A981) is controlling circuits 584 and 693 when not commanded, replace CCU (A981) and perform complete calibration / configuration procedure of CCU. Access CCU address 21 and perform **Rear PTO Speed Sensor Configuration**. (See **CCU Addresses**, Reference 245-CCU-001.) (See Reference 245-05-002, Access Control Unit Addresses.)	**OK:** Diagnosis complete.

OURX927,0000091 -19-11MAR03-4/5

3 Diagnosis Summary	If PTO is turning with PTO solenoid valve unplugged, the possibilities are as follows. • Solenoid valve is stuck in the ON position. Remove and replace solenoid valve assembly. • PTO clutch has failed and is seized together slipping PTO brake. Inspect and repair PTO clutch and brake assembly.	**NOT OK:** Repair as needed. Diagnosis complete.

OURX927,0000091 -19-11MAR03-5/5

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23 Pressurize Load Sense Circuit	Perform **Part Three** of the **Rear Hitch / SCV Valve Leak Test**. (See Reference 270-15-005.)	**OK:** Problem is in load sense circuit. Load sense circuit in hitch valve is blocked or hitch spool is scored at third land from left end and leaking pressure oil to the return circuit. Inspect and repair. GO TO 12 **NOT OK:** GO TO 25

OURX927,00000AF -19-26OCT04-26/53

24 Causes of SCV Leakage	1. SCV / Hitch-Pump Pressure Passage a. Loose valve stack through bolts. Check nuts for proper torque. b. Two shuttle check (dime) valve disks in one location. 2. SCV spool scored. Leaks at neutral when another SCV is at stall. 3. SCV Hose Coupler Body O-ring a. Check right coupler if leak test failed during retract. b. Check left coupler if leak test failed during extend. 4. SCV or Hitch Compensator Plug O-ring a. SCV leak test would have failed at both extend and retract. 5. Hitch surge relief valve leaking or incorrect relief pressure. 6. Hitch spool valve stuck in lowering position. 7. SCV/Hitch spool binding in valve bore.	**OK:** Inspect and repair as necessary. GO TO 12

OURX927,00000AF -19-26OCT04-27/53

25 Preparation for Stall Pressure Problem Diagnosis	Perform **Part Four** of the **Rear Hitch / SCV Valve Leak Test**. (See Reference 270-15-005.)	**OK:** GO TO 34

Continued on next page

OURX927,00000AF -19-26OCT04-28/53

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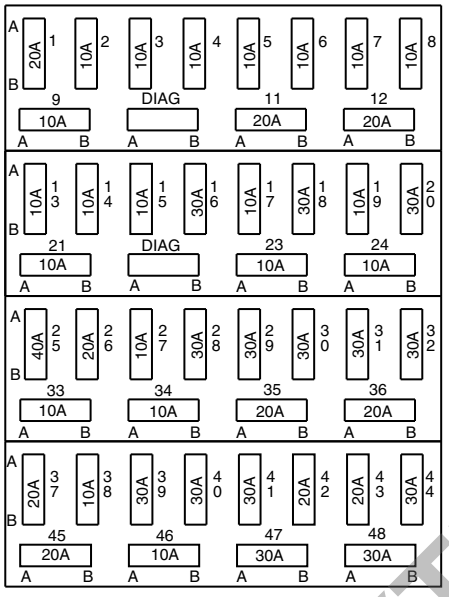
A100— Delay Timer
A120— Turn Signal / Hazard Flasher
E132— Front Grill Spotlight (1) (Option)
E133— Roof Beacon Light
E134— Front Grill Floods (2)
E135— Left High / Low Lamp
E136— Right High / Low Lamp
E160— Left Rear Tail and Right Front Clearance Light (2)
E161— Right Rear Tail and Left Front Clearance Light (2)
E162— Rear License Plate Light (1)
E163— Brake Light (2)
E164— Right Front and Right Fender Light (Yellow)
E165— Left Front and Left Fender Light (Yellow)
E180— Left / Right Rear Roof Floods (2) (+ Optional 2)
E181— Left / Right Front Roof Floods (2) (Option)
E182— Left / Right Upper Midbody Floods (2)
E183— Left / Right Rear Fender Floods (2)
E184— Left / Right Lower Midbody Floods (2) (Option)
F20— Light Switch, Road Switch (European Tractors), Delay Timer Fuse
F24— Radio, Clock (European Tractors), ICU Backlighting, Right Console Lamp Fuse
F29— Rear Roof Floods, Beacon Light, K4 Relay Fuse
F30— Front Grill Spotlight, Front Grill Floods Fuse
F31— Rear Fender Foods, K5 Relay (European Tractors), Side Floods (European Tractors), 7-Way Accessory Outlet Fuse
F32— Hazard Lamps and Switch, Turn Signal Lamps, K8 and K9 Relays
F35— Left Tail Lamp, Right Clearance Lamp (European Tractors), Rear License Plate Lamp (European Tractors) Fuse
F36— Right Tail Lamp, Left Clearance Lamp (European Tractors) Fuse
F37— Brake Lamps, K11 Relay (European Tractors) Fuse
F39— 7-Way Accessory Outlet, K12 Relay Fuse
F41— Front Chassis Flood Lamps (European Tractors), K10 Relay (European Tractors) Fuse
F42— Headlamps, K1 and K2 Relays Fuse
F44— Upper Side Flood Lamps, K6 Relay (North American Tractors) Fuse
H106— Roof Beacon Indicator
K1—High Beam Relay
K2—Low Beam Relay
K3—Front Roof Floods Relay
K4—Rear Roof Floods Relay
K5—Rear Fender Floods Relay
K6—Lower Midbody Floods Relay
K7—K4 Grounding Relay (North American Tractors), K14 Grounding Relay (European Tractors)
K8—Right Turn Relay
K9—Left Turn Relay
K10— Front Grill Floods Relay
K11— Brake Lamps Relay
K12— Accessory Relay
K14— Front Grill Spotlight Relay
M100— Power Mirror
S101— Hazard Lights Switch
S106— Roof Beacon Light Switch
S107— Mirror Switch
S120— Road Light Switch
S180— Field Light Switch
V1—Diode Block No. 1 (Located on load center)
V2—Diode Block No. 2 (Located on load center)
X160— Trailer Lighting and Accessory Outlet Connector

OUO1041,0000052 -19-05NOV04-2/2

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Reference 240-25-063, Fuse Panel (European) (010001—)



RXA0066423 —UN—26MAR03

F1 — Central Control Unit/Powershift Control Unit (CCU/PCU) (SE8b, W6)
F2 — Instrument Control Unit (ICU), Warning Horn, Hand Brake Pedal Switch, SCV Setup Panel (SE9b, W6)
F3 — Armrest Control Unit (ACU) (SE14, W6)
F4 — Corner Post Display, Performance Monitor (Optional) (SE12, W6)
F5 — Hitch Control Unit (HCU) and SCV 1 (SE7, W6)
F6 — SCV 2 and 3 (SE7, W6)
F7 — SCV 4 and 5 Control Unit (SCo) (SE13, W6)
F8 — Steering System Control Unit (SSU) (SE15, W6)
F9 — 'Diag' Fuse Storage (SE8b, W6)
F10 — 'Diag' Mode Enable (SE8b, W6)
F11 — Alternator, Fuel Heater, Start Aid (SE1, W6)
F12 — Engine Control Unit (ECU), Actuator Solenoid (SE1, W6)
F13 — Rear PTO Switch, Seat (SE14, W6)
F14 — Sensor Power, Radar Sensor (SE8b, W6)
F15 — GREENSTAR™ AutoTrac Assisted Steering System fuse
F16 — Diagnostic Connector (X16) (Switched/circuit 072) (SE11b, W6)
F17 — Diagnostic Connector (X16), SERVICE ADVISOR™ Connector, CAN Power (Unswitched/circuit 002) (SE11b, W6)
F18 — Key Switch (SE1, W6)
F19 — Radio Clock, Dome Lamp, Horn, Turn Signal Switch, High / Low Beam Switch, (SE4b, W6)
F20 — Light Switch, Road Switch, Delay Timer (SE5c, SE5d, W6)
F21 — Spare
F22 — Spare
F23 — Spare
F24 — Radio, and ICU Backlighting, Right Console Lamp (SE5c, SE5d, W6)
F25 — HVAC System, Circulator Blower Motor and Switch, K29 and K30 Relay (SE3, W6)
F26 — Pressurizer Blower Motor, CLIMATRAK™ Diagnostic Relay, CLIMATRAK™ Controller (SE3, W6)
F27 — Spare
F28 — Wiper Circuit (SE2a, W6)
F29 — Rear Roof Floods, Beacon Light (Optional), K4 Relay (SE5c, SE5d, W6)
F30 — Front Grille Spot Light
F31 — Rear Fender Floods, K5 Relay, 7- Way Accessory Outlet, Lower Side Floods (SE5c, SE5d, W6)
F32 — Warning Lamps and Switch, Turn Signal Lamps, K8 and K9 Relays (SE5c, SE5d, W6)
F33 — Spare
F34 — Spare
F35 — Left Tail Lamp, Right Clearance Lamp, Rear License Plate Lamp (SE5c, SE5d, W6)
F36 — Right Tail Lamp, Left Clearance Lamp (SE5c, SE5d, W6)
F37 — Brake Lamps, K10 Relay (SE5d, W6)
F38 — Operator Presence Switch, (SE2c, W6)
F39 — 7-Way Accessory Outlet, K12 Relay (SE5c, SE5d, W6)
F40 — Cigarette Lighter, Convenience Outlets and Junction Block, FIELD OFFICE™ Option, Auxiliary Power Strip (Unswitched circuit 262 Only) (SE6b, W6)
F41 — Front Grille Flood Lamps, (SE5d, W6)
F42 — Head Lights, (SE5c, SE5d, W6)
F43 — Engine Control Unit (ECU)
F44 — Upper Midbody Flood Lamps, K6 Relay (SE5c, W6)
F45 — Height Control Switch, Seat Compressor Motor/Bleed Valve, Radio Power, (SE2c, W6)
F46 — Steering System Control Unit (SSU) (SE15, W6)
F47 — Left Junction Block, FIELD OFFICE™ (Switched circuit 272 Only) (SE6b, W6)

Continued on next page

KB11996,000005B -19-10JUN08-1/2

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ACU Addresses 80-81—ACU Part Number

Status Addresses

OURX927,00000C9 -19-16NOV04-132/151

1 Address Description	**Address 80** • This address displays the **first three digits** of the ACU part number. **Address 81** • This address displays the **last three digits** of the ACU part number. There is no test procedure for these addresses.	**OK:** Return to diagnosis in progress.

OURX927,00000C9 -19-16NOV04-133/151

ACU Addresses 82-83—ACU Serial Number

Status Addresses

OURX927,00000C9 -19-16NOV04-134/151

1 Address Description	**Address 82** • This address displays the **first three digits** of the ACU serial number. **Address 83** • This address displays the **last three digits** of the ACU serial number. There is no test procedure for these addresses.	**OK:** Return to diagnosis in progress.

OURX927,00000C9 -19-16NOV04-135/151

ACU Addresses 84-85—ACU Software Part Number

Status Addresses

OURX927,00000C9 -19-16NOV04-136/151

1 Address Description	**Address 84** • This address displays the **first three digits** of the ACU software part number. **Address 85** • This address displays the **last three digits** of the ACU software part number. There is no test procedure for these addresses.	**OK:** Return to diagnosis in progress.

OURX927,00000C9 -19-16NOV04-137/151

ACU Addresses 86-87—ACU Software Version Number

Status Addresses

Continued on next page

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8 Check Switch Disconnected	Remove engine oil pressure switch connector. Check for 5 volts on pin B of switch connector (circuit 326). Display should read between: **19** **0.00** and... **19** **0.10** (See Reference 245-CCU-300, CCU Wiring Diagram (—010000) or Reference 245-CCU-301, CCU Wiring Diagram (010001—).)	**OK:** Test passed. GO TO **10** **NOT OK:** Check for an opens and shorts. Repair as necessary. Check operation of engine oil pressure switch (B303). GO TO **7**

OURX937,000010E -19-05NOV04-81/238

9 Engine Running Test	Start engine and set at 1000 rpm. The corner post should read: **13** **XX1**	**OK:** Engine oil pressure switch (B303) is good. Return to diagnosis in progress. **NOT OK:** GO TO **10**

OURX937,000010E -19-05NOV04-82/238

10 Switch Circuit Checks	Remove engine oil pressure switch connector. Check the following circuits for opens, shorts or high resistance: • Circuit 314 from (B303) connector pin A to X981-2 pin D3 • Circuit 326 from (B303) connector pin B to X981-1 pin K1 • Circuit 367 from (B303) connector pin C to X981-1 pin B3 (See Reference 245-CCU-300, CCU Wiring Diagram (—010000) or Reference 245-CCU-301, CCU Wiring Diagram (010001—).)	**OK:** Replace engine oil pressure switch. GO TO **7** **NOT OK:** Repair circuits as necessary. GO TO **7**

OURX937,000010E -19-05NOV04-83/238

CCU Address 14 - Intake Manifold Air Temperature Sensor Voltage

Status Address

Continued on next page

OURX937,000010E -19-05NOV04-84/238

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The solenoid valve is powered from the EHo on circuits 847 and 050. Circuit 847 wires to pin G of the 10 pin Independent Link Suspension manifold connector and pin F3 of EHo connector X880-2. Circuit 050 is wired to pin H of the 10 pin Independent Link Suspension manifold connector and pin A1 of EHo connector X880-2 and single point ground.

Independent Link Suspension Unlock Valve

The unlock solenoid valve is located on the Independent Link Suspension valve manifold mounted to the front side of the front differential case. This valve is number 12 on the Independent Link Suspension valve manifold. These numbers are cast into the housing.

This valve **unrestricts** the suspension movement hence the Corner Post Display "**UOn**". When ON, voltage is applied to solenoid and the valve unrestricts access of the Independent Link Suspension cylinders (head side) to the accumulators by relieving pressure on the damping spool valve which then shifts to its unrestricted position due to spring force. This Independent Link Suspension mode is called "**Unrestricted Mode**" and provides suspension performance that compensates for uneven ground surfaces. This mode is set at EHo address 26

The solenoid valve is powered from the EHo on circuits 848 and 849. Circuit 848 wires to pin F of the 10 pin Independent Link Suspension manifold connector and pin A3 of EHo connector X880-1. Circuit 849 wires to pin E of the 10 pin Independent Link Suspension manifold connector and pin C2 of EHo connector X880-1.

Raise and Raise / Lower Valves

The raise solenoid valve is number 2 on the Independent Link Suspension valve manifold mounted to the front side of the front differential case and the raise / lower is number 3. These numbers are cast into the housing.

The EHo uses both of the valves to raise the suspension and only the raise / lower to lower the suspension.

The raise solenoid valve is powered on circuits 851 and 853. Circuit 851 is wired to pin D of the 10 pin Independent Link Suspension manifold connector and pin A2 of EHo connector X880-1. Circuit 853 is wired to pin C of the 10 pin Independent Link Suspension manifold connector and pin B2 of EHo connector X880-1.

The raise / lower solenoid valve is powered on circuit 854 and 855. Circuit 854 is wired to pin B of the 10 pin Independent Link Suspension manifold connector and pin A1 of EHo connector X880-1. Circuit 855 is wired to pin A of the 10 pin Independent Link Suspension manifold connector and pin C1 of EHo connector X880-1.

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❷ **Setting PCU Address 27**	Program this address as follows: 1. Access PCU address 27. (See Reference 245-05-002, Access Control Unit Addresses.) 2. Pull the flash-to-pass lever, pause for about three seconds. This will cause the left column digit to start flashing. 3. By moving the turn signal to the right, the number will increase, and moving the turn signal to the left, the number will decrease. When the correct number is displayed, pull the flash-to-pass lever and the middle digit will start flashing. 4. Set the middle digit with the turn signal lever using the same method and then pull the flash-to-pass lever again for the digit in the right column to begin flashing. 5. Set the right column digit with the turn signal lever using the same method and then turn the hazard lights switch ON and then OFF to store the setting.	**OK:** Return to diagnosis in progress.

OURX937,000002B -19-20JUL04-114/179

PCU Address 28 - Bypass Throttle Load Adjustment

Adjustment Address

OURX937,000002B -19-20JUL04-115/179

❶ **Address Description**	PCU address 28 displays the load point for throttle commands to be ignored during a gear shift. A typical display would show XXX (% of rated torque). Options range from 0 to 100 with a default of 060.	**OK:** To check or change this display value, GO TO ❷

OURX937,000002B -19-20JUL04-116/179

❷ **Adjusting PCU Address 28**	Program this address as follows: 1. Access PCU address 28. (See Reference 245-05-002, Access Control Unit Addresses.) 2. Pull the flash-to-pass lever, pause for about three seconds. This will cause the left column digit to start flashing. 3. By moving the turn signal to the right, the number will increase, and moving the turn signal to the left, the number will decrease. When the correct number is displayed, pull the flash-to-pass lever and the middle digit will start flashing. 4. Set the middle digit with the turn signal lever using the same method and then pull the flash-to-pass lever again for the digit in the right column to begin flashing. 5. Set the right column digit with the turn signal lever using the same method and then turn the hazard lights switch ON and then OFF to store the setting.	**OK:** Return to diagnosis in progress.

OURX937,000002B -19-20JUL04-117/179

PCU Address 29 - Load Compensation Configuration

Configuration Address

Continued on next page

OURX937,000002B -19-20JUL04-118/179

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SSU Addresses 14-16 - Not Used

Not Used

RX33672,00003B5 -19-10JUN08-47/191

❶ **Address Description**	These addresses are not used.	**OK:** GO TO next address required.

RX33672,00003B5 -19-10JUN08-48/191

SSU Address 17—Current Operating Mode, Current Gear, and Calculated Vehicle Direction

Status Address

RX33672,00003B5 -19-10JUN08-49/191

❶ **Address Description**	This address displays the current commanded gear, transmission gear, and vehicle direction as broadcast on the CCD network. The possible display characters are: • r - “r”everse • n - “n”eutral • F - “F”orward • P - “P”ark	**OK:** To check status of SSU address 17, GO TO ❷

RX33672,00003B5 -19-10JUN08-50/191

❷ **SSU Address 17 Check**	Display will show commanded gear, current gear and vehicle direction. *NOTE: SSU code 207 is generated when the SSU does not receive a commanded gear, current gear, or vehicle direction signal when expected.* With the engine OFF, access SSU address 17. (See Reference 245-05-002, Access Control Unit Addresses.) Display will show commanded gear, current gear and vehicle direction (as broadcast on the CCD network).	**OK:** Display matches commanded gear, current transmission gear and vehicle direction. Return to diagnosis in progress. **NOT OK:** Return to diagnosis in progress.

Commanded Gear - Left Digit	Current Gear - Center Digit	Vehicle Direction - Right Digit
r	r	r
F	F	F
n	n	—
P	P	—

RX33672,00003B5 -19-10JUN08-51/191

SSU Address 18—Current Wheel Speed

Status Address

Continued on next page

RX33672,00003B5 -19-10JUN08-52/191

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Control Unit	CCD Address	Description	Details
JDLINK™ JdL	092, 093	DISPLAY: Current Vehicle Model Number	This contains the model number of the current vehicle as determined from the CCD bus.
JDLINK™ JdL	094, 095	DISPLAY: Current Vehicle Serial Number	This contains the serial number of the current vehicle as determined from the CCD bus.
JDLINK™ JdL	096, 097	DISPLAY: Original Vehicle Model Number	This contains the model number of the vehicle the vehicle controller was originally programmed and calibrated for. The first time a non-zero model number is obtained from the CCD bus, the controller programs this address and thereafter it cannot be altered.
JDLINK™ JdL	098, 099	DISPLAY: Original Vehicle Serial Number	This contains the serial number of the vehicle the vehicle controller was originally programmed and calibrated for. The first time a non-zero serial number is obtained from the CCD bus, the controller programs this address and thereafter it cannot be altered.

CAN Diagnostic Addresses - JDLINK™ Control Unit

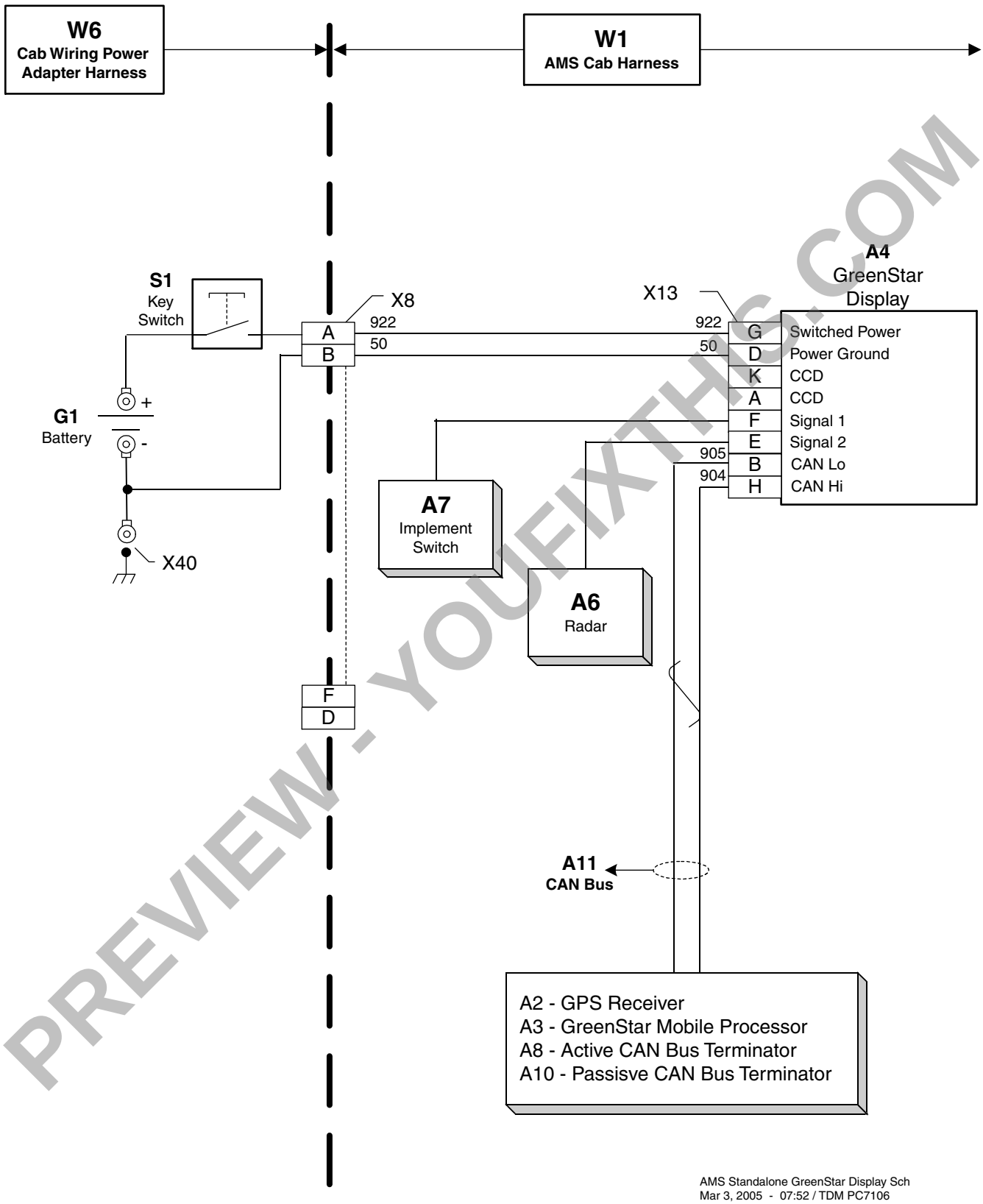
Control Unit	CAN Address	Description	Details
JDLINK™ JdL	002	JdL System Beep Mode	The system will monitor those inputs which are assigned a function. Of those inputs the system will show the diagnostic addresses of any input that changes.
JDLINK™ JdL	003	DISPLAY: Engine Speed Sensor Status	Not implemented
JDLINK™ JdL	004	DISPLAY: External Call Request	Not Implemented
JDLINK™ JdL	005	DISPLAY: Reserved beep mode for Opto-isolated input	Not Implemented
JDLINK™ JdL	006	DISPLAY: Analog Input 1 Voltage	Analog Input 1 Voltage, this voltage is normally between 0 and 5.0 volts.
JDLINK™ JdL	007	DISPLAY: Analog Input 2 Voltage	Analog Input 2 Voltage; this voltage is normally between 0 and 5.0 volts.
JDLINK™ JdL	008	DISPLAY: Reserved beep mode for future Analog input	Not Implemented
JDLINK™ JdL	009	DISPLAY: Reserved beep mode for future Analog input	Not Implemented
JDLINK™ JdL	010	DISPLAY: Cellular Signal Strength	Default: 000 (very weak or no signal Range: 0 to 63 The received signal strength is a positive number that indicated relative signal strength where 0 is no signal and 63 is the maximum signal.
JDLINK™ JdL	011	CALIBRATE: Call Request	Default: 000 Options: 000 No call-in in process 001 Forced call-in in process This address allows a call-in to be forced manually.
JDLINK™ JdL	012	DISPLAY: Modem Activity 1 Status	Default: 000 On an Advanced Mobile Phone Standard (AMPS) system this will be the call processing state having one of the following values: 000 - the modem is powered off 001 - normal stand-by mode 002 - waiting for answer 003 - dialing a number 004 - normal conversation mode 005 - hangup command has been sent 006 - AMPS cellular task is suspended 007 - modem is in the minimum mode and the cellular radio is completely disabled 008 - modem will not register because auto registration is either disabled or the specified SID does not match the current system.

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RX33672,00002E5 -19-18JUN03-4/7

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Reference 246C-15G-002, Electrical Schematic



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RX33672,0000357 -19-22JUL04-1/2

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A2 (A908)—GREENSTAR™ GPS Receiver
S1 (S001)—Key Switch
G1 (G001)—Battery
W1 (W92)—AMS Cab Harness (GREENSTAR™ Factory Installed Harness
W6—Cab Harness
X8 (X925)—Diagnostic Connector (SE12c)
X10 (X908)—GREENSTAR™ GPS Receiver Connector

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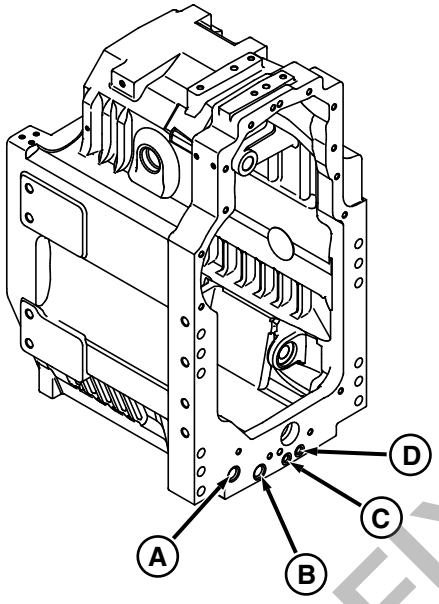
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1 Lube Test

NOTE: This test will indicate if the ground drive pump is delivering the correct amount of lube oil to the front axle.

With engine off, remove the Independent Link Suspension lube line from port (C) at the bottom rear of transmission. Install a (-6) ORFS Cap (38H1415) on the lube passage port (C).



RXA0059400 —UN—05FEB02

A—Return Oil
B—Pressure Oil
C—GDP Plug or Lube Oil Line
D—Load Sense

Remove the opposite end of the lube line from rear of transmission (GDP outlet port) and install a DR on the port. (A 38H1030 Tee Fitting with a 38H1415 Cap and an RE60701 DR can be used for this connection.)

Connect a JT07117 Three Gauge Manifold[1] with a JT05497 Hose Assembly[2] to the DR installed on the GDP outlet port. Place gauge in cab to be observed while driving.

Drive tractor in 12F at 2240 rpm (approximately 18 kph (11 mph)). Observe gauge pressure while driving tractor.

Specification

Lube Pressure - Typical Readings—Pressure..... 620 - 965 Kpa (6.2 - 9.6 bar) (90-140 psi)

OK: Return to diagnosis in progress.

NOT OK: Pressure is incorrect indicates a problem in the ground drive pump circuit. Make repairs as needed and return to diagnosis in progress.

[1]Part of JT07115 Master Hydraulic Test Kit. See Section 299 Group 15 for complete breakdown of kit.
[2]Part of JT05470 Agricultural Universal Pressure Test Kit. See Section 299 Group 15 for complete breakdown of kit.

RX33672,00003F4 -19-14JUN06-3/3

Reference 256-15-003, MFWD Clutch Test

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LP50317,000010E -19-26JUL06-1/7

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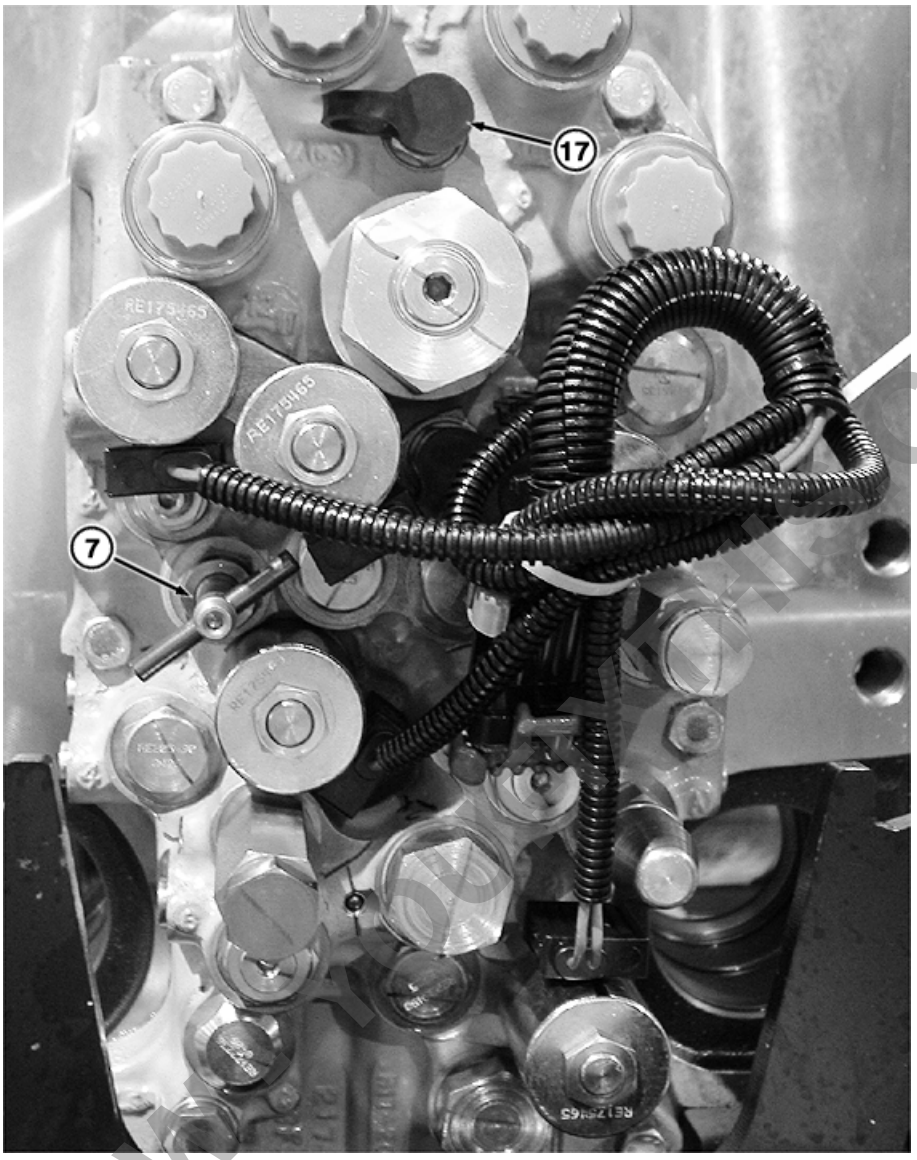
Specifications

Item	Measurement	Specification
Hydraulic Oil Cooler	Differential Pressure @ 38°C (100°F)	340—480 kPa (3.4—4.8 bar) (50—70 psi)
Hydraulic Oil Cooler	Differential Pressure @ 65°C (150°F)	138—278 kPa (1.3—2.8 bar) (20—40 psi)
Pilot Pressure (PS port)	Pilot Pressure	1900—22050 kPa (19—22 bar) (275—320 psi)
Standby Pressure (P port)	Standby Pressure	3000—4000 kPa (30—40 bar) (435—580 psi)
Stall Pressure (P port)	Stall Pressure—P port	19600-21000 kPa (196-210 bar) (2850-3050 psi)
Typical Lube Pressure @ 38°C (100°F)	1000 rpm	120 kPa (1.2 bar) (17 psi)
	2000 rpm (minimum pressure)	410 kPa (4.1 bar) (60 psi)
Typical Lube Pressure @ 65°C (150°F)	1000 rpm	83 kPa (.83 bar) (12 psi)
	2000 rpm (minimum pressure)	310 kPa (3.1 bar) (45 psi)
Load Sense	Pressure Change	2758-3206 kPa (28-32 bar) (400-465 psi)
Oil Filter Differential Pressure		
Typical	Pressure at 38°C (100°F)	55 kPa (0.5 bar) (8.0 psi)
	Pressure at 65°C (150°F)	35 kPa (0.4 bar) (5.0 psi)
Maximum	Pressure Differential	280 kPa (2.8 bar) (40 psi)
Independent Link Suspension Commanded Raise P Port Pressure	Pressure @ 1000 rpm	19700-20680 kPa (197-206 bar) (2850-3000 psi)

Continued on next page

RX33672,0000279 -19-11AUG04-1/3

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RXA0077697 —UN—06OCT04

A—Pressure Compensated Flow Control Valve
ACC—Head Side Accumulators (2)
C—Cylinder Shuttle Check Valve
CD—Front Differential Case Drain
CYL — Left & Right Cylinder, Head Side
LS—Auxiliary Load Sense
P—Auxiliary Pressure
PP—Pressure Reducing Valve Test Port
T—Auxiliary (Tank) Return
1—Head Pressure Check Valve
2—Raise Solenoid Valve
3—Raise / Lower Solenoid Valve
4—Rod Pressure Check Valve
5—Rod Pressure Control Valve
6—Rod Side Pilot Operated Check Valve
7—Manual Drain Valve (Plastic Cap EARLY or "T" Handle LATE)
8—Head Side Pilot Operated Check Valve
9—Suspension Damping Spool Valve
10—Pressure Relief Valve
11—Lock Solenoid Valve
12—Unlock Solenoid Valve
13A—Common Head Check Valve
13B—Common Rod Check Valve
14—Pressure Reducing Valve (31 bar) (450 psi)
15—Front Differential Lock Solenoid Valve
16—Front Brake Valve (North American has plug installed)
17—Head Side Test Port (DR LATE)

The Independent Link Suspension Valve Manifold has the following components:

- Check Valves (4)
- Pilot Operated Check Valves (2)
- Three Way Solenoid Valves (3)
- Two Way Solenoid Valves (2)
- Front Brake Valve (1)
- Rod Pressure Control Valve (1)
- Suspension Damping Spool Valve (1)
- Pressure Control Valves (3)
- Shuttle Check Valves (2)
- Manual Drain Valve (1)

There are other items on the manifold worth noting such as ports for the accumulators, load sense, pump pressure, pilot pressure and orifices for controlling the Suspension Damping Spool Valve opening and closing speeds and the suspension lowering speed.

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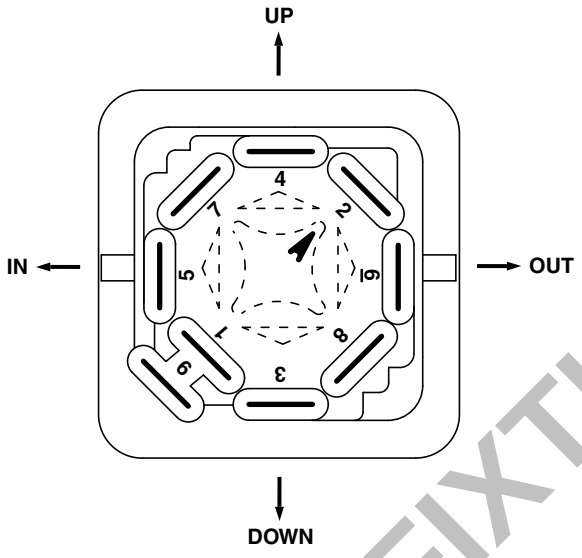
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4 Mirror Switch Continuity Check

1. Remove switch from cab headliner.

2. Remove wires from mirror switch.
3. Set switch knob to point to terminal 2.



RXA0059192 —UN—10JAN02

NOTE: Switch is viewed from terminal side.

4. Check continuity of switch against table for each arrow/switch position.

Switch Position	Terminal Continuity
UP	2, 7 and 8 1 and 4
DOWN	1, 7 and 8 2 and 4
IN	1, 7 and 8 2 and 6
OUT	2, 7 and 8 1 and 6

5. Reinstall switch using terminal/wire color table.

Terminal	Wire Color	Harness
1	Black (cct 010)	Cab
2	Gray (cct 168)	Cab
4	Yellow	Mirror
6	Black	Mirror
7	Red	Mirror
8	Orange	Mirror

NOTE: Terminals 3, 5, and 9 are not used.

Brown and green wires of mirror harness are not used..

OK: Switch continuity is good.

GO TO 5

NOT OK: Switch failed continuity check. Replace switch.

GO TO 1

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RE26679,0000074 -19-04APR02-6/7

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